COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

SENATE

STANDING COMMITTEE ON ECONOMICS

Reference: Exposure drafts of the legislation to implement the Carbon Pollution Reduction Scheme

TUESDAY, 24 MARCH 2009

MELBOURNE

BY AUTHORITY OF THE SENATE

INTERNET

Hansard transcripts of public hearings are made available on the internet when authorised by the committee.

The internet address is:

http://www.aph.gov.au/hansard

To search the parliamentary database, go to:
http://parlinfoweb.aph.gov.au

SENATE STANDING COMMITTEE ON

ECONOMICS

Tuesday, 24 March 2009

Members: Senator Hurley *(Chair)*, Senator Eggleston *(Deputy Chair)*, Senators Bushby, Cameron, Furner, Joyce, Pratt and Xenophon

Participating members: Senators Abetz, Adams, Arbib, Barnett, Bernardi, Bilyk, Birmingham, Mark Bishop, Boswell, Boyce, Brandis, Bob Brown, Carol Brown, Cash, Colbeck, Jacinta Collins, Coonan, Cormann, Crossin, Ellison, Farrell, Feeney, Fielding, Fierravanti-Wells, Fifield, Fisher, Forshaw, Hanson-Young, Heffernan, Humphries, Hutchins, Johnston, Kroger, Ludlam, Lundy, Ian Macdonald, McEwen, McGauran, McLucas, Marshall, Mason, Milne, Minchin, Moore, Nash, O'Brien, Parry, Payne, Polley, Ronaldson, Ryan, Scullion, Siewert, Stephens, Sterle, Troeth, Trood, Williams and Wortley

Senators in attendance: Senators Abetz, Cameron, Eggleston, Furner, Hurley, Joyce, Pratt and Xenophon

Terms of reference for the inquiry:

To inquire into and report on:

Exposure drafts of the legislation to implement the Carbon Pollution Reduction Scheme

WITNESSES

BURROW, Ms Sharan, President, Australian Council of Trade Unions 84

CATCHPOLE, Mr Andrew, General Manager, Communications and External Relations, Hydro Tasmania 14

CONCANNON, Mr Anthony, Chairman, Energy Supply Association of Australia 34

HARRIS, Mr Matt, Consultant, Frontier Economics 70

O'CONNOR, Mr Simon, Economic Adviser, Australian Conservation Foundation 46

PASCOE, Mr Owen, Climate Change Campaigner, Australian Conservation Foundation 46

PRICE, Mr Daniel, Managing Director, Frontier Economics 70

RITOSSA, Ms Demitra Kerry, Corporate Lawyer, Santos Limited 22

ROBINSON, Ms Belinda, Australian Petroleum Production and Exploration Association 2

ROWLEY, Mr Gregg, Group Executive, Clean Energy, Santos Limited 22

SAVAGE, Ms Clare, Chief Executive Officer, Energy Supply Association of Australia 34

SMITH, Ms Susan Jane, Principal Climate Change Adviser, Santos Limited 22

WAIN, Mr Colin, Policy Analyst, Strategic Policy, Communications and External Relations, Hydro Tasmania 14

WARREN, Mr Mathew, Chief Executive Officer, Clean Energy Council 60

Committee met at 9.16 am

CHAIR (Senator Hurley)—I declare open this fourth hearing of the Senate Standing Committee on Economics inquiry into the exposure draft of the Carbon Pollution Reduction Scheme Bill 2009. On 11 March 2009, the Senate referred the exposure draft of the legislation to the Senate economics committee for enquiry. The exposure draft is based on the government's white paper on climate change, which was released in December last year. These documents affirm the government's commitment to a medium-term national target range of reducing emissions by between five and 15 per cent of 2000 levels by 2020, and a long-term emissions reduction target of 60 per cent below 2000 levels by 2050.

The government has released six draft bills for public comment. The Carbon Pollution Reduction Scheme Bill 2009 is the main bill and covers the arrangements for the scheme. A second bill relates to the consequential amendments needed to the National Greenhouse and Energy Reporting Act 2007. The Australian Climate Change Regulatory Authority Bill 2009 will establish the authority which will administer the scheme. The remaining three bills are technical bills in case the charges for the emissions units issued are at some time considered taxation. This inquiry will focus on issues relating to these bills. A separate Senate inquiry will consider aspects of climate change policy more generally. This committee is due to report to the Senate by 14 April 2009.

These are public proceedings, although the committee may agree to a request to have evidence heard in camera or may determine that certain evidence should be heard in camera. I remind all witnesses that in giving evidence to the committee they are protected by parliamentary privilege; it is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee, and such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence to a committee. If a witness objects to answering a question, the witness should state the ground upon which the objection is taken and the committee will determine whether it will insist on answer, having regard to the ground which is claimed. If the committee determines to insist on an answer, a witness may request that the answer be given in camera. Such a request may of course also be made at any other time.

[9.18 am]

ROBINSON, Ms Belinda, Australian Petroleum Production and Exploration Association

CHAIR—I welcome the Australian Petroleum Production and Exploration Association. Welcome, Ms Robinson. Do you have an opening statement you wish to make?

Ms Robinson—Yes, I do. Thank you, Madam Chair. I appreciate the opportunity to appear before the committee today and will keep my opening comments briefed to allow you time to ask me questions. APPEA is the peak national body representing the industry that explores for and produces oil and natural gas in Australia. Our role is to work with governments to secure fiscal, regulatory and policy settings conducive to realising the full potential of Australia's upstream oil and natural gas industry but delivering maximum benefit to Australia.

We welcome the committee's interest in this critical matter of national importance. At the outset, however, APPEA is concerned about the very tight timetable allowed for submissions—nine working days—and hearings, most, including this one, held before submissions are due on a package of legislation and commentary that runs for over 700 pages. This reform has been described by the minister for climate change as 'the most significant economic and structural reform undertaken in Australia since the trade liberalisation of the 1980s'. This time frame for the inquiry is in no way commensurate with the magnitude of the reform in question and, as such, raises doubts about the level of the committee's commitment to the inquiry process. APPEA is yet to complete its detailed review and consideration of the exposure draft legislation due to the unreasonable amount of time provided for the preparation of submissions. Our comments on the exposure draft, therefore, should be considered preliminary. APPEA's submission, to be lodged later this week addresses a number of issues that we have identified in the package of bills released on 10 March. We will be examining the bills closely and providing comments to the government by the due date of 14 April.

As a general proposition, it appears that the bills, subject to a number of areas that require some correction and clarification, do give true effect to the policy position set out in the December 2008 white paper. Many areas of the bills are supported by APPEA and many have benefited from the consultation process that has been undertaken. This is not true in all cases, however, and with that in mind, rather than going through a range of issues in detail, I will focus my comments on that part of the draft legislation that we believe requires fundamental amendment. This is division 8 of the draft Carbon Pollution Reduction Scheme Bill 2009 that deals with the treatment of emissions intensive trading exposed activities. I note that the division sets out in six pages the proposed treatment of EITE activities. Almost all of the key details of the treatment are proposed to be set out in regulations and not in the act itself.

More broadly, as has been considered and accepted by every major credible analysis of an emissions trading scheme undertaken in Australia and internationally, if policies and measures such as emissions trading schemes are implemented in some countries and not in others, distortions will occur as a result of the increase in production costs in the countries that have implemented greenhouse policies relative to those that have not. APPEA has long recommended that measures to deal with this international policy distortion must be a central feature of any

emissions trading scheme introduced in Australia. In doing so, it is vitally important to recall why the emissions intensive trade exposed issue arises at all, and that is the failure of governments around the world to reach a global agreement on carbon pricing and the consequent implications for industry competitiveness that arise from unilateral actions by any one government. With that in mind, the industry's key objective in considering this issue is to ensure that the Australian LNG industry—that is, liquid natural gas—does not bear an additional cost impact for as long as our competitors and our customers are not subject to a similar impost. For a number of reasons that will be considered further, the draft bills fail to achieve this outcome and we believe, therefore, require some amendment.

APPEA acknowledges that the government, through the bills, has taken steps to clarify the impact of the proposed emissions trading scheme on the Australian LNG industry. This means that, provided it meets the criteria set out in the commentary at paragraph 4.12, LNG projects may qualify for an administrative allocation of permits to cover up to 60 per cent of emissions in the first year of the scheme's operation. It remains the case, however, that the industry will be subject to a significant cost burden that is not borne by its LNG competitors, including countries such as Qatar, Algeria, Nigeria, Trinidad and Tobago, Egypt, Brunei, Indonesia, Malaysia, Oman and the United Arab Emirates or our customers. Reducing the international competitiveness of Australia's LNG industry will lead to growth prospects being constrained and a likely commensurate increase in global emissions as developing countries continue to expand their use of more carbon intensive fuels.

LNG has been characterised as an anomaly within the emissions trading scheme design. Although producing LNG is emissions intensive and adds to greenhouse gas emissions in Australia, natural gas makes a substantial net contribution to reducing global greenhouse gas emissions. As the world inevitably shifts to a preference for cleaner burning fuels, the substantial strategic value of Australia's natural gas assets can only increase. LNG is a proven industry with significant and imminent growth prospects in Australia. The impact of this industry's growth on regional development and employment as well as government earnings is set to be substantial. With this in mind APPEA agrees with Professor Ross Garnaut, who stated in his report that a fundamental principle in designing a domestic emissions trading scheme in the absence of a global scheme must be to ensure that it produces similar production and investment outcomes to those reasonably expected under a global scheme. I quote from page 344 of his report:

The rationale for payments to trade exposed, emissions-intensive industries is different and sound. It is to avoid the economic and environmental costs of having firms in these industries contracting more than, and failing to expand as much as, they would in a world in which all countries were applying carbon constraints involving similar costs to ours.

He goes on to say:

A constructive and efficient solution must focus on policy design that assists our domestic industries to address the failure of our global competitors to act on limiting their carbon emissions.

His solution to this, outlined on page 345, is:

For every unit of production, eligible firms receive a credit against their permit obligations equivalent to the expected uplift in world product prices that would eventuate if our trading competitors had policies similar to our own.

His solution may be difficult to apply but it is sound in principle. We were therefore very disappointed that a similar rationale for permit allocation to EITE activities outlined in the green paper was subsequently removed in the white paper and is no longer reflected in the objects of section 165 of the bill at all. In the green paper the third rationale for recognising EITE activities was 'to support the production and investment decisions that would be consistent with a global carbon constraint'. This has been removed as a principle and transformed into a vague statement of expectation that this may be a partial consequence of EITE treatment. It is not reflected, as I said, in section 165 at all, which fundamentally undermines the integrity of EITE treatment.

Subjected to a global price for carbon, the international natural gas industry will expand as a consequence of its emissions being between 50 and 70 per cent lower than the coal alternative when used in electricity generation. Yet perversely the domestic scheme as proposed would see its growth constrained. The LNG industry can think of no explanation for a design that results in the curtailment of an Australian industry that is poised for growth precisely because of the world's desire for sources of energy which emit less greenhouse gas. Inadvertently it could send a message that Australia is unconcerned that the growth of the global LNG industry and all the environmental, economic and social benefits associated with it will occur instead in those LNG producing countries with which we compete.

The case for the industry not to be exposed to any cost associated with a domestic emissions trading scheme while ever our competitors and customers, with cheaper and higher emitting energy sources available, are not subject to similar imposts is compelling. Clearly, significant amendments in division 8 of the draft Carbon Pollution Reduction Scheme Bill 2009 would be required to achieve this outcome. APPEA therefore recommends that the draft Carbon Pollution Reduction Scheme Bill 2009 be amended to ensure that the LNG industry does not face any costs associated with a domestic emissions trading scheme while ever our competitors and our customers are not subject to similar imposts. Thank you. I welcome any questions that you might have.

CHAIR—Thank you. First of all, I assure you that the committee does take this inquiry very seriously. I think the passion in the consultation on this bill, first with the green paper and then with the white paper last year, was quite extensive. It has been recognised in a number of sources that this bill is extensively modelled on the white paper, which industry and the public generally have had for some time now. This of course is a draft bill, an exposure draft, and it gives people an opportunity to examine the bill before the actual bill is introduced in the May session of parliament. So although this committee's deliberations on the draft bill are relatively limited, we wanted to give people an additional opportunity to examine the draft bill in the time we had available to allow further comment and refinement of people's positions subsequent to their submissions to the white paper.

In terms of LNG, as you mentioned, LNG is a low-emissions fuel compared to other non-renewable fuels such as coal. But of course it is in itself non-renewable. As I think you said, a lot of the focus has not been so much on reducing emissions as on promoting renewable energy resources. So do you not feel that, alongside the higher emitting non-renewable sources, LNG must also be considered non-renewable and therefore not, under the greenhouse gas scenario, the best kind of fuel?

Ms Robinson—I think that is a very reasonable point. You are quite right of course that it is a non-renewable resource. I guess the key point that we are making is in terms of the sort of design that we are suggesting needs to be better accommodated within the scheme, to take account of the fact that, if we had a global price on carbon, the LNG industry would grow and expand as a consequence of it being a substantially lower emitting fuel. Therefore the issues that we have raised would dissolve if governments around the world had agreed to a carbon price. So the issue is only an issue because of the failure of governments around the world to have agreed on a carbon pricing mechanism. That therefore creates a situation where we have a distortion created in Australia whereby a fuel that would expand and grow under what we are all seeking to achieve—and that is a global scheme—is paradoxically and perversely constrained under the domestic scheme. So, while your point is certainly valid, we are not saying that there should be no cost impact on LNG or on the gas industry broadly. That is the whole purpose of a carbon pricing mechanism, which is to ensure that fuels or products that are carbon intensive internalise the costs associated with that. That is fine if we had the world as part of that process, because everyone would be competing on a level playing field. The problems only occur where we are imposing that cost in Australia and not taking account of the benefits that accrue.

Also, in relation to renewables, it is very difficult to see in the short term how we can fundamentally decrease the emissions profile of our energy sector substantially. You look at the needs that we have for energy in Australia and also within our broader region and ask: how can we do that without looking at what some of the viable alternatives would be? We have argued for a long time that, because of natural gas being so much less carbon intensive, it provides a very real solution in the near term to assisting the world to move to that much lower or no emitting future that we are all keen to pursue. In other words, it would give us breathing time while other technologies evolve, become practical and can be rolled out on a much broader scale.

CHAIR—Thank you, Ms Robinson.

Senator JOYCE—Ms Robinson, thanks for your deputation. Everybody who comes before this committee basically has the same position which is this. We believe in a carbon reduction scheme; we just want an exemption from it—so it always has to involve somebody else. With a reduction in the association of an ETS to LNG, what would you suggest is the other part of the economy that should pick up the tab and carry more of it?

Ms Robinson—Obviously, that is not something that I can answer. Getting back to your question, we believe, demonstrably so, in a carbon scheme. If there were a carbon scheme around the world, the gas industry would grow and expand—as it should. The purpose of a carbon scheme is to allow those products that are less carbon intensive than their competitors to grow. That is the whole point. If in Australia we have a different outcome, then that suggests there is a flaw in the design of the mechanism. When you say they want an exemption, the LNG industry is not looking for an exemption in respect of a scheme that delivers on the objective to reduce global emissions. It is looking for a design mechanism within a domestic scheme that produces a fundamentally different outcome than would be achieved if we had a carbon price around the world.

Senator JOYCE—I agree totally that this will have an effect on LNG. I was talking to people from Sarawak the other day who have the largest LNG plant in the world, if that is correct. There

is the capacity for other people, if we make ourselves uncompetitive, to basically knock us out of markets, isn't there?

Ms Robinson—I do not want to be alarmist about this. We are not saying that all LNG projects around this country will suddenly go on hold, because of course there is a range of factors that are taken into account when we make decisions about the economics of a project and that project therefore going ahead. But certainly increasing the costs, in already the highest cost destination for LNG supplying the Asia-Pacific region in the world, just makes it that much more difficult. We only have two LNG projects in this country despite a massive resource, a resource that perhaps we should be giving much greater consideration to acknowledging as a very substantial national strategic asset that we have here. We still only have two projects. We are still regularly referred to as underweight as an LNG producer. But the positive is that we do have around $200 billion worth of projects on the drawing board. Some of these, as I have said, will go ahead. But a higher price, as I say, will just make it more difficult—and for what? Making those projects more difficult to get up only then ensures there is less LNG flowing to the world, which course leads to more carbon intensive fuels being used.

Senator JOYCE—So if you do not have LNG you would be replacing it with coal-fired power, and that is of course more carbon intensive.

Ms Robinson—It will not be replacing it with that. They are already using coal-fired power. We will not be substituting with a lower carbon intensive fuel source.

Senator JOYCE—You were referring to Professor Garnaut and the green paper and you were talking about pages 344 and 345, where he talked about the requirements of a global trading scheme. Do you see any move whatsoever for, or any semblance of an idea of, a global carbon trading scheme to bring about some equality and competitiveness so that we do not create what will initially be, if we go solar, a solar impediment to Australian industry?

Ms Robinson—I am probably not as close to it as some others, but of course I do watch it reasonably closely. I think that hopefully there may be some movement at some point in some countries that are not part of it. I certainly cannot see that anytime soon. I certainly cannot see any signs that competitors, the guys that the Australia LNG industry competes with—and they are the countries that I mentioned before, such as Nigeria, Trinidad and Tobago, Malaysia, Indonesia and Qatar—are turning their minds to this issue at all. We clearly see the sorts of issues that we are raising as transitional issues to that point, and we would urge governments—and certainly we have—to be monitoring those countries very carefully. I think what you desire and we desire as quickly as possible is that global pricing mechanism. As I have said, once we get or something close to that these issues will dissolve.

Senator JOYCE—You mentioned Nigeria, Qatar, Malaysia and Indonesia. Do you have any notion or any information that any of these countries are influenced by Australian domestic policy and how we are approaching an ETS? Are they aware of it? Does it add some impetus to them going forward? Do they want to catch up to us or do they look across at us and say, 'Well, that's your business; off you go'?

Ms Robinson—What we see from the LNG industries in these countries is that they think this is a terrific policy movement on behalf of Australia because immediately they are delivered a competitive advantage.

Senator JOYCE—One of the major LNG projects at the moment would be Darwin. Would that be correct?

Ms Robinson—Darwin is a producing project.

Senator JOYCE—Is that in any way going to be affected by the current musings as to the ETS and where that is going to go?

Ms Robinson—Yes, it will be.

Senator JOYCE—How will it be affected?

Ms Robinson—At the moment there is still a lot of work to be done and we are participating in that process to identify what the scheme actually means for the sector. One of the issues, as you are probably aware, is how, under the white paper scheme, up to 60 per cent of emissions permits are intended to be provided to the LNG sector. The way that 60 per cent will be calculated is on the basis of existing emissions. Of course, the pool for existing emissions is very small, given that there are only two projects. That takes into account the North West Shelf and Darwin. Darwin will be affected by whatever the average is because the 60 per cent will be calculated on the basis of an industry average of production and an industry average of emissions—averages calculated as a consequence of two projects. If the North West Shelf emissions are higher than the Darwin emissions, obviously that will bring that number down and, as a consequence, the Darwin project would receive the permits as calculated by that averaging.

Senator JOYCE—Going to that capital expenditure project in Darwin: will people look at it and say, 'Now our returns are less; therefore, our propensity to invest is less and, therefore, there is likely to be a scaling back of that investment in Darwin'?

Ms Robinson—Sorry, Senator; I think I have got confused. When you talk about Darwin, I think you are talking about Impex. I have been talking about what is called Darwin LNG, which is the ConocoPhillips project. You are referring to the Impex project?

Senator Joyce—That is correct. Sorry about that.

Ms Robinson—No, that is my confusion. That is one of those $200 billion projects on the drawing board that I referred to. Once it is clear what the 60 per cent actually means, that cost impact will be fed into the process of calculating the economics of that project and will be taken into account by the board making the decision about going ahead on that project in terms of whether it goes to a final investment decision or not. I am not in a position—and I do not think even those in Impex are in a position—to say what that impact will be, because there is still so much work to be done around the 60 per cent issue. But like all of those projects on the drawing board—there are the Gladstone projects, there is Gorgon, there are a whole bunch in Western Australia, there is Sunrise in the Northern Territory and so on—this issue will need to be costed

out and will impact on the economics of those projects. To what extent it impacts on final investment decisions is an issue for each of those individual projects.

Senator JOYCE—There are alternate venues in the world in which the same money can be invested. If it shows a better return, that would be the logical thing for the board to do, wouldn't it?

Ms Robinson—Yes. All the capital for these projects is footloose. These are massive projects costing from $20 billion up for an average two-train project—that is two production units. The sorts of companies that have access to those funds are obviously very big, but their capital is also obviously very footloose. Not only do they constantly look for where they should be directing that capital for LNG; they also look more broadly for where they should be directing that capital. These companies are not all LNG companies; they are energy companies more broadly, and it is a very competitive environment for securing that investment.

Senator CAMERON—Ms Robinson, I want to go to a few of the points you have raised about the effect of the ETS on your member companies. I have just had a quick look at the Woodside Petroleum annual report and, apart from a very small reference by Michael Chaney from Woodside in his chairman's overview, which said that an ETS might make the company less competitive, I do not see any real concerns being expressed. Don Voelte, in his report, points to the massive 55 per cent increase in profits by Woodside. Their profits are $1,832 million, up 55 per cent from last year. Surely, if any company in the country can make a contribution to reducing greenhouse gas, it is Woodside and the LNG industry.

Ms Robinson—I certainly agree with that point. If there was any industry to make a difference to emissions it is the LNG industry. I am not sure what you are getting at with the rest of it, and obviously I cannot comment on behalf of Woodside—

Senator CAMERON—Let me tell you what I am getting at. Your statements seem to be much more bellicose than the statements from your members in terms of their reports to the shareholders.

Ms Robinson—I suggest that you might want to speak to Don Voelte, because I do not think that is actually true and I think Don Voelte is on the record on many occasions expressing just how concerned he is. But, as I say, it is not my place to make comments on the views of Woodside. I am sure Woodside would be quite happy to answer any questions that you might have further. In terms of the profit, you raise a good point and a point I think that is not very well understood. I take your word for a 55 per cent profit increase. What I guess needs to be borne in mind is the capital intensive nature of these industries. Woodside are going to require every cent of that in building the Pluto project, which is under construction at the moment. As I mentioned to you before, these projects cost in excess of $20 billion, $25 billion, for an average two-train project. When you think of the dollar return on those projects, it is very small compared to the outlay and the cost of those projects going forward. Those projects do not earn any profit for 10 years or more because of just how expensive the projects are to build in the first place, which is why it is always so difficult and it takes such a long time for boards to make decisions on those projects. So it is not very informative to simply look at revenue in relation to the company. What is more informative is to understand what the cost profile is of those projects and the very long

lead times and how long it takes to start to recoup those costs and generate a profit as a consequence.

Senator CAMERON—I am quoting profits. I can quote revenue as well; I have those figures. I also want to draw your attention to the fact that Don Voelte also indicates that Woodside compared to its international competitors has better profit returns. So there must be something happening in Australia that makes Australia a good place to invest.

Ms Robinson—There are a lot of things about Australia that make it a good place to invest. But imposing additional costs that are not shared by competitors is not one of them.

Senator CAMERON—You asked in one of your positions earlier why was Australia doing this. Do you honestly take the view that you do not know why Australia would be looking to engage in a carbon pollution reduction scheme?

Ms Robinson—I do not think I said that at all, Senator. I did not say why is Australia doing this—

Senator CAMERON—'And for what,' you said.

Ms Robinson—Demonstrably so, we would like the world to be addressing this problem because the emissions profile of gas means that the gas industry will expand. What I am questioning is, if the primary objective of this country and the people of this country is to have a global carbon scheme that produces a certain outcome, then, as pointed out by Ross Garnaut as demonstrated in the green paper, should not the scheme that we introduce in Australia at least attempt to produce similar investment outcomes that would occur if we had a global scheme? So the issue is simply one of design and a design that takes account of the distortion that occurs because of the particular circumstances here.

Senator CAMERON—Should we wait until Nigeria introduces one?

Ms Robinson—No. As I keep saying, the issue is around the transitional mechanism. The government had a pre-election commitment to ensure that the competitiveness of Australia's emissions intensive trade-exposed industry would be protected in the design of an emissions trading scheme. All we are doing is attempting to hold the government to its word on that, but more particularly around LNG to ask the question, shouldn't the design ensure that an industry that would expand precisely because of the world's demand for cleaner burning fuels, shouldn't the scheme deliver those same sorts of outcomes?

Senator CAMERON—It has been said that the scheme might result in a lower exchange rate. Wouldn't that be a significant benefit to your members?

Ms Robinson—I cannot comment on that; that is speculation. But of course exchange rates have all sorts of different impacts in terms of the input costs as well as the prices achieved.

Senator XENOPHON—I should know this, but can you tell us the energy intensity of LNG compared to that of black coal and brown coal? Do you have that information handy?

Ms Robinson—On average, when burned for electricity generation, it generates between 50 and 70 per cent less greenhouse gas emissions, and that is on a life cycle basis. I can tell you, on the basis of reports that we have provided to this process—not the economics committee process but the consultation process more broadly—that have not been done not for us but independently by the CSIRO and WorleyParsons, that for every tonne of emissions produced in Australia in producing liquid natural gas, between 4.5 and 9.5 tonnes are saved when it is used for electricity generation in the Asia-Pacific region, assuming a substitution for coal.

Senator XENOPHON—Thank you. You alluded to the issue of scheme design. I would just like to explore the issue of intensity schemes such as output based allocation more generally. Is that something you have considered? I know the Canadians have been considering an energy intensity basis in the planning of their scheme. Is that something that your association has considered as an alternative way of getting abatements without the same price effects and without what you have referred to as perverse outcomes?

Ms Robinson—We are looking at those at the moment. We have not settled on any particular position, I guess because we have been concentrating on the design of this scheme most specifically and prior to that what was called the NETT scheme, the state developed emissions trading scheme. We have also looked very carefully at the draft scheme of previous government, and we are looking carefully at the North American scheme. All of those are certainly very interesting alternatives. While we have not landed on a position at the moment, we are looking at elements of all of those schemes to see whether there are some design mechanisms within them that do not produce those perverse outcomes.

That said, I guess what we are trying to draw attention to here is that LNG is an anomaly. A net beneficial outcome to the globe is not reflected in the domestic scheme. There does appear to be some room to improve that domestic scheme to ensure that that distortion is corrected, because, if we do not improve it, we are saying that we are comfortable with increasing global emissions provided we can be seen to be reducing our domestic emissions. That is not consistent with any approach to an emissions reduction scheme, which is at some point to assist in reducing global emissions. The greatest contribution that Australia could make would be to back and champion its natural gas resources to ensure that they were available to the rest of the world so that they could reduce their greenhouse gas emissions.

Senator ABETZ—Ms Robinson, thank you very much for your submission. In relation to your written submission that we will receive in due course, I assume you would be happy to take some questions on notice?

Ms Robinson—Yes, of course.

Senator ABETZ—Thank you. You have also made the point that a lot of other people have made to me, and that is that with this scheme the devil is in the detail and a lot of the detail is going to be in the regulations. Is it your view or your members' view that the regulations may be worthy of an inquiry, and would you encourage the government to submit detailed draft regulations so that we can see how those regulations will actually interplay with the legislation that is before us?

Ms Robinson—That would be very useful, particularly if the government is interested in correcting, I guess, some of these anomalies and distortions.

Senator ABETZ—Thank you for that. This is my third and final question. You have suggested that there should be a few amendments to the legislation. I wonder how fortunate we might be in having you or your members proposing specific amendments in the written submission that we look forward to receiving. Would it be your intention to canvass specific wording in your submission?

Ms Robinson—We would like to do that, but the submissions are actually due tomorrow so it is unlikely that we are going to be in a position to have agreed or, obviously, signed off with our members and done all the internal consultation that is necessary in putting something like that together. We are working on that and it is our intention to make it available as soon as we can.

Senator ABETZ—If you could provide us with a supplementary submission in relation to actual wording, I am sure we would be appreciative. That concludes my questions.

Senator PRATT—I would like to know APPEA's position on the international agreements that are currently being debated. It appears to me that, whilst I understand APPEA's desire for everyone to be included in the scheme from the outset, those involved in these negotiations make it quite clear that we are not likely to get a global agreement unless countries like Australia come to the table along with developed nations first. That is all in order to try and get the kind of agreement that APPEA and the industry would ultimately aspire to. What do you say to that?

Ms Robinson—I really think you are absolutely right on that. It is very difficult to show leadership in the absence of any obvious followers, which is why we put so much emphasis on these being transitional measures. It will be very interesting to see where the US goes. Maybe we can hold out hope that that is where some of the breakthroughs will take place. It is in everyone's best interest, including my own industry, to move as quickly as we can to some sort of global agreement. As you said, it does not look like that might be happening any time soon, although we might start seeing some creative work around bilateral negotiations and so on between various developed countries and developing countries, so I do not want to be too pessimistic about what might occur. The point that I make is that, in the meantime, we need to be very careful to ensure the transitional measures and design that we have in the scheme, one, does not inadvertently increase global emissions and, two, on a more positive note, is able to use Australia's gas resources as a vehicle for demonstrating that international leadership—that is, international leadership by, I guess, recognising what our natural resources can do in assisting our developing countries' neighbours move to less intensive sources of power. That could, and perhaps should, be part of that international leadership script.

CHAIR—We are short of time. Senator Furner has a question.

Senator FURNER—In response to a question from the Senator Cameron, you mentioned Woodside's Pluto project. It has generated, I understand, about 1,000 jobs over recent months. How many projects are under consideration or seeking environmental approval in Australia? Also, what is the CO2 content of the gas in reserves under consideration?

Ms Robinson—I am afraid I cannot go through every project and give the stats, but in general there are about $200 billion worth of projects on the drawing board. I can provide you with a list of those projects if you would like.

Senator FURNER—That would be helpful—thanks.

Ms Robinson—ABARE have a list of the ones that are currently being planned. The CO2 contents of the reservoir vary considerably, and that is part of the problem in the work that is being done in relation to the 60 per cent permit applications using only two projects because it does not give a very broad range of emissions to create a robust average. Some of those projects have very high reservoir contents, some have very low reservoir contents of CO2; you can average them out but it is not very meaningful. Pluto, as you mentioned, going forward is a high CO2 reservoir content project, and I am sure that they are doing the numbers at the moment. But ultimately it is impossible to work out what the impact of those projects will be until we have resolved some of the issues around the design of the 60 per cent allocation vehicle.

Senator EGGLESTON—I would like to take you back to the comment you made about international competitiveness and the fact that the world market for gas resource projects is very competitive, and to Senator Cameron's references to the profits made by companies like Woodside, which, I would have to say, suggested that he was inferring that paying these charges would not unduly affect the bottom line of Woodside. Surely, from Australia's point of view it is important to have new projects being developed. We have Impex being considered for the Browse Basin and there is, of course, the Pluto project going ahead on the Burrup Peninsula. I would like you to comment on where in five years time, if Australia does have high emissions trading scheme costs, Australia would be in terms of the consideration of locating new projects here rather than in countries without high-cost emissions trading schemes like Indonesia, Nigeria, Malaysia and Qatar, and where the boards would decide to put these industries.

Ms Robinson—Again, it is a difficult question to answer. There is a range of destinations obviously for capital and, as I say, it is not just capital that might go into LNG projects, it is capital that could go into all sorts of different projects and all sorts of different places. In the end companies will assess the commerciality of the projects on a case-by-case basis. So I guess that the high-level answer to that question is that there is a range of opportunities around the world for capital to be expended in, but in the end I think that we need to bear in mind that we are on the cusp of very substantial growth in Australia's LNG industry—and I am not embarrassed to say what a magnificent opportunity for Australia it is. Why would we want to constrain that in any way? Why wouldn't we be getting behind the industry given that it is only poised for growth as a consequence of the world's desire for cleaner burning fuels?

In relation to the bottom line, I do think that there is a misunderstanding about how these projects work. What profits there are for a company in a year is irrelevant to whether or not the projects that they are planning will ultimately get up as LNG projects in Australia. Those projects have to stand alone on the basis of the returns to their shareholders, and the returns for LNG projects are not large and they do not generate a profit for many, many years. So it is of no use, and it is certainly not illuminating in any way, to look at a company's profit to say whether or not that suggests that a project is going to go ahead. We are not talking here so much about an industry surviving; we are talking here about an industry growing. So the economics of these projects is about whether or not they can generate a return to investors at an appropriate level

according to what their hurdle rates are. If they are not appropriate, they do not go ahead; if they are appropriate, then they do.

CHAIR—Ms Robinson, thank you for making time to speak to us this morning. We have a question on notice.

Ms Robinson—Sure.

Senator PRATT—You acknowledge in your evidence that a robust global agreement would give the LNG industry competitive advantage when compared to more carbon intensive fuels like coal. I would like to know what the industry is doing internationally as a whole in working together to advance such a global agreement that would see this competitive advantage realised.

CHAIR—Will you be able to provide that as part of your submission or on notice, Ms Robinson?

Ms Robinson—Yes, we will put that in our submission.

CHAIR—Thank you very much.

[10.06 am]

CATCHPOLE, Mr Andrew, General Manager, Communications and External Relations, Hydro Tasmania

WAIN, Mr Colin, Policy Analyst, Strategic Policy, Communications and External Relations, Hydro Tasmania

Evidence was taken via teleconference—

CHAIR—Good morning, Mr Catchpole and Mr Wain. Do you have an opening statement that you wish to make?

Mr Catchpole—Yes, please, for a couple of moments. I have a few opening remarks. Senators, thank you for the opportunity for Hydro Tasmania to present to your committee. Hydro Tasmania is the largest renewable energy generator in Australia and is internationally recognised for its expertise in renewable energy. We continue to make a major contribution to the production and growth of renewable energy and reduction of greenhouse gas emissions including through global wind energy developer Roaring 40s, which is a joint-venture company between Hydro Tasmania and China Light and Power. Hydro Tasmania also has a consulting business providing expertise internationally and a 51 per cent share in Momentum Energy, an accredited green power electricity retailer in Victoria.

A carbon price signal in the economy is important to Hydro Tasmania principally on two counts: firstly, to provide appropriate commercial returns to maintain and enhance our existing renewable energy base; and, secondly, to commercially deploy new renewable energy projects. Australia's ageing hydro power assets have very long-term investment cycles. Around two-thirds of Hydro Tasmania's production comes from assets past their midlife. That is an average age for our asset fleet of about 50 years. By far the vast majority of Australia's renewable energy comes from existing hydro power resources. Consequently, the challenge of reducing emissions from the electricity sector will be exacerbated if Australia loses any existing renewable energy generation particularly if existing renewable plant is replaced by more emissions-intensive energy sources.

Varying rainfall year on year is the greatest operational risk for a hydro power business. The major concern as a result of climate change is the risk of reduced rainfall or an increased variability of inflows in the future. Market signals need to support the refurbishment, upgrade and enhancement of existing assets to ensure a continued contribution from Australia's hydro power resources.

Hydro Tasmania can make an important contribution to Australia's emission reduction goals and has a number of renewable projects waiting to be deployed. This project pipeline includes wind farms, mini hydro and system enhancement opportunities. Hydro Tasmania is also involved in proving and deploying new renewable energy solutions such as energy storage, system integration and diesel replacement solutions. The introduction of a carbon price through the CPRS, along with other complementary measures, will drive investment in and deployment of

low- and zero-emission technologies and can ensure the maintenance and upgrade of existing resources.

Hydro Tasmania welcomes the release of the CPRS exposure draft legislation and broadly supports the design features and timing outlined in the white paper and exposure draft legislation. Delaying action will increase the costs of meeting future emissions reduction targets. In recognition of this, Hydro Tasmania supports a scheme design that ensures the full cost of carbon is reflected in all investment decisions as soon as practically possible, providing investment certainty and a long-term emissions reduction pathway for Australia.

The release of the CPRS draft legislation provides Australian industry with greater clarity over the workings of the scheme and reaffirms the government's commitment to tackling climate change. In particular, Hydro Tasmania welcomes the confirmation that the CPRS will be designed to start on 1 July 2010, that the target will be for an emissions reduction of between five per cent and 15 per cent below 2000 levels by 2020, that the 2050 target is for a 60 per cent cut in emissions below 2000 levels and that liable entities carrying unit shortfalls will need to make good their shortfall. This will preserve the environmental integrity of the scheme.

Hydro Tasmania has not undertaken an extensive legal review in the time available. We are currently finalising our submission, due tomorrow, which highlights three areas where further clarification of the draft legislation may be required. Firstly, in relation to section 15, 'National scheme gateway', it would appear that under certain circumstances the scheme cap may be set outside the national target range. We are not sure what the implications of this might be and further guidance on this issue would be helpful. Secondly, in relation to section 130, 'Unit shortfalls', and section 133, 'Penalty for unit shortfall', the CPRS commentary document from the Department of Climate Change website is helpful to explain sections 130 to 133. Without this explanatory information, the interaction of the penalty, the make-good liability and borrowing would be unclear. Hydro Tasmania does not understand the legal status of the commentary document.

Finally, on recognition of additional voluntary action, leading businesses, including Hydro Tasmania, are undertaking voluntary action to reduce their carbon footprints. While the draft legislation allows future caps to be set with consideration to the level of voluntary action, the exposure draft does not allow immediate recognition of voluntary action under the CPRS. For an example of how this could be achieved, the purchase of additional renewable energy through green power could be converted into tons of CO2 equivalent avoided and CPRS permits retired accordingly. Thank you again for the opportunity to contribute to the inquiry. We understand the committee is working to a tight time frame. Therefore, if there are any issues that cannot be addressed today, Hydro Tasmania would be happy to work quickly to assist the committee in its ongoing inquiry.

CHAIR—Thank you. You were saying that any delay will increase your costs. Are you talking about costs of investment? Are you talking about the ability to go forward with some of the renewable projects you outlined?

Mr Catchpole—I think it is a general view, as put forward by Garnaut and Stern, for example, that the costs to the economy of reducing emissions later would be higher. We have plans in three main areas. There is ongoing enhancement and refurbishment of existing plant to maintain

and improve its contribution to the extent of renewable energy generation. We have also initiated a thing called the 1,000 gigawatt hours project, which is to identify and develop our capability to generate an additional 1,000 gigawatt hours of energy per annum from our existing electricity system through a range of system enhancements and small developments. As an example of the scale, the 20 most favourable prospects will produce around 440 gigawatt hours per annum, at a cost of approximately $200 million.

CHAIR—On those projects, you talk about enhancement—is that physical infrastructure, technological development or a combination of both?

Mr Catchpole—It is a combination of many things. The range includes the very prosaic cleaning of canals and water conveyancing infrastructure, which involves improving the flow of water through those conveyancing structures, through to upgrade of generating plant—fitting more efficient turbines and runners and mini hydro installations, for example, where there are environmental flows to add to the generation capability.

CHAIR—Do you have any estimate of the job creation involved in those projects?

Mr Catchpole—No, I am sorry; I do not. But it is something that we could perhaps come back to the committee with.

CHAIR—Thank you; that would be good.

Senator EGGLESTON—What are the main sources of renewable energy in Australia?

Mr Catchpole—At the moment the dominant generation is from hydropower.

Mr Wain—On that issue, hydropower represents the vast majority, probably well over 60, if not 70, per cent of Australia's renewable energy at present. The second largest contributors would probably be biomass in certain regions of Queensland and Western Australia and wind generation, with a small contribution from solar photovoltaic systems.

Senator EGGLESTON—So you have this range of sources of renewable energy, but what capacity does renewable energy have to contribute to baseload power in Australia at this stage?

Mr Wain—Certainly the existing hydro resources, which are obviously predominantly in the Snowy Mountains and in Tasmania, have enormous capacity to support the development of other forms of renewable energy. Hydropower is a quick-start technology. It has been expressed, I think in Garnaut's final report to the Commonwealth, that the hydropower resources of Australia can provide power when the wind drops off or when the sun is shining not so strongly. Certainly the other renewable technologies are not baseload in that respect, but the combination of hydro and other resources can provide a strong contribution to Australia's electricity needs.

Senator EGGLESTON—But would you agree this is only in limited, well-defined geographical areas and not across the board?

Mr Wain—With regard to, for example, wind power, the whole South Coast of Australia and certainly all of Tasmania has world-renowned wind resources. They are certainly on a par with

those of anywhere else in the world. Australia also has fantastic solar resources and is likely to have very good geothermal resources as well in many states.

Senator EGGLESTON—We do have, obviously, geothermal, and solar across this country in great abundance, but the technology to develop power from these sources is not very well developed yet—would you not agree?

Mr Catchpole—What we certainly have is a range of technologies at a range of maturities. Perhaps the committee would be interested in some information that we could provide that represents, I guess, a snapshot of the current stage of development and relative cost of implementation of this range of technologies. Mature technologies include hydropower and, very extensively, wind. Solar thermal, of course, is a much more readily commercialised technology, particularly in its distributed use—for example, for water heating—than solar photovoltaic. There are a number of distinctions even in those kinds of technologies. Biomass is certainly a commercial technology, particularly when used in co-generation applications, we understand. Perhaps the committee would benefit from some additional information. We would be happy to forward that on.

Senator EGGLESTON—We would indeed. There has been some criticism that the most deployable clean energy sources—wind and solar—really cannot, even in combination, deliver the amount of power needed for baseload. The government talks about using renewable energy as an alternative and has built that into this proposal, but in fact that is unlikely to be met for a very long time. What you agree with that?

Mr Catchpole—It is important in considering the CPRS to recognise that it is a technology-neutral policy measure. The technology that is most economically capable of assisting and meeting the target will be applied. It is not just renewables, even though that is the industry that we participate in. A very large part of the response will be from gas generation, with its much lower emissions profile than, say, incumbent coal generation.

Senator EGGLESTON—We do however have a mandatory renewable energy target, do we not?

Mr Catchpole—Yes, we do, and we have the proposed extension to that in the form of the renewable energy target.

Senator EGGLESTON—What is that target now?

Mr Catchpole—The current MRET is 9,500 gigawatt hours. The proposed extended target is 45,000 gigawatt hours which is intended to be 20 per cent renewable energy by 2020.

Senator EGGLESTON—There has been some criticism that the MRET program and the CPRS work at cross-purposes in that a well designed ETS should deliver the most economically efficient reductions in carbon emissions, whereas the MRET effectively forces dollars into technologies that are currently the most cost-effective but may not be the most efficient in the longer term or the most efficient at producing reductions in global emissions. Would you like to comment on that?

Mr Catchpole—Hydro Tasmania certainly supports the policy ambition for an emissions trading scheme, in the form of the proposed CPRS, to be the ultimate tool to deliver the least cost-abatement outcome. However, in order to achieve early action and bring on the development and commercialisation of a range of technologies, a strong renewable energy target is essential to meet the gap between the carbon price delivered through emissions trading and the price of these technologies as we deploy them in the early stages in Australia. What we would anticipate, and of course what we all hope for, is that MRET will do its job and roll off. That will happen as the carbon price meets the required level to enable commercial deployment of renewable technologies. At that point we will achieve the most efficient economic outcome.

Senator EGGLESTON—There is a concern in the gas industry that the combination of the MRETs and CPRS has the potential to undermine investment in gas production—gas production would be the substitute for coal-powered generation of electricity—and that a decrease in investment in the gas industry would result in an increase in emissions in the medium term. Would you like to comment on that criticism?

Mr Catchpole—The issue with a CPRS-only measure at this point, with no additional support for the renewable energy industry, is a case of putting all the eggs in one basket. We believe that there is a role for a range of complementary technologies in meeting Australia's emissions abatement challenge and that, in fact, the broader the range of technologies and measures that can be brought to bear on the problem at this point will ultimately deliver the most efficient outcome.

Senator ABETZ—I welcome two Tasmanians. Why we are asking you a limited range of questions is that there are eight senators sitting around the table and we all want a bite of the cherry. It has been put to me that the regulations are going to play a very important role in this scheme. Does Hydro-Tasmania have any views on the benefit of industries such as your own being able to make a submission in relation to those proposed regulations?

Mr Catchpole—Absolutely, yes, is the answer there. If we look at the history of the development of legislation and the progress of various inquiries in this country, it has been extremely beneficial to have a very collaborative relationship between industry and policymakers to date. We would see that the maximum effectiveness of legislation and regulation could be achieved by continuing that relationship.

Senator ABETZ—Can you advise us as to whether, under the CPRS, one megawatt of hydropower will be regarded differently from one megawatt of coal power?

Mr Wain—Once the carbon price is taken into account, you should see a sort of levelling of the playing field, if you like, between different technologies. As it currently exists, the cost bases underpinning hydropower, gas and coal are very different. What the CPRS will do is take into account the environmental externality of the carbon emissions produced and, depending on that carbon price, you will see these different technologies switch between which is the most economic of the technologies. So, once a carbon price has been paid, there is no difference between one megawatt hour of hydropower and one megawatt hour of coal power, as far as the CPRS goes. There may be a difference to consumers but not as far as how the scheme will function.

Senator ABETZ—What carbon price is needed to make some of your projects in Tasmania and, indeed, potentially elsewhere in Australia viable?

Mr Catchpole—It is a very broad range of numbers for a range of different technologies and, indeed, projects within technologies. Perhaps some of the supplementary information we have already offered to provide will help illustrate that; but, if I could add a little colour, some of the more prosaic enhancements to our existing system come at a very small premium. Something in the order of $5 to $10 per megawatt hour will make some of those options commercial for us. If we look at—

Senator ABETZ—You talk about the price per megawatt hour. Are you able to translate that into dollars per tonne of CO2 emissions?

Mr Catchpole—I think we would all like to have an answer to the question: at what rate will the price of carbon flow through into the electricity market? It might be $5, it might be $7 or it might be $10 per tonne of CO2. The other extreme for us is the cost of a wind farm development. A wind farm development might have a total commercialisation cost of $105 per megawatt hour, of which perhaps $45 is met by the black energy price at the moment—the existing return on the energy sold—so there is a gap of $60 per megawatt hour. With the two pieces of legislation working together going forward, that gap will be met through a combination of the renewable energy target and the carbon price. The market is telling us at the moment that if that gap is $60 and the renewable energy certificate component is about $50 then about $10 per megawatt hour—or about $14 per tonne of CO2—will need to be met by the carbon price.

Senator ABETZ—If I read this correctly, the Musselroe Wind Farm would be reliant on the renewable energy target plus the CPRS.

Mr Catchpole—Yes, you have read it correctly. The Musselroe Wind Farm is an excellent choice to talk about from our point of view. The development of Musselroe, and I would think most wind farms remaining to be commercialised in Australia at the moment, is currently dependent on the renewable energy target and of course the CPRS.

Senator ABETZ—So it is the two in combination. I understand that you are involved in my colleague Senator Xenophon's state of South Australia, but are you looking at any other projects around Australia?

Mr Catchpole—The two that we have currently built are the various stages of Woolnorth in Tasmania and Cathedral Rocks near Port Lincoln in South Australia. In addition our next leading projects are Musselroe in Tasmania and Waterloo in South Australia. After that there are a range of prospects at various stages of development where we have certainly established the rights for development but perhaps have not been through the full environmental approvals process in the way that we have with Musselroe Bay and Waterloo to date.

Senator ABETZ—So in general terms the commentary you have provided in relation to the viability of Musselroe Bay applies to the other prospective projects that you have on the drawing board?

Mr Catchpole—In general terms, it is the same position.

Senator FURNER—In relation to your projects—I am particularly focusing on your joint ventures with wind power company Roaring 40s—can you tell the committee of your experience in global carbon markets?

Mr Catchpole—Certainly. The Roaring 40s partnership was formed after our initial development in Tasmania and South Australia to preserve the project development capability until the time when we would again be able to build wind farms in Australia. The best places for us to do that ended up being China and, more recently, India. In China we have currently built seven wind farms. We have several more under construction as a partnership. The way that works is that, under the Chinese legislation, the proponent—in this case, Roaring 40s—must have a local joint venture partner in the form of one of the local energy companies. These are generally provincial energy companies. We have those in a number of provinces. The developer, Roaring 40s, then owns half of the ultimate project. The mechanism by which that comes about is that the Chinese have a system of tariffs to support the development of a range of technologies, including renewable energy, and those tariffs are in addition to the base energy price. Further, the project is underpinned by the ability under the clean development mechanism of the Kyoto protocol to generate CERs, which have a value in the European market in meeting companies' obligations under that scheme. It is the combination of those value sources, both locally from within China and also through the clean development mechanism, that underpins the viability of those wind farm developments.

Senator FURNER—Focusing on wind power, I understand there may be some impediments in securing supplies from major manufacturers and rolling out more wind power as a result of that.

Mr Catchpole—There are a number of project challenges facing any developer in Australia at the moment, whether it be of wind power or other technologies. One of those that have improved of late is the exchange rate. In procuring technology, particularly that which is manufactured in Europe, recent trends in the exchange rate have lowered that hurdle. Certainly anybody who is looking at a major investment in Australia at the moment faces the common problem of the impact of the financial crisis and the global economic downturn on the availability of capital. In the very short term, all developers will face that challenge. We hope that it is only in the short term, but the future is unknown in that regard. They would be the significant additional challenges.

There was a period of time over the last couple of years where demand for wind turbine generators was quite high relative to global supply. This certainly led to some significant lead times in project construction due to the need to acquire the production capability of a supplier. I think the general global economic downturn will also soften that position. That is also being addressed by the arrival over time of new suppliers in the market, particularly in India and China, where increasingly their domestic requirements are being met by local manufacturers.

Senator FURNER—What is the current wait time for wind turbines?

Mr Catchpole—I do not know that off the top of my head. We will find out for you and get back to you on that one.

Senator FURNER—Thank you.

Senator PRATT—I am interested to know how the economic downturn might have affected any particular developments that you are looking at pursuing. You have said quite clearly that the industry would like to see the CPRS in place. Some are arguing that the CPRS might be an additional burden, but clearly you are arguing that the CPRS provides a framework for investment certainty. I would like your comment on those issues from your company's point of view.

Mr Catchpole—I preface my remarks with the fact that I am not an economist and I am speaking for one company. I will confine my remarks to our actual experience. Our actual experience to date is that we have not had any particular impact from the global economic downturn on our business apart perhaps from the movement in the Australian dollar against other currencies that I have already spoken about. We are all, I suppose, anticipating particular consequences such as the availability of capital as the projects go forward. We have not directly experienced those conditions as yet, and certainly with the financing models that are applied to project developments, again, we are anticipating that for projects built under a project financing model the banks would be more conservative in the debt equity ratios that they apply to deals. So we may see some higher equity requirements from project developers. I would be guessing if I said what those would be other than that we have had some indication that we are on the path, for example, where a debt equity ratio of 70 per cent has been fairly standard for project finance of a wind farm, perhaps 60 per cent would be more the number going forward.

CHAIR—Thank you, Mr Catchpole and Mr Wain, for making time available for us this morning to answer questions. It is much appreciated.

Mr Catchpole—Thank you.

Proceedings suspended from 10.42 am to 11.03 am

RITOSSA, Ms Demitra Kerry, Corporate Lawyer, Santos Limited

ROWLEY, Mr Gregg, Group Executive, Clean Energy, Santos Limited

SMITH, Ms Susan Jane, Principal Climate Change Adviser, Santos Limited

CHAIR—Welcome. Mr Rowley, do you have an opening statement you wish to make?

Mr Rowley—Yes, I do. But first I would like to mention that we will be submitting a written submission to the committee tomorrow, as per the due date. We were grateful for the extension. As many of you will know, Santos is the major producer of natural gas here in Australia for domestic use. We also are a producer of liquid natural gas, through one of our joint ventures up in Darwin. We are looking to further develop the LNG industry here in Australia, particularly up in Queensland, with other investments in this area.

We strongly believe in the issues around climate change and, in particular, around the need for the abatement of greenhouse gases—CO2 and equivalents—but also the need for some form of carbon impost to be put on the economy. Without that impost, we do not see an economic and practical way of limiting the carbon emissions that are occurring. We are also very much believers in a market based solution, a cap in trade system, as per the CPRS that the government has been architecting. We see this as essentially the lowest cost form of abatement practically possible in the current economic environment. We note that the European system is based on the same type of approach and it appears that the Obama administration in the US is also going down a similar route.

One issue we have with the CPRS legislation, one of the key requirements we see of the scheme, is the necessity to allow the cost of carbon to be reflected through the economy and appear in the price of goods and services to the consumer and to businesses. Without that, you will not get a change in behaviour and the choice between low-emission technologies and high-emission technologies. We believe natural gas has a big future to play in a low-emission technology area. We believe that, to some extent, natural gas has been overlooked in a lot of the debate around climate change. We tend to hear about both extremes around coal and around renewables but, once there is a reasonable carbon impost in the economy, we believe that natural gas, particularly for stationary energy generation, can produce a lot of the abatement opportunities required over the next 20 or 30 years to reduce greenhouse gas emissions and therefore climate change. As an example, if you replace one of the coal-fired power stations with gas-fired power, we can produce the same savings, or 80 per cent of the savings, that you would get by retrofitting CCS to those coal-fired power stations. So we believe in low emissions and we believe in a cost for carbon. We also believe that that needs to be reflected through the economy so that people can make a choice towards low-emission technologies—there is a strong pricing signal for that.

So, although we are very supportive of the CPRS and the design of the scheme, our particular issue with the draft legislation at the moment is around the flowthrough of carbon and the cost of carbon through the economy. So, for an industry like us in the gas industry or other fossil fuel producers, there are two types of carbon emissions and therefore costs which have to flow

through the economy. The first one is the cost of the carbon as it is emitted when the fuel itself is burnt, and the CPRS and the legislation has a mechanism, known as the OTN—the Obligation Transfer Number—to allow that to pass through the industry. We are very much in favour of that and believe that is a powerful way to ensure that the flow of the carbon cost of those goods and services, particularly electricity, is reflected in the pricing in the economy.

There is another form of emissions that occur in an industry like ours, which is when we actually produce the gas out of the ground. When gas comes out of the ground, typically it is not just pure methane that you burn on your stove, for example. It actually contains CO_2, which has to be separated and vented, and we will suffer a liability—correctly—for the emissions from those venting operations in our gas fields. Unfortunately, though, as with a lot of capital-intensive industries, we engage in long-term supply contracts with our customers, the retailers and large industrial users of gas in Australia. Those long-term contracts often go back years in terms of when they were signed. The idea of an ETS, or carbon trading system, was not agreed on at that stage, so, unfortunately, in not all but a number of those long-term contracts, the wording is not right to allow the passing of those carbon costs through the system. So we have suggested to the climate change minister and the department the idea of a statutory override to allow that to occur in much the same way as there was a transitional requirement in the case of GST for these long-term contracts to allow the passage of carbon through them.

Fortunately, in our view, the white paper, issued last December, came to a policy position where the government decided to do nothing about this particular issue. The arguments for their reasoning on that were basically threefold. Firstly, they believed that there was a constitutional issue, a legal issue, with introducing statutory override. We have done extensive inquiries on this issue, and we firmly believe there is not a constitutional issue in introducing a statutory override to allow carbon to pass through. Not only is there not an issue with it, but the particular clause in the Constitution, if it were triggered, would not involve the government being liable to compensation, as it is claimed in the white paper—in fact, it would allow the provision to pass through.

So we do not agree with the white paper's view on there being this legal or constitutional involved. We will supply more details on that in our written submission to you tomorrow. If you want to, we can go into the details, but I am keeping it somewhat broad at the moment. So we do not believe that is an issue.

We also do not agree with the second reason that the white paper suggests as to why this carbon cost pass-through would be difficult to employ for these particular emissions. They believe that it would be ambiguous as to how much the costs are that we pass through for any particular contract to any particular retailer, for example. As you are probably well aware, with the introduction of the national greenhouse emissions reporting standards we now will have very strict standards around the measurement of these emissions. First and foremost, those emissions and reporting will be audited by independent third parties. So we do not see any issue in being able to allocate the costs and being able to, if you like, stand behind what needs to be passed through, just like we do with the lot of other costs that we have to pass through in contracts with joint ventures et cetera.

The third issue that the white paper raised that we disagree with is what we would regard as a somewhat spurious issue that there is a belief that, if we are allowed to pass the costs of carbon

through, there is no incentive for us to reduce our emissions. On the surface, it sounds like a reasonable argument. But just digging underneath it, the reality is that it is only some contracts where we have this issue and it is only a transitional issue. In other words, it is only for these contracts that were signed pre-June 2007, when bipartisan support did not exist for an ETS. So there is a natural sunset on this, and it is only some of the contacts. We still have a lot of other short-term contracts where carbon cost will be reflected and it is very much in our incentive to actually reduce emissions for that. Lastly, the whole idea of a CPRS, the whole idea of changing behaviour towards lower emissions technology, is totally reliant on carbon costs being passed through so that consumers and customers see the cost of carbon in the price of their services and goods.

In summary, we do not believe that the white paper position is correct on this. We believe it is a fairly simple insertion in the legislation to change this and allow this to occur. It is only for contracts which were signed prior to June 2007, we believe. It is only for contracts where it is ambiguous as to what should happen with carbon pass-through. Many are not, so it is only those cases. Thirdly, it is only in those cases of contracts for the supply of goods post when the scheme was introduced, because that is when it is affected. That is our key issue and our key position and we have put a simple solution in our written submission to this. It is very much along the lines of what was done in the case of GST. It is a large issue. This is tens or hundreds of millions of dollars in terms of cost not just to us, not just to the gas industry but for others such as coal and other resource-based industries, and fossil fuels in particular.

There is one other issue I would like to discuss with the Senate committee, and that is in relation to the so-called emission-intensive trade-exposed industries, of which the LNG industry would claim it is one. I know there has been a lot of heat and light around this in many hearings and the like. Without talking about the specific issue, I guess our point about the legislation as it is drafted at the moment is that all of the meat around these ET issues is not in the legislation; it is basically being pushed into the regulation, as we understand it. Whilst we agree with the architecture of the scheme, there are some very important details that had to come into that regulation, not just around ET but around the actual cap limits and the actual extent or exposure or breadth of the scheme as well. The regulation is very important and it is going to be very important that we have due process in the formulation of that regulation.

This is not to say that we are not having due process, but there is a lot of hidden light in the air around so-called deadlines for when schemes are introduced et cetera. We believe the issue is not around deadlines. It is around the scheme, and the elements of the regulation are very, very important to get right, because that is really the meat of a lot of what will happen out there in terms of the impacts—and not just in our industry but in others. We would suggest a process like what was gone through with the NGERS, the National Greenhouse and Energy Reporting System, for the development of the regulation there, where due time, consideration and consultation is given to the development of those regulations.

That, in summary, is what we would like to put to the committee. We believe natural gas has a big future in moving to low emission technologies in a carbon impost world, and, as to the CPRS in general, we agree with the architecture of it. There are just a couple of points that we believe we need to clarify and ensure are designed correctly.

CHAIR—Thank you, Mr Rowley. In relation to the long-term contracts, can you advise the total value and number of the contracts, or at least a proportion of contracts that do fall into this pre-2007 area?

Mr Rowley—I do not have the exact number with me, but it is a significant number in terms of value, so it is not so much the number of contracts but the value of the gas that is supplied through those contracts that is significant. For example, from our Cooper Basin operations, at the moment it is probably around a third, but I will need to get back to you on the exact numbers.

Senator FURNER—In that regard, can you tell us when those contracts were negotiated and agreed upon?

Mr Rowley—Many were around 2000 and 2002. They were the time frames when they were agreed upon. They are quite long term. Most expire or come to their natural end, if you like, around 2015 or 2016. What we are proposing in terms of this statutory override would naturally fall away once those contracts expire.

Senator ABETZ—On the proposed statutory override, I assume those contracts are for international supply?

Mr Rowley—No, they are for the domestic supply of gas. They are with retailers or end user customers here in Australia—eastern Australia, principally.

Senator ABETZ—Without trying to put my lawyer's wig back on, if it is a domestic producer supplying a domestic market, I would have thought that with a statutory override you would not have the issue of where the contract was entered into and which jurisdiction and what law should apply; it would all be within the bounds of Australian law and, if the government were to legislate as you have indicated, that would be possible. Have you obtained a QC's opinion in relation to this matter of statutory override?

Mr Rowley—We have made a number of inquiries. At the moment we are still looking into that.

Senator ABETZ—Could I put this proposal to you: if you were to obtain an opinion that you were willing to share with us, I for one at least on this committee would be very appreciative of being armed with that legal opinion for the ensuing discussions in the Senate about the issue of statutory override. Whilst I have got the call, can I indicate that your commentary about the need for further investigation of the regulations is a matter that I have been putting to other witnesses. You have obviated the need for me to ask any questions in relation to that.

CHAIR—Yes, the committee would be happy to accept any supplementary submissions even after you have put in your report, if that opinion becomes available.

Senator EGGLESTON—I would like to ask you a general question. You support the CPRS, which is a cap on trade system, but some people criticise it on the ground that you pay for emissions and can purchase credits from, say, Indonesia, where there might be a forest and other options like that, and that in fact overall it does really very little to reduce carbon emissions in the world because emissions here remain much the same and nothing is done about the

Indonesian emissions in that example I gave you. What do you say to that kind of criticism about the cap on trade system?

Mr Rowley—There is a lot of criticism in the market around CDMs and CERs in general. I guess the whole point is that it is a global issue and so a global solution is going to be required. We are supportive of the idea of using CDMs as a bridge to that. Ultimately, the systems should all be linked around the world to enable that to happen. We believe in a market based system. We believe the market can work in this environment. In short, we are supportive of the CDMs and CER mechanisms and the ability to surrender those into Australian emission units. We believe it provides more liquidity into the market and is a good balance on price fluctuations in the emissions.

Senator EGGLESTON—Nobody disagrees that a global system is a great ideal, but many people think it will be a long time before it is implemented because the kind of countries we are dealing with, like Indonesia, India and Malaysia, are not going to have emissions trading schemes in the foreseeable future. So, whilst it is an ideal, it is not necessarily a very practical basis upon which to work. Some people have suggested that, in fact, a carbon tax would be a better approach and say that a carbon tax is preferable to a carbon trading system because it is more efficient, effective, simple, flexible, transparent and, more importantly, has the added benefit of providing revenue which could be used to cut other taxes, including domestic taxes. A revenue neutral carbon tax may have little or no economic cost to us in Australia. Economic cost is a big issue because it may translate into loss of jobs and have an adverse effect on our economy. What do you say to that?

Mr Rowley—The point I would like to make is that, whether the carbon impost is put in via a cap and trade scheme or a carbon tax, the reality is that around things like passing that cost through to prices in goods and the issues around trading with the rest of the world are the same. They are the same issues. You either have to give some relief on tax or you just have to put in mechanisms to allow that tax to through flow through the system. In our view, it actually does not change some of the key issues that we are facing with the introduction of the CPRS. The other argument that people use is that a carbon tax is more certain in terms of price versus a cap and trade scheme, but the reality is that putting capital in an industry like we are in—like putting in a power station like we are doing down in Victoria; gas fired power generation—is a 20- to 30-year investment. A carbon tax is not going to be certain over 20 to 30 years. It might be certain for five years, but that is not going to help us in terms of a 20- or 30-year payback on our investment. So we do not see what advantage there would be in having a carbon tax versus a cap and trade scheme. That is just our view.

Senator EGGLESTON—Yesterday the Griffin Company in Western Australia expressed great concern about the modelling that had been done concerning coal powered electricity stations versus gas. They thought that gas was disadvantaged under the model. Do you have a view on that?

Mr Rowley—Which modelling was that?

Senator EGGLESTON—In Western Australia the electricity system is largely based on gas. Griffin was of the view that the government's model was based on coal, which has a higher output of carbon than gas, and that gas was thereby disadvantaged. Do you share their concerns?

Mr Rowley—We share some of the concerns around the Treasury modelling of the amount of coal fired power generation that will exist into the future. I think a lot of the uncertainty in that is around the assumptions in the modelling, particularly around the cost of carbon capture and storage, as we see it. We all have different views on what it costs to do that. I guess that is where the key variable occurs: how much you think gas versus coal versus renewables will come into the power generation mix.

We do have a reasonable amount of experience in carbon capture and storage. We are the largest carbon capturer in Australia at the moment, so far as I am aware. We captured about a million tonnes of CO_2 at Moomba, when we separated that CO_2 from the stream of sales gas. We have our own views on the costs of capturing carbon and also for storing gas on the ground. It is very dependent on geology and where the operations occur. We would share some of Griffin's concerns around that.

Senator JOYCE—Carbon sequestration, to the best of my knowledge, has not occurred anywhere yet, has it?

Mr Rowley—Certainly not on a commercial basis, but it is certainly occurring, particularly in the North Sea. The Norwegians are doing that—I cannot pronounce the field—

Ms Smith—Sleipner.

Mr Rowley—that is the one; thank you very much—but that is due to large incentives, or should I say disincentives, from the government for venting CO_2. Again, it is from the gas that has come out of the North Sea that they are basically reinjecting into aquifers.

Senator JOYCE—Is it commercially viable? Anything is possible, but is this commercially viable?

Mr Rowley—Our view is that you would need a carbon cost north of $100 a tonne to make it viable.

Senator JOYCE—What happens to the Australian economy?

Mr Rowley—I guess if you look at the Treasury modelling, I would say it is a one or two per cent impact on GDP at that stage. It is not necessarily just how much, but when that occurs—and they are agreeing back in the 2020s.

Senator CAMERON—The issue of government intervention in commercial contracts is quite a serious proposition. I am not sure that governments have intervened as a matter of course in contractual obligations. Why should we intervene now?

Mr Rowley—I put it to you that the whole introduction of a scheme, such as the CPRS, is actually an intervention into the obligations that parties have in a contract. You are right; it is not to be done lightly, absolutely. It is to be done with due consideration. This is not a position that we come to lightly. But if we are looking at a scheme—to be honest, it does not matter whether it is a carbon tax or a cap and trade system—it will only work if the cost of carbon flows through and is reflected in the price to the end user. It is a fairly simple solution we are offering. It is with

precedent. We believe it is, therefore, lower risk and we believe it is fair. It is only in the case when the meaning is ambiguous as to what should happen with carbon costs passed through the operators.

Senator JOYCE—To not interfere in the market, Mr Rowley, as proposed by Senator Cameron, do you believe that would be espousing—

Senator CAMERON—That is not—

Senator JOYCE—a neoliberal view of economics? Or do you think that would be espousing an interventionist view on economics?

CHAIR—Senator Joyce, that is getting into an area beyond our inquiry.

Senator CAMERON—Barnaby, your behaviour has been pretty good so far; let us keep it that way. Apart from that proposition, you are generally supportive of the broad architecture of the scheme and the government's position. That seems to be at odds with some of the other minerals producers and gas producers that we have had before us. It seems to me they are taking a very short-term approach on this. Why is Santos taking a different view?

Mr Rowley—I cannot comment on others and where they are at. Our view is firmly that we believe there is enormous opportunity for gas, as a low emission technology, to replace a lot of the high emission technologies out there—gas-fired power generation in particular. But that will not happen unless we have some form of carbon impost instituted. We just cannot compete, particularly with black coal fire power generation, for base load power. Enlightened self interest is one way of saying it. We believe our product is right for the times and is right for the environment of a low in carbon economy. That is the basic reason why we have the view that we have, aside from our own personal views on greenhouse gases and climate change in general.

Senator CAMERON—What is the employment creation which you would estimate from expansion of your business as a result of this scheme?

Mr Rowley—For example, what we are seeing up in Queensland at the moment with the LNG projects: we have put on 300 people in the past nine months in the projects up there. We also think there is a very good opportunity for coal seam gas in New South Wales, not so much for LNG, but for gas-fired power generation for the domestic market as well. So there are thousands of direct jobs, but then obviously there is an indirect flow-on in developing this resource, not only to meet our domestic carbon abatement needs in lowering emissions and for power generation, but also to help overseas in LNG production as well.

Senator CAMERON—Do you believe that this scheme has to have an international linkage, that we must engage with the rest of the world in carbon pollution reduction?

Mr Rowley—It is somewhat speculative, but from Santos's point of view it is a global problem; it has to be in some way linked with the international markets. As many have said, if we solve our emission issues here in Australia, it does not mean anything in terms of climate change unless the whole world comes on board. But Santos believes in this country taking a lead in this matter, and the linkage internationally will be very important because that is how you get

the lowest cost abatement. At the end of the day, the goal is reducing emissions—not enhancing gas, not promoting renewables, it is reducing emissions. And if we can do it at the lowest cost, we can afford more reductions in those emissions. Whether that is here in Melbourne or whether it is in Shanghai, ultimately it does not actually matter. But at the moment, we can only affect what is here in Australia. We have to start somewhere.

Senator XENOPHON—You said that Europe has had a scheme for some time now and that there is a need for certainty. From your industry's point of view, you need to have some certainty but a carbon tax may not provide that certainty. Does that accurately represent your position?

Mr Rowley—Not quite, I guess is the short answer. What we are saying is that business love certainty, that is a sure, but it is certainty around the process and the environment basically of what we are operating in. We are not saying that we have to know the exact price of carbon now and into the next 10 years. We are used to dealing with uncertainty. When we put in a gas-fired power generation plant, we do not know what the future cost of gas is going to be, we do not know what the future cost of capital is going to be either over the 10 to 20 years of its life. We certainly do not know what the electricity price is going to be. This is just one more uncertainty that we can manage as long as we know the rules around them.

Senator XENOPHON—You made reference to Europe. The price of permits in Europe has collapsed in recent times. It does not provide any price signal for cleaner energy. How would we avoid that sort of situation occurring here in Australia?

Mr Rowley—Maybe this is not answering you directly, but hopefully it is. The price of oil has collapsed incredibly in the past six months. We handle that as an industry. We handle variations in the price of commodities and items all of the time. So when we are making our investment decisions, we are making them over 20- to 30-year horizons, whether it be development of an offshore gas field or development of a gas-fired power generation plant. We have the tools and skills and technology to take into account those uncertainties, so it is not an unusual thing.

Senator XENOPHON—The European scheme does not give any incentives now to go green because of the collapse in the permit prices. With the current design of this scheme, can you see that it is possible to have that sort of problem occurring here?

Mr Rowley—Look, obviously there is always going to be ups and downs in a market-based mechanism, but I would take issue with you saying there is no incentive for greens in Europe. When I last looked, a day or two ago, the price of carbon was around A$21 in Europe. It has been lower previously, absolutely. Around $21 is the entry price people are predicting for the 2010 launch of the scheme here in Australia. That makes us viable in terms of gas-fired power generation versus coal-fired power generation for base load. It is still a signal for low emission technologies. It may vary from time to time, be stronger and weaker, but in the long term, which is what people do these investment decisions over, it is still a strong signal.

Senator FURNER—Can I just take you back to the preliminary answer you gave me about when you negotiated those preliminary contracts and agreed upon them in 2002. At that stage, the previous government had issued discussion papers on an ETS. Didn't you consider at that point in time that it was appropriate to consider a carbon pass-through appropriate clause to go in those contracts?

Mr Rowley—In many contracts, that is exactly what happened, but in some of them the wording is not quite—it is really a legal technical issue in many of them that things were mentioned, such as carbon tax, fees, charges or levies. There is still a legal exposure that that does not cover in those contracts from a legal point of view, we are told.

Senator JOYCE—I have two questions. In the first question, Mr Rowley, I want to take you back to your comment about international carbon trading and the fact that that mechanism is not truly available here if you want to trade with China or something like that. From your knowledge of this system, will the Australian scheme actually have any effect in any sustainable or evident way on global climate?

Mr Rowley—If you are restricting it just to the Australian scheme, no.

Senator JOYCE—I am restricting it just to the Australian scheme.

Mr Rowley—No, it will not.

Senator JOYCE—My second question is this: if there were an alternate scheme and it was proposed to you that you could just get a 150 per cent tax deduction for capital investment upfront that reduces carbon emissions through some defined way, would that be of interest to you in such a way that you would—

Senator CAMERON—New policy on the run!

Senator JOYCE—Madam Chair, you have to let me now interfere with Senator Cameron's line of questioning; okay? Is that fair enough?

CHAIR—Maybe! Go ahead, Senator Joyce.

Senator CAMERON—That makes us even!

Senator JOYCE—Would that be something where you would inevitably invest in avenues that would reduce carbon without having any real flow-on effects to the consumer?

Mr Rowley—We are always interested in proposals around this, so we would be—

Senator JOYCE—There is a 150 per cent investment allowance, or there has been in the past. Why couldn't we just encapsulate a policy that we already have down there to incorporate carbon emissions?

Mr Rowley—It is hard to comment specifically on this without a detailed proposal, but I understand where you are coming from in trying to alter at the input side, so to speak, in terms of the investment side, and steer it towards low-emission technologies, which I think is what you are saying. I guess our only fear on that is just how efficient that will be. We do not have a firm view, so I am just telling you what I think right now. But it is just how efficient that will be and how open it might be to vested interests one way or the other in terms of pushing what is included and what is not included, in terms of who gets the investment allowance and the like.

Senator JOYCE—What we have here is a permit scheme, isn't it—a permit that can be traded on a market? Would that be a fair call? Santos is a publicly listed company. What is roughly the commission that you know is on share transactions? Is it about 1½ per cent?

Mr Rowley—I do not know, sorry.

Senator JOYCE—It is about 1½ per cent. If we had the capacity to churn these permits and I were in a position to collect a commission on it, I would have a vested interest in getting this scheme to go forward, not because it is going to improve the climate of the globe but because it is going to absolutely increase my propensity to earn an income from trading.

Mr Rowley—Yes.

Senator PRATT—I am interested in your position on the time line for the introduction of the scheme. The government has set out a very clear time line for its introduction. Is that something you are supportive of?

Mr Rowley—The issue is the time line, but the issue is not so much when the scheme is introduced. We believe it is a question of design as opposed to deadline. We need to get the design right. I come back to the point I made about the ET industries in getting that regulation right. There needs to be a correct process, a thorough process, to develop all that, because that is where all of the meat, so to speak, of the CPRS will be put. We have no problem with the 2010 deadline as long as it allows time for the regulations to be developed properly.

Senator PRATT—Those issues may or may not fall your way; I cannot speculate on that—we are here to listen to you. In regard to the time line, what are the implications for investment decisions, particularly in this kind of economic climate, of too much delay in getting a scheme up and running?

Mr Rowley—I think there are three things. One is the delay in deciding what the scheme is, and another is the delay in the details around the scheme. Another is the delay of the implementation of the scheme. I think it is very important to have the first to make sure that there is some certainty about what the ground rules are going to be. Secondly, as I said, really the deadline as to when it is introduced should just depend on getting those design rules right. It is important to have certainty for business decisions, investment decisions, around what the ground rules are. That is the key point we would like to make about that.

Senator PRATT—Is it in our interest to get those ground rules right as quickly as possible? We are in the middle of a global economic downturn. We are all hoping that that is going to pick up sooner rather than later, but, if there is uncertainty that remains in what this scheme is going to look like, surely that means that companies will be delaying investment decisions and in turn that will slow down our economic upturn.

Mr Rowley—The uncertainty will impede the investment decisions. I think there is no doubt about that. One point we would make is that we believe a well-designed market based mechanism should be able to handle economic downturns. If it does not, we have a real problem in this. You cannot just pull the scheme once we have a downturn in the future. That is one of the attractions we see of a market based mechanism: when there is a downturn and demand falls

down, emissions tend to reduce and the price will come down as well, so there are some checks and balances in a market based mechanism which we find attractive. As I say, it is important to get the design right—not necessarily to be as focused on the deadline but to get the design buttoned down basically as quickly as possible—and then people can go on and make decisions about investments.

Senator JOYCE—Mr Rowley, this whole scheme has been proposed by a government that is giving a warrant that the efficacy behind it is to reduce carbon emissions, which we hope in the long term, if it were incorporated in some magnificent form, would reduce the temperature of the globe. With information yet to come to light that we do not know, if there were a minuscule chance that they were wrong, is there anything in the scheme that you have observed such that they would refund your money after you have bought these permits?

Mr Rowley—Not that I am aware of.

Senator JOYCE—Do you think it is peculiar that anybody would sell a product such that, if it did not work, they would not send you back your money?

Mr Rowley—That is an interesting question. I am not sure. I am not sure that you could count this as a product, but is an interesting point of view.

Senator JOYCE—How would you go if you sold gas to someone and it did not actually light up? Do you reckon they would ask for their money back?

Mr Rowley—They certainly would—and a make-good provision as well.

CHAIR—I believe Senator Xenophon has a question on notice.

Senator XENOPHON—There had been discussion about the Moomba site in South Australia being a likely location for a major geosequestration facility, but earlier there this month there were reports that you had suspended the project. Can you give the reasons for that?

Mr Rowley—It is not actually suspended as such; we are reviewing the project at the moment.

Senator XENOPHON—Can I follow that up, Chair?

CHAIR—Go ahead if you want to follow that up.

Senator XENOPHON—Do you have time?

Mr Rowley—That project is under review at the moment. As I think I alluded to—for those who may not be aware of it—we are taking this million tonnes of CO2 that is emitted from Moomba and the idea is to sequester it underground. We are finding that the costs of doing that are very high. That is why it is in review at the moment.

Senator XENOPHON—Higher than anticipated previously?

Mr Rowley—Higher than what we anticipated. So it is in review at the moment. We will land on a point very soon on that, but the costs are high for sequestration in this particular geology under these particular circumstances at the moment.

Senator XENOPHON—So it may not go ahead.

Mr Rowley—Correct.

CHAIR—Thank you to everyone from Santos for coming in today.

[11.46 am]

CONCANNON, Mr Anthony, Chairman, Energy Supply Association of Australia

SAVAGE, Ms Clare, Chief Executive Officer, Energy Supply Association of Australia

CHAIR—Welcome. Mr Concannon, do you have an opening statement you wish to make?

Mr Concannon—I will ask Ms Savage to give that opening brief, if I may.

Ms Savage—We welcome the opportunity to appear before this committee this morning on the federal government's proposed Carbon Pollution Reduction Scheme. The Energy Supply Association of Australia is the peak industry body for the electricity and downstream natural gas industries. We represent the chief executives of 45 electricity and gas businesses, including generation, which is all forms of generation—coal, gas and renewables—transmission, distribution and retail and gas networks and gas retail. Our businesses own and operate more than $120 billion worth of assets. We employ 49,000 people and contribute about $14½ billion directly to the nation's gross domestic product.

The investment challenge for the energy sector over the next decade is significant, even in the absence of a Carbon Pollution Reduction Scheme and an expanded renewable energy target. Investor confidence in the energy supply sector is critical to ensure the continued secure, safe and reliable supply of competitively priced electricity and natural gas. In recognition of the threat that uncertain greenhouse policy can play with regard to energy sector investment, ESAA was the first industry association to proactively advocate for the introduction of an emissions trading scheme and outlined, in 2006, 11 critical design features to provide a least-cost market based solution.

Although the electricity sector represents about 35 per cent of Australia's total emissions, ESAA members will actually account for about 50 per cent of liable entities under the proposed CPRS. With both a CPRS and an expanded renewable energy target, the investment challenge to the energy sector has increased threefold, with over $33 billion of generation investment required in addition to significant new investment in network assets. This investment is over and above the $50 billion which will need to be refinanced in the energy sector in the next five years alone. In addition, electricity contract markets have slowed beyond July 2010 because participants are still unsure about the costs of greenhouse gas emissions and the costs of their production going forward.

We see, as an association, that there are four critical issues that must be resolved with the CPRS to deliver the investor confidence that is required in the energy sector. The first of those issues is that the number of free permits issued to coal-fired generators needs to be increased significantly to avoid large-scale impairment of assets and a shock to the electricity sector, and to deliver investor confidence in a lower emission energy supply system going forward. We consider that a minimum term of 10 years is required for firm scheme caps, followed by a 10-year rolling gateway to ensure there is sufficient information for investors to commit to large capital-intensive assets and deliver that transition to a lower emission energy supply system. We

also think there needs to be careful design of the permit auction arrangements to ensure that there is no increase in working capital requirements. We consider that retail price regulation must be removed so the full cost of emission abatement can be internalised in the electricity price for all energy users.

I just wanted to talk firstly about adequate structural adjustment assistance to coal-fired generators. Reducing Australia's emissions by five per cent at 2020 is actually a 20 per cent reduction compared to business as usual. Achieving these reductions while also achieving a 20 per cent renewable energy target will require fundamental change to the entire energy supply system in what is, in infrastructure terms, a very short time frame.

Modelling for ESAA by ACIL Tasman suggests that around 15 per cent of east coast generating capacity, which is 6,700 megawatts, will have to close prior to its business as usual life. In addition, 15,000 megawatts of gas fired or renewable generation facilities will need to be constructed to replace those closed facilities. This amounts to about a third of Australia's existing capacity. We welcome the government's recognition that coal fired generators will be strongly affected by the advent of the CPRS.

However, the number of emission permits that are being offered with no charge, which is 130.7 million permits, is insufficient to avoid large-scale impairment of both equity and debt. It will frustrate the refinancing of existing assets and new debt, which is a material consideration, and will not facilitate a smooth transition to a lower emission energy supply system. Both the states and territories National Emissions Trading Taskforce and the former Prime Minister's task group on emissions trading recognise the importance of having a gradual introduction to a charge on emissions for the industry, the recognition of asset value loss that occurs from a change in law or sovereign risk, the fact that there is no off-the-shelf technology currently available to capture greenhouse gases on a large scale and the need to provide investor confidence for ongoing investment for both existing infrastructure and new infrastructure. However, the current level of assistance is insufficient and the transition to the CPRS could have serious implications for the short-term viability of the electricity markets due to the financial distress of a significant number of generators. Insufficient assistance would also send a very poor signal to future investors about the government's willingness to strand large-scale assets without adequate recognition.

Electricity generators will provide the government with over $55 billion worth of permit revenue in the first 10 years of this scheme. The proposed $3½ billion of assistance is insufficient and considerably lower than the consensus of modelling reports, which include two sets of government modelling reports, which suggest at least $10 billion of assistance is required in the first 10 years. It should also be noted that for many coal fired generators the loss in asset value extends well beyond the first 10 years of the scheme and these losses have been completely ignored by the government's modelling. To ensure a smooth transition to a low-emission economy and to secure further investment in a low-emission energy supply sector, those generators that suffer significant value reductions as a result of the introduction of the CPRS should receive adequate transitional assistance.

The tenure of scheme caps and gateways is one that we think is an important issue and one that was picked up in both the state and territory process and the former Prime Minister's process. Investor confidence in the energy sector is actually dependent on the ability to

confidently determine a clear view of future greenhouse gas emission prices. To date this has not been possible, but the introduction of the CPRS is intended to rectify this. However, the CPRS proposal to only commit to five years of firm scheme caps is disappointing. Five years is an inadequate time frame for planning long-lived, capital-intensive investments. ESAA considers that at a minimum annual scheme caps should be set for a 10-year period; that is extended by one year each year followed by a 10-year rolling gateway, which would effectively give a 20-year view of carbon prices going forward. The government is the only entity that can commit Australia in international negotiations and it is the government that should bear the risk of future scheme caps or gateways being inappropriate. The industry should not be expected to bear this risk.

Permit auction design is an issue that we are working with the government on, and the government has indicated in its white paper that it is happy to work with the industry on. But electricity generators will be required to purchase and surrender around 200 million permits annually and the electricity generation sector could need to hold well in excess of $10 billion of permits at any one time. I am sure you can imagine that to hold $10 billion worth of permits and to have access to credit facilities to facilitate that is very difficult in the current environment and in the absence of a liquid secondary market. This is a significant increase in working capital requirements on generation businesses. The association welcomes the government's commitment to work with industry on this, but we encourage the process to keep going.

Our final issue, which is a very significant issue, is retail price regulation. The regulation of retail electricity prices poses a significant threat to the efficient operation of the CPRS and the viability of retailers. For the scheme to operate efficiently and provide least-cost emission reductions, consumers must be exposed to the cost implications of greenhouse gas emissions. The government has acknowledged in its white paper that ideally there should be no regulatory impediments to the timely pass-through of reasonable costs to ensure the objectives of the CPRS are not undermined. However, the white paper concludes that the optimal approach to progressing cost pass-through is to support the work of the Ministerial Council on Energy, and the ESAA has very strong reservations about this approach. Thank you.

CHAIR—On retail regulation, how many states have any kind of cap on the retail price of electricity now?

Ms Savage—Every jurisdiction with the exception of Victoria.

CHAIR—Every one has a retail cap on the price?

Ms Savage—Yes.

CHAIR—Have you had any discussion with them about how they will respond?

Ms Savage—Yes, we have. My understanding is that Minister Ferguson, through the Ministerial Council on Energy, has been tasked with securing the agreement from the states and territories to provide cost pass-through. At this stage, the Ministerial Council on Energy has indicated that they will amend the Australian Energy Market Agreement to provide for cost pass-through. Our concern though is that the Australian Energy Market Commission, which is

currently looking at how energy markets will respond to a CPRS, has found that the regulatory process is insufficiently flexible to accommodate that.

CHAIR—Can you go into that because in my home state of South Australia I thought—and I could well be wrong—there was not a cap but rather regulation of what increase would be allowed.

Ms Savage—But they set a maximum price that is allowed.

CHAIR—Year by year.

Ms Savage—No. I think in South Australia it is every three years.

CHAIR—I think they would view it as allowing an increase rather than setting a maximum.

Ms Savage—It is still setting a maximum price, and what that will require the regulator to do under a CPRS is accurately determine going forward what the impact on the electricity wholesale price is likely to be, which is going to be impacted by the volume and sale of permits and their price. It will also require a regulator to make an assessment of how much contracting will happen in the wholesale market—that is, what degree of risk the retailers are exposed to—and the volatility of the spot market. There are a number of factors that will need to be considered to actually determine what that maximum price should be. Our view is that the South Australian market is extremely competitive. The Australian Energy Market Commission has released a report saying that it is extremely competitive. They have also released a report saying retail price regulation should be removed and that there is no justification for continuing to regulate prices in South Australia.

CHAIR—So you are saying that the regulator would be unable under the CPRS to access all of those factors that you enunciated and factor them into the recommended price?

Ms Savage—Yes. Our view is that it would be very difficult for a regulator to set reasonable rates of return for retailers, to estimate all of the costs that go into the regulated retail price and to ensure enough flexibility so that retailers can change prices as they need to in response to what is happening in the wholesale market to ensure viability. But our first principle is that, even in the absence of the CPRS, in competitive markets there is no place for retail price regulation.

CHAIR—Regulators at the moment do quite complex assessments under the current national electricity market.

Ms Savage—They do an assessment at the moment, but there is actually a forward market for contracts which shows what they think the forward price of electricity will be. At the moment, those forward contracts are not fully factoring in the cost of carbon. So the complexity of those assessments and the degree of risk that will be introduced into the sector is something that we have never seen before.

Senator JOYCE—So in summary what you are saying, Ms Savage, is that there is a paradox at play here where the government is saying, 'You cannot put up the price of power but we are going to put a cost on you for carbon. You were talking about 15 per cent of east coast facilities

to close. I imagine that would also affect the employment structure that flows down from those facilities. Have you got any numbers of Australian working families that are involved with those facilities?

Ms Savage—We have not done any modelling on the employment impact because there are also new stations that will need to be opened. Tony might have something he would like to add to that.

Mr Concannon—If you look at a typical coal fired power station you get a range of employment. If we look at one, first of all, without a mine, your typical employment is going to be between 150 and 400 staff. That is what the order of magnitude would be. If you look at a mine as well you will see anywhere between 250 and 350 staff at that mine as well.

Senator JOYCE—Would you be able take on notice just exactly how many employees or working families would be attributed to that 15 per cent closure and get back to us on that?

Ms Savage—We could estimate that but we would also have to estimate how many jobs might be involved in the new stations that would open to replace them.

Senator JOYCE—That is fine. You were also talking about sequestration. We have already received evidence that sequestration will become commercially viable when permits go in excess of $100 a tonne. How will it affect the power market in Australia when permits are in excess of $100 a tonne?

Ms Savage—Is your question: how would the power market operate with permit prices over $100?

Senator JOYCE—Yes, that is correct.

Ms Savage—My understanding of the way in which the electricity market works at the moment is that with the introduction of a $100 permit price, which we would not expect to see for quite some time, you would have a different set of technologies operating than what you currently have today to deliver power to Australian consumers.

Senator JOYCE—Right. So we would need a different set of technologies. But they would not be coal fired, would they?

Ms Savage—Coal-fired power stations with a $100 cost of carbon would probably be uneconomic compared to things like wind or other technologies that are currently available.

Senator JOYCE—I am asking this question because this is the balance: carbon sequestration is what is being held out there, but that is not viable until you get in excess of $100 a tonne, and coal-fired power stations are not viable at $100 a tonne. So we are in a bit of a dilemma here, because that means our coal industry has just collapsed.

Ms Savage—I have seen a range of figures on what carbon price will be required for carbon capture and storage, and I think that is something that is still under development as the RD&D process continues. But there are a range of technologies that are viable at those kinds of power

prices and are competitive. Wind is one; geothermal is potentially another one; carbon capture and storage may be viable at $100 a tonne. When the price is set in the market, the power system will respond to those prices. But, no, coal certainly would not be competitive at those kinds of prices.

Senator JOYCE—Question: how many coalmines does it take to run a wind-generated power plant? The answer is: none.

You are talking about more extensive exposure, free permits for the coal-generating section of the power industry. This is the message we are getting loud and clear. Everybody comes in and they all want the same thing: they like the ETS but they just want to be exempt from it. So the question I pose to everyone is this: to make the mechanism work properly, there has to be a pricing mechanism. If we exempt you, we have to increase the effect on somebody else. So who do we increase the effect on when we exempt the power industry?

Ms Savage—I think it is important to recognise that we are not actually asking to be exempted. What we are saying is that we want to transition from a higher-emission energy supply system to a lower-emission energy supply system. Through that process there is a transitional mechanism where you recognise the asset value destruction that is happening through that process, by the allocation of free permits. But we are not proposing to be exempted from the scheme. We recognise that these assets need to close in order to reduce Australia's emissions and be replaced with new, lower-emission generation capacity. It is just a question of making sure you do not bankrupt generators on the way through.

Senator JOYCE—It looks like that is where we are off to. I want to go through your access to capital requirements. You talked about an increased access to capital of $10 billion, was it, for permits that would be held as current assets on your books?

Ms Savage—Essentially, electricity emissions are currently around 200 million tonnes a year. So, if you assume a permit price of about $20 a tonne, that means there are basically $4 billion worth of permits that the industry needs each and every year. As the permit price increases, that will go up, but obviously the number of permits will probably decrease as well. But then you also probably need to purchase that $4 billion worth of permits ahead for the next three to five years beyond the current year so you can support the forward market in electricity, because to sell an electricity contract you need to know what the price of carbon is. So you will want to hold a declining number of permits in the following year; it might be 80 per cent in the second year, 60 per cent in the year after that and 40 per cent in the year after that. When you add up that requirement, it is $10 billion for the electricity sector.

Senator JOYCE—Ten billion dollars on hand?

Ms Savage—Yes.

Senator JOYCE—How do you think you would go at the moment, getting your hands on $10 billion in the current market?

Ms Savage—I will let Mr Concannon answer that.

Mr Concannon—You have clearly only got to read the press. There is a lot of scarcity of capital, not only within Australia but on a global basis as well. We think it is unlikely that the electricity sector will be able to raise the necessary capital, as Ms Savage has just explained.

Senator JOYCE—Going to the next point, Mr Concannon, that is a pretty substantial investment that you have got as a non-current asset sitting on your books. The government has asked you to buy it. We have seen the collapse of the carbon market in Europe, so this is a tenuous asset and most accountants would be little bit concerned about what your exposure to it is. Has government given you any guarantees—for example, 'If the thing falls over, don't worry; we'll fix you up for the money'?

Mr Concannon—I think there are actually two threads to that. I will answer the last one first, if I may, and that is: no, there is no guarantee; moreover, the industry would not expect any form of guarantee from a government regarding trading. I think that is the first point. The second point is that we think it is soluble. It is purely a working-capital requirement. For example, if the scheme is designed so that, as receipts are received from electricity sales, that is when the liability for paying permits for emissions is also due, then you can clearly use the proceeds from electricity sales to fund the auction permits. It can become very troublesome if there is a disconnect between those two and you find there is an enormous increase in your working capital requirements because the two mechanisms—electricity receipts and liability for emissions trading—are out of step with each other. As Clare mentioned before, they need to be in step with each other because the only way you will sell an electricity contract is if you can hedge your emissions liability at the same time.

Senator JOYCE—If we are walking forward with our capex requirements, now we have a requirement to hold up to $10 billion worth of static asset; it is just going to be sitting there. That is obviously going to affect other investments in other capital expenditure projects. It is oxymoronic that you will have money to invest in such things as carbon sequestration when your money is tied up in permits.

Mr Concannon—I think it is not sustainable. In other words, I do not believe the industry will be able to secure $10 billion. It circles back to the mechanism having to be properly designed such that it minimises the impact on existing working capital requirements, because the expectation is that there are very little additional credit lines available in the marketplace.

Senator JOYCE—The paradox I am getting to is that the government is trying to inspire you to be more carbon efficient by tying up the capital that you would have to invest to be carbon efficient. The money is not there to be carbon efficient. If they wanted to go about it in a different format they could say to you, for instance, 'We will just give you an upfront tax deduction and then you will make your own arrangements.' Therefore you have tied up no capital and it is completely up to you how you define your capex budget into the future. If you want a greater propensity of return to your shareholders, you can invest somewhere where there is a greater tax deductibility and therefore a greater return per share and it all makes sense.

Ms Savage—Can I clarify one point there. On the issue of working capital requirements, that is the one area where the government has actually recognised in the white paper that this is a significant issue for the industry. We are in discussions with them about a payment deferral facility, where the industry will actually be able to discharge its permit liability at the time it

takes possession of those permits, which is when that liability will fall due. What is a more significant issue around tying up the capital of the industry is actually deteriorating the balance sheets of existing generators through inadequate assistance. That is where I think you will really see that the sector's ability to reinvest in new, lower emission technologies will be seriously constrained.

Senator JOYCE—I want to go to two other issues. Your capex budgets in the power industry would be running, I imagine, at about a 25-year window. If you invest in a power plant you would be looking at about a 25-year window for it—or am I wrong there?

Mr Concannon—You would typically have asset plans going between 25 and 50 years.

Senator JOYCE—I imagine, in the time frame that they have put out, this would create an immense disturbance in your current sunk capital that is already invested in the market as well as any propensity to invest new capital into the market. How do you go when a government comes in and puts a regulation in place that completely disavows the principles that you put forward in previous assessments of capital expenditure?

Ms Savage—This is our issue in terms of wanting to make sure that asset value losses are actually recognised so that you do not actually strand those assets; you do recognise the fact that people invested in good faith and that going forward the industry has the confidence that, when the government makes significant policy change, the asset value losses will be recognised.

Mr Concannon—I think that is a very good point. What you are seeing with these very large, capital-intensive pieces of infrastructure is that they can tolerate a small degree of regulatory change but they cannot tolerate radical regulatory change. That is the first point.

The second point is some of our members, but clearly not all ESAA members—and remember again that those investors are both Australian and international—are concerned that, if the government has been prepared to radically change regulation in the form that is proposed at the moment in the white paper, this may happen again. It may happen with plants and equipment even though a 25- to 50-year design life is typical. Some of those assets are less than 10 years old. So if they have seen this radical change now, the concern is: what will happen in another 10, 15 or 20 years time? Will the ground rules change completely again within Australia?

Senator JOYCE—This is my final question and it goes back to my former days in banking. The people who issued you credit will be wanting to see you very soon, won't they? They will be wanting to have a good hard talk to you about exactly what the terms were on which they gave you the money and what the terms are now. Your biggest risk has become one of government policy.

Mr Concannon—That is correct for some of our members.

Senator CAMERON—I might try and get this discussion into some context. How long has your association known that you could be faced with some type of scheme to regulate the emissions of carbon?

Ms Savage—We have known since the election of the Rudd government in November 2007.

Senator CAMERON—Wasn't there a discussion paper issued by the Howard government over 10 years ago?

Ms Savage—There have been many discussion papers issued over the last 10 years, but we did not actually know anything until there was an election commitment and the government was elected in 2007.

Senator CAMERON—Wouldn't the debate that has gone on for 10 years alert your members to the fact that you could be faced with a carbon pollution reduction scheme?

Ms Savage—I think it is important to recognise that, for every scheme that has ever been contemplated anywhere in the world, and for both the states' and territories' process and the Howard government's process, none of those schemes has ever contemplated stranding electricity sector assets.

Senator CAMERON—Stranding electricity?

Ms Savage—All of them, including the Howard government's proposal, have recognised that there should be compensation for disproportionate asset value loss.

Senator CAMERON—There is a significant amount of support for the industry through the scheme as announced. You are asking for more support. Where would that support come from?

Ms Savage—My understanding is that government has two sets of modelling results that suggest $10 billion of compensation is required in the first 10 years of the scheme, and they are offering $3½ billion. I do not think that is 'significant level of support' for the industry.

Senator CAMERON—But if the income is about $11 billion from the scheme, should the government take support from households and give it to the coal fired power industry?

Ms Savage—The income from the scheme is $11 billion in any one year, but over a 10-year period the electricity supply industry will provide the government with $55 billion worth of permit revenue. So to see an increase from $3½ billion to $10 billion is not unreasonable.

Senator CAMERON—I am asking: should we should take money from the household sector to support the coal fired power industry?

Ms Savage—It would be a decision of the government where they wish to get the money from. What we are interested in is ensuring that the assets are protected to make sure that you actually secure investor confidence going forward and you continue to have a viable electricity system.

Senator CAMERON—Some of your members have already started to diversify their power sources. Will they do better in a carbon constrained economy than those who do nothing?

Ms Savage—I will let Tony answer that question.

Mr Concannon—I think that is correct. We do have a number of different members. Some of them, frankly, have maybe one asset within the electricity market; some of them will have multiple assets across a number of states using a diverse range of fuels and technologies. I think that is true. However, although a number of the members—and I am conscious that today my representation is as Chairman of the ESAA—have diversity across a number of fuels and technologies, the magnitude of the potential losses due to the CPRS as it is designed currently would be so large that it would put into question further investment in Australia.

Senator CAMERON—Why should government compensate the industry further than 10 years out? Why wouldn't you then operate in the marketplace without government assistance? Why is it a government proposition—

Mr Concannon—It circles back to the question raised by Senator Joyce earlier. These assets are typically over a 25-to-50 year design life, so you cannot chop and change every 10 years.

Ms Savage—But even if you did just take a 10-year time horizon, as the government has proposed in the white paper, the number you would be looking at is not $3½ billion but $10 billion.

Senator CAMERON—How many new coal-fired power stations have been built in the last 15 years?

Ms Savage—I would have to take that question on notice, but you would be talking about only a handful.

Mr Concannon—I have one other supplementary point. Some of our members actually procured coal-fired power plants in the mid-1990s, and some of those members have gone, on a number of occasions, to public inquiries—which have representation both at a state level and a federal level—where again they have made it clear what the expectation is in terms of design life. As far as I am aware, at no time, either at a federal level or a state level, has there been any red flag waved such as 'Look, you should really tread with caution, because an emissions trading scheme could be coming in fairly dramatically in Australia.'

Senator CAMERON—Didn't some companies in the 1990s pay well over the odds for that investment and they are paying a price for that?

Mr Concannon—It is true that a number of entities did get their forecasts wrong in the mid-1990s, particularly in Victoria. I think that is acknowledged. But after 13 or 14 years, a lot of that has already shaken through. Indeed, you did not hear a peep from business at the time when a lot of those companies wrote off all their equity and some of them, as well, a portion of their debt, in order to get the books and assets back into balance. But what you are seeing here is not market forces at work. What you are seeing here is potential new regulation at work, causing that potential write-off in the future.

Senator CAMERON—Some other criticism we have heard of the government's scheme is that it does not go far enough, that it does not penalise the big polluters effectively, that there should be no money going to the massive polluters such as the coal-fired power industry. How does the government balance that argument against your argument, and how can you describe

the government's scheme as 'radical' when you have known for a decade that you may be faced with a carbon pollution reduction scheme?

Ms Savage—I think it is important to recognise that we have not known for a decade that we might face a carbon pollution reduction scheme. The industry has contemplated the prospects of an emissions trading scheme, which is very different to what the CPRS is, as designed. They have made investments on the basis of the investment climate that existed at that time. In the absence of investment in coal-fired generation Australian energy consumers would have been paying a lot more for their energy for a lot longer. Your household assistance package is designed to assist households so that they do not face the full cost of their energy consumption. We support assisting low-income households, but you do not need to bankrupt generators to achieve environmental integrity in an emissions trading scheme. You can have an emissions trading scheme with a firm cap that has environmental integrity, and you can recognise asset value losses. What you have chosen to do with permit revenue are your own policy choices around equity.

Senator CAMERON—No-one has come here and said that they are going to be bankrupt. We have had generators come to us and actually say, 'We don't like the scheme.' 'We think you should help us more.' 'We think it's unfair.' But we have never heard an argument that we are going to bankrupt anyone.

Ms Savage—I would have to take issue with that, Senator, because as a representative of those businesses I have said it to the government on a number of occasions.

Senator JOYCE—I do not think they are able to go out and say something as explicit as that. They might have a little problem with the stock exchange.

Senator XENOPHON—This follows on from Senator Joyce's questions about the modelling effects on employment. I think you said that you had not done any modelling of that. Has the ESAA or its members modelled the effects on prices and on consumers of different scheme designs?

Ms Savage—The ESAA has not modelled the impacts of different scheme designs on employment or on prices, but I am aware of other studies and, since you asked me this question in the last Senate hearings, I have looked into it. There are other schemes out there that could have lower impact on electricity prices, but you need to recognise that it is a muting of a price signal when you use those other schemes—a baseline and credit scheme or an output based intensity scheme. The way they operate is to effectively suppress the price signal by subsidising some forms of generation and, by doing that, just suppress the price effect for households and for energy-intensive users. With the Carbon Pollution Reduction Scheme, an emissions trading scheme, a well-designed scheme can achieve the same thing but through allowing the price to actually reflect the cost of carbon, and that is an important part of making sure that people use energy more efficiently and appropriately. Households and large energy users need to actually see the full cost of their electricity to ensure that they consume at the level that is appropriate.

Senator XENOPHON—But if you mute the price effects you could go for a deeper cut in the targets, couldn't you?

Ms Savage—The impact on our sector is the same under either scheme. So you still strand electricity assets.

Senator XENOPHON—Okay. I will leave it there.

CHAIR—There being no further questions, I thank the ESAA for coming in this afternoon.

Ms Savage—Thanks for your time.

Proceedings suspended from 12.21 pm to 1.32 pm

O'CONNOR, Mr Simon, Economic Adviser, Australian Conservation Foundation

PASCOE, Mr Owen, Climate Change Campaigner, Australian Conservation Foundation

CHAIR—Welcome. Do you have an opening statement you wish to make?

Mr Pascoe—Thank you; that would be fantastic. Thank you very much for your time today. I will start by reading a brief statement. For background information, I am sure you all have heard of the Australian Conservation Foundation before. Our aim is to inspire people to achieve a healthy environment for all Australians. We have been operating in Australia for over 40 years. We were established in 1966 with Sir Garfield Barwick as our first president. We continue to work with the community, business and government to protect, restore and sustain our environment, and our supporters number over 30,000. We have been campaigning to prevent dangerous climate change for over 10 years. One of our most successful projects has been through Al Gore's Climate Project in Australia, in which we have trained 250 people to give the presentation that Al Gore gives in the movie *An Inconvenient Truth*. At the end of 2008 we were pleased to announce that we had reached over one in 100 Australians through those presentations.

Over recent years we have been campaigning to increase the use of renewable energy, to help households reduce their carbon footprint and for the introduction of an environmentally effective emissions trading scheme. The Carbon Pollution Reduction Scheme as outlined in the white paper and to be implemented through legislation does not constitute an environmentally effective emissions trading scheme, and we do not support the introduction of the scheme as it currently stands. It is in Australia's national interest to act early and strongly to tackle climate change. Australia's best climate scientists warn that, if effective global action to achieve deep cuts in greenhouse gas emissions does not begin in the near future, Australia will see a future of dramatically increased days of extreme bushfire and heatwave stress, more severe and regular droughts in southern Australia, more destructive cyclones and risk of mosquito-borne diseases in the north and devastating damage to the Great Barrier Reef and many of our other natural icons which the Australian Conservation Foundation has been campaigning to protect.

The recent bushfires—and this is particularly relevant as we are in Victoria today—and the heatwave disaster we have seen in Australia are a foretaste of a much worse future if we do not act now. A recent joint CSIRO and Bureau of Meteorology study on the impacts of climate change found that parts of Victoria will face up to 65 per cent more days of extreme fire risk by 2020 and 230 per cent more by mid-century.

There are four key problems that we hope to outline today to the committee and that we will put in writing through the submission process. Our primary concern with the Carbon Pollution Reduction Scheme and the exposure draft legislation are the weak targets that have been set to cut Australia's carbon emissions by the year 2020. The weak targets proposed of five to 15 per cent if adopted globally would condemn Australia to a future of dangerous climate change. The Australian Conservation Foundation advocates for a target of at least 30 per cent and moving to 40 per cent in the context of an international agreement.

The government's proposed target of 15 per cent in the context of an international agreement is not consistent with the Prime Minister's statement that the government accepts the findings of the Garnaut climate change review and in particular that it is in Australia's national interests to see atmospheric levels of greenhouse gases constrained to 450 parts per million or lower by mid-century. The Garnaut review and modelling equate Australia's full and fair share of a global outcome of 450 ppm or lower as an Australian target to reduce emissions by 25 per cent or more. That is the key issue that we needed to raise with this legislation. We believe this legislation can be fixed to be able to implement targets that are more aligned with the science.

Another issue that we will be raising in our submission is the locking in of pollution overallocation through the excessive provision of free permits. The excessive handouts can also entrench a high-carbon economy and weaken our transition to a low-carbon future. Finally, there is the lack of support for renewable energy, energy efficiency, healthy ecosystems and voluntary and additional action by Australian households. I will ask Simon to make a quick statement in response to some of the issues that were raised by the Energy Supply Association of Australia in an earlier hearing.

Mr O'Connor—I thought it might be worth putting forward to the committee some information. A question was put to the ESAA on the number of coal-fired plants that had been commissioned in the last decade. Our information is that there have been a total of seven plants in the last 10 years, out of a total of 31 plants around Australia. That comes back to the discussion on the capital requirements of the coal-fired power sector in Australia. I am happy to comment a little more on that as we go through some of the questioning.

That says that approximately 80 per cent of the energy supply sector and the coal power sector long in advance had warning of a carbon pollution reduction scheme, emissions trading scheme or a price on carbon that was imminent in regulation. The first indication of that was probably in 1992 when Australia signed onto the UN Framework Convention on Climate Change, which committed Australia primarily to avoid dangerous climate change. The energy supply sectors had advanced warning to prepare themselves, adjust their balance sheets and prepare for correct asset valuations as there has been a long lead time for that industry.

CHAIR—You had three reasons why you are unhappy with the legislation. One was the targets, another was the excessive use of free permits and the third was lack of support for renewables, reduction in household consumption et cetera. Was there another one that you said before?

Mr Pascoe—Yes. Two of those headings are fairly similar, but there are a couple of different issues discussed there. One issue that needs to be raised is that, through the white paper proposal to increase Australia's emissions targets for 2020, the only mechanism available to the current government or a future government is to purchase international permits. To move to something in closer alignment with the science, we would be looking at a bill of around $3 billion per year in international permits to go from a 15 per cent target to a 25 per cent target, for example. That is how the proposals can actually lock in that pollution overallocation. A slightly separate issue there but one with a similar heading is that $9 billion in handouts is being given to the emissions intensive industries and the coal-fired sector out to 2012. The big issue for us is the opportunity cost. The $9 billion has a massive potential to invest in the low-carbon economy and in green jobs in Australia. We would see that as a much more productive use of those funds.

CHAIR—You have not identified any problem with the particular type of system proposed—the cap and trade and the market based system? Is that right?

Mr Pascoe—That is right. We would see the emissions trading scheme as the most effective regulatory mechanism currently available; it is more effective than a carbon tax in that it allows us to set a limit on greenhouse gas pollution rather than to set a price with uncertain environmental outcomes. So we have been big supporters of an emissions trading scheme. We have done a lot of work with our members and other organisations to build support for emissions trading to be introduced in Australia, and we are profoundly disappointed that we now have a system that is not able to deliver in the short term or the long term.

CHAIR—To clarify: you were talking about a target of greater than 30 per cent. Is that from the year 2000, as is the current five per cent to 15 per cent?

Mr Pascoe—We refer to 1990 as the internationally more accepted baseline through the Kyoto protocol. However, we are aware that emissions in Australia in 1990 and 2000 are rather similar, although different across sectors.

Senator JOYCE—I will be upfront, Mr Pascoe. I would say that you and I have different views overall, but one thing we do agree on is that we are not happy with the current scheme. That would be a fair call, wouldn't it?

Mr Pascoe—Yes.

Senator JOYCE—Your view can basically be encapsulated by this example: if the house is on fire, this scheme is like a dripper-hose through the house; it is not actually going to put out the fire. That being the case, are you more likely to support or not support the scheme?

Mr Pascoe—We will not be supporting the scheme unless there are major changes. Our position is that we do not support the scheme as it is currently proposed, but we do think there are really good opportunities to fix it and that those opportunities should be taken this year. We do not have time for delay. Every year of slowing action locks in a worse future for dangerous climate change. We do not support the scheme as it currently stands; we would like to see it fixed.

Senator JOYCE—Although the Australian Conservation Foundation does not hold my views; nonetheless, it is a respectable foundation. You would be making the recommendation to the Senate not to support the scheme?

Mr Pascoe—Yes, as it is currently proposed. Also, we need to look at what the issues are in regard to the policy and the legislation. As it is currently proposed in the white paper and implemented by the exposure draft legislation, we are recommending that it not be supported unless there are some major changes. The key change is the target range. There has been some discussion in media reports about different advice from legal circles on whether the legislation actually constrains action out to 2020 with that five to 15 per cent target range. That is a really crucial issue. We have been advised by the department of climate change that the intention of the legislation is not to provide the minister with flexibility to examine those issues in coming years, or potentially to re-examine the science or to move in regard to what is happening internationally

with negotiations, technology and climate science but rather to constrain action to that five to 15 per cent target range out to 2020.

Senator JOYCE—What would be required to take you out to where you want to be at 30 to 40 per cent? Let us be honest here: do you see a future for a coal industry in Australia when you talk about 30 to 40 per cent carbon reductions?

Mr Pascoe—We would not see a role for further coal-fired power generators in the different segments of the coal industry in Australia. We would see a role for gas-fired generation in the medium term, but we need to aim for a future where we are getting closer and closer to being completely powered by renewable energy and moving to some of the emerging technologies like solar thermal and geothermal.

Senator JOYCE—Can I go through one of those: geothermal. Are you talking about hot rocks?

Mr Pascoe—Yes, that is right.

Senator JOYCE—What makes the rocks hot?

Mr Pascoe—I understand it is radioactivity.

Senator JOYCE—So it is a form of natural nuclear power, basically?

Mr Pascoe—It could be thought of in those sorts of terms. It is obviously very different from, for example, mining uranium, processing uranium, enriching uranium and building nuclear power stations.

Senator JOYCE—It is a latent heat from the degradation of granitic material that produces the heat. Do you support nuclear power and, if not, why not?

Mr Pascoe—We do not support nuclear power in Australia. We see the nuclear life cycle as far too dangerous and something in which Australia should not be involved in terms of the potential environmental outcomes of nuclear power, contamination and pollution and in terms of nuclear proliferation.

Senator JOYCE—That is a fair call. Do you support the exporting of uranium?

CHAIR—Senator Joyce—

Senator JOYCE—Chair, I am getting there; give me a chance.

CHAIR—Very slowly, Senator Joyce.

Senator JOYCE—Do you support the exporting of uranium?

Mr Pascoe—No, we do not support the exporting of uranium.

Senator JOYCE—Do you support the exporting of coal?

Mr Pascoe—We are not black and white opposed to the exporting of coal.

CHAIR—Senator Joyce, we are discussing the legislation.

Senator JOYCE—I am talking about that. Since you support the exporting of coal and the 30 to 40 per cent reduction, aren't we just moving the carbon problem to a place where we have no control over it?

Mr Pascoe—That goes to the issue of carbon leakage. I think the issue of carbon leakage has been overstated in this debate. I am yet to see any really good evidence that there will be carbon leakage in Australia. The evidence from the EU is that any form of carbon leakage is undetectable or very close to being undetectable. We are hearing predictions of different industry groups saying, 'Yes, we'll move offshore.' But when you look at the factors involved in a decision to move a large facility, climate change regulation would be a very small factor in such a decision.

Senator JOYCE—If I were to show you an example of carbon leakage, which might be 40 ships parked off Hay Point, Mackay, wouldn't that be an extremely good example of carbon leakage? I am glad that they are there; otherwise, we would all be stone motherless broke. Wouldn't a classic example of carbon leakage be one where we put the coal—little black rocks of carbon—into the boats and send them over to China, and then they stick it back up into the atmosphere?

Mr Pascoe—You are right that, without an effective international agreement, we cannot get to the climate change outcomes for avoiding dangerous climate change.

Senator JOYCE—Do you acknowledge that, with current five per cent reduction of 1½ per cent of global emissions and your talk of three to four per cent anthropogenic carbon, Australia's scheme is going to have absolutely zero effect on the global climate?

Mr Pascoe—The effect that our policy will have is that Australia can support a strong international agreement that leads to the outcomes that we need to see to protect the Great Barrier Reef and the Murray-Darling Basin. When we go to Copenhagen in 2009, we do not want to say, 'We're going to hold back action and only act if other countries do.' We need to go there and say, 'We're willing to put our cards on the table and do what is necessary, and we want to bring other countries along with us and encourage other countries to act.'

Senator JOYCE—Do you sincerely believe that Wen Jiabao, Obama or Dimitri Medvedev really care about Australia's position on carbon emissions?

Mr Pascoe—I think Australia has shown through the Kyoto negotiations that our position on climate change actually held back action. It gave excuses for other countries not to act. At one point, we were the only country standing there alongside George W Bush saying, 'The Kyoto protocol isn't the way to go.' That was effectively helping to hold back action. This is in Australia's national interests. We would like to see the government arguing for Australia's national interests and doing everything within its power to encourage other countries to act.

Senator XENOPHON—The CPRS is a means to an end, isn't it, in terms of reducing greenhouse gases? If there were an alternative approach that would lead to deeper cuts and could be shown not to have the same economic impact—you are worried about the reduction in greenhouse gases; you are not particularly wedded to this model, are you?

Mr Pascoe—It is fair to say that our policy is about the environmental outcome, and we think this is the best regulatory mechanism that is available at the moment. But we would certainly be open to a policy that would see deeper and quicker cuts in carbon emissions.

Senator XENOPHON—And it is not inconsistent in terms of the work that the ACF has done to have a parallel approach as an addition to, say, an emissions trading scheme to get the low-hanging fruit in terms of energy abatement. Is that something you have considered? I am not endorsing the opposition leader's policy but he did talk about the issue of biochar and using agriculture as a way of soaking up carbon. Is that the sort of thing you have considered as well?

Mr Pascoe—Absolutely. In the debate in Australia we have really seen the emissions trading scheme being proposed as an overarching framework that will capture everything and the only thing we will do on climate change.

Senator XENOPHON—Is that a false construct?

Mr Pascoe—Absolutely. When you look at the way other countries are acting—areas of California, for example—the emissions trading scheme is seen more as the cherry on top of a suite of policies. You do need an overarching price on carbon—that is very important. However, there is a lot of low-hanging fruit that can be picked up, particularly in energy efficiency. It is not just from an environmental perspective but from the perspective of increasing Australia's energy productivity and leading to benefits to our economy and employment through policies that improve our outcomes for carbon and energy use.

Senator XENOPHON—So you are open to alternative methods of getting a better outcome?

Mr Pascoe—Absolutely. Certainly you would need to assess the package of measures that are put together. We certainly welcome the discussion on biochar and reafforestation but we would really need to see more detail in order to assess whether that is going to be effective. I might just highlight one of the issues that we do have with the white paper—that is, the way the caps and targets are set is such that it is all thrown into the one bundle, so even if Australia were to develop a really strong biochar or reafforestation policy that still would not lead to increases in our national targets beyond the five to 15 per cent range.

Senator XENOPHON—You are picking up the criticism of Richard Dennis of the Australia Institute, aren't you?

Mr Pascoe—Partly, yes. He has been talking a lot about household action and state level action and noting that it also applies to reafforestation and the agricultural sector.

Senator XENOPHON—The front page of yesterday's *Age* newspaper made a similar criticism. I think they received some information from the Victorian government that no matter

what is done at an individual level it will not make any difference. Is that a scheme design flaw that you are particularly concerned about?

Mr Pascoe—Absolutely. We would certainly agree with that assessment. We really need to see a transparent, fully accounted for mechanism that would see those sorts of voluntary actions that state governments, local governments and companies going carbon neutral—people who want to contribute to this problem must be provided with a mechanism by which they can do so in a transparent manner and for that not to be left up to the minister's discretion, which it is in the white paper caps and target-setting process.

CHAIR—You were saying before that you do not support this legislation. Other people who have appeared before this inquiry do not support it for other reasons. Assuming that this legislation does fail to get through, is that how you see the country going? Is it through individual households and state and local government being persuaded to reduce carbon—

Mr Pascoe—Absolutely not. We do need an overarching regulatory framework on climate change, but we need one that does not lock us into failure, or that is designed for failure, and for no improvements to be made after 2020. I do not want to hypothecate here but I want to say that if this legislation is not passed this year we would like to see an amended piece of legislation passed in the second half of this year or the first half of next year. We would want to see it—

CHAIR—I do not think you have much chance of that.

Senator PRATT—You have said that every year delay further contributes to climate change. What if the alternative to passing this scheme is to have no scheme in the foreseeable future?

Mr Pascoe—It certainly would be a bad outcome. That is not to say that we do not want to act on climate change or to hold off action on climate change; we need to come up with a better solution and we need to do it fast. I am repeating myself here, and I apologise for that, but if we do not go to the Copenhagen meeting in 2009 with a strong position on climate change then we are really waving the white flag on seeing a global outcome which is in line with what the government has said its policy is, which is to hold greenhouse gas concentrations at 450 ppm or below.

Senator PRATT—If we cannot make progress at a national level here towards a scheme in the near future, surely we will not be doing our bit to help create a global agreement. So, in failing to get a scheme up now, which could possibly happen if we cannot get a mandate to get it through the Senate, we will be undermining international efforts for an agreement, surely?

Mr Pascoe—If there were a very negative outcome then, yes, we could be. However, we do not see this as a like-it-or-lump-it situation. We look forward to the parliamentary debate in the Senate on this, and we hope that improvements can be made.

Senator PRATT—You have done a lot of work as a campaign organisation building up community support for as robust a scheme as possible but, clearly, it is difficult to create community consensus across a diverse range of issues. Do you recognise that government ultimately is only going to be able to go as far as it has an electoral mandate to go and that, in partnership, we have to educate the community to enable us to take this as far as possible?

Mr Pascoe—Absolutely. We do need to see more of a consensus across the community. The interpretation of the electoral mandate is obviously one that can be widely discussed, but my understanding is that there was a commitment to bring the Garnaut review in and to have an evidence based examination of what we need to do on climate change policy. Professor Garnaut's key recommendation is that we needed to say that we were willing to go to a 25 per cent reduction in greenhouse gas emissions by the year 2020 and that we would be willing to do that as part of an international agreement. We are implementing that recommendation.

Senator PRATT—Clearly the government has to put in place a scheme that transitions the economy in a responsible manner, particularly in the light of the global financial crisis. Surely the government has to work hard to get that balance right and that is what it is seeking to do at this point in time. Do you acknowledge that?

Mr Pascoe—The issue of balance is one that is hard to reconcile with climate change science—to say that we can just do a little bit because we have a global financial crisis. Professor Garnaut has highlighted that emissions might be slowing slightly, ever so slightly. They are still on a path towards really dangerous climate change—towards complete loss of Arctic sea ice and towards the destruction of the Great Barrier Reef by the middle of the century. To tell our grandchildren that we did not act on climate change because we were concerned about balance and a global financial crisis is not an argument they would be prepared to accept.

Mr O'Connor—In addition to that, our belief is that a lot of the economic costs of climate change and this legislation have been well and truly overblown, particularly by a lot of the corporations that have come out loudly seeking compensation. The evidence that they are producing does not seem to correlate with the evidence of a lot of financial analysts who are currently assessing these companies and the potential impact of a carbon price on the EBITDAR or the earnings or the revenue of these companies. This has happened on numerous occasions, whether it be Woodside or, more recently, Xstrata.

I think what we continue to miss out on in this debate is not that we have a potential huge cost impact but that there is a massive opportunity side impact. Something holding this whole system back even further means that we have less of a chance to capitalise on this opportunity. To date, the evidence does not support that jobs will lost. To date, the evidence that we have is that tough environmental policies have stimulated a lot of green jobs and a lot of new green innovation, and that evidence comes from Germany, the UK and CSIRO's own reports. There is a lot of data to support that in fact the outcome has been jobs creation. CSIRO's analysis out to 2030 indicates that even in those extractive industries—the high environmental intensity industries—there is still jobs growth under a zero carbon protection.

Senator PRATT—If we delay introducing this scheme in the current financial environment, surely we are going to deny certainty to business in a way that might actually slow it and prevent the economic pick-up because there will be existing uncertainty as we need to get—

Mr O'Connor—Absolutely. It seems to only exacerbate that uncertainty. We have energy companies such as AGL saying, 'Get this legislation through; we need that certainty'. So in fact the calls to put off legislation are quite incongruous with what some of the companies are calling for themselves. In fact, we have Germany saying that part of their stimulus out of this recession will be investment in the green economy, green jobs, and that that will actually draw them

through this recession and lead to less of a negative impact on their growth over this year and next. So, absolutely, I think it is a really important thing to focus on.

Senator EGGLESTON—You said that one of the reasons you do not support this scheme is because it really does not produce the outcomes we would like in terms of contributing to the reduction of carbon around the world. I suppose part of that is the inherent trading of credits—people will pay for a credit and trade it off with buying some counterbalancing whatnot somewhere overseas and that does not reduce emissions either in Australia or in the place that the credit is purchased from. What about a carbon tax? Some see a carbon tax as a better global aspiration than emissions trading because a tax or agreement on an internationally harmonised price to apply domestic permit trading schemes would avoid both the questions of distribution between countries inherent in a cap in trade system and the potentially destabilising effects of large-scale international flows. What is your view about a carbon tax in terms of achieving the goals which we would all like to see?

Mr Pascoe—In an Australian context or an individual country context we would much prefer an emissions trading scheme. The basics there are that an emission trading scheme allows us to set the cap on greenhouse pollution, and to achieve that cap with a tax, that is the price, and we have to model and estimate what greenhouse gas reduction outcome that would have. The imperative here is obviously that the reason we are doing this is to reduce greenhouse gas emissions, so we think it is better policy to more closely align your mechanism with what the stated policy goal is. On an international perspective, we are moving towards a global carbon market through the Kyoto protocol and through the Copenhagen negotiations. There are some benefits from that as well as some risks. There is a risk in terms of environmental impact in that we need to make sure that any international credits that we are bringing into Australia are actually environmentally effective. Also, to try and restart those negotiations and restart that framework on the basis of a carbon tax internationally would be taking a step back, in our view.

Senator EGGLESTON—But it might produce a better outcome in the longer term and you might involve some of the countries that are unlikely to introduce emissions trading schemes at all, such as Indonesia and various other countries.

Mr Pascoe—It is possible. My understanding of the worldwide experience is that carbon taxes have not been effective. I believe we have seen carbon taxes in the UK and some of the Scandinavian countries. My understanding is that very little effect on greenhouse gas emissions was brought about by those carbon taxes. There was a key issue about the willingness of a regulator to set a carbon tax that would be commensurate with the sorts of reductions that we need to see, and having those negotiations on an international level would be fraught with danger. We are not convinced that we could see a good global outcome on the basis of a carbon tax. However, we are always keen to look at these options and to look for new evidence on these issues.

Senator EGGLESTON—There is an organisation called the Institute of Public Affairs, which has the view that a carbon tax could work a little bit like the GST. The mechanism is there and we have seen it already. They talk about it as an energy tax and say:

The aim of the proposed carbon tax is to incentivise everyone to use less carbon dioxide emitting fuel.

That is a mechanism which we know about, which is in place and which we could adopt fairly quickly. Perhaps that is something you should consider in your commitment to achieving the objectives you would like to see.

Mr Pascoe—If there were a carbon tax that resulted in a carbon price higher than what we are likely to see under the CPRS—perhaps if there were a proposal for a carbon tax of $30 or $40 a tonne starting in 2010—that might actually see more and quicker action than the Carbon Pollution Reduction Scheme. However, I have not seen any current figures on a carbon tax. Chiefly, our concern here is what the outcome is and not necessarily what the mechanism is. Our view is that the emissions trading scheme is a more effective regulatory mechanism. If there were a proposal for a very strong and environmentally effective carbon tax that was wide reaching and able to be integrated with the global negotiation framework, that certainly could lead to a better environmental outcome.

Mr O'Connor—There would also be the concern from the social equity perspective that it would most likely be a regressive tax. The way an ETS can be structured at the moment, there can be compensation for low-income households, which is an important part of the ETS.

Senator EGGLESTON—There would also be loss of jobs and various industries as a result of the ETS.

Mr O'Connor—This is what I was referring to before. There is no evidence to substantiate a loss of jobs. The evidence that we currently have tells us the opposite is true. Until the evidence is produced, it is highly unlikely that we can claim a clear correlation between loss of jobs due to the ETS—

Senator EGGLESTON—But various industries say they will close down.

Senator ABETZ—How can you assert the opposite is true if you say the evidence is unclear? You deny that assertion and assert the opposite but then say the evidence is still not in. Aren't you having it both ways on that?

Mr O'Connor—I am saying that the evidence that we currently have at hand asserts that, in fact, jobs growth is the likely outcome from this, as opposed to the other way around. I can cite a number of reports to that effect. In the report of CSIRO to the Dusseldorp Skills Forum, *Growing the green collar economy*, CSIRO modelled 52 sectors of the economy under deep emission cuts and found that employment would increase by 2.6 million by 2025 and by anywhere up to 7.5 million by 2050. I can also quote the UNEP *Green jobs* report, which indicates, interestingly, that recent history shows that the labour intensity of extractive industries has reduced over time and that in most countries employment levels have reduced over time in extractive industries. At the same time, it demonstrates evidence of the US having half a million green jobs and China already having up to a million green jobs.

Senator ABETZ—Part of the problem we face generally is that the Treasury modelling, the Garnaut modelling et cetera are all based on virtually identical assumptions. One of those assumptions is international action, which is one huge assumption to make; the other is that the economy is going to keep going as it always has and that we can just somehow push aside the global financial crisis, not to mention the other changes in our economies that have never been

predicted even 12 months or two years in advance, let alone five decades in advance. The modelling is all based on similar parameters, so it is not surprising that the CSIRO, Treasury and Garnaut all throw up similar conclusions.

Mr O'Connor—I would agree that computer general equilibrium modelling has a lot of flaws. The other flaw is that the opportunity side and the innovation that is actually created from a price on carbon is also not incorporated, as Garnaut himself has indicated. Also, the non-market impacts are not incorporated—that is, the impacts through the loss of, for instance, the Great Barrier Reef over that period of time. They have not been incorporated, so on both sides of the equation there are some shortcomings in the CGE modelling, absolutely.

Senator JOYCE—Modelling can be very dangerous, especially when you do not have the empirical to back up the anecdotal.

Mr O'Connor—Absolutely, but I would argue that producing figures that are not substantiated by any analysis is even more dangerous. The greatest example of that is last week's discussion by Xstrata of the threat to cut X thousands of jobs when in fact they have not said that publicly. In fact it is more likely that that number of jobs will be lost as a result of the global financial crisis, of the 50 per cent fall in thermal coal prices out of the Newcastle port and of the lack of capital to invest in the expansion of coalmines. To draw a correlation between that and a proposed ETS is even more dangerous than detailed modelling.

Senator JOYCE—Correlation should never be confused with causation.

CHAIR—Senator Furner has a question.

Senator FURNER—I would be interested to hear your opinion of those businesses that claim that the ETS is radical.

Mr Pascoe—It is an interesting view. We would obviously see it as more radical to sit back, look at the evidence that is coming out of, for example, the Copenhagen science conference in the last couple of weeks about what is happening on climate change and decide, 'Actually, we're not going to believe those 2,000 scientists; we might just sit on our hands and not do anything about climate change.'

Mr O'Connor—I am often interested to note what proportion of the actual economy is coming out forthrightly and saying that an ETS is radical. My understanding is that, if you dissect the economy into those groups that are actually vocalising their opinions through the BCA and the ESAA, they often do not reflect a majority of our economy. The majority of our economy is not vocalising such an opinion. So it is really important just to dissect where the loudest voices are actually coming from. It is often not reflective of the true economy.

Senator FURNER—I am asking that question on the basis of what Professor Garnaut said yesterday in Perth. He indicated there were some major concerns about the scheme being defeated before the Copenhagen conference and that such a defeat would create big difficulties for Australia. He criticised lobby groups and also politicians for making ignorant statements about climate change policy. So certainly he is identifying some critics out there that may jeopardise the possibility of it being passed before December this year.

Senator Abetz interjecting—

Senator FURNER—What's that?

Senator ABETZ—Sorry, I was being facetious.

CHAIR—Would the witnesses care to respond to the question?

Mr Pascoe—Sorry, could you repeat the question.

Senator FURNER—It was based on Professor Garnaut's criticism yesterday of the view of those people, whether they be politicians or lobbyists, about what is happening with the scheme in particular and making ignorant statements about the scheme. I am just wondering what your views on his comments about that being a catalyst for the scheme failing before the Copenhagen conference.

Mr Pascoe—I think there are certainly are some extreme views being put about the impacts of the Carbon Pollution Reduction Scheme on businesses' bottom lines and other issues. There are some very extreme views being put about how much compensation is necessary and about potential job losses, as we have discussed, through scare campaigns around the country about job losses.

Senator FURNER—One of the current initiatives of the government, as a result of the Nation Building and Jobs Plan, is insulation. Certainly that will generate benefits and add to assistance towards the ETS. What else do you think can be done for low-income earners in that respect?

Mr Pascoe—Certainly energy efficiency is something that can benefit Australian households and help them to live more comfortable lives and lower their energy bills. We have been supportive of action for a national energy efficiency strategy, not just for the rollout of insulation but other mechanisms that we can use such as solar hot water, solar PV panels and other household modifications for better design that can help to lower bills of low-income households. We have been supporting the work of organisations such as the Brotherhood of St Laurence, which has been working in that sector.

Senator CAMERON—We have had varying views put forward to the committee so far, going from maybe your view—not to the extreme, but saying that we are not doing enough—and there are the views that we are doing far too much. The government has determined to go down a certain path to start the process of transformation. If we do not manage to get this through parliament, what is your estimate of when any government could get a transformation process put through parliament?

Mr Pascoe—We certainly need to see something put through parliament and we would hope it would be this year. I would not want to estimate what the likely views of a government would be, but we certainly know that the Australian public wants strong action on climate change and that they do not want to see a system that will not deliver the sorts of reductions that we are going to need to see. We certainly think it is important to see legislation passed. We would really like to see a robust Senate debate and some modifications to the scheme so that we can see something that is environmentally effective. That is the outcome we would like to see.

Senator ABETZ—Is the ACF opposed to nuclear power per se or just nuclear power in Australia?

Mr Pascoe—We are opposed to nuclear power per se to the full cycle of the nuclear industry.

Senator ABETZ—In relation to the issue of carbon leakage, you indicated earlier—I think in answer to Senator Joyce—that you thought that issue had been somewhat overplayed. Would you like to flesh out a bit more for us as to why you have come to that conclusion?

Mr Pascoe—Sure. I can refer to a couple of bits of evidence from our green paper submission on this. There have been reports from organisations like MIT, and it has been written in the *Economist*, that show that the evidence that is available does not support the rhetoric that has been calling for this carbon leakage. For example, a study out of Cambridge concluded that carbon leakage from the implementation of the EU ETS is unlikely because transport costs, local market conditions, product variety and incomplete information all tend to favour local production. Further analysis on the iron and steel industries demonstrates little evidence that carbon price had any impact on competitiveness. There are a number of other studies available, after the fact as well as looking into the future, that show that the likelihood of the carbon price being a key factor in deciding the location of a company is fairly minimal. This is not really relevant to Xstrata and its operations, but, as an example of overstating the issue, I believe the impact of a $20 carbon price on Xstrata was something like 1.7 per cent of revenue.

Mr O'Connor—It was 1.7 per cent of—

Mr Pascoe—So to say that that is the main factor in deciding to sack thousands of workers is overstating the issue.

Senator ABETZ—Thank you for your view on that; I am not sure that I share it. In your commentary there was also the suggestion that, if Australia took the lead, it would be rewarded or be seen positively in the world community. Could you nominate any countries that you believe would say, 'Yes, now that Australia's gone down that track we will too'?

Mr Pascoe—The EU, for example, has a policy that they will cut emissions by 20 per cent by 2020 and that they will increase that to 30 per cent if other countries act. That is one example of where we would see someone moving closer to what the government has said is in our national interest.

Senator ABETZ—So you are saying that, if Australia acts, that would be enough to put the EU across the threshold to take that further step?

Mr Pascoe—No. There are also statements by United States President Barack Obama referring to Australia's action on climate change. We are talking about an international negotiation here and there are hundreds of countries involved. Australia is high up on the list as one of the highest per capita emitters and it is up there in terms of being one of the biggest economies in the world, from the G20. We are a player in this negotiation and we do have an influence. We have seen Australia have a positive influence on international negotiations in other realms, from the establishment of the United Nations.

Senator ABETZ—Yes. We saw it in Bali, where I thought it very ironic that the new Prime Minister of Australia was given a standing ovation because he had signed up to Kyoto—

Senator Cameron interjecting—

Senator ABETZ—You undid your own argument with Santos, Senator Cameron.

Senator CAMERON—I more than happy to go there, Senator Abetz—10 years of nothing.

Senator ABETZ—You undid your own argument with Santos by telling them that they had 10 years notice, courtesy of the Howard government.

CHAIR—Senator Abetz, have you finished with your questions?

Senator ABETZ—No. I could not help observing the irony of all these representatives of various countries in Bali applauding Australia for finally coming on board, when Australia is in fact on track to meet its Kyoto targets but all those counties that stood up to applaud were in fact on a huge trajectory to well and truly overtake their Kyoto targets. I am wondering what actually motivates the international community. It seems that the symbolism is a lot more important than the substance. I would have thought Australia should have been applauded for being one of the very few countries to meet its Kyoto target as opposed to all those countries applauding and being in complete denial as to their own breaches.

Mr Pascoe—In response to that, there are certainly some flaws in the Kyoto protocol that need to be addressed, and we hope we have learnt a lot since the establishment of the Kyoto protocol about committing to actions and following them up. We do note, however, that Australia did meet its Kyoto target largely through action in the agriculture and land management sectors and that we had done very little—

Senator Cameron interjecting—

Senator Abetz interjecting—

CHAIR—Thank you. We have now strayed to Kyoto rather than staying on the legislation and we are well over time, so I thank the ACF for their appearance here this afternoon.

[2.24 pm]

WARREN, Mr Mathew, Chief Executive Officer, Clean Energy Council

CHAIR—Welcome. Mr Warren, do you have an opening statement?

Mr Warren—Sure. The Clean Energy Council has now consolidated its role as the peak body for the energy efficiency sectors in Australia. The council represents nearly 400 companies developing and deploying clean energy and energy efficiency technologies in Australia. Its membership ranges from the smaller technology specific companies—deploying and developing technologies as to solar PV and ocean energy—through to the major retailers and most of the major generators managing their carbon risk by diversifying their businesses.

We consider the energy transformation that Australia and the world have embarked upon to be a marathon, not a sprint. Given the nature of a marathon, we need to run as fast as we can for a considerably long time. It is a process of radical and induced change that will last a generation. Therefore this process needs to be robust enough to continue irrespective of the political tide running at any given time. Public opinion and the public's levels of concern over the threat of dangerous climate change is going to wax and wane.

This brings us to the government's Carbon Pollution Reduction Scheme. The Clean Energy Council has identified a small number of concerns about its design features and has engaged with the government and the Department of Climate Change to see how they can be remedied. In this respect we seem to be a relatively minor player compared with other industries. One important issue is the treatment of voluntary actions. Since January we have been arguing for the need for reform of the treatment of voluntary actions under the CPRS design. There are some key behaviours by businesses and households that are strongly motivated by the ambition to reduce greenhouse gases. Some of these, like installing rooftop solar PV panels, rely on a substantial financial commitment by households and are encouraged by government policy. It is therefore inconsistent for the government to encourage this type of action on the one hand only for the individual in question to discover their efforts have no impact on the overall emissions profile. It is not possible or feasible for all voluntary actions to be rewarded or recognised in this way, but we suggest there are key discrete actions that require consideration.

The last point I would make is that we liken the implementation of the CPRS to buying a computer. Whenever you go to buy one there is always a rational incentive to wait for a couple of years because there is always a faster, better and cheaper model coming. But if you adopt this thinking then you will never buy a computer. By buying one now, you will discover the design features that are really important and those that do not make so much difference, so that when you upgrade, in two or three years time, you will be better informed—just as we would be better informed consumers of new policy. We should accept the harsh reality of climate policy sooner rather than later. We are evolving novel policy and are destined to make mistakes, perhaps many times over. The design of the trading scheme, if that ends up being the final policy tool, will evolve many times over the next decade and the international dynamic of this policy will add further uncertainty.

The white paper delivered in December should not be seen as the end of the policy process but as the start. The approach that the Europeans have taken is innately risk averse. They got criticised for being too generous at the start of the scheme and grandfathering permits to major emitters and trade exposed industries. But now the debate in Europe is on how to improve their scheme design rather than on when or whether to start it. So the political and technical uncertainty over deployment of the CPRS makes the deployment of complementary measures even more important. The aggressive development of clean generation technologies and energy efficiency measures should have pre-empted any trading scheme. This was the rationale behind the deployment of the MRET in 2000 and the recommendation of the Parer review in 2003.

CHAIR—Thank you, Mr Warren. You were talking about the possibility of some voluntary actions being incorporated in the CPRS. How do you see the mechanism for that happening?

Mr Warren—In the discussions we have had with the department, the concern that they have, which we are sympathetic to, is about creation. I should go back a step. When it comes to individuals doing various actions, there are a range of motivations for those actions and they vary as to deciding to ride a bike or walk to work, rather than driving, or catching public transport. They go through to purchases of white and brown goods, and what sort of car you drive. It does open a Pandora's box if you try to account for every one of these voluntary actions. We figure that at the very least where there is discrete government policy in place, one that directly stimulates and motivates individuals to take steps to reduce their greenhouse profile, that needs to have the integrity of that action preserved. The classic case, we think, is the deployment of solar PV panels. It is a reasonably expensive exercise for a household to invest in that technology. There are a few other reasons why they would do that other than reducing their greenhouse profile. We are concerned that if a perception evolves in the marketplace that putting PV on the group does not actually make any difference—it just reduces the cost of carbon permits for major emitters in the economy—that will undermine the enthusiasm and incentive for those households and small businesses to deploy the technology. That will in turn undermine a developing market. So we are currently in discussions with the government and the department to try and resolve that.

CHAIR—So how do you see this fitting in to the permit trading system? There are a series of federal and state government subsidies for installing solar PV panels.

Mr Warren—We do not think it is very difficult. The easiest way is this. The proposed multiplier under the renewable energy target will provide an exact known amount of deemed energy that is being saved. It is banded to different regions. So that gives you a fairly clear metric by which to account for the amount of greenhouse gases that has been avoided through the deployment of those technologies, which can then be retired in, say, 2015 or at some point in the future. It is a relatively simple one-off exercise. At the same time it creates a clear link between an individual's action, in this case, and the reduction of the Australian greenhouse emissions profile by the amount of greenhouse gases that they have avoided through the deployment of that technology. That is enough, just so people know that they are making a difference, so that their significant efforts are fully acknowledged and recognised in the marketplace.

CHAIR—So you do not think that the subsidies that exist now do make enough difference?

Mr Warren—It is not that. They are important as market development mechanisms. PV is a unique case. Think about the market where people are buying, say, hybrid cars. There is a range of decisions and motivations as to the car you might choose. But when you are spending between $6,000 and $15,000 of your own money to put a PV system on your roof, your only motivation is environmental and greenhouse driven, given the estimate as to the purchase. It is just to make sure that those actions are fully recognised by assuring those households that the amount of greenhouse gases that they are saving through that investment is actually coming off the top of Australia's emissions profile and not just being absorbed and making the cost of the scheme slightly cheaper for the rest of the economy.

CHAIR—Thank you. We will go to Senator Eggleston.

Senator EGGLESTON—What is the total energy from electricity production from installed capacity in Australia?

Mr Warren—Do you mean the total grid?

Senator EGGLESTON—Yes.

Mr Warren—I do not have that information in front of me, Senator, I am afraid. I can get back to you with the answer on that. I would guess, just working backwards off the top of my head, we are talking about a 20 per cent energy target by 2020, which is 45,000 gigawatt hours. So you could multiply that by five to give you the size of the electricity energy market in Australia.

Senator EGGLESTON—Okay. Right now what percentage of the total power generation do you think your members contribute to that total energy supply in Australia?

Mr Warren—It is about eight per cent.

Senator EGGLESTON—Where is that coming from? Is it from hydro—

Mr Warren—It is from hydro, wind. South Australia has 75 per cent or thereabouts of wind energy deployed in Australia. So it is hydro, wind and some solar PV. They are the main players. There is also some avoided energy through solar hot water deployment as well.

Senator EGGLESTON—That is a long way short of the 20 per cent clean energy target that you are advocating, isn't it?

Mr Warren—I would not argue it is a long way short. The clean energy target is certainly achievable. There is not much of a view within the industry that that is something we cannot deliver. The interesting thing will be to see how that is filled. I think the nature of that target is appropriate for Australia. We are probably one of only two countries in the world that I can think of that have genuine first-best or A list natural clean energy resources. We have the roaring forties wind along the south coast, we have the most abundant sunshine on earth, we have excellent hot fractured rocks and conventional geothermal assets and we have good access to bioenergy. The nature of the RET is that it is an effective policy because it does not pick a

winner from any of those technologies and it creates an open market in which they can compete and deploy at the lowest possible cost.

Senator EGGLESTON—What renewables are ready to go now that will make up the required baseline and deliver a carbon emission reduction?

Mr Warren—Wind and solar PV are certainly ready to go right now. Indeed, there is a queue of wind projects that are on the drawing board waiting for the RET legislation to be finalised. The trajectory to meet the target will be met mainly by wind and some solar PVs in the first year. We did not expect to see a growing diversification potentially in the ensuing years, subject to how other technologies develop and deploy. We think solar thermal technology is reasonably close. Geothermal energy suppliers indicate that they should be ready to market by 2015 or thereabouts.

The nature of this policy and this process is that it is innovative—and innovation, by its nature, is surprising. When the MRET was first introduced in 2000 we were surprised by the way it ended up deploying, and I think we can expect to be surprised again. But part of that is getting the economy fit enough to run the marathon that we are facing over the next generation.

Senator EGGLESTON—With a 20 per cent target, I think you are fairly optimistic to think that things like solar are going to make that up. It seems to me that it is going to be very difficult to reach.

Mr Warren—Sorry, we do not agree at all. Solar will play a role. The challenge for solar will be evolving effective policy that brings the costs down and also realises the value of the deployed generation, so there are savings from avoided transmission and infrastructure costs by being able to deploy generation and at the point of consumption. That applies to microwind and microhydro as well as solar. That will certainly play a role. Wind is clearly quite capable of filling a large part of that process right now.

Senator EGGLESTON—But only in limited areas, surely. It is a very uncertain source of supply.

Mr Warren—No. Australia has outstanding wind assets all along the south coast and parts of New South Wales. It is a very big country. Our wind assets are probably three times more efficient than many in Europe. We expect that there will be no problems in deploying to meet that target if that is what is required.

Senator EGGLESTON—Sadly the wind does not blow every day. There is a Parliamentary Library brief which says:

> There is substance to the claims that an expanded MRET will see the relative decline in the use of gas for power generation in Australia but only if the emissions permit price is low enough. Unfortunately, permit prices in the initial years of the scheme may be too low to give sufficient incentive for the deployment of large-scale gas fired power generation in Australia. In these circumstances, the continued high use of coal to generate electricity may well also increase greenhouse gas emissions, not reduce them.

Would you like to comment on that?

Mr Warren—Sure. There is no indication that we will see any likelihood of an increase in emissions from coal-fired generation, because we do not see any plans or proposals or the likelihood of the construction of new coal-fired generation for the next decade. It is generally accepted in the market that you are unlikely to see a new generation from coal unless it is fitted with carbon capture and storage and able to be deployed. On the other hand, there is already a large investment in gas as well as potential for base load generation capacity. So gas is growing at a substantial pace into big growth energy generation technology right now in the grid and we expect that to continue.

The second point is that the gas industry cannot lose in a sense, because the opening up of LNG facilities in Gladstone will create great export opportunities. All the gas that is able to be generated will either be consumed here or be able to be sold through those terminals. That will also expose east coast Australia to world gas prices. We expect the combination of significant deployment of gas generation and the exposure to world prices to be the main driver pushing up electricity prices over the next five to 10 years.

The experience in Europe is that, because gas is a much more flexible generation technology, it is much more suited, along with hydro, to matching increased deployment of technologies like wind. So, as the wind abates in parts of Australia, gas is much nimbler at filling the gap as required. So they are actually quite complementary technologies, rather than being competing technologies.

Senator EGGLESTON—There is a view that the MRET program and CPRS work at cross purposes in that a well-designed ETS should deliver the most economically-efficient reduction in carbon emissions, whereas MRET effectively forces dollars into technologies which are currently cost effective but may not be the most efficient in the longer term or the most efficient at producing reductions in global emissions. This is particularly of concern to the gas power generators, as they see the combination of MRETs and CPRS as having the potential to undermine investment in gas production, and gas generation will be substituted for coal-fired generation and actually result in an increase in emissions in the medium term. What do you say to that?

Mr Warren—In effect, the RET is an industry development policy tool. Ideally, we should have deployed the RET process more aggressively prior to considering the introduction of the emissions trading scheme, because it is the way in which you explore and discover what the lowest cost is for those clean technologies and on what scale they can be deployed. That has not happened. The opportunity was provided in 2003 and was passed up. In a sense, we are now deploying the RET as the same time as the proposed CPRS.

The second point is that—I think the same point was made again—I do not see that there will be an increase in coal generation under a CPRS or a RET. I think that gas, as a lower emission technology to coal, will start to increase and it is demonstrating its increase in its market share on the Australian market over the next decade and will continue to do so. I do not think the RET will crowd out gas deployment. I think that, while it will increase renewables it will also, bearing in mind that it is an increase in renewables as part of an overall larger energy market, there is plenty of scope for gas to continue to increase its deployment. We would probably expect to see the retirement of some of the older and less efficient coal-powered stations sooner rather than later—I am thinking maybe one in South Australia. But that will be dependent on how the policy

deploys. Gas that is not sold by the gas industry will be exported, so it is a good business to be in either way, I suspect.

Senator JOYCE—This is not a tricky question but just general curiosity. Of the renewable sources like wind and solar, how much of this plant is actually made in Australia?

Mr Warren—Probably the standout would be solar hot water systems. About 80 per cent are made in Australia. The wind technology is all imported. Most of the PV panels, to bring costs down, are sourced out of lower cost production facilities. So the PV is largely imported. Obviously the hydro is indigenous. The geothermal technology, if it is built at scale, will be constructed partly here and partly imported. It will depend from case to case, but we would expect to see, as with most other industries, costs driven down as much as possible. I think all of the gas turbines and most of the technology in coal-fired power stations is also imported. I do not think we make any of it.

Senator JOYCE—Has there been any study on how many units of labour there are per megawatt of power? If you compare coal to gas to solar to wind?

Mr Warren—That is a good question. We are getting some work done on that at the moment, so it is a pressing question. Wind generation is a bit like gas and coal. They are not particularly big employers. We expect, with the renewable energy target, that there will be about three jobs per megawatt of energy in the wind industry, in the construction of those sites. That is something like 3,000 jobs in regional Australia. The numbers are much bigger for the manufacture and deployment of insulation and solar hot water, because they are much more labour intensive; they are in lower cost technologies.

We suspect the big growth will be in the transformation of the retail energy business from a relatively hands off and technical process to a much more service-oriented one: the deployment of skilled men and women into households and businesses installing PV panels, insulation, solar hot water and very smart meters, and providing a much greater service component as retailers move from just selling electricity to actually selling the service of managing energy efficiency. We suspect that will be a very large employer and a great substitute over the next decade.

Senator JOYCE—Basically, it will be an increase in the service industry by reason of the deployment of renewable energy?

Mr Warren—We think the retail electricity market will evolve so that service will be a much larger component. That will obviously be a much better employer than the just read-the-meter once-a-quarter kind of business they have at the moment.

Senator JOYCE—So we are looking at retail and service industry jobs?

Mr Warren—Yes. We suspect energy efficiency will be a lot more hands-on and there will be a much more evolved relationship with customers than is currently the case. That will be a way for the retailers managing the decline in the amount of power they sell to increase the level of service that goes.

Senator JOYCE—If coal is our nation's major export and major employer and if what we believe is right for Australia should be right for everybody else, what exactly will be put in its place if we move away from coal?

Mr Warren—I think we are appropriately investing substantially in development of clean coal technologies. If we can make that succeed, that will certainly help sustain the coal business in Australia at a cleaner level. So that is a valid investment. The likely substitute in the medium and longer term will be LNG, I suspect. As you would be aware, the curious nature of the Russians supplying gas to their European neighbours and then turning the taps off in the middle of the winter makes the world pay a premium for more reliable sources of LNG. I think we would expect to see the export of gas as a substantial substitute in the medium term in regard to our terms of trade, and that would be welcome. The model we see for the renewables industry is probably something like IKEA, in that we would expect to be designing, developing and selling the IP from Australia and we may find that we manufacture and keep the costs down to develop global businesses in other parts of the world. We have the advantage of being able to develop really low-cost and highly efficient industries here. So we might be quite surprised at how we can deploy that if we get the right policy settings in place.

Senator JOYCE—I live in the Surat Basin. The good thing about gas is that once it is out of the ground and the capital is invested, it looks after itself. You put the pipeline in but you just need a maintenance crew to look after that, and you have the fields and you possibly need a maintenance crew to look after that. It is not labour intensive; in fact, its labour requirements are quite frugal.

Mr Warren—Most low-cost energy is not going to have a high labour component. As I said, the exception will be the extent of the management of energy efficiency because of the nature of the business. We are not in the business of being opposed to gas. We think it is a great fuel and will provide an important transition. Deutsche Bank got it right when they predicted the world carbon price will largely be the cost of switching from coal to gas and will be so for the next 10 to 15 years if not longer which means the carbon price will track the oil price because gas is a direct substitute for oil. I think we saw that last year with the heightened foreign investment and interest in Australia's gas businesses. It is hard to see how gas businesses will lose over the next decade or two, providing we get the specific treatment of LNG and value add and the emissions profile of the business itself right, so we do not undermine its ability to contribute to the economy in a substantial way.

Senator JOYCE—The coal industry is one of the highest paying blue-collar jobs in Australia, isn't it?

Mr Warren—It is, although it is not a substantial employer. The ratio of coal extracted compared to the number of people employed has been falling steadily for the past 30 or 40 years as it becomes mechanised. That has also been a big driver in improved safety with fewer people down the mines so that has made a substantial difference to the improved performance of industry. They are not substantial employers, although obviously they are very important in regions like the Hunter Valley and the Bowen Basin. But, in and of themselves, they tend to have substantial multipliers more because of the nature of the fuel and the economy than the direct employment benefits from those workforces themselves.

Senator JOYCE—So the emissions trading scheme could be a mechanism that allows people who have the licences on those coalfields to move to a return to gas, which is less labour intensive? As long as they are getting a margin from it, it could be a cost saver for them?

Mr Warren—It is probably outside our expertise, to be honest. As you would be aware from the numbers, the well-paid jobs in the coal industry do not require particularly high skill sets. And then there are mining engineers and those related skills. I think those skilled employees will be able to move fairly easily across different sectors, but it will evolve and I expect the CPRS, like any other major structural change, to have some regional impacts, both positive and negative, and that needs to be managed.

Senator JOYCE—One industry that obviously will expand is the people trading the permits. Who are some of the companies that you would suggest would be involved in the trading of emissions trading scheme permits?

Mr Warren—Right now, the retailers like AGL and Origin and TRUenergy are running fair books. You would see that major financial institutions—Macquarie Bank, ABN-AMBRO—

Senator JOYCE—Macquarie Bank, ABN-AMBRO, Deutsche Bank.

Mr Warren—Yes, all of those. The debate, which I do not think we would want to weigh into, is about international linkages and how you can stop them. If another country decides that they will recognise Australian permits then there will be international financial institutions buying Australian permits, or they will want to hold them in anticipation of them being recognised. There would be business in trading like that as well. It will evolve. You would expect that having scale and being able to hedge and do all the derivatives that are required would be an advantage, so the major trading houses will pick up and see with other commodities and schemes.

Senator JOYCE—A nice little bastion of conservative voters. That is a great idea. I am getting on board with this idea!

CHAIR—Mr Warren, Senator Xenophon has some questions he would like you to take on notice. If you are not in a position to write them down or hear them very well, the secretariat will be able to advise you what they are at a later date if you care to ring them.

Senator XENOPHON—I will put them in order, Mr Warren. Your website is a five-point plan. Firstly, why do you think energy efficiency targets and regulations and a $2 billion fund of support are superior to market mechanisms such as the CPRS or other emissions trading schemes? Secondly, why does the Clean Energy Council want a weaker emissions target than that proposed in the CPRS—that is, no reduction from 2000 emissions by 2020 compared to a five to 15 per cent reduction in the CPRS, and calls for stronger cuts by most environmental groups? Finally, would an emissions trading scheme or carbon tax removing the subsidy to fossil fuels be one important, tangible step towards, to use your word, ‘incentivising’ the use of renewable energy?

Mr Warren—Okay.

Senator ABETZ—Mr Warren, you indicated earlier that clean or renewable energy was making up about eight per cent of our power needs in Australia, and that was to be increased to 20 per cent. What sort of carbon price do you think needs to be factored in to make that a viable option to get the renewable sector up to 20 per cent?

Mr Warren—A carbon price is not required under the renewable energy targets, but I presume your question is: if there was no renewable energy target, then at what price would that level of deploy occur? Is that right?

Senator ABETZ—Or the take-up of renewable energy given the cost of it. As I understand it, it becomes somewhat cheaper if the more traditional sources of power have a carbon tax, for want of a better term. And what level would the CO_2 emission cost per tonne need to reach, do you think, for the renewable energy sector to be able to compete effectively in the energy market?

Mr Warren—Under current, known technology, it would probably be a minimum of $40 a tonne or thereabouts, possibly higher. One thing we observed in some of the forward planning is that the real cost of renewable technologies can improve as the dynamic of the grid improves. At the moment we have a grid which is a network that is built around coal-fired generation to a large extent, so we optimise it because we have large base-load power stations. As we see the deployment of more variable technologies, and as the grid can find ways of managing that intermittency better, we think that some of those costs can come down.

Senator ABETZ—Somewhere along the way you indicated to us the computer analogy—that is, you would never buy a computer if you are always waiting for the latest model. I thought that was a very interesting analogy. Is there a functional emissions trading scheme in the world that you would say has the basic requirements of an emissions trading scheme?

Mr Warren—Easily the most evolved scheme is the European scheme. There is reference made to some trading schemes operating in a few US states and other parts of the world, but I think the European model is the most advanced. While they were heavily criticised at the time, the Europeans ended up taking up a fairly risk adverse approach so they could get the scheme in. If I could make an observation: this is being drafted in a fairly hasty fashion. The Europeans took five years to design their scheme—we have taken one—but by taking a risk adverse approach they discovered there was whole lot—and they are phasing the scheme in over 15 years, so there are a series of phases where they adjust the rules every time. In the first phase, while they were criticised for over-allocating permits to major emitters and trade exposed industries, it ameliorated a lot of the opposition to the introduction of the scheme and gave them significant upgrading and improvement on information. It is really a third-best policy environment at the moment. We have very weak information about the consequences of a carbon price. Australia is a highly trade exposed, carbon intense economy, so it is more vulnerable and more sensitive to this kind of policy than Europe. There is a case to say, 'Let's start'. If we start and have the least amount of risk, but we start understanding at least what really happens and what the true costs and impacts are and we start improving that data flow, then we can begin to evolve the scheme over time and keep updating it.

This idea of designing a scheme in 2009 and that is going to be in law for the next 30 years is incredibly ambitious. As we see an international dynamic and as the US begin to evolve their

policy more aggressively, we are likely to see a range of good ideas continually filtering into the debate and we should accept those because the idea is to solve the problem, not to stay wedded to a scheme which may be five or 10 years out of date. But if we do not start, we will never start because there will always be the sense that there is a better design coming down the track. We are generally of the view that there is as much lost as gained by deferring or putting off the deployment of the CPRS to sometime in the future whereas, if we start now, taking into consideration there are too many concerns in industry to expect that all of them are just whimsical, then we do it to minimise risk so we can start finding out what we know and what we do not know, and that would be the best way to proceed.

Senator ABETZ—I hear what you say but, with respect, you say that the European model is the most advanced scheme. Can I suggest to you that it has fallen, if not into disrepute, into disrepair—and substantial disrepair. You also, I think, agree that there was weak information about the various impacts of the scheme, and you also acknowledge that Australia is more trade exposed than the European Union. Given all those factors, would it not be wiser—to use a term—to 'hasten slowly' than to commence at a politically asserted date, namely 2010, rather than a date when you have all your ducks in a row and you can have some certainty that the impact will be minimal?

Mr Warren—I hear what you are saying, but in the scheme the Europeans had in the first phases the effective price of carbon actually became zero once they realised they had overallocated. While that was criticised in that phase, they learnt an awful lot more about the specifics, the risks and the nature of what they needed to take into account for the second phase.

Senator ABETZ—Alan Bond learnt a lot from his mistakes as well, I am sure, but sometimes mistakes have huge economic consequences, and that is something that we want to guard against in relation to this.

Mr Warren—Absolutely. That is understood. The introduction of the scheme in Europe did not drive or cause significant economic dislocation, but it did give them the ability to improve the scheme and evolve it. We are just suggesting—and there are a range of voices in the energy debate who agree—that it is better to get going and start with a less risk averse approach than to try and create the perfect scheme and then find that it is not as perfect as you thought.

CHAIR—Thank you, Mr Warren, for joining us by phone this afternoon and thank you for your evidence.

Proceedings suspended from 3.02 pm to 3.18 pm

HARRIS, Mr Matt, Consultant, Frontier Economics

PRICE, Mr Daniel, Managing Director, Frontier Economics

CHAIR—Welcome. Mr Price, do you have an opening statement you wish to make?

Mr Price—Yes. I also have some written material, if that assists.

CHAIR—Thank you. Do you have multiple copies of that?

Mr Price—Yes. I thought I would briefly go through this to give you a more structured view of our views. I am representing Frontier Economics today. I am not representing any clients' interests. Our interest in emissions trading policy goes back more than 10 years to when we worked with the New South Wales government to create in New South Wales the world's first mandatory emissions trading scheme, GGAS. The then premier, Bob Carr, was quite interested in demonstrating that emissions trading schemes could work. That is not to say that GGAS is the scheme that we would ideally put in place. It was an amendment to an existing voluntary scheme, so we were very constrained in what we could do. I am not indirectly representing any clients' interests. We work for a broad range of clients, from governments and regulators to generators and retailers. We have done a lot of work for organisations such as the WWF Investor Group on Climate Change and Australia 21. We have a broad range of interests as far as greenhouse matters and energy are concerned.

I thought it would be worth while starting quickly on the policy objective. From our perspective, that should give you an indication of the way we think about this. It is pretty clear that the scientific community think a fast, effective response is required. This policy is like nothing else Australia or the world has had to confront before in that the policy objective can only be achieved by massive and ongoing investment. That indicates the sort of policy environment that you need to create—that is, to support investment. If you want private investment you have to give them a great deal of clarity and certainty around the arrangements to make sure they want to invest the billions of dollars that are required for long-lived assets. If you do not, taxpayers will become the investors of last resort. We have had a long history of that, and it does not work terribly well.

It is clear that under any scheme, irrespective of design, any meaningful target will involve considerable expense, but that should not deter governments from implementing emissions trading schemes. It is probably the case that the cost of not doing anything will overwhelm the cost of doing something. Being a very small and open economy, Australia has a great responsibility to ensure it has the most economically efficient scheme in place. Any scheme that unnecessarily raises prices could damage the Australian economy to the point that it undermines the incentive for people to implement emissions trading schemes worldwide. Particularly given Australia's other policy objective of being a policy leader in this area, I think it is important for Australia, for the rest of the world and for the environment that we think very carefully about the nature of the scheme we put in place.

It is worth stating that almost all of the alternative schemes that have been proposed effectively do the same thing: they all try to shift the relative economics towards cleaner, lower-emission activity in production and consumption. They do so in different means. The real problem in terms of the difference in these schemes is that they produce absolutely different price effects, which make these schemes relatively more or less attractive. One of the reactions to schemes that produce very harsh and absolute economic outcomes is that policymakers tend to moderate the target that they put in place to try and achieve emissions reductions. If you can conceive a scheme that is effective in reducing emissions trading but has a less harsh economic impact, it stands to reason that you would be able to increase the target to get a more effective environmental outcome. That is something we have been thinking about for a good many years. We work around the world in very organised energy and emissions markets, so we have thought about this very carefully.

I will just run through the three key alternatives, the different types of schemes. I have tried to simplify this as much as I can. I apologise for the sacrifice of some technical and economic purity, but this is to communicate the basic features of these three alternatives. One alternative is the classic cap and trade scheme, which the CPRS is based upon. In terms of a carrot and stick approach, I classify that as a purely 'stick' approach. It changes people's behaviour by charging for all emissions. From an environmental design point of view, it will achieve its objective. There is no doubt in my mind that a CPRS will work to reduce emissions outputs.

An alternative way of changing the relative economics of cleaner and higher-emission activity is by applying a carbon tax. A number of people prefer a carbon tax because they believe it will provide much more certainty for investors—and that is a laudable aim. The problem with taxes is that the tax would be constantly adjusted to meet an emissions outcome. So I think it is an illusion that this tax would lead to a more certain environment. The other problem with taxes is that you cannot trade a tax, so you cannot get the benefits of competition and trading. I guess a third problem with a tax is that it has the same absolute, harsh price effect that a cap and trade approach has—that is, it is all 'stick'.

An alternative way to change behaviour is by using some inducements, some 'carrots'—positive rewards for positive behaviour. I characterise that as a 'carrot' approach. There are two broad types for that approach. The mandatory renewable energy target scheme, which the government intends to rely on—and has relied on in the past—is a purely carrot approach in that it provides credit for positive action, for investment in renewable schemes. The clean development mechanism used extensively in Europe is a carrot approach as well. But it is a purely carrot approach in that it pushes all the impact on to the supply side, so it can lead to higher resource costs in meeting the target. And then there is the halfway house of the carrot and stick approach itself: you reward good behaviour but punish poor behaviour. In effect, you are meeting the needs of both parties. It is this scheme that we believe delivers the best balance of economic and environmental outcomes.

I would like to speak briefly about the benefits of this approach. In the slide pack I have given you there are three pictures which in a figurative way demonstrate the three key schemes that I have described. Slide 7 highlight the benefits of the carrot and stick approach. By far the key benefit is that the absolute price effect through the economy is much smaller for exactly the same emissions reduction and exactly the same resource cost. So it has the same economic efficiency characteristics but the price effect is much smaller. The reason why I think that is a

positive outcome is that it mutes a lot of the harsh economic signals that people are concerned about and which cause governments and policymakers to adopt a less aggressive and less meaningful environmental target. Of course, the immediate response to that is that it must follow that less harsh price signals mean there is less demand side response—and we can talk about that a bit later. But that need not be the case, because you can change consumers' behaviour by beating them up with a stick or by inducing them with a carrot. In this type of arrangement it turns out that inducing people positively to change their behaviour probably works more effectively for most consumers than simply raising prices, which they will not thank you for. This has been shown by experience in New South Wales.

The other major benefit of the scheme we are suggesting here—which is in fact a modification of the CPRS, not a wholesale change—is that it completely avoids the need to churn billions and billions of dollars of revenue. The value of the permits over time will be in the order of over $1 trillion of extra costs to Australian industry in terms of the cost of the permits to the economy. It is a huge number. That $1 trillion odd will get churned between government and industry. The logic of the CPRS is that it will offset the harsh price effects by handing money back to adversely affected consumers. But we all know that two things will happen: first, a large amount of money will be consumed in administering that arrangement; and, second, it will not be the case that those funds will be perfectly allocated for all time, efficiently allocated back to precisely the parties that are adversely affected. There will be leakage, there will be inefficiencies and there will be money that will go to people's pet projects—which will create their own inefficiencies. This scheme completely avoids the need for that massive churn of revenue.

A third benefit which is really important and becoming more obvious to people—in fact, it was on the front page of the *Age* today and in the editorial, and I think it has been raised by the Australia Institute—is that the way the CPRS works is that if complementary measures are put in place by other state governments, or if voluntary actions are undertaken by consumers, all that does is leave additional emissions that are allowed to be produced by industry. It undermines the incentive for voluntary action and undermines the effectiveness of complementary measures that governments put in place at the federal, state and local levels because the way these schemes work is that it is a target that is consistent through time, irrespective of the economic conditions. It provides investors with a great deal of certainty. It maintains the task for producers and consumers to continue to reduce emissions through time. It does not give them a let-up if the economy goes back a little bit. It still keeps the pressure on reducing emissions through time and it does not undermine the incentive for voluntary action or complementary schemes.

I have said in the slides that the CPRS creates some perverse impacts in that it tends to reward higher emitters in the compensation arrangement than lower emitters and in fact discourages high emitters from reducing their emissions. The sort of scheme that we are promoting would not do that, would not let those higher emitters off the hook, if you like. Because the emissions task is constant through time under the scheme we are promoting, carbon prices will be far more stable through time. We spend a lot of time with investors in the energy sector in particular and the one thing they like is stable commodity prices or prices against which they can decide their investments. The last speaker I heard talked about the European emissions price rising and collapsing rapidly according to what happened in the regulatory arrangements. You will see the same thing with the CPRS through the course of re-establishing the so-called gateways. Prices will rise and collapse as you come close to those gateways. It will create lot of price instability.

Price instability makes it very difficult for investors to make long-lived infrastructure investments. This type of arrangement provides much more stable prices.

It is often said that the scheme that we are promoting has limited coverage in terms of only being applied to, say, the electricity sector. That is not true. The arrangement we are promoting here can be applied to the exact same sectors as the CPRS. In fact, you could have the MRET, the demand side of abatement, any other form of abatement, agricultural abatement and all the other sectors that are currently covered under the umbrella of one scheme rather than having multiple schemes operating at great expense to investors.

I will skip to slide 9 because I think it is really illustrative of why this is such an important issue. If these were just administrative nuances I would not be sitting here in front of you. It makes a massive difference to economic outcomes. This is an example of some electricity modelling that we have done. We do a lot of this for all of the major electricity regulators and institutions in this country and around the world, so this is pretty robust stuff. Let us look at what I have called the base case, the Department of Climate Change reference case, which is the dark blue line. This shows what would happen to electricity prices if no emissions trading scheme were put in place in Australia. We did that modelling at the time of the green paper on ETS, which is the same target that is now being considered. The red line is the new electricity price and the dark blue line shows when there is no emissions trading. You can see there is a very severe jump in electricity prices. The reality will probably be more than that. Then we have modelled the scheme that we are proposing, which is the light blue line. This is modelled to produce the same greenhouse gas abatement as under the CPRS, under the red line. You can see the effect on electricity prices is far less severe for the exact same emissions outcome.

You can think about that either as softening people's hardened opposition to introducing an emissions trading scheme or, alternatively, as extra headroom allowing you to increase the target to a more meaningful level. So there are different ways of thinking about the policy implications of that. But either way it is pretty clear that, if you have much less severe effects on such an important product as electricity, it will have less of an impact throughout the rest of the macroeconomy. So you will not have the requirement for compensation for industry, for the users. You will not have the adverse effect in terms of carbon leakage—industry leaving Australia for other countries where emissions may in fact rise. We can avoid all of that type of problem with this type of scheme. And our analysis, doing the same sort of general equilibrium analysis that the Commonwealth Treasury does, using the same type of model, shows us that, if we apply this type of scheme just to electricity, the economic costs are in the order of $300 billion to $400 billion cheaper than the CPRS. So it is not a case of just—sorry?

Senator ABETZ—Over what period?

Mr Price—Over that same time period, between now and 2050. So it is not a case of administrative nuances; this is a very meaningful difference in scheme design.

Senator CAMERON—You said '$300 billion to $400 billion cheaper'?

Mr Price—Yes.

CHAIR—Thank you, Mr Price. You were saying that the current scheme discourages voluntary action. I am not quite sure how voluntary action, particularly that of households or, say, small business, would fit into your scheme. How would that fit in, in terms of the permits? How would that work?

Mr Price—A working example of how this could work is already in existence in New South Wales as part of the GGAS scheme. There is something there called the demand-side abatement rule. I am not suggesting that for this, but it gives you an idea of how it works. The way that functions is that businesses—companies such as Easy Being Green—make money by going around to people's houses and knocking on their doors, and retrofitting the entire house with energy-efficient light bulbs, low-flow shower heads et cetera, and they secure a credit. Then they use that credit to fund their business and to make money. What the consumer gets out of that is a lower electricity bill, because they are not heating as much hot water or using as much electricity. It is a positive inducement. The flipside to not producing such a harsh price by just charging people higher electricity bills—which, for most consumers, tends to do nothing, because it is such a small proportion of their total expenses—is that it is a positive inducement, and it generates a business where people go and look for these opportunities to reduce energy demand. That would be incorporated as part of this type of arrangement. So instead of 'black permits', these are the opposite—'white permits'. They are credits for positive behaviour.

CHAIR—But, under the CPRS, wouldn't households have the same incentive to respond to people coming around, knocking on the door and offering to reduce their electricity usage? Your own graph shows prices going up quite steeply, so there would be the incentive there.

Mr Price—Electricity represents, for most householders, just a couple of per cent of their entire household budget, so even a very steep increase in electricity prices would have very little effect on the majority of consumers. So you have got, basically, two classes of consumers.

CHAIR—But why would the consumers do it under your scheme?

Mr Price—Because the business that actually makes money out of selling the credits gets a profit from that. The consumer, in that case, does not actually have to do anything. How, under a CPRS, would a company like Easy Being Green make money by reducing the consumer's household consumption by a tiny per cent?

CHAIR—So you are not saying that the householder would benefit; you are saying that the intermediate company would benefit?

Mr Price—The householder benefits under this type of arrangement in two ways. Under both the CPRS and this type of arrangement, consumers benefit by getting a lower electricity price. What I am suggesting here, and what experience shows us, is that consumers are far more responsive to a positive inducement—or making it easy for consumers to switch to low-energy products like light bulbs and low-flow shower heads—if someone else does it. In this example, that someone else is a private sector company looking for profitable opportunities to make money, and where they make that money is by knocking on someone's door and retrofitting their houses. That will not happen under a CPRS.

CHAIR—I do not see why not. The other thing you said that puzzled me a little was that the CPRS discourages high emitters from reducing their output. In what way does it discourage high emitters?

Mr Harris—It is more in the thresholds that are set for the compensation measures. So the fact that beyond 2,000 tonnes CO2 per million dollars you get a rate of compensation at 90 per cent for energy intensive trade-exposed industries whereas below 2,000, between 1,500 and 2,000, the level of compensation drops to 6,000. Below 1,500 there is a rate of zero per cent compensation. By these differences in the level of compensation you can create perverse incentives in terms of incentives for companies to reduce their emissions. That was highlighted by the Business Council of Australia in one of their submissions.

Mr Price—The logic is that there is a point at which a producer would have no incentive to reduce their emissions because they fall below a compensation threshold, so their profit will actually decline if they get cleaner, not increase. They have to bear the costs of getting cleaner plus their compensation then drops, so it creates a sort of crazy incentive to stay as a high emitter.

CHAIR—So the compensation levels are wrong.

Mr Price—I think wherever you set it you are going to get the same sort of boundary issues; that is always going to happen.

Senator ABETZ—On page 9 of your submission, the last page, there is an example of price affects electricity. On the left-hand side we have got a code LMRC dollars, per megawatt hour, I assume. Just reminded me what LMRC is.

Mr Price—These prices are in fact reflective of long-run marginal costs of the generation system, so it is the incremental cost of building another generator—or it could be renewable or whatever—to meet demand. It is a lower band of prices in the market.

Senator ABETZ—Reading that, starting at 2010, where does the scenario 1, the Green paper ETS, start us off at? Would that be at about 52 or something like that?

Mr Price—Yes. There is probably a good 25 per cent jump in prices, at least.

Senator ABETZ—What I am tracking is that in 2010 through to, if my eyesight is correct, about 2023 we see a significant jump of, in rough terms, $50, which is virtually a doubling of the cost. But if you project it out into the never-never, 2050, the total is in fact only about a $60 increase. If you average it out over those 40 years, the impact might not look as stark, but the reality is that there is a huge cliff to climb, if I can use that term, for the economy in about the first decade or first 1½ decades, and that is where the real economic impact is going to be, if I might say, very significant. What do you say to those people who are so anxious to spin it out and tell us about what the impact would be over the years to 2050 as opposed to telling us what the real impact is going to be in the first decade or first 1½ decades?

Mr Price—You are dead right, it is true that the price effects are more pronounced after the first 10 years. The reason is that that reflects when the absolute emissions have to come down, so

the task at hand actually gets harder and harder. To slow the growth of emissions is one thing but to actually reverse it is another one altogether.

That corresponds pretty much with the rapid rise in prices, because it is actually trying to turn the absolute emissions over. The logic of this is that there will be more technology available in 15 to 20 years, and that will tend to flatten the price. But of course if technology gets much cheaper then the price in effect will be much less, or if the supply of that technology is more constrained—for example, we do not have carbon capture and storage or we cannot get the assumed level of forestry sequestration—then those prices will be much higher.

Senator ABETZ—Let me identify myself as being somewhat a sceptic when it comes to modelling in particular, especially the further out we get, because of all the variables that might come into the scene. For instance, somebody trying to model the economy even 20 years ago would not have taken into account the advent of computers, how they have just taken over and the impact they have had. The modelling that we have had put to us is usually based on the overall GDP impact, which up until the year 2050 will only be 0.1 per cent, 0.2 per cent or some other marginal percentage. That might be right if it is evened out over 40 years. Are you able to shed any light on the impact over that first decade or first 1½ decades? Will we have a similar ramp-up of the impact on GDP in that first decade which will then ease off?

Mr Price—Yes. First up, let me say I have the same scepticism about modelling. We do a lot of it, so I know how much caution you should apply to it—to everybody's, including our own. Our interest here was first of all to demonstrate a relative effect between different schemes. Even if you did not believe the absolute numbers, I think what is really instructive here is the relative difference between these prices. That is one thing.

Electricity modelling is not for the fainthearted, but macroeconomic modelling is even more fraught, and we do a lot of it—and we have done lot of this for the CPRS. We use the same model as the Commonwealth Treasury, MMRF, and work with the Monash people, so is not a war of models. The way these models work is that, by and large, people concentrate on the long-term adjustment. So the way that the government report it is the way that all treasuries report these models: they look at long-term adjustment. But the reality is that the economy is nowhere near as flexible as modelled by the Commonwealth Treasury or by us. The economy responds relatively seamlessly and structurally adjusts without very much cost. So it is just not realistic.

Senator XENOPHON—The modelling, do you mean?

Mr Price—Yes. I will give you a good example. In modelling the CPRS, one of the scenarios we modelled is the same, in fact, as what the Treasury modelled: that Australia adopts a CPRS and the rest of the world is assumed, also, to have adopted an emissions trading scheme. Clearly, that is not going to be the case. You would anticipate that a modelling scenario that had Australia adopting a CPRS and the rest of the world not doing anything would give you a much more severe outcome. That is what you would expect. But with these models you get almost exactly the same economic outcome, and the reason for that is that these macroeconomic models just assume that the economy adjusts seamlessly.

Senator ABETZ—That was a comment I made to a previous submitter—that it seems that all the modelling is based on the adoption of several assumptions and therefore it is not that

surprising that the modelling comes out with similar impacts. But one of the aspects I am interested in is: are you aware of any modelling that has been done as to the impact on the Australian economy if other countries do not follow suit or the current world status quo—be it the discredited European system, the half-baked Canadian system or whatever they might have in New Zealand—were to limp on and remain in place and Australia were to go it alone? What would be the impacts then? Would they be significantly greater?

Mr Price—As I suggested before, we have actually done exactly that but using the standard macroeconomic modelling assumptions where the economy does adjust. We did it to try to understand more about how flexible the economies are assumed to be. So when we did a scenario where everybody does something together we got the same modelling outcome using the Centre of Policy Studies model and everybody else's models. We got the same outcome when Australia just went it alone. That is illogical. The reason for the modelling outcome is that these models basically function as though the Australian economy is infinitely flexible, and it is not right. It is one of the things that you need to be very wary of when you look at these economic modelling results. We use these models, and we know how to use them, but I think there is a real danger that people will start to believe those modelling results. We did that modelling scenario just to demonstrate the care you need to take when you interpret the outcomes of those results.

When the government talks about one-tenth of one per cent, the absolute value of the economic cost on a cumulative basis over time is into the trillions of dollars, even on the basis of their own modelling. So the economic loss is trillions of dollars. If you keep dividing a number by a bigger number you come up with a smaller per cent, of course. But if you look at the underlying absolute cost, it is quite big. But as I said right at the beginning, it is my belief that it is still worth while pursuing an emissions trading scheme because it is probably right that the cost of not doing something will eclipse the cost of doing something. The challenge is really to find the best way to make use of your resources, to find a scheme that has less severe impacts. That is why we are so interested in scheme design. If we come up with a scheme design that mutes these trillions of dollars and can bring that down by half a trillion dollars or more, that would be fantastic.

Senator ABETZ—How can the cost of not implementing something be more than the cost of implementing? Is that in the context of Australia going it alone or the rest of the world coming on board as well?

Mr Price—I am not sure what you mean.

Senator ABETZ—I understood you to say that chances are there is a good argument for an emissions trading scheme because the cost of not doing anything would be greater than the cost of doing something, so we need to act. I am just wondering whether you put that in the context of the world acting in concert or of Australia just going it alone.

Mr Price—I understand what you are saying now. Let us say that in an emissions trading scheme the broader general equilibrium effects on the economy are $2 trillion or $3 trillion, which they are at least going to be. That means that you expect the damage from not doing something is going to at least exceed that. The corollary of that is that in undertaking that action you have actually done something positive in terms of reducing emissions around the world. If

Australia were the only country to do something and expend that $2 trillion or $3 trillion and the rest of the world did nothing, it would be all for nothing. I agree with that. That is true.

Senator CAMERON—Mr Price, thanks for coming along and not asking for money, because that is mainly what we have had today! I have a whole range of questions. I may have to put some of them on notice if I do not get through them all. First of all, could you provide the committee with the data and assumptions that sit behind your slide 9?

Mr Price—Sure.

Senator CAMERON—From what I have seen, this is a baseline and credit scheme and an emissions intensity scheme. The Canadians have used this as what they are describing an interim measure. Why would the Canadians use it as only an interim measure if it delivers all of these benefits that you are proposing?

Mr Price—I think there is a confusion of terms here. What the Canadians have proposed is not a baseline in credit; it is an intensity based measure, so there is both a stick and carrot, whereas, with a baseline in credit, there is just a carrot. That is often misunderstood. So it is sticks and carrots.

Mr Harris—The difference between the two is: under a baseline-in-credit scheme, if your emissions are above the benchmark then you are not liable for those emissions, whereas under an intensity based or benchmark-type scheme you are liable for all emissions that are above that baseline target. That is where the source of funding comes from or the source of demand for purchases of the credits for those that are below that benchmark.

Mr Price—Under a baseline-in-credit scheme, the demand for those credits comes from consumers. If you think about the MRET scheme, for example, it is not producers that buy the credits; it is the retailers on behalf of the consumers, so the consumers are the demanders for those permits. That is the distinction. The Canadians have proposed an intensity based scheme which is in fact a cap and trade. You are capping emissions and you are allowing trade between producers of permits and buyers of permits. The key distinction between the CPRS and the Canadian scheme is that the baseline under the CPRS starts at zero, so you start buying emissions from any emissions that you produce, whereas under the Canadian scheme all they do is they move the starting point at which you buy emissions up higher and then they give credit for anyone that is below it and give a liability to buy permits for anyone above it. That is the only real distinction between the two, at a simple architectural level.

Senator CAMERON—I know these are complex issues, but I have to try to get through them as quickly as I can. How do you achieve broad coverage under your scheme? As I understand it, these schemes are more narrowly focused.

Mr Price—I think almost identically to the way that the CPRS is set. What ends up happening under the CPRS is that there is a coverage of a number of sectors, you know what they are and there is an overall cap. What the scheme does is that it then establishes a form of allocation of permits and they have a range of what they call allocative baselines to establish the permits that people receive. The Canadian scheme works almost identically to that, in that the allocative

baselines that are incorporated in the CPRS are identical to the benchmarks that would be established for each sector under an intensity based scheme.

Senator CAMERON—Are you saying your scheme would be different, that you would have a broader base?

Mr Price—The base under an intensity scheme can be identical to that under the CPRS. You can have the same mechanical arrangement for any sector, and you can have permits traded. A permit that is created in, say, the cement industry is completely fungible, or tradeable, with a permit that is required to be purchased by an electricity producer and vice versa. These are completely homogenous permits that are created and bought by different sectors. In that respect, it works the same way as the CPRS but without the negative effects of the CPRS.

Senator CAMERON—How would you be confident that the variables you used to determine your baseline are 100 per cent?

Mr Price—That is a very good question. I think the first thing I would do is establish the benchmarks on the same basis that the government has already done for the allocative baselines in the CPRS. As I was suggesting before, the government has actually already solved this issue. It is often said that it is very difficult to establish the baselines in an intensity scheme or, for that matter, a baseline-in-credit scheme, but the government has already done that. It is actually a key design feature of the way in which it compensates industry. I know that the government has all already overcome that problem.

Senator CAMERON—Are you proposing that there should be baselines set for the myriad of companies, that companies should have different baselines, that residential consumers should have a baseline?

Mr Price—No.

Senator CAMERON—What are you suggesting?

Mr Price—I am just going to use the CPRS as an analogy, because they have a sort of clunky version of what we are suggesting. They already set sector targets and they call them allocative baselines. They set them according to different sectors. You would not have a baseline set for a particular generation type; that is not the way that the CPRS is set, so I would use the CPRS as an analogy.

Senator CAMERON—Regardless of the argument that other countries are not going to move to an international scheme, I am more optimistic than that and I think there eventually has to be an international scheme given the problems we are facing. It does seem that most companies are moving to a cap and trade—that seems to me to be an inevitability.

Mr Price—I have said before that I am a keen supporter of an emissions trading scheme and I think that wealthy countries generally need to establish some policy leadership, but being a very small economy we have a greater responsibility in that we have to establish a scheme that does not destroy the economy, which would destroy the reputation of emissions trading. That is why I

am so interested in it. So I think we start from the same position in that regard. What was the rest of your question?

Senator CAMERON—Why aren't other countries adopting it?

Mr Price—The point was that the dominant model—and you hear this a bit—is the cap and trade. It turns out that it is not. By far the most common model for emissions trading around the world is in fact some form of baseline and credit or intensity scheme. Major nations are actually moving towards an intensity based scheme. In fact global sectoral agreements, which are the emerging trend, are intensity based arrangements. They are becoming the more dominant model. China, for example, is moving towards an intensity scheme. As to the reason, I put up a slide the other day at the Parliamentary Library presentation that I did and it showed a very interesting relationship. Countries that have a greater exposure to global trade are tending towards these intensity schemes because they are very worried about the problem of carbon leakage. So they tend towards emissions intensity schemes because they have the properties that we have been suggesting. I do not think it is true that people are moving towards cap and trade. In any case, as I have suggested, the scheme that we are describing here is in fact a variant of a cap and trade. So I do not think there is a very useful distinction between intensity schemes and cap and trade. I have obviously been using that term to communicate the difference, but it is in fact a cap and trade. It is just that the baseline at which you start counting the cost of carbon is not zero; it is higher. That is the only key distinction between the two.

Mr Harris—And there is nothing to say you cannot trade between the two different schemes in the same manner that permits under the clean development mechanism are recognised in the European scheme even though the essential form of the schemes is different.

Senator CAMERON—I am still not clear on this because I thought your scheme went to individual companies to set the baseline.

Mr Price—No.

Mr Harris—They are sectoral.

Mr Price—That would not be workable; it would be an administrative nightmare.

Mr Harris—That is in the same way that the allocative baselines are set for the emissions-intensive trade-exposed industries under the CPRS.

Senator CAMERON—You criticised the government's gateways.

Mr Price—I do not think criticism is the—

Senator CAMERON—I think you used the European analogy, but wasn't that the reason why in the government's scheme we have had very long lead times to the gateways and the gateways might never be reached. That is to make it so that you do not have a short gateway where the price could collapse, as in Europe. It is actually learning from the European model.

Mr Price—I do not think I was being critical of the gateways; what I was saying was that the gateways give rise to price volatility and price volatility is bad for investors—they find it difficult to hedge that sort of risk, particularly where that risk is not driven by economic fundamentals but by regulation. Maintaining some flexibility in targets is quite important to reflect the reality that science will develop, technology will develop and the relative costs of abating will change over time. Governments cannot give an ironclad guarantee to anybody—consumers, voters or investors—that they will stick with an emissions target for all time. That would be crazy. So a gateway is an explicit recognition that there is an opportunity for government at various waypoints to be able to adjust the target. That is one way of doing it. I think the reality is that under any scheme, whether it be tax, an intensity scheme, or classic cap and trade, it is naive to assume that the targets will be fixed through time. They will be driven by science, technology, economics and politics. They will change—all of them.

Senator CAMERON—Professor Garnaut gave evidence yesterday and spoke about the consultation that had taken place and that there was not a great deal of enthusiasm from business within Australia for an emissions intensive scheme. What is your comment on that?

Mr Price—My comment on that is that I think that is Professor Garnaut's view. It is probably pretty fair to say that it received virtually no attention in the course of any analysis that Professor Garnaut undertook. His reports only referred to it in total over the telephone books of reports that he produced on a single page. It was a single page and yet this is a scheme design which is more dominant around the world and more prominent in Australia in terms of operations. It received a page of attention. Each state has in fact promoted the idea of a baseline and credit scheme in the form of their own stand-alone renewable schemes such as GGAS. Your own MRET scheme is in fact a baseline and credit scheme.

Senator CAMERON—Could you provide us information where this type of scheme is operating and why you believe it will become the dominant scheme?

Mr Price—Sure.

Senator JOYCE—Can you explain to the committee how we actually go about the process of administering exactly who is producing what and whether they are above the baseline or below the baseline? How do we do that?

Mr Harris—That is essentially a matter of tracking emissions, which would have to take place under any emissions trading scheme. It would be a process of monitoring and verifying actual emissions.

Mr Price—Under the CPRS, for example, you have to know who has produced what so you can penalise people if they do not have the required number of permits. You then match that against the permits that they have. They also then have to have a basis for comparing where they are compared to the allocated baselines. The administrative mechanics of this is precisely the same under the CPRS but avoids the need to establish a whole institutional structure for auctioning permits and recycling revenues back to consumers.

Senator PRATT—I note that President Obama has just announced a cap and trade type system. Irrespective of the number of countries that might have different models, would you

concede that, when you are looking at an economy the size of the United States, that does create a fairly dominant paradigm?

Mr Price—When somebody talks about cap and trade, there are so many different versions of a cap and trade that you have to be absolutely clear what they are suggesting. All that has been suggested is that they develop a cap and trade scheme. The Canadian scheme is in fact a cap and trade scheme of a kind. So it depends on what they put in place. If they put something in place that is called a cap and trade of a certain kind that does not necessarily mean that we should follow that. Their interests may in fact be entirely different.

I was recently in California, for example, where the largest emitters are cars. So whether you put in place a cap and trade or a fuel tax it will not matter to that the economy, because it is not going to affect their trade flows. Whereas a scheme you put in place in Australia, because most of our emissions come from major industrial users and electricity generators, would could significantly affect trade flows. I would never expect that it was economically sensible to have the one scheme around the world. It is actually not necessary, because you can interchange, you can trade in between different schemes, as Europe has in fact shown.

Senator PRATT—I can accept that nations should adopt a scheme that suits them, but you did seem to argue that there were a large number of countries with it and that the intensity model was the dominant model. But America is clearly not pursuing an intensity model; it is a 100 per cent auction and cap and trade scheme. That might have a fairly dominant effect on what the market looks like.

One of my concerns about the intensity model as you have framed it—and I am sorry, you do not call it an intensity model, but it is an intensity based approach—is that you have purported that the benefit of it is the lack of churn in government revenues. But one of the concerns I have is in regard to the incapacity for government then to compensate those that may need protection from the most onerous price increases within the scheme—for example, low-income householders. How can we assist them easily without being able to raise that revenue that we can then commit to that?

Mr Price—I will take you to slide 9, but, first of all, compensation is not a permanent feature of the CPRS—it was not presented as such, unless you are suggesting that it will be; it is a transitional measure. I will take you to slide 9 in respect of electricity. You tell me what assistance low-income people will need—or industry, for that matter—in terms of compensation. They do not need it—that is the point. The only people that need compensation in this little world for electricity are in fact electricity generators. Generators are equally adversely affected under what we are suggesting here, as well as a CPRS, as well as a baseline and credit. It is only the money that goes towards compensating electricity generators. From that reason, of course, you will not hear the ESAA being very supportive of this type of scheme, because they want to be able to put their hands on some of the money you have created under the CPRS. So they will dislike an intensity based scheme for that reason.

Senator ABETZ—In relation to the sectoral areas that I think Mr Harris was referring to—possibly Mr Price, I cannot recall—how would you determine a sector in relation to the baseline system? One of the criticisms is: how do you determine what a sector is? Is the sector, say, the

electricity generating sector; is it the coal sector; or is it the black coal sector as opposed to the brown coal sector—

Senator XENOPHON—Or gas.

Senator ABETZ—or gas, indeed, as Senator Xenophon quite rightly interposes? Your definition of 'sector' is going to be fundamental is it not to the efficacy of the scheme?

Mr Price—For practical simplicity, I would define it on the basis that the CPRS does. They have already defined these sectors. There is no real reason to change things just to complicate things. From an economics point of view, the way that you would define a sector—this is the way that economists think about it—is in reference to substitutions. So, for example, if gas generation is substitutable for coal generation, then you want to apply the target to both of those producers. You look at the product market so you do not create distortions on the product side of the market. That is a standard practice for economists in defining markets, in fact.

Senator ABETZ—Thank you.

CHAIR—Obviously there are a lot more questions that we would have liked to ask. Thank you for your time coming in today. Perhaps if we can give you questions for you to come back to us with. Likewise, if you have any other supplementary submission you would like to make, we would be happy to receive them. Thank you.

Mr Price—Sure. Thank you for the opportunity.

[4.16 pm]

BURROW, Ms Sharan, President, Australian Council of Trade Unions

CHAIR—Welcome. Would you like to make an opening statement?

Ms Burrow—I will make a general statement and then see what you are particularly interested in. I apologise for not being there in person, but this is the best we can do at the moment. There are three areas that I would like to canvass regarding the CPRS. The first goes to the ETS, or the cap-and-trade scheme, and in particular a number of areas under that; the second goes to the nature of targets; and the third goes to some solutions. In terms of the ETS, or the cap-and-trade scheme, we would say that the structure and the mechanics are fundamentally sound, but the nature of compensation has become confused and needs to be sorted out. Nobody would argue more than I would for protection for trade exposed industries, but there is a mixture of trade exposed compensation and profitability. Again, there is not necessarily any criticism about the issue of profitability but it needs to be transparent. I am concerned about the time line for review, recognising that business requires certainty. It still worries me that a review four years in is a kind of six-year time lag, when we need to make sure that we can have a faster response to—

CHAIR—Ms Burrow, sorry to interrupt. We are having a little difficulty in hearing you. It is like there is a bit of feedback. Perhaps you could shift your position from the phone. That might help a bit.

Ms Burrow—Is that better?

CHAIR—Yes, it is a little fainter but better in terms of the feedback.

Ms Burrow—I can lift the volume.

CHAIR—That is good. Thank you.

Ms Burrow—No problem. Just tell me what you need. When you go to the nature of compensation, I was simply saying that we support, of course, compensation to energy-intensive trade exposed industries. It has become confused, in our view, with profitability. Again, there is no general statement about the pros or cons of looking to compensation for profitability, but, if that is the case, it must be done with transparency so that people know why we are indeed compensating for basically corporate profits. The time line for review concerns me, although I recognise that it can trigger change. If you look at businesses' need for certainty, that is understood, but it must be balanced by a capacity to look at where businesses are not further exposed or whether that changes because of sectoral agreements or other measures, or indeed where profitability, if that is a criterion, is to be recognised. The time line for review is six years in, and that is quite a long time lag. On one hand, as I said, there is business certainty and, on the other hand, there is the question of competitiveness and the capacity to shift the available money for compensation where necessary. Transparency is really at the heart of that particular

comment. It should be independent and we should be able to disaggregate the support that industries require with some rapid responses when you need to shift that compensation.

The other thing I would say about the ETS, or cap-and-trade scheme, is about the conditionality or—as I like to talk about—incentives for transition by strategic Australian industries. It is absolutely the position of the ACTU that we want to see those traditional energy-intensive industries supported and maintained in their capacity for competitiveness. That means, of course, jobs and the retention and growth of jobs, but we need to make sure that they are here in 30 years time, not just here today. It is important that we are able to provide the sorts of incentives that would maximise their transition to a low-carbon economy. Indeed, if you look at the report that was provided by the Climate Institute just last week, you can see that the companies' own plans for reducing energy emissions go to quite sizeable reductions. In that sense, we would like to see how you can provide not just compensation but incentives to drive that further.

The 1.3 per cent reduction, which of course came down from four per cent in the original paper, is something that as a blanket piece probably needs further consideration. There will be some industries that will struggle to make that 1.3 per cent, but others, including some of the largest companies, will do it much more easily. I refer you to the companies' own estimates in the BCA report that showed that, together, some of the biggest companies in Australia can reduce carbon emissions by 3.1 million tonnes every year, which is equivalent to taking 715,000 cars off the road or reducing the future carbon costs by quite a lot of money. When you look at that, and that does not include investment in longer term payback, there is a lot we can do, and that should be part of the incentive structure—or conditionality, if you take the negative approach. But certainly we want to see companies competitive in the global economy as quickly as possible with a low-carbon frame.

That brings me to the nature of targets. We were disappointed to see the cap on the target. If five to 15 per cent is the judgment of those who did the modelling of what you can achieve through an ETS, that is one thing, but that is absent of the kind of ambitious outcomes from a global deal that we would hope are still possible. While we recognise that the global financial crisis is driving people's concerns to even greater hyperbole—and much of that is, of course, serious—nevertheless, if we do not deal with both of the issues, the global financial crisis and the climate change challenges, then we miss an opportunity and we are still going to be in the same position in five or 10 years time. So competitiveness for us goes to the nature of targets. A cap on the 15 per cent target by 2020 is the major concern for us. We recognise that you will not reach even that ambition without a comprehensive global agreement, but it worries me that putting a cap on it will deter investment, particularly into renewable areas or clean technology areas. If you look at the ambitious plans from China and the US coupled with massive investment in their own stimulus packages, it is a concern that we will be left behind if we do not look at the intersection between the nature of targets, a global agreement and the competitiveness of own industries.

In that context, I would simply say that investment in what will be a green capital market of some $2 trillion to $3 trillion by 2020 is essential. We can have a large share of that, and that requires investment, both national and international investment, drawn into clean technology in Australia, plus it requires a massive look at industry policy. I simply refer you to our ACF-ACTU report, where we set out six areas that we think can be world-beaters for Australia. Before

the US and Chinese investment, we indicated that you could have a quarter of a trillion-dollar share of an almost $3 trillion global products market by 2025 or so. That really requires international ambition for Copenhagen that takes us to the solutions.

We do have to avoid a republic moment by supporting an ETS that can draw in political and community support. We believe that part of the solution there is to adopt a broader package approach, looking at the minor but significant areas of the ETS that need adjustment and, of course, looking at complementary measures, particularly those sitting outside the current emissions trading scheme, which go to energy efficiency, especially in the built sector—some more incentives around personal effort.

We applaud the government for its mix of stimulus measures, social housing and vulnerable housing efforts in regard to insulation, solar hot water et cetera. Then there is agriculture, forestry—I will not bore you with some of the details, but we think there are exciting opportunities there. Research is being done, but we need to lift our game in those areas. And, of course, there are international measures, particularly investment in RED activities, which would add to our effort.

We think there are also some areas of work that ought to be explored if we are going to get our traditional industries to competitiveness, because they are indeed seen to be much cleaner operations in what I call the blue-green alliance that will drive competitiveness. Then we need to look at where public-private investment might go—cogeneration, but not just for the plants, so they invest in cheaper energy and renewable energy but it covers communities, which makes that shared investment a real winner for companies like those in steel and aluminium and those in other sectors. Because of the public and the private investment, you get a double win, where the company not only reduces its dependence on traditional energy but because of its investment with public support gets access to cheaper energy.

Of course, it is framed by our own international union movement's commitment as well as the ACTU's to ambitions that reach the reduction to 450 ppm or driving a 25 to 40 per cent mix for developed countries in terms of the Copenhagen agreement.

All in all, we support an emissions trading scheme, but we do want it to be framed in terms of transparency, a more rapid response to review, and some measure of incentives that go to drawing out the capacity for even those industries being compensated to reduce their carbon emissions and in the process save themselves money or make money in the context of a cap-and-trade scheme. But then, in the broader package, we think you have to reach not just an ambitious target but ambitious outcomes by looking at those complementary measures which can add to our effort and, of course, international measures which can add to that as well. I will leave it there and let you ask me questions.

CHAIR—Thank you, Ms Burrow. A company today suggested that any job losses that resulted from the CPR Scheme would be made up or more than made up by new jobs in the green energy industry. Would you concur with that?

Ms Burrow—I think that is a problematic way to look at the issue. The only analogy I can draw for you is to go back to the debate in the early nineties, when the orthodoxy was that there was old industry and new industry. We never accepted that; we always believed that you would

drive new technologies and new services out of traditional industrial strength—and in fact that has been the basis of the boom that Australia has experienced through the late nineties and the early part of this decade. The traditional industries of Australia—resources, agriculture and sectors of manufacturing—are the areas that have become world beaters and have served us well. But of course they have changed. If you were to walk into an aluminium smelter of 20 years ago and compare it to now, it is now a vastly different place. Of course new jobs were created in a range of areas, particularly in the services sector, which has exploded in Australia, but a lot of those jobs were connected to traditional industries. In my view, if we are a smart country it will be the same here.

Senator CAMERON—Can I just raise an issue: I cannot understand a word Ms Burrow is saying. This line is absolutely hopeless. It is just not possible to carry on unless it improves.

Ms Burrow—Do you want to call me back on my mobile? That will probably be clearer.

CHAIR—Yes, we will try that. If you hang up, we will ring you back.

Proceedings suspended from 4.31 pm to 4.32 pm

CHAIR—Ms Burrow, could you start again. We were talking about the job situation.

Ms Burrow—Our view is that we can have a blue-green solidarity in Australia if we are smart. We can drive new areas of manufacturing but also those that already exist. If you look at our report *Green gold rush: How ambitious environmental policy can make Australia a leader in the race for green jobs*, we have manufacturing companies now that, with the right policy settings, can scale up. We know that in traditional areas of the resources industry, in value-added areas like steel and aluminium, we can actually green up. And of course in addition to that we can create new green jobs. It is not an either/or, and we are not prepared to lose jobs in traditional industries. What we want to see is industry policy that makes those jobs the cleanest and most competitive in the world. We will make steel, aluminium, cement and things in other areas. We will manufacture materials for a global economy. We want to do that in Australia as well as invest in new clean areas, and we have made that clear in the report that I referred to. I am absolutely confident that, if we get the narrative and the plans underneath that narrative right, we will not lose the jobs in the way that people are suggesting—as if it is a foregone conclusion.

Senator PRATT—I want to ask what you think about the way in which the government, with the CPRS, is balancing the issues before us. On the one hand, we have stakeholders who are asking for deep emissions cuts now, which would inevitably see coal fired power stations turned off in the very near future and many displaced workers. On the other hand, we also have calls from industry for much greater compensation packages. Clearly, in the path that you are illuminating for the way forward where we are really trying to get a balance between these things, how close is the current scheme to achieving that balance?

Ms Burrow—First of all people tend to talk about either/or. If you look at the demand spike for energy, there is no danger in actually seeing coal fired generators turned off tomorrow. That stuff is ridiculous. Seventy per cent of our economic dependency regarding energy is on fossil fuels. We have to reduce that dependency but combine that with an energy spike, combine it with

diversification for companies into areas that mix of renewable and traditional energy sources. Then you are actually talking about growth or a good period to come.

Senator PRATT—My question is: is what the government is presenting in the CPRS the kind of model that is going to drive those kinds of outcomes in your assessment?

Ms Burrow—I think the ETS is fundamentally sound in terms of the assessment pretty much globally. I know there is a debate about this, but we come down on the side of a cap and trade scheme, rather than just a green tariff, because it can have the incentive or conditionality whichever word you choose to drive that transition to a low-carbon future. It needs tweaking, as I said, in a couple of areas, but we do not want to see a republic moment where Australia loses this opportunity and does not get it back for years to come. We will be behind the eight ball then. But we think there are complementary measures to the actual ETS—areas that sit outside forestry, agriculture, the commercial built sector and so on—that can drive additional effort. We recognise that all of that is really about planning for an ambitious global agreement into which we are establishing our own industry policy settings, our own investment in green technology just to set us up for a competitive future in that global economy.

Senator JOYCE—Maybe I did not hear this. You are saying that you support the current ETS as proposed in this draft legislation.

Ms Burrow—We want to see a couple of areas of amendments, but we support an ETS. We want to see it complemented by additional measures that lift our ambitions towards a global package that enables up to be competitive.

Senator JOYCE—If you cannot get those amendments, would you on the balance of things support the current legislation?

Ms Burrow—I believe we will get amendments and one of the ways forward is to bring the key stakeholders together. The reason I went to the BCA report and those companies that indicated that they could not afford an ETS was to demonstrate by their own reporting that they can make big efforts in reducing carbon emissions not just for savings for themselves but indeed for contributing to our own effort. We need to unlock potential.

Senator JOYCE—What makes you believe you will get those amendments?

Ms Burrow—Again in Australia when we come together around something that is so urgent as climate change, we will find a way through. But we would urge the government to bring the key stakeholders together. Industry and the ACTU do not have any difference of ambition. We might argue about the mechanisms, we might argue about transparency but between the government and indeed the industry themselves, the ACTU, the unions and those stakeholders in the non-government organisations that are pushing for a solution to this we can find a way through with appropriate amendments and with complementary measures.

Senator JOYCE—Do you believe that Australian working families will not be put out by reason of the emission trading scheme and that blue-collar jobs will not be lost or not?

Ms Burrow—We have to find the policy settings that actually drive that blue green solidarity. There is no doubt that the world has to move to a low-carbon future. When you look at the potential Australia has with solar, thermal, geothermal energy and the service capacity in terms of our trade support et cetera, we can drive some of the best standards in the world in our buildings. This is a terribly negative debate in Australia right now.

Senator JOYCE—Do you believe we will lose blue-collar jobs?

Ms Burrow—I do not believe we need to lose blue-collar jobs, no. If our politicians want to see us making steel, aluminium and cement and other things in 30-years time, then they need to get the settings right now that support those industries with compensation. Industry policy and building green jobs off that is essential. What I would say is that the CPRS is not just about an emissions trading scheme. We support that, but it has to be about complementary measures that set us up for global competitiveness.

Senator JOYCE—So those complementary measures would include more compensatory measures to heavy industry—is that what you are saying there?

Ms Burrow—I am saying that it would look at areas that sit outside the cap and trade scheme. It would look at forestry, at agriculture and at energy efficiency mechanisms—

Senator JOYCE—Do you want to bring in agriculture earlier? Do you think that should happen?

Ms Burrow—You can tackle it either way. If you look at a CPRS, it is not all about the cap and trade scheme. You can either include agriculture or you can look to invest in soil sequestration and other measures as a complementary piece.

Senator JOYCE—So are you happy that agriculture is outside the scheme until 2013 or 2015?

Ms Burrow—I would rather to see the measurement settled in agriculture, but you also have some international conditionality here, because those measures are not settled in the context of the Kyoto agreement and I am not sure they will be going forward in this year's Copenhagen agreement. But it does not make much difference. Bring it in—that is what we would like to see—but, equally importantly, let's start where we can and look at it as a complementary measure if you cannot do that. It is not an either/or.

Senator JOYCE—Everyone believes it is going to affect coal jobs. Do you believe that those coal jobs are going to be able to be replaced by green jobs?

Ms Burrow—That is such a simplistic view, with respect. Let's take Wollongong—

Senator JOYCE—It is not if you are working in the coal industry.

Ms Burrow—Ask Tony Maher about how the coalminers feel. They will tell you that their future is based on investment in clean technologies, and they know that. But there are some other—

Senator JOYCE—That is not what they are saying in—

Ms Burrow—Can I just finish? There are some other realities here too. If you go to Wollongong, where it is easy to see the links, the coal there is the highest grade coking coal in the world, or amongst it. It is necessary for making steel and steel is necessary for making windmills, and I could give you lots of other examples of the supply chain. If we get the settings right, this does not have to be an either/or. What astounds me is that people want to have this limited debate about what the possibilities are for both traditional industries in Australia and new industries.

Senator JOYCE—So you believe that wind, solar, gas and those alternatives will equal the employment we have in the coal industry?

Senator CAMERON—It will be more.

Ms Burrow—The demand spike is going up—

Senator JOYCE—All right, Senator Cameron.

Ms Burrow—and we are gradually—sorry?

Senator JOYCE—Senator Cameron said there would be more jobs in wind, solar and gas than there are in the coal industry.

CHAIR—Ms Burrow, I am sorry Senator Joyce is interjecting all the time. Can you finish your answer?

Senator JOYCE—I am not. Senator Cameron is interjecting.

CHAIR—You are just doing it!

Ms Burrow—You are having better fun than me, I can tell.

CHAIR—This is a difficult line, a difficult teleconference. Can we speak one at a time, please. Senator Joyce, can you let Ms Burrow finish her answer rather than interjecting.

Ms Burrow—If the demand spike for energy is still going up and does for the foreseeable future, both in Australia and internationally, because of the population growth and the emergence of demand in our trading partners, then we need to bring on other streams of energy anyway to meet that demand and to be open to export opportunities.

Going to your question, I agree with Senator Cameron, if I heard what he said correctly. There will be more jobs in new industries both to meet demand and in a transition environment. So what we have to do is look at where we are developing a low-carbon future. I support absolutely whichever senator talked about the Central Queensland area. You can bet that the ACTU and the unions will be right there defending jobs but defending them in the context of a progressive future, not simply saying we are going to somehow undermine Australia's economy and refuse to deal with climate change when we are amongst the most vulnerable countries in the world.

Senator JOYCE—Ms Burrow, how many jobs are in the coal industry in Australia?

Ms Burrow—I cannot tell you offhand. I can easily get you the answer. It varies. Right now I think the projections are there will be 20,000 more jobs in the coal industry over the next 20 years or so, but I would have to confirm that.

Senator JOYCE—And that is under the current ETS?

Ms Burrow—That is under the current environment. It is the demand spike for energy and, until the global financial crisis hit, it was our actual export demand. Of course the demand has been squashed a little for the minute. But look at the growth in population in other countries. It will come back.

Senator JOYCE—This is my final question. So you believe it is a good move for people to be transferring from coal jobs into green jobs such those in production in respect of the wind, solar and gas industries, those sorts of industries?

Ms Burrow—First and foremost, that is not what I said. What I said is that for the foreseeable future there will actually be some growth in coal and in fossil fuels broadly. Secondly, I indicated that we can add value. If you look at soil sequestration efforts, you see they are all about the use of the by-products of brown coal and it actually draws legacy carbon out of the atmosphere, so you are not just reducing the current emissions. That has got to be looked at. It is good for the agricultural sector.

Thirdly, there is a narrative that says coal will be necessary in terms of some of our new green industries. I would urge you not to make this a simplistic debate and to bring players together to make sure that we can support the retention of jobs in traditional industries and the clean technologies that will keep, if CCS works, a coal industry in the future for generations to come. In our lifetime we are not going to see too much difference in demand in the coal industry. Fourthly, we must build jobs in those other sectors that you talked about, those which are absolutely part of our future. Gas is a transition technology. Then we will be economically well served—and they are good jobs.

Senator JOYCE—This is my final, final question. If we do not get these amendments up you do not want to support the ETS or you do?

Ms Burrow—I want to support a CPRS, which is about both an ETS and complementary measures, and an ambition towards a global target which will be the way in which we deal with our own vulnerability as a nation, as a continent. So what I will be working towards is making sure that where there are amendments to the cap and trade part of the CPRS they are advantaging our industries as well as supporting them as well as driving them towards competitiveness—

CHAIR—Sorry, Ms Burrow. Senators, I will not allow interjections. Have you finished, Ms Burrow?

Ms Burrow—There are just two further things that I would say. I am confident that we can find a way through. We must not lose a republic movement but we must also bring business and unions and the government and other groups within our community together on this question.

The second thing I would say is that we face two choices. We can buy in climate change solutions and never develop the manufacturing base and the value-added side to our resources sector and so lose the opportunity for a strong economic future with good jobs. Otherwise, we can get our act together now on an integrated approach that sets Australia up for the future in respect of the global economy.

Senator FURNER—Ms Burrow, the committee heard today from the Australian Conservation Foundation about green jobs, and you were talking on that subject earlier. I went to their website and saw they were indicating a growth of, from memory, approximately 850,000 by 2030. No doubt there would be a need to reskill people to accommodate that sort of job creation. Can you alert us as to how that reskilling process would be done and how that would be conducted?

Ms Burrow—Certainly. I can do two things. I can make available a paper I wrote on this just a couple of weeks ago, and it goes to a lot of detail that we do not have time for, but some of that is already in the mix. We have asked for a 40,000-place allocation from Skills Australia for green skills. We have started to put together the networks of the industry skills councils, the state authorities and indeed the federal departments and Skills Australia to look at how we develop a green skills strategy. I might add I am going to the opening of the plumbers union training college in a couple of weeks, and their ambition is to train thousands and thousands of plumbers with additional skills. The same is going on with electricians. We have competence around green building standards in the world. What we need are the policy settings that unleash some of that in our own backyard. So it is absolutely critical that we start preparing those green skills now. Again, some of these jobs will be new, but a lot of them will be greening traditional jobs or they will be indeed upskilling traditional jobs with new technologies and new understandings and therefore new applications.

Senator FURNER—I went to a workplace just after the Nation Building and Jobs Plan was released, a CSR company, where they had been predicting an expansion of an underestimate of 4,000 jobs in the insulation business. Would that be an example where existing jobs are in place but there is an expansion as a result of the path we are heading down, towards an ETS?

Ms Burrow—Absolutely. That is a perfect example of existing demand. Indeed, we know that there are a lot of areas where that existing demand is unfilled, and that will simply grow. Can I just reinforce two figures for you. One is that to get those 800,000-odd new jobs at the ACF rightfully put on the table we need to tweak some policy settings. They are in fact the complementary measures that I am talking about, and they will unleash a capacity for us to get more than a $¼ trillion share of that almost $3 trillion global products industry. That was our assessment of what the global value of that industry would be before President Obama and indeed the Chinese leadership put out their ambitious targets, and investment to boot out, in their stimulus packages. So I think it will grow exponentially, and we need to be prepared for that.

Senator FURNER—Thank you.

Senator EGGLESTON—Ms Burrow, you referred several times to amendments, but you did not specify what amendments you would like to see put in place, and I wonder if you would be kind enough to do that.

Ms Burrow—Sure. I did, but it was probably a bit confused—

Senator EGGLESTON—It was really hard to hear.

Ms Burrow—I appreciate that. I will put some of this writing. They largely go to two areas. One is the area of conditionality or incentives, and it has two parts. One is a capacity to not just review that in four to six years time but monitor it, and that requires also that companies are prepared to report on their plans to drive efficiency measures, as they would any other measure in their annual reporting environment, and it requires, in our view, some independent tracking as well. The second part goes to—well, I think I have dealt with both parts. One is the incentives question. And, remember, right at the end of the debate last year, we went from four per cent effort to 1.3 per cent. Now, I want to make the case that some industries will struggle to make 1.3, but some of them could achieve that by turning out the lights, and we need to get those incentives or the conditionality, whichever way you want to put it, right, to make sure that we draw out the best of the assets from our major companies in this regard. The second goes to transparency, and an independent piece with a capacity potentially to move more quickly than that four-year review.

Senator EGGLESTON—So, shorter than the four-year review. I think I also heard you talk about secondary processing industries being preserved. Is that the case?

Ms Burrow—Absolutely.

Senator EGGLESTON—Most people seem to think that the cost of energy will go up in Australia if this scheme is introduced. We have relied on cheap, coal based electricity. But you can see secondary processing of minerals and so on occurring; is that what you are saying?

Ms Burrow—The costs of alternative energy sources are all about scale. We need to get our existing industries and those emerging as real possibilities—like geothermal and solar thermal, in particular, which have not yet had a lot of attention in Australia—to scale with the right industry policy settings. But if you are talking about processing like aluminium, cement, steel et cetera then we are still going to rely on those. People will rely on those products globally. What we want to do is set up our plant and our processes and our energy dependence from those plants for the most competitive efficiency we can. That requires some investment from the companies in their own interest in terms of cheaper energy, but it requires investment from the public as well. We can integrate renewable energy both for communities and for the industries in which those industries sit, in my view, through PPPs and make a really big dent in both those ambitions.

Senator EGGLESTON—So you see renewables as being the source of the cheaper energy for that kind of industrial development?

Ms Burrow—Let us have a look at the aluminium industry. I do not profess to be an expert, but I do know that global demand for aluminium is not going to decrease. It has had a bit of a whack at the moment with the GFC, but it will not decrease, because of the construction trajectory in both our own and other countries. Aluminium companies globally are looking to areas like Brazil, where you have latent hydro; Indonesia, with the same thing; and other countries where they can bring on renewable energy streams to green up their act, if you like.

The demand will still reach back into Australia, provided that we are there as well in terms of not just making our product a quality product, which it is, but providing an energy efficiency base of the best we can make available.

Senator EGGLESTON—So you are actually saying that in the case of aluminium, if not others, rather than having the aluminium smelters—or whatever they are—processing in Australia, it would be elsewhere, such as in Indonesia or Chile, where there is cheap hydro power? I thought you were talking about secondary processing in Australia—for example, perhaps steel mills in the Pilbara and so on.

Ms Burrow—Okay, let us finish on aluminium. There are three areas where we can look to get our aluminium industry to world's best practice or best effective practice, if you like. That ought to be underpinned by a global sectoral agreement for industries like aluminium—and, indeed, steel as we get there. If you look at the three areas on top of a global sectoral agreement that will set the floor, which we need to be competitive, they go to the very best and most efficient plant and equipment; they go to cogeneration or reliance on renewable energy; and they go to, potentially, that man-on-the-moon technology, CCS, because everybody thinks this is about the coal industry but in fact the production process in aluminium or steel is one of the other areas where CCS, if it becomes a reality, might in fact be useful. We do not have too much scope outside those areas for greening those industries, but we can at least do those things that are possible now, invest in CCS, of course, and hope that we are in advance of other economies in applying that technology. We need to have those plans as well as plans for the new and emerging industries that you can in fact link with those traditional industries or with new and emerging areas of the economy.

If we go to steel, you are going to always require steel. If you look at CCS, for example, I think it is Tony Maher who tells the story of the analysis of just the infrastructure we are going to need to capture the carbon emissions and to transport them. We want those parts made by Australian steel. There are a whole lot of things around industry policy and planning that we can do to both invest in our own domestic demand and set ourselves up for global competition as well.

Senator ABETZ—It is just a pity that industry is not telling us that.

Senator EGGLESTON—But essentially you seem to be saying that the processing will be done offshore. Is that correct?

Ms Burrow—No, I do not think I was saying that.

Senator EGGLESTON—When you were talking about cheap power? Aluminium is an interesting example because many people regard it as solid electricity. You need a lot of electricity, and cheap electricity, to process bauxite into aluminium, but you seem to be saying that the processing would occur in Indonesia or South America.

Ms Burrow—No. What I am saying is that there is a global increase in demand for aluminium and that will continue on an upward trajectory. Most of our companies are in fact subsidiaries, or have parents. Their parents are located in other countries and, if you look at the global plans for aluminium, there are already plans to look at how you build new plants, accessing renewable

areas like hydro. What I am saying is that Australia needs to set itself up with the same capacity so that part of that global demand is ours.

Senator EGGLESTON—So you are suggesting we can use renewables for these processing plants in Australia. Is that your essential point?

Ms Burrow—Yes. Initially, you might have to use a mixture. Of course, you can have cogeneration with traditional energy sources. You put a solar stream onto a traditional plant in Victoria, in the valley, and you will reduce your emissions by something like 20 per cent. There are all sorts of interlinked capacities here, and we need to sit down and work out how best to serve our ambitions for retaining those jobs, those industries, in Australia and making them globally competitive in a low-carbon future as well as investing in new technologies and new jobs.

Senator EGGLESTON—I think there is a lot of technological development required before that will actually occur, but thank you very much.

Senator XENOPHON—The ETS, or the CPRS, is a means to an end—that is, to have a low-carbon future. If there were alternative ways to achieve that with a lesser economic effect, so you could actually go for a deeper cut, would you have an issue with that? In other words, if the design were modified and would allow for deeper cuts but would achieve essentially the same end, would you be wedded to this particular model?

Ms Burrow—We have had a look at most of those and we do think a cap-and-trade scheme is more effective if we get the design right. You are right about that. It is more effective, potentially, for two reasons: (1) it is with us now and we can make a big start, (2) it actually drives behavioural change and facilitates the market that will surround that, ironically, which will make for greater incentives rather than simply paying taxes, and (3) if America is going to have a cap-and-trade scheme and Europe is renewing its cap-and-trade scheme, then we want to be able to play in a global market in that environment. It seems to me that it could take us a very long time to get an alternative up, and that is why we say that, in the current environment, with some areas of complementary measures excluded from the ETS—not because of the government's design but because of, in some areas, international constraint—then we need to see the CPRS as an ETS-plus. That is what we will be looking for.

Senator XENOPHON—Thank you.

CHAIR—As there are no further questions, we thank you, Ms Burrow, for taking the time to appear by teleconference with us this afternoon.

Ms Burrow—I will put something in writing.

CHAIR—Thank you. That would be very useful.

Committee adjourned at 5.04 pm