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SELECT COMMITTEE ON CLIMATE POLICY

Reference: Emissions trading and reducing carbon pollution

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**SENATE SELECT COMMITTEE ON
CLIMATE POLICY**

Members: Senator Colbeck (*Chair*), Senator Milne (*Deputy Chair*), Senators Boswell, Cameron, Cash, Feeney, Furner, Ian Macdonald, Pratt and Xenophon

Senators in attendance: Senators Boswell, Mark Bishop, Cameron, Cash, Colbeck, Feeney, Ludlam, Macdonald, Milne, Pratt and Xenophon.

Participating members: Senators Abetz, Adams, Back, Barnett, Bernardi, Birmingham, Bishop, Boyce, Brandis, Bob Brown, Carol Brown, Bushby, Jacinta Collins, Coonan, Cormann, Crossin, Eggleston, Farrell, Ferguson, Fielding, Fierravanti-Wells, Fifield, Fisher, Forshaw, Hanson-Young, Heffernan, Humphries, Hurlley, Hutchins, Johnston, Joyce, Kroger, Ludlam, Lundy, McEwen, McGauran, Marshall, Mason, Minchin, Moore, Nash, O'Brien, Parry, Payne, Polley, Ronaldson, Ryan, Scullion, Siewert, Sterle, Troeth, Trood, Williams and Wortley

Terms of reference for the inquiry:

To inquire into and report on:

- (a) the choice of emissions trading as the central policy to reduce Australia's carbon pollution, taking into account the need to:
 - (i) reduce carbon pollution at the lowest economic cost,
 - (ii) put in place long-term incentives for investment in clean energy and low-emission technology, and
 - (iii) contribute to a global solution to climate change;
- (b) the relative contributions to overall emission reduction targets from complementary measures such as renewable energy feed-in laws, energy efficiency and the protection or development of terrestrial carbon stores such as native forests and soils;
- (c) whether the Government's Carbon Pollution Reduction Scheme is environmentally effective, in particular with regard to the adequacy or otherwise of the Government's 2020 and 2050 greenhouse gas emission reduction targets in avoiding dangerous climate change;
- (d) an appropriate mechanism for determining what a fair and equitable contribution to the global emission reduction effort would be;
- (e) whether the design of the proposed scheme will send appropriate investment signals for green collar jobs, research and development, and the manufacturing and service industries, taking into account permit allocation, leakage, compensation mechanisms and additionality issues; and
- (f) any related matter.

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Committee met at 8.22 am

CHAIR (Senator Colbeck)—I declare open this third hearing of the Senate Select Committee on Climate Policy. On 11 March 2009 the Senate established this committee to inquire into policies relating to climate change. The terms of reference for this inquiry direct the committee to examine:

- (1) (a) the choice of emissions trading as the central policy to reduce Australia's carbon pollution, taking into account the need to:
 - (i) reduce carbon pollution at the lowest economic cost,
 - (ii) put in place long-term incentives for investment in clean energy and low-emission technology, and
 - (iii) contribute to a global solution to climate change;
- (b) the relative contributions to overall emission reduction targets from complementary measures such as renewable energy feed-in laws, energy efficiency and the protection or development of terrestrial carbon stores such as native forests and soils;
- (c) whether the Government's Carbon Pollution Reduction Scheme is environmentally effective, in particular with regard to the adequacy or otherwise of the Government's 2020 and 2050 greenhouse gas emission reduction targets in avoiding dangerous climate change;
- (d) an appropriate mechanism for determining what a fair and equitable contribution to the global emission reduction effort would be;
- (e) whether the design of the proposed scheme will send appropriate investment signals for green collar jobs, research and development, and the manufacturing and service industries, taking into account permit allocation, leakage, compensation mechanisms and additionality issues ...

These are public hearings, although the committee may 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 the committee, and such action may be treated by the Senate as contempt. It is also contempt to give false or misleading evidence to a committee.

If witnesses object to answering a question, they should state the ground on which the objection is taken and the committee will determine whether it will insist on an answer, having regard to the ground on which it 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. A witness called on to answer a question for the first time should state his or her full name and the capacity in which he or she appears, and witnesses should speak clearly into the microphones to assist Hansard to record proceedings. I ask everyone who has a mobile either to turn it off or to turn it to silent.

[8.26 am]

BOYCE, Ms Karen, Chair, Climate Change Committee, Chamber of Commerce and Industry of Western Australia

CANION, Mr Andrew, Senior Adviser, Industry Policy, Chamber of Commerce and Industry of Western Australia

CHAIR—I welcome Mr Canion and Ms Boyce from the Chamber of Commerce and Industry of Western Australia. Do you wish to make an opening statement?

Mr Canion—I thank the committee. The CCI is a member-based organisation and it represents over 5,000 members of the Western Australian business community, which goes across large and small businesses. We also have some government representatives and some not-for-profit organisations as part of our membership. As a result, we represent a broad cross-section of the business community and we are cognisant of that fact when we make our policy decisions.

The CCI hosts a number of policy committees comprising representative firms, one of those being the climate change committee. Members of the climate change committee are predominantly larger businesses and we have a number of service providers and business advisory firms. In developing the policy that committee is again cognisant of the needs of the entire chamber membership and Western Australian business more generally.

In determining its policy position the CCI would like to make it clear that it supports an emissions trading scheme in some shape or form. We believe that an emissions trading scheme represents the most market-efficient method of managing mitigation and reducing overall emissions throughout the country. It represents an efficient and simplistic way of allowing business to get on best and to use least cost pathways to ensure that the mitigation effect is the most appropriate, given their individual needs.

We think that any emissions trading scheme should offer broad coverage across all business sectors to ensure that there is a fair approach to the problem and that one industry sector or one business area is not overly burdened more than any other. Having said that the CCI has three main concerns with the proposed CPRS and they revolve around the areas of the timing of its introduction, the reporting and compliance aspects of it, and the assistance measures proposed for emissions-intensive trade-exposed industries. Let me touch briefly on each of those issues.

With regard to the timing of its introduction we simply believe that July 2010 is too soon. Basically, we do not believe that business is in a position where it is ready to deal with such a monumental change to its operation and the financial risks that a scheme such as this imposes on business. We would argue that it is important to get the scheme right when it is introduced. Basically, we are proposing that you need to do it once and do it right. We should not be heading towards a particular deadline that has been set; rather we should be introducing the scheme when all the participants are ready for it.

Referring to reporting and compliance, we note that a lot of activity is still being undertaken in this space at the moment, in particular, with reference to the definition of activities for the purposes of the scheme, how businesses will be expected to measure and report back on those activities, and what it will mean for their individual economic and financial circumstances. We also note in relation to reporting and compliance that it will be necessary for any system to interface within a company itself. The carbon trading and emissions trading aspects of it will need to integrate with financial business units and the environmental and operational aspects of their business.

We see this as representing a significant risk to any particular company and we need to ensure that complete and auditable systems are put in place. To some extent, that ties back to the timing of the scheme. To get it all ready and up and running by July 2010 is a monumental challenge. Finally, referring to ERTE specifics, a number of the companies that are potentially ERTE qualified are unsure of the measure of their activities and how they will be applied to their businesses.

We note within the legislation that a lot of the detail with regard to ERTE specifics will be contained within regulations that have not yet been made available. This makes it difficult for business to draw any firm conclusions. In brief, that outlines our three key concerns and it also voices our support for an ETS in general.

CHAIR—Thank you Mr Canion. Senator Cash?

Senator CASH—Thank you, Mr Canion and Ms Boyce. I refer, first, to your written submission which makes mention of global action. You said:

CCI believes it would be in Australia's best interests to ensure the policy direction taken internationally aligns with our foreign emissions trading scheme.

You then went on to state:

The risk of implementing a scheme that is inconsistent with other countries may be greater than the risks associated with delaying the introduction of an Australian ETS scheme to enable these compatibility tests.

Could I get you to elaborate on that, as we have heard evidence that is the exact opposite of that relating to the risk posed if we do not go forward with an ETS before the rest of the world comes on board?

Mr Canion—Sure. The view of the CCI is that it is imperative that global action is taken. I think everybody recognises that if Australia goes it alone it will not have a measurable effect on the world situation.

Senator CASH—But does that matter?

Mr Canion—What we think matters is that Australian industry is operating within the context of a global economy. It is important that we do not have imposts on our industries that are not equivalent to imposts in other nations.

Senator CASH—What would the effect of that be? What are you saying?

Mr Canion—Essentially, we are saying that Australia needs to go ahead with its carbon leakage and the risk that industry will choose either not to invest in Australia or to invest capital externally in other countries.

Senator CASH—That is interesting. As you have stated, you represent a number of businesses involved in various industries. How real is the issue of carbon leakage? I do not want you to tell me that it is a real issue; I want you to say to me, if you can, ‘It is an issue because these representations have been made to us.’

Mr Canion—We have been advised by our member companies that the risk of carbon leakage is real and that a rational economic business decision would be to invest where it is the least costly to do so. We have further been advised that there is a risk that, should Australia introduce an emissions trading scheme of itself without complementary action internationally, a rational business decision would be to look at those other options.

Senator CASH—Evidence was presented to us at our Canberra hearings that that would not be the case. From a shareholders’ perspective or from a moral perspective a company just will not do that. A company will not let Australia go it alone on carbon leakage. Is that what you are you saying?

Mr Canion—No, not necessarily, as I have not heard the submissions to which you are referring. These days, businesses look at the triple bottom line. Within that triple bottom line economic imperative is a key issue. They are responsible for responding to their shareholders across each of those areas. It is their responsibility to balance the value of each of those issues. We have been advised that for some firms it is a real consideration that they will be taking into account.

Senator CASH—Referring to the ETIE companies you said that the regulations have not yet been drafted, or that they are not yet in place, so it is difficult to ensure that these things will happen to those companies. What do you suggest should happen to them if we go ahead with an ETS?

Mr Canion—At this stage all that industry is asking for is a fair opportunity to see the regulations, to consider them, to incorporate them and to think about what might be their outcome. At the moment companies are being asked to make decisions based on something that is unseen. A fair consultation period would be welcomed. Again, we note the timing. Pushing towards July 2010, every aspect of this process has been rushed and it is putting businesses under significant pressure. Therefore, we request more time at each of these stages along the way.

Senator CASH—You say that you are requesting more time and that we should delay the implementation of the ETS. Could you elaborate on exactly what you are saying?

Mr Canion—We are not saying that we need to delay it for 12 months, until July 2011, or anything like that. We do not think there is value in setting a firm deadline; we are saying, ‘Let

businesses work through the process.' Once the process is complete everybody will be in a position where they are comfortable to proceed rather than being pushed towards a set deadline.

Senator CASH—What is the impact on the industry that you represent of Australia pushing ahead before companies are able to make an informed decision?

Mr Canion—There are two aspects to that. There are the cost aspects of having to resource up to try to process this in a short period. There are also the risk aspects. It is difficult to assess fully all the impacts that this scheme may have in such a compressed timeline. Those risks are difficult to value until you reach a consequence or an outcome that you were hoping you would not see. At that point the value of that risk probably becomes more measurable.

Senator CASH—You are saying that you are unable to do that at this stage because of reductions in performance?

Mr Canion—That is correct.

Senator CASH—I refer to the impact on jobs, if any, as a result of the implementation of the emissions trading scheme. Have any of your companies made representations to you as to whether or not there would be an impact on jobs in Australia?

Mr Canion—Not directly. At this point the critical risk of jobs for Australian companies relates to the global financial crisis. That is where the majority of their concern lies. They recognise that there could be positives to employment from the CPRS. We need to make that clear. It opens up new business opportunities and avenues. In that regard it should be seen as a positive as it could be a driver of growth. At the same time we do not know its negative consequences, how those two will play out and the balance that will come from it. It is difficult to tell.

Senator CASH—Are you saying that at this stage the government should not be imposing additional carbon related costs on business at the same time that it is seeking to stimulate the economy?

Mr Canion—Yes. It seems somewhat dichotomous that a government is pumping money into the economy to stimulate it but, at the same time, it is imposing this cost burden on business that might see it divert capital that it might otherwise invest in new technology and new investments. To us it seems to be counterintuitive.

Senator CAMERON—Mr Canion, the CCI obviously believes that action must be taken to reduce CO2 emissions, both in Australia and globally?

Mr Canion—That is correct, yes.

Senator CAMERON—You also said that you had a committee looking at this scheme. Did the committee have a look at the economic modelling done by Treasury?

Mr Canion—Yes. The CCI and its climate change committee have reviewed the modelling. To be fair, we do not believe that the modelling went far enough.

Senator CAMERON—That is not what I am asking. I am asking you whether you have looked at the modelling.

Mr Canion—Yes, we have.

Senator CAMERON—Some of Treasury's big conclusions are that there will continue to be robust growth in the economy. Does the CCI agree with that proposition? Even with the introduction of the scheme will there continue to be robust growth?

Mr Canion—I think over the long term the economy will continue to grow.

Senator CAMERON—You said that not all your members would be ready for this scheme. How many members do you have?

Mr Canion—We have over 5,000 members. I think at last count it was around 5,200, but that figure tends to fluctuate.

Senator CAMERON—Under this scheme how many of your members will be directly liable?

Mr Canion—I do not have the breakdown in front of me but I am aware that across Australia there are approximately 1,000 companies.

Senator CAMERON—How many in Western Australia are your members? You talking about your members; you are not talking about the whole of Australia.

Mr Canion—Yes. Perhaps 100 companies but, again, I do not want to commit to that number without checking.

Senator CAMERON—Approximately 100? You expressed concern about the scheme but you do not know how many of your members are covered?

Mr Canion—That is right. I do not have that number in front of me.

Senator IAN MACDONALD—I do not think you said that you did not know; you just do not have the details in front of you?

Mr Canion—That is correct.

Senator CAMERON—Could you take that question on notice and provide that figure to the committee?

Mr Canion—I will use my best endeavours to do so but I note that some companies are still unsure of their own liability.

Senator CAMERON—How many of yours members are already reporting under the national greenhouse and energy reporting system?

Mr Canion—As I understand it, no-one at this stage.

Ms Boyce—The reporting requirements have not yet commenced. Registration is required in August of companies that will be liable, and reporting is required by the end of October.

Senator CAMERON—Companies will be gearing up to report?

Ms Boyce—Yes, many companies are gearing up to report, but no-one has yet reported.

Senator CAMERON—Your members are not directly covered by the scheme and would need to hold emission units. What further information do you say that they need before the scheme should start?

Mr Canion—First, we think that there is a need for a broader education campaign. After talking to a lot of our small and medium enterprise businesses we established that they are aware that the CPRS is out there, but obviously they have no real understanding of how it operates at that higher level for the larger companies. They also have not considered the cost impacts that might flow down through the economy in the value chain and hit their businesses directly. It is important for them to understand the need to pass on those costs where they can for the scheme to work efficiently and for the end user to pay the carbon price embodied in the scheme.

Senator CAMERON—Will you be providing advice to your members on that?

Mr Canion—Yes, we already are. We have already run a number of sessions for the benefit of our members, and we will continue to do so to the best of our ability.

Senator CAMERON—You do not know what will be the cost impact on member companies that are not covered?

Mr Canion—We refer to the Treasury modelling to provide a guide. It has to be said that we were disappointed by the level of information and detail provided in that report. We note that it took a holistic national economy approach to the issue. We were hoping for some more detail in that information regarding the impact on particular industry segments across each of the states and so on.

Senator CAMERON—Do you think economic modelling can do that for your individual companies?

Mr Canion—We would have liked to have seen some set rule analysis, for instance, that provided some guidance.

Senator CAMERON—Do you have that much faith in modelling?

Mr Canion—We think modelling has a role to play in something as big as this. A fair level of modelling should have been done to assist everybody.

Senator XENOPHON—Chair, with Senator Cameron's permission, can I ask a supplementary question?

CHAIR—Yes, sure.

Senator XENOPHON—In your submission you say to the chamber that the modelling is not adequate. Could you provide details for the committee either now or on notice about precisely what sort of additional modelling needs to take place, the nature of that modelling, the parameters of that modelling and how you say that would be useful in determining the architecture of an emissions trading scheme?

Mr Canion—I can give you a broad response at the moment. I will leave it in your hands to establish whether or not it is sufficient. As I mentioned earlier, we think the modelling should have undertaken a business sector analysis. It should have looked at the cost impacts on a particular sector—perhaps building construction for the purposes of this argument. What would be their input costs, what would be the impact within their sector and how could those costs be passed through. Overall would that sector be better or worse off as a result? The CCI, with its partner in the Australian Chamber of Commerce and Industry, or ACCI, is currently looking at undertaking some further modelling to help us get a better view of that. We realised that we need to get on the front foot about this. We want to try to see whether we can do it for ourselves where we think the Treasury modelling is lacking.

Senator XENOPHON—Thank you, Mr Chairman, and thank you, Senator Cameron.

Senator CAMERON—I understand that the ACTU is building a skills network to address the challenge of climate change. You indicated that there are real possibilities of job creation as a result of the scheme. What big skills needs are required to reduce emissions, and will the CCI be involved in training and education on this issue?

Mr Canion—The CCI will be involved in training and education to the extent that it is able. As I mentioned earlier, we have run some courses and we will continue to do that. I will take on notice any opportunities that the government offers to provide training through third parties. The CCI also has a strong apprenticeships area. I am not in a position to say whether that will tie into any of the job creation opportunities within the CPRS, but it is certainly something at which we would look.

Senator CAMERON—Has the CCI had a look at what types of opportunities will arise in Western Australia?

Mr Canion—At the moment we have not had a great deal of opportunity to sit back and consider the potential blue sky careers that might be created from it. We recognise that there are opportunities—

Senator CAMERON—I am not talking about blue sky careers; I am talking about practical careers. We have been here before and we have heard evidence about job opportunities in Western Australia. I am just wondering whether the CCI agrees with issues relating to tidal, solar, photovoltaic and geothermal. Are you looking at those issues?

Mr Canion—Yes. A lot of member companies, as members of the CCI, are involved in those businesses. We support those businesses and we think they are fantastic. There is potential for job growth in those areas.

Senator CAMERON—Some of those companies have argued that we should achieve some certainty in relation to what will happen. They have also argued that the scheme, if passed, should provide certainty. What is your position on certainty for business investment?

Mr Canion—I agree that business requires certainty to be able to do its job best. One of the problems we have at the moment is that there is so much uncertainty. As I mentioned earlier, in the defining of activities, which is a fundamental aspect of the system, businesses do not yet know whether they qualify, or what aspects of their businesses qualify, within those activities. We are saying, ‘Please give us certainty.’ If it requires more time to do that, then take that time.

Senator CAMERON—How much time do we need? This issue has been around for 11 years and we still do not have a scheme up and running. Is the argument not to push off more of the short-term-ism—the big critique put forward by the Business Council and its members? Is this not about short-term-ism? Do we not need to try to focus on the long term rather than paint the global financial crisis as being the issue? How do you deal with that sort of critique?

Mr Canion—I do not think it is short-term-ism; I think it is taking a longer term view because we are looking at the longer term security of the scheme. We are saying that the risk of introducing a scheme as at July 2010 will create an opportunity for the scheme to collapse because no appropriate design methods have gone into it. If you take a little more time at the front end you will ensure that your scheme is robust and ready for full operation across the economy, and it will succeed in the long term.

Senator CAMERON—Are you aware that support mechanisms are being put in place for businesses that miss out on free permits?

Mr Canion—We are aware of those mechanisms but again we are unclear on the detail.

Senator CAMERON—Do you know about the Climate Change Action Fund?

Mr Canion—Yes, we do.

Senator CAMERON—How do you see that operating for your members? What benefits could your members gain from that?

Mr Canion—We do not know at this stage. We are waiting on the detail of that fund. My understanding is that it has not been released.

Senator IAN MACDONALD—You talked earlier about the flow-on impact to your members. Were you talking about things such as electricity?

Mr Canion—Electricity for one, input costs and essentially the general cost of doing business.

Senator IAN MACDONALD—We heard evidence in Mackay and the Mackay council indicated that rates would go up by 10 per cent because of landfill problems. Have you done any detailed analysis to show whether it will affect your 5,000 members as opposed to the 100 about whom you were being asked earlier?

Mr Canion—Yes. I can confirm that we have made anecdotal comments along those same lines relating to landfill levies and so on increasing costs. As I said earlier, the CCI is looking to undertake modelling in conjunction with the ACCI. I think that modelling will help us to answer some of those questions about which we have only anecdotal answers at this stage.

Senator IAN MACDONALD—I am sure we can ask the Western Australian government later. However, your association would be fairly closely involved with the Western Australian government on these things. Do you know whether they are doing any modelling that relates specifically to Western Australia?

Mr Canion—I believe that they are, yes. I understand that they have a unit looking over emission trading schemes in general and that they have already done a fair amount of modelling during the development of the green paper. I believe that that modelling is ongoing.

Senator IAN MACDONALD—To your knowledge, is either ACCI or the Western Australian government doing anything about the regions that are so important to Western Australia? No modelling seems to have been done for that. I understand that the New South Wales government has done some modelling but it refuses to release the results of that modelling. Do you know whether anyone is looking at that in a Western Australian context?

Mr Canion—I believe that the Western Australian government is looking at that. Without wanting to speak for them, I understand that they have looked at both the business and the social community aspects in the regions. However, I am afraid that I cannot give you more detail than that.

Senator IAN MACDONALD—Thank you for your submission, which is succinct and which addresses all the points well. I think Senator Cash asked you earlier an important question about the global financial crisis. From the Western Australian point of view you are very much aligned with China and India and you have a big trade influence with those countries. How will your members fare—and this is a broad comment—when trading with those countries as it appears as though they will not become involved to the same extent as Australia in any emissions trading scheme? Is that a matter of concern?

Mr Canion—Yes, it is a matter of concern. Obviously the contract specifics for each sale are different and the ability to pass on that cost will fluctuate. On the whole there is a concern that either the cost will not be able to be passed on, or that at the conclusion of the contract the customer might look elsewhere.

Senator IAN MACDONALD—Finally, do you make cement in Western Australia, or do you import most of your cement from Indonesia? Are you aware of that sort of level of detail?

Mr Canion—I am aware that Western Australia produces cement, yes.

Senator IAN MACDONALD—You would also be aware that a fair bit of cement comes in from Indonesia, according to the Cement Industry Association?

Mr Canion—They would probably have a stronger idea about that than I do. However, I understand that it is also built and created here.

Ms Boyce—There is a cement producer in Western Australia which produces most of the cement for Western Australia. I am not sure how much is imported but there is a fair production in this state.

Senator IAN MACDONALD—They will be slugged by the CPRS, whereas the Indonesian imports will not be under the current scheme. Is that a matter of concern to you? Is that Western Australian company a member of yours?

Ms Boyce—Prior to me the previous chair was a representative of the cement company in Western Australia. Obviously it is a matter of great concern as they had one of their company representatives chairing the committee.

Senator IAN MACDONALD—Okay. Thank you very much for that.

Senator LUDLAM—Thank you very much for coming in this morning. Your submission mentions:

CCI understands that the current economic downturn is causing a natural reduction of carbon emissions as a result of declining industrial production.

Are you able to substantiate that for us, or do you have a sense of any data on the kind of magnitude to which that is occurring?

Mr Canion—I think it is probably too early for real data in terms of emissions to be released at this stage. There is a lag on that sort of data and we are new to collecting it in general. But obviously they only need to look at the broader economic circumstances. The Ravensthorpe has obviously closed down; the Hismelt facility in Kwinana has maintained its care and maintenance mode, which I think they have put it in.

Senator LUDLAM—Yes.

Mr Canion—There is a general downward economic trend in the economic production, so we think that is pretty clear evidence that overall emissions would also be in decline.

Senator LUDLAM—Okay, but you do not have any specific estimates of the degree to which that is occurring?

Mr Canion—No, I do not.

Senator LUDLAM—That is okay. Ms Boyce, I just wanted to ask briefly about the unit you head up within CCI. Can you tell us a little bit about the climate change group and when it was formed?

Ms Boyce—I cannot tell you when it was formed because I was not one of the original members. It was a very active committee. As Andrew already indicated, it was made up from quite a broad range of people. We have quite a number of members who are representative of renewable energy, such as a lot of companies that are in the consultancy area that are looking for opportunities out of the CPRS or out of the emissions trading system; plus it is also

representative of a large number of emissions-intensive trade-exposed industries and some of those are in the coal industry and some are in the gas industry. They have quite opposing views as well.

Senator LUDLAM—Yes.

Ms Boyce—As a committee, we have to try to maintain a balance of policy based on trying to represent all of the members' views, which at times can be difficult, as you can imagine.

Senator LUDLAM—Sure. Diversity is good. Mr Canion, in your opening statement you mentioned that for the CCI, you were a little reluctant to set a deadline by which the scheme should be introduced because you wanted to wait until all your members were on board. But to me it would seem that that is working from the opposition direction: Essentially, the science should be setting the targets, not particular industry sectors. What would you say to the suggestion that what we really are trying to do here is set up a scheme in time to meet what science is demanding we do.

Mr Canion—Firstly, just in terms of my first point, I am not sure if I said that. I should clarify, however, in terms of all our members being on board before we introduce that if we did that, it would probably never happen.

Senator IAN MACDONALD—There is a demonstration outside. Did you see that?

Mr Canion—So what is best for WA business is probably the way I should have put it, if I did not. But in terms of the science driving the debate, we recognise that there is scientific argument and that people argue both ways—whether climate change is happening or not happening—but what we are looking at in terms of the mitigation methods is that business needs a robust system to work around so that it can best achieve the environmental outcomes. We are concerned that that system, as it is proposed at the moment, has some shortfalls that we would like to see remedied.

Senator LUDLAM—Australia signed the framework convention on climate change in 1992, which is 17 years ago, yet to me it still sounds as though you are saying that WA business is at a fairly low state of readiness. Is that a fairly accurate statement, or would you describe the business community as being at a high state of readiness?

Mr Canion—I think there is probably a variance of both those extremes across all companies, but I think it is that while we recognise that action is likely to be taken by the government at some stage, there have been multiple proposals as to how that action would take place. Only now has a scheme been presented to us in terms of, 'This is how it will be done.' So while you say the debate has been going for 17 years, it has: but understanding how we will deal with it has really only come to fruition in the last 12 to 18 months.

Senator LUDLAM—But surely the broad outlines are that we are heading for a low carbon economy, whether individual business sectors like it or not, and the details and the debate will come and go. I suppose that is what I am getting at. What is the state of readiness of the Western Australia business community for a low carbon economy, irrespective of the details of how we get there?

Mr Canion—I think one of the other things we need to consider here is that a lot of the emissions-intensive activities which are the key concern, if you are looking at it from an environmental perspective, are very lumpy investments.

Senator LUDLAM—Yes.

Mr Canion—An investment decision will be made at one point in time and that facility, if you like, may exist for 40 years, perhaps. It is very difficult. Businesses have to make long-term decisions based at a point in time, so while the debate has been going on for a long time, emissions have been an externality which has not been costed. We are saying it is good now that the CPRS will put a price on carbon which will enable these economic decisions to be made, but in the past that has not been the case, and businesses have responded accordingly.

Senator LUDLAM—But I suppose I would put to you that business has responded by hoping that it is never going to occur, which is why we are still at a fairly low state of readiness in WA.

Mr Canion—I think some businesses have responded already. There are obviously the renewable energy businesses that have seen, and are taking, opportunities in the market, which is an excellent outcome. Other businesses have made the market decision that they will continue to invest in emissions-intensive capital because they believe that will result in the best return for their shareholders. That, to me, is a reasonable market-driven response.

Senator LUDLAM—I could be over time.

CHAIR—Yes. I will go to Senator Feeney. He has not had as much as the rest of you.

Senator FEENEY—I just have a couple of questions, Mr Canion. In your submission you referred very briefly to the global financial crisis. I wonder if you could tell me what you think the prevailing economic conditions need to be to create a suitable environment for the introduction of a CPRS?

Mr Canion—Yes. I guess the economic conditions of 12 months ago were a lot more conducive to the introduction of a CPRS. At the moment, businesses are really focused on ensuring that they can see through these difficult times: they are focused on the here and now. We are concerned that the imposition of this additional cost, keeping in mind that the declining economy is reducing our emissions naturally, it is not a good result for business.

Senator FEENEY—So would you go so far as to say that there needs to be prevailing economic conditions of boom for the introduction of a carbon emissions scheme?

Mr Canion—No, I do not believe that is the case. I do not think we need a boom.

Senator FEENEY—In the part of your submission under the heading ‘Global Action’, you make the comment that you think it is important that an Australian scheme be compatible with schemes introduced overseas. Is there any reason you can articulate about why the CPRS may be incompatible or out of kilter, so to speak, with schemes in the EU or various states of the United States and so forth?

Mr Canion—It is my understanding that the government has taken this very seriously and has designed it to the best of its ability to make it link with international schemes. We commend it for that. The real problem is that there are not a lot of other international schemes out there at the moment, so the possibility for linkages is largely theoretical at this stage.

Senator FEENEY—Are you aware of there being any schemes implemented overseas that would simply be incompatible with the CPRS?

Mr Canion—Not at this stage. Given that the EU scheme is the predominant one at the moment.

Senator FEENEY—With respect to questions Senator Cameron asked you about the Climate Change Action Fund—I understood your answer to be that you do not have the detail of that at this time—could you articulate what you would be looking for in such a fund, and what sort of initiatives and opportunities you are hoping that fund might present to Western Australia business.

Mr Canion—Sure. Obviously it needs to promote smart investment. It needs to ensure that businesses can adapt and grow as a result of the changes that have been put upon them. It also needs to encompass a level of training and education to the entire economy, basically, and all participants within it. Those are the two key streams we see as being most important, and I guess investment and wealth-creating investment would be the key aspects.

Senator FEENEY—Has your organisation had an opportunity or sought an opportunity to make submissions with respect to the work of the fund?

Mr Canion—We have made some brief comments on it in the past but we have not gone into it in depth or detail in our submissions at this stage.

Senator FEENEY—Finally I just want to clarify the CCI's position with respect to climate change. You made a brief remark concerning the debate in the scientific community. Does the CCI have a policy accepting the existence of climate change?

Mr Canion—Our policy is that our job is to respond to the conditions put upon us by government. In terms of the scientific debate, that is not something we wish to enter into. We look at what has been presented to us in terms of government policy and develop our response on behalf of business in the face of that.

Senator FEENEY—So your climate change committee has not made a threshold determination that climate change is real?

Ms Boyce—Certainly at times the committee has discussed the issue of the actual climate change itself, but we are focused much more on the response to the proposed legislation rather than dealing with that issue because that is really outside the scope of what the committee has been set up for.

Senator CAMERON—But some people are arguing that it is not real.

Ms Boyce—Yes.

Senator CAMERON—Surely you would have a view as to whether it is real, or whether the threat is such that we have to take reasonable steps to avoid the risks.

Ms Boyce—Certainly.

Senator CAMERON—You are not just responding to government legislation on this—surely not.

Ms Boyce—The purpose of the climate change committee is not to debate whether climate change itself is real. The climate change committee is focused on the response to it. Certainly all our members have opinions on it and from time to time they express those opinions, but we move on from that and work on what response we are actually working on; otherwise, we could get extremely bogged down in the debate on that issue, whereas what is facing the member companies is the proposed legislation that is coming up.

Senator FEENEY—When you say you might get bogged down in that debate, are you referring to the fact that you have significant members who have strong views about whether climate change is real?

Senator IAN MACDONALD—Or that, I guess, they wonder what Australia can do to influence climate change with less than 1.4 per cent of the emissions.

Senator LUDLAM—I do not think that is what the question was.

Senator IAN MACDONALD—Well, no, it is exactly the same.

Senator LUDLAM—I am happy for both to be put.

CHAIR—Let us not get involved in a discussion around the table. We are very tight for time. Senator Xenophon, do you have any particular you would like to ask?

Senator XENOPHON—Yes, I do, Chair. In terms of the submission, the chamber says that they do not think that there is a need for the MRET scheme or a mandatory renewable energy target. Is the chamber actually saying to scrap MRETS, or if a CPRS was differently designed—and, if so, how differently—it would not have a need for an MRET-type scheme?

Mr Canion—Thank you for the question. We think that a very well designed CPRS should result in there being no need for an MRET. We think a single economic instrument that every business can look to as the price signal should be sufficient to direct investment in the appropriate way. We recognise that there are differing views on that. We have put forward views, if an MRET is to go forward, how we think it should operate. I guess that is our position on that.

Senator BOSWELL—I was going to ask a question on how you saw the MRET and the ETS and to what extent that would extend the cost of the scheme?

Mr Canion—WA is in somewhat of a unique position when it comes to the MRET as well, particularly in relation to our power grid. Being in the isolated south-west interconnected system, or the SWIS, creates additional problems and concerns as opposed to being part of the NEM. It becomes more difficult for WA to dispatch renewable energy while ensuring that baseload power supplies are guaranteed. One of our concerns is that you will end up in a situation where you are making double investments. You may be investing in renewable energy, but you may also have to invest in fossil fuel energy, if you like, to provide a backup baseload supply when that renewable energy source cannot provide.

Senator BOSWELL—Have you done any research on how much it would increase the cost of power in Western Australia—I mean, combined with an ETS?

Mr Canion—It is a very difficult question.

Senator BOSWELL—It is one we have to look at because it is coming down upon us.

Mr Canion—Yes. I cannot provide direct values on that.

Senator BOSWELL—That does not matter because in your submission you state:

... the Minister must take all reasonable steps to establish the emissions-intensive, trade-exposed assistance program prior to 1 July 2010.

Then the inference you draw is that the government could commence its ETS without finalising or implementing its proposed assistance program to maintain Australia's trade competitiveness. Would you like to elaborate on that?

Mr Canion—Yes. That is particular to the wording in the legislation at the moment. Our interpretation of that is that it says the minister 'may'. We would like to see that strengthened to ensure that the CPRS cannot go ahead without the EITES assistance program being in place. We think that lends itself to providing greater certainty to business.

Senator BOSWELL—All right. Can you provide the committee with your concerns with the government's final proposals including in relation to assistance—and you might just jot these down—with trade-exposed emissions-intensive industries; the effect that a partial assistance package will have on top of profitability and jobs in Western Australia; and the technical and economic problems associated with the government's 20 per cent renewable energy target in Western Australia?

Mr Canion—Okay.

Senator BOSWELL—Have you got those?

Mr Canion—I think so.

Senator BOSWELL—Maybe I can just give you a list.

Senator CAMERON—It looks like Egyptian hieroglyphics.

CHAIR—Are you happy for those to be taken on notice, Senator Boswell?

Senator BOSWELL—Just quickly, if you could give me a five-minute assessment.

CHAIR—No, you have not got five minutes, I am sorry.

Senator BOSWELL—Well, two minutes.

CHAIR—We are over time and we need to move on to the next witnesses. Mr Canion, be very, very succinct please.

Mr Canion—I think I will take the third one first, the 20 per cent renewable energy target: the technical problems with that I have referred to—double investment and the fact that renewable energy is often on the edge of the grid where the grid has been developed to provide large supplies from other region. I have touched on that quickly.

Senator BOSWELL—Yes, we have done that one.

Mr Canion—The effect of the assistance package on profitability and jobs: again, I guess it depends on the construction of the assistance scheme.

Senator BOSWELL—Have you seen that?

Mr Canion—We have not got details on that. If it promotes investment or has the potential to improve it, yes: otherwise, it is difficult to say at this stage. And the assistance to the trade-exposed industries: again, it gets back to the measures of activities providing those firms with enough detail to assess their own emissions intensity and to understand where they will and will not qualify in the scheme, keeping in mind that while we talked about 60 and 90 per cent assistance levels, that is not for the company as a whole. There will still be significant cost impacts on them because it will affect only the relevant activities.

CHAIR—Thank you, Mr Canion. Thank you, Ms Boyce. Thanks for your evidence. There are a couple of questions I understand that will be submitted in writing on notice. If you would good enough to assist us with those, we would appreciate that. Thank you for your evidence this morning. We shall move on to our next witness from the Australian Climate Exchange.

[9.13 am]

HANLIN, Mr Timothy John, Managing Director, Australian Climate Exchange Limited.

CHAIR—Good morning, Mr Hanlin. Thank you for coming to submit your views to us this morning. I invite you to make a short opening statement.

Mr Hanlin—The ACX is the operator of the first electronic emissions trading platform in Australia and we have been operating since July 2007 essentially in what would be described the voluntary emissions trading market. I have three points that I would like to make to the committee this morning. The first is that the ACX recognises that while an ETS is the most effective mechanism for reducing emissions, at the lowest economic cost, it is not the only mechanism. We believe very strongly that any emissions trading scheme should include the ability to incorporate complementary measures and, in so doing that, making sure that they are achieving additional abatement to what is achieved through the CPRS.

We also believe very strongly in the fact that a market price signal, or market pull, as we call it, is not sufficient to bring along new technologies and transition the economy to a greener or lower emissions future without a complementary technology push. We believe that the proceeds of the auction system or the large majority of those proceeds going forward should be targeted to providing assistance in that area.

The second point is, as I pointed out at the beginning, that I suppose I represent one of the new green collar industries. I make the point to the committee that any delay or abandonment of the CPRS will lead to the loss of the current green collar jobs that have been created by firms such as ours, but also the huge potential for green collar jobs going forward. Any delay or indeed abandonment would be likely to see firms like ours either fold or move offshore to countries like the US, where they seem to be moving forward quite rapidly towards emissions trading schemes.

Thirdly, and most importantly, I stress the role of the voluntary market in supplementing the reductions achieved by a compliance scheme like the CPRS. In pointing that out, I add that there is a desperate need for a government sponsored voluntary emissions trading scheme that is able to complement the compliance scheme. We believe that the CPRS needs mechanisms that, for instance, buy back permits from the market and therefore maintain the cap equivalent to the reductions that are achieved in that voluntary emissions trading scheme. We also believe that at least five per cent additional reduction by 2020 could very easily and conservatively be achieved through voluntary measures. We point to Europe and the fact that post the introduction of an EU emissions trading scheme, Europe has been the largest market growth in voluntary emissions trading of anywhere else in the world. That concludes my opening statement.

CHAIR—Thank you, Mr Hanlin. Senator Xenophon?

Senator XENOPHON—In relation to the European scheme, there has been a problem with the permit prices. What can we learn from the problems experienced with the European scheme in terms of the way that the permit price has not given a good price signal for investment in green industries?

Mr Hanlin—I think one of the biggest lessons that has been learned, and it seems to have implemented in the current design of the CPRS, is that by directly allocating permits to obligated parties for free, rather than using a primary auction market mechanism such as the one that is proposed in the CPRS, means that you do not get any price discovery in that allocation process. That is part of the problem, particularly the permit problems that we were seeing in the first phase of the scheme, which were a combination of over allocation for a start, and a lack of market data transparency in the market, which in turn was caused by that allocation process.

I believe that we have addressed the bulk of those issues via the use of 75 per cent auctioning of permits. The second factor to do with the price of permits themselves very much relates to the level of the cap. Obviously the tighter is the cap, the higher will be the price that the market will clear at, and therefore the higher will be the price signal creating a greater incentive for green investment.

Senator XENOPHON—Thanks.

Senator FEENEY—I wonder if you will talk to us a little bit about the unlimited importation of certified emissions reductions under the clean development mechanism, and what you think that might mean in terms of the operation of the CPRS and opportunities for business?

Mr Hanlin—One of the best parts about CERs will be included in the scheme is that we get exposure to an international price signal. That is the first point. It provides the opportunity for a natural cap on pricing, so there is an alternative to having to buy a permit on the market. I think that there may be some issues for the government in terms of its international commitments if there are too many CERs that are imported. Australia has a supplementarity limit in terms of meeting its Kyoto requirements and therefore if more than the supplementarity limit is imported and used within the CPRS, we may be short of AAUs, and therefore the government will have to go onto the market and buy AAUs from other countries.

I see that there is a potential for that to be a problem for the government in terms of meeting its Kyoto commitments. However, I would say that to those who are saying that people will not buy permits but will rather just buy CERs, I just see that the CER price will influence the price that a permit is auctioned or sold for. I still see that, given the unlimited bankability of Australian permits within the scheme, companies will see that priced for risk as a better proposition necessarily than a CER.

Senator FEENEY—A propos of that answer, how will you help major emitter companies manage their permit liabilities?

Mr Hanlin—We have put place mechanisms through our emissions registry for companies to import CERs into their own accounts before the national registry is actually available, so we are allowing a mechanism, a work-around so to speak, for companies to be able to obtain good title to CERs prior to the national registry being up and running. That is one way. I suppose the second way is by providing an alternative marketplace for sellers of CERs to list their product. We are also providing that channel for Australian companies to buy without having to go onto European exchanges.

Senator FEENEY—Thank you. I have no further questions, thank you, Chair.

CHAIR—Senator Ludlam?

Senator LUDLAM—Thanks, Chair. Thanks very much for coming in. Right at the beginning you mentioned additional measures, so you see the CPRS as important but not the only show in town. What would be the other main instruments that you would be keen to see?

Mr Hanlin—I mentioned a voluntary emissions trading scheme.

Senator LUDLAM—Yes.

Mr Hanlin—That could very much incorporate the energy efficiency schemes that are being proposed by the various state governments. I also see the opportunity for not necessarily including an expanded MRETS within the CPRS, but certainly for any reductions that are achieved through that MRETS to be reflected in the number of permits that are on market at any given time.

Senator LUDLAM—So you would see any gains from an MRET target as subtracting from the cap, for example?

Mr Hanlin—I think there should be a mechanism that allows for that. Certainly one of the Garnaut suggestions was a central carbon bank, which may monitor those sorts of issues and make those sorts of adjustments. I think that that is potentially within a legislative limit or framework that would be a feature of the scheme that would be an improvement on what is currently proposed. But certainly one of the things that concerns us in terms of a CPRS being the be-all and end-all is that there are certain sectors where the price signal just does not get to. One of those sectors, for instance, would be the rental property market where there is no incentive for either the owner of the property or the renter to do any energy efficiency. No matter how strong the price signal is, it is never going to encourage that kind of activity. We see the complementary measures being a way of achieving that.

Senator LUDLAM—Right.

Mr Hanlin—But they need to be included in that overall framework of the CPRS so that you do not get a watering down of the effect of either the CPRS or the complementary measures.

Senator LUDLAM—That is where I was going next. If you had a robust, mandatory carbon trading scheme active in Australia, can you just spell out for us what the value would be of a voluntary scheme running side by side?

Mr Hanlin—In terms of the overall amount that could be achieved?

Senator LUDLAM—The benefits, yes.

Mr Hanlin—Apart from the fact that you are actually empowering companies and consumers to start to vote with their wallets, you are developing brand and awareness about what can be done in terms of voluntary schemes. To a certain extent—I reflect back on one of the reasons that the voluntary market has been so robust post-compliance in Europe—is a certain frustration among consumers as to the efficacy of the compliance scheme. So it actually gives consumers

the opportunity to have a direct influence, and therefore you get buy-in and empowerment in that process.

Senator LUDLAM—One of the key criticism that has been raised of the CPRS today, particularly if it is introduced with a fairly low target out to 2020, is that the kind of voluntary actions will only make the permit price cheaper for big polluters, so would you see benefit in these kind of voluntary actions taking permits out of the system?

Mr Hanlin—Absolutely. Then that argument goes away.

Senator LUDLAM—Yes.

Mr Hanlin—If it is done in such a way that the government actually buys back those permits. Considering that it was paid for the permits in the first place through the auction process and that, apart from the transaction cost it should be reasonably revenue neutral, you have a situation whereby, having to compete on the market, you are not creating a market distortion whereas if you were to arbitrarily just reduce the cap or reduce the number of permits that are on issue, that may be considered not giving industry the long market signals and price signals that it is looking for.

Senator LUDLAM—Thank you very much.

CHAIR—Senator Boswell?

Senator BOSWELL—Would trading in certificates—and, I would anticipate if the scheme goes ahead that there will be a fair bit of trading in certificates—form a little stock exchange, or how would it operate?

Mr Hanlin—Typically that is what we have seen in Europe. We would expect that the secondary market, due to the auction process and the fact that it is not just the obligated parties that are necessarily going to be involved in the market, the secondary market will evolve probably more quickly than we saw in Europe. It is that secondary market where you will see exchange trading in both the spot market or the cash market and also in risk products, such as derivative products like options and futures and so on, which obviously will give companies more flexibility in terms of their risk management.

Senator BOSWELL—Obviously you have set yourself up in business here and you see it having a chance of being successful, but how much do you think that exchange will be worth? In monetary terms, how much will that exchange trade per year?

Mr Hanlin—Well, I believe that, once again the second market, will be to the tune of around about 30 per cent of the total number of permits on issue in any given year.

Senator BOSWELL—What is that in money roughly?

Mr Hanlin—I would say you have 320 million permits in the first year of the scheme times 30 per cent times whatever the market price will be.

Senator BOSWELL—So 320 million by 30 per cent?

Mr Hanlin—By whatever the permit price is going to be.

Senator BOSWELL—It is a fair bit of money, is it not?

Mr Hanlin—It is. It is a fairly liquid market, yes.

Senator BOSWELL—I have heard it being put at something like \$50 billion a year. Would that be accurate?

Mr Hanlin—I think that is probably a very optimistic figure.

Senator BOSWELL—What would you put it at?

Mr Hanlin—I would put it in probably the \$10 billion category at the outside and that certainly would be in the first few years of the scheme but not \$50 billion.

Senator BOSWELL—That \$10 billion would have to come out of the economy. Whether it is \$10 billion or \$50 billion, someone has to pay for that—either the manufacturer or the end user—when the legislation is passed. Someone has to pay that money. It just is not created, so that money would have to come from manufacturers or, if they did not pay it, it would be passed down to the end users.

Mr Hanlin—I am not quite sure I am understanding where you are going with that.

Senator BOSWELL—Out of the economy someone has to the \$10 billion, which is your figure, or the increased figure. That money will have to come from somewhere. Who is paying that money? Who pays?

Mr Hanlin—I do not agree that the money is coming out of the economy. It is a bit like saying that the stock market—

Senator BOSWELL—But it does.

Mr Hanlin—which trades millions and millions of dollars a day in overall turnover—and we are talking turnover—

Senator BOSWELL—Yes.

Mr Hanlin—We are not talking about one person pays another and that person takes all that money. That is the kind of turnover you might see.

Senator BOSWELL—Yes.

Mr Hanlin—So that is not money that is coming out of the money. That is money that is actually circulating through the economy.

Senator BOSWELL—But someone is taking a percentage out of that, whichever way you look at it.

Mr Hanlin—Yes, and that percentage would be a very small fraction of that \$10 billion.

Senator BOSWELL—But if we are trading in certificates, and the trade is \$50 billion or \$10 billion, as you put it, then someone has to pay that \$10 billion initially. It might not end up in the exchange's hands, but they will get a percentage of it. But there will be an increased cost to the economy.

Mr Hanlin—But 75 per cent of, say, the \$12 billion, which is what I have heard quoted if in a single year all of those permits are sold through the auction process and most of which goes into the Climate Change Action Fund, that has to come out of the economy, yes.

Senator BOSWELL—I know. That is precisely my point. You are taking that money out of the economy and putting it into a fund that you hope will produce more jobs.

Mr Hanlin—Yes.

Senator BOSWELL—Can you tell me about the RET and how it is going to impact on the ETS, and whether you think you have to have a RET and an ETS?

Mr Hanlin—I think that, yes, you do need to have some kind of renewable energy scheme to reach a renewable energy target. Whether the RET scheme, as it has operated up until now, by simply changing the MRET target from five per cent to 20 per cent, or whatever the numbers are—and I have to say straightaway that I am not an expert on the MRET scheme as it is proposed—if you simply increase the MRET target you probably are not going to achieve your 20 per cent by 2020 anyway because you are only using a price pull mechanism and there is a limit to what that can actually do, but also to an extent that will cause issue with adding costs onto industry if it is purely and simply a subsidy that is put on top of the cost of energy.

Senator BOSWELL—Professor Garnaut believed that to be totally wrong, and a number of other people have said that if you are going to have an ETS that works, then you should not have an MRET scheme because you would not finish with having it both way, or two ways. Would you comment on that?

Mr Hanlin—I do not agree that if you have an ETS you do not need complementary measures to bring forth renewable energy, but I do believe that if you have two measures, one being the CPRS and one being an MRET, which are both a price pull, then that is a mistake. The approach to a 20 per cent renewable energy target by 2020, which I think is an admirable thing to push for, and using a price pull to achieve that is probably not the way to go because it will be a double impact.

Senator BOSWELL—Good point. My last question is: Do you believe the ETS, as it is proposed and with a RET, is the best way that you can deliver, cost effectively for industry, a carbon reduction program?

Mr Hanlin—A CPRS is, yes, but I am not linking that with a RET. I said CPRS is the most cost-effective way of achieving any given target. Renewable energy target and measures to supplement the development of renewable energy in this country is an industry development issue. It is not a carbon issue.

Senator BOSWELL—Well, that might be but—

CHAIR—Senator Cameron?

Senator CAMERON—Mr Hanlin, you are based in Western Australia?

Mr Hanlin—I am, yes.

Senator CAMERON—You also advise companies about managing their risk in relation to climate change?

Mr Hanlin—Yes.

Senator CAMERON—I just noticed some figures here on the Department of Climate Change website stating that in coastal areas of Western Australia 94,000 coastal buildings are at risk from projected sea level rise, and between Fremantle and Mandurah, an estimated 28,000 and 641 kilometres of road are at risk from erosion due to rising sea levels.

Mr Hanlin—Yes.

Senator CAMERON—Are these risks being factored in at all in terms of business in Western Australia?

Mr Hanlin—I need to clarify that when we consult on risk, we are talking about the risk associated with a company's emissions inventory. What you are talking about now is an adaption risk and we certainly do not practise in that area. It is not one of my areas of expertise. But I would make the comment that my experience is that adaption is not something that is high on companies' risk agenda—at least the companies that I have been involved in.

Senator CAMERON—Basically Australian companies and Western Australia companies are not preparing for the risks in your estimation?

Mr Hanlin—That is a personal observation, yes.

Senator CAMERON—What about the opportunities?

Mr Hanlin—On the adaption side?

Senator CAMERON—Yes. Is there much going on in terms of picking up the opportunities?

Mr Hanlin—Like buying property that is two or three rows back from the front?

Senator CAMERON—I mean job creation, trading—you know?

Mr Hanlin—Once again, it is not my area of expertise, but I have not seen any evidence of that, no.

Senator IAN MACDONALD—Mr Hanlin, is your organisation the only one in Australia doing what you are doing?

Mr Hanlin—In terms of an electronic emissions trading platform that the public can access and see, yes—That I know of.

Senator IAN MACDONALD—Around the world, there are others, I think you were saying.

Mr Hanlin—There are.

Senator IAN MACDONALD—In what countries are they based?

Mr Hanlin—Obviously Europe is one of the biggest areas. The Chicago Climate Change, which is probably one of the earliest of the types of exchange we are talking about, has been around since 2001 and that is based in the US. There has been a fair amount of this type of activity going on for a number of years.

Senator IAN MACDONALD—Yes, and I appreciate you are not a climate scientist, but do you have a comment on what impact those exchanges around the world are having on global greenhouse gas emissions and therefore global climate change?

Mr Hanlin—I do not think the exchanges themselves are having an impact. The exchanges are purely and simply a marketplace, so it needs to be the scheme that sits behind it that has the impact. I would certainly see that the evidence in Europe of the effectiveness of the emissions trading scheme there certainly seems to be inconclusive at best and at worst that perhaps the scheme is not achieving what it set out to achieve. But I think that is more a case of a flaw in the scheme than the concept of emissions trading per se.

Senator IAN MACDONALD—Can you just elaborate on what you just said?

Mr Hanlin—I think there are political issues within Europe in regards to the national allocation plans, so there are a number of countries that are threatening the EU over their national allocation plans. I think where you have a scheme that has as many stakeholders as Europe has, you are bound to have those issues. But I think the biggest issue has been over-allocation and a lack of transparency within the allocation process. One of those issues, the transparency issue, is one which the CPRS covers and has addressed. With the issue about over-allocation, we are probably yet to see the effect of the global financial crisis on whether or not there will be an over-allocation in the first few years of the scheme.

Senator IAN MACDONALD—So does over-allocation mean that there is not as much impact on greenhouse gas emissions as might otherwise be if there were not over-allocations?

Mr Hanlin—Absolutely. That is the first issue. The second issue is that you do not get a robust and high enough price signal to actually encourage emission abatement, so once again you are not going to achieve the outcomes that you are looking to achieve.

Senator IAN MACDONALD—Are you aware of whether there is any data or where we would look for data on what you are saying on the extent of over-allocation and the impact it might be having on emissions and changing the climate?

Mr Hanlin—I am sure there are two very credible sources that we use. One is New Carbon Finance, which is a group that analyses the European scheme and the like, and the other one is Point Carbon.

Senator IAN MACDONALD—They are both websites, are they?

Mr Hanlin—They are both organisations that do analysis and they both have websites. You can subscribe to their analysis, et cetera. So there is a subscription service.

Senator IAN MACDONALD—Okay. Thanks, Mr Hanlin.

Senator CAMERON—Just on this issue, we have had a quite severe critique of the trading by Professor Warwick McKibbin. Are you aware of the critique that he has given?

Mr Hanlin—Yes.

Senator CAMERON—Would you have any comment on that?

Mr Hanlin—Personally I think that some of the issues that the professor raises—I am trying to think of a polite way of putting it.

CHAIR—Diplomatic?

Senator CAMERON—You do not have to be polite.

CHAIR—But it helps.

Mr Hanlin—Sometimes I think when you put two economists in the room, it is like putting two pit bulls in a room and seeing who comes out worse.

Senator IAN MACDONALD—Or two politicians.

Senator CAMERON—No!

Mr Hanlin—You may say that. I cannot say that. But what I would say is that there may be an element of his scheme has not been the one that has been adopted. Quite frankly, I think his scheme is a little bit complex. The biggest problem I have with it—

Senator CAMERON—Sour grapes? Is that the term you were looking for?

Mr Hanlin—There is an element of that, I think, but the other issue that came up in the previous session is compatibility with other schemes and the ability for Australia to link into other international trading. One of the problems I have with McKibbin's plan or his alternative is that that moves us so far away from the Kyoto-type process that it would be almost impossible for us to link in, unless everybody else came our way. That would be my major concern.

Senator CAMERON—Are there any checks and balances to ensure that we do not end up trading with Zimbabwe, as was the claim?

Mr Hanlin—I am not aware of any CDM projects, for instance, that come out of Zimbabwe. If there are some and they are a legitimate production, from a market perspective I would not have a problem with that.

CHAIR—Because that is certifiable.

Mr Hanlin—As long as it is certified by the CDM executive board, and the CDM executive board is an arm of the UNFCCC. At the end of the day that is the international process that is in place. My point is that if they are coming from that source, then they are as good as the ones coming from China, India or anywhere else.

Senator CAMERON—But there is a check and balance in terms of who gets access to trading.

Mr Hanlin—But the check and balance is more, 'Are they meeting the requirements of the UNFCCC?', not, 'Are they are legitimate regime that we should be dealing with?' That is something that is outside the scope of the UNFCCC and the CDM executive board. I am not sure at this point whether or not that is something that an emissions trading scheme of any kind is designed to cope with.

Senator FEENEY—Nor any market.

Mr Hanlin—Yes.

CHAIR—Thank you, Mr Hanlin, very much for your evidence this morning. I do think any questions on notice are associated with it, so you have been spared that onerous duty. Thank you for coming to present to us this morning.

Mr Hanlin—It is a pleasure, thank you.

CHAIR—I now call a representative from Doctors for the Environment Australia, Dr Kirczenow.

[9.45 am]

KIRCZENOW, Dr Irene, Doctors for the Environment Australia.

CHAIR—Would you like to make an opening statement?

Dr Kirczenow—I believe I can provide you with an opening statement of 10 to 15. Is that correct?

CHAIR—The shorter, the better, because that places less time pressure on us when it comes to questions.

Dr Kirczenow—The shorter, the better?

CHAIR—If you could, make it relatively succinct, please.

Dr Kirczenow—If you wish to interrupt me and curtail it if I am going too far, please do. Good morning, Senators. Thank you for this opportunity at short notice to present to the committee on behalf of Doctors for the Environment. Doctors for the Environment is a nationwide voluntary organisation of doctors and all specialties, general practitioners and students are represented in our membership. Some of our members are active in research on health and climate change and have been contributors to the IPCC process. Our scientific advisory panel includes such luminaries as Nobel Laureate Professor Peter Doherty, Professor Frank Fenner, Professor Tony McMichael and Professor Fiona Stanley.

As doctors and clinicians, we have a detailed understanding of science as it relates to human health and this places us in a strong position to provide input into the global warming debate, both in terms of assessing the risks, pressing for action and directing adaptive measures. We also have experience in facilitating behavioural change.

We are motivated only by concern for the health and wellbeing of our patients and humanity as a whole, and we have no other agenda. We feel that public good must prevail over other vested interests, as the medical profession understands only too well, from our dealings with the tobacco lobby, how corporate might can have little regard for human life and how misinformation is generated.

We recognise the importance of a healthy environment for human health and promote activities on many levels—from patient's education and informing the public, to briefing policy makers. I will stress that our members come from all political viewpoints, but this does not prevent us from reaching agreement on the need for preservation of the environment and action on global warming. Doctors for the Environment believes that the problem is of such magnitude that that there should be a bipartisan approach, and we need the best and brightest ideas from all as this wicked problem transcends all the normal short-term decisions which occupy policy makers.

In 2008 we wrote to all members and senators outlining our position and requesting bipartisanship. I thank Senators Richard Colbeck and David Feeney for their replies. I cannot recognise everybody, but thank you. The effects of global warming on health are likely to be profound—a fact recognised by the World Health Organization and the policies of the AMA and medical colleges. Quoting the director of the World Health Organization, ‘it may turn out to be the most ominous struggle of them all’.

I am personally asked frequently what environment and climate change has to do with health and doctors, and this is not altogether surprising as the political dialogue on climate change has often concentrated on its effects on the economy or at best jobs, rather than on the complex dimensions of health. It is also understandable as most of us have come to feel our health is independent of the environment and will continue to improve through technological advances alone.

However, we are realising that there is a connection between climate change and threat to future health on a global scale. This is because we understand that functioning ecosystems are fundamental to wellbeing. These very ecosystems are reaching breaking point. Many natural resources are being exploited at rates which are unsustainable and waste, both terrestrial aquatic and atmospheric, is being accumulated at rates which exceed the planet’s ability to degrade it. Our food producing arable land is diminishing, fisheries are nearing collapse, freshwater aquifers are being depleted, and forests are being logged at alarming rates. Climate change is but one aspect of the cascade of stresses being placed on ecosystems, but it is a serious additional burden with effects on all other systems, and this may prove overwhelming.

I will stress to you that the most critical result of climate change, as a symptom of unsustainable practices, is a threat to the life-sustaining capacity of the earth itself. When we talk about the health effects, we can discuss those in terms of the direct and indirect effects. I am sure you are all familiar with the direct effects of heat, fire, flood and, from graphic illustrations we have had in Australia in recent times, both the acute and longer-term effects on the health of the population. I will briefly talk about the indirect effects because they are less well understood by the general population. For example, biodiversity loss, such as a 20 to 30 per cent loss predicted with warming of two to three degrees, will have detrimental effects on health.

I will challenge you all for a moment to consider what the world will be like. I am not talking about polar bears or big ticket organisms here but the balance of micro-organisms and quality of soil structure, pests and diseases affecting our crops and indeed ourselves as well as entire oceanic ecosystems being destroyed through ocean acidification. I am also talking about the deterioration in mental health through loss of the recreational, educational and spiritual assets of nature. As well as this many of our medicine is—more than 50 per cent of commonly used medicines—derived from nature. This invaluable resource will be diminished, even as new health challenges arise. This is also a multibillion-dollar potential industry.

I repeat: biodiversity is inextricably linked to a healthy environment. Mental health is a huge potential problem and a huge potential cost to the population. We will see both acute mental anguish with disasters as well as post-traumatic stress disorder and we are currently facing a frightening future which is impacting on children and adolescents. A study which was a survey of Australian children in 2007 states:

A quarter of children are so troubled about the state of the world that they honestly believe it will come to an end before they get older.

To me, this is an issue of great concern.

Senator IAN MACDONALD—That is a great credit to our education system, is it not?

Dr Kirczenow—Well, no. I think it is a realistic appraisal based on the information which is available. If we ignore that effect on the mental health of our future generations—

Senator CAMERON—We do not believe anything is happening, so do not be too carried away by Senator Macdonald because everything is going to be okay.

Senator IAN MACDONALD—Well, that is simply not correct.

Senator CAMERON—Yes it is.

Senator IAN MACDONALD—It is simply not correct.

CHAIR—Senators, can we let the doctor continue, thank you?

Dr Kirczenow—Yes. So I am not here so much to prove to you that climate change is occurring. There are much more capable individuals from whom I am sure you will be hearing. I am producing a medical perspective which I hope will sway you in terms of your decisions to set targets and the urgency which is required for the sitting of these targets. The other thing I wish to state is that the health dollar will have to compete with new demands within the health sector as well as competing priorities from other sectors driven by climate challenges. We all know how difficult it is to make ends meet in the provision of health services.

As we attempt to adapt to climate change I would also stress that this is an ongoing dynamic process and capable of potentially sudden shifts. It is going to be very hard to adjust and adapt to a shifting baseline. As soon as we get used to one set of climate parameters, we may very well be facing others. This is a very difficult situation. As the observed changes of global warming continue to outstrip our predictions, we will be observing this experiment unfolding and we will be measuring it in the health of our families. We have to be mindful that this period in history is not just requiring leadership in the usual short-term sense; these ramifications may not reversible for hundreds, if not thousands, of years.

In summary, as a final note, in view of the urgency and seriousness of our predicament, Doctors for the Environment are not satisfied with the current government's policy. It is not enough for the size of the problem. It does not send an appropriate message to the world that is soon to embark on a new round of negotiations in Copenhagen. We feel that the government has been rolled by the fossil fuel and other energy-intensive industries into unjustified concessions. The emergency dictates that we need massive funding for measures that work now in energy efficiency and renewable resources. We need to acknowledge and promote the co-benefits to health that climate change mitigation will bring for a more active and less car-dependent lifestyles, and better air quality. We are desperate to see a constructive policy from the opposition.

We feel that wringing of hands over future unproven job losses is hypocritical in the face of acceptance of massive job losses from the hidden hand of the market. These losses are out of our control, whereas any job losses from a CPRS should be managed by creating sustainable jobs in Australia. We need to be making a measured transition from fossil-fuel based jobs to those in the renewable sector, and at the same time address the demise of rural communities. Climate change will result in loss of jobs in many sectors, such as tourism, agriculture, and, as I said, the shrinking and suffering of the rural communities.

Above all, it is clear that we cannot delay action. We need it now and we need to be fearless, and we need to lead and give hope. This should be seen as a opportunity rather than an insurmountable challenge. From a purely psychological point of view, action is a positive response to stress which, even under severe stress, can produce positive outcomes. Inaction is detrimental and causes a raft of mental health problems. Thank you.

CHAIR—Thank you. Senator Ludlam?

Senator LUDLAM—Thank you, Chair. Thanks very much for your submission, Dr Kirczenow. In your submission you make the case for why a carbon tax could be preferable to an ETS. Could you go into a bit more detail as to why you believe that to be the case?

Dr Kirczenow—I do not know that we so much advocate a carbon tax above other systems. The main point we wish to make is that there is substantial urgency and that we feel that perhaps a carbon tax may address that issue perhaps more effectively. We are principally concerned with appropriate both short term and long term targets. There has been some consideration whether there may be less opportunity for manipulation by special interests, although obviously the complexity of a carbon tax may increase as it is developed. It is put forward as an option provided it is a means to an appropriate end, taking into consideration urgency, appropriate targets, incorporating incentives for every sphere of enterprise to be included and complementary measures, such as improved housing and improved public transport, et cetera, that must be addressed.

Senator CAMERON—On that point, all the evidence I have seen is that one of the reasons why measures have not gone for a carbon tax is that it does not allow you to set a target. The second point is that a tax can be politically affected as much as any other scheme. There is no saying that if you put in a tax, then big business will not affect how that tax operates. The third reason is that a tax will not be able to integrate internationally and contribute to the international push.

Dr Kirczenow—That is right. Since we provided our submission, certainly the US has indicated a desire to follow an emissions trading system that would interlock with ours, so this is a major consideration and certainly that plays a part. I think I would prefer to stick to the health aspects to guide you in terms of your decision making rather than to dwell entirely on the financial side of things, as I am not an economist—although I know that the remit of this committee is to discuss the Carbon Pollution Reduction Scheme.

Senator LUDLAM—I guess we have a fairly broad remit, so given that we are in Perth this morning, can you tell us a bit about the specific health threats to Western Australia?

Dr Kirczenow—Yes. We know already that rainfall has been declining. We anticipate that further rainfall reductions will occur over the next 50 years, perhaps in the same order of the 20 to 40 per cent that have occurred already. So when we look at the indirect effects of drought we see effects on the rural communities; for example, an increased rate of depression, anxiety, potentially suicide and longer term effects of dislocation of communities. We also see potential issues for water quality as well as health issues that may result from adaptive strategies—for example, water tanks being a potential site for breeding of dengue and mosquitoes. So we have to be careful how we address some of our adaptive strategies because they have health ramifications as well.

I have some figures relating to current heat related deaths. In 2000 we were looking at 220 deaths per 100,000 in Perth. With a low emissions scenario, we could expect to see an increase to some 287 deaths per 100,000 of population. With a high emissions scenario, perhaps we will see up to 495. The evidence is that with strong action we can potentially halve these scenarios. Certainly a lot of people will ask me whether these are deaths that would occur anyway—sort of picking the low hanging fruit of elderly people. I would remind you that we will be potentially in that category in this time frame, but also that young people, the homeless, the mentally ill and the socially disadvantaged with poorer access to housing as well as indigenous populations who are already marginalised by having very poor housing, very poor access to medical facilities and a high burden of chronic illness will be affected by rises in heat as well.

Vector-borne diseases are a very complex area. Often they are oversimplified because it is a complex relationship between mammalian hosts in some cases, such as Ross River virus with rainfall patterns, rates of evaporation and land cover by vegetation. But certainly if we see seawater ingress, this provides breeding grounds for mosquitoes who can often tolerate high levels of salinity, so we can see changes arising in that way. Then of course there is food availability. We see changes in the pricing of foods, which already has occurred, but this is obviously multifactorial. We see results in health from changes in dietary patterns, access to fresh foods and pricing. It is often disadvantaged people who will experience those impacts, again with increased risk of obesity, diabetes or even some cancers.

There is also social displacement. People who are living in low-lying coastal areas may have to go somewhere looking at maps of potential changes around Mandurah. There could be a large displaced population with sea level rises in that vicinity. As I was discussing, there are implications for mental health also, both in the anticipation and then finally realisation that we have reached a point in our history which is truly catastrophic. I cannot anticipate what effects that will have on the population.

Senator LUDLAM—I know there was quite a degree of work done during the Cold War relating to the impact on children of the nuclear holocaust.

Dr Kirczenow—Yes.

Senator LUDLAM—And that threat that the world could just be eliminated in an afternoon. Is there similar sort of work being done on child psychology in particular around climate change?

Dr Kirczenow—As I mentioned there is some preliminary information looking at anxiety and concerns among children, but in terms of obviously tracking over time we have not got that sort of solid data. Certainly anecdotally growing up in the Cold War era myself, I can recall clearly a feeling of pessimism.

Senator FEENEY—And like everyone.

Dr Kirczenow—I would have to say that the risk from climate change far outweighs the possibility of nuclear holocaust.

Senator LUDLAM—I will ask just one more question if I may.

Senator IAN MACDONALD—We could get lots of uranium.

Senator LUDLAM—We will get there, we will get there. In particular in the comments you have raised, when we talk about climate change and impacts on health and avoidance of threats, but has anybody in your group in particular done any thinking about the potentials for improved health in a low carbon society in which we are driving less, for example, or are eating more locally produced food? What are the health benefits of getting climate policy right?

Dr Kirczenow—These effects can be quite immediate in terms of reducing obesity and, as I was saying, the risk of diabetes, which is at epidemic levels in Australia at this point in time. There are effects from particulates on cardiovascular and cerebrovascular and respiratory health from the small particles from motor vehicles, so changing to increased use of public transport or cleaner technologies for personal transport is important there. Active transport of course promotes exercise as part of our everyday lives rather than segregating it for some special activity.

In relation to food choices, of course we have always advocated eating fresh foods which generally have less saturated fat and are less packaged than others, and this is entirely consistent with objectives of climate change policy. Certainly locally grown produce would be encouraged in that regard. So also with active transport, we are looking at reductions in things like osteoporosis. We know that being active is good for mental health, so there are a number of spin-offs in that regard as well as promoting more pleasant and socially cohesive environments where people are able to venture out into the streets, where children can play on the street without necessarily being run over by a car and where they can walk to school in safety knowing that other people are walking. There are huge benefits. Certainly since I was a child the rate of children walking to school has significantly dropped and this has been reflected in rising rates of obesity. So our position would be that these are very important strategies with very clear benefits.

Senator LUDLAM—Thank you.

CHAIR—Senator Xenophon, do you have any questions? I will take that as a no.

Dr Kirczenow—He is asleep.

CHAIR—I would not have made that allegation against Senator Xenophon. Senator Boswell?

Senator BOSWELL—I will perfectly honest with you, doctor. If I had had the opportunity I would have voted for you not to attend.

Senator CAMERON—Why?

Senator BOSWELL—The reason I would have done that is that I do not believe that doctors for climate change have any more expertise than would fitters and turners for climate change or barmaids for climate change or anyone. But we live in a free society, and I make that point.

CHAIR—Let us get to a question, Senator Boswell.

Senator FEENEY—Let us talk about ‘or as liquor and hospitality workers’.

Senator BOSWELL—Or liquor and hospitality workers.

Senator CAMERON—Or sceptics for climate change.

Dr Kirczenow—With all due respect, I would suggest that we all have a part to play in this.

Senator CAMERON—They have permanent residency. The sceptics are here all the time.

Senator BOSWELL—Yes, I think we all have.

Dr Kirczenow—Particularly those with scientific expertise.

Senator BOSWELL—I absolutely agree. If we have doctors for climate change, we should have many other people. I was not consulted; you are here, and I will ask the questions. You made some remarks about stress.

Senator CAMERON—We just saw an example of that.

Senator BOSWELL—The last witness said that there will be between \$10 billion and \$50 billion taken out of the economy. Do you think there will be any stress for children who come home at night to find that their dad has lost his job or mum has lost her job and they cannot pay the bills, or they are going to be kicked out of the home? Those are the considerations that have to be taken into account. You are a doctor and you can hang your shingle up and earn your \$200,000 a year, or whatever you earn.

Senator CAMERON—She had to work a lot of years for it.

Dr Kirczenow—I donate a lot of my time to voluntary work.

Senator BOSWELL—And that is to your credit. But, as someone stated in the paper the other day, a green is someone who does not have to worry about his grocery bills. That was a description given the other day in the papers. Have you considered the stress of all those ramifications if they happen?

Dr Kirczenow—Of course. Job losses are an enormous cause of stress and concern to both children and individuals who lose their jobs. It is an ongoing stress which continues long after that acute period is over. However, we have to accept that job losses from climate change will also be a major issue, perhaps in different sectors from those which perhaps we are aiming to protect. But we need to be moving towards education, towards diversification of jobs, towards an intelligent economy, to filling gaps in producing renewable energy technology, and clearly making a commitment to being a knowledge economy—not just sitting on our laurels of having haphazardly inherited a resource-rich country that certainly not every country has had the opportunity to inherit but have managed to develop other strategies to create wealth and prosperity.

I suggest that when we talk about jobs, we need to think about jobs in rural areas, in tourism, and in all the areas that will be affected by climate change and also jobs in the future. Certainly, very pessimistically—and I prefer not to be a pessimist—some people consider that our population will be decimated by the end of the century. To me, as a doctor, represents immeasurable human suffering. Perhaps in your daily job you are not necessarily confronted by this, but I certainly am.

Senator BOSWELL—I certainly am.

Dr Kirczenow—I think we need to be mindful of that in our discussions.

Senator BOSWELL—Doctor, you say that I am not mindful of that, but I come into contact with many people—farmers, fishermen, banana growers, so doctors do not have that concern exclusively. The question I have relates to your suggestion that the USA was moving forward to implement an ETS. Are you aware of the legislation passed in the Congress that proceeded down that path, but had the rider that the US government would do all those things, as long as it did not hurt anyone—similar to doctors doing no harm. To my way of thinking, that would be the greatest escape clause ever written into legislation because I do not think it is possible to implement an ETS without doing someone some harm. My question is: What happens if no-one else does this? What happens if the majority of the world does not follow us? I think that is more than a possibility.

Dr Kirczenow—But I think we are setting ourselves up for no-one to follow us by implementing targets which are too low. I think that a five per cent target is grossly inadequate. A 15 per cent target is still short of the mark since we know that the developing world will be disinclined to make the required changes if we, as profligate carbon producers, do not set appropriate targets for at least 20 to 25 per cent in the short term by 2020.

So first of all I think we are setting ourselves up not to be leaders of the rest of the world. On the other hand, by being leaders we can be ahead of the game in providing ourselves with opportunities and with strategies to succeed. Once again, we have to set up optimism, be imaginative, and have a can-do mentality rather than the constant mantra, ‘I can’t, I can’t, I can’t.’

CHAIR—Senator Cameron?

Senator CAMERON—Thanks, doctor, and I welcome your submission, even though you are critical of aspects of the government's position. We are not as thin-skinned as some. Could you just give us some advice in terms of what positive aspects you think the government should be taking on adaptation?

Dr Kirczenow—Yes, certainly. We know, of course, that climate change, even with an absolute cessation of production of greenhouse gases at this point, will continue to cause temperature rises. We expect that that could be in the order of another 0.5 degrees of warming. We need to be making very strong adaptive strategies. We need to be first of all encouraging research and investigation of climate change effects. I congratulate the government on its plans to institute a study and on giving this priority. We need to be putting together plans for improving our infrastructure, especially to remote areas.

We know that power outages and other acute events can occur with climate disruptions, and health care provision is very much dependent on good quality water and power supplies as well as access to medical facilities. Resilience building in communities is important, as is encouraging people to be mindful of their neighbours, to care for elderly people and make sure that they are safe in times of heat waves, and to provide early warning systems for emergency services, especially by informing the community of extreme weather events, fire forecasting and so on. I am sure these are issues that will be discussed to a certain degree in the Victorian fires royal commission.

We need to be preparing in these ways for a future with a changed climate regime. Building codes need to be addressed with insulation, double glazing and appropriate passive solar design for various climate areas. As well, strategies for improving indigenous health and housing and monitoring for vector-borne diseases are all important issues to be addressed.

Senator IAN MACDONALD—Doctor, what is your discipline?

Dr Kirczenow—I am general practitioner.

Senator IAN MACDONALD—Okay.

Dr Kirczenow—I have worked for the past 20 years approximately as a general practitioner. I have also worked as a solo rural general practitioner serving a wheat belt town north of Perth, so I am intimately acquainted with the issues around—

Senator IAN MACDONALD—You are in private practice or at a hospital?

Dr Kirczenow—What was that?

Senator IAN MACDONALD—You are in private practice or at a hospital?

Dr Kirczenow—I am in private practice, yes.

Senator IAN MACDONALD—And whereabouts now?

Dr Kirczenow—I am working in the northern suburbs of Perth. I also do some skin cancer work.

Senator IAN MACDONALD—Okay. Good. I say ‘good’ because I have just had a mole map done. I will talk to you about you later and get some free advice. It is costing me \$300 which is not recoverable under the government’s Medicare.

Senator CAMERON—Take off as soon as he has finished questioning you. Just go!

Senator IAN MACDONALD—Doctor, is your organisation the successor to the Doctors for Forests, are you?

Dr Kirczenow—Many of our members include, in Western Australia, members of Doctors for the Preservation of Old Growth Forests, yes.

Senator IAN MACDONALD—And the so-called *liberals for forests*, too, I guess.

Dr Kirczenow—Yes, that is right. As I said—

Senator IAN MACDONALD—Who are neither Liberals nor for the forests, but anyhow.

Dr Kirczenow—We have membership—

Senator BOSWELL—Vote for the forests and get the preferences.

Dr Kirczenow—From all political parties.

Senator IAN MACDONALD—Okay. Of your membership, how many are practising doctors and how many are students, as you mentioned?

Dr Kirczenow—I cannot give you the exact figures.

Senator IAN MACDONALD—Approximately? Fifty-fifty?

Dr Kirczenow—No, not fifty-fifty. There is a smaller proportion of students so the majority are practising clinicians.

Senator IAN MACDONALD—So approximately how many members would you have?

Dr Kirczenow—We have approximately 450 members with members in each state.

Senator IAN MACDONALD—I noticed in your original submission you were critical of the opposition for some reason. You made a comment. Can you repeat that?

Dr Kirczenow—I think that—

Senator IAN MACDONALD—Own it?

Dr Kirczenow—Our issue is really one of requesting a bipartisan approach to this issue in that we are concerned that this issue is far beyond what normal policies have to deal with. This is really something that transcends everything we have had to deal with in the past. It needs a unique approach. Really, we would like to see people shed their political affiliations and—

Senator IAN MACDONALD—So you would be very critical of Mr Rudd for not engaging with the opposition by giving us the draft legislation about half an hour before it was released—that sort of thing. You would be very critical of that?

Dr Kirczenow—I will not comment on that because I am not aware of the scenario.

Senator IAN MACDONALD—But you are aware enough to be critical of the Liberal Party and not so much of the Labor Party.

Dr Kirczenow—Well, no. As I said, I am critical of the government's approach as well. I think it has been substantially watered down from what we would have expected. That of course is a matter of political expediency as well as pressure which has been applied from many and various sectors.

Senator IAN MACDONALD—You gave evidence that you were concerned about significant mental health problems.

Dr Kirczenow—Yes.

Senator IAN MACDONALD—Among young people.

Dr Kirczenow—Yes.

Senator IAN MACDONALD—Who are obviously being told that the world is coming to an end by the education system, parents or someone—or by Doctors for the Environment, perhaps.

Senator CAMERON—The Liberals are saying, 'Nothing's happening.'

Senator IAN MACDONALD—If Australia were to proceed to reach a 25 per cent target—not a five per cent target, but a 25 per cent target—what would that do to the changing climate of the world and consequently to the anxiety that all these young people feel?

Dr Kirczenow—Well, we are aiming, with all these negotiations and targets, to try to limit global warming to under two degrees. If the world adopts these targets, we may—

Senator IAN MACDONALD—But I am talking about Australia.

Dr Kirczenow—But of course we are getting back again to the prisoner's dilemma, are we not? We want to have our cake and eat it while everyone else—

Senator IAN MACDONALD—Well, nobody else has it. I will quote the evidence given to another committee from the Institute of Public Affairs, and I would like to get your comment on it:

With 1% of world gross domestic product, we are not particularly influential within world councils. And while we have many well-qualified scientists, few of these are considered to be world authorities on climate change. Accordingly, it is pure hubris for Australia to try to take the lead in abatement activity.

Would you agree with that?

Dr Kirczenow—Firstly, I think that is extremely derogatory of our scientists.

Senator IAN MACDONALD—It is quite the contrary, yes.

Dr Kirczenow—In response, I would like to quote from information from the CSIRO in 2007:

Australia, with 0.32 per cent of the world population, contributes 1.43 per cent of CO₂ emissions from fossil fuels. In a global context, and particularly in comparison with other developed regions (the USA, European Union and Japan), these emissions rank as follows:

- Australia's per capita emissions in 2004 were 4.5 times the global average, just below the value for the USA.
- Australia's carbon intensity of energy (amount of carbon burned as fossil fuel per unit of energy) is 20 per cent higher than the world average, and 25 to 30 per cent higher than values for the USA, Europe and Japan. Therefore, the energy efficiency of fossil fuel use is significantly lower in Australia than in these other developed countries.
- Australia's carbon intensity of GDP (amount of carbon burned as fossil fuel per dollar of wealth created) is 25 per cent higher than the world average. It is a little higher than the USA and nearly double that of Europe and Japan.

So our efficiency is about half of that.

Senator IAN MACDONALD—Okay. We have had evidence along those lines, so I understand your point.

Dr Kirczenow—Apart from this, certainly historically we have produced large—

Senator IAN MACDONALD—Can I get back to my original question?

Dr Kirczenow—Yes.

Senator IAN MACDONALD—If Australia goes for a 25 per cent target, what will that do for the anxiety that all these young people are slashing their wrists because of?

Dr Kirczenow—This represents more meaningful action. It represents a commitment to undertaking litigation. So if you understand the stress response, action is a very important mechanism for promoting good mental health.

Senator IAN MACDONALD—You seem to be suggesting that if Australia tilts at windmills, China does nothing, India does nothing and the US but Australia doing that will stop this mental anxiety among young people.

Dr Kirczenow—Of course I am not implying that it will abolish this, but it is certainly a more positive strategy. Also we then have a potential for influencing other countries to adopt—

Senator IAN MACDONALD—In your view, but not in the view of the IPA or many sensible commentators.

Senator CAMERON—IPA? What a joke.

Senator IAN MACDONALD—They are far better than the Evatt Foundation, I have to say. They are an independent group.

Senator CAMERON—Independent, yeah.

Senator LUDLAM—Let us not get carried away.

CHAIR—Come on, Senators.

Senator CAMERON—We would be in trouble if it was dependent on the IPA.

Senator IAN MACDONALD—Let me put this to you without advocating this, which I do not. If people are so concerned with anxiety and stress levels because of rising sea levels and all of the other scenarios, such as no proper food—

Dr Kirczenow—Are you not concerned?

Senator IAN MACDONALD—I am concerned. But I am going to ask you a solution. Do you think perhaps that if we did what Europe did, which is have a lot of nuclear power plants that do not emit uranium, all these anxiety levels would dissipate and we would be able to get lots of good food?

Senator CAMERON—Not if they emit uranium.

Dr Kirczenow—Doctors for the Environment does not advocate the use of nuclear power in Australia. We do not think that this is a positive strategy in health terms. I do not think that substituting one non-renewable potentially devastating industry for another is a suitable solution.

Senator IAN MACDONALD—But you accept that it does not emit greenhouse gases and therefore does not impact on climate change.

Dr Kirczenow—I do not accept first of all that it does not emit greenhouse gases as I am sure that we are all aware that the mining and transportation of uranium and the building of nuclear power plants produces a large amount of—

Senator IAN MACDONALD—Building green power stations also has the same production and transport.

Dr Kirczenow—I can certainly provide you with the figures, on request. Certainly we do not advocate the use of nuclear power in Australia. We accept that nuclear power is an important part of the mix in other countries and will continue to be so for the short to intermediate term. However, once again we would be advocating clean and renewable resources for the future. As

you probably are aware, no satisfactory waste repositories have been developed anywhere in the world, so we are left with this time bomb to human health.

Senator IAN MACDONALD—Thanks, doctor. We are clear on where you are coming from, so thanks very much.

Dr Kirczenow—Thank you.

Senator CASH—I have one question. You would be aware that one of our terms of reference is to inquire into the choice of emissions trading as a central policy to reduce our carbon pollution. I note in your written submission that you refer to the carbon tax as potentially being easier to implement and to harmonise and that the approach ‘will enable individuals to make a meaningful contribution to emission reduction’. If we are going to get the type of emissions trading right in this country, do you believe that we should explore the alternative approach of a carbon tax prior to the introduction of anything?

Dr Kirczenow—My concern is that time is of the essence with managing these issues. We have gone down the pathway of a Carbon Pollution Reduction Scheme and already the wheels are in motion. I do not want to see delay tactics and the use of a carbon tax and any other number of schemes as a means of creating confusion and delay.

Senator CASH—Yes, but what might be happening with a carbon tax is that they may use it before they get the scale right.

Dr Kirczenow—If it was a genuine approach to providing substantial reductions in the shortest possible time, then I would accept this option. Certainly many do feel that a carbon tax is an appropriate way to go.

Senator CASH—Thank you. Thank you, Chair.

CHAIR—Thank you very much. Thank you, doctor, for appearing here this morning.

Dr Kirczenow—Thank you.

CHAIR—We understand that you were given short notice.

Dr Kirczenow—Yes. Most of this was produced in a day and a bit while on holidays.

CHAIR—Thank you for your time this morning.

Dr Kirczenow—Thank you.

CHAIR—Senators, we shall adjourn for 15 minutes for morning tea.

Proceedings suspended from 10.31 am to 10.48 am

WILLS, Dr Raymond Thomas, Chief Executive, Western Australian Sustainable Energy Association Inc.

CHAIR—Welcome. I invite you to make a short opening statement.

Dr Wills—The association is the largest state-based body of its kind in Australia. We have over 230 members and our membership is growing at the rate of one or two members a week. Our view of our growth is a combination of the interest in this area that is coming from enterprises that are joining us together with the level of support that the business community is putting forward to seeing change in action in this space. Our continued growth is evidence of that.

We have a very diverse membership which covers everybody from architects and builders through to urban and transport planners, energy efficiency auditors and greenhouse auditors all the way through to renewable energy manufacturers and generators as well as, over the top of that, a whole raft of customers who are buying those services. The main criterion for membership of the association at an enterprise level is an interest in sustainable energy, so it is open to all businesses and that is reflected in our growth and our growth continues across a broad spectrum of industry.

In that context, our members and our policy are for quick action on climate change. In terms of the science of climate change, I have several hats that I wear. I am also an adjunct researcher with the University of Western Australia where I teach a course on climate change and climate science, and in fact I am dashing off at midday to deliver a lecture to the students. One of the issues that is becoming increasingly evident in the science is that the science is becoming increasingly convincing in relation to the urgency of this issue.

There is a raft of changes going on in the planet and that underscores the need for urgency. Specifically within the terms of reference of this committee, we as a group and as an association are strongly supportive of firm action across the issue of reducing emissions to do with combating climate change as well as increasing our industry based on renewable energy sources and sustainable energy practices.

Senator CAMERON—There is still some scepticism around the science of climate change. What do you see as the situation for Western Australia if no abatement scheme is put in place?

Dr Wills—I will address that in two parts. The scepticism you are seeing is media reporting of scepticism. The *Australian* newspaper on the weekend illustrated a classic example of how the science is misreported. It is absolutely true to say that, for example, the sea ice in Antarctica is expanding. That is a reflection on the fact that the globe is warming. It is showing increased storm intensity, increasing precipitation and increasing cold events on sea ice in winter in the Antarctic that are expanding the extent of winter and Antarctica ice is extending. That winter ice disappears every summer. So it is not the summer ice extent getting larger; it is the winter ice extent getting larger. We also know that, using the Antarctic case as an example, that west Antarctica is seeing a rapid diminishment of the sea ice based continuum of ice.

The consequence of that as has been described by glaciologists in this area; that is, it will be like taking the cork out of the bottle. The problem is not the sea ice; the problem is the ice that is on the land. If you remove the sea ice from west Antarctica, it unbottles the land-based ice and provides it with the opportunity to slide into the ocean. If that happens, such an event will be catastrophic. Such an event will cause a rapid sea level rise. We have seen evidence of it in the past in the geological history of the planet when large what are called melt-water pulse events occur and contribute to rapid sea level rises. One such event happened about 14,000 years ago, when we saw a sea level rise of about 40 metres over a period of 500 years. That is about eight metres a century. That is what happens when you unstop the bottle and allow land-based ice to flow into the ocean. That is what we are seeing potential of in west Antarctica and it is why the Antarctic glaciologists as a whole are concerned about. The article in the *Australian* on the weekend was a classic example of the way that the *Australian* tends to report climate change.

Senator IAN MACDONALD—Was that Mr Pearson's article?

Dr Wills—There were three separate articles in the weekend paper.

CHAIR—And an editorial one?

Dr Wills—Yes. The key is that the *Australian* is not a scientific journal and the advice that it is offering is not scientific. To offer a different view of climate change and climate science in relation to sceptics, my analogy is to compare it with evolutionary science. There are few theories in science that are as constantly and rigorously tested. Evolutionary science is one of them. Evolutionary science is probably the one theory in science that has been more tested than any other. But second to it is probably climate science. Both of them still stand up to scientific scrutiny. There is no published science in reputable scientific journals that refutes the importance of greenhouse gases in the atmosphere for influencing and controlling the earth's climate and there is no article published in reputable scientific literature that refutes the idea that humans are increasing greenhouse gases and contributing to global warming. None at all—zero—in the scientific literature.

There have been a number of publications that have come out recently—the most recent one reported in the *Australian* is an example of that—is not a peer-reviewed document. It is not a document that actually stands up to scientific scrutiny. It is one person's opinion about what is happening and, in particular, that person's opinion that greenhouse gases themselves are not important. This is fundamentally flawed and has not been subject to scientific peer review before being published in that document.

I will compare it to perhaps a few other more digestible, more easily accessible ideas. The idea that we should immunise the community and children against disease is one some medical doctors actually argue against. Some medical doctors will tell you that immunising the community is bad and that it puts children at risk. There are a number of medical doctors in that category. There are by far a small proportion of practising medics who will tell you that community immunisation is absolutely important for community health. It is the same example where, yes, it is important that all scientific ideas are continuously tested—that is the nature of science—but what that continuing testing does is not make the science wrong, it continues to actually improve the rigor of the science. What it does mean in the case of immunisation, evolutionary theory and climate change is that it is very unlikely to be wrong.

Senator CAMERON—We have had a number of submissions that say we should wait until Copenhagen. Some business groups have said that we should not do anything in Australia until at least 80 per cent of the globe has adopted a scheme to reduce carbon emissions. Yet, Greg Hunt, the shadow minister said in a speech to the Tourism Export Council on 1 May:

The task group on emissions trading established by the previous government—

I think that is nearly a decade ago—

concluded that Australia should not wait until a genuinely global agreement has been negotiated. It concluded there would be benefits which outweigh the costs of early adoption by Australia of an appropriate emissions regime.

What do you see as the benefits of early adoption?

Dr Wills—There are a whole range of benefits. From a strategic point of view in terms of industry, it is actually about adopting the practices, growing the skill base and understanding this process that will be global in my view within less than a decade, and I think probably less than five years. I think the speed at which the US is moving will show that carbon trading will also be established in the US in a short timeframe. It is very easy to be part of the pack, but it is often difficult to be a world leader. In terms of leadership, if we look at Australia's financial position, we are world's fifteenth largest economy and we have the world's ninth largest per capita income in population terms. If we look at our national debt, we have one of the lowest levels of national debt of any nation in the world.

Senator IAN MACDONALD—Still?

Dr Wills—Still. Based on figures I saw last week, places like Japan have 170 per cent debt in this arena. We have something like 20 per cent. We are incredibly well placed to deal with this issue in a very aggressive way that positions us to be a world leader in the industry that will shape the century. I think that part is really important.

On the basis of that, we need to address the whole supply chain. We need to be looking at how we develop our research and development in this area so that we can develop product that the world will buy. We need to develop an education base that will develop the skills and training that the world will buy. But we need to produce the engineers who will kit us up with renewable energy sources that are an absolute wealth in this nation so that we can turn that renewable energy into an economic boom for the whole nation that supports and underscores all of the economic effort we go to. Then ultimately within that framework undoubtedly as world trade develops in and around carbon, undoubtedly as the Europeans continue to push for some kind of carbon tariff, if we are not well placed to reduce the emissions intensity of our national product then we will start to face carbon tariffs on the borders of Europe and probably of the US as well. That will be couched in the terms of the GATT and an environmental tariff that will be perfectly legal in terms of the GATT and the WTO rules.

Senator CAMERON—One of the arguments we heard is that carbon leakage is the big issue for business and that this is a big problem for the Australian economy. On the other hand, Treasury and some of the other expert opinion says that carbon leakage is overstated. What we

have to do is develop the positive aspects of climate change, and that is the new jobs for the future. What would these new jobs look like in terms of Western Australia and Australia?

Dr Wills—There is a little risk in a few industries. I think the aluminium industry is a case in point. The question is how we develop industry restructuring to assist them to actually take advantage of Australia's huge resources of renewable energy. One way we may fail to do that is if we offer them free trading permits to allow them to continue to emit. I believe that we need to offer industry restructuring to companies like Alcoa to allow that to happen. But the way I believe we should do it is not by offering them free permits but emissions-free energy to the same value. That will reduce their emissions footprints; it will help to establish them in a less emissions intensive industry that will help them in the next five to 10 years to compete globally as these things become important. If we delay on a carbon emissions trading scheme, the world will simply catch up and overtake and the consequence of that will be those places will close anyway despite our efforts in offering them free permits.

What are the advantages? In terms of Western Australia in particular, Australia as a whole—and some of you have heard me say this before—is the Middle East of renewable energy. On this continent we have the world's best resources of solar. There is no doubt about that. Enough sunshine falls on the whole of Australia in four hours to power the whole of the country for one year. What we lack is the skills and technology to harvest that. What we lack is the investment in the research and development that will allow us to harvest that. If we can, that energy is free, not just for the next 100 years as we may see with gas, or the next 200 or 300 years as we may see with coal, but for the next millennium, as we will see with renewable energy. We have the opportunity to harvest solar thermal and solar PV in that place and geothermal across the continent. We have the best wind resources on a continent in the world. The southern half of Australia has the world's best resources as far as wind is concerned. Beyond that we have the best wave resources washing up on our coastline of any place in the world.

Wave resources are particularly important because unlike UK, which has some waves of similar intensity and similar energy value, we have a huge coastline. We have about 2,500 kilometres of coastline that has really good wave resources washing up. If we can develop those wave resources to then be harvested to produce fuel such as hydrogen as well as, of course, driving electricity for all of the industry that is in the southern half of Australia—and that would include Alcoa in Victoria—we could actually drive those industries on renewable energy at very little cost. In terms of the research and development that is required to make that happen, last year UK spent \$500 million on wave energy research. In the last five years by my estimate, we have spent a total of about \$50 million, yet we have the world's best resources. There are some grand opportunities there.

Senator IAN MACDONALD—Do you have any results for the wave energy?

Dr Wills—Yes, I think there is a total of eight or nine wave research companies around Australia. In the United Kingdom, I believe it is something like 60. In Western Australia there are two in particular—the Carnegie Corporation and OPT. Carnegie Corporation now has a memorandum of understanding with the state retailer of energy to sell them up to 50 megawatts of renewable energy over the next few years. Carnegie will be developing in their patches off the coast of Albany and off the coast of Garden Island wave generation facilities that will create electricity and desalinate water as part of that process. Of all the renewable energies we have,

one of the greatest advantages of wave, of course, is that 90 per cent of our population lives within 100 kilometres of the coast, and a great bulk of them are in the southern half of the continent. So there is a grand opportunity to link wave energy and water production together with the population. In respect of the terms of reference of this committee, it relates to the first point, which states:

- (1) (a) the choice of emissions trading as the central policy to reduce Australia's carbon pollution, taking into account the need to:
 - (i) reduce carbon pollution at the lowest economic cost ...

I have a challenge with that because the lowest economic cost does not necessarily deliver you the best value. An example of that might be a flippant one. From a male-centric point of view, if you are about to get engaged and you go to buy an engagement ring for the opposite number, it is not necessarily a zircon, it is usually a diamond. That is an example of least cost is not best value. You will not get the result you want. You need to be able to invest and get the appropriate return.

A simpler example might be a street car. If you have the opportunity—and I do not mean to denigrate any low-price brand—but let us say a Hyundai versus a BMW, both vehicles will do the same thing with the same amount of safety. But perhaps there are other perceived values in the higher priced car that will make you buy it given that opportunity. Least cost does not equal best value. That is a concern.

In the context of renewable energy, it is important, but how relevant? One example might be that if you put a solar panel on the roof of a domestic house, if you simply measure the cost of the electricity it is an expensive way to provide electricity. However, you get a lot of things that we do not measure associated with that. If you put a solar panel on the roof we know that the occupants of that house become more energy efficient. We know that the community looks at that house and says, 'They've got a solar panel.' We also know that we have infrastructure that we do not need to upgrade because, instead of actually pumping lots of electricity down fat wires from a single power station, we get distributor generation that reduces your infrastructure costs as a part of that process. All of those attributes we do not value in the sense of the kilowatt hour that we look at. That is another example of where least cost does not equal best value.

Senator CAMERON—How does this all relate to employment creation? Have you given any thought to what type of jobs or how many jobs? The argument is that if we implement this scheme jobs will be lost and the economy will be in trouble.

Dr Wills—One of the things we are facing with the economic analysis in this space is that it is a traditional economic analysis of traditional industries. That is to say it is an economic analysis of what our economy used to look like in the twentieth century, not what it will look like in the twenty-first century. There have been opportunities lost such as Cobb and Co. Cobb and Co invested in horse-drawn wagons and they went out of business because they did not invest in the new motorised transport. We are in that space now. If you were investing in abacuses in the 1970s, the computer put you out of business as well. This is another such time, where energy generation this century will be renewably based.

The reality is that as we tackle this issue and develop the technology, it will change the dynamics of the way we create and use energy. The consequence of that is that there is a whole

raft of jobs that are required. We need research and development at this early phase of the industry, because we need to continue to bolster things in terms of how we deal particularly with transport fuels and remote energy generation. In the Western Australian case, 65 per cent of our energy use is off grid, mostly at mine sites. If we can develop large-scale remote energy generation it will benefit miners. They will not have to import diesel, which is not going to impact on our balance of trade and our trade deficits. We are actually going to start using energy internal to the country to create that wealth from the resource extraction that we need to do.

The third thing that we need in that space is people who can actually help with the transition. That is the energy efficiency guys, the energy auditors, the building design people and so on. There is a whole raft of issues that we need to tackle across that space. The other level is the large-scale generation. While it is important to address distributed generation and domestic generation, it is also important to address commercial-scale generation for large industry sectors and large industry precincts that need a lot of power. Wave energy will be one of those technologies that in the next 10 years will deliver a lot of power to those sorts of areas. Solar thermal is one that we can build today that will create grand opportunities. I am aware of five solar thermal projects across Western Australia that are looking in the range of 200 megawatts and 250 megawatts of generation of electricity for industrial projects, including mining projects.

Senator CASH—Thank you for your submission today, Dr Wills. One of the key underlying presumptions of the Carbon Pollution Reduction Scheme is that renewable energy will provide an increasing contribution to baseload power needs and as such we have our renewable energy target of December 2020. Based on what you have been saying in relation to the alternative forms of energy—wind power, solar power, et cetera—how achievable is this target within that timeframe?

Dr Wills—The major challenge is actually to build it. We have to make an investment of \$30 billion or \$40 billion over the next 10 years to reach that target.

Senator CASH—When you say ‘we’, is that the government or private enterprise?

Dr Wills—That is Australia. It will be private investment that is driven by mandated renewable energy targets and with the carbon signal tied to it at some point. That will then initiate these projects. It will also and could also be government investment in this in a couple of different ways. Government can simply invest as a procurement agency. Government spend is easily a \$200-billion operation nationally. If a lot of that expenditure and procurement were directed at ensuring that green energy was bought by all government operations, that would drive a market without any need for legislation or any other change. The same could happen at the state and local government levels.

Senator CASH—In terms of having a renewable energy target that is set, is it feasible by 2020 to achieve what the government wants us to achieve based on what you are saying about needing this investment and the additional research and development? We do not seem to have progressed very far down the road to achieving these targets.

Dr Wills—The key for research and development is to focus on those things that are really important for Australia. We can be technology takers on a raft of technology. But there are some specific needs for Australia like remote generation and storage issues that we should in fact be

investing in. Again, in terms of the target and building, there are technologies that we can deploy straightaway. We can deploy wind, but of course wind is not dispatchable, it is reliant on wind at the time. We need to be clever about the deployment of those things. In Western Australia there is an example where effectively we have two wind farms. There is one to the north, which is two wind farms separated by about 150 kilometres but effectively in the same wind belt. Another 600 kilometres to the south there is the Albany wind farm. There is nothing in the middle. If you look at the CIA Fact Book for information around the world—as I travel I often do—you will find under ‘Australia’ and ‘geography’ mention of Canberra, Melbourne and Sydney and then it will refer not to Perth but to Fremantle and to the ‘Fremantle Doctor’. That simply refers to the Fremantle Doctor as the world’s most reliable wind resource and there is not a wind farm within 300 kilometres. That is where we are missing these opportunities. The geographic diversity of the nation should be a part of what we make use of. To have them in nodes means that you escape that geographic diversity for wind generation. You can see that across the eastern grid to a better level where you are getting 30 per cent to 35 per cent penetration of wind. In Western Australia it is much lower, and that is an issue.

Senator CASH—If we do not have the investment that you refer to, what then happens?

Dr Wills—I have little doubt that over the next 30 years to 40 years if renewable were not assisted it would grow and come to dominate the market, because we are getting clearer with our technology and our ability to harvest it. Just as the IT industry grew over the last 30 years, the renewable energy sector will grow in the same way.

Senator CASH—But that is a long way after 2020.

Dr Wills—It is indeed. So the reason we need government programs and government policies that drive investment is that we actually need the emissions-free energy today. We cannot wait 30 years or 40 years for it to develop as I am confident it will. But if it develops over that time frame will be far too late to help us with climate change and with emissions reductions.

Senator CASH—Thank you.

Dr Wills—You are welcome.

Senator LUDLAM—The membership of the association is very diverse. Has there been a shift in thinking in the business community recent years? I notice that you have some of the larger fossil companies, for example, as your members. Is there a shift occurring in corporate culture to embrace these opportunities?

Dr Wills—There is no doubt that a lot of growth is often driven by personalities in companies. So you will see some very large global companies that spend a lot of time under the leadership of one person developing significant renewable energy portfolios. However, if you get a change of management that thinking may change. There is no doubt that there is still some thinking driven by that. But that is reflected by the fact that those people are people in the community and people with families who are interested in and concerned about what might happen in the future. Up to probably about 18 months ago that was particularly driving membership of the association.

However, businesses are also seeing and recognising business opportunities from the point of view of energy efficiency reducing bottom line costs, business are seeing the fact that there will be global economic change coming about as a consequence of the uptake of renewable energy and that they need to be a part of that. No doubt among some of them there are reputation issues about needing to act appropriately and with a corporate social responsibility about climate change. There is no doubt all of those factors come into play.

Senator LUDLAM—This committee has heard a bit of debate about whether a carbon price is enough or whether you need complementary measures like a renewable energy target, efficiency targets and so on. What is the view of association?

Dr Wills—There are two parts to that. We regard the mandated renewable energy target not as a way of reducing emissions but a way of developing an industry. It is certainly developing industry that is critically important for reducing emissions. But we certainly regard the MRET as an industry development package. The Carbon Pollution Reduction Scheme is designed to deal with emissions and to reduce emissions. They are complementary measures, but we treat them very differently in that way.

In terms of carbon pollution reduction or greenhouse gas reduction, is the proposed five per cent cut sufficient to trigger the right sorts of pricing? No, we do not believe so. We believe it is important to start the scheme. It provides an opportunity to skill up and to understand the way it works. At the moment, mostly that is all it is going to do. It will skill us up, but it will not create a lot of change at the sorts of levels we are talking about.

Senator LUDLAM—It will not create that change out to 2020?

Dr Wills—No, we do not believe so.

CHAIR—You said that you regard the MRET as an industry development package and you talked before about the rights and wrongs of the lowest cost in respect of the committee's terms of reference. However, does the MRET effectively largely just push the most cost effective or the least cost renewable? There are other projects floating around. But we saw that in the original MRET it effectively linked it in with some going to hydro. So all the MRET does is push it to the least cost energy type. It does not really effectively work as an industry development program.

Dr Wills—I agree. I think that there are probably some design issues that need to ensure that we do not pick winners as a consequence of that. The least cost scenario comes into play again. It is the least cost that is not necessarily by itself delivering the right solution. In terms of energy generation, we have seen it with the Varanus Island incident. You need a diversity of energy supplies. Some of our gas went down and if we had had a more diverse energy infrastructure in Western Australia there would have been less of an impact as a result of Varanus. That applies across the energy generation portfolio as well as within the renewable energy generation portfolio. We need a diversity of measures.

What we need to do is to have measures within there that can actually support what people often refer to as baseload generation—the minimum use of the generation that we have. Baseload is an interesting traditional term in as much as in Western Australia with a small grid

the network owner is concerned that if we get too energy efficient overnight they are going have trouble maintaining their coal-fired plants operating at the current level. They will not be able to turn them down low enough. They are concerned about street lighting programs that are going to reduce street lighting consumption by 80 per cent. If that happens, some of our coal-fired power station production will have problems as a consequence.

Senator LUDLAM—I was going to the baseload question next. It sounds like baseload is becoming part of the problem. We have to run coal generators flat out day and night.

Dr Wills—With the technology of the twentieth century a coal-fired power station could be turned down to a certain level. You had spinning reserve and you needed to conserve that spinning reserve to make it worthwhile even to have them switched on. That attracted low energy pricing overnight, which attracted businesses that were trying to take advantage of that. That is an issue we need to consider in terms of how we restructure our economy; that is, how we restructure those businesses that rely on that kind of power supply. What we should be generating is not the baseload but the energy that we need. The energy that we need overnight should be reflecting what we need to consume overnight. We should not be saying, ‘Let’s build our capacity or consumption to a level that meets the technology that we are using.’

Senator LUDLAM—Can renewable energy provide baseload electricity? We heard again from the chamber this morning that the south-west is a small island grid, it is all too hard, we cannot get more than a certain proportion of renewables on. Is that true? We hear that a lot.

Dr Wills—It is true with the existing model that we have in as much as we mainly have wind. If you look at Western Australia’s energy production, only five per cent or less than five per cent of our energy production comes from renewables in a state that has the best resources offered. Half of that is actually hydro from Kununurra. In other words, only 2.5 per cent of our energy generation is actually coming from renewables in this state. Can we get wind up high higher? Yes, we can get it up much higher; we can easily get it to 10 per cent without any problem at all and Western Power would confirm that.

You are talking about baseload, but peak load production is also important. The biggest challenge for the Western Australian market is peak load production. Solar thermal is absolutely ideal for peak load production because it gives you a high peak of production in the daytime but it also offers you some overnight production through storage. That then contributes to what we have traditionally called baseload.

Senator PRATT—The committee has had evidence in submissions and at previous Senate committee hearings that the coal-fired power generation industry in Western Australia has not received enough compensation in the ETS package and other measures. They have requested an alternative package. What is your comment about that?

Dr Wills—I cannot comment on their economic analysis. But I guess it underscores the issue why we need to change emissions. If it is about creating change in these industries then we need to ensure that the funds that come from this actually contribute to restructuring and real emissions reductions and not as may well happen over the next five years in some cases simply the early retirement of plants once the free emissions permits have been allocated.

Senator PRATT—I know that the association has a number of members. How are more emissions intensive producers in Western Australia working to reduce their emissions and what kind of partnerships are they creating to do that?

Dr Wills—Certainly. I guess probably the largest one at this point is a consortium that involves WorleyParsons, Rio Tinto, BHP, Western Power, Verve—I am going to run out of names. There are seven consortium members that are looking at a solar thermal power station for the Pilbara grid. That could be up to a 250-megawatt solar thermal power station that will provide energy for the needs of the Pilbara and for that resource grid. That represents a significant investment to date of research capacity. I think jointly those organisations are spending about \$7 million to look into this question themselves. I think that underscores industry's interest in this space and the change. That relates back to a question from Senator Ludlam about how industries are changing. One of our members who owns significant coal reserves is saying that in 20 years they will be an energy company. They are not going to define what that energy will be. I think that reflects the change in thinking that is happening in business as a part of this process.

Senator BOSWELL—The world would be wonderful if you could conduct it from a room in a university, because you can solve all the problems there.

Senator CAMERON—We have solved quite a lot, have we not?

Senator BOSWELL—Yes. But the real world is out there—

Senator PRATT—Universities are good for that.

Senator BOSWELL—But the real world is out there in the community. I want to challenge you on a couple of ideas. You said that the reason Cobb and Co went broke was because it did not change to motor transport. The reason they probably went broke was that they did not observe that they could move passengers more quickly and more cheaply and they stuck to the old thing. My position to you is that industry will pick up any challenge financially if there is a profit in it; that is, if they can invest money and get a return on that money so they can pay their shareholders. That has been how it has worked. Yes, you can create electricity from various means—thermal, wind and many others. But you cannot do it cost competitively. In three or four months this bill will either fail or get up and then Australia is faced with some people say \$50 billion and others say \$10 billion coming out of the economy. People will not be able to get a return on their money and they will not invest, and that will lead to a loss of jobs. You can talk from academia as much as you like.

Dr Wills—Sorry Senator, I would like to clarify that I am here representing the Western Australian Sustainable Energy Association, an industry association that has 230 members. Most of them are enterprises and involved in private industry.

Senator BOSWELL—Yes, and I know why they would be in it—because they all want to see what is going on and keep their ear to the ground. What impact will a 20 per cent RET have on the increased cost of an ETS? The cost of the ETS is going to push power and then renewable energy will push power up. What is the impact?

Dr Wills—There was an interesting article out of the Europe Union over the weekend that is underscoring the view that the problem with mixing a carbon pollution reduction scheme and a mandated renewable energy target is the fact that it makes carbon cheaper. By actually increasing the renewable energy target at the same time you are putting a cap on emissions—

Senator BOSWELL—That would not be helpful for milking it, it would reduce—

Dr Wills—No, that is exactly the point. The mix of the two does have some technical challenges because if you increase renewable energy production at the same time you cap the market for its emissions then effectively it will push down the price of carbon. That is part of the issue that is happening in the European Union.

Senator BOSWELL—In spite of that you think this is a bad way to approach it. You believe an ETS is the best way.

Dr Wills—From an industry point of view an emissions trading system is a logical approach. It gives industry the greatest flexibility in tackling this, as opposed to a carbon tax which simply imposes a tax on your raw materials.

Senator BOSWELL—Okay. If sea levels rise, do they rise uniformly around the world? Water finds its own level and if it rises in Russia it should rise in Australia.

Dr Wills—It does not quite work that way. It is perplexing until you start looking at the detail. It is really simple in a number of points. First of all, the sea level at Broome will be different from the sea level off the coast of Perth right now. The reason for that is that there would be hotter water up there which is higher in profile—above sea level—and there would be cooler water down south. That is what creates ocean currents. Ocean currents are an attempt to balance sea level. The second thing that happens, which is really important, is that there is a gravity impact on water as well. We know that, for example, the ice mass in Antarctica attracts water to it. If we lose the ice mass in Antarctica it will release water. New York will be more severely impacted by a sea level rise than, say, Perth in the same circumstance.

Senator XENOPHON—Dr Wills, you have said that the least cost is not necessarily better value and you have given the example about the cost of having solar panels on roofs and that means less of a cost on infrastructure in the electricity grid, which I agree with. Are you saying that the economic modelling that is in existence now does not fully take those into account in the context of determining the best way forward in dealing with this issue?

Dr Wills—No, it does not, and the economic model actually acknowledges that. It does look at existing industry and it puts a price pressure on existing costs within that industry and with that change there will be a negative impact. That is not rocket science, it is logical. I would agree. If you were not going to change anything else, that would remain case. It also acknowledges that it does not look at the opportunities and the new jobs that will be created in these new industries. Just as the IT industry in 1985 was a fairly small beast and is now significant, renewable energy will be the same. The issue is that we have not costed or valued those opportunities.

Senator XENOPHON—Can you send the committee some details about the inadequacy that you see in economic modelling?

Dr Wills—Certainly.

Senator XENOPHON—Thank you.

Senator MILNE—I refer to the point you are making that five per cent is not enough in terms of pricing to bring on the kinds of technology transformation we would like. You mentioned the problem in Europe with the renewable energy targets undermining the carbon price. Is that because the targets are not ambitious enough? If you set an ambitious target then both those problems would be overcome to a certain extent. Following on from the chair's point about a renewable energy target mainly going to wind in the current context, how would you see a feed-in tariff being brought into that? What is your response to, say, moving to a much more ambitious target in order to overcome some of those problems and bringing in a feed-in tariff to bring on some of the more expensive technologies?

Dr Wills—One of the challenges with the target is that if we set a low target now and then in the next five years the world passes us by actually setting more ambitious targets we will then need to catch up. In the Australian economy that does not offer market certainty. One of the problems that the renewable energy market has faced over the past five years or so has been continuous changes in policy that results in continuous changes in pricing of renewable energy. So we have seen ups and downs in the marketplace. The same will happen in the carbon market. One thing is that as the science becomes more certain the targets have not been revised down; they have always been revised up.

Sea levels rise, temperature rises and a whole range of things. The consequence we will face in five years time is that if we delay implementing the scheme now, the next target will simply have to be higher. Of course, the design flaw in this existing scheme with a low target is indeed that; that is, it does not offer the certainty that the market is chasing because we can be sure that the target will change at a later point but we cannot be sure by how much.

One of the things that you can do with a feed-in tariff is to target it to baseload generators and to peak load generators and therefore at a commercial scale start to address some of the design flaws that are in the mandated renewable energy target. It is a simple way to offer market certainty in a way that the MRET does not.

Senator BOSWELL—You are suggesting with a feed-in target that you penalise the less efficient wind—that is, compared to coal. You have a tariff that makes it more expensive to use wind and less expensive to use photo voltaic cells. So you have a tariff, on a tariff, on a tariff.

Dr Wills—No, a feed-in tariff offers a direct market stimulus to a particular type of technology that we wanted to bolster. Of course, wind can take advantage of that with a storage system.

Senator BOSWELL—We have not got a storage system.

Dr Wills—That is part of the challenge. Of course, somebody who is benefiting from a market stimulus for electricity generation with a storage system will then stimulate the research and development you need to ensure that they can also step into that market.

Senator BOSWELL—You are going to penalise wind.

Dr Wills—No, we are not going to penalise wind. We are simply not going to reward them further than they are within that scheme.

Senator BOSWELL—By rewarding someone else more and wind less, you are penalising wind.

Dr Wills—No. It will actually help to stimulate research and development into storage systems associated with wind technologies.

CHAIR—We are going to have to leave that.

Senator IAN MACDONALD—Where does tidal power fit into all of this?

Dr Wills—There are great opportunities in tidal power around the world and certainly in the Kimberley. People who are generating tidal power are moving away from tidal basin storage and simply using the current of the tide itself. We have seen significant investment, again in the United Kingdom, in tidal power.

Senator IAN MACDONALD—We have had a look at the Horizontal Waterfalls. Is that for real? It is very remote. Is there any prospect with that?

Dr Wills—Again, the problem is very remote generation. If you want to take it to another location you need to use DC transmission. I know that the network providers have been looking at that in terms of their own research and development. If we want to transport energy long distances through wires, we cannot do it with AC, we have to go to DC. There are alternatives to that of course. You can find a transportable fuel source—hydrogen is one example, but it may not necessarily be the best one.

CHAIR—Do you know if anyone is looking at that seriously? There is no need to give details.

Dr Wills—There is still a project proponent for tidal power in the north-west.

CHAIR—Thank you very much. Committee members might want to ask a few further questions. Hopefully you are prepared to assist us with those. We would appreciate that. Thank you for your evidence this morning.

[11.40 am]

CREMIN, Mr Shane, General Manager, Policy and Strategy, Griffin Energy

TRUMBLE, Mr Wayne, Executive General Manager, Griffin Energy

CHAIR—Do you wish to make a short opening statement?

Mr Cremin—I will make a brief opening statement fairly consistent with our recent submission. The Griffin Group has consistently supported the concept of introducing an Australian emissions trading scheme as part of an international effort to price and hence reduce the emissions of greenhouse gases from otherwise productive industry. We have maintained that such a scheme should be broad based where practicable, offer a high level of certainty to investors and strike an appropriate balance between the benefit of Australia's vital contribution to the global emissions reduction effort and the potential disruption to Australia's relatively emissions intensive economy. It should also recognise that to maintain Australia's reputation for investment certainty, investments made prior to any policy implementation in this area must be protected where it is constructive to do so.

Importantly, it must be understood that transitioning away from a carbon intensive economy takes time. While we firmly believe that over time and given the appropriate incentives, innovation will move Australia from a relatively high to a low carbon economy. The scheme designed in the interim must give regard to the physical and financial constraints in implementing low emission technologies during this period.

Most economists would argue that market-based mechanisms are more efficient than the use of public funds by governments to achieve a similar outcome when reforming markets. However, markets are dynamic and complex environments. Altering the parameters of an existing market will have profound effects on the operators within that market. In the case of emissions trading, the assumption that the market will move seamlessly from a high emissions state to a low emissions state is incongruous with reality. Careful design of the implementation of an emissions trading scheme can overcome many of the issues confronted in the transition.

An important implementation design parameter is timing. Investments in the emissions intensive economy tend to be large, lumpy and long lived. The long lead times required to transition away from an emissions intensive economy may be difficult to reconcile with the perceived urgency of the task. However, inadequately addressing this design issue may lead to significant dislocation within existing markets, resulting in large and volatile impacts on the general economy. This is true of the emission intensive electricity sector, characterised more than most by very large, lumpy and long-lived capital investments.

Emissions trading design mechanisms need to accurately reflect the losses to asset value attributable to the new parameters imposed on the existing market, especially where such losses will incur regulatory risk premiums to be applied to future investments. Griffin does not believe that the electricity sector adjustment scheme contained in the CPRS legislation succeeds in doing this. Importantly, it does not reflect the long lead times required to transition to a low emission

intensive electricity sector. This transition will require significant investment in new technology—technology not yet in existence in many circumstances—as well as the competitive relationships between the outputs of new and existing technology to coalesce into a functioning marketplace that is universally recognised for its complexity. If the detailed design of a market-based emissions trading scheme does not account for such fundamental principles, it risks imposing a significant dislocation on electricity markets in Australia, which will likely lead to volatile and inefficient costs being imposed on the larger economy.

Senator CASH—I would like to put a proposition to you from your submission on the exposure draft and then ask you some questions on that. It specifically relates to the situation in Western Australia. In your submission to the inquiry into the exposure draft of the CPRS you make the point that in the Western Australian electricity market gas-powered generation is dominant and suffers discrimination and that Treasury modelling uses the same competitive spot market assumptions made for the eastern states electricity market in its assessment of the need for ESAS assistance. Can you expand on why you say that the Western Australia market is different from the eastern states market? What is wrong with the assumption made by the Treasury modelling? What will the impact be on Western Australia? What, if anything, can be done to rectify the situation?

Mr Cremin—Effectively the Treasury modelling uses a dynamic equilibrium model to have a look at what technologies are doing to replace existing technologies over time. That is all well and good in a long-term, dynamic situation. However, it also uses the same technique then to model what the electricity sector adjustment scheme compensation or compensation for asset value loss might be as well. In doing that, the dynamic model looks at the ability to pass through costs. Those costs are passed through in the national electricity market based on the relative emissions intensive efficiencies between generation assets in a gross pool market. In other words, all these generators compete in a spot market to sell electricity and to pass through a component of the carbon price in that electricity price.

In Western Australia we do not have a gross pool energy market. We do have an energy market, but only about three per cent to five per cent of energy is traded in that market. The rest of the energy is traded bilaterally; that is, in long-term contracts. Therefore, to invest in new assets in Western Australia you need a long-term bilateral contract to underpin that invest—to finance that investment. In other words, there is not what you would refer to as ‘merchant investment’ in the market. To do that you need to lock in firm offtake prices for 15 years or more. The effect that has is that there is then no capability of passing through the respective emissions intensity cost in a spot market as there is in the NEM. Basically, the generator who has locked in prices anywhere in the last five to 10 years has to carry those costs going forward. That is the basic effect.

In our submission to the draft legislation we suggested that, quite simply, the best way to treat this without totally changing the way that the ESAS is founded would be to treat Western Australia as a different market, which it clearly is. The other thing in Western Australia is that there are no brown coal generators, so we are not skewed towards those very high emission intensive generators. In other words, it is more of a competition between black coal and gas, which brings down our average intensity in the market to quite a different level than exists in the NEM. However, there are still competitive pressures between the two and bilateral contracts are still struck based on those competitive pressures. There is still the likelihood, or almost certainty,

that the higher relative intensive emissions generators in Western Australia—that is, the black coal generators—will experience significant losses of asset value going forward.

Senator CASH—It was put to you at a hearing before the economics committee into a similar subject that you are merely asking for more money, nothing more and nothing less, and that really there is no difference between what happens in the eastern states and in Western Australia. What do you say to that?

Mr Cremin—I do not think it is a case of asking for more money; it is a case of recognising that not so much should be taken out of the generators in the first place. Again, generators do not have the ability to pass through these costs. It is a broad expectation of the ESAS that generators will pass through the costs and the inefficient generators will in effect eventually go out of business or withdraw from the market. That is not the case in Western Australia. Also there is a fairly important factor in that we are an isolated energy system and we need a fair bit of competitive pressure and security of supply pressure from coal, gas and renewables. Not looking at those particular instances in our local market means that a very large proportion of the cost that a CPRS will impose on the energy sector in Western Australia will come out of existing coal-fired assets.

Senator CASH—In the event that the modelling is not done on the unique circumstances in Western Australia and we go forward with the current scheme, what is the actual impact going to be on Western Australia?

Mr Trumble—Over time, Western Australia will become more dependent on gas and there will be a reduction in the diversity of our supply leading to a higher risk, as was evidenced in the past with the failure of the North-West Shelf and Varanus Island. Without some assistance the modelling shows that approximately \$12 billion will be pulled from the coal-fired generation industry under this program, and \$3.9 billion is being returned as industry-wide assistance. Of that, 90 per cent is ending up in the hands of a handful of generators on the east coast. Without some of that assistance coming back to Western Australian to black coal generators we are concerned that that portion of the market will reduce and, as I said, our security of supply for what is a very isolated market will in effect decrease.

Senator CAMERON—But the other argument to that is that the power industry is not receiving appropriate market signals in terms of the cost of carbon. By providing the support, the argument has been put that the government is providing too much support and you will not be getting those market signals, you will not move to diversify renewables and you will not take steps to reduce your carbon emissions. How do you deal with those arguments? It does still seem to me that you are coming here and it is just rent seeking.

Mr Trumble—Our company has one of the largest wind farms in the state at Emu Downs at 80 megawatts. So we have made that investment. It is evident given the investments made by the company.

Senator FEENEY—You characterised your company profile, indeed your industry profile, as having large, lumpy and long-lived investments. Last month was the tenth anniversary of the federal government paper on an ETS and the challenge of climate change. Can you give us an

overview of how your investment decisions in recent times have been shaped by the clear and present danger from your perspective of the introduction of a carbon price?

Mr Trumble—If you recall, at the time we were making our investment decisions the European system was in place, which very specifically protected asset values and participants in that industry. At the time, the state program was the pre-eminent program and, again, it protected asset values. That was the backdrop against which we were making our investment decision. We saw that there would be a transitional period if a carbon tax was introduced. Certainly, all evidence at that point in time led to the maintenance of asset values as part of the program.

Senator FEENEY—You obviously made a decision relatively recently with respect to wind energy which represents, I guess, a diversification of your business. When did you make that investment decision and do you have other investment decisions like that pending?

Mr Trumble—As a development company we made the investment decision regarding wind in approximately 2004-05. The farm became commercially operational in 2006. As a development company in the energy area we have a pipeline of projects always under development, including all technologies and all fuel types. Those decisions obviously depend upon approvals, land rights, market demand and financing in the global financial situation that we find ourselves in, as well as the regulatory environment in which we are making those decisions.

Senator FEENEY—I have a question following on from Senator Cash's line of questioning. It goes to the long-term bilateral agreements that your business needs to secure investment. Can you explain to me how or why these bilateral contracts do not contain rise and fall provisions that would take account of a transformation in the regulatory regime, for instance, that would give you some of the flexibility that you told Senator Cash you do not have?

Mr Cremin—To a certain extent they do. We have not entered bilateral contracts blind to this particular environment. However, not knowing what the environment constituted it was very difficult to come to a position with a counter party in that you have to realise a competitive market in WA based against, at the time, very cheap and aggressively priced gas. There are provisions in our contracts, but the decision to sign the contract was made at a time, as Wayne explained, when the overwhelming majority of perception and focus in this area was based on protecting investments, even if it be by accepting a disproportionate loss in asset value—which was the catchphrase at the time. That was the regulatory and policy discussion setting in which we made our decisions.

Senator FEENEY—Does that then mean that you have rise and fall provisions in your long-term bilateral contract which do give you certain flexibility in the dealing with the CPRS and pricing?

Mr Trumble—There are change of law provisions in any contract. Whether or not this qualifies and how the risk would then be shared is a matter for negotiation once it is identified as a change in law. The contracts have difficulty. Because we did not know the shape or form at the time the contracts were being negotiated, there is a real possibility that they will be reopened as a result of a change of law of this magnitude.

Senator FEENEY—Which in a business like yours is—I would not say mundane because that would be to understate it—a foreseeable issue when a long-term bilateral contract is struck.

Mr Trumble—Not really. You are trying to avoid it at all costs. You set up your financing on the basis of long-term arrangements. Those banks have lent you money on the basis of those long-term arrangements for offtake. We raised that issue under the white paper. In a market where projects are subject to project financing and refinancing over the next few years we expressed a real concern that given this change and increased cost that the banks would then have the opportunity in many cases, and particularly in ours, to relook at that financing, for example, and determine whether or not they wish to refinance or in fact provide the initial financing for some of these projects. There is a real concern, as you are probably aware, in the environment where many of the foreign banks have stopped lending in Australia. As a result I understand that the Rudd government has determined to establish its own bank. But as those foreign banks leave they will in fact leave a substantial hole in the marketplace that has traditionally, at least over the last 10 years, provided a financing source for our power generation in this country.

Senator IAN MACDONALD—Evidence has been given to another committee looking into this that it is very difficult to work out what this whole arrangement is all about because a lot of the rules are going to be in regulations rather than in the primary legislation. What is your feeling on that? Do you feel you have enough information to be making investment and other decisions that you need to make or should you wait? I appreciate that you have gone a long way already, but is there some imperative to wait and see what the regulations actually are?

Mr Cremin—In a perfect world you would love to know with certainty what you are investing in going forward. However, energy markets are fairly dynamic. There has been significant load growth in Western Australia and we are approaching a very large retirement phase of existing generation, the Verve Energy fleet are getting quite old and they will be retiring. Put quite simply, had not the two investments that we had made in Blue Waters Unit 1 and Unit 2 not gone ahead, lights would be going out in Western Australia in the near future. So time stops for no one. It has been very difficult to make investment decisions in this framework, which is why we have tried to put as much flexibility as our counter parties might allow in our offtake contracts. To be honest, we have to balance the fine decision-making process of making the investment or waiting until we know with certainty what is going on and suffering the consequences.

Senator IAN MACDONALD—How critical is time? There is a call in some quarters to delay passage of the legislation until, first, regulations are ready and, secondly, Copenhagen gives us an idea of what the rest of the world is doing. Would that impact positively or negatively on your sort of business?

Mr Cremin—Again, that is difficult to answer in that a delay would be negative in the sense that it would still provide a lack of certainty for investment going forward.

Senator IAN MACDONALD—For the next six months?

Mr Cremin—For the next six months, nine months or however long it might take for the actual legislation to come out and schemes to be implemented. However, in the long term—and I

made this point in our submission—there is a very long transition time in these types of assets. As I said, a lot of the technology people are expecting to replace existing technology does not yet exist. So there is going to be some long-term benefit in delaying introductions of this sort of firm legislation while people get a little bit longer to work out what might replace these assets.

Senator IAN MACDONALD—Comments have been made to this committee and elsewhere that you have had 11 years to get ready. But it is very difficult to get ready when you do not know exactly what the rules are. Is that correct?

Senator CAMERON—Basically it takes 11 years to think about it.

Mr Cremin—It is. It is 11 years to get ready for what?. As I said, there has been significant demand growth, people still require power and there is absent nuclear technology. If we were to rely exclusively on gas in this market, which itself carries an emissions footprint as well, then we would get into a situation here in Western Australia where a Varanus-style incident would be a lot more horrific than it was. As Wayne tends to point out, we had a very significant curtailment of 30 per cent loss of gas in this state and in the south-west, but fundamentally the lights did not go out. We have a diverse enough supply with coal, gas and renewables.

Senator XENOPHON—Is the issue not one of transition from a high carbon to a low carbon economy? Is that what you are particularly apprehensive about in terms of how the scheme design would operate and how the transitional arrangements would work?

Mr Cremin—Yes, that is right. As Wayne pointed out, we are a development company. We will be with others in the framework for developing new technology as it comes on board. We have a wind farm and myriad other developments of quite interesting technologies, none of which are commercially feasible at the moment. Yes, we do realise that transition is going to be a long time and we have to be a little bit sensible about how we manage this transition. That is why there will be in the foreseeable future a fairly large reliance on traditional thermal generation here in Western Australia.

Senator PRATT—In what year were your investment decisions made?

Mr Trumble—In terms of our coal plants?

Senator PRATT—That is right.

Mr Trumble—Investment decisions would have been made in the 2004-05 timeframe.

Senator PRATT—I am interested in following up Senator Feeney's question about what account you took of the looming carbon liability. You say that you worked that liability based on what Europe was doing at the time.

Mr Trumble—Europe and the state program, which was the pre-eminent program at the time.

Senator PRATT—That was the program at the time, but surely at some point you must have also examined a greater carbon liability and what that might look like for Griffin Energy in terms of costing the different scenarios.

Mr Trumble—I think as Senator Macdonald pointed out that it is tough to get ready for what you do not understand. You could at that point in time have modelled anything from five per cent, where we seem to be today, but discussions at that point in time were targets as high as 50 per cent. As a business trying to determine an investment decision, you took what you saw practically happening in the marketplace as opposed to forecasting. At some level, obviously, you would simply say, ‘I will not make that investment’, regardless of what is presenting itself to me in the market.

Senator PRATT—I understand that investments can be risky, and it seems pretty risky to me. I know Griffin Energy is looking at opportunities to reduce emissions and you have highlighted some of your renewable investments. What is happening in your coal-fired power stations and what movements are you making towards carbon capture? Are you pursuing any trials of carbon capture technology that you might?

Mr Trumble—With the expansion of the Blue Waters power station—which involves the third and fourth units—as part of their environmental approval process we have committed to be carbon capture ready—that is as defined by the International Energy Agency. As part of becoming carbon capture ready we, along with other industries in the Collie region and with the support of both the state and federal governments, are studying the possibility of carbon capture by geosequestration and specifically in the area between Perth and Collie. There appear to be two areas that are prospective for the possibility of underground geosequestration.

Senator PRATT—What a plans have you got to diversify in a broader sense by incorporating further renewables in your portfolio?

Mr Trumble—Our existing investment is an 80-megawatt wind farm. We have development approval for a 130-megawatt in addition to that wind farm. This is located immediately north of Perth in the Cervantes area. The farm is in effect through its environmental approval and development approval and we are expecting that we will make a final investment decision in the last half of 2009.

Mr Cremin—On top of that, we are also investigating the potential of co-firing biomass through our existing power stations and in the Blue Waters expansion units as well as a fairly significant reduction in the emissions footprint. Biomass probably not being the most well liked renewable out there just tends to show the limitations you have with technology at the moment. It is probably the best guess that we have at the moment.

Senator BOSWELL—What sort of biomass are you using?

Mr Cremin—We are using harvest waste.

Senator BOSWELL—Like weed biomass?

Mr Cremin—No, forestry harvest waste.

Senator LUDLAM—I suppose this is similar to the line that some of the other senators have been pursuing. You have had the foresight to invest in several substantial wind farms, you mentioned wave power and you talk about biomass and gas. Why in this day and age are you

still investing in coal when as you say the risk of targets is likely to be anything between five per cent and 50 per cent. Sooner or later that is where we are going to end up. Why the pursuit of coal?

Mr Trumble—I guess as we have pointed out, the Western Australian market, at least into the future, is still not connected to the rest of Australia at all. There are no pipelines, no wires, nothing. Its security of supply is completely dependent upon generation located within what we call south-west integrated system. So, when looking at the technologies available we do have a certain amount of wind investment in this market, but beyond that those new technologies—whether they be wave, solar or otherwise—have not yet proven themselves capable of being as dependable as baseload coal-fired generation. Our investment decision was based upon what the market was showing us that there was a need in the marketplace for a diversity of supply between gas and coal and for baseload generation. It cannot be received from anywhere else, it cannot be brought in from anywhere else; therefore, it needed to be an investment made here.

Senator LUDLAM—I am not sure whether you were in the room when Dr Wills was giving evidence. He talked a lot about Western Australia and Australia in general being the Saudi Arabia of renewable technology. Obviously you have some direct exposure to that on the ground through your investments. You also mentioned that a certain amount of our generators are going to be retired fairly shortly. Is that not the perfect time to be making those investments in renewable energy?

Mr Cremin—The renewable energy we have access to at the moment—nuclear aside—is intermittent.

Senator LUDLAM—I would not describe nuclear as renewable in any sense of the word.

Mr Cremin—It is—

Senator LUDLAM—It is not renewable; the planet is not making any more.

Mr Cremin—Okay, we will call it low emission. The low emission generation that we have access to at the moment is generally intermittent. Intermittent generation has very significant physical network-type issues that are going to constrain it from coming onto the market in great quantities. First, there importantly needs to be some thermal backup for intermittent generation because by its nature it is not going to be there on many occasions when you need it. Mind you, with renewable electricity legislation coming in I am quite confident that we will dramatically increase the quantity of renewable energy in Western Australia. However, without nuclear as an option here, if you were to rely solely on gas and renewables you would have a very unstable energy mix in Western Australia. It is pretty much as simple as that, I suppose.

Senator LUDLAM—You referred to innovative wave power technology on the first page of your submission. What does that involve?

Mr Cremin—We still have a pilot program with an international developer for a small scale wave program. It is basically in development. We are discussing the milestones being achieved by this developer overseas, which has a few pilot programs being rolled out.

Senator LUDLAM—Is that the Carnegie group or it is something different?

Mr Cremin—That is a different program.

Senator LUDLAM—Do you concur with Dr Wills that solar thermal can provide not only very good load following for peak electricity but also baseload and that that has been demonstrated elsewhere?

Mr Cremin—Solar PV and solar thermal are actually valuable because they follow hot periods and the air-conditioning load here in Western Australia. We have looked reasonably seriously at some solar thermal applications and continue to do so. Again, it would be next generation type investments that might occur on our system. However, an issue with them is that they are still intermittent, but less so than wind. So you would require some serious backup from thermal generation. It should be also understood that we talk about a renewable market in the general sense that RECs are traded nationally in Australia. If you get away from that high level concept and have a look at where this renewable energy is being physically put on the ground, there are existing energy markets. As it happens here in Western Australia, our Saudi Arabia-like qualities occur where there are no network assets. Similar to geothermal and other alternative sources of electricity, we would have to completely reengineer our grids and electricity sectors at very considerable cost. I am talking hundreds of millions of dollars or billions of dollars to change the network which services traditional energy sources to new energy sources.

Senator LUDLAM—The wind runs all the way out to the goldfields and to Kalgoorlie. We have wave energy right around the south-west coast and we have some of the best wind resources in the south-west where people live. So are you not overstating the case just a little?

Mr Cremin—As Wayne pointed out, we have development approval for the Badgingarra wind farm. However, that wind farm cannot connect to the grid at the moment because there is not sufficient strength in the network north of Perth to connect it. There is unlikely to be sufficient strength in that network unless a very considerable amount of money is spent on it. Even then, the amount of renewable generation that can be attached to that network is going to be limited.

Senator BOSWELL—How many generating companies are there in Western Australia?

Mr Trumble—There are four.

Senator BOSWELL—And you all get your coal from Collie?

Mr Trumble—Those that use coal all get it from Collie.

Senator BOSWELL—We were told by the Energy Supply Association that millions of dollars worth of investment would be needed to transform Australia's electricity sector and that generators and network providers are struggling under current financial conditions to refinance their existing operations without even worrying about additional investment. Can you explain the effect of the government moving down the path of regulatory reform without properly compensating for the significant balance sheet write downs as a result of the ETS? Can you

explain how this will increase the financial cost of the significant investment required for renewable, clean coal and gas-fired power generation?

Mr Cremin—That is the whole point and rationale behind the electricity sector adjustment scheme and other such compensation schemes in the CPRS. Effectively, the price of electricity is going up. That is the point of putting a price on carbon. That price needs to be pushed through to consumers so that we change behaviour. That is the market economics at work. However, these are all considered to be efficient pricing mechanisms that price carbon in a certain way. Effectively, what the ESAIA and many others are saying—and this is especially so for all the brown coal generators in Victoria, but we have the same issues here in Western Australia—is that if you are to decrease the value of existing assets you have implications on financing.

Regardless of CPRS, you are going require tens of billions of dollars to replace the ageing infrastructure we have in Australia. It is going to be a much bigger task by trying to implement new technologies as well. So we are after tens of billions of dollars in the coming decades to be invested here in Australia. We have just gone through a decade of very cheap finance and we are seeing what it is like not having access to that finance. If we were to apply regulatory risk premiums to that finance coming into Australia, it significantly increases the cost of electricity. This is viewed as an inefficient increase, because you are not getting any additional price signal for the price of carbon; it is just a cost required by investors to provide a slight return for them for something that is perceived to be a more risky investment.

Senator BOSWELL—Dr Wills suggested that going to wind power, which would be a first option for Western Australia, would stop people investing in photo voltaic cells and geothermal. His proposition to encourage people to use those new forms of power would be to place a tariff on wind farms or conversely give a financial advantage to these other forms of power. As someone who has invested a motser in wind power, I would like to get your views on that.

Mr Trumble—I would suspect that our bankers would be less than encouraged by seeing a regulatory change that would discriminate against the investments that they have traditionally made, not only in our generation assets but also in generation assets across the country.

Senator BOSWELL—Did you hear Dr Wills?

Mr Cremin—I think he gets back to a broader issue. As we pointed out in our submission, market-based systems are generally the best way of dealing with these sorts of transitions. However, market-based systems tend to have government intervention in a lot of different areas. That basically distorts the price signals. The renewable electricity regulations are probably an inefficient way of transitioning to a low emission intensive economy in the first place. However, it is probably necessary to subsidise a particular renewable energy industry here in Australia. The feed-in tariff for solar PV is just taking it a step further; it is basically subsidising a very particular generation or network solution as well. The point is where you stop this and at what point is an investment at any particular point going to be safe going forward when there are constant interventions aimed at picking winners in this area.

Senator CAMERON—Mr Trumble, during the Varanus Island explosion inquiry the DomGas Alliance said that natural gas supplies 51 per cent of the state's primary energy and 60 per cent of electricity generation. There was also a debate about moving to a more market-based

price for gas based on some notional international price that would move your competitor's price up quite significantly. Is it not an issue in terms of investment in your industry in the future that your main competitor is going to have more costs involved in Western Australia and your costs will not be moving because of that market-based approach? The point I am trying to make is that you come here and argue that you are in this terrible position but in reality competitively you are not going to be too badly off.

Mr Cremin—That actually highlights the point I made earlier that the contracts struck between Blue Waters Unit 1 and Blue Waters Unit 2 and other similar generators here in Western Australia in the last 10 years were done so in fierce competition with very low priced gas. It was done in a different market dynamic than what we experience today. So those prices have been locked in for some time into the future. That is why the change in regulatory and policy settings is the driver behind the loss in asset value of those particular assets. However, the new assets are going to have a different pricing dynamic to deal with.

You are correct that gas prices here in Western Australia have dramatically increased in the last couple of years. So the dynamic between coal—which has a much higher capital cost rather than the ongoing fuel cost—and gas, which is the other by around, is going to change. It always has done in its merry dance over the past couple of decades. The emissions intensity factor was going to weigh on it. In other words, the pricing dynamic is going to be quite difficult at any one point in time because someone has to make an investment decision as to what is the price of gas, what does it cost me to build a gas-fired power station, what is the price of coal, what does it cost me to build a coal-fired power station and what are the likely dynamics between the prices of those inputs—

Senator CAMERON—Or to maintain a coal-fired power station, to keep a coal-fired power station operating. That is another issue, not just building a new power station.

Mr Cremin—That is right. That is all factored into the modelling which is, as you can imagine for billions of dollars of investment, pretty intensive modelling. Those are the types of dynamic situation or static situations we face. So they are decisions at a point in time that need to be made with dynamic or variables going forward. That is what makes our market very different to the NEM.

Senator CAMERON—The point I am making is that in comparative terms you would have a comparative advantage over gas as it moves to an international price.

Mr Trumble—Our response is that the output of this plant was contracted at 2004-05 when the price of gas was not headed upward, as you suggest, and as was recently announced by the gas industry. We were competing against a much lower priced gas at the time. Prices are now fixed so that that dynamic with regard to the capital cost of the plant and the cost of its fuels was sorted out through the competitive process at the time. What is now happening is a regulatory change associated with the carbon tax that will be imposed on those two fuels.

Mr Cremin—If we had a similar situation in our market that exists in the NEM, you are right, with coal versus gas pricing going forward and with the electricity produced from each coal would have an advantage as gas rises. The point is that it is not. Western Australia is a bilateral market and it was fixed earlier.

Senator MILNE—I want to follow up on the carbon capture and storage questions, especially in relation to the comments about subsidising a particular technology. When has Griffin Energy modelled and when does it expect carbon capture and storage to be online? What sort of timeframe are you anticipating? What level of resources are you putting into that research?

Mr Trumble—With regard to the first question, it is our expectation that it will be after 2014 before carbon capture and storage becomes viable. Our concentration as a local Western Australian company is on determining places for storage. It is our expectation that much larger and technically competent companies in the form of the US government, perhaps Shell and the large Europeans, will be the ones who determine the commercially viable technology. It will be up to those of us in the far flung areas to determine once you retrofit your plant with that technology what you will do with the carbon after you have captured it. As I said earlier, our concentration has been on determining likely places for geosequestration within the greater Collie region. Expenditure to date has been in the range of \$250,000. The next phase, which is just kicking off, will be \$750,000.

Senator MILNE—Over what timeframe?

Mr Trumble—The \$750,000 study is to be completed by the second quarter of 2010, at which point in time a decision will be made as to the viability of the project to that point. A decision will also be made with regard to drilling. Once we begin to drill to determine the viability of the formation we will be talking about expenditures in the areas of tens of millions of dollars.

Senator CAMERON—What do you say about the government's leadership in terms of the international research and development program? You say that Shell will develop it. Are you saying that none of the leadership that the government has shown internationally will count?

Mr Trumble—The leadership that the government is showing is certainly financial leadership as you suggest. However, I believe that the technology in power generation for the capture exists within the private sector and not within the government sector.

Senator MILNE—You say you expect it to be commercially viable by 2014. I have not heard that figure from anyone else. Most people talk in terms of post 2020 and even 2025. What gives you that confidence? We are nowhere near capturing it now without 30 per cent loss of efficiency at the power station. What gives you the confidence that we will be there in less than five years?

Mr Cremin—I can qualify that. I think Wayne was referring to the demonstration plant. The viability of this financing wise, which is the way our projects are going to get up, is probably more like post 2020. But by all accounts there seems to be a lot of push to get some not necessarily commercially proven but some pilot programs actually injecting CO₂ in some manner in the next five years or so.

Senator MILNE—We have had a lot of evidence to say that you can get up a pilot plant, but it is a far cry from that to scale it up to the size we would be talking about if it was going to be a serious contribution. There is also nothing to say that it is ever going to be economically viable.

Mr Cremin—As developers we very much appreciate that sentiment.

Senator MARK BISHOP—Your submission refers to CPRS, the ETS and the regulatory risk. Your solution is to say that the way to mitigate perception of regulatory risk through scheme design is to compensate generators that have suffered significant losses attributable to the market parameters. That would clearly suit your company's interest. I understand that. What are the direct consequences if there is no significant change to government policy? Secondly, and more importantly, what other options do exist to mitigate the regulatory risk that you are identifying?

Mr Trumble—With regard to the first question, specifically in our case, without a change to the CPRS program it is our expectation that approximately \$100 million will be removed from the value of our asset. Secondly, the CPRS will in fact provide a trigger for the banks that I mentioned earlier to review their financing of our projects and that may lead to withdrawal of financial support for our projects. With regard to the second point—what do we think should happen—we have made a recommendation that the Western Australian market should be treated separately from the national electricity market and that specifically the white paper and the draft legislation should be changed to ensure that there is a better distribution of the electricity industry assistance rather than 90 per cent of it ending up in the hands of a handful of generators on the east coast of the country.

Mr Cremin—That is a mechanical way of dealing with the issue of regulatory risk. I think your question was getting at whether there are other ways of mitigating regulatory risk. Quite frankly, not a lot. Regulatory risk is actually the perception that an investment is severely impaired because of policy intervention. As we pointed out with the \$100 million loss on the current settings, that is precisely what is happening here. The whole concept of the electricity sector adjustment scheme appears to be that governments may make some very significant economic reform, but if someone has made an investment in good faith under a different paradigm we are not going to punish that person by wiping out their equity returns. That is how you try to avoid the perception of regulatory risk on future investment.

Senator BOSWELL—I would like to put some questions on notice about the relative cost of power generated by wind, geothermal and photo voltaic cells.

Senator CAMERON—I may have a couple of question to put on notice as well.

CHAIR—It sounds as though there is some homework for you to do. If you would be happy to assist us with that it would be appreciated. Thank you for your evidence this morning and for appearing before the inquiry.

[12.20 pm]

ALBRECHT, Professor Glenn, Director, Institute for Sustainability and Technology Policy, Murdoch University

PETTITT, Associate Professor Bradley, Dean, School of Sustainability, Murdoch University

CHAIR—Welcome. Thank you for appearing before the committee today. Do you wish to make an opening statement?

Prof. Albrecht—I am an environmental philosopher, so the perspective I have on this issue is very different from the one you have just been listening to from Griffin Energy. I hope that my focus on the ethical issues associated with the emissions trading scheme is something that would be of interest to all members of the Senate and, of course, to the Australian people. I would like to add my voice to the ethical dimensions of this problem and to suggest that we have some major ethical considerations to look at in addition to the economic impacts within Australia and globally. This is something that is often ignored in the general debate.

I accept the scientific consensus that humanity is responsible for increased greenhouse gas emissions, and that is in turn responsible for global warming. I also accept that over the last 100 years the scientific consensus is telling us that we have already warmed by about 0.8 of a degree and that this process will grow exponentially if we exponentially increase greenhouse gas emissions into the twenty-first century. We are in a serious ethical dilemma. We are totally reliant on fossil fuels to deliver a globally interconnected civilisation. At the same time, we are now aware that the very foundation of that civilisation—cheap and freely available fossil fuels—is the source of a major problem. Not only are fossil fuels finite by definition—so they are not sustainable—but they are also causing a problem that is perhaps more pervasive and more powerful than any other that our civilisation has known.

I do not want to go through the list of things that are known and suggested consequences of increased warming. But they obviously include things like a change in the composition of the atmosphere, acidification of the oceans and collapse of marine ecosystems, a warming of our ecosystems and climes beyond the tolerances that species have evolved in and sea level rise. There is a lot of debate about where we are going with that. I do not think we can be definitive about it at the moment, except to say that there is potential for dramatic sea level rise, particularly if the runaway greenhouse effect begins to change the nature of the systems in the Arctic and the Antarctic.

One of the things that I study as a philosopher is the relationship between humans and their support environment. With colleagues in Nick Higginbotham and Linda Connor I hold an ARC Discovery Grant looking at the impact of climate change on communities and people with the Hunter valley as a case study. A previous ARC grant has looked at the impact of open-cut coalmining and power stations on the psychological wellbeing of people in the Hunter Valley. What the research that we have conducted has shown us is that there is a great deal of distress connected to a changing environment where people feel powerless about the nature of the

changes that are being imposed upon them. It is obvious with respect to things like somebody living in close proximity to an open-cut coalmine or a very large power station like the Bayswater power station in the Hunter Valley. However, it is less obvious when we are looking at something like climate change where there was slow incremental change to people's environments and this incremental change is leading to knock-on effects such as a drying climate, availability of water and impacts on agriculture.

I have also worked closely with the Centre for Rural and Remote Mental Health, which has looked at the impact of drought on farmers, and particularly the mental health of farmers, during extensive drought in eastern Australia over the last five to 10 years. What we have found that is a changing environment has profound psychological effects on people. This changing environmental situation is something that people tend to underestimate. It is one of the potentially large impacts of climate change. Depression at the moment is the fourth largest burden on health worldwide. It is suggested that it will move to about the second largest sector of health expenditure by 2050 worldwide. I would suggest that climate change, particularly in Australia, is connected to the availability of water and its impact on rural and regional Australia is likely to be a very large burden.

I study what I call psychoterratic health; that is, mental health issues that are related to the earth or the environment. I have collaborated with people internationally to put forward a submission to the UN and world leaders on the psychological impact of climate change. I am happy to table that and to give it to your secretariat for your benefit later on. I have also published with colleagues in the Australian and New Zealand Journal of Psychiatry about the impact of varietal change on the mental health of Australians, particularly with respect to the Hunter Valley and the drought in eastern Australia over the last five years.

Even if the science is uncertain—and science is telling us that we are in the realm of 90 per cent certain that human beings are the source of the problems that we face with respect to climate change—I would argue that we need to pay attention to the fact that it is ethically repugnant to force on innocent and non-consenting communities, particularly obviously our children and all future children, a deliberate decision to increase greenhouse gas emissions or a calculated failure to reduce them to safe levels. We must do the right thing to avoid imposing a massive and potentially irreversible risk on them. The idea of irreversibility is something that our ethical systems have not had to deal with in the past.

My concerns with the current carbon pollution reduction scheme is that it is not meeting our scientific estimates of the amount of CO₂ equivalent that is needed to be reduced. In addition, it fails to meet our ethical obligations to future generations. According to the best science that I have access to, we need deeper cuts to our carbon dioxide and we also need to have our science being matched by our best ethics. At the moment that does not seem to be case.

In addition, I am worried that the market system is perhaps inadequate to deliver kind of trading system that would eliminate the risk of irreversible climate change. I have seen evidence from leaders in other countries. For example, the Russians are not going to limit their carbon emissions. Their top official in charge of their Kyoto obligations stated that as the top energy producer and consumer, Russia welcomed the fact that Kyoto had not limited its carbon emissions and expected the same of any future climate deal. He said that Russia did not plan to limit the use of fuel for its industries. They do not think that this would be right. The Chinese

have argued that if there are taxes and penalties on carbon, that those taxes should be paid by the consumer not the producer. In March 2009 their top climate change negotiator said that his country should not pay for cutting emissions created by Chinese manufacturing, which is a position that suggests that an emissions trading scheme based on a global market—a cap-and-trade approach—is not likely to be successful, at least not in the short term. I am therefore led to the idea that we as a country should not be seriously considering a carbon tax as opposed to a cap-and-trade system.

In conclusion, I would like to say that both the science and the ethics for climate change are compelling. The science is more than sufficient to deliver an ethical response based on risk minimisation. The issue of irreversible change to the global climate is not one that humans can dismiss with scepticism or inaction and Australia's obligation as a relatively rich, very wealthy, industrialised and well educated country is to take the lead on greenhouse gas reductions and to set standards that will deliver a safe and predictable world to future generations. Thank you.

CHAIR—Thank you, Professor. Senator Feeney?

Senator FEENEY—Just one of your remarks prompts this question, and that is your preference for a carbon tax. A carbon tax shares a number of attributes with the CPRS. One of those is that it is not trade neutral, how do you imagine that moving to a carbon tax in preference to a CPRS assists our trade position, or assists us in terms of having a scheme that is compatible with overseas schemes?

Prof. Albrecht—Various economists have suggested that you can deal with the problem with border taxes and adjustments. I am not an economist but there are plenty of solutions to that particular problem that have been suggested by key economists who support a carbon tax rather than a cap and trade system.

Senator FEENEY—And you simply have a preference for attributing carbon price as an import tax than having permits for pollution producers? You are proposing a different solution to the problem, but surely the solution you are proffering makes Australia's Carbon Pollution Reduction Scheme less compatible with what is happening overseas, in Europe and in other markets.

Prof. Albrecht—Europe is not a very good example to see a successful cap and trade system in practice. It is actually a very bad example of the point you are trying to make. It is something which would suggest to me that it is not the right path to go down. I am not saying that I have a carbon tax solution. I am just saying that we should be looking at that seriously, and all of the mechanics that would go with it, to make it work internationally because I am not confident, under the current market failure, under the rules and regulations that I have seen operating in the European system and the comments made by internationally significant players in the global market for carbon, particularly Russia and China that I mentioned. They are not going to play that game.

Senator CAMERON—On this point, Professor Garnaut gave evidence and said that all the options were on the table during the Garnaut inquiry and that by far the bulk of the submissions and analysis from economists and from industry was that a cap and trade scheme was the way to

go. That is what is happening in the United States, it looks as if that is what is going to happen in Canada, and that is going to be the global norm. Why would we go for a tax?

Prof. Albrecht—Well, I read the literature, the same as you do. I see plenty of support for a carbon tax internationally, particularly in the USA and Canada.

Senator CAMERON—Can you provide that?

Prof. Albrecht—Yes. I am happy to provide you with evidence of that.

Senator CAMERON—I have not seen that support, I must say.

CHAIR—Before we go on, I understand that Professor Pettit has a short statement. We are very tight for time.

Prof. Pettitt—I understand. I have to make mine very short. My apologies that these documents were not circulated before. I am happy to circulate them after presentation. I will just draw your attention to some headings. As Dean of the School of Sustainability at Murdoch University, there is a diversity of perspectives. That is why I thought it might be useful to have two presentations. You will find we agree on most things. I am much more comfortable with a cap and trade system, or a trading system. Given where we are in the debate and as it is quite well progressed, it will probably fit in with an international response and is actually defensible. I certainly do not think it is defensible in its current form or with any further watering down.

Glenn and I certainly agree on a number of points: the ETS will only be supportable with a number of substantial changes and additions, which I have outlined in my submission. These would include a stronger target, especially a maximum. Having a maximum of 15 per cent is indefensible and does not match up with the science. I can understand the basis for a minimum but I also suggest that we should raise that in terms of global leadership.

We probably need to separate two issues here. One is the carbon reduction rate. The atmosphere is important. We are a small economy and 1.4 or 1.5 per cent is not going to make a mammoth difference. Where our role lies is in terms of global leadership. Having such a low maximum undermines that. I suggest that a 25 to 30 per cent range would be much more sensible in making us part of a global solution to climate change. The second one is that I would support modifications to the scheme that would include community action and voluntary cuts sitting outside the scheme. I understand this is not a major issue and I do not want to harp on it, but in terms of bringing the community on board, getting support and getting other action alongside the CPRS, the benefits of doing that outweighs the costs. I understand that the majority report of the other Senate committee on climate policy recommended such a change.

The third point I would make is that the ETS by itself is not going to get us where we want to go. On top of that—and this probably another point on which Glenn and I certainly agree—stronger regulatory and investment responses will be required. Earlier speakers have probably dealt in detail already around a feed-in tariff in relation to MRET, so I will not focus on that now although I am happy to answer questions in that regard. That will need to be done additionally to get an early and quick response in addition to the longer-term response that we will get through the CPRS.

What I have outlined in my submission, which I will not go through now, is just a whole bunch of a lot of low-hanging fruit. There is really a lot of low-hanging fruit that we can grab ranging from changes to the fringe benefits tax applying to cars, a stronger regulation regime, housing energy efficiency and some others that I think are really important. The final point I make, which is a report that I will table, is around our international response as an aid program. Recently with some colleagues I did a report for the Australian government aid program, AusAID, around climate change impacts in South Asia and how we should respond to those. It is quite clear from that report that Australian assistance will be really vital in that area and that we need to ramp that up in terms of enabling those countries to get on a clean energy path, but also helping them to adapt to the unavoidable climate change that they will suffer. I would also like to just table that report.

CHAIR—Of course. Thank you very much.

CHAIR—Senator Ludlam?

Senator LUDLAM—Thanks. I have just one question for each of you, if I may. Thanks very much for your presentation. I will start with you, Professor Pettitt. Some of your work has related to the links between sustainability and climate change and so on and built heritage. Is that right?

Prof. Pettitt—That is correct.

Senator LUDLAM—Could you give us a bit of an idea of that work?

Prof. Pettitt—Sure. I have done some research around looking at the connections between heritage buildings and sustainability. I will really quickly summarise that by saying that in a lot of our work we find that embodied energy in our existing buildings is great. In fact, if you take all the embodied energy around Australia, you are looking at about 30 years of functioning energy that is held up in our buildings in terms of what the buildings use. A sustainability response will require that we find ways of retrofitting those buildings instead of knocking them down and replacing them.

Senator LUDLAM—Okay.

Prof. Pettitt—Especially our heritage buildings. I am also a councillor of the City of Fremantle where we have a lot of heritage buildings. They are reasonably energy efficient compared with some of the buildings constructed in the sixties, but you can look at really good sustainable retrofitting rather than demolition and rebuilding, which is kind of the current response. Of course it is also about constructing buildings that are made to last, given that there is so much embodied energy.

Senator LUDLAM—Thank you very much. We are a bit short of time so I will just put one question to you, if I may, Professor Albrecht. We hear a lot, and it has characterised the debate in Australia for the last 20 years, that we should not bother doing anything until the big developing nations that are coming up—China and India are the two most commonly cited—start pulling their weight, and what on earth is the point of Australia tackling emissions, with less than two

per cent of global emissions? From the point of view of an ethicist, what do you say to that position?

Prof. Albrecht—I think I described it as ethically repugnant in my submission and my statement. That is so because we in Australia are privileged by virtue of the wealth that we have generated through our natural resources and our intellectual and cultural resources. As a result we have created an incredibly wealthy, well educated and technologically sophisticated society. That is precisely the kind of society that has to provide leadership to the rest of the world on all of these major globally significant issues.

We also export huge amounts of raw materials to the rest of the world. I have been working for the last 27 years in the City of Newcastle in New South Wales, which is the world's largest export port for black coal. As acknowledged, although our total emissions are small, our per capita emissions are among the world's highest. But even more important than that is that, as a sophisticated, well educated and wealthy society, we should be providing leadership to the rest of the world. That is a position that is unassailable.

CHAIR—Senator Macdonald?

Senator IAN MACDONALD—Clearly you do not agree with the comment made by the Institute of Public Affairs as follows:

With 1% of world gross domestic product, we are not particularly influential within world councils. And while we have many well-qualified scientists, few of these are considered to be world authorities on climate change. Accordingly, it is pure hubris for Australia to try to take the lead in abatement activity.

Clearly you do not agree with that?

Prof. Albrecht—I think that kind of statement is pure hubris.

Senator IAN MACDONALD—I guess it depends on your point of view, does it not? Both of you were saying earlier how wealthy Australia is from its resources, no doubt from its coal and iron ore, enabling big grants to be made for research. Both of you have mentioned that you are getting research grants from the government. On Saturday I read a view in the paper to which I do not particularly subscribe that suggests there is a genuine interest in scientists continuing to get huge grants relating to climate change. Would you be able to tell us how much Murdoch University is getting as a percentage of its total revenue in your areas from ARC or other government grants?

Prof. Albrecht—I could not tell you that. All I know is that—

Senator IAN MACDONALD—As a percentage?

Prof. Albrecht—The ARC—

Senator FEENEY—You say that Australia is over-investing in its scientific community.

Prof. Albrecht—The ARC is funded by the taxpayers of Australia and it provides independent financial support for—

Senator IAN MACDONALD—Across a wide range of things, but I am referring in particular to climate change.

Prof. Albrecht—I would not know the total. I only know that the ARC Discovery Grant project is highly competitive and has only a 20 per cent success rate. Other research initiatives, in particular the centres of excellence—

Senator CAMERON—Point of order: I am not sure whether this comes within the committee's terms of reference. I think this is a typical case of attacking the messenger when you do not like the message.

CHAIR—Senator Cameron, there has been pretty reasonable leeway for all parties with respect to some of the questions that have been answered, including some of the questions asked by you.

Senator IAN MACDONALD—I do not take any notice of interruptions from people who should be looking after their members.

CHAIR—We will deal quickly with the question and we can move on to another one.

Prof. Pettitt—The percentage that we get through our school is very small. Directly we get less than five per cent of federal government related grants for climate change.

Senator IAN MACDONALD—However, you were saying that you were getting it out of AusAID?

Prof. Pettitt—That is right. That was one grant and then there are separate grants to that.

Senator IAN MACDONALD—I seek clarification, Professor Albrecht. You indicated earlier that both Russia and China are saying that they will not go into a cap and trade scheme?

Prof. Albrecht—Russia has indicated that it will not cap and China has indicated that it wants to shift the burden of taxation of the financial costs from production in China to consumption in, say, Australia.

Senator IAN MACDONALD—So neither of those countries will do much about their own affairs?

Prof. Albrecht—That is the impression I got from their lead negotiators for the next round in Copenhagen.

Senator IAN MACDONALD—Professor Albrecht, this is my brief summary, but you are looking at stress caused by climate change. You mentioned farmers and others?

Prof. Albrecht—Yes.

Senator IAN MACDONALD—Have you done any work on other things? A power company spoke to a group in which I was involved and it said that a power station, I think in Lake Macquarie, was causing an enormous amount of stress and they were about to shut down the power station because of climate change. It is in a geographical area where people will lose their homes because they cannot sell them to anybody else. Have you also looked at that sort of stress?

Prof. Albrecht—I look at all stress relating to how people connect to the physical environment around them. The stress of potentially losing a job is not something on which my work focuses. I am looking at the direct relationship that people have to their physical environment.

Senator IAN MACDONALD—I think you indicated that the mental problem from climate change was a big issue?

Prof. Albrecht—I see it as potentially big. It is already affecting groups of people in, say, the Arctic Circle. The Inuit are already experiencing significant change to their physical environment because of event stress.

Senator IAN MACDONALD—Let us put this into perspective. I appreciate that this is a broad question, but is climate change mental disease equivalent to drug related mental disease—five per cent or 120 per cent?

Prof. Albrecht—I cannot give you a precise answer to that question. However, I am saying that as the climate changes, as conditions get warmer, as we have more extreme weather events, as fires become more frequent and as agriculture fails because of a lack of water, issues associated with psychic disturbance, depression, all the way through to suicide are likely to become more severe, not just in Australia but globally. The pressure on humans will be ratcheted up as the climate warms and it becomes more unpredictable.

Senator PRATT—Continuing on the psychology theme, discussions have already highlighted that we are an emissions-intensive country. What do you think of the psychology of Australia as a nation being reluctant to take action because we have a lot to lose and we have a vested interest in our energy-intensive lifestyle? Clearly governments can take only as much action as the community gives it a mandate to do and they will be gone at the next election. What kind of mandate do we have to take action and how can we make the Australian public comfortable with taking the required action on climate change?

Prof. Albrecht—I state briefly that it is a matter of environmental and climate literacy. The effort that needs to go into ensuring that Australian citizens are as literate on these issues is incredibly important. At the moment I do not think we have done a good enough job on that. Some of our media seem to have a vested interest in maintaining scepticism and denialism. I find that disturbing in a country that has limited national media coverage. I think the work that we need to do to improve climate change literacy is something for which government should bear a greater responsibility.

Prof. Pettitt—I wish to add to that. I would go so far as to say that politicians in this country are behind the public on this issue. When we put to the public a substantial response to climate

change they respond favourably. Let me give you one example from the City of Fremantle. Recently the city went carbon neutral. It is costing our ratepayers money but we have had nothing but praise for it.

Senator FEENEY—Is that a representative sample? Is the City of Fremantle a representative sample?

Prof. Pettitt—No, it is not but we can say—

Senator FEENEY—I suspect that the City of Yarra would respond just as favourably.

Prof. Pettitt—It is possible that you are right. I guess there was—

Senator MARK BISHOP—Are you advocating an atypical response?

Prof. Pettitt—I am saying that there was concern amongst the elected members of the City of Fremantle that this—

Senator MARK BISHOP—If you are green you would be.

Prof. Pettitt—No, we are all independent in the City of Fremantle.

Senator CASH—I hope we are getting this all on the transcript.

Prof. Pettitt—It is true. There are no party politics in local government in Western Australia. It is interesting that—

Senator CASH—It is probable that you are standing for the Senate.

Prof. Pettitt—Let me finish what I was saying. The councillors were far more concerned about a community response than about the reality. The reality was that it was very favourable. Given the magnitude of the issue, I think to a large degree we are overstating the magnitude of the response. The issue is huge. Depending on how you model it, this is a small percentage of GDP in a nation that will get richer anyway. If we start selling it and we say, ‘You will be 74 per cent richer in 2000 rather than 76 per cent richer’, all of a sudden people will say, ‘Is this such an issue?’ We are overstating the problem and underselling the response.

Senator XENOPHON—I think earlier Professor Pettitt mentioned low-hanging fruit. Was that you, Professor Pettitt?

Prof. Pettitt—That is correct.

Senator XENOPHON—Is it fair to say in relation to the so-called low-hanging fruit that energy abatement measures that can be implemented now are not contingent on an ETS?

Prof. Pettitt—No, they are not. I think that needs to be offered in addition to the ETS. In fact, some of them are quite obvious, such as stricter standards around energy efficient housing. It

will save consumers money and it will lower Australia's housing costs. It is a no-brainer. The fact that it has not happened is due merely to politics.

Senator MILNE—Could I follow up on the psychology issue in response to something that Professor Albrecht said, that is, that we need more literacy in Australia about climate change? I think it is more complicated than that and that is why I am interested in his response to the psychology issue. We did not have very much literacy about terrorism, but when the planes hit the twin towers nobody asked, 'How much will it cost to deal with this problem?' Everybody threw money at it from one end of the planet to the other.

The other issue relates to bird flu. There was not much literacy about bird flu but virtually no-one in Australia questioned whatever the government had to spend. It had to spend that in order to save the population from what was deemed to be a huge health crisis. The last issue relates to the financial crisis. Very few people have any real literacy about it, but it is taken as read and however much needs to be spent is spent. Why is it that parliamentarians and the community more generally, without knowing very much about it, say, 'Do whatever has to be done' for something like terrorism, bird flu or the financial crisis, but they cannot do the same on climate change when that has killed more people globally than terrorism, bird flu or the financial crisis put together?

Prof. Albrecht—I will try to answer that question as quickly as I can.

Senator PRATT—Should you not be asking parliamentarians that question?

Senator MILNE—I am interested in the answer.

CHAIR—Senator Boswell, come to order!

Senator MILNE—I would like an explanation about the psychology of that issue.

CHAIR—Senator Boswell, we will get a response from our witnesses and you can then ask a question.

Prof. Albrecht—I think the answer is: quick poison and slow poison. With climate change we are dealing with slow poison. It is not spectacular. More technically, it could be called the tyranny of small decisions where each incremental change that we make does not appear to be leading to some kind of catastrophic endpoint. What is interesting about climate change is that climate scientists are telling us that there is a catastrophic endpoint if we continue down the path on which we are moving.

From an educational perspective it is an extremely difficult thing to convince anyone right now that we are heading down a path that is so potentially catastrophic that it will outweigh any of the economic impacts that we put on ourselves in the next 10, 20, 30 or 50 years. As a result, educationally it is an extremely difficult message to get across. It is largely connected to ethics as opposed to any other branch of human enterprise and thought. Maybe we are not doing that very well.

CHAIR—Senator Boswell?

Senator BOSWELL—You said in your statement that China and Russia would not go into a cap and trade scheme. India has also said that it would not go into a cap and trade scheme. A couple of weeks ago legislation was passed in America to do those things but an overriding clause in that legislation provided that those things would be done as long as it did not in convenience anyone, hurt anyone, or put up costs. That is not an enthusiastic way in which to approach climate change. Would you agree with that?

Prof. Albrecht—It does not appear to me to be a strong response. I am waiting to hear more of their response.

Senator BOSWELL—We, as parliamentarians, are responsible for people's jobs, livelihoods, home repayments and other issues. As I said before, you are in the world of academia and you do not have to worry about any of these things. I presume that you are on permanent tenure and that your jobs are safe. However, the jobs of a lot of other people in the community will not be safe. Today we heard that \$50 billion will be pulled out of the economy in order to strengthen the economy. In your position as a professor do you take into account the fact that many people are not as fortunate as you? Do you think it is worth putting their jobs, families and livelihoods at risk if we will not achieve one thing? That is what we, as politicians, are faced with. You were perfectly honest when you made those statements about Russia, China, America and England. This bold step in the future will affect people's jobs, livelihoods, home repayments and payments of school fees. Do you think it is worth taking that sort of risk if we do not achieve anything?

Prof. Albrecht—I would argue for a just transition and a significant shift of our economic strategies. As my colleague said, we need to be putting a much larger amount of our natural resource commitment into renewable energy and into energy conservation. These are all jobs intensive and they are proven to be jobs intensive in other parts of the world. Clearly, I am not advocating a sudden and catastrophic removal of people from the energy-intensive economy into the unemployment queue; I am arguing for a just transition which would take place over a number of decades, where we gradually shift the employment structure of Australia from resource-intensive to renewable energy.

Senator BOSWELL—But that is not what you are trying to do. If this legislation fails in a next couple of months there will be an immediate impact on the economy. Earlier witnesses stated that they would not invest, that banks would close and that there will be a social impact.

Prof. Albrecht—I commenced by stating that we were in a dilemma. The dilemma is that if we do not do something—

Senator BOSWELL—These are the people who vote for us.

Prof. Albrecht—I am interested in more than the current generation. My position is suggesting that we have a responsibility to make decisions that will go a long way into the future. I would argue for a just transition for current generations. Obviously, we do not have the time and this is not the right place to give you details about what would be a just transition.

Senator BOSWELL—You want to have it both ways. You want to have a just transition, which is good, but we do not have that luxury. On any given day in politics the government

introduces legislation, members each have 20 minutes within which to make a contribution to debate and after about eight hours someone closes debate on the bill and members take a vote on it. That vote impacts on the way that people—

Prof. Albrecht—I understand how politics work. With respect if we took that view on every future orientated decision we would never make one.

Senator BOSWELL—But nothing would have an impact such as this. I wanted to make that point and to a certain extent you have agreed.

Prof. Albrecht—I disagreed with it 100 per cent.

Senator MARK BISHOP—I am unclear about what you are recommending. Professor Albrecht you made the point that the CPRS might not have the maximum effect because of comments made by international leaders. You advocated some form of carbon tax. The government rejected a carbon tax from the beginning.

Prof. Albrecht—I understand that.

Senator MARK BISHOP—The government also made it quite clear that there would be zero changes when the bill finally comes before us for consideration. That being the case—a zero change and a carbon tax not on our agenda—are you suggesting that the bill in its current form should be rejected, or the bill in its current form, however problematic it might be from your perspective, should be passed?

Prof. Albrecht—I would be happy if a much stronger emissions trading scheme were put in place. I would agree with—

Senator MARK BISHOP—That was not my question. The government has already made clear its position on that issue.

Prof. Albrecht—I indicated that because of the international uncertainty and because of market instability and the statements made by players worldwide, in my view there is not much chance of Australia's system being adopted by the rest of the world. I am a philosopher and not an economist but we are not looking at a high probability of success of international agreement. I looked also at the failed Doha round of trade negotiations and noticed that we failed to get agreement internationally on some simple measures that would have improved trade and the global economic system.

I am not an optimist when it comes to the global community reaching agreement on what the cap should be and how we should set up trading to make it work. That does not mean that I think it is impossible; it is just a harder road. It seems to me that the bureaucracy needed to run is also incredibly complex. As a philosopher I was suggesting that I would like to see this committee re-examining what the government has put forward by way of policy. I think it needs major re-examination.

The first step should be at least to make it work to satisfy the scientific and ethical dimensions of the problem that we face. The second step should be to have a look at the international context

and to ask serious questions about whether this is a sane and practical approach, given the severe problems that we will be facing to get agreement internationally. That is not to say that we should not be doing the hard work of trying to improve the existing system to make it more effective. That is certainly the first step.

Senator CAMERON—Professor Albrecht, you told us what you think the outcome of Copenhagen will be, based on some statements from both Russian and Chinese diplomats. You also indicated that you knew something about it. Do you know what is happening in China to significantly reduce CO2 emissions?

Prof. Albrecht—No, I do not know the detail. I know that their renewable energy target is far higher than Australia's target. I know that they are spending billions of dollars on new technologies to improve their situation, but I do not know the details.

Senator CAMERON—They are not doing nothing.

Prof. Albrecht—Of course not.

Senator CAMERON—Is it possible that their public statements are about positioning, the same as governments around the world are positioning themselves to try to get the best outcome from negotiations at Copenhagen?

Prof. Albrecht—I have no doubt that that is what they are trying to do.

Senator CAMERON—You are a pessimist but you cannot deny that?

Prof. Albrecht—A lot of hard-nosed negotiation could bring them into line.

CHAIR—For a change I will ask a question. I am interested in the energy efficiency work being done in relation to construction and in particular to buildings. I would be interested in your comments on that, in particular, in relation to the materials that apparently are being pushed forward in so-called energy-efficient homes. For example, there is a strong bias towards concrete over timber. It seems to me that there is a real need to get a change to those regulations so that we use much more efficient construction methods and much more efficient materials in those homes.

Prof. Pettitt—That is a fair comment. As you are obviously aware, concrete is a very intensive CO2 material. But of course it has its benefits, for example, thermal mass and other things like that. We have some sophisticated rating tools that I think are aggressively dealing with materials and how they fit into the whole building design. That relates to both the residential sector and also to the Green Building Council and commercial buildings. I would say that materials are only one part of the overall equation. There is no doubt that there are some simple things we can do around orientation, and around how we design that in and easy options like insulation. They are so obvious, but we tend to build the opposite.

It is depressing for me when I drive past newer suburbs and I find that eave-less black-roofed houses that will depend on air conditioning for the rest of their lives are still being built in this day and age. It is not fair on those who are going to buy them because they are so expensive to

run. I think this is a classic case where regulation is needed in addition to the CPRS to get a good outcome. Twenty per cent of our CO2 emissions relate to households, and this low-hanging fruit will not cost the consumer more over the life of the house.

CHAIR—Professor Albrecht, I refer to the report that you are receiving and to the information that you are gathering on the actions of overseas countries. It is an important point, even in the context of this inquiry, given that the modelling that has been done by Treasury assumes that all other countries are in. I would be interested in the sources of that information. Where should we go to ask further questions about that? Because of what we are looking at it is as important an issue as is the design of the CPRS.

Prof. Albrecht—I am happy to provide the sources. I have a document that I printed that I will submit to your secretariat. It does not have the exact sources in it; I just made reference to the comments that I made in my presentation to you. However, I am happy to provide the exact sources. They are all publicly available so it would be no problem to provide them to you.

CHAIR—Thank you very much.

Senator CAMERON—Does that refer to the Hunter Valley to which you were referring?

Prof. Albrecht—Yes. There is a copy of an internationally peer-reviewed article in Australasian psychiatry about the work that I have been doing with my colleagues on drought and the development of new concepts that relate to the psychological relationships that humans have with their physical environment. As I said, I think this issue will become increasingly important as we see these—

Senator CAMERON—Is that the same article about people feeling powerless?

Prof. Albrecht—Yes. It is a syndrome that powerlessness and distress about change are mutually reinforcing. In the same way that you are powerless about drought you can be powerless about being a neighbour to an open-cut coalmine in the Hunter Valley.

CHAIR—Thank you very much, gentlemen, for your evidence this morning.

Senator PRATT—I have a couple of questions on notice that I will email.

Senator BOSWELL—I also asked a couple of questions to which I need answers.

CHAIR—Thank you for your evidence, gentlemen. We will adjourn for lunch.

Proceedings suspended from 1.15 pm to 1.44 pm

[1.44 pm]

HOFMEESTER, Ms Carolyn Marie, Climate Change Policy Officer, Conservation Council of Western Australia

VERSTEGEN, Mr Piers, Director, Conservation Council of Western Australia

CHAIR—Welcome. I invite you to make a short opening statement.

Mr Verstegen—We have made a written submission and we wish to go through some of the points that we have put in our written submission. Before I do so I will give you some background on the Conservation Council. We are the state's peak environment advocacy group and we represent 95 community-based environment and sustainability groups throughout Western Australia. We have a keen interest in all matters relating to the protection of the environment but also economic sustainability. Many of the groups that we represent are working directly in areas such as renewable energy, cleaner production and in those sorts of areas that are not solely focused on the protection of the environment but are focused on how we can lead a transformation of our economy towards a sustainable state and one that means we have much less greenhouse gas emissions.

In that context I wish briefly to outline some of the comments that we have made in our submission relating to the Carbon Pollution Reduction Scheme. The first thing I want to say is that we support an emissions trading scheme as the primary but not the only instrument in tackling Australia's carbon pollution problem. We support that for a number of reasons and we support this legislation subject to a range of measures that I suggest need to be looked at seriously and fixed before it can be passed. As I said, we support a cap and trade scheme. Some of the reasons for that are that it facilitates an international linkage, it enables a cap to be set on our overall emissions, and it enables a cap to be set that is reflective of the science.

I know that that cap was to be changed over time. Some of the other policy instruments that have been talked about do not allow those things. We support emissions trading and we believe that this Carbon Pollution Reduction Scheme is Australia's opportunity to introduce an emissions trading scheme, but we need to get that opportunity right. In order to do that we need to fix some of the fundamental flaws that are built into the legislation that we have before us.

Let me go through some of the issues that we believe need to be fixed as a matter of urgency, and certainly before the legislation is passed. The main issue relating to this bill is the carbon targets that are set in the emissions trading scheme. In our view and in the view of tens of thousands of Western Australians that we represent, the five per cent to 10 per cent target range is grossly inadequate and quite out of keeping with the science that we know is getting worse. The latest science has been reported to us by the world's most eminent climate scientists. I do not need to rehearse this to you as I am sure many other people have presented similar evidence. We know that global emissions are tracking at a rate of emissions greater than that which was projected just five years ago by the IPCC.

We also know that the measurable impacts on our climatic system that have been measured are more severe than was predicted only five years ago. There are a number of reasons for that, but it means that we need to cut are emissions more deeply than we thought they should have been cut a few years ago when this legislation and the government's policy responses to these things were being considered.

Our view is that the 2020 target is incredibly important and that the 2020 emissions reduction target needs to be in a range of 40 per cent. I want to make some comments relating to the international context with which we are dealing. Our only opportunity to tackle this problem is in the context of a comprehensive international agreement.

We strongly submit that the range of targets put forward in the existing Carbon Pollution Reduction Scheme makes such an agreement much more difficult to reach and it is not in Australia's interests. We know from what Professor Garnaut and others have reported in different contributions to the policy debate that it is strongly in Australia's interests to take a leadership role in the international context. We know that that is required because the impacts of carbon pollution and of climate change will be felt more severely in Australia than in any other developed economy.

That is particularly the case for Western Australia. We have already experienced 30 per cent reduction of rainfall as one example. You may be aware that that has reduced our runoff into dams by 50 per cent and this is an example of the type of impact we are likely to see. Both in an economic and in an environmental sense we are extremely vulnerable to climate change, so it is in the national interest to take a leadership position. The targets that have been set do not take a leadership position in an international context. In fact, they do the opposite—they make it more difficult to reach a comprehensive international agreement.

I have been represented at international negotiations in Bali and, most recently, in Poznan. In both those negotiations the developing countries—the group of G77, including China—have clearly said that they are not prepared to come to the negotiating table to develop a comprehensive agreement unless developing countries together look at reducing emissions in the range of 25 per cent to 40 per cent by 2020. They have made that very clear. For Australia to come out with a range that is significantly lower than that essentially is sending a signal that we do not care if we achieve an international agreement.

In our view that is an abrogation of our duties to represent Australia's interests. We need to lift our target significantly to reflect the science and to play that important international leadership role. Some other issues seep below that overall issue relating to targets, about which we can talk in more detail as you question us. I will go through some of those issues now. We have some serious difficulties relating to the compensation measures outlined in the CPRS for both trade-exposed industries and strongly affected industries. The whole intent of an emissions trading scheme is to introduce a carbon price into the system, and it is based on the polluter pays principle.

Instead, we seem to have a scheme that is based on a pay the polluter principle. It is taking what is now a publicly-owned asset and giving a lot of that asset free of charge to the polluting parts of our economy. This is going in exactly the opposite direction to where we want to be with the economic instruments that we need to introduce. There is some justification for

compensation for trade-exposed industries. In Western Australia we have a significant number of trade-exposed industries in our state economy, and they are well represented.

We would like to make specific comments relating to the trade-exposed industries and how we think that carbon leakage issues, which potentially are real—they have not yet manifested in other emissions trading schemes that have been developed around the world but potentially they are real—need to be recognised. We have some comments relating to how they might be fixed using means other than compensation.

We are opposed to any compensation for strongly affected industries. We believe that investment decisions have been made by these industries in the full knowledge that we will have a carbon-constrained economy. We do not believe the argument is there to support any form of compensation for what is being termed strongly affected industries. I refer, next, to energy efficiency which, of course, is an important complementary measure to an emissions trading scheme.

When I say ‘complementary measure’ I am talking in the terminology of the government and the Carbon Pollution Reduction Scheme. If existing market failures are not resolved by emissions trading, those market failures need to be resolved by some other policy instrument. We know, through all sorts of analyses, that energy efficiency and the uptake of energy efficiency and end-use energy efficiency is some of those areas in which there will be a range of outstanding market values that will not be fixed by the current pollution reduction scheme. There needs to be a comprehensive package of measures to ensure the uptake of energy efficiency, which is one of the cheapest forms of abatement in the economy.

We submit that the national energy efficiency strategy has not yet been developed. Without the benefit of knowing what is in that strategy it is difficult to support the Carbon Pollution Reduction Scheme because we know that it simply will not drive the potential low-cost abatement that is available through energy efficiency. I would like to make some comments about the treatment of forests and woodlands under the Carbon Pollution Reduction Scheme. Essentially, as we understand it, the Kyoto protocol carbon accounting mechanisms would be embedded in the legislation. Right now those carbon accounting mechanisms are delivering severe adverse consequences for what we call our green carbon stores—our carbon stores in native forests and woodlands.

The Kyoto accounting provisions allow for the translation of natural forests into production forests that have a much lower carbon-carrying capacity without recognising any penalty from a carbon perspective. That flawed accounting should not be embedded in the scheme. The scheme assumes that land clearing is being adequately controlled at the state level, so it does not apply any penalty or omissions liability to land-clearing activities. We think that is a grave mistake, in particular, in Western Australia, where land clearing is demonstrably not being controlled sufficiently by state-based policies. A huge amount of land clearing is still going on in Western Australia. In our view the failure to account for that represents a significant policy failure.

In opening I would like to make two other points. My next point, which is important, relates to the ability of voluntary action but also policy measures that would be taken by state, federal and local governments to produce additional abatement in the economy over and above the targets that are set in the Carbon Pollution Reduction Scheme. As many of you would be aware,

members of the community are taking action in good faith to make all sorts of investment decisions that do not necessarily make good financial sense, but they are doing it because they want to reduce carbon pollution.

The CPRS scheme would create a system in which those voluntary actions would not reduce carbon pollution in addition to the targets that have set. The same applies to the mandatory renewable energy target. For example, we submit that all those government policy measures should result in additional abatement to the Carbon Pollution Reduction Scheme. We have some ideas about how that principle could be given effect.

Before I outline those I think the point needs to be made that if we are to rely on an economic instrument of a carbon trading scheme to deliver the outcome that we want—to significantly reduce carbon abatement in our economy—and we look at that as the only instrument that reduces that abatement, which is the approach that has been taken here, we need to set science-based and leadership-based carbon reduction targets in that scheme. It needs to be 40 per cent at least by 2020.

If we are not prepared to do that and if we want to reduce our emissions by something less than 40 per cent through the economic price signal alone, we need to ensure that these additional actions and the additional policy instruments provide additional abatement to add up to that 40 per cent. We do not want a situation where the target is set at a low rate in the emissions trading scheme and effectively that precludes additional action in the economy to reduce carbon emissions above and beyond that modest target. On the issue of—

CHAIR—We need to wind up fairly soon as we are tight on time, as you might be aware.

Mr Verstegen—I thought we had 45 minutes. I would like to make one further point. The last point that I want to make relates to the carbon leakage issues with trade-exposed industries. As I said, we have a dominance of trade-exposed industries in the Western Australian economy. We think there are a number of ways in which these issues can be addressed without the need for as much compensation as has been outlined in the CPRS. Two of the measures that can interact at the international level to reduce that trade-exposed issue and the carbon leakage issue are sectoral agreements between these industries.

We have some experience in relation to how those sectoral agreements could be developed. The other approach that we are suggesting is what we are calling a pegged levy approach in which carbon trading schemes, including schemes in Australia and other countries, such as the EU and America, are eventually linked together. We can see that happening in the short term which would establish a relatively stable carbon price signal.

We suggest that developing countries should put a pegged levy onto their trade exposed industries that would match that carbon price. That would be shifted up and down according to what the carbon price was. That would lower the level of the playing field and thus reduce our carbon leakage issue from Australia. However, it would also—and this is critical—enable these developed economies to raise funds for their own internal use for the transitions that they require in their own economies. This is one of the main stumbling blocks in the development of an international agreement. Developing countries are saying, ‘Where will these funds come from and how will we pay for the abatement and the adaptation that are required?’

Senator IAN MACDONALD—I have four or five very quick questions. If Australia were miraculously to reach the target of 40 per cent could tell me what impact that would have on the changing climate of the world? I heard what you said about leadership and leading the way, but from Australia's point of view what impact would that have on greenhouse gas emissions and the changing climate of the world?

Mr Verstegen—I would submit that our target cannot be divorced from an effective international agreement.

Senator IAN MACDONALD—I have read your submission, but I am asking you a question. What impact would that have on the changing climate?

Mr Verstegen—It would be much more likely to establish an effective global agreement.

Senator IAN MACDONALD—I heard you say that before and I am not asking you to repeat it. I am asking you to say what will be the impact on greenhouse gas emissions.

Senator PRATT—You cannot put words in to the mouth of the witness, Senator Macdonald.

Senator IAN MACDONALD—I am asking a question. I heard what he said about this before.

Senator PRATT—He is entitled to give an answer.

Senator IAN MACDONALD—If he cannot answer it he can say that he cannot answer it.

Mr Verstegen—I have given you my answer. My answer is that the effect of that would be to make it much more likely to have an effective global agreement which would significantly reduce greenhouse gas emissions and put us in a situation—

Senator IAN MACDONALD—I am sorry; that is very interesting. You said that in your submission but that is not the question I am asking. We are here to ask you questions. If you do not want to answer them just say so and we will move on. My question to you is: What impact will it have on greenhouse gas emissions around the world? What impact will that have on climate change?

Mr Verstegen—It will have a huge impact on greenhouse gas emissions around the world. What Australia does will have an impact on what is done by other countries.

Senator IAN MACDONALD—No, I heard you say that.

Senator PRATT—I have questions to ask if this line of question is not going anywhere.

Senator IAN MACDONALD—Could you wait your turn without interrupting me, as you seem to be prone to doing? I will move on because clearly you will not answer my question.

Mr Verstegen—I have answered that question three times.

Senator IAN MACDONALD—You have not.

Mr Verstegen—I said that it would make a big difference. That is my answer.

Senator IAN MACDONALD—I am asking what impact it will have on greenhouse gas emissions.

CHAIR—Senator, could we avoid a confrontation?

Senator IAN MACDONALD—Last week Professor Garnaut came to the conclusion that with the proposed CPRS you could do it or you could not do it and it would not make much difference. I think he said that it was lineball. What is your view on the current system?

Mr Verstegen—I think that the current system that has been put forward should not be passed because it locks a range of fundamental policy failures into legislation, and that is not what we would like to see for Australia.

Senator IAN MACDONALD—It is better than nothing though?

Mr Verstegen—I do not think we would support the passing of the existing Carbon Pollution Reduction Scheme on the basis that it locks policy failures into legislation, and that is not what we would like to see. We would like to see a much better effort on behalf of the Australian government.

Senator IAN MACDONALD—If it is that or nothing what would you prefer?

Mr Verstegen—I think that question is premised by a failure of understanding. It is not that or nothing.

Senator IAN MACDONALD—It is a proposal by the government that either is passed or is not passed. Which would be better off? If there is no change—

Mr Verstegen—You are trying to construct a scenario in which you are saying that if this is not passed there will be nothing else. I reject that.

Senator IAN MACDONALD—That is what the government has indicated.

Mr Verstegen—No, it is not what the government has indicated.

Senator IAN MACDONALD—Oh, I see. That is interesting.

Mr Verstegen—It is not what the Australian community has indicated either.

Senator IAN MACDONALD—But the government is in charge. They put forward a proposal which they are saying will go through with only minor amendment. I am asking you whether it is better to do that, flawed though it is, or is it better to do nothing and to hope for something else.

Mr Versteegen—I am suggesting that the premise of your question is a failure of understanding.

Senator IAN MACDONALD—Clearly you want to enter into debate rather than questions and answers. I will ask you two quick final questions. Would it what be better to leave not only the legislation but also the regulation, which apparently will contain most of the detail, until after Copenhagen? Do you see merit in that?

Mr Versteegen—I definitely see some merit in that. If the carbon pollution targets cannot be introduced in such a way as to position Australia in a leadership position, and in a position that is reflective of the international climate science, I see merit in removing them completely from the legislation.

Senator IAN MACDONALD—Finally, you mentioned that trade-exposed emission-intensive industries should not be compensated because they have had all this time to do it.

Mr Versteegen—No, I did not say that at all. What I said was that the strongly affected industries have had a long time to adjust to what they know is a carbon price signal coming in the economy. The strongly affected industries are separate and additional to the trade-exposed industries. What I outlined in relation to trade exposed industries is that there is a case for some form of compensation, but that is not the preferred policy measure for dealing with carbon leakage and there are better ways of doing that.

Senator IAN MACDONALD—What about the coal industry, for example? You are not in favour of giving them any free permits or any breaks at all. What happens to the people who rely on that industry for their wages, their homes, their mortgages and their future? Do you feel any sympathy for them? Should they be looked after?

Mr Versteegen—What we want is people and jobs that do not rely on irresponsible government policies into the future. If a big part of our economy relies on internationally irresponsible policy settings by the government we are not—

Senator IAN MACDONALD—No compensation for those who are affected by it?

Mr Versteegen—Hang on, let me finish. I am saying that there are ways of dealing with this other than by compensation. I am saying that we need to move our economy to a situation where we do not have jobs—

Senator IAN MACDONALD—Will it have an effect on jobs in the Bowen Basin in north Queensland? What can we do to help those people with jobs if, according to your plans, the coal industry is shut down tomorrow?

Mr Versteegen—I can tell you what we can do. We can set realistic emissions reduction targets that are reflective of the science and that put us in a leadership position that will generate billions of dollars worth of investment in new clean technologies and industries and new jobs that do not rely on carbon policy settings by government that will be frowned on internationally and that are simply unsustainable.

Senator IAN MACDONALD—Thank you for that. I will tell the miners that their jobs will be okay.

Ms Hofmeester—We are not arguing against the fact that you would need structural adjustment packages for those industries.

Senator IAN MACDONALD—Put them onto welfare sort of thing; give them a grant—

Ms Hofmeester—I do not think we have enough of those, but some studies have done on particular regions and a detailed transition plan.

Senator IAN MACDONALD—I can assure you that nothing has been done on the Bowen coalfields.

Ms Hofmeester—A detailed transition plan should be developed for those industries. That is what we need. We need a good, sound transition plan for the coal industry.

Mr Verstegen—With respect, Senator, I do not think you are listening to what is being said. Carolyn mentioned structural adjustment and you mentioned welfare. I do not see a connection there at all. Structural adjustment does not mean welfare. Structural adjustment is a policy instrument that allows the government—

Senator IAN MACDONALD—I was a minister for nine years and I know what structural adjustment is.

Mr Verstegen—The response that you have indicated suggests that—

Senator IAN MACDONALD—As I said, this is not a debate, it is a question and answer session. I can debate that with you but I will not.

Senator PRATT—I refer to current debate about the model we have chosen. You indicated that you support an emissions trading scheme but there is a lot of debate about carbon taxes and other models. What do you think will be the implications? How long will it take to get a mandate to build up a policy instrument in order to be able to take action on climate change? The idea is that the Senate might seriously entertain, for example, a carbon tax.

Mr Verstegen—My view is that six or eight months ago, before the Carbon Pollution Reduction Scheme legislation was submitted to the community, there was strong support across the community for emissions trading as the primary measure to tackle greenhouse emissions. Australians voted on that basis, and they voted for a government that was prepared to introduce an emissions trading scheme. We had support from the business side of the community, we had support from both sides of politics, and we had support from environmental groups.

Because of the failures in the design of this emissions trading scheme we now see a fracturing of that support, which does not help. That might lead to significant timing delays in the introduction of this instrument. The key point is that we have the support of the Australian community and businesses to introduce an emissions trading scheme, but we have to get it right.

Senator PRATT—How do we stay on track?

Mr Verstegen—We stay on track by fixing the targets in the emissions trading scheme, introducing a range, and clearly articulating a range of complementary measures that would also reduce Australia's greenhouse gas emissions over and above the targets that are set in the emissions trading scheme. Further, we should fix the other policy failures that I outlined relating to this bill so that it can be supported and passed by the Australian community.

Senator PRATT—Do we fix that before or after Copenhagen?

Mr Verstegen—As I have indicated, some issues might be best left until after Copenhagen. If we are not prepared to take a political leadership position that reflects the science we should not be locking weak targets into our legislation that puts us in a laggard position. We are locking ourselves into a laggard position that will significantly impact on our ability to achieve a decent international agreement.

Senator FEENEY—On that issue who would you identify globally? Which nation states would you identify as being likely to surpass our targets?

Mr Verstegen—Likely to surpass our targets?

Senator FEENEY—You said that we were laggards. Presumably that means that in your view, under the CPRS we are not in a leadership position. Could you identify for me those jurisdictions that would have superior targets to ours?

Mr Verstegen—As you would be aware, this issue of target setting is extremely complex. A range of issues go to the carbon intensity of our economy as it is now and to our previous emissions over time. We are submitting that to be in a leadership position Australia needs to set at least an emissions reduction target.

Senator FEENEY—I understand that. I am in an unusual position in that I am in the same situation as Senator Macdonald. I would just like you to answer my question. Which jurisdictions would you identify as being jurisdictions that had superior targets to ours?

Mr Verstegen—At this point, Senator, the European Union has set much stronger targets. Carolyn, do you have anything to add?

Ms Hofmeester—Certainly the Obama Administration introduced a bill that will result in higher targets than ours. As everyone knows, the United States is a crucial player in this area. President Obama wants to take a leadership role.

Senator IAN MACDONALD—Is that done and dusted? President Obama was going to do it; he said he would achieve a 20 per cent reduction. Sorry, I am interrupting you, Senator Feeney.

Senator FEENEY—No, go for your life, Senator.

Senator IAN MACDONALD—You are saying that that is done and dusted. There is no equivocation about that—he is going to do it?

Ms Hofmeester—That is what is being put forward, as we understand it.

Senator BOSWELL—An overriding clause in that legislation states, ‘We will do all these things as long as it does no-one any harm, or as long as it does not affect anyone, put up the costs, or charge anyone anything.’ I submit to you that you cannot have an emissions trading scheme that does not put up the costs. It seems to me that President Obama and his Congress are not terribly enthusiastic about introducing legislation with that overriding clause.

Mr Verstegen—Emissions trading and economic policy more generally will introduce costs against those things that create costs in our economy in the future. If we are to reduce future costs—as I said earlier, Australia will be subject to those costs to a greater extent than other developed countries—we need to bear some costs now. In saying that, that is really a one-eyed view of our economy.

As you would know, Senator, costs in one part of the economy mean opportunities in another part of the economy. I am telling you—many people who would want sustainable jobs do not rely on irresponsible government policies for the future—that the opportunities that would come with setting ambitious and science-reflective greenhouse gas targets are significant and would place Australia in a beneficial position in the future.

Senator LUDLAM—Thank you for coming along this afternoon. Your submission states that there is an estimate that 66 per cent of the energy requirements of the SWIS, or the south-west integrated system, could be sourced from a mix of renewables by 2020. I presume that would be refuted by Griffin Energy from whom we heard evidence earlier. We have heard claims that, frankly, that is implausible, if not more. How could we do that?

Ms Hofmeester—That is based on potential. From our understanding, that is based on research. If we have to break down that percentage it would mean that by 2020 we would have one solar thermal plant generating 250 megawatts, 10 wind farms generating 900 megawatts, 10 biomass plants, 50 per cent solar PVs, five wave power plants in operation plus geothermal plants, but we do not yet have enough information about that. We believe that if there was a political will those sorts of things could be put in place by 2020.

Senator LUDLAM—That is an argument that it is not a technical or an engineering problem with which we are confronted; it is a problem of politics?

Ms Hofmeester—Yes, that is our understanding. Those technologies exist. It is a question of whether—

CHAIR—All those technologies exist. Is the wave energy a defined technology?

Ms Hofmeester—Yes. There is commissioning of wave power plants.

CHAIR—Test plants at this stage.

Senator PRATT—Wave power plants are all over the world.

Senator LUDLAM—They are running at full tilt. They know what they are doing.

Senator FEENEY—We heard evidence earlier that they entered into their very first contract in Western Australia.

Senator LUDLAM—They have been running a trial plant at Fremantle for a couple of years.

Senator FEENEY—Sure, but their first bilateral agreement—

CHAIR—Let us get back to the question. Sorry Senator Ludlum. That was my fault.

Mr Verstegen—I wish to make a quick addition to what Carolyn has been saying. From a Western Australian perspective we are endowed with incredible resources that we could be harnessing from a renewable energy perspective. We have geothermal resources that are extremely underdeveloped and not well understood. However, what we know about them is that they are significant. We also have wave power, wind power and solar power. This place could be leading Australia, if not the world, in relation to our renewable energy capacity.

Senator LUDLAM—In your submission you used the term ‘double compensation’ that some industries potentially would enjoy under the proposed CPRS. Could you tease that out a little for us?

Ms Hofmeester—That was in relation to the RET, is that right?

Senator LUDLAM—I believe so, yes.

Ms Hofmeester—We were concerned about proposed compensation to trade-exposed industries because of the RET. We have not yet seen the details of that but we heard that a proposal on that is forthcoming. If that were the case that would potentially result in them being compensated by virtue of the fact that there is a renewable energy target.

Senator LUDLAM—In your opening statement you had some proposals besides just handing out free permits. I am interested in particular in the trade-exposed industries. You mentioned the pegged levy as one of those ideas. Where have these ideas come from? Can you flesh them out a little for us?

Mr Verstegen—The development of sectoral agreements is something that has been talked about in an international context for some time now. I need to be specific about this because there is a range of ways in which sectoral agreements could be developed, some of which are strongly opposed by environment groups, including us. That form of agreements simply states that we will go, for example, for energy-intensity best practice targets. They do not put measurable carbon reduction targets on these industries.

The principle of a sectoral agreement is that there is an agreement between, for example, the aluminium sector and between all the aluminium producers around the world, irrespective of where they are located, and that they take on a binding contractual agreement to reduce their emissions by a certain amount. Those sectoral agreements open up certain opportunities, apart from the fact that in doing so you would level the playing field for industries that are signed up to those sectoral agreements, so you would reduce the carbon leakage problem.

There is an opportunity to move to this pegged levy approach, which is an approach that we have suggested and that we have submitted to Professor Garnaut in the past and he made reference to it in some of his papers and submissions. Over time, through a combination of sectoral agreements and emissions trading schemes by annexed one countries under the Kyoto protocol, you could move to this pegged levy approach that would raise funds for developed countries and their mitigation efforts and also allow a level playing field without those developing countries having to take binding country targets.

The key thing that is preventing them from introducing emissions trading schemes in their own economies is that this point in time they are not prepared to take binding country targets. The pegged levy approach would be a way to get around that by levelling the playing field internationally and also by allowing them to generate revenue.

Senator LUDLAM—Is that likely to lead to fewer threats as we hear fairly routinely of corporations threatening to leave to weaker governance zones where there are no targets and pollute elsewhere. Is that partly an attempt to get around that?

Mr Versteegen—It is entirely an attempt to get around that. If developing countries have to pay the same amount under a pegged levy that they would have to pay as a carbon price in an emissions trading scheme there is no economic incentive for that carbon leakage to occur.

CHAIR—Senator Xenophon, do you have any questions?

Senator XENOPHON—On this whole issue of waiting until Copenhagen, are the witnesses taking a view similar to Dr Richard Denniss of the Australia Institute that we should wait until Copenhagen because of the significant increase for Australian taxpayers if a higher target is agreed to at Copenhagen? In the meantime, is the Conservation Council saying we should also be looking at the low-hanging fruit in tackling a whole range of abatement issues that are independent of an emissions trading scheme?

Mr Versteegen—My answer to your second point is yes. We should be tackling a whole range of issues, or as you have characterised them, low-hanging fruit. Referring to your first point, the Conservation Council submits that we should be putting ambitious carbon targets into our emissions trading scheme, which will put us in an leadership position in the lead-up to Copenhagen—targets that are reflective of the recent climate science. If we cannot do that I submit that we should have no carbon targets in our emissions trading scheme at all because that would undermine our ability to develop a sufficient international agreement.

Senator PRATT—Are you saying that we should pass it without targets?

Mr Versteegen—I am saying pass it without targets if we cannot get targets that place Australia in a leadership position.

CHAIR—Thank you very much, Mr Versteegen and Ms Hofmeester, for your evidence this afternoon. We appreciate it. Senator Boswell indicated that he will not ask any questions. I thank you for your time here this afternoon. I now call our next witnesses from the Western Australian Farmers Federation.

[2.24 pm]

HILL, Mr Alan, Director of Policy, Western Australian Farmers Federation Inc.

McMILLAN, Mr Andy, Chief Executive Officer, Western Australian Farmers Federation Inc.

NORTON, Mr Mike, President, Western Australian Farmers Federation Inc.

PARK, Mr Dale, Land Management and Climate Change Spokesperson, Western Australian Farmers Federation Inc.

CHAIR—I invite you to make a short opening statement. As we are tight for time you will find us scarping for the airport after 3 pm. We need to keep this session as succinct as possible. The floor is yours, Mr Norton.

Mr Norton—In our summary we will encapsulate some of the key points that we have made in our submission. The Western Australian Farmers Association recognises the reality of climate change. Farmers acknowledge the federal government's Carbon Pollution Reduction Scheme and agriculture for the environment 2015. In the interim period the Western Australian Farmers federation seeks to be involved in the highest level of consultation to identify practical methods for entry into or a re-visiting of the relevant Kyoto rules. The Western Australian Farmers Federation has lobbied for increased research funding for agriculture's role in greenhouse gas mitigation and abatement.

We have also been involved with the NFF's submission. We have been part of that all the way through the process. Our submission supports emissions trading as an effective method in reducing total greenhouse gas emissions. But the key issue is that we do not support the proposed Carbon Pollution Reduction Scheme in its current form. Hopefully we can quickly cover those points as we go through. We will be seeking the Australian government to lobby for alternatives in the Kyoto protocol, and we have been driving the NFF to try to achieve that. Going back over 14 months we have had good interaction in relation to this whole process with Senator Wong and Senator Burke. Obviously, there are some areas of the current government's policy about which we have some problems.

A key point on the next page of our submission is that we believe agriculture has the potential to be a greater contributor to the solution of climate change than a contributor to the cause of climate change. That is embedded in a lot of the research that we need to do into agriculture. We have covered on page 3 of our submission the cost to agriculture of the Carbon Pollution Reduction Scheme, which came out of the Garnaut report on the first day of this scheme. Agriculture will be hit by additional costs and charges via the emissions trading for the cost of inputs, be it electricity, liquid fuel and fertiliser. All those costs will rise and they have an immediate effect on our bottom line.

We will certainly be swept up from day one in this whole process. We cannot see where we will be compensated for that. Consumers will be compensated but we are at the end of the food

chain. Nobody has yet been able to tell us how we will be looked after and compensated. In some of the data that we have seen so far a charge of \$20 a tonne will add an extra five per cent to seven per cent to our input costs. That has not been—

Senator BOSWELL—How much was that?

Mr Norton—The figures we have show that at \$20 a tonne that will put an increased cost on our bottom line of between five per cent and seven per cent. That increased CPRS cost will be put directly back on producers. As I said there is no direct support for agriculture, which is a matter of enormous concern. Even though we represent 15.6 per cent of total inputs we believe that with proper research and proper government policy we can get our emissions back to a negative level, which will be to the benefit of agriculture and to the benefit of the Australian economy. As we have seen in recent times, agriculture plays a major role. It is one of the core backbone industries of Australian agriculture.

Agriculture is a trade-exposed industry. Australian agriculture is trade exposed and probably in this state more than ever the Department of Climate Change notes agriculture farm gate value at three per cent GDP. In contrast, over the past five years agriculture contributed 35 per cent of the Australian merchandise export, which equates to \$30 billion. I have seen some other figures that show the knock-on effect. That figure could rise to as high as \$100 billion as it filters right through the system. Western Australia has a greater level of exposure because 80 per cent of produce in Western Australia is exported, so we have Buckley's chance of getting any financial return once it goes offshore.

We in Western Australia are extremely vulnerable and extremely concerned about that. In general, whilst we represent 4,000-odd farming families and individuals—as you are aware there is a diverse point of view on climate change as to how bad it is and how it should be fixed—the bulk of farmers believe that we should leave the environment the way that it is. We want to be dealt with fairly and equitably and we must be able to produce our food and fibre. While we are producing our total greenhouse contributions should remain sustainable and profitable. Our key message is that we have to be sustainable and we have to be profitable. In our opinion the current scheme does not facilitate that.

In recent times plenty of information has been bandied around that there are global food production needs. In the twenty-first century we will need to double our production. If we look at agriculture over recent years we find that whenever there are major changes, be it legislative or other changes, production always drops. The wool industry is a classic example. Some years ago we made some major legislative changes and we have never been able to regenerate it. The dairy industry is another example. There were major changes in 2000 and dairy production has gone down and gone south and it will probably continue to go south with the problems of water in the Murray-Darling Basin.

There are no incentives by political people or operators on either side of the house to drive agriculture forward when it gets into trouble. When there is a major political change this is another area in which we go backwards and not forwards. That does not affect only one commodity; it will affect all commodities. We are extremely concerned about that. That probably covers most of the key points that we have. Farmers manage 60 per cent of Australia's landmass, so they have an enormous potential to help us get through this problem. Once again, we have to

have a carrot rather than a stick from our political masters. We made quite a number of other points in the paper relating to research and development, be it for sequestering carbon or for doing a whole range of things.

Senator BOSWELL—We would like to ask you some questions.

Mr Norton—Sure. I was just making some key points.

CHAIR—Senator Boswell, you have the call.

Senator BOSWELL—Thank you. I read your submission and I would like to know what have you done to investigate the cost to farmers of emission trading? Have you done any investigation, or has that been left to the NFF?

Mr Park—I am the climate change spokesperson for the Western Australian Farmers Federation. We have relied mainly on the work of Mick Keogh from the farming institute.

Senator BOSWELL—He will be giving evidence later.

Mr Park—He will be able to give you a run down.

Senator BOSWELL—Thank you for that.

Mr Park—One of the things to keep an eye on is the assumptions that are made on any findings for costs. The assumptions dictate what sorts of numbers you get at the other end.

Senator BOSWELL—You made the point that you will not be picked up until 2015. You also made the point that your costs will increase from the moment that this legislation is passed. Where will your costs increase?

Mr Park—It is true that the decision will not be made Australian until 2013 for inclusion in 2015. When you analyse it you find that it only takes the costs of direct agriculture. We are looking only at things such as methane production and nitrous oxide production, whereas all the costs of energy, be it fuel, electricity and costs on fertiliser will all be introduced or taken in from 2011. If you are a grain grower in the wheat belt of Western Australia, 90 per cent of your greenhouse costs will probably be liable from 2011 onwards.

Senator BOSWELL—I refer to dairying, which I know is not a big industry in Western Australia. Nevertheless, there is a dairy industry in this state. If the costs of an emissions trading scheme are not imposed on your competitors, such as New Zealand, and you are forced to bear increased costs in dairying, all the processing will bear increased costs, including the farms. There will also be an increase in electricity costs. If no-one else goes down this path what will be the result for your industry?

Mr Norton—If the competitors do not face the costs we will be in a less enviable position than any of them. I bring you back to one of the points that you made earlier. Some of the feedback we are getting from processors of our products, mainly abattoirs and milk packagers and processors, is that they intend to pass their greenhouse costs back to the farmers and not to

the consumers. Those farmers who are in the room will understand that it is a hell of a lot easier for the buyers of our products to pass back the costs rather than pass them forward. Not only will we be faced with the costs of our direct input; it looks as though we will also be faced with processing costs under the greenhouse taxes.

Senator BOSWELL—The other day I heard that the costs of putting beasts through an abattoir without the emissions trading scheme and without the methane part of it will be about \$14 a beast. Have you done any work in Western Australia on this issue?

Mr Norton—The meat processors have. As I have said, we have spoken with the meat processors and they have told us categorically that it will go back down the chain. We will wear it; there is no doubt about that.

CHAIR—What about quantum though? I think that is what Senator Boswell is asking. How much will it cost per head?

Mr Norton—We do not know yet. Until we see all the rules and the data we are all shooting in the dark. At the moment we are all guessing.

Senator BOSWELL—People from the abattoirs will be giving evidence, and they believe it will be \$14 a head. That is in Queensland. I was wondering whether it was similar here.

Mr Norton—All the abattoirs have done some accurate costings. We went to Western Australian Meat Marketing Co-operative at Katanning. They believe that they might just come in under the level. However, you have to bear in mind that those that come in just under the level will be given a fair old marketing advantage over those who come in over the level.

Senator BOSWELL—Half the abattoirs will have to be picked up. They will have to go out and buy certificates and the other half will not. Those that pass back the money will get more business.

Mr Norton—We have only one export abattoir and he will not be much of a problem.

Senator BOSWELL—I am concerned about food processors because I do not think a great deal of thought has gone into this. I always use the Golden Circle example. Last year Golden Circle told growers that it could only take 40 per cent or 60 per cent of the farmers' quotas, so it cut back production by 40 per cent. If Golden Circle closed because of huge increases in electricity and other charges, these people would not be able to put up their costs because they would be hit by imports and they could not put down their costs as they are already on the breadline. In fact, they will just have to be taken over. Does import replacement concern you? Putting up domestic costs will allow import replacements.

Mr Norton—In Western Australia all pineapples are imported; they do not grow any pineapples.

Senator BOSWELL—We do not import them in Queensland.

Mr Norton—Of course, that is a matter of concern. If you want to keep heaping costs on agriculture it will contract. The experts tell us that you either have to get bigger or you have to work harder. How big do you want to make these farms? In 2000 there were 400 dairy farmers in Western Australia and now there are 200. Ten years ago there were about 12,000 grain farmers and now there are about 5,000. Do you want to finish up with one farm? How many farms do you want to finish up with? That is something you have to think about. You have to set the policy to drive agriculture or to drive any industry. The ball is pretty much in your court. We just play by the rules, if we can.

Senator PRATT—You acknowledged in your submission that Western Australian farmers recognise the reality of climate change. I would like you to define what you mean by ‘the reality of climate change’, including its clauses.

Mr Park—Yes. The world is getting warmer; I do not think there is any doubt about that. The other part is that 95 per cent of the climate scientists tell us that humans are causing it and that we have to do something about it. As we said in our submission, we believe that, given the right policy settings, agriculture can be part of the solution and not part of the problem.

Senator PRATT—I refer to the CPRS and to soil mitigation processes. Your submission strongly highlights the need for international movement on that issue. What do we need to do to establish the science and to establish that argument internationally?

Mr Park—There are two or three parts to your question. For a start, we still need to do quite a lot more research so that we are better able to measure and estimate carbon levels in the soil than we do at the moment. We also have to start looking at what farming practices we can use to store or gain carbon in the soil. There are other strategies—things such as biochar, which the Opposition has talked about. It is a great chance for farmers to be able to participate in the carbon market. One of the problems we have is that under the Kyoto agreement or protocol, the only mitigation recognised at the moment is planting trees.

Not only do you have to plant those trees; you also have to keep them alive—I keep hearing different numbers—for over 100 years and up to 150 years. In my view trees are potential CO₂. If some white ants eat them they turn into methane, which is the worst outcome. If we can use technologies such as biochar we can make biomass into charcoal, which has a half life of thousands of years, and we will be far better off. If farmers are to participate in that market they have to get international recognition, and preferably at Copenhagen, so that they can participate in this market. At the moment the only mitigation strategy open to farmers is to stop production.

Mr Norton—One of the other things we are doing involves mallees and biomass. One way to become self-sufficient is to generate our own fuel. That is in our carbon footprint. We have to start thinking outside the square to establish how to do this practically. We have plenty of land; all we have to do is think about how we can martial our forces a bit more effectively than we have done in the past. It has been easy just to order a tanker from the Middle East.

Senator PRATT—I am reasonably supportive of biochar but it is not a quick fix, unless we get these things right, or unless there is an architecture above that to drive its development.

Mr Park—There is no one answer to this problem. We are running at about 387 parts per million of CO₂ in the air at the moment and that keeps increasing. We have to use almost everything at our disposal—anything from renewable energy through to biochar, soil carbon and methods that we have not even thought of. We have to have the incentives. One of the things we point out in our submission is that Australia will hit its target because of the clearing bans implemented in the late 1990s. Farmers who effectively donated their bush for that have been paid not one cent. I worry about some of the things that I hear about biochar. I seem to get the impression that it will happen magically without any incentives. The only way we will get farmers to start turning biomass into biochar is to ensure that they profit from it in some way.

Senator PRATT—In fact we need a change to the carbon accounting rules internationally.

Mr Park—Definitely. That is the first step. You have to change the accounting rules.

CHAIR—Senator Ludlam?

Senator LUDLAM—I will come in a bit later.

CHAIR—Senator Xenophon?

Senator XENOPHON—Not at this stage, Chair.

Senator CAMERON—Thank you. I am not sure whether this should be answered by Mr Norton or Mr Park, but either one of you could.

Senator IAN MACDONALD—We have just broken the order again.

Senator CAMERON—I think the submissions you have made have been very helpful. In terms of your recognising that there is a problem to face, I think that is very constructive because that has not been the position we have heard from some witnesses. One of the arguments I have heard is that on the one hand global warming is spoken about in terms of rising sea levels, a diminishing agricultural base, more storms, bigger and longer droughts, and less run-off, but the argument I have heard is that the biggest problem you have is weeds. What is the bigger problem, global warming or weeds?

Mr Norton—Oh, weeds.

Senator CAMERON—The weeds?

Mr Park—The weeds will be there anyway. It does not matter what sort of farming system; you have got to have them. You smiled during our introduction. Certainly not 100 per cent of our members agreed with my point of view, for instance.

Senator CAMERON—Sure.

Mr Park—We have various debates at various forums about how much and what we should be doing and the like.

Senator FEENEY—So do we.

Mr Park—Global warming is an ongoing problem and weeds might be too because we get herbicide resistance, which is the big problem as far as weeds go, and those sorts of things, but we do keep finding new strategies to do that. My take on global warming is that we have not got any strategies to fix global warming at the moment. The only strategy is to start reducing the amount of CO₂ we are putting into the air or start sucking some back out—one or the other. My problem with adaptation, for instance, is: What are we adapting to? Are we adapting to one degree warmer, two degrees warmer, or five degrees warmer? At the moment we have not really scratched the surface. We have only had 0.7 of a degree warming in the world at the moment, but we do know is that it is getting quicker and that we have to start doing something about it or it will get a lot worse.

Senator CAMERON—In that context we hear a lot of talk about the costs of trying to deal with abatement and reducing CO₂ emissions and obviously everyone will have to bear a cost, including farmers and that is the reality. What is more important—bearing a cost now, or watching the farming community become absolutely disabled through long term global warming? That is what I cannot get a feel for.

Mr Park—Let us break down farming into consumers and producers. All farmers are consumers. They all eat and they all drive cars and do all those sorts of things. As consumers, we have to pay costs, the same as any other consumer around the place. To hear Senator Boswell—I think it was Senator Boswell or maybe someone else—say that the Americans are not going to have costs imposed on anyone, I do not quite understand how you put a cost on carbon and it does not cost you anything.

Senator BOSWELL—That is right.

Mr Park—It is an interesting concept, which someone will have to explain to me later.

Senator CAMERON—Maybe Senator Boswell can.

Mr Park—What is that?

Senator CAMERON—Maybe he can give you a master class.

Senator BOSWELL—If there is, they are not going to pass the legislation. It is very simple.

Mr Park—As consumers we will have to bear that cost, but as producers of food, what we are worried about and what we see at the moment is that we are actually going to shouldering a lot more of the costs. Not only will we be looking at costs of methane if we are included in 2015, but we are also seeing all the costs from anywhere and everywhere that can pass it back. The only way we can get those prices up is if we actually stop producing so that there is less of it around the place and people have to pay more for their food.

We are operating in a market. We are at the whim of the market. We are price takers. We cannot just say, 'Well, we make decisions on what we're going to produce 10, 12 or 24 months.' For instance, the cattle that I will see in two years time I will put the bulls to in three months

time. You have that long period and you do not have the option of saying, ‘You are not going to pay me enough for it. We will keep them here’—especially during a season the like of which we have just had when we have had too many mouths and not enough food.

Senator CAMERON—But has the government not recognised some of these issues and said, ‘Okay, you don’t come in until 2015, and on the basis that you’ve come in, we will consult with you right up to 2015’, so there is a process to listen to all of these arguments that you are putting forward now?

Mr Park—It is not my concept of government.

Mr Norton—We have already outlined the fact that we are going to start increasing costs to 2011. We have already stated that. The system is revolving around a European system.

Senator CAMERON—I am sorry, what European system?

Mr Norton—The Kyoto thing. Most of the rules have been set on European research and development. Most European things do not work in Australia.

Senator CAMERON—I am not sure what you are saying because—

Senator BOSWELL—The ETS is based on the European—

Senator CAMERON—No, I am not asking you to say that, Boswell. I hear enough of you.

Senator BOSWELL—I am just trying to give an alternative viewpoint.

Senator IAN MACDONALD—Broaden his knowledge.

Senator CAMERON—Let him give the answer.

Senator PRATT—We have limited time and I want to hear the answer too.

Senator CAMERON—You make enough noise and hot air around the place. Let us hear the witnesses.

Mr Norton—The point I was trying to make is that the Kyoto process revolves around research and development that has been based in Europe. Most systems that have come out of Europe do not work in Australia. We are a different country with different climatic conditions and different government policy. I guess the other issue is that Australian farmers will adapt. We have been adapting for 200 years. We will adapt, but there will be a cost to that in many ways, and we need the right type of policy to make sure that we go forwards, not backwards, and that we are still as wealthy and profitable for the economy as we have been in the past.

Senator CAMERON—But Treasury is saying that there will be a cost to everybody in terms of trying to deal with this horrendous problem, but what they are saying is that the cost is minimal if we do it correctly. Under a cap and trade scheme, you can keep those costs under control and there will still be robust growth across the economy, including the agricultural sector.

Mr Norton—I thought it was the parliament that runs the country and not Treasury. What we are saying to the parliament is—

Senator FEENEY—There should be an inquiry into that, perhaps.

Senator CAMERON—I do not want to go there: I might get myself into trouble. But in terms of what I am asking you, do you see that there are some opportunities? We will look at all the dark side in terms of this, but are there not opportunities for the farming community in terms of the R and D and in terms of green jobs? Is there any of that around?

Mr Norton—Look, there will be enormous opportunities from agricultural if the parliament sets the rules right and does the research and the development we need to make it cost neutral. We believe that the farming community can actually make money out of it. If you do that, some of you might even get a knighthood.

Senator LUDLAM—Not if republicans elect us.

Mr Park—Can I just say is that one of the problems is that the Australian CPRS has to be in agreement with the Kyoto rules or the international accounting rules. That is why I say to you that what we need this government to do is change those international accounting rules so that we can do some of those things. At the moment, the way 3.4 is set up, we will not be looking at soil carbon because you are looking at all the other things that happen outside agriculture.

Senator CAMERON—Oh yes.

Mr Park—Biochar is not recognised, so we need to have those things. I agree with you: I think the opportunities are going to be there, but we have to have the ability to be able catch them. To give you an example of what Mike was talking about before when he referred to Europeans, the baseline for nitrous oxide emissions from cropping land is one per cent. The two studies that have been done here—and I suppose that one of our other complaints is that there is very little research done in Australia on these things—and of the two that have been done, one here and one in Victoria, have shown that our nitrous oxide emissions are about one-tenth of what the baseline is. They are the sorts of examples. We need to do a lot more research to make sure that the baseline research—

Mr Norton—The measurements.

Mr Park—Or measurements are not over the top for what we actually do.

Senator CAMERON—Are there cost effective or profitable biochar operations in Western Australia?

Mr Park—No, but I am trying to get one going.

Senator CAMERON—Yes.

Mr Park—The best way of producing biochar, or the most financially sustainable way, is to generate power from it. You generate power from cooking the biomass because of endothermic

reaction, and half your carbon is left as char and so you have two income streams. Without a price for carbon, it is very difficult to generate power.

Senator CAMERON—But biochar would require a fair amount of land available to produce the raw material.

Mr Park—No. We probably ran between one and a half to two tonnes a hectare of chaff right throughout the wheat belt that just gets turned into CO₂ by various means. Quite a bit of it is burnt and quite a lot of it is from interaction with insects and the like—all these sorts of things. To make biochar, all you need is biomass, so it is anything. A city like Perth, for instance, produces huge amounts of anything from tree loppings to lawn clippings, bad food, and all those sorts of things. Really the sky is the limit on what we could use.

Senator CAMERON—I thought the restaurants were pretty good here.

Mr Park—But we have things like ‘use by’ dates and people throw things out, and that sort of thing. But agriculturally, it includes things like crop waste, and in the forestry industry, some forestry concerns can get up to 60 or 70 per cent production, but that still leaves 30 to 40 per cent that you can turn into biochar.

Senator CAMERON—This is my last question. How far away are you from getting your biochar operation up, do you think?

Mr Park—We are fairly close. We have got it close. We are actually looking at turning chicken manure into biochar, and we are in the last stages of finding a place or a piece of land to put it onto, which should be down south. We have contracts with all the chicken producers to supply the manure, the feed stock. Why I am involved and so keen to get it going is that once we get one going, I think we will find the rollout from there quite quickly. But people’s reticence about doing the first one is quite severe.

CHAIR—Senator Ludlam? Just quickly.

Senator LUDLAM—Thanks, Chair. One of you raised a comment earlier to the effect of enough sticks, more carrots. I forget which one of you it was. For example, the renewable energy sector, getting away from the carbon price and what that will do, is saying that we need a renewable energy target, and we can make our contribution. Public transport people will say, ‘We want fringe benefits tax exemptions, the same way that private motorists get them, and we can make our contribution.’ What kind of policy settings does the farming community need to make its contribution? Getting away from the carbon price arguments for the moment, what are you looking for?

Mr Norton—We are not looking for anything at this stage as we do not know what the rules are and what the numbers will be. The parliament set up an MIS scheme for the timber industry. You did not have much trouble doing that. We would need to get a little bit further down the track as to what your plans, program and legislation is going to be before you can put some meat on the bones and start to crunch the numbers.

Senator LUDLAM—I am asking you for the bones, as it were. What does a climate neutral or climate positive policy for the farming community look like?

Mr Park—One of the things we really need is research. A lot of people say, ‘Well, why don’t you do your own research?’ The fact of the matter is that agriculture runs on such a fine profit margin that we battle to fund the things that actually make us more money rather than the esoteric things. We need to be doing more research into trying to find ways to make animals produce less methane—those sorts of things.

Research is what is going to drive a lot of this. We will probably need a price for carbon for some things, but a lot of these things should have a lower carbon production/better production outcome. But we have to do the work and it will be quite expensive. Purely on a production, if you are looking at it from a production point of view, you ask yourself: Do we spend the money on this research for a production purpose? You would probably say no. But if you incorporate benefits to lower carbon dioxide production, you would probably say yes. They are the sorts of things that we need help on.

Senator LUDLAM—I guess other sectors are getting assistance with research and development. Does it make any difference to the farming community? For example, some of the big wind farms just out of Geraldton, do they pay a price or a rental to the farmers whose property they are on?

Mr Park—Yes, and they are very good.

Senator LUDLAM—They are very good. Okay, so more of that. Are there any things like that that people are looking towards that are creating employment?

Mr Park—Just going back to wind farms, for instance, I have a wind farm right next to me and the worst thing about that it that it is not on my place. It is quite financially beneficial to the people who own the land that the wind farms are on. They are very good. They are the sorts of things that we can participate in.

Senator LUDLAM—Okay.

Mr Park—And maybe some of the other things. As Mike said earlier, what we are seeing is farms getting bigger and bigger. That means that farmers do not do things like stewardship and those sorts of things so much. They are concentrating purely on production.

Senator LUDLAM—These eastern states need to catch a plane and get out here. What is happening with the Narrogin biology plant? That just seems to have been almost over the line for years and years and years.

Mr Park—It is almost there again, I gather, but I do not know much about it.

Senator LUDLAM—Because that was just such a hopeful development—such a great idea.

Mr Park—The amount of biomass that is going through that is not quite big enough either, I do not think. But other than that, I do not know. That is the oil mallee one.

Senator LUDLAM—Yes.

Mr Park—There have been some problems on both sides of that for a little while.

Mr Norton—There is a lot of work going on in the eastern wheat belt. We are trying to drought-proof farms by putting 20 per cent of that country back into oil mallees. Once you have a price for carbon, if weather conditions and soil temperatures are not right, you cannot put in a crop, but you can still get up to \$200,000 a year in off your oil mallee, so you have a guaranteed income. You do not have to go back to government for EC for drought sustainability or to finance that. There are a number of ways we can kill a couple of birds with one stone if we all think and work together.

CHAIR—Effectively what you are looking at is getting the regulatory process in place to allow for soil carbon, biochar—

Mr Norton—Whatever.

CHAIR—And all those sorts of things which will actually put you back into the game.

Mr Norton—Yes.

CHAIR—At the moment, you are not, and you have the additional disadvantage of the fact that the processing sector, which is effectively truncated from on-farm agriculture has all the impositions applied to it which will then drift back down to farm gate prices under the current scheme.

Mr Norton—I am sure about that. We have already been told.

CHAIR—Okay. Thank you, gentlemen. We appreciate your coming in and talking to us. Senator Macdonald has one quick question to ask.

Senator IAN MACDONALD—Can you tell us, perhaps on notice, what food you import to Western Australia—not from country or eastern Australia. Do you import food? Is it in competition with what you grow or produce here?

Senator PRATT—It comes from China.

Mr Norton—One of the departments here has a figure like 60 or 70 per cent of food consumed in Western Australia is all imported.

Senator IAN MACDONALD—Is it consumed—

CHAIR—What percentage was that?

Mr Norton—It is around 70 per cent, I think, is it not, Andy?

Mr McMillan—It is a bit higher.

Mr Norton—It is amazing.

Senator IAN MACDONALD—Is that competing with local production?

Mr McMillan—In some cases it is, yes, up to a point.

Senator IAN MACDONALD—That will make it worse if we have the CPRS and China, for example, does not.

Mr Norton—Yes, for quite a lot of dairy products.

Mr Park—Yes.

Senator IAN MACDONALD—Mr Norton, you were saying that you are uncertain about where to go here because you do not really know the rules. Do you see any merit in leaving the passage of this emissions trading scheme legislation until after Copenhagen when we find out what the rest of the world is doing? The timing will be very close between the time parliament deals with it under the current schedule and Copenhagen.

Mr Norton—That is a politically loaded question, is it not?

Senator IAN MACDONALD—No, it is not. Would you feel more comfortable in knowing where you are going?

Mr Norton—I should say no!

Mr Park—The whole problem is—and this is one of the discussions that are being held in our forms: ‘Oh, we shouldn’t do anything until someone else moves.’ The problem is that we are actually one of the bad boys in the world because on a per capita basis we produce more CO₂. It is not because we have lots of country. It is because we burn a hell of a lot of coal to produce our energy.

Senator IAN MACDONALD—You know what the bottom line of all this is about.

Senator PRATT—Let him finish.

Mr Park—If we get an international agreement, and I am not very hopeful about Copenhagen. We might get some good things but I suspect there will not be much of an international agreement. But if there is, I really do think that it will be on a per head basis. It will not be, ‘We’ll all cut 20 per cent’, because you will have India which produces about one-tenth of the amount of carbon dioxide per head that we do and is looking to cut 50 per cent. I do not think that is even thinkable rather than tenable. Therefore we will go to a per head basis. If we go to a per head basis, the US and ourselves will be right at the top trying to—

Senator IAN MACDONALD—What is it going to do to climate change though?

Mr Park—What?

Senator IAN MACDONALD—If you shut Australia down, what is that going to climate change?

Senator CAMERON—Point of order: nobody is saying we are going to shut Australia down.

Mr Park—No, I do not think you will shut Australia down.

Mr Park—We will not shut Australia down. You cannot shut Australia down.

Senator IAN MACDONALD—Have a 40 per cent target.

Senator CAMERON—What a dopey question.

Senator IAN MACDONALD—Have a target. You keep your own dopey questions to yourself.

Senator BOSWELL—I thought some of your questions were silly.

Senator IAN MACDONALD—Well, you keep your comments to yourself. You have been very colourful.

Mr Park—If we do set—

Senator PRATT—The witness is still speaking.

CHAIR—Some order please!

Senator CAMERON—It is like children overboard all over again!

Senator IAN MACDONALD—If we set a 40 per cent target, what is that going to do to the changing climate of the world? If we do that in Australia, what is that going to do for the climate change of the world if China, as you are suggesting, does nothing?

Senator FEENEY—We will burn in hell.

Mr Park—I think Garnaut actually had the answers to that in his report. You start a system where you all start going, and once you hit a level where you think you should be—say, China, and they will hit theirs way before India, for instance—the short answer to your question of us cutting it by 40 per cent and no-one else doing anything is no, it will not make any difference at all. But how is Australia then going to be able to go to the rest of the world in Copenhagen and say, ‘We think you should cut your greenhouse gases.’

Senator IAN MACDONALD—Do you believe that Australia will lead the discussion at Copenhagen?

Mr Park—I do not think they will.

Senator IAN MACDONALD—You have been listening Penny Wong too long, I am afraid.

Mr Park—I do not think they will, but I think what they will be told to them is the same thing that was told to the US by New Guinea, which was, ‘If you don’t do anything, for Christ’s sake get out of the way.’ I think that is the sort of thing they will be told.

Senator BOSWELL—They will. They will get out of the way by not doing it.

Senator CAMERON—I move an extension for questioning of Mr Park.

Senator IAN MACDONALD—Your folly, Senator Cameron, is that you keep interrupting me and then want to give me more time. If you did not interrupt in the first place with your inane interjections, you would make these things better.

CHAIR—Gentlemen, thanks for your time this afternoon.

Mr Park—You are very welcome.

CHAIR—Your evidence is appreciated. It looks like the microphone has decided it is time I finished up.

Senator CAMERON—Time is up.

Senator PRATT—Thank you very much.

CHAIR—Thank you. I declare this session closed.

Committee adjourned at 3.06 pm