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Official Committee Hansard

**HOUSE OF
REPRESENTATIVES**

STANDING COMMITTEE ON PRIMARY INDUSTRIES AND
RESOURCES

**Reference: Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill 2008
[Provisions]**

TUESDAY, 15 JULY 2008

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HOUSE OF REPRESENTATIVES
STANDING COMMITTEE ON PRIMARY INDUSTRIES AND RESOURCES

Tuesday, 15 July 2008

Members: Mr Adams (*Chair*), Mr Schultz (*Deputy Chair*), Mr Bidgood, Mr Champion, Mr Forrest, Mr Haase, Ms Livermore, Mr Perrett, Mr Sidebottom and Mr Windsor

Members in attendance: Mr Adams, Ms Livermore, Mr Perrett

Terms of reference for the inquiry:

To inquire into and report on:

The provisions of the draft Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill.

Specifically, the Committee will ascertain whether the Bill:

- a) Establishes legal certainty for access and property rights for the injection and long-term storage of greenhouse gases (GHGs) in offshore Commonwealth waters;
- b) Provides a regulatory regime which will enable management of GHG injection and storage activities in a manner which responds to community and industry concerns;
- c) Provides a predictable and transparent system to manage the interaction between GHG injection and storage operators with pre-existing and co-existing rights, including, but not limited to, those of petroleum and fishing operators, should these come into conflict;
- d) Promotes certainty for investment in injection and storage activities; and
- e) Establishes a legislative framework that provides a model that could be adopted on a national basis.

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Committee met at 9.22 am**HARTWELL, Mr John, Head, Resources Division, Department of Resources, Energy and Tourism****MILLER, Mr John, Policy Officer, Carbon Capture and Storage, Department of Resources, Energy and Tourism****SEWELL, Ms Margaret, General Manager, Low Emissions Coal and CO2 Storage Branch, Resources Division, Department of Resources, Energy and Tourism**

CHAIR (Mr Adams)—I declare open this public hearing of the House of Representatives Standing Committee on Primary Industries and Resources for its inquiry into the future development of the draft Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill 2008. This is the first public hearing of this important inquiry. Today the committee will hear from a range of witnesses representing government and industry. I now welcome representatives of the Department of Resources, Energy and Tourism. Although the committee does not require you to give evidence under oath, I should advise you that this hearing is a formal proceeding of the parliament and therefore warrants the same respect as proceedings of the House. Giving false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. Do you wish to make an opening statement before going to questions from the committee?

Mr Hartwell—Thank you, Chair. We will make a brief statement just to set the context, but to take advantage of the time available we would prefer to spend most of the time answering any questions that the committee might have in relation to the Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill 2008.

CHAIR—Thank you for that consideration.

Mr Hartwell—As you are probably aware, the Resources Division within the Department of Resources, Energy and Tourism is responsible for the provision of policy and legislative advice on a range of issues for encouraging oil exploration and for a number of issues relating to coal and minerals. This is both policy advice and legislative advice. We were also charged with the responsibility of developing, for the government, the Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill. In doing that we built on the work which had been conducted through the Ministerial Council on Mineral and Petroleum Resources, and in November 2005 they endorsed a set of regulatory guiding principles for carbon dioxide capture and geological storage or, as it is commonly known, CCS. These principles were provided to underpin the development of a clear and transparent regulatory framework for CCS in Australia.

Following consultation with relevant Commonwealth agencies, the Offshore Petroleum Act 2006, or the OPA, was identified as the most appropriate vehicle for implementation of a greenhouse gas injection and storage regime in Commonwealth waters. This was consistent with the MCMPR principle that existing legislation and regulation relating to assessment and approval processes for CCS be identified, modified and augmented where necessary—in other words, do not unnecessarily duplicate or add to existing legislation or make new legislation. Use of the OPA, which was endorsed by the MCMPR in December 2006, allows for the establishment of an effective regulatory framework for greenhouse gas injection and storage and

ensures both the existing petroleum industry and the newly emerging greenhouse gas injection and storage industry can coexist in Commonwealth offshore waters.

The bill, which was publicly released on 17 May 2008 and subsequently introduced into the parliament on 18 June 2008, is based on three broad principles: provision of access and property rights for greenhouse gas injection and storage activities in Commonwealth waters; management of interactions between petroleum, fishing and other industries; and safe and secure storage. The bill will amend the OPA to establish a system of offshore titles similar to the offshore petroleum titles that already exist under the OPA, and it will authorise the transportation by pipeline and injection and storage of greenhouse gas substances in deep geological formations under the seabed. The bill will also make changes to the existing regime of petroleum titles that are needed in order to accommodate the new kinds of activities being authorised by the act. At this point I will stop. I think that provides the broad context of the bill that your committee is examining. It is fair to say that in developing this bill we have, as much as possible, consulted widely with interested stakeholders. They include not only industry but also state and territory governments. I will leave it at that. Thank you very much.

CHAIR—Thank you very much. One of the questions is in relation to the no-significant-impact test on those who presently hold petroleum licences. That operates as a bit of a veto on, maybe, new opportunities. Do you have any comments on that?

Mr Hartwell—I will ask my colleagues to add to my answer in relation to this issue, but I will start by saying that we do not accept the view put by some—and I think you will find this in some of the submissions before the committee—that pre-existing titleholder amounts to a veto right. In our view, the legislation sets out clearly that the decision maker, with regard to the risk of a significant impact, is the responsible Commonwealth minister, and he will be guided by assessment of the proposed activities by Geoscience Australia. There are a whole set of criteria that will be adopted in responding to this particular issue.

Mr PERRETT—Mr Hartwell, could I take you back to the MCMPR process. Were there any dissenting views put forward about the science supporting CCS in that MCMPR process?

Mr Hartwell—From my recollection, no; there were no dissenting views in relation to the fact that this was an important issue and that Australia, as a country, had to grapple with this issue. There may have been various views on how we should go about creating an appropriate legal and regulatory framework. I think you would be well apprised of the situation that some may have thought that we could go down a stand-alone legislation path; others had different views. But, in the end, there was broad consensus, as I mentioned in my opening remarks, that in relation to establishing a legal and regulatory framework we should as much as possible use existing legislation. So far as the Commonwealth was concerned, it would use the—

Mr PERRETT—I am referring to the science supporting CCS, not so much to the process after agreeing that the CCS was the way to go.

Mr Hartwell—If you are talking about whether capturing CO₂ and then storing it works, I do not think it was to the forefront of the considerations of the ministerial council. We were putting science to one side and establishing a legal and regulatory framework to enable this to happen and to let the science be developed for it.

Mr PERRETT—So the presumption was that the science stacks up. This was the process which we would use, based on that platform of the science being okay. What about consultation with stakeholders? Were there any contrary views about the science put forward by that extensive consultation with stakeholders, or did that involve only stakeholders who would agree that the science does stack up?

Mr Hartwell—That is going back two or three years now, so I would have to go back and check the various views that were put forward and the consultation process that happened at that point in time. I do not recollect any views that were put forward of the nature that you are outlining, but I could stand corrected on that. I would need to go back and check that detail.

Mr Miller—One thing that did come through was not so much the science but more the policy and science combined. There were concerns raised by some parties that CCS was distracting focus from the main game of changes in the way we use energy within Australia. But as to the science itself, even then Sleipner in Norway had commenced their investigations into injection storage on an international playing field. It was recognised as a viable technology. Pure science dissent? There was very little.

CHAIR—We wanted to establish that the extra storage of CO₂ is probably 30 or 40 years old as a technology?

Mr Miller—That is correct.

CHAIR—It is used by the petroleum, gas and oil industries.

Mr Miller—The petroleum industry has been using it to enhance oil recovery for at least 30 years that I am aware of.

Mr Hartwell—We would expect that, spread across all the projects that presently exist—and there are some demonstration projects storing CO₂; you have mentioned the Sleipner project, and there are some others—three million tonnes of CO₂ is being stored annually in one form or another.

Mr PERRETT—Sorry to dwell on this before we kick off the whole process. There will be an appropriate time later on to look at some of those projects in terms of the monitoring. I am not doubting the science of how the CCS has occurred over the last 30 or 40 years. My understanding is that the focus has always been on oil recovery rather than on the CO₂ storage. I was wondering what the scientific monitoring of the storage has been. Obviously, 40 years ago the technology was not there to monitor the CO₂ emissions in the same way that it is now. The Sleipner project has been going since 1998 or so. What monitoring of the retention of CO₂ has occurred in the decade since that project was established?

Mr Hartwell—From every bit of evidence that we have seen of the Sleipner project—and we can provide the committee with more detail on this; there have been a number of technical papers on the monitoring and verification of how stored CO₂ behaves—

Mr PERRETT—From independent peer reviews?

Mr Hartwell—As I understand it, that is the case. The CO₂ behaves in a storage sense exactly the way they hoped it would behave and as it was predicted to behave.

Mr PERRETT—It behaved in the way that Mr Miller described in the preliminary briefing?

Mr Hartwell—Yes.

Mr PERRETT—I understand that the science is not complicated. I just have some reservations about heading down the whole road. That is why I am asking these questions.

Ms Sewell—If I can just add to that: one of the other well-known global projects is the Weyburn-Midale operation in Canada, which operates for enhanced oil recovery. They bring CO₂ some hundreds of kilometres for enhanced oil recovery purposes. That site is actually an international R&D operation. So the results from all aspects of the CO₂ injection, including things like the integrity of the well linings as they are going down, through to the monitoring and verification processes that are in place there, are made available through the International Energy Agency's greenhouse gas R&D program not only to financial backers of that project but, more generally, to the scientific community around the world. While there are only a very small number of projects already underway, those results are being widely and globally shared for the benefit of moving the technology forward.

Ms LIVERMORE—I want to go back to the significant impacts test. Presumably, the significant impacts on pre-existing petroleum title or operation would come at the injection phase of the CO₂ CCS operations. Do you foresee a problem where proponents of a CCS project are going to have to invest a lot of money in the early stages of the assessment, in the investigation-exploration side of things, knowing that they are going to have to jump a significant impacts hurdle further down the track in order to get an injection licence? How do you see that playing out?

Mr Miller—It is definitely one of the risks that the new CCS industry will have to confront. What we will try and do from an administrative perspective is make sure that we avoid releasing high-risk acreage—for example, if there is a work-in-production licence, we would be unlikely to get CCS proponents taking up acreage that overlapped that production licence if all the good storage information available suggested that the interactions would occur. So the first step is appropriate acreage release. If there are still significant interests in it and proponents of greenhouse gas storage feel that they can identify storage formation and create a project that will not impact on overlapping petroleum tenure—and this is entirely possible if, for example, they are dealing with two distinct geological layers that are completely separate—we would expect that the CCS operator would have some form of interaction with the petroleum operator right from the start, saying: 'We're bidding on this acreage. We're targeting this geological zone.' As it progresses through to the injection licence, that collaborative arrangement occurs. I do agree that in a confrontational situation or a non-collaborative environment, the CCS operator will face a high level of risk progressing to their injection licence if they are not sure of the potential impacts on the petroleum operator.

Ms LIVERMORE—There is no requirement written into these amendments that talks about the need for various operators from CCS and petroleum to negotiate or consult with one another, is there?

Mr Miller—There are no enforced negotiations written into the legislation at all. There are outcome derived expectations—that is, you will be able to proceed if you have the agreement of the incumbent operator. That extends into the postcommencement world as well, where there may be an established CCS entity and a new petroleum entity coming in. We recognise civil agreements as important, but I think we would be reluctant to force these negotiations in any way, manner or form.

Mr Hartwell—Of course, the legislation does not prevent those agreements taking place. The mere existence of an interaction between existing petroleum titles and the possibilities of greenhouse gas storage does not give—to get back to the earlier question on the veto situation—that existing petroleum title holder the right of veto. Even if the greenhouse gas storage proponent has a bit of difficulty being able to produce the evidence to show that there would be no significant impact, it does not rule out the petroleum title holder and the greenhouse gas storage proponent coming to some sort of civil agreement about the storage activity going forward. John is right: the legislation does not force any sort of process in relation to an agreement between the two competing users, as we described in this situation. But, on the other hand, it also does not prevent it, and essentially it would be our hope that that is the way that these issues would be resolved.

CHAIR—I guess it is the tension that we are seeing and reading into it to make sure that these commercial considerations all have to find the solution to that. We are setting the minister up as a bit of an arbitrator—a word we do not use much these days—if they do not get it together. I would be interested to know what you think—and I think it comes up in our submissions—about making sure that all the information is on the table when they do discuss or negotiate. I think that that is a genuine issue. Mr Hartwell probably just described that he feels that it can, but I would be interested in what you think about how the information flows between both groups. Of course, it would be a negotiated position, I would say, that whoever is going to do the injection would be doing a commercial contract with those who are going to want to get rid of the CO₂ into the injection process.

Mr Miller—With the provision of data, the first thing to stress on these potential conflict arrangements is that, based on our technical advice and our potential lease areas, we are talking about a very small subset of potential lease areas. It is not necessarily going to be something that will occur with every greenhouse gas pre-existing petroleum interaction. With the data, what we would see happening is that the technical regulator, primarily Geoscience Australia, would be receiving submissions from both the GHG proponent and the petroleum proponent to make an evaluation of whether there is a significant impact or not.

We are a bit reluctant to insert any clauses associated with data access by one proponent or another proponent, mainly because the data is commercial data—a lot of money is being spent to obtain it. Also, it might be a bit of a remote concern but what would stop a GHG component putting in some form of slightly silly or unusual proposal in an effort to obtain this commercially sensitive data and therefore go away and refine their project based on the data they have obtained? In essence they might have got tens of millions of dollars worth of leg-up. So it would be the role of the technical regulator to confidentially assess the data in order to make a determination on the most significant impact. I know that is difficult for a new operator in an established operator's realm but the alternatives seem less palatable.

Ms Sewell—I will take a step back from that part of the process to look at the information that will be on the table before a block is even released for expressions of interest in an exploration effort. Basically, through Geoscience Australia, which has an enormous amount of pre-competitive geological information at its disposal already, I think it is fair to say that blocks are very unlikely to be released unless their geological integrity as a storage site is already fairly well known. So the question of the petroleum developer and the greenhouse gas storage proponent having to provide further information to support a possible significant risk, a significant impact test, will build on top of what is already held by Geoscience Australia.

Mr PERRETT—The person in Geoscience who is sitting there with the maps and geological data in front of them will make a technical assessment as to the feasibility of the two projects—oil versus carbon dioxide storage. Is that correct?

Mr Miller—Is this at the acreage release stage or at the assessing the no-significant-impact stage?

Mr PERRETT—The no-significant-impact stage.

Mr Miller—We would anticipate that it would be looking at the data available, with the primary question being: does this GHG proposal do no significant impact to the petroleum impact activity?

Mr PERRETT—Would this be a geologist? What skills would such a person have?

Mr Miller—I hesitate with this because I feel it has a lot to do with the technical elements of risk, but I would say that it would definitely include a geologist, a geotechnical expert of some description. If warranted, there might need to be some financial input as well to be able to gauge the magnitude of the impact. It needs to be said that it will affect, for example, petroleum recovery by X amount. Some financial input would then say, ‘If that is what your technical opinion is, here are the financial ramifications.’

Mr PERRETT—And it is really the technical feasibility or possibility—

Mr Miller—Yes; that would be the primary driver.

Mr PERRETT—They are not weighing competing aims. They are not weighing greenhouse objectives with fuel objectives for the nation. They are just saying in terms of technical—

Mr Miller—For the no-significant-impact test it is a pure technical test, yes.

Mr Hartwell—It is a pure technical test, and we probably hesitate, as John has indicated, to get into too much technical detail—and you can talk to our colleagues in Geoscience Australia, should you so wish. But to take a simple example: if a greenhouse gas storage proponent wanted to do some seismic work, we would expect that it would not be likely to have a significant impact on potential hydrocarbon exploitation either presently or in the future. However, should the greenhouse gas storage proponent want to drill a well through a known hydrocarbon deposit, then one might think that that would have a significant impact and one would have to consider that much more carefully. I think those are the sorts of tests we and the greenhouse gas storage

people would have to think about in terms of significant impacts. Of course, they are the things the advisers would take into account in relation to whether or not it would have a significant impact.

Mr PERRETT—Is Geoscience Australia a Commonwealth entity with the employees being Commonwealth employees?

Mr Hartwell—It is a prescribed agency within the Resources, Energy and Tourism portfolio, so it is essentially a Commonwealth agency located within this portfolio and it reports to the Minister for Resources and Energy and Minister for Tourism.

Mr PERRETT—Would they be liaising with the Victorian Department of Primary Industries or whatever the equivalent is? Much of this expertise would seem to be—

Mr Hartwell—They would not only liaise with the relevant state and territory geological survey organisation but also have direct liaison with various proponents both on the petroleum side and on the greenhouse gas storage side. But, of course, they would liaise with us should we be charged with administering this bill, should it pass the parliament. So there would be constant interaction in that context.

Mr PERRETT—The reason I am asking this is that in Queensland, in a booming mining sector, it was hard to find such people because, obviously, they are easier to find when it is not booming.

Mr Miller—That is true.

Mr PERRETT—I know we are talking about something much further down the track, but in terms of potential bottlenecks, obviously, there are going to be some fairly big spotlights on these people, whoever they are, and the number that we have.

Mr Hartwell—I think that is a fair point. Essentially, as Geoscience Australia have tried to gear up to handle what we see as increased activity going forward, there is some difficulty in attracting the right people, and indeed they are in a competitive race for the right people. So I think the point being made is a very valid one.

CHAIR—In these exciting times, some of the universities are pretty busy in the earth sciences, and there are a lot of incentives being offered by a lot of people to get first-year people to sign up and have a job when they finish their degree. That is how tough it is at the moment. It is good for the people.

Mr Hartwell—It is indeed.

Mr PERRETT—It is a headache for Mr Hartwell further down the track!

Mr Hartwell—Yes, that is possibly so. I know my colleague Neil Williams in Geoscience Australia is very reluctant to send his bright, young and new recruits and graduates out into the wider world, to conferences, for them to show their ability, because they are immediately snapped up and they never come back. So it is an issue.

Mr PERRETT—Yes.

Ms LIVERMORE—Talking about the significant impact test being very much a technical question, the public interest test comes into play in the post-commencement area, doesn't it?

Mr Miller—That is right, yes.

Ms LIVERMORE—Is that much more a question of competing policy objectives?

Mr Miller—Where there are pre-existing rights, the no-significant-impact test is the primary specific test. Where there are no pre-existing rights post commencement, and there are two activities that are at the same level of development and that wish to proceed to the next step, the public interest test would be applied if they could not both go together as they are configured or could be configured. It was the only way to separate two activities where only one could go ahead.

Ms LIVERMORE—I think it was raised in one of the submissions—it might have been the Victorian government's submission. They were floating the idea of applying a public interest test to subsequent steps—or, I guess, the escalating steps—along the petroleum titles. Was any thought given to that? What would be the implications of that kind of system?

Mr Miller—The application of the public interest test on pre-commencement petroleum titles—and I will start with that—is an area that would cause us concern, mainly because of the introduction of sovereign risk. These petroleum companies have taken up tenure, invested money, knowing a certain business environment. To suddenly overlay that with a requirement that to now proceed to a production licence you are required to pass a public interest test, which you were not aware of when you took up your exploration tenure, not only would be of concern for petroleum investors looking at investing in Australia but may even be of concern for wider foreign investment. They would be concerned that suddenly their pre-existing rights can be subject to such tests. In a post-commencement world all entities that go in, be they GHG or petroleum proponents, are aware that there will be public interest assessments right up to the point of their licence, and that gives us a lot more comfort. The companies will come in knowing that that is a hurdle that they have to jump.

Mr PERRETT—The decision maker for the public interest test; could you talk about the escalation of that process right up until it gets—if indeed it ever does—to the minister's chair?

Mr Hartwell—Maybe I will begin my answer by saying that the public interest test applying in the post-commencement stage can almost be described as a last resort. We would hope that there would be means by which the need to apply this test would not occur—in other words, there would be some agreement between the parties involved and so forth. It really only applies when there is some view that two activities—that is, petroleum exploitation and gas storage—cannot exist together, and then we would need to have a set of criteria that would be taken into account for what is the public interest. I am grappling towards saying to you that this is something where you will have to try and imagine situations which we hope do not occur and that this can all be worked out in a sensible fashion. But when it can not, then we just need a process that has to be gone through.

Mr PERRETT—That is what I was hoping to unpack in terms of the proposed escalation of such things because law firms do not exist as charities; they do tend to support people who have competing interests. I have seen it in the resources sector. So what is the proposed escalation? Who would be the first initial administrative decision maker in terms of reporting the public interest considerations of the two streams before they converge on to some final decision maker?

Mr Hartwell—If we have to resort to the public interest test, then essentially the regulator would take into account a wide range of considerations. There would be submissions on both sides on what should be before the regulator to make decisions based on the public interest. But you could imagine—

Mr PERRETT—Sorry, Mr Hartwell, is the regulator the designated authority?

Ms Sewell—No. The responsible Commonwealth minister.

Mr Hartwell—The responsible Commonwealth minister is always the regulator.

Mr PERRETT—Okay.

Mr Hartwell—I was just trying to outline what we would expect would be some of the criteria that the responsible Commonwealth minister, as the regulator, would take into account. They would obviously be economic and environmental issues as well as various issues around regional development, consumer interests and business competitiveness—all the things that are normally associated with the national interest and the public interest.

Mr PERRETT—So the input would come from your people?

Mr Hartwell—I would imagine that the various proponents on either side could point to the public interest from their perspective

Mr PERRETT—The competing parties?

Mr Hartwell—Then I imagine a situation where the responsible Commonwealth minister is the regulator. We would provide advice to the responsible minister on our assessment of the various claims that have been made against the public interest and some of the criteria I have just outlined. So this process is something that is not unfamiliar in a whole range of areas that, obviously, we deal with.

Mr PERRETT—I understand that. I am just interested in whether the responsible Commonwealth minister would, at the moment, be your minister rather than the climate change minister or the Treasurer or anything like that.

Mr Hartwell—Certainly, under the proposed bill, it would be our minister who would be the responsible Commonwealth minister and therefore the regulator as described in the legislation.

CHAIR—We have been dealing with access and property rights—the issue of environmental considerations and monitoring. Could you outline the bill and how we deal with that section of the bill?

Mr Miller—The bill itself does not explicitly go into what is required as far as environmental activities go. What it does allow is access to appropriate areas to undertake monitoring and verification. It makes reference to monitoring and verification required as part of your closure. Rather than trying to extract elements of broader environmental legislation and embedding them within this access legislation, it allows for the incorporation of their requirements into the legislation. So you will not see, for example, in the legislation that an environmental impact assessment is required to obtain an injection licence, although there would be an expectation that any project, like any other major project, would be referred to the appropriate environmental authorities. They would undertake their appropriate activities. They would provide recommendations back to the primary regulator.

CHAIR—So our general legislation and regulatory regimes would come into play—

Mr Miller—Absolutely.

CHAIR—as they do now in any other situation.

Mr Hartwell—And the EPBC Act and various other acts which may or may not be applicable, depending on the situation.

CHAIR—I see the WWF and the defender's offices have put in their submissions—in relation to exclusion zones—that some islands and other areas have real sensitivity, as they perceive. Do you have a view on that? Is it something you have considered?

Mr Miller—I am not sure what advantage, within legislation, having definitive exclusion zones would have. General exclusion zones might be of some benefit—for example, anything that the EBPC warrants as a sensitive area could be excluded. But if you get into the game of excluding specific areas you could end up amending your act quite regularly as different areas are announced as important, while the broader environmental assessment process considers these and would make recommendations along the lines of 'We do not recommend that activity should occur near this island or that island for this reason.' It would be hard to approve those activities in that case, given there is that broad environmental protection.

CHAIR—Our present regulatory frameworks for dealing with our environmental considerations would come into play.

Mr Miller—Yes, that is right.

Mr Hartwell—As I just mentioned, we would expect that the Environment Protection and Biodiversity Conservation Act 1999 would possibly come into play. There are some other bits of legislation that apply offshore as well. There is the Environment Protection (Sea Dumping) Act 1981. Some of those, depending on circumstances, may be applicable. Of course, there is, in terms of the legislation, the need for the greenhouse gas storage proponent to submit a draft site plan for assessment by the Commonwealth minister. That will cover a whole range of issues, including the environmental management issues, we would expect. Getting back, Chair, to your original question, there will certainly be a whole range of requirements for the proponent to meet certain environmental obligations.

Ms Sewell—I think it is probably also worth while to note that the Western Australian government went through a very extensive environmental impact assessment process before agreeing to allow the Gorgon oil and gas project to store up to five million tonnes of CO₂ a year under Barrow Island, which is a class A nature reserve in WA. So the integrity of the existing environmental processes is expected to come into play for all these projects as necessary.

CHAIR—I understand that they are dealing with microbes that actually live thousands of metres down there.

Mr Miller—Extremophiles.

CHAIR—They would be, yes. I take it that the London convention on dumping has come together in our legislation. We will not be outside a treaty or anything like that.

Mr Miller—No.

Ms LIVERMORE—The bill provides for petroleum leaseholders to apply for an injection licence—is that right?

Mr Miller—That is right.

Ms LIVERMORE—That is to inject CO₂ that they produce as a result of their activities?

Mr Miller—Yes.

Ms LIVERMORE—Is there any scope for them, when they cease producing petroleum, to convert that to a storage licence, seeking it from other sources?

Mr Miller—We have actually invited comment on this specific issue within the bill. As it stands now, the design of this section was to allow petroleum operators who are injecting and storing CO₂ as part of their operations to obtain a licence for that should there be some external driver or incentive required that recognises a licence—for example, an emissions trading scheme. There was no intent in the design to expand this right beyond that initial petroleum embedded right, but we do need to consider what happens at the end of that operation, considering that they have been injecting and storing CO₂, they have the infrastructure in place and they have the knowledge on the site. It would be fair to say that we are still not entirely convinced one way or the other whether that right would convert to a commercial CCS right for a petroleum operator or whether it would be open to competitive bidding—because the competitive bidding side does create a few issues in that this pre-existing petroleum operator will have a lot of inherent knowledge, infrastructure. How transparent could such a bidding process be?

Ms LIVERMORE—I see. So they are the options: either just allowing that operator to convert their licence into a GHG licence or regard it as a whole new storage area and go through the other process.

Mr Miller—Yes.

Ms LIVERMORE—I know that there were comments made—I think in ExxonMobil’s submission—about the operation of section 137. They were concerned that the provisions seemed to limit a right that they already have.

Mr Miller—There is a section contained within the draft bill that does limit the rights. This was picked up after we had got our final policy approval to release. It is an orphan provision, because it does not fit within the context of the rest of the bill. It actually makes all injection and storage illegal. What happened is that at one stage we were trying to explicitly detail the inherent petroleum rights to inject-install. They cover a number of activities such as the permanent disposal of CO₂, the temporary storage of methane and the use of CO₂ for enhanced oil recovery. We ended up taking what was a very simple section, 137 of the OPA, and turning it into a five- or six-page monstrosity. The concern was that what we have actually done is to make their injection and storage rights explicit rather than implicit, as they were. So we cut that back but forgot to take out the—

CHAIR—I am sure amendments will be—

Mr Miller—The amendments will definitely pick it up. But, yes, that concern is valid—the error of drafting.

Mr PERRETT—Going back to something Ms Livermore asked in terms of the possible transfer, I just want to be clear: you would not be able to transfer but your rights would be upheld by a new process over the same area—is that right? It would not really be a transfer of a licence.

Mr Miller—No, it would not be a transfer. The outcome would be the same. Basically the injection licence granted as part of your production licence activities is very specific in that it is non-competitive. It is to cover activities within your production licence. Once your production is completed, that form of licence could not really be used in an ongoing manner, because it is not associated with the production of petroleum. It would have to be a new form of a licence, a general GHG injection licence.

Mr PERRETT—A non-competitive tender process, basically?

Mr Miller—It could be that way or it could be opened up to wider release or wider competitive release. As I said, we have still not finalised the position on what happens over these production licences to the release of that area.

Mr PERRETT—Do you know if there is anything comparable in the resources sector, where they switch minerals or switch coal to coal seam gas or vice versa?

Mr Hartwell—Nothing immediately comes to mind. As John has indicated, this is an issue we are still grappling with to a certain extent. It is a part of the ongoing consultations. I am not aware of anything we can immediately draw on as a guide to how we might go forward on this particular issue. We are probably going to have to develop it in the context of listening to the various views being put and coming up with the fairest and most equitable arrangements we can put in place.

Ms LIVERMORE—What is the most likely time frame for this issue to arise? What is the operating lifetime of the petroleum holders at the moment?

Mr Miller—Realistically, the direct issue, I would say, would be at least 15 to 20 years at least, because you are talking about a production licence generating CO₂, but they then want to permanently store that CO₂ until the completion of their production licence activities. There is all that establishment of the infrastructure to inject the CO₂ and undertake the petroleum activities before completing the petroleum activities. They would need long time frames for that to occur. The indirect effects could be quite soon. When I say ‘indirect effects’, let me clarify: by establishing this protocol we have essentially said, ‘This production licence area could be a storage for this petroleum activity and post this petroleum activity; therefore, in all our current releases of acreage or considerations in the GHG, we might have to omit this area.’ So the impacts indirectly could be a lot sooner.

CHAIR—Dealing with obtaining a closure certificate, we have a prescribed fixed term closure period. Why do we do that? What was the reason for a fixed time for a period of closure?

Ms Sewell—Was the question: why does the draft bill have a fixed term?

CHAIR—Yes.

Mr Hartwell—I think the draft bill does not proscribe a fixed term.

CHAIR—It does not?

Mr Miller—No.

Ms Sewell—No.

Mr PERRETT—It ‘proscribes’—is that the word you mean? Or is it ‘prescribes’?

Mr Miller—It prescribes.

Ms Sewell—Proscribes.

Mr PERRETT—It bans or makes mandatory?

Mr Miller—Basically, the legislation does not have a fixed term closure period. In fact, it has a project-specific closure period that is not limited.

CHAIR—Why do we have it put that way?

Mr Hartwell—I suppose it is the fact that we do not think one size fits all. We are aware that in certain other activities around Australia there are fixed term closure periods. We think that that is a fairly inflexible approach and so, given what we are dealing with here, we chose not to have a fixed term closure period. It is essentially based on what we believe is the best approach.

Mr PERRETT—This legislation was discussed in the House a few months ago. Has there been a spike in the number of applications for oil or gas exploration tenements since this legislation was discussed?

Mr Hartwell—There certainly has been increased interest in our offshore petroleum acreage. I am not sure that that is being driven, if that is the supposition of the question, because of the talk about an offshore petroleum act. I think it has been driven by the fact that oil and gas are now very attractive commodities to have in your portfolio. Certainly, there has been a greatly renewed interest in Australia as a destination for petroleum exploration. Prior to recent circumstances, we were seen as being a bit gas prone, and gas was pretty difficult to develop—it was essentially quite expensive to develop and was in remote areas. Given what has happened in the world gas market, we are suddenly very attractive. So the answer is yes, there certainly has been a spike, but I do not think it has been driven by any view about what may be happening in terms of greenhouse gas storage.

CHAIR—We have been a little silent within the bill on the liability questions. I think there will be developments, but we basically have left it to say that common law will prevail. What was the reason for the thinking in that area, about long-term liability? If something were to occur, say, 20 years from the date of closure of a storage well, would we then deal with that through common law?

Mr Miller—This debate, about the acceptance of long-term liability, has occurred extensively internationally, particularly when one considers that when a greenhouse gas substance is stored we are talking about geological time frames in which this stuff exists. In establishing this legislation, we did look at comparable mineral extraction legislation within Australia. Things like the OPA are specifically silent on long-term liability. We decided to model on that. I guess the main concern with accepting liability or explicitly putting limitations on common law postclosure liability was the inheritance of this by the Australian people. We did not really think this was necessarily appropriate or needed, considering that remaining silent seemed to be working so well for a lot of mining and petroleum legislation. It is recognised, though, that the key concern of all potential GHG proponents will be having some form of limitation on their long-term liability.

CHAIR—To drive investment in this new industry, as such, we will need to resolve this issue, wouldn't you think?

Mr Hartwell—That is an interesting point. Certainly the statutory liability will cease for the project developers once there is a site closure certificate. To extend that to making greenhouse gas storage proponents immune from common law liability would be setting precedents which we think do have serious consequences for government regimes going forward. We believe that this issue also provides an incentive for those proponents to take action to minimise their future exposure and so forth. This issue is a difficult one—and I am sure other people will raise that—but I think to go down any other route would have been very, very difficult for us.

CHAIR—Your proposal is that there be trust accounts, and payments made to trust accounts, to cover any maintenance. This would of course add to the cost of something that we know is going to be costly and that our nation is trying to come to grips with—probably on behalf of the world as well. Do you have any comment in relation to that?

Mr Hartwell—I accept that point, but we do not rule out that a market will develop in that context which will try to handle the situation. Even when a greenhouse gas storage site is closed and, as I said, the statutory liability disappears, going forward there is a common law liability. I am sure there will be some participants out there in the financial sector and others who can take some risks here. It is similar to an insurance activity or a hedging activity, which obviously for the proponents might add to their costs. But, on the other hand, we just do not see any other way around this issue at this point in time.

CHAIR—Maybe a futures with a CO₂?

Mr Hartwell—That is quite possible.

Mr Miller—You mentioned the industry funded concept with long-term liability. In the longer term, that might have merits but, when you look at the anticipated number of early proponents within this industry, there will not be a huge number. Therefore, distributing responsibilities in such a fund would probably create a higher burden on the initial movers than later on when there is a much more mature industry and lots of players and contributors. It is food for thought looking forward, but it would seem to be a disincentive in itself in the early days.

Mr PERRETT—I want to go back to your statement, Mr Hartwell, about the common law liability going forward. Is the presumption that the common law would protect someone's rights to pursue damages in the future? Is that the presumption or is it in fact that the common law damages are statute bound from a certain time so in fact there would be a finite period for pursuing one of the proponents of a project?

Mr Hartwell—The common law provisions would apply, so one would expect that, if someone wants to take action along those lines, provided the entity that actually conducted the project was still in existence, yes. That is at least my understanding. I will go to my colleagues to see if they want to correct me, because we are in technical points of law here, but that would certainly provide some vehicle by which they could seek some compensation or so forth.

Mr PERRETT—My understanding is that, in Queensland, it would almost be a set cap once you got the—

CHAIR—The closure certificate.

Mr PERRETT—So you would have three years or six years—

Ms LIVERMORE—After you get the closure certificate.

Mr PERRETT—Yes, once you get the closure certificate. So, if the damage occurred 10 years after you got your closure certificate, the time would then flow from there—three years, six years or whatever it is?

Mr Hartwell—That is that broader understanding.

Ms LIVERMORE—It is my understanding that the idea of this legislation is to provide a framework or model for the states to adopt when it comes to developing their regulations for onshore storage of CO₂. How do you see that developing state by state?

Mr Hartwell—This is obviously an issue for the various jurisdictions concerned, and I know that you will have before you some of the representatives of those states, including one today. From the Commonwealth perspective, we have, as I have mentioned, been working through the Ministerial Council on Mineral and Petroleum Resources, and we have talked about the broader regulatory principles in relation to carbon capture and storage that were released by the ministerial council. There is, I believe, an inclination to act across the Commonwealth of Australia in as consistent a fashion as possible. Of course, the proposed bill that you have before you at the moment is a Commonwealth bill that only applies offshore. There are obviously some other issues that emerge when you start going into state jurisdiction onshore. But we would hope that, as much as possible, the outcome of having a consistent approach will emerge. The various states are at various stages in developing their own legislation, and I think you have heard from some of them on this. Some of them have waited until the Commonwealth legislation was exposed before starting to develop their own legislative framework in earnest. There is, under the Ministerial Council on Mineral and Petroleum Resources, a storage working group, which is trying as much as possible to get, if you like, a consistent approach to this. We would hope that that would be the outcome, but obviously you can talk to them about their own views on how much they believe they can adapt what is proposed at the Commonwealth level.

Ms LIVERMORE—So it is driven through the ministerial council.

Mr Hartwell—It is driven through the ministerial council, yes.

CHAIR—I want to ask about some submissions in relation to a petroleum licence. When you start looking at an injection licence, you see that there may be something on the boundary that goes out and therefore extends that plume—I think that was the term in the submission. Does the bill deal with any of that in the depths of the legislation?

Mr Miller—This would be broadly covered under managing serious situations.

CHAIR—This is not so much in a dangerous situation as—

Mr Miller—No. When a substance is injected into storage there is a lot of modelling done on what it is going to do. These are all probability-driven estimates of what is going to happen. Yes, there is the potential for CO₂ to inadvertently migrate somewhere it should not—off-lease, for example. If this migration did occur, it would not automatically constitute a serious situation. If there were no tenure there or there were no impacts on any other users, our management strategy would probably be a lot more benign than if there were an adjacent activity that is going to be impacted. We may ask them to look at varying their injection profile, understanding, critically and first of all, the questions: ‘Why did that migrate to a location you did not think it was going to migrate to? What does this tell us about your management systems? Why aren’t you aware of what’s going on here?’ The primary action would not be to cease and desist all activities if there were no impact on another party. Ideally we would not like it to continue, and there is no provision to expand your injection licence because it has accidentally gone off the licence. We would rather see the situation controlled.

CHAIR—Thank you very much for your evidence and for all the work that has gone on over a long period of time. We do appreciate it. It is new work, creating a new direction for the nation and, somewhat, for the world. Thank you very much.

Mr Hartwell—Thank you very much, Chair, for allowing us to appear before the committee. We appreciate it.

Proceedings suspended from 10.31 am to 10.59 am

ALDOUS, Dr Richard, Executive Director, Minerals and Petroleum, Department of Primary Industries, Victoria

BESLEY, Ms Anna, Legal Policy Team Leader, Climate Change, Energy and Earth Resources Policy, Department of Primary Industries, Victoria

SEYMOUR, Mr Dale, Acting Secretary, Department of Primary Industries, Victoria

CHAIR—Welcome. Although the committee does not require you to give evidence under oath, I should advise you that this hearing is a formal proceeding of the parliament and warrants the same respect as proceedings of the House. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. The committee has received your submission. Would you like to make any amendments to your submission?

Mr Seymour—No.

CHAIR—I invite you to make a statement before we go to questions.

Overhead transparencies were then shown—

Mr Seymour—It is indeed a pleasure for DPI to be able to appear before the House of Representatives Standing Committee on Primary Industries and Resources inquiry into the draft [Offshore Petroleum Amendment \(Greenhouse Gas Storage\) Bill 2008](#). We welcome the opportunity to appear before this inquiry and to elaborate on our submission. The creation of clear legal rights to explore for geological storage formations and to store greenhouse gases as well as an efficient, transparent and credible regime for its assessment, approval and operation is a necessary precondition for investment in carbon capture and geological storage—CCS. Accordingly, Victoria strongly supports the development of Commonwealth legislation to enable the injection and storage of greenhouse gases in Commonwealth waters. However, Victoria considers that greenhouse gas storage formations are a new resource and should be treated as a separate and distinct from the petroleum resource which is commonly collocated. An equitable and competitive market for access to CCS resources is therefore absolutely essential. The rights of CCS proponents should not be treated as subordinate to those of existing petroleum titleholders or that of the petroleum industry generally.

CCS has a key role to play in ensuring that Victoria meets greenhouse gas reduction target of a 60 per cent reduction by 2050. As committee members can see from the slides, Victoria is heavily dependent on brown coal for electricity generation. In 2005, over 60 per cent of Victoria's net greenhouse gas emissions, or approximately 80 million tonnes, was from the stationary energy sector. As the state is likely to continue to rely on its fossil fuel reserves, the commercial development of CCS is critical and timely access to suitable storage formations vital. In short, Victoria has an urgent and vital need for CCS.

Victoria has world-class greenhouse gas storage facilities. The offshore Gippsland Basin in Commonwealth waters is estimated as having the state's largest potential greenhouse gas storage

capacity—roughly 35,000 million tonnes or approximately 285 years of Victorian emissions at current emissions rates. The Gippsland Basin is also estimated to be the lowest cost storage site as it is geographically approximate to Victoria's main emissions source—the coal powered electricity sector in Gippsland's Latrobe Valley.

Currently a number of major projects involving commercial-scale CCS are being proposed for the Latrobe Valley, including the Monash Energy Coal to Liquids Project and other projects involving clean coal technology. These projects depend on the storage potential of the Gippsland Basin, and the project operators are waiting for the release of acreage to commence exploration. However, a significant proportion of the Gippsland Basin is currently subject to petroleum titles. Victoria is very concerned that the protections proposed to be afforded to existing petroleum titleholders will result in no exploration of storage sites unless the agreement of existing petroleum titleholders is obtained. We further understand that the Commonwealth is proposing not to release acreage in these existing title areas, although that needs to be confirmed.

This combination has the potential to significantly delay the development of Victoria's CCS industry, nullifying any benefit the technology may have for immediate climate change responses at both the state and national level. We estimate this delay could cost five to 10 years or more. A direct consequence of this would be that large projects relying on CCS may find that the additional cost of storage in other areas makes their projects non-viable. Brown coal power stations will not have access to low-cost storage and the implications are severe. This would represent a significant failure of policy and would be contrary to the federal government's commitment to taking comprehensive action to tackle climate change.

There are three issues that we wish to bring to the committee's attention today. The first is on acreage release and exploration. We submit the following key proposals for your consideration—whilst not within the inquiry's terms of reference—identified by Victoria's acreage release and exploration. It is understood that the Commonwealth is intending to release only limited parts of the Gippsland Basin for CCS exploration, excluding areas subject to petroleum titles. Victoria considers that all areas of the Gippsland Basin should be released. Areas should not be excluded solely because there is an existing petroleum title over an area. Victoria is concerned that a possible consequence of the Commonwealth's approach may be that attractive areas for CCS are excluded from exploration, costing many millions of dollars, and taking some five to 10 years, essential for discovering and proving viable CCS injection and storage sites. In most instances, exploration will be unlikely to pose a significant risk of a significant adverse impact on the operations of petroleum titleholders. Therefore exploration should be allowed, indeed, encouraged, to ensure that storage sites are identified as quickly as possible to meet our national objectives. Even with this, explorers will not proceed if they know that a discovery may be thwarted because of new discoveries of other petroleum opportunities in the region.

The second proposal relates to impact assessments. To ensure a consistent, predictable and transparent system for the management of competing interactions between CCS operators and other rights and titleholders, Victoria considers that, firstly, in determining whether there is a significant risk of a significant adverse impact, the responsible Commonwealth minister should be assisted by an expert panel, including representatives from the states and territories. The expert panel should be able to advise the minister and make recommendations. The expert panel should be able to hold hearings and take formal submissions from government, industry and

community groups. Finally, the recommendations of the expert panel should be made publicly available.

An assessment of competing resource impacts should be required for any resource operations proposed under the legislation. This assessment process should include consideration of impacts, both positive and negative, on other resources and entitlements—including, in the Victorian context, onshore groundwater resources.

The last proposal is the application of the public interest test. An equitable and competitive market for access to CCS storage formations is absolutely essential. The rights of CCS proponents should not be treated as subordinate. Accordingly, the Victorian government proposes that, where there is a significant risk of a significant adverse impact, the responsible Commonwealth minister should be empowered to make a determination on public interest grounds irrespective of whether the overlapping title was granted. Pre-existing petroleum titleholders should not be protected from the application of the public interest test. Where a decision is made on public interest grounds and the rights of the titleholders are in fact impacted upon as a result of that decision, the legislation should acquire the CCS proponent to compensate the other party either in accordance with the compensation agreement or, if there is no agreement, by a dispute resolution mechanism. This arrangement could be modelled on the arrangements which apply on onshore Victoria for land access by a petroleum operator under the Petroleum Act 1998. That is our presentation today. We are more than happy to answer any questions that the committee may have.

CHAIR—Thank you very much, Mr Seymour. Victoria has a lot of brown coal. There is some interesting technology for drying that. I think that when it is dried it produces more energy. I do not know whether less CO₂ comes off it at that time. You might like to answer that for me. Also, in your submission you expressed concerns that the acreage allocation may favour the petroleum industry, which you have just commented on. Would you recommend a system other than the bidding system that is being proposed? You might like to elaborate on those two points.

Mr Seymour—I will answer the first question and I will ask my colleague Dr Aldous to answer the second question. In relation to energy innovation and technology deployment, the Victorian government in partnership with the Commonwealth government has been pursuing, for a number of years now, energy technology innovation in the form of what I call ‘cleaner coal technology’, and coal drying is one of those technologies which is being trialled currently at the Hazelwood power station in Victoria. It both reduces the CO₂ emissions profile quite substantially and provides, from a demonstration perspective, that that technology is able to be used on a large scale. I guess they are the technology objectives of the program, the energy technology innovation scheme, which, as I said, has been supported wonderfully well by the Commonwealth government over a number of years. The Victorian government has recently, in the state budget, announced the continuation of that program and has made available an additional \$110 million for two large-scale carbon capture and storage projects that meet that same test, energy technology innovation, either in a postcombustion or precombustion context. The objectives are to essentially create a near zero emissions profile of CO₂ from the stationary energy sector in Victoria or indeed new proposals that might focus on, for example, a coal-to-liquids process. The bottom line is that we are seeking to deploy energy technology innovation to effectively create a near zero emissions profile from brown coal for energy—stationary or

transportation energy—in the Victorian jurisdiction. In relation to acreage, I might ask my colleague Dr Aldous to expand a little and answer your question.

Dr Aldous—I think, Chair, your question relates to the bidding system and particularly to our comments about asymmetric information—the ability of the current petroleum operators to have more information. The sense is that, if we go out to bid under those circumstances, the petroleum operators would have a huge advantage in bidding if they wanted to do that. I have to say that in my mind it is not absolutely clear what an alternative way of resolving that would be, but there are thoughts of having at least some consideration of that. A key element relates to the ability of the explorers who want to come in and explore for carbon capture and storage to be able to gather data and to make a case for exploring. A critical element is whether they can gather that information. To start with, they can get hold of publicly available information that is held by the states or the Commonwealth. They can analyse that and can make an assessment as to whether they think there is a possibility of them exploring in a certain area.

CHAIR—That is pre commercialisation?

Dr Aldous—That is right. We call it precompetitive data. Although it may have been data that was collected by previous explorers, it is now in the public domain, so they have access to that. On the basis of that they will be making a call as to whether they think they can explore in those areas, whether they can define a carbon storage trap and also whether they will be able to eventually make a case to the minister that that trap can be operated in a way that is not detrimental to the current operators—and it is important that those current operators' interests are properly looked after in the legislation. The thing that we are really concerned about in this space is that, particularly if there is a policy of not releasing acreage near those petroleum operations, that exploration for carbon storage will in fact never happen or will be significantly delayed.

I would like to show you a slide which explains what we see as some of the dilemma. The vertical axis shows the risk of carbon storage having an impact on, say, a petroleum operation that is already established. The horizontal axis shows the distance of greenhouse gas injection from that operation. We are going to inject but we need to know how close it is. The risk profile of that, taking a conservative view, might be the very top line of this graph. It is okay to have a low level of risk and have it a long way away. So anything to the right of that line is okay—anything in the dark green area would be okay.

It is the nature of our basins, particularly the Gippsland Basin, that a lot of the geosequestration is in the same region as the petroleum deposits. We are concerned that, if we take an overly conservative view about whether exploration should occur, we will not allow the bulk of the geosequestration potential to be discovered. Equally, a very optimistic greenhouse gas injector might say that we can get very close to these petroleum operations—and they might view the risk profile as being the optimistic view, which sees the operations being much closer. What we are really looking for is a process that allows an independent panel of experts to make a call on those two different views.

Coming back to your main point about getting into the area to start with, if a view is taken in both the design of the legislation and the way it is administered that is very conservative about how close operations could be right up-front, the data that allows the decision to be made in the middle area will never surface. We will never allow it, so there will be a market failure. We

believe there is a market for greenhouse gas explorers who want to spend money on the risk of the possibility of finding a storage site and also the possibility of being able to develop it. So it is very important that the legislation sets up a pathway that allows that investment to occur. Critical to that is the ability to have decisions by the minister—

CHAIR—I guess there are two points that emerge. One point is that the petroleum industry has spent money establishing its own situation and has certain rights to do that—and that is quite a legitimate concern that has been shown by that sector. The other point is that there is a national interest and a public interest—in that stopping them from producing gas and oil would have an impact on the wellbeing of the nation. So an expert panel would have a pretty difficult situation. Expert panels might be good at doing scientific and logical decision making, but we have to find a way through on a commercial basis as well.

Dr Aldous—I think that is an important point. The expert panel will be able to give advice. We believe that the minister has to be the ultimate decision maker weighing up the pros and cons and indeed the public interest. The critical thing, though, is that we not set up legislation that stops exploration from occurring. We do not want incumbent operators to be able to say, ‘We don’t want you anywhere near these operations.’ More to the point, when it comes to acreage release, we do not want the incumbent operators to have an effective veto and be able to say, ‘We think you should not even explore in this area.’ So, in the exploration phase, we contend that the decision to grant an exploration assessment permit should be based purely on the impacts of the exploration process itself, which is typically going to be seismic and may involve the drilling of holes. We believe that, in most cases, that can be done without unduly impacting on petroleum operations.

CHAIR—On what do you base your feeling that that can be done without impacting on petroleum operations? The evidence we have received in submissions from the petroleum industry is that it could have an impact on them.

Dr Aldous—The exploration itself—

Mr PERRETT—Seismic exploration.

Dr Aldous—For example, seismic exploration will not do harm. It is possible that—

CHAIR—But there may be information that could be gained that could be an advantage, I suppose.

Dr Aldous—There could be information gained that gives an insight into oil and gas during that exploration phase—that is correct—and we will need to work out how to manage that information in that it is not immediately—

CHAIR—And if that is on someone else’s lease that they already have and have already spent money on, their property right as such, how would we handle that?

Dr Aldous—It is quite interesting; there are a lot of situations where we do have overlapping property rights. We see this a lot in Victoria with land ownership—somebody owns a farm and they think they have exclusive ownership and rights to that, the surface rights, and then an

explorer comes along and discovers a gold deposit underneath it. They are pretty shocked about that but the law has provided for there to be overlapping rights.

CHAIR—I think that in Queensland coal is starting to emerge in that area at the moment.

Dr Aldous—I think it is a common problem that society has to deal with.

CHAIR—You think we can find a way through that.

Dr Aldous—I think we can manage the issue about confidentiality of the data, because what you are saying is that if an oil lake, for example, is discovered in the course of CCS, how is that information looked after; it may be confidential.

CHAIR—Sure. I think the petroleum industry has a bit of an argument that if other people are doing things in our property right as such, there is a genuine argument there for which we do not have a solution.

Mr PERRETT—I will unravel that thread a bit more. The difference, obviously, between a farmer and a goldminer is that the farmer never has any property in the gold—the Crown owns the gold. Whereas the oil explorer, whilst he has no property in the oil—if you know what I mean by the legal concept of properties—

Dr Aldous—Yes.

Mr PERRETT—Obviously the intellectual knowledge of where that oil is and the ability to pump the oil out is a profit incentive for that person. I can see that how the knowledge is going to be preserved will keep a lot of people's minds occupied for a while. You have a very optimistic view of two potentially adversarial companies, I think.

Dr Aldous—There is no doubt that we will have an adversarial situation, in some cases in the extremes. A long way away there is no problem but as you get closer we progressively move into areas of concern. What we are concerned about is that we do not leave that breach too wide, because Gippsland is where all the low-cost carbon sequestration potential is, so we need to make sure that it is properly explored and properly tested but that there are backstops to manage the things that you mentioned.

Mr Seymour—I think our threshold issue here is ensuring a competitive and equal marketplace for CCS. That is the driving public policy objective of the Victorian government right now.

CHAIR—I think we have got that; I understand that.

Mr PERRETT—Further to this, in the information you provided you talked about the fact that the nearly 60 per cent of the central basin, which represents the largest proportion of available storage, is not subject to compulsory relinquishment provisions for exploration permits. This is on page 4 under the heading 'Overview'. Am I referring to the right information provided by you guys?

Mr Seymour—Yes.

Mr PERRETT—I want to take you back a bit. What is the relinquishment provision for the central basin in terms of exploration permits? Is it a special provision?

Mr Seymour—You are referring to Commonwealth legislation in that question, I think.

Mr PERRETT—The petroleum production licences in the central basins?

Mr Seymour—In Commonwealth waters, yes. I do not have the legislation in front of me. I am not sure whether Richard is able to—

Mr PERRETT—Okay.

Mr Seymour—My colleague Ms Beesley can add a view to this.

Mr PERRETT—My subsequent question is: how will that impact on what we are talking about? I wanted to know what the mechanism was if it were not a five-year thing.

Ms Beesley—Under the Offshore Petroleum Act, exploration permits are required to be relinquished at 50 per cent of their title area every five years if exploration activities are not undertaken in those areas. However—

Mr PERRETT—But for?

Ms Beesley—where there is a production licence in place under the Offshore Petroleum Act there is no equivalent relinquishment provision.

CHAIR—So your concern is about the banking of acreage or areas?

Mr PERRETT—Yes, that was my concern.

Ms Beesley—That is correct.

Mr PERRETT—So I have misread that then, have I?

CHAIR—You do not think that licences should be banked; is that your submission?

Dr Aldous—This is really making the point that if exploration and development are not allowed in the areas that are under licence it will be a long time—

Mr PERRETT—Because of the production licence, I understand.

Mr Seymour—Sorry, Mr Perrett and Chair, it is actually about access under that arrangement. We do not offer an opinion on the suitability or otherwise of that provision of the Commonwealth legislation as it currently exists.

Ms LIVERMORE—While we are on page 4, I wonder if you could elaborate on the final paragraph where you talk about concern that existing petroleum operators are afforded windfall benefits under the bill to apply for suitable CCS tenure. Can you elaborate on where that is provided for in the bill and how you see that operating in practice?

Ms Beesley—The bill provides for existing petroleum production licence holders to directly apply as of right for a greenhouse gas injection licence for the purposes of re-injecting or injecting greenhouse gasses which are a by-product of their petroleum operations. There is no competitive bid process. That is an automatic right as part of their petroleum operations. The bill is silent as to what will happen once petroleum operations are completed and there is no petroleum left in the reservoir. The issue of whether a petroleum titleholder may convert that right to a broader greenhouse gas injection licence to enable injection from a third party source is not addressed in the legislation at this point in time.

CHAIR—You would think that, if there were a commercial situation, that would be a major consideration for them to want to be involved in that. Would that be your thinking?

Mr Seymour—I think that is right. I think the commercial drivers will determine the behaviour, yes.

CHAIR—But your concern is that the legislation does not say, ‘What are you going to do with that empty vessel or reservoir’?

Mr Seymour—That is right.

Ms Beesley—Not only that; by remaining silent it potentially means that existing petroleum titleholders may have a windfall benefit and it may not enable competitive bidding for that new empty vessel.

CHAIR—They are spending that amount of money and, with the knowledge that they have, they have now abstracted the oil and gas. I guess they have traditionally then capped the well and left, but this is an issue of whether the property rights are still available to them to exploit in a new industry, as such, of storage of CO₂.

Ms Beesley—Your petroleum title gives you the right to explore for and to extract petroleum. The petroleum operator only owns that petroleum once it has been extracted from the wellhead.

Mr Seymour—So, essentially, in terms of who might be an aspirant to be a CO₂ injector, we are agnostic as to who they might be, what businesses they might be, but we are absolutely clear that there should be a level playing field in relation to how that would occur. Businesses that have a knowledge of the substrata and the geological formations would obviously have a view about the capacity and the opportunities that might exist, but a level playing field and how that allocation regime might work is again an important threshold issue for us.

CHAIR—Understood.

Mr PERRETT—Could I just unpack that a bit further. The policy objective of the legislation is to remove CO₂ from the atmosphere—would you agree with that? I know that that is asking for a Victorian input into our legislation.

Mr Seymour—That is really a matter for the Commonwealth. My perspective on it is that the Commonwealth is proposing amendments to existing offshore petroleum legislation to give effective greenhouse gas storage.

Mr PERRETT—If that is the policy objective. You are talking about a level playing field but surely the people that have the knowledge of the strata will inherently have an advantage over anyone else on the playing field.

Mr Seymour—I am agnostic as to who might be an aspirant to inject CO₂.

Mr PERRETT—Yes. I am just playing devil's advocate here—

Mr Seymour—But there are other businesses around it, obviously, and in our submission I think we referred to one large business investment that we have secured in the last few years utilising our wonderful resource of brown coal to convert to diesel. That is the Monash Energy project, and clearly under our regime we want that to proceed on the basis that it is a zero emissions process. Clearly the only way for that to occur is for carbon capture and storage to be deployed as part of that by the investor. So there is a business that has a very strong interest in accessing appropriate storage sites—either onshore or offshore. A level playing field would provide an opportunity for everyone who aspires in that space to so compete.

Ms LIVERMORE—Assuming that we are accepting what you put in your submission that there should be no protection of pre-existing petroleum titles, wouldn't that open the government up to claims for compensation from those companies that have invested millions of dollars in exploring and that are getting to a point where they can produce oil. All of a sudden they are then back to where they started, trying to compete with claims from greenhouse gas operators. How do you deal with that?

Dr Aldous—We are not saying that oil and gas operations should not be protected. We are not saying that they should be sort of expropriated or taken or whatever. What we are saying is that, particularly in the exploration phase, we need to allow the exploration assessment phase to occur without making decisions at that point about what impacts there might be on actual operations from future greenhouse gas storage. So, in the exploration phase, let us just judge whether the seismic and the drilling will impact on those operations. We will believe that in most cases they will not or indeed if there are impacts they can be properly managed through discussions with the regulator. That is not taking away the petroleum companies' rights to operate and, indeed, to extract their oil and gas.

What we are saying is that once that exploration has occurred and a trap has been established, then there is a discussion about whether that trap can be operated close to that petroleum operator. If, when the analysis is done, it is quite clear that there will be impacts on that petroleum operator, then clearly it should not go ahead. The question is actually about the grey area. If there are going to be massive impacts, you will be able to see that. If there are no impacts, if the technical people agree that there are going to be no impacts, then the difficulty

that we have is that grey area in between. That is where we say that the market should be allowed to decide whether that exploration goes ahead, because who is going to spend \$100 million on exploring for and developing a greenhouse gas trap if they know that they are not going to be able to develop it because it is too close to a petroleum operation?

So let the market decide whether they should spend that money in the exploration phase, understanding that there is a risk that (a) they might not find anything and (b) if they do find something and it is close to a petroleum operation and would damage it, they will not be able to develop it. We are not saying, 'Impact petroleum operations,' but to allow that process to happen it is very important that acreage is released, that the exploration is allowed and that there is then a clear decision-making process at the end that actually makes that call about whether it should go ahead or not.

CHAIR—Your submission is that the bill is just too broad on petroleum operators at the present moment.

Dr Aldous—That is right. We believe that it is giving too early barriers around exploration and, indeed, not setting the proper tight decision-making process at the end that can make decisions in the national interest in that grey area of risk between the two operations.

Ms Beesley—I should just add to Dr Aldous's comments that the question of whether or not potential CCS injection operations will have a significant risk of a significant adverse impact on petroleum operations also needs to be considered in the context of the volume of petroleum left in the petroleum reservoir. In that context, there is a need for the responsible Commonwealth minister to be able to make decisions based on the public interest.

Mr Seymour—So we are respecting the rights of existing licence holders but we feel that there is architecture in the legislation that could be considered to provide alternative pathways, particularly in the exploration phase, to create a viable exploration sector in storage with, as I say, appropriate opportunity for expert panel advice and ultimately ministerial determination in the event that that is required. I think that from a Victorian government perspective that is where, in a practical sense, we find ourselves.

CHAIR—I think the petroleum industry would say that technology is changing for them all the time and that sometimes they think they have emptied a reservoir, and they use new technology and, bingo, they have another three or four years. So I guess that has to be considered by the expert panel. That is what your submission would be.

Mr Seymour—Yes. We believe that we should put the task in the hands of those who know and who can provide that evidence, and then make a more informed decision, with appropriate criteria, as to which way to go, because the unintended consequence otherwise may well be a stranding of the storage asset in an environment where our public policy task—that is, the Victorian government's—is climate security and energy security.

CHAIR—Sure. You do not think we are going to put sovereign risk at risk if we go down that—

Mr Seymour—I think you have to have a risk-assessment regime, and the best way to assess risk is to get the right data and evidence and then make an informed judgement on that basis.

CHAIR—Who would you envisage that your expert panel would be made up of? I take it that the expert panel would then give advice to the minister, and the minister would make the decision. Who would you envisage as being on that sort of panel?

Dr Aldous—We would envisage that there may be eminent petroleum reservoir engineers—people with expertise in subsurface design, drilling and so on—who are not aligned to the particular companies. We would envisage that there may be a case for the actual regulators, state and/or Commonwealth, to sit on that as well. Obviously there may be legal advice required as well, but that is the sort of composition that we would envisage.

CHAIR—Do you think it should have a lawyer on it?

Dr Aldous—There are lawyers with significant knowledge. In oil and gas technology, there are quite a lot of subsurface issues where there are arguments between companies—it is very common—and joint-venture partners. There are many issues—for example, unitisation, where you have a boundary and a lake goes across. So there could be some merit in that, yes.

CHAIR—The petroleum corporate operators in Australian seem to have worked very well together to bring lots of the resources to a head and get them out into the marketplace. The more I am involved with this committee and this task, the more I see of where people are joining together to do that. So one would hope that we could continue that process. I would just like to ask you about whether we will have enough earth scientists and people to do that. Is the Victorian government involved in encouraging that through your universities?

Mr Seymour—The Victorian government has a very strong view and aspiration in terms of skills and capability in this sector going forward. We are working very closely with the university sector. We have a very strong R&D program in this space. We are also supporting R&D more broadly through our support of the CO2CRC, specifically the Otway basin trial, which—correct me if I am wrong here, Richard—has already sequestered 10,000 tonnes of CO2 and is the largest storage trial in the southern hemisphere. We are all very excited about that for the very reason that we are seeking the evidence that says we can store CO2 and that we can monitor its behaviour and make judgements about how it then settles and behaves in the long term. We are very excited about that. The Victorian government has had a strong record of supporting R&D and, through that process, the skills and capabilities that are required in the earth's resources space. As the officer who is ultimately responsible for GeoScience Victoria, under Richard's leadership, I can say that it is a very competitive labour market share. Holding those skills inside of government is a real challenge for us right now, given the nature of the resources sector more broadly.

CHAIR—There is a lot of science going on in Victoria in this field.

Mr Seymour—Yes.

CHAIR—Thank you for that.

Mr PERRETT—Mr Seymour, if I could just revisit the comments you were making earlier about the level playing field and the like. Is it your position that an oil or gas company should make publicly available their geological or drilling data once they have finished their production and, for all intents and purposes, got a closure certificate for a site—that that data then be available for the CCS proponents?

Mr Seymour—I will be guided by Dr Aldous on this. I think it would be unreasonable to expect them to release commercial-in-confidence data whilst they are still operating. I am not sure about—

Mr PERRETT—It would not be commercial in confidence if they had—

Mr Seymour—If they had closed? I am just clarifying the nature of the question for that reason. Richard?

Dr Aldous—Once an operator have finished, they are obliged to provide us, the Victorian government, with information as they go on about what they have drilled, what they have discovered and so on.

Mr PERRETT—On an ongoing—

Dr Aldous—On a confidential basis during exploration and development. When they have finished and they have closed up and gone, that information can then goes into the public domain.

Mr PERRETT—So the trigger mechanism for the information being made public is the end of the venture?

Dr Aldous—Exactly—when they do not have an interest in that area any more.

Mr PERRETT—So the goldminer puts information up which can then be used by the next silver miner or whoever.

Dr Aldous—Exactly.

Mr PERRETT—The time is when they are finished, so your position would be that the federal government should not give any protection to the oil and gas operator holding that information to give them an unfair advantage over the rest in a tender process for a CCS project?

Dr Aldous—It will become more complex when it comes to sharing information or during dispute processes, for example, where the petroleum company may have information that it believes gives it insights into that area from an oil and gas perspective but which are also relevant to the possible impact of greenhouse gas storage. There will need to be careful management of that process during hearings, but I think that can be managed in a confidential way between parties.

Mr Seymour—Mr Perrett, your question is really on publicly available data.

Mr PERRETT—Yes. In respect of the other potential tenderers, should the company maintain its advantage in that it drilled and obtained the information and then got the benefit of oil and gas production? I am just exploring your position as to whether or not they should have that commercial advantage over the rest of the field or whether they should be obliged under the law, the same as the goldminer in Queensland or whatever, to be told, ‘All right, you’ve had your go; that information is now available to the market.’

Mr Seymour—On that last point, Anna might answer the question in relation to how we are proceeding with onshore CCS legislation, because that is effectively where we are heading, I think.

Ms Beesley—Certainly in the context of the development of Victorian onshore CCS legislation we are looking to require a petroleum producer to make publicly available that type of data once they have finished their production operations.

Mr Seymour—That is in the onshore.

Mr PERRETT—So that would be: the oil and gas game is over, we now move into another process and that data becomes publicly available. So you are not giving them a leg-up in terms of saying, ‘All right, you obtained the data. You can hold it for a six-month or one-year period’, which might give them an advantage and a bonus in terms of their venture?

Ms Beesley—That is correct. The rationale underlying it is that the injection and storage of carbon dioxide is a new commodity which is going to be stored in the pore space, which is a new resource.

Mr PERRETT—But in terms of intellectual property of the drill data—that is what we are really exploring?

Ms Beesley—That is right.

Mr PERRETT—So the idea being to support a new industry rather than give something on the balance sheet for oil and gas companies?

Ms Beesley—That is correct.

Mr Seymour—And we are being clear about this. In the onshore space we are talking of post closure—so post-commercial interest having been assessed, I guess, and settled. That is the same across all commodity groups, Richard, in Victoria.

Dr Aldous—It is. Even the potential explorers looking for greenhouse gas storage will be working on the back of an enormous amount of money and data that has been created by the petroleum industry over decades, and that information will be in the public domain.

Mr PERRETT—Going to the onshore again, obviously I would like to have some uniformity across the nation. Could you see the possible doubling-up of costs if the data becomes available once, say, they close the gate and leave the premises and then again when the new company has to come in and open the gate and re-fire everything—new personnel, new information—through

a tender process? There could actually be some incentives to let the company that has the drill data throw their hat in the tender ring. They might be a company that wants to do that; they might not. They have the inside running, I suppose, on every other company if they get the tender: they have the data, they have the personnel, they know the area, they do not have to do all the rehabilitation that they might have to do before they close the gate and vacate the field.

Ms Beesley—The crux there is the timing of when that information is handed over to the state. Obviously a petroleum producer will know prior to applying for surrender of their title that the petroleum reserve is depleted. So it could be at that point in time—prior to when they actually commence their rehabilitation, closure of wells, rehabilitation activities—they provide their data to the state. So it means that acreage could be released prior to all that closure activity occurring.

Mr PERRETT—What is the trigger mechanism? I am not familiar with the Victorian mineral resources act, or whatever it is?

Ms Beesley—Certainly we are in the process of developing our onshore legislation.

Mr PERRETT—No, I mean generally.

Dr Aldous—Typically it is once the licence is relinquished.

Mr PERRETT—The production licence?

Dr Aldous—The production licence or the exploration licence, because in some cases it may not go through to production. But, whatever the licence is, once that is relinquished, the proponent no longer has a vested interest in that ground and the data goes into the public domain.

Mr PERRETT—It is mandatory that it must become available?

Dr Aldous—It is mandatory that the information must be provided, and it finds its way into the public domain eventually.

Mr Seymour—Via us.

Dr Aldous—Yes, it is through the government—it is through the department.

Mr Seymour—That takes us back to the point you made earlier in relation to pre-competitive data. Effectively at that point it is in the public interest to have as much of the information out in the public arena so that future aspirants who want to get into this space are able to do so and are able to access as much data in the pre-competitive space as possible.

CHAIR—It is a very good regime and I think we are very lucky that we have had it in Australia. It has given great opportunities to people who want to go out there and boost their money.

Mr Seymour—The other point about this is that we operate internationally constantly in this space. We are operating globally in terms of trying to attract investment into the state in the minerals and petroleum sector, and in the CO2 storage business as well as we go forward.

CHAIR—Hopefully.

Mr Seymour—Hopefully, absolutely. It is our commitment to do that. That is what we are here to do. When we are competing internationally, other jurisdictions have exactly the same view and the contest is for the highest quality of pre-competitive data that we can get, because we are competing for that FDI that is floating through the world economy and we are seeking to ensure that as much of it as possible lands in Australia and, in our case, in Victoria.

CHAIR—We have to move on, so I want to explore the avenue of state-Commonwealth joint authorities. The legislation does not deal with that, but I wonder what your thoughts are. I know we do it in some other areas. Do you think there are opportunities, maybe in the future, for that to emerge?

Dr Aldous—We do not have a definitive position on this, but it is quite clear that we have been operating under this joint arrangement in the petroleum sphere. Certainly the Victorian government has a lot of expertise and knowledge of particularly the operations and the geology around Victoria because of that. We have found that there are a lot of benefits in collaboration. Quite often, when it comes to a very difficult problem of negotiation with proponents or arguments or whatever, having both Commonwealth and Victorian regulators looking at a particular problem can often give a better solution. But, at the same time, we understand the proposal is that this greenhouse gas storage component of the legislation is likely to be managed exclusively by the Commonwealth, so they would be Commonwealth decisions. The extent to which they wish to use the states' expertise, which would persist through the joint arrangements on the petroleum side, as yet has not really been put on the table.

CHAIR—And the state has not put forward some of what it does. We have the divide on the Constitution, which is what governs us as a nation.

Mr Seymour—We have a long history of working very cooperatively with the Commonwealth. I would take this opportunity to stress that we would look forward to continuing working very cooperatively with the Commonwealth on how we would arrive at a proper solution to this challenge via this legislation.

CHAIR—Thank you very much for your submission and for appearing today. It is a new area and I know it is not easy, but you have been very straightforward, and I hope we have as well, in advancing this legislation to give us a Commonwealth framework to start the ball rolling. If there are any matters on which we might need some additional information, the secretariat will write to you.

Mr Seymour—We take this opportunity to thank you, Chair, and the committee for allowing us the chance to appear before you to expand on our submission. Thank you very much.

[11.58 am]

DAVIES, Mr Bob, Chief Executive Officer, Australian Energy Company Ltd

DUCKETT, Mr Paul Frederick, General Manager, Operational Development, Australian Energy Company Ltd

CHAIR—I call witnesses from the AEC, the Australian Energy Company. Welcome to the committee. You might like to make a statement prior to the questions from the committee. Although the committee does not require you to give evidence under oath, I wish to advise you that this hearing is a formal proceeding of the parliament and therefore it warrants the same respect as proceedings of the House. I remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. The committee has received your submission. Is there anything you would like to add before we start?

Mr Davies—I am the Chief Executive Officer for the Australian Energy Company, formerly the Chief Financial Officer.

Mr Duckett—I am the General Manager, Operational Development for the Latrobe Urea Project.

CHAIR—Thank you very much. We have got your submission. You might give us a little outline of your company for the record.

Mr Davies—The chairman of the Australian Energy Company is Allan Blood. He was previously the principal founder of what was then the APEL project, now Monash energy, which you heard spoken of in the previous presentation by the state government. Subsequent to that project, Mr Blood started AEC, whose principal purpose is to develop a urea fertiliser project using clean coal technology and the brown coal in the Latrobe Valley. The strong industrial logic for this project is twofold. On the one hand, most new projects of this nature which would look to gasify coal would have to develop and permit a new mining operation. We have the benefit of an existing Loyang mining operation, so we do not need to permit a mine and we do not need to buy mining equipment. We can step in and, simply by Loyang increasing their production output, pick up the coal we require for our plant. An advantage that we offer Loyang is that we can take waste coal from them and, at the same time, give them access to the higher quality coal they like to burn in their generator. So Loyang has a commercial interest in seeing us succeed in our project. I should add that, as a consequence of that, they are an equity investor in the project as well.

We have recently completed an equity raising which will fund us through the full pre-feed activity. We have a licence for the gasification technology, through Siemens in Germany. We have made a couple of payments on that licence fee, so we now have access to the gasification technology we need for the project. We have roughly 1,500 tonnes of sample coal in Germany, with RWE, going through a coal drying test. That coal will be dried and then gasified in the Siemens gasifier testing facility. It is likely we will complete that work by the end of October.

The fundamental risk for us in the project, the most significant risk we confront right now, is the whole issue of carbon capture and sequestration, or CCS. We are basically confronted with one of three alternatives for our plant. We have designed the plant to be ready for CCS disposal. That means we are ready to tap into a pipeline and pass the CO₂ on to that service provider. Our second alternative is simply to buy permits and emit the CO₂ into the atmosphere. The third alternative is to look elsewhere for alternative locations for the project.

We think the industrial logic behind having an existing mining facility at Loyang and having brown coal, which actually lends itself to this process for us, means that this is competitively the best possible location for the plant. Australia currently produces about 200,000 tonnes of urea and consumes about 1.3 million tonnes of urea. Our project is designed to produce 1.2 million tonnes, so we could effectively replace all of the urea imported into Australia with domestically produced urea. Alternatively, we could export that urea to other markets.

In summary, that is where we are at with the project. We expect that we will start our feed activities, the detailed engineering and design, in December this year. We think that is roughly a 12-month exercise and about \$60 million of investment, and that will lead us to the final financial close and investment decision around the project towards the end of '09 on the current schedule.

CHAIR—What does urea do as a fertiliser?

Mr Duckett—Urea is the primary source of nitrogen, which Australian farmers use in both the broadacre and the horticultural sectors. The other sources are small amounts of ammonium sulphate; and ammonium nitrate, which I understand the government is very reluctant to have on the market these days, for obvious reasons. So urea has become the primary source of nitrogen for Australian farmers.

CHAIR—And is the waste coal you spoke about, Mr Davies, washed coal, which comes out of a washing process?

Mr Davies—No, it is mined. It is run-of-mine coal that is just run through a drying process, and we capture the moisture out of the drying process. It is about 60 per cent moisture, so there is a fair amount of water that we capture out of the process and recycle through our system. It is essentially coal that has either higher moisture content than the power plants can consume or higher salt and so has some corrosive implications for their plant.

CHAIR—So there are some pluses in it, from the coalminer's point of view, to get a return?

Mr Davies—Yes.

CHAIR—What sort of volumes of CO₂ from your process are you talking about?

Mr Davies—The emissions are approximately one million tonnes per year. I should add that with carbon capture and sequestration we say we can capture essentially zero, but it is roughly 95 per cent of the CO₂ that can be captured.

CHAIR—That is done through the process when you are making the product?

Mr Davies—Yes.

Mr Duckett—On that, the process in itself does utilise CO₂, so we actually capture the CO₂ in the urea granule. There is some argument that that does go some way towards carbon replacement in the soil, which is a major problem as well for Australia, but I will leave it to the chemists to argue the benefits of such.

CHAIR—Is the capture of CO₂ from the process new technology or old technology? Has that been developed by your company?

Mr Davies—It is not proprietary technology for AEC.

CHAIR—You buy the licence?

Mr Davies—Yes, it is off the shelf.

Ms LIVERMORE—In your submission you raise concerns about the allocation process for greenhouse gas storage tenure. Could you talk us through the problems that you see with the mechanism provided for in the bill and say what your alternative view would be?

Mr Davies—What we see as the fundamental flaw in the legislation as it is currently formulated is that it is very difficult to identify who the people investing in the reservoirs and in the CO₂ capture infrastructure—the hub, if you will—will be. To use an analogy, if I think of a nickel smelter in WA or an alumina refinery or an aluminium smelter, they have no interest in the gas exploration, the gas pipeline development. They basically set the plant up and take the gas off the end of the pipe—they tap into the main pipeline that is developed—but they have no commercial interests in any of that. So the difficulty for us is in who the people who will take up the business of drilling reservoirs and putting in this infrastructure will be and what the commercial driver for them will be. Instead of just opening it up and suggesting that a market is going to do it—that free-market people will come in—there needs to be a market there for them to do it. They need to have some understanding of what the revenue stream is and who the users are going to be. Currently there are no users; there are just potential users. We think we are one of them. We believe that our project would be a user of that facility. But we certainly do not see ourselves as an investor in reservoirs for CO₂ sequestration or in infrastructure to pipe it to those reservoirs. We think that we are, rather, the user at the other end of the line pumping CO₂ into the line. It is difficult for me to see, in this environment, how we are going to have people come in and access reservoirs or drill reservoirs looking to establish CO₂ sinks or capture reservoirs underground without some sort of commercial incentive.

Ms LIVERMORE—So how would the design of this bill change or improve that situation?

Mr Davies—Let me say this at the outset: take our project, for example. It is a million tonnes of CO₂. It is not commercially sizeable enough to have somebody actually develop the infrastructure and the reservoir and pump a million tonnes of CO₂ into the ground. We think, on our numbers, that roughly 10 million tonnes of CO₂ needs to be pumped into the ground to justify the infrastructure and the investment in the actual development of the reservoir.

If I can use a crude analogy, the Americans have an expression: build it and they will come. I think there actually has to be an attitude within CCS, particularly in Victoria in the Gippsland Basin, of 'build it and they will come'. I think government operating jointly with industry, and with our company in particular, should be prepared to make the initial investment and do the initial exploration for the appropriate reservoirs for the disposition of CO₂. If we leave it to the marketplace, the time frame will be 20-plus years to get this done—if we ever get it done. I think it is going to require government support to do that. Critical in all of this is accessing the reservoirs. We are aligned with the Victorian state government with respect to some of their comments around accessing the reservoirs. It would clearly not be in the current petroleum rights owners' interests to have people poking holes in their reservoirs or around their reservoirs, so you really do have to draw on what is actually in the public interest here with respect to this.

I attended Professor Garnaut's forums in Melbourne on this topic and I cannot count the number of times he used the words 'catastrophic' and 'cataclysmic' in his presentation and then in his subsequent answers to questions from the floor. It seems to me, if we are speaking in that context, that we do need to have a balance here. I am not an advocate of treading on somebody else's property rights but I do think we need to balance the current property owners' rights and interests with what is in the public interest. Of critical importance is how you mitigate the risk to the existing property holder and still allow CCS, taking the Victorian focus first—because I am a long-term Victorian—but also an Australian focus and then a global focus as well, if we are going to take the lead on this. I am a strong believer in CCS as a solution for the problem but I do not believe we are going to do it just by commercialising it at the front end by seeking open, competitive tenders from people who are going to turn this into a commercial business initially. I think that will happen down the road.

CHAIR—The price of CO₂ will not help?

Mr Davies—I think there are a couple of things to consider. We do not know what an emissions trading scheme is going to generate ultimately in terms of a price to emit. I would like to think there are two objectives here. The ultimate objective is to drive the value of the CO₂ permits to zero because nobody needs them—the technology has moved on. But we are a long way from that, so we will have to go through a transitional period. I think of this in the context of what the value is for AEC in injecting CO₂ into the ground, and the first commercial consideration for us is: what is the price of a permit? Can we acquire a permit? What will the future value of that permit be? And what does that mean for me when I talk to shareholders about investing \$2 billion in this plant? I do not know what the price of a CO₂ permit is going to be. I hope it will be zero one day, but for the time being it is going to go nowhere but higher. What that says is: what will the cost be to inject CO₂ into the ground? What is my decision point here? If I can emit for \$40 and inject for \$60 I suspect I am going to be an emitter.

CHAIR—A commercial decision.

Mr PERRETT—Mr Davies, did you say that Australia imports about 1.2 million tonnes of urea per annum?

Mr Davies—It is 1.3 million tonnes.

Mr Duckett—It varies, depending on the drought. It has been up as high as 1.4 million tonnes but it is an average of about 1.3 million tonnes per year.

Mr PERRETT—And you would produce about 1.2 million tonnes?

Mr Duckett—That is correct.

Mr PERRETT—Where do we import most of our urea from at the moment?

Mr Duckett—It comes in from the Middle East, primarily.

Mr PERRETT—It is distilled energy, basically, is it?

Mr Duckett—It actually uses natural gas as a feed source.

Mr PERRETT—Is transport a significant component?

Mr Duckett—It is.

Mr PERRETT—Is transport a significant CO₂ addition to our current urea usage?

Mr Duckett—Yes, it is. Not only do you have the cost of shipping it from the Middle East but then you have the cost of dispersing it around to the markets; that transport obviously makes it an emitter.

Mr PERRETT—Obviously Victoria is a little bit closer to our farmlands than the Middle East. Going back to the affixing of the carbon in the soil, is it straight chemistry that we are talking about here in terms of the chemical formula for urea—that is, it has carbon in it? Is that what you are saying?

Mr Duckett—That is correct. As part of the process, when the gases, the ammonia and the nitrogen gas, come together and form the granule, you actually inject CO₂ in as part of that process to get the liquefied urea, which is then granulated.

Mr PERRETT—And the chemical formula for urea has the carbon in it?

Mr Duckett—Yes, it has a carbon component.

Mr PERRETT—Hence your name ‘Australia Energy Company’—because that is basically what you do?

Mr Duckett—That is right.

Mr PERRETT—So you are expecting the project to emit about one million tonnes per annum?

Mr Duckett—Our current estimate is around one million tonnes—above and beyond the CO₂ that we use to produce the urea.

Mr PERRETT—And there is currently no mechanism for offsetting the carbon that goes into the soil?

Mr Duckett—No.

Mr PERRETT—You made a reference to the fact that you leave for that the scientists. So you are not making any claims—

Mr Duckett—No, we are not making any claims in that direction. Obviously there are arguments that say that, by using urea, you are actually replenishing the soil, but there are also some proponents of natural farming who would argue otherwise. I do not want to get into that debate; I do not think it is proper.

Mr PERRETT—Our farmers are not here, are they, Chair?

CHAIR—No. There is still a little bit of science to move in that area.

Mr PERRETT—You referred to it as being an essential agricultural input. I am not a farmer. Do you mean ‘essential’ as you cannot compete in the world markets for food if you do not have urea? Can you give me the ‘urea 101’?

Mr Duckett—Certainly. The biggest problem facing Australian farmers—indeed, most farmers throughout the world—is that the actual amount of agricultural land is diminishing. So the only solution to the world’s food crisis is to become more productive. At the moment, the only way to make land more productive is to put fertilizer into it, and nitrogen is an essential element in the growth of crops of any form. To take China for an example, their current urea usage is in the order of 55 million tonnes a year. They produce about 48 million tonnes of that and import the rest. We are not major users of urea; however, when it comes to our trade of agricultural crops, particularly wheat, we are significant. In fact, there are arguments around that, at the moment, the world’s supply of wheat is as low as it has been since 1946—and primarily because of the drought impacting Australian farmers. So it is absolutely imperative that Australian farmers increase their yield, and the only way to do that is to actually increase fertilizer utilisation and to do it in a sustainable manner.

Mr PERRETT—Obviously water is a critical element.

Mr Duckett—Yes.

Mr PERRETT—Urea ain’t going to help if there—

Mr Duckett—No, not without water. I am a farmer and I do have agricultural interests. We are becoming more conscious of how we use water. In fact, we are growing crops at the moment on our farm down in Deniliquin where we have to a large extent drought proofed about 30 per cent of the property. It is about how we use the water. It is becoming as much a water management issue as a land and animal farming issue.

Mr PERRETT—You said that some of the coal is not viable because it is too damp. Is there a water output in that process?

Mr Duckett—We actually utilise water in our whole production process, primarily through the quenching of the gases. Mr Davies has made reference to the fact that in the drying process we will recover water. We will also take water that currently is not potable and utilise it in our plant as well.

Mr PERRETT—As to the royalties on that waste coal, do you pay market rate royalties? How do they strike a levy for—

Mr Duckett—It is probably a commercial decision.

Mr PERRETT—It would be public, would it not?

Mr Davies—Loyang will charge for the coal. We basically have a sales agreement with Loyang to provide the coal. Whatever royalty obligations they have will be built into that.

Ms LIVERMORE—I think you are saying that there are limited commercial incentives at the moment for companies to make the investments in CCS exploration and infrastructure. But how does that sit with the concerns that the Victorian government representatives were expressing about this idea of existing petroleum licence holders acquiring and banking potential greenhouse gas storage sites? I am just trying to reconcile those two claims.

Mr Davies—I would make a couple of observations. One is that, if I were an oil and gas producer in the Bass Strait, I would take whatever steps I could to secure my rights to the reservoir and to whatever the reservoir contained. I would probably be appearing in front of this committee talking out of the other side of my face, I suspect. I would make that point. The other key issue for us in all of this in terms of the oil and gas industry right now in Victoria—and it is different worldwide—is that gas is underdeveloped as a fuel source within the Victorian context simply because brown coal is a much lower cost source of energy. That is what is driving it. If you drive up the cost of brown coal, you will then supplant brown coal with gas at some point in time. I do not think that is the right outcome. I think the right outcome is to always ensure that you have some competition between those two energy sources and to put a mechanism in place so that we can continue to take advantage of the low-cost brown coal whilst at the same time creating some commercial opportunities to develop some of the gas resources. From an oil and gas producer's perspective, it would clearly be in their interest to see an emissions trading system in Australia and its impact on the brown coal industry in Victoria reflecting ultimately higher gas prices and my ability to provide more energy at a higher price. I will recycle what I said before. If you are asking me as a member of the Australian public what I am hearing, it is, again, the words 'cataclysm', 'catastrophic' and 'I need to reduce my standard of living in order to address this issue'. That is fine but then we need to ensure that we have some balance in that discussion. I would make that point.

The other issue I have is that, if I were a petroleum producer, I would try to secure those reservoirs for myself at the lowest possible cost, lock them away, not have the impact and continue to maintain my ability then to compete against brown coal, saddled with an emissions permit, as an alternative energy source. I just think that is in their commercial interest and I

respect the fact that they are acting in their commercial interest, but we need to open up the opportunity for CCS to be developed. We do not believe our project will go ahead in Victoria without some sort of path forward due to carbon capture and storage. We think it makes the hurdle for our project pretty high. Clearly, I am talking from an AEC perspective in saying that.

I would add one other thing. I think another area that is important—and I think we focused on it in our submission as well—is the whole issue of access to data. I would just make the point that I have been a signatory to a number of confidentiality agreements, some of them reciprocal, around exploration properties. It seems to me that if a non-petroleum company is going to go and poke a hole in a reservoir someplace and they have signed a confidentiality agreement with a petroleum company to provide that information, under the parameters of the confidentiality agreement it does not need to go into the public domain. The two businesses can agree together to have a confidentiality agreement. There is no reason why the information cannot be reciprocal and the rights to the information exchanged before holes are poked in the reservoir. I think those are perfectly logical solutions to the problems of information and data.

Mr PERRETT—And you have seen similar situations where contracts have ensured confidentiality?

Mr Davies—Sure. I have signed them. When you agree, post whatever exercise, on due diligence on a potential acquisition, all of that confidential information that you gather is handed back or destroyed and you sign off that you have done that.

CHAIR—You do not think that we will be able to drive this unless we have government intervention to do that, especially in the initial stages, and I guess that is the establishment of the pipelines and the whole operation. Is that your submission?

Mr Davies—Ultimately that is the conclusion that we have reached. We do not believe that a competitive tender for reservoirs and access to those reservoirs is going to drive us to a CCS solution in the short term.

CHAIR—Thank you very much for your submission. I appreciate the effort you put into that and your openness and frankness today. If there are any matters that we might need further information on we will write to you. You will receive a copy of the *Hansard* of the transcript and if there are any editorial changes you wish to make please feel free to do that.

Mr Davies—Thank you for this opportunity.

Proceedings suspended from 12.26 pm to 1.35 pm

NOLAN, Mr Mark J, Chairman, ExxonMobil Australia

YOUNG, Mr Robert B, Manager, Issues and Government Relations, ExxonMobil Australia

CHAIR—I welcome representatives of ExxonMobil Australia. Thank you for being here. Although we do not expect you to give evidence under oath, I advise you that this is a formal hearing of the parliament and, therefore, it warrants the same respect as proceedings of the House. It is customary to remind you that the giving of false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. We have received your submission. Do you have any corrections or amendments that you would like to make? If not, you might like to make a statement before we kick off.

Mr Nolan—Mr Chairman and committee members, thank you for the invitation to appear here and for the time being provided to us to share our views and answer any questions you may have on the greenhouse gas storage bill. Managing the risk from increases in local greenhouse gas emissions is an important concern for ExxonMobil, industry and governments around the world. Carbon capture and storage, CCS, is a very promising option in managing this risk, particularly as many companies, including ExxonMobil, have industrial-scale experience with its component technologies—that is, capture, transportation and storage. While large-scale integrated performance of these components in a CCS application remains to be fully demonstrated, at ExxonMobil we have researched, developed and applied carbon management technologies for more than 30 years.

ExxonMobil has been involved in the longest-running CCS project—the North Sea Sleipner gas field, where over one million metric tonnes of CO₂ have been stored each year since 1998. The company is also working with the European Commission and other companies on the CO₂ReMoVe project to evaluate a large range of carbon injection and storage technologies in Norway, Algeria and Germany. Recently ExxonMobil announced a commitment of more than US\$100 million to complete the development and testing of an improved natural gas treating technology for CO₂ removal called Controlled Freeze Zone technology that could make carbon capture and storage more affordable and significantly reduce greenhouse gas emissions. ExxonMobil plans to build a commercial-scale demonstration Controlled Freeze Zone plant near LaBarge in Wyoming in the US.

Here in Australia, ExxonMobil with its joint venture partners in the Gorgon LNG project is pursuing the largest commercial-scale CCS project in the world. To date, the Gorgon CCS proposal represents the biggest single investment contemplated solely for the management of greenhouse gas emissions. ExxonMobil also worked locally in the 2004-06 time frame on the Latrobe Valley carbon sequestration assessment project with many stakeholders, including the CO₂CRC group, on the feasibility of storing CO₂ in the Gippsland Basin. Moving on from that study and that work we have progressed within ExxonMobil detailed technical studies to simulate the potential CO₂ migration in the Gippsland Basin. We have shared this work with Geoscience Australia, the Department of Resources, Energy and Tourism, and the Victorian Department of Primary Industries.

Against this background, ExxonMobil is well placed to comment on the Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill. I would like to make a few brief comments on the bill itself. We believe the bill overall establishes a good framework that is suitable for adoption on a national basis and uses an appropriate regulatory framework analogous to petroleum regulation in Australia. As we have discussed with many here today, any regulatory framework should recognise that the injection of CO₂ into or near operational oil and gas facilities not designed for exposure to CO₂ presents potentially significant safety and operational risks and integrity issues to personnel, production and infrastructure. It is our view that the bill recognises these concerns and provides mechanisms to avoid significant impact on pre-existing petroleum operations.

Whilst cautious about overlapping leases or licences established in the bill, the proposed legislation supports the objective of protecting the sanctity of existing property rights conferred on existing petroleum titleholders. However, ExxonMobil retain concerns about some aspects of the bill that may act as obstacles to establish investment and the legal certainty required to enable broad, large-scale deployment of CCS. In particular, we highlight to the committee the requirement of the bill or the regulations to address site closure standards and timing and long-term responsibility management as key areas that require review and enhancement to ensure the near-term viability of CCS. I also encourage the committee to examine conditions associated with post-commencement petroleum titles and the injection of greenhouse gas for petroleum operations as they are two areas that require clarification for petroleum producers. Lastly, whilst supporting the overarching framework of the bill, we note that there are a wide range of matters in key areas that the bill does not provide explicit definition of—that is, the ‘public interest’ or ‘significant impact’ definitions. Therefore, we encourage the addition of general requirements to be more clearly defined as the legislation and the regulations are further detailed.

In closing, I commend the work of the minister and the Department of Resources, Energy and Tourism in preparing a comprehensive regime that has taken on board broad stakeholder input. We respectfully thank you for the opportunity to provide comments here today and in our submission. I reiterate that ExxonMobil has a continuing commitment to being an active and valued contributor to identifying, developing and executing technically, economically and environmentally sound practices and policies for the implementation of CCS. I am now pleased to address any questions you may have.

CHAIR—Thank you very much, Mr Nolan. ExxonMobil has been involved in bringing Gorgon forward and involved in the North Sea with Sleipner. You must have a good idea of where you think we can go with carbon capture and storage. As a company, you have been involved for some time. Would you like to give us your views in relation to that?

Mr Nolan—There is no question in our mind that carbon capture and storage has great potential to significantly reduce greenhouse gas emissions. We bring forward to this overall discussion a wide range of international experience gained from our involvement in the Sleipner project, our studies related to the Gorgon project and our technical studies related to Gippsland. We point out that the commitment of ExxonMobil in many areas has been significant. An example of that is the joint venture in the Gorgon project. There has been more than \$85 million injected for drilling a data well to test the viability in the Gorgon project.

CHAIR—The petroleum industry has done this for a long time. Are all the technical skills available to achieve this? Is it basically working out the property rights? You have some concerns about those issues and making sure you retain your abstraction licences and that they work without any impingement. Are these your concerns?

Mr Nolan—Yes, what we do know is that every reservoir around the world is different, so each one of them has to be studied separately. The unique features associated with Sleipner and Gorgon are that the CO₂ is proposed to be injected into a separate saline aquifer. What is of concern to us in the Gippsland application, for example, is the potential connectivity between the saline aquifer lying below the hydrocarbon-bearing sands and the potential for that injection, while producing, to sour the oil and gas. Having said that, we recognise that more study is needed. We are undertaking that study, and we are sharing the ongoing results of that with Geoscience Australia and the federal and state governments.

Ms LIVERMORE—Throughout your submission you make reference to significant risks you are concerned about in terms of the interaction between petroleum activities and greenhouse gas storage activities. You have elaborated on that a bit in those comments, but how would you want to see the significant impact test defined in the legislation or in the regulations to address some of those concerns?

Mr Nolan—The concerns we have are about the remaining oil and gas that is yet to be produced from the fields, that that not be soured—I have already mentioned that. The facilities we have in Gippsland—some \$13 billion worth of investment—were not really designed and set up as CO₂ facilities; they were set up for the production of oil and gas. The CO₂ facilities would have to be designed and built so that there would be no risk to the ongoing operations should they remain in nearby fields. So there are a lot of technical and operational risks to the personnel and to the facilities. We see in the legislation the role that the minister has. We believe that it is a very important role, and we would assess that his key adviser, Geoscience Australia, is well positioned to advise on the technical aspects between the oil and gas productions and the CCS proponents.

Ms LIVERMORE—We heard from the Victorian government earlier today their suggestion that the significant impact test also involve assessment by an independent panel advising the minister. Do you have any views on whether that would improve the bill as it is now?

Mr Nolan—Frankly, we do not support that on the basis that we do not think it is necessary. We think that essentially this is a technical assessment of what potential CO₂ injection might or might not do and how it would impact on existing petroleum operations. We say that the minister, supported by the expertise within Geoscience Australia, is well positioned to make that proper judgement.

Mr PERRETT—One of the notions we are kicking around is that the oil and gas company has a lot of data and expertise about its tenancy. When it has closed off operations and vacates the field once it has explored the oil and gas in that site, one suggestion is that there then be an open tender process for the advantages that might flow in terms of CCS. Would you like to make any comments on that, seeing as you are the world leader in terms of both the oil and gas side of things and, arguably, the CCS side of things?

Mr Nolan—Yes. The geotechnical data that we gather, recognising that we have drilled over 600 wells in Gippsland, is shared and has been shared with Geoscience Australia from the very start of the operations. So as we drill wells today and obtain logs and reservoir information that is all shared with Geoscience Australia.

Mr PERRETT—Is that confidential until the well is finished?

Mr Nolan—If you take a couple of examples, well data is public access within one year of that data being submitted to the government. Seismic data in the licence areas is available two years after it has been acquired. So within the Gippsland Basin, for example, we have spent over \$80 million in the last five or so years on 3D seismic, and that having gone past, in the licence areas, that two-year period, that is in the public domain.

Mr PERRETT—Mr Nolan, is that irrespective of production? The trigger date is two years from acquiring the information, irrespective of production, for the seismic data?

Mr Nolan—Correct.

Mr PERRETT—So it is ‘use it or lose it’ for you, is it?

Mr Nolan—It is part of the licence requirement that we retain that for a certain period of time and then it is in the public domain.

Mr PERRETT—So use it or share it, basically?

Mr Nolan—We use it while it is proprietary and we continue to, but it is in the public domain following those two periods.

Mr PERRETT—Coming back to that idea of the best use of this data to advance carbon sequestration, what would be your thoughts?

Mr Nolan—I understand your question, and I think it reinforces my point earlier that the central figure in this in our view is Geoscience Australia. We openly share the technical details of the reservoir properties, so they know that as well as we do. What is proprietary within companies such as ExxonMobil is how you might interpret or use that data in the production of oil and gas. But the basic reservoir properties as they relate to the hydrocarbon existence and the potential to store CO₂, the properties of the reservoir, the permeability and the porosity is all shared openly with Geoscience Australia. They have that data.

Ms LIVERMORE—So that then informs their decisions about potential acreage release for greenhouse gas storage in the future?

Mr Nolan—That is correct. They use that data and we have access to competitor data on the same basis. When we have interest in other acreage we can obtain that data that is in the public domain, and Geoscience use that data to encourage people to apply for acreage around Australia.

Mr Young—I think the key point, if I can maybe go to the nub of your question, is that much of the information required for both the regulator to make a judgement about the best storage

sites out there to release as well as for potential GHG proponents to undertake carbon capture and storage is already in the public domain. We are probably not exactly sure what extra or additional information is really being referred to that would need to be released.

Mr PERRETT—In terms of making an informed tender, you would only have market forces basically deciding things rather than the geotechnical data deciding as to whether or not that site is a goer.

Mr Young—I think that is correct.

Mr PERRETT—Can I ask a slightly different question. I know we do not know the price of carbon yet, but are greenhouse gasses easily transportable around the world? We are a long way from most of the emitters—apart from ourselves, obviously. Could we take Chinese gasses or European greenhouse gasses here?

Mr Nolan—No—well, it is just a matter of cost. What we have experienced in the oil and gas industry is compressing gasses and transporting them by pipeline. We also have experience in refrigerating gasses and sending them by ship, which is LNG. I have not heard of anyone trying to refrigerate CO₂ and transport it around the world.

Mr PERRETT—And the price per barrel for CO₂ is not quite the oil price at the moment.

Mr Nolan—I would suggest that might be the case, yes.

CHAIR—We had some discussion this morning in relation to the end of production of an oil and gas well and what would be the situation then. Would you then give up your lease on that site as far as greenhouse gas injection is proposed? What would be the outcome of that? Do you believe there would be an assessment made on whether it would be a reservoir? Would you apply for access to use it for potential storage for CO₂? We were trying to work out how the situation would work at the end of a production of a well.

Mr Nolan—Under the current regulations and act, we have a licence to produce oil and gas. When that operation has ceased, we would appropriately abandon those facilities and hand that licence area back to the government. I am not sure I am addressing your question exactly.

CHAIR—Let us look into the future, Mr Nolan, in that there is a market to reinject CO₂. As that well is coming to an end, would you as a company be interested in seeking to inject CO₂?

Mr Nolan—We have not made any decisions one way or the other at this stage as to how much we get into that sort of business, but we would look at those opportunities as they arise. It obviously depends on the commercial incentives to do that, and we would make those decisions as they arise.

CHAIR—But you do not rule out that ExxonMobil would be involved in that process.

Mr Nolan—We are certainly involved in it in Gorgon, and we are certainly investing a lot of time and technology in Sleipner. So we certainly have an interest in the field.

CHAIR—Can you tell us about Gorgon? Maybe some of our committee who will read this transcript, as well as people here, would not know the project. Could you just explain what is happening there?

Mr Nolan—The Gorgon project involves the potential development of some 40 trillion cubic feet of gas which is in the deep water off Western Australia. The current proposal is to bring that, via subsea wells and a pipeline, onto Barrow Island and build three five-million-tonne-per-annum LNG trains. They would effectively separate and clean up the methane, refrigerate it and put it on ships, and it would be available for international sales. The CO₂ in the Gorgon field is higher than the market can tolerate, so there would be a separation process as part of the facilities. That CO₂ would be separated from the methane and reinjected into the Dupuy saline aquifer, some three kilometres, I recall, below Barrow Island.

Mr PERRETT—What safety risks do you envisage arising from the overlapping petroleum and GHG tenures, both from your own experience now—

Mr Nolan—The operational risk is potentially to sour the remaining oil and gas, which would make it effectively non-commercial. We have, in most of our gas contracts, a maximum of seven per cent inerts in the methane contracts, so if there were some leakages of CO₂ that exceeded that then it would be necessary to remove that once again to make that commercially viable. Also, CO₂ is more corrosive than the gases and oil that we currently produce, so we would have concerns about the potentially corrosive nature or the migration of CO₂ into our facilities that have been designed out of, mostly, carbon steel to accommodate low-CO₂ and low-corrosive oil and gas. CO₂ is also a risk to the people and, should any of that escape around offshore facilities, that would be of particular concern.

Mr Young—I will add a point of extra clarification. In both the Sleipner project and Gorgon, the parties that are actually doing the carbon capture and storage are the same parties that are producing the oil and gas, so there is a natural synergy there for both parties to get it right.

CHAIR—So there is quite a learning experience in that, I guess. You cannot nod here, Mr Young, because it does not get recorded.

Mr Young—Indeed. Yes, I believe that is the case.

Ms LIVERMORE—You talk about the design of your facilities not being able to cope or not being designed in a way that can, I guess, coexist with the presence of or exposure to CO₂. Does that then suggest that there is a way in the not too distant future for oil and gas facilities to be constructed in a way that would minimise the conflict between the extraction of oil and gas and storage of CO₂ in the same area?

Mr Nolan—There is a way with chemicals and materials selection that CO₂ can be safely compressed, transported and injected. I do not want to give the impression that it cannot be done. I was addressing more the concern that many assume that existing facilities and pipelines can easily be used and converted. It is not as easy as it sounds.

Ms LIVERMORE—What I am trying to get at is—and I am not sure that I am using the correct terminology—say, a petroleum leaseholder were moving in the next 10 years from an

exploration permit to a production licence; can they construct their facility to make it more compatible with the GHG operations that are in close proximity, which does not happen with existing petroleum facilities?

Mr Nolan—I understand your question and, yes, it is theoretically possible to design facilities that could be used for both oil and gas production and then long-term injection—if there was an economic incentive to put that investment up front.

Mr Young—I think the other important point, again using Gorgon as an example, is that they were projects designed with CSS in mind. Gippsland, for example, was not designed with CSS in mind and that is the fundamentally distinguishing difference.

CHAIR—Mr Young, can we just put the figures for Sleipner on the record?

Mr Nolan—I can give you a brief summary of Sleipner. It is an offshore concrete gravity based structure. It produces natural gas. It is in the Norwegian sector of the North Sea. It produces natural gas with a certain excess content of CO₂, and there is a process on the offshore platform that separates the methane from the CO₂. Since 1998, the operator of that facility has been injecting one million tonnes per annum of CO₂ into a saline aquifer that is quite separate and distinct from the hydrocarbon gas bearing sands. Having now injected 10 million tonnes since 1998, we have learnt how to use technology to track the movement of that CO₂ plume. The proponents of that project have run 3D seismic technology over the plume every few years and have been successfully able to see where that CO₂ is moving.

Mr Young—I should stress that there has been no leakage from that in the 10 years that we have observed it.

CHAIR—How much of the actual gas that is coming out of the well is made up of CO₂? Do you have that figure? Is that the seven per cent—

Mr Young—It will vary by field.

Mr Nolan—In Sleipner in particular?

CHAIR—Yes.

Mr Nolan—I can get you that figure; I do not know that off the top of my head.

CHAIR—If you could do that, we would appreciate it.

Ms LIVERMORE—On page 17 of your submission you talk about the concerns you have with the conditions the minister might put on approval of key petroleum operations, particularly in the final paragraph where you say that the bill ‘potentially makes petroleum companies underwrite a portion of the commercial costs of CCS proponents.’ You talk about this being a possible disincentive for investment in petroleum activities.

Mr Young—As we understand it, the bill sets out for post-petroleum licences, not existing licences, that they will have to abandon the sites—not only to the current standards under the

OPA legislation but to a set of greenhouse gas standards—which would ensure that the sites are usable for a greenhouse gas purpose. We are suggesting that that is a burden that is put on petroleum producers who may or may not, for example, enter the GHG storage business and that, in effect, it underwrites a proportion of what the new greenhouse gas proponent should, we would suggest, normally do.

Mr PERRETT—In your submission you talk about the protection of petroleum discoveries. You seem to be having a bet each way, basically, by saying that, if the greenhouse gas proponent finds oil, then the rights to develop that oil should rest with either the leaseholder or the government, not the entity exploring whether or not the site is a valuable greenhouse gas storage site. I thought when you got an exploration permit you had a right to explore the lease; you did not actually own anything that you did not find in the lease.

Mr Young—Maybe if you look at it in the reverse way: a greenhouse gas storage proponent has no right under this bill to search for or produce oil. You would not like to see the processes being set up under this bill as a backdoor way for those proponents to get into oil and gas. So what we are suggesting there is that, if they do find commercially available hydrocarbons on existing petroleum leases, while the bill requires the minister to be told, it is unclear whether the minister has a responsibility to advise the leaseholder. We are suggesting that that needs clarification. In the case of a greenfield site, we are simply saying that the government should retain the information and then they will make a judgement about whether to release that. But the GHG proponent should not get the benefit from finding oil and gas when they are in fact having a lease or a title to undertake greenhouse gas storage.

Mr PERRETT—So, unlike other mineral exploration, where you have a metalliferous permit—I am talking about Queensland here—and you find coal, you can get the benefit of heading down to the titles office.

Mr Young—I think there are different regimes in each state, which I am probably not qualified to speak to. There are some very important issues around delineation of the purpose here between, say, things we do—enhanced oil recovery, which is very similar to aspects of carbon capture and storage—and the greenhouse gas storage process. So we think the bill should make it very clear what the rights and responsibilities are of those who win a licence for a GHG storage process. Really that is all we are saying in our submission.

Mr PERRETT—So basically all you require is to clarify that the minister should be informed and that the minister makes clear beforehand what will be done with that data.

Mr Young—Specifically, if it is within an existing petroleum list, we think the minister should make clear in the bill what his responsibility is to tell the existing petroleum titleholder. In a greenfield site it just rests with the minister and Geoscience Australia, and I am assuming they would move forward in some acreage round and there would be public information and all the rest. It is really a clarification on that point. I think in a practical matter that is probably where the minister would go anyway, but it is a small part of the bill we would like to see clarified.

Mr PERRETT—I thought your treatment of it was very balanced.

Mr Young—Thank you.

Ms LIVERMORE—This bill assumes that there will be a competitive market for companies wanting to get involved in CCS exploration and investment in infrastructure et cetera. Earlier today we heard from some representatives of a Victorian company. They said they did not see that that market was really going to exist. We are hearing about your company's major investments in this area, so I guess I am wondering what you would say about the state of the potential market or interest in commercial CCS activities. Also, what drove your decision to make the major investment you did in the Gorgon site?

Mr Nolan—Corporately, I would say that we as ExxonMobil have a desire to produce our oil and gas for the benefit of the communities around the world in the most environmentally effective manner we can. We have a long history and a good history of doing that in a very balanced manner. Where we see that there are viable opportunities to minimise the environmental footprint, we are taking action in those areas. Indeed, we are working to that in many examples that I explained earlier from all around the world. Your other question about the economic incentives if we move forward is probably a question about the details of the design of an emissions trading system that we understand we will learn more about tomorrow.

CHAIR—To sum up, I am keen to know, from the knowledge and the expertise that you have as a company, whether you think the bill gives the commercial tension for a carbon capture and storage industry to develop. Does it give legal parameters for that to occur, keeping in mind that the minister has discretionary powers available to him generally in relation to taking good advice before he made a decision? Do you think it is a feasible proposition that carbon capture and storage will become an industry?

Mr Nolan—Yes. There is no question that we view carbon capture and storage as having great potential to significantly reduce greenhouse gas emissions. Our overall assessment of the draft bill is that, in general, it is very balanced. The one area that we have not talked about which we believe needs some more work to reinforce that is the long-term responsibility. We believe it would be in the government's interests to take on that long-term responsibility once a CCS proponent has met the standards of closure so as to encourage companies to get into that business and make it worthwhile.

CHAIR—You think that, for investment to flow, for people to make those commercial decisions, there needs to be a liability structure post-closure that will give some certainty to long-term investment?

Mr Nolan—Yes. We believe that would be the best way to ensure that you get the most attractive business propositions coming forward.

CHAIR—Thank you very much for your submission and your time. It is a major piece of legislation and the beginning of something that we need to do as a nation and, of course, as part of the world, which your company is very much a part of. As I said, we thank you for your submission and for your time today and the confidence with which you gave it to us. If we need any more information on this submission, we will write to you.

Mr Nolan—Thank you.

[2.17 pm]

BOUNDS, Mr Roger, Project Director, Monash Energy Pty Ltd

BRENNAN, Mr Dominic, Senior Counsel, Monash Energy Pty Ltd

VAN NISPEN, Mr Daniel, Head, Carbon Capture and Storage and Enhanced Oil Recovery, Monash Energy Pty Ltd

CHAIR—I welcome representatives of Monash Energy. Although the committee does not require you to give evidence under oath, I should advise you that this hearing is a formal proceeding of the parliament and therefore warrants the same respect as proceedings of the House. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. The committee has received your submission. If there are any corrections or amendments you would like to make, feel free to do that. You might like to make a brief statement before we ask some questions of you on your submission. Are you happy with your submission as we have it? Are there any corrections?

Mr Bounds—We are very pleased with our submission, but I would like to make an opening comment.

CHAIR—Certainly. Please go ahead.

Mr Bounds—First of all I would like to thank you for the opportunity to comment upon the legislation. I would like to say in opening that we welcome the legislation and we appreciate the efforts that the government and the department have made in terms of making the legislation available to us for comment and the efforts they are making to facilitate what is a very important process for addressing the greenhouse gas challenge.

Monash Energy is uniquely well positioned to comment upon the legislation. We are a joint venture between two companies—Shell, particularly Shell Development (Australia), and Anglo American, or Anglo Coal Australia, a coalminer. The debate regarding carbon capture and storage is often characterised as a debate between the coal industry and the oil and gas industry, so as a pairing of these two important companies we are able to bring a perspective that shows how one can achieve balance and address both sides of the argument.

Monash Energy is involved in the development of a project for the transformation of the lignite in the Latrobe Valley into ultra-clean transport fuels, which would go some way to addressing both the issues of energy security and the shortage of transport fuels in Australia. We see carbon capture and storage as being a vital enabler of those sorts of transformation technologies, whether they be clean coal into electricity, feedstock for petrochemicals, fertiliser production or, in our case, transport fuels. In that sense, we see the legislation as being a very useful and welcome contributor to enabling the industry. We believe it goes far enough and adopts appropriate mechanisms from the oil and gas precedents for addressing safe handling of CO₂, safe sequestration of CO₂ and appropriate monitoring and verification of storage and

therefore should give the public and the community confidence that carbon capture and storage can be undertaken in this country as a useful tool for addressing the greenhouse gas challenge.

In our submission, as you know, we made eight recommendations for changes. Some of those changes are in fact substantial, but we believe that they can be undertaken in a timely fashion which should not delay introduction of the legislation. In fact, we would like to encourage a sense of urgency on the part of the government to get this legislation underway such that we get as much time as possible to be able to really firm up carbon capture and storage before the introduction of an emissions trading scheme.

You would be aware that the bill defines pre-commencement titles, and we would like to focus all of our comments upon pre-commencement titles because, in the area in which we are dealing—that is, the Commonwealth waters that are adjacent to Victoria—all the appropriate areas that we believe are suitable for carbon capture and storage are in fact covered by pre-commencement titles. As a consequence, there are no relevant areas that we consider to have high priority in the short term that would be covered by the post-commencement titles. I would like to leave you with something that was not included in our submission. I have a map showing likely areas of carbon capture and storage with an overlay of pre-commencement titles to illustrate our point.

CHAIR—We can do that at the end of your statement.

Mr Bounds—Thank you very much. We also focus on pre-commencement titles because we believe that the incumbent oil and gas producers in the area have superior knowledge regarding the characteristics of those areas and that that knowledge is an important enabler of carbon capture and storage, which puts them in a favourable commercial position relative to people seeking access for the purposes of carbon capture and storage. We make the point in our submission that not only do they have superior knowledge but also they have a commercial interest, which does not necessarily lead them to wish to facilitate carbon capture and storage. As the marketing of natural gas is in competition with clean coal power in south-east Australia, they will not necessarily be inclined to facilitate the introduction of a competing fuel source.

We believe that there are particular aspects of the bill that disadvantage or tilt the playing field with respect to parties trying to seek access, which, as a consequence, will make CCS more expensive, more risky for the parties seeking access and, as a consequence, will mean that the impact of an emissions trading scheme and a CO₂ cap will become more onerous for the Australian economy. So, leaving aside our own interests as a project, we believe that good public policy would suggest that an appropriate balance be struck with the new bill.

We make eight recommendations, and I am very happy to speak to each one of them as we go through. Would you like me to do that now?

CHAIR—Please do.

Mr Bounds—The first thing that we recommend is that the public interest test in the bill be strengthened and debated within parliament and be taken up, rather than left as subordinate legislation. In drafting the bill, the government has made a choice not to include an objects clause. As a consequence, it is difficult for us to find evidence that this bill goes to the heart of

enabling CCS, rather than trying to reach some balance or in fact protect the interests of incumbents. As a consequence, we would like to see the public interest test clearly bring out that it is in the public interest to facilitate CCS.

We welcome the ministerial discretion which is brought out in the bill, but we think that that ministerial discretion would probably be strengthened by the introduction of some clear advisory role for an external body and that he or she could rely upon that technical advice. We think that there are agencies within the government that are capable of providing that advice and that that should be brought out. We believe that that ministerial discretion should also have the opportunity to resolve deadlocks between incumbents and people seeking access. At the moment that is missing from the bill. The minister's hands are tied with respect to being able to resolve those deadlocks, and we think that there needs to be a role that enables the minister to intervene. There are precedents in other legislation for the minister to exercise that form of intervention.

We believe that the acreage release mechanism, as it is set out at the moment, lacks transparency. There is a risk that very suitable and low-cost geosequestration acreage will remain unavailable to parties seeking access and that the reasons for it being unavailable will not be clear. Some acreage which is some distance from the Latrobe Valley may be released at the end of this year or the beginning of next year and, as a consequence, carbon capture and storage will be put under much greater commercial challenge.

The bill adopts mechanisms from the OPA with respect to the assessment of competing bids for acreage release, the cash bidding and work program bidding schemes. We make a recommendation that cash bidding be put to one side. But we particularly go to the heart of work program bidding, where we believe the minister should take into account other factors, including parties who have a source of CO₂ or who have made substantial onshore work program commitments, not just offshore work program commitments. In general, that links back to the public interest test.

We think that the definition of a significant risk of a significant impact, setting aside, as it does, the question of the probability of impact, puts a great hurdle in the way of proponents and, as a consequence, gives too much power to existing oil and gas titleholders. This is likely to hit you at any number of points. It could hit you when you first go for greenhouse gas assessment. It could hit you when you go for your retention lease. It could hit you again when you have your licence. At each one of these hurdles, you are stepping up from tens of millions of dollars, to hundreds of millions of dollars, to potentially billions of dollars in investment. One of the first terms of reference for this inquiry is to look at whether the economic effect and security of title is such that it would encourage investment. We would suggest that the significant impact test, setting aside, as it does, probability, needs to be addressed as a matter of urgency.

I would like to go to the question of long-term viability. We feel that the presentations by the department and the discussions we have had among the industry all seem to align around the idea that, after a certain period of time and with appropriate monitoring and verification, the long-term liability transfers back to the Crown. We would encourage you to give that your attention and take those views on board.

Our submission is not short, and that is because we take the issue very seriously. I am very happy to answer questions or talk about our submission. Thank you.

CHAIR—After the carbon has been captured is Monash Energy prepared to transport and store it? Would you go into that business?

Mr Bounds—Yes, We see that as an important ancillary to the production of clean transport fuels.

CHAIR—So your company would be interested in pursuing that as part of its enterprise?

Mr Bounds—It may be that either of our parent companies—Anglo Coal or Shell—will get into carbon capture and storage of others' CO₂ as a commercial business in its own right. I would not rule that out. However, that is not part of the charter of Monash Energy. Monash Energy is very much about the vertical integration of those elements of the production chain, including the disposing of our own CO₂.

CHAIR—After you endeavour to make diesel from coal in liquid form?

Mr Bounds—That is right.

CHAIR—You have touched on many of the issues we have been dealing with in relation to the tensions between the property rights of existing petroleum operators and access to storage facilities. I think your submission talks about consultation between stakeholders on acreage release. Would you like to expand on how you think that could be improved by the bill?

Mr Bounds—First of all, I think there should be more transparency with respect to the acreage release scheme on the identification of the sites that are likely to be released for geosequestration and the thinking that underlies that. Perhaps facilitation of that by bodies such as GSA or the government department would be an appropriate first step. In an open fashion, the views of the parties who are arguing for or against such a release could be heard and properly weighted and responded to. I think that would be an important first step.

CHAIR—So you think there should be more information and transparency?

Mr Bounds—That is right. The arguments for or against parties objecting to the release of certain acreage ought to be able to be challenged, if you like, and discussed in a very mature manner. Our parent companies are involved in carbon capture and storage activities around the world, and in fact Shell Development (Australia) is involved in every one of the active carbon capture and storage programs in Australia at the moment. We are involved in the tests associated with the ZeroGen project in Queensland; we are involved in the Otway Basin trial under the CRC in Victoria; we are involved in the Gorgon LNG project, where we are participating in the sequestration of CO₂ in the aquifer under Barrow Island; we ourselves are obviously involved in the Monash Energy project, which has a very large carbon capture and storage element to it; and we are involved in investigating the opportunities to mitigate greenhouse gas emissions from our substantial oil and gas interests and operations both in the North West Shelf and elsewhere in Western Australia. So we believe that you can have a robust and transparent discussion between those who seek access to carbon capture and storage and those who have existing oil and gas interests, and in fact good public policy is facilitated by having that discussion in a relatively open form.

CHAIR—It is the tension on the commercial side. The technology is developing on the capture and is capable in relation to injection. Storage might need something on the integrity of the pipelines in relation to CO₂ being a corrosive substance. But the tension seems to lie around getting the use of the storage facilities right and the concerns of the present property rights in relation to allowing other people to gain some access to information and also, possibly, drilling holes in their present basin. I am interested in whether you have anything else to say in that area and on how you think we could improve in that area. Do you have any suggestions? The minister has certain discretions. Also, the recommendation from the Victorian government is that there be a committee of technical experts to advise the minister. Do you have any opinions in that area?

Mr Bounds—That question ranged widely, so I will try and hit as many of its aspects as I can on my way through.

CHAIR—Thank you.

Mr Bounds—First of all, there is an understanding in the general community that geosequestration will target depleted oil and gas fields—that is, a pore space which has been vacated by the extraction of the hydrocarbons. That is certainly possible. It is undertaken elsewhere in the world, and it is quite likely to be undertaken again in the future. In fact, that is more likely to be the lesser contribution to geosequestration. We believe that there are completely and sustainably separate structures—in particular, the saline aquifers which underlie most hydrocarbon-producing basins—where you can sequester CO₂ without there being any interference with existing oil and gas production. In fact, as major resource companies, Anglo and Shell would like to stay a long way away from impinging upon other people's production or interfering in any way with the integrity of their production activities. We do not believe that you need to or are likely to interfere with the existing oil and gas production, sour their gas fields or introduce a corrosive CO₂ stream into existing facilities.

The second point to make is that coproduction of CO₂ in oil and gas production is quite common and that, in fact, many gas fields have substantial amounts of CO₂. That CO₂ is currently either vented, introduced into the pipeline system where regulations allow or, in some cases, extracted, compressed and reinjected. These are, engineeringly, technically possible and, in fact, are undertaken in a range of places depending upon both the regulatory instructions that are received and the economic incentives which are provided for undertaking that. So the opportunity to sequester into unrelated structures which happen to be geographically in the same area as oil and gas production is technically possible and, we would argue, commercially possible. The impediment that exists as a result of linking those other structures to existing oil and gas production licences is creating a barrier to entry, effectively, in terms of being able to get in and do the sequestration work that is necessary.

CHAIR—I did not quite get your last few words there.

Mr Bounds—The linking of unrelated structures, such as saline aquifers, to the production rights that exist, in terms of existing petroleum licences, which effectively is undertaken in this bill, creates an unnecessary barrier to entry for people seeking to sequester CO₂.

CHAIR—Okay. Thank you.

Mr Bounds—I am happy to expand on that if you want.

CHAIR—I understand.

Ms LIVERMORE—Isn't that what the significant impact test will demonstrate? As a potential CCS operator you would be demonstrating that there is no potential for conflict between the two areas, wouldn't you?

Mr Bounds—One would hope so, and that is certainly what you would seek to do. There is the fundamental problem of proving a negative, in the sense of going in there and saying that you have proved that absolutely nothing will happen—and hence to the question of the low probability: the bill is quite clear that even a low probability of a significant adverse impact may well be enough to set aside the release of acreage. But I think it also just goes to the heart of the release of the acreage in the first place. The incumbent could well argue that there is some opportunity for a relationship between the aquifer, or the area where one might seek to source CO₂, and existing oil and gas production, and that argument may be sufficient to set aside the release of that acreage such that no drilling or testing could in fact be undertaken. It is that concern that we are bringing to the committee now.

CHAIR—But that could be a genuine argument as well.

Mr Bounds—Absolutely.

CHAIR—That is the conflict that we have, isn't it? That could be a genuine argument. It might also be: 'Don't come near us; we're extracting quite well, thank you.'

Mr Bounds—Indeed.

CHAIR—That is a hard one to find a solution for at this stage, other than what is already in the bill.

Ms LIVERMORE—In your submission you suggest that a way of dealing with that is to lay a public interest test over the significant impact test—that, when a proponent is seeking to get approval for an injection licence, at that point not only should there be the significant impact test but also the minister should apply a public interest test. Is that right?

Mr Bounds—That is right.

Ms LIVERMORE—Can you just expand a little on how you see that improving the balance between the competing interests.

Mr Bounds—Yes. First of all, there is a regime for public interest already identified in the bill. We think that that probably needs to be strengthened, and the minister needs to be capable of applying it in a wider range of circumstances, including taking into account the release of acreage and, we suggested, as a deadlock-breaking mechanism. We suggest that he bring a public interest test into that forum when exercising that deadlock-breaking mechanism in a situation where a CCS proponent seeks access to acreage, seeks to undertake any one of the

greenhouse gas assessment activities, applies for the retention lease or in fact moves all the way through to the injection licence.

One of the questions put forward in the bill that the minister needs to ask is: do you have agreement from the existing petroleum licence holder? In the absence of that agreement, the minister should then be empowered to essentially break that deadlock. At the moment, one could envisage a situation where an existing petroleum licence holder refuses to come to the table and does not undertake such a commercial negotiation or such an approach and, as a consequence, it is difficult to resolve that without the minister compelling the parties to come together and then break the deadlock, if you like. So, what we would then say is that public interest, better defined, would bring into account things like the enabling of coal extraction onshore for the purposes of low-cost electricity generation, addressing issues of energy security and addressing ancillary benefits of developing CCS activities in manners which, potentially, are yet immature.

Ms LIVERMORE—And that would be weighed against, I presume, the public interest in minimising the sovereign risk of companies that have already made big investments in getting to where they are with their petroleum activities.

Mr Bounds—Indeed, and the minister would have to take into account all of those things but do it in a manner which was informed by a public interest test which said, ‘These amendments are about facilitating CCS; they’re not necessarily solely about protecting the rights of existing petroleum licence holders.’

Mr PERRETT—Would you advocate that the minister have an expert panel advise him or her in terms of making a public interest call? I know that in Queensland the minister can form a committee that can inform him or her about particular issues.

Mr Bounds—I think there are a range of regulatory structures that could be adopted for the minister to be able to draw upon that technical advice and there are already well-qualified people within the government to provide that advice. I think the minister should clearly be informed by the technical issues at hand rather than make decisions in isolation of the technical advice, so we do encourage the minister to draw on the technical advice to resolve that deadlock, if you like. We have already spent tens of millions of dollars re-examining publicly available data around the Gippsland Basin, the Otway Basin, the Torquay Basin and other structures which are close to our site for the purpose of sequestration. At this level of maturity for our project, as major resource companies we are confident that, to be able to inject CO₂ in a manner which allows peaceful coexistence and noninterference, we would need to do appraisal drilling and bring it along.

Mr PERRETT—In your submission, you talk about the work bid criteria in terms of the minister not solely relying on the level of expenditure. Could you unpack that concept for me? It touches on what you have already said in answer to the previous question.

Mr Bounds—Indeed. As a legacy of enabling CCS through amendments to the OPA, it basically adopts the same form of acreage release mechanism and bid ranking as is undertaken in the OPA or the act’s predecessor—that is, parties who are prepared to undertake a more expensive work program are more likely to secure the acreage than otherwise. However, those precedents are really firmed up around the idea of the expenditure that takes place on the permit

site. We would encourage the minister to take into account expenditure that may happen off the permit site as well—the production of CO₂ onshore where it involves clean coal technologies, for example; expenditure on transport infrastructure in order to get the CO₂ from the point of production to the point of sequestration; and expenditure on the research that has been undertaken at that level. We would encourage the minister to give due weight to the party who holds CO₂ that needs to be sequestered, rather than treating it as ‘unassociated activities’ and thereby leading to a sort of merchant model. We would also encourage the minister to take into account the fact that this is a very young activity globally and there may be further steps that need to be taken in order to facilitate the growth of the clean coal industry in Australia which involve facilitating carbon capture and storage beyond just a work program bidding scheme. That is why we say: do not just look at expenditure on the site alone.

Mr PERRETT—It seems to be getting outside the bailiwick of the Minister for Resources and Energy. We will have to second the Treasurer, the Minister for Climate Change and Water and a few others.

CHAIR—You oppose cash bidding. Could you outline your suggestions and why you think we should not have cash bidding? I know you touched on that a little earlier. Could you give us your views on that very quickly?

Mr Bounds—Although cash bidding for the release of offshore acreage for oil and gas production is in the legislation, we understand that it is not used widely. We felt that it was a distraction, if you like, at the moment in this process for CCS and that it would be better put aside for a time until these other aspects we have drawn attention to have been addressed.

CHAIR—Other than cash bidding, what would you suggest that is already in the bill is the direction in which we should go?

Mr Bounds—We would propose that the bill gives the minister the freedom to bring into the criteria for assessing bids these other aspects which I have mentioned, including expenditure outside the permit area, the presence of CO₂ within the integrated structure and other aspects in terms of developing the CCS activity.

Mr PERRETT—Some of the competitive tender processes in Queensland have regard to engagement with the Indigenous community, the local community and the like. So there are obviously tender processes where you can have a look at that.

Mr Bounds—Thank you.

Ms LIVERMORE—You make a recommendation about the joint authority, rather than the responsible Commonwealth minister, being the decision maker—so, eliminating that distinction between the petroleum regime and the greenhouse gas regime. Can you talk a bit about that—why you think that is a problem and what improvements would arise from your recommendation?

Mr Bounds—Yes. The existing oil and gas permits are administered under a joint authority; the state and the Commonwealth cooperate and work together on the administration of the regulations associated with the permits. Those pre-commencement permits will continue to be

the province of the incumbents with whom you have to deal as a CCS proponent. Our view is that it would simplify the likely regulatory outcome if you were dealing with the same regulator in both cases. So, without making an argument for or against joint authorities or sole administration via the Commonwealth, our point was that, for the sake of good governance, a single authority dealing with both CCS proponents and pre-commencement titles made sense.

Ms LIVERMORE—Okay.

CHAIR—In relation to liability post the closure of a site, I think you believe that there should be a regime where liability is transferred to another entity. Why not rely on common law, as the bill suggests, as we do in the petroleum industry at the moment?

Mr Bounds—I am reluctant to talk too much about reliance on how abandonment and common law provisions exist after abandonment of a well in the current OPA—although I do have my legal counsel here and he may feel he wants to talk about it in a moment! The point that we are making about CCS is perhaps something slightly different, and that is that it is a very young activity globally, and the long-term performance of the industry—although we have confidence in the technologies of the oil and gas industry in handling the CO₂ and putting it away—and the monitoring, verification and eventual closure and moving away, are almost intergenerational aspects of the implications that concern us and our parent companies. In Shell's case, at least, we are talking about a company that has 100 years of recognised operating history and so is able to take a long-term legacy view of these matters. As a consequence, we believe that a more even-handed approach—in the same way that the government recognises this with the expiration of a particular corporation—would be that liability would return to the state. This is just made more explicit so that after a suitable period of time the liability returns to the state. If you would like Dominic to comment on that, I am very happy to invite him to.

CHAIR—Mr Brennan?

Mr Brennan—I would fully support what Mr Bounds says. I think the real crux of this is the intergenerational aspect. We are talking here about potential liabilities which could go out centuries, if not millennia. Here we are; we have World Youth Day and we have the oldest corporation in the world, basically—it is the only one that can go back for 2,000 years. We could be talking about future time frames longer than that and, however strong Shell is, however strong Anglo Coal is, the real prospect of them being around in that sort of time frame is very small. Now, that sets a historical context, but I think really what you need to look at is that there is almost an acceptance that that is right. It is not in the legislation, but, if you look at the supporting presentation, which I assume you have seen, that DRET prepared for stakeholders, there is almost an admission that ultimately the state is the only entity capable of taking on that ultra-long-term liability.

If you think about it, what do we have in this model? We have no allocation of common-law liability at all. We have common-law liability. We have an allocation of regulatory liability. If you go through the reasonably standard sort of well closure process, then there is a point in time when regulatory liability can be shrugged off. If you then take this historic context into account, it would not be inappropriate for the Crown to take on the very long-term liability. Whether you want to do that at the same time as you shrug off your regulatory liability, I cannot say—maybe,

maybe not. Perhaps you could say it might be 50 years time or 30 years time. All we would say is that in looking at this very long time frame, it would not be inappropriate to do that.

CHAIR—There is also a submission to set up trust funds to gather some money in case there is, post the monitoring stage even, a need to do some rectification et cetera.

Mr Brennan—Yes, that is true. Again, the context of that is very much on the technical side of things. It is to ensure that the closure activities that have taken place are properly funded as far as people can assess. But again I think you have to ask yourself, if you are looking at the intergenerational liability, whether even that is appropriate.

CHAIR—That is right—if you go out to a thousand years. With regard to the technology available to monitor, we know that in Norway they have been going for 10 years and they say with confidence that there has been no problem and basically it is where they thought it was going to be. I take it that the monitoring is within an economic scale that will enable us to do that at a reasonable cost et cetera?

Mr Van Nispen—Yes, Mr Chairman, that is something that we certainly look at in our evaluations. The technologies that are required for monitoring of CO₂ are very similar if not identical to the technologies that are required for the oil and gas industry, and those are very well developed and in fact have applied in the current CO₂ storage trials and projects very effectively.

Mr PERRETT—Could you give me the layman's version of how you monitor something that is that far underground and underwater and remote from everything?

Mr Van Nispen—There are many different technologies. Perhaps the most effective technology offshore to monitor the location of the CO₂ plume is time-lapse seismic monitoring where an acoustic signal is shot and reflects off the strata underneath the ocean or in the ground. That signal is affected by the types of fluids that are in the ground, and by processing and analysing that signal scientists can determine where the CO₂ plume has migrated from and to.

Mr PERRETT—Is that an expensive process on an ongoing basis? It is a boat and a—

Mr Van Nispen—It is a process in the order of millions of dollars per activity.

Mr PERRETT—Per annum?

Mr Van Nispen—It depends on the frequency of the activity.

Mr PERRETT—So it is best done while there is ongoing exploration activity rather than as a dedicated activity to go and monitor the CO₂ plume?

Mr Van Nispen—Yes. That is one of the technologies. There are other technologies utilising wells that are drilled and the pressure performance of the subsurface to understand how that is affected by the CO₂ injection or the production of oil and gas. There are also technologies to model the migration and the location of the CO₂ and those models can be matched with the production and injection data to give certainty or assurance that the accuracy of the predictions can be confirmed.

Mr PERRETT—If the plume is heading north, is that just bad luck and that is the end of the process? There is no capping—

Mr Van Nispen—No, there are mitigation technologies possible. It is possible to drill wells, for instance, and either produce fluid or inject fluid to change the pressure field and the direction that the plume is migrating.

CHAIR—This is all pretty well established technology. We understand that there are some issues with the cement that is used in present situations and there might be a need to improve that because CO₂ could be corrosive.

Mr Van Nispen—In some circumstances and in the presence of water, CO₂ can be corrosive. But it is fair to say that CO₂ has been injected in many oilfields around the world for the purpose of enhanced oil recovery quite effectively for many tens of years.

CHAIR—I understand the Americans pass it around a bit as a commodity to help pressure.

Mr Van Nispen—That is right. You have to purchase it.

CHAIR—I take it that gas and oil platforms and wellheads test that pressure to make sure that there is not a significant problem blowing the top off.

Mr Van Nispen—That is right. The pressure both within the reservoir and at the surface of the wellhead is routinely monitored for safety and performance reasons.

CHAIR—So the knowledge has been built up over the 30 or 40 or 100 years we have been doing that.

Mr Van Nispen—That is right.

Ms LIVERMORE—On pages 27 and 28 of your submission you talk about the situation of oil producers also having the right to inject CO₂ and you seem to have some concerns about them having that right and that it is open to abuse. Can you just explain those concerns and what the problem is with oil producers having the right to inject CO₂ as part of their operations?

Mr Bounds—Indeed. Thanks for asking the question. This is one which, appropriately I think, the department and the minister and now the committee are paying attention to, because it is probably one of those areas of existing oil and gas procedures under existing petroleum licences and their interaction with storage activities which we recognise as needing to be taken up. CO₂ capture, storage and reinjection is a normal part of many aspects of existing oil and gas production both for the purposes of enhanced oil recovery or for addressing regulatory requirements for addressing an excessive amount of CO₂ in oil or other gas reinjection activities in terms of gas recycling where CO₂ may be a part of the gas that is being recycled for the purposes of oil production.

There is nothing in our submission which would suggest that that should be changed. However we do express a concern that the regulator needs to be aware that this could become a backdoor process for securing CCS acreage and, as a consequence, further strengthen the role of

the incumbent putting in place barriers to entry for those who are seeking CCS acreage for other purposes to enable competing fuels or competing energy sources elsewhere other than within their permit area. This does not just go to coal versus natural gas producers or coal versus oil and natural gas producers. This could also be between two competing natural gas producers offshore in a related area where someone seeks to sequester the CO₂ in a neighbouring permit into an area where they need to seek CCS acreage and they are precluded from doing so because the incumbent seeks that area for their own activities.

Ms LIVERMORE—So you are not saying that you would not be able to go and start producing oil under a greenhouse gas licence. If they want to sequester CO₂ then they should be doing it under the same terms and conditions as any other—

Mr Bounds—We are looking for a level playing field between new entrants regardless of whether they are coal producers or neighbouring oil and gas producers. There should be a level playing field between new entrants of any sort and incumbents and, although we recognise that CO₂ sequestration for the purposes of oil and gas production is a current process and it needs to be respected, it should not be treated as a backdoor entry to securing CCS acreage within a petroleum licence.

Mr PERRETT—There is a climate change paper coming out tomorrow on a carbon pollution reduction scheme, as I am sure you are no doubt aware. If you had a major CO₂ producer—emitter, polluter—and they were sending that underground to a storage facility, do you think that the CO₂ they produce should be counted in Australia's emissions?

Mr Bounds—No, we do not. We believe that CO₂ sequestered is CO₂ not emitted and, as a consequence, does not require a permit in its own right. But I would suggest that there are emerging mechanisms under discussion regarding how permits under an emissions trading scheme are going to be dealt with and how the revenues from that are going to be distributed. I suggest that the emissions trading scheme as it emerges and the revenues therefrom provide a great opportunity to really kick this activity into gear. It is a very necessary activity, so I would encourage all mechanisms—both a balancing of the regulatory mechanisms as we have proposed here and other fiscal and, if you like, sympathetic community responses necessary to get CCS up and running.

CHAIR—Thanks very much for your evidence and your submission. We really appreciate it and the way you presented it to us. It is all new stuff and you have a lot of expertise in the area. Would you like to table something to the committee?

Mr Bounds—We would like to table a map which shows that all the likely areas of sequestration within reach of our mining licence are in fact covered by a pre-commencement title. That is why we concentrated on that aspect in our submission.

CHAIR—Is it the wish of the committee that the document be accepted as an exhibit and received as evidence to the inquiry? As there are no objections, we will receive that document. Thank you again. If there are any matters on which the committee might require additional information, we will write to you.

Resolved (on motion by **Ms Livermore**):

That this committee authorises publication of the transcript of the evidence given before it at public hearing this day.

Committee adjourned at 3.03 pm