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SELECT COMMITTEE ON FUEL AND ENERGY

Reference: Issues relating to the Fuel and Energy Industry

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SENATE SELECT COMMITTEE ON

FUEL AND ENERGY

Wednesday, 19 November 2008

Members: Senator Cormann *(Chair)*, Senator Hutchins *(Deputy Chair)*, Senators Bushby, Fifield, Joyce and McEwen

Senators in attendance: Senators Bushby, Cormann, Fielding and Hutchins

Participating members: Senators Abetz, Adams, Arbib, Barnett, Bernardi, Bilyk, Birmingham, Mark Bishop, Boswell, Boyce, Brandis, Carol Brown, Cameron, Cash, Colbeck, Jacinta Collins, Coonan, Crossin, Eggleston, Ellison, Farrell, Feeney, Ferguson, Fielding, Fisher, Forshaw, Furner, Heffernan, Humphries, Hurley, Johnston, Kroger, Lundy, Ian Macdonald, McGauran, McLucas, Marshall, Mason, Milne, Minchin, Moore, Nash, O'Brien, Parry, Payne, Polley, Pratt, Ronaldson, Ryan, Scullion, Stephens, Sterle, Troeth, Trood, Williams, Wortley and Xenophon

Terms of reference for the inquiry:

To inquire into and report on:

a. the impact of higher petroleum, diesel and gas prices on:
   - i. families,
   - ii. small business,
   - iii. rural and regional Australia,
   - iv. grocery prices, and
   - v. key industries, including but not limited to tourism and transport;

b. the role and activities of the Petrol Commissioner, including whether the Petrol Commissioner reduces the price of petroleum;

c. the operation of the domestic petroleum, diesel and gas markets, including the fostering of maximum competition and provision of consumer information;

d. the impact of an emissions trading scheme on the fuel and energy industry, including but not limited to:
   - i. prices,
   - ii. employment in the fuel and energy industries, and any related adverse impacts on regional centres reliant on these industries,
   - iii. domestic energy supply, and
   - iv. future investment in fuel and energy infrastructure;

e. the existing set of state government regulatory powers as they relate to petroleum, diesel and gas products;

f. taxation arrangements on petroleum, diesel and gas products including:
   - i. Commonwealth excise,
   - ii. the goods and services tax, and
   - iii. new state and federal taxes;

g. the role of alternative fuels to petroleum and diesel, including but not limited to: LPG, LNG, CNG, gas to liquids, coal to liquids, electricity and bio-fuels such as, but not limited to, ethanol;

h. the domestic oil/gas exploration and refinement industry, with particular reference to:
   - i. the impact of Commonwealth, state and local government regulations on this industry,
   - ii. increasing domestic oil/gas exploration and refinement activities, with a view to reducing Australia's reliance on imported oil, and
   - iii. other tax incentives; and

i. the impact of higher petroleum, diesel and gas prices on public transport systems, including the adequacy of public transport infrastructure and record of public transport investment by state governments.

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SCHANDL, Dr Heinz, Group Leader and Senior Researcher, Commonwealth Scientific and Industrial Research Organisation Sustainable Ecosystems **13**

STERLAND, Mr Barry, First Assistant Secretary, Emissions Trading Division, Department of Climate Change **54**

Committee met at 8.30 am

CHAIR (Senator Cormann)—I declare open this public hearing of the Senate Select Committee on Fuel and Energy. The Senate has referred to the committee matters associated with fuel and energy, including the price of fuel, the impact of an emissions trading scheme, regulation and taxation arrangements and alternative fuels. The committee is due to report to the Senate on 21 October 2009. Today the committee is focusing mainly on the impact of an emissions trading scheme. I welcome you all here today. This is a public hearing and a *Hansard* transcript of the proceedings is being made.

Before the committee begins taking evidence, I remind all witnesses that in giving evidence to the committee they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee, and such action may be treated by the Senate as contempt. It is also contempt to give false or misleading to a committee. The committee prefers all evidence to be given in public, but under the Senate's resolutions, witnesses have the right to request to be heard in private session. It is important that witnesses give the committee notice of their intention to ask to give evidence in camera.

If a witness objects to answering a question, the witness should state the ground upon which the objection is taken, and the committee will determine whether it will insist on an answer, having regard to the ground which is claimed. If the committee determines to insist on an answer, a witness may request that they answer be given in camera. Such a request may, of course, also be made at any other time. I would also ask witnesses to remain behind for a few minutes at the conclusion of their evidence in case the Hansard staff need to clarify any terms or references. I remind people in the hearing room to ensure that their mobile phones are either turned off or switched to silent. Finally, on behalf of the committee, I thank all those who have made submissions and sent representatives here today for their cooperation in this inquiry.

[8.32 am]

McELHONE, Mr Charles, Economics Manager, National Farmers Federation

CHAIR—I welcome Mr McElhone from the National Farmers Federation. I invite you to make a brief opening statement and then the committee will ask some questions.

Mr McElhone—Thank you very much, Senators, and thank you for the opportunity to speak to you today. It should be noted that in recent times we have seen a vast increase in the cost base for the Australian farm sector. We have seen significant increases in the price of fuel, fertiliser, chemicals, labour and debt financing. Fuel and energy, particularly fuel, obviously is a key component of that increase and a key component for the cost base for the Australian farm sector. Fuel and energy represent about 10 per cent of the direct cost base of the farmers or farm sector, but that escalates to up to 45 per cent of the cost base when you take into account both the direct and indirect costs, such as contracting, fertilisers and freight. It is a significant cost for our sector and a key issue for us right now.

Obviously, bearing in mind the fuel price escalation we have seen in recent times, or up until recent times when it hit US$130 a barrel, we have seen that decrease significantly in recent times to about US$50 a barrel. But it should be said that, particularly for the farmers with regard to diesel prices, they are not seeing a significant amount of relief in terms of the prices they are paying on the ground for their diesel. They have seen a decrease, but it is by no means a reflection of what we are seeing on world markets.

The National Farmers Federation has talked about some of the things that can be done to provide some insulation from the increasing costs of fuel and indeed energy. We have been looking at alternative fuel development; research and development technologies to decrease fuel use, such as GM crops and improved technology around engine design; different cropping and farming techniques that can reduce exposure to fuel in particular; streamlining regulations, particularly around biodiesel use, which has been very problematic in recent times regarding the mixing of diesel and biodiesel blends on-farm; competition issues, such as making sure that we have a competitive framework within the domestic market; and bioenergy research and development, particularly for regional communities where their access to the central grid is limited so that there are greater opportunities to look at utility-scale renewable energy use. Those opportunities need to be explored.

The focus today is very much on the Carbon Pollution Reduction Scheme and the impact that that will have on fuel and energy costs, particularly for the farm sector. This is a key issue for us, especially how it will impact on our international competitiveness moving forward. We export 70 per cent of what we produce and we are not proud of the fact that we have a notorious incapacity to pass on additional costs that we see through our supply chain. Additional costs of fuel and energy will be a significant burden on our sector. The other issue is the potential for a disproportionate impact on regional communities. We must remember that regional communities have limited access to public transport works and also are more exposed to fuel for transportation over greater distance. Therefore they have greater exposure to fuel use, which

means that potentially they could be disproportionately affected by any emissions trading scheme implemented on the domestic market.

We recognise that within the government's green paper there is discussion about offsetting fuel use for the first three years of the Carbon Pollution Reduction Scheme. We think that it is a prudent move, but in saying that, there is also discussion within the paper that heavy vehicle use will be offset only for the first year. We question why there is a differential between the offset for heavy vehicle use and the offset which is provided to the rest of the community. That is one concern that we have.

We also note that regardless of any offsetting mechanism, there will be an impact on the cost base for farm businesses. We recognise the discussion that agriculture will not be a covered sector until at least 2015, and that there is no mechanism for any emissions-intensive trade-exposed sector assistance for uncovered sectors. Even though our cost base will increase and our international competitiveness may be exposed, there is no plan within that EITE framework to provide any assistance along those lines. That is obviously another concern for the farm sector. Thank you.

CHAIR—Thank you very much, Mr McElhone. You mention all those major input costs. Would you be able to describe the relative importance of fuel, fertiliser and chemicals in as far as they relate to farm profitability, particularly fuel? Even though there might be some offsets, there are obviously some flow-throughs in terms of other input costs. Would you be able to describe that?

Mr McElhone—Most definitely. We talked about 10 per cent of the direct costs being fuel and electricity, but as we talked about them, fertiliser is a significant cost for the farm sector. Fertiliser is about another 10 per cent of the input costs for Australian farmers. Talking about chemicals as well, there is about another 6.3 per cent for broad acre farming. If you are talking about wheat production in particular, you are talking about that exposure being significantly higher—up to 15 per cent and 12 per cent respectively.

The freight impact is another thing. The figures that I am talking about in terms of that indirect exposure being up to 45 per cent, that only takes into account direct freight exposure, which is the amount that the farmer is paying directly to the heavy vehicle transporter and which comes directly to their farm. It does not take into account that in many cases we are exporting our product much greater distances and that there are further indirect costs that are exposed to that fuel price.

As I said, it varies, depending on the different sectors, up to 45 per cent of grain producers' input costs are directly or indirectly exposed to that fuel and energy price. Obviously that is an enormous part of our cost base; and not just for working in agriculture, but also in living in regional Australia where most of our members are located. There are associated costs with transport there.

CHAIR—You mentioned in your opening statement, and just now again, the disproportionate impact on regional Australia. With the ETS, obviously the impact will be felt in regional Australia in particular as well. Do you have any views on how that could be better addressed or better mitigated?

Mr McElhone—Yes. Obviously there is a need for a broader body of work to look at this problem. We need to look at our taxation system to make sure that if there is a disproportionate impact, we can offset any of that disproportionate impact. We are talking about our current mechanism, such as tax zone rebates, which may be a mechanism to look at in terms of correcting any potential imbalance that may occur.

CHAIR—Should that happen before an ETS is introduced or should that work be done now so that we could do it all at the same time, or are you thinking that this is something that could happen down the track?

Mr McElhone—I think we definitely need to get onto it immediately in terms of preparing and making sure that we get the right framework in place. Tax zone rebates is an issue that the National Farmers Federation has championed for a number of years on a number of regional development issues to correct some of the imbalances that are already inherently present. Those discrepancies would be exacerbated by an emission trading scheme. We would encourage work being undertaken now, but it raises the importance of looking at such mechanisms. It might not just be a tax zone rebate mechanism, or it might be through other mechanisms, but we see the tax system as being one available mechanism. We have raised that through the Henry review. We believe that it is something that should be examined as a necessary item.

Senator HUTCHINS—Have you made a submission to the Henry review yet?

Mr McElhone—Yes, we have. That review has discussed the capacity for taxation to play a role in regional development. It has looked at options of taxation playing a role in making sure we have appropriate drought preparedness, things like environmental stewardship, and looking at how the taxation system can play a role. We have engaged in a very much a top-line level at this point, on advice from Treasury, and we will continue to be engaged in that process.

Senator HUTCHINS—We may find it of assistance, if it is possible, to have a copy of your submission to the Henry review.

Mr McElhone—Yes, most definitely.

CHAIR—Has the National Farmers Federation done any modelling or analysis in terms of the impact of energy cost increases and farm profitability, even though agriculture is not included in the ETS in the first instance?

Mr McElhone—Not directly through the National Farmers Federation, although there is work that is currently taking place that is being undertaken by the Centre for International Economics. The centre is looking at the direct on-farm impacts of an emissions trading scheme. I can also tell you that there has been some work undertaken by the Australian Farm Institute. That work shows some significant impacts. It looks at a range of different scenarios. It is talking about agriculture as either a covered or uncovered sector. It should be noted that even as an uncovered sector, profit margins could decrease by up to 10 per cent in some sectors.

It is a very important issue for us. If we are talking about a covered sector scenario with limited emissions-intensive trade exposure assistance compensation, we are talking about decreased profit margins of in excess of 100 per cent for some sectors, particularly some of the

livestock sectors in which, globally, we have a competitive advantage and are recognised as being low-intensity emitters of carbon.

CHAIR—When would you expect the work that is currently underway to come to fruition?

Mr McElhone—We would expect that from the CIE to be available within the next fortnight.

CHAIR—Is that something you might be able to make available to the committee?

Mr McElhone—Most definitely.

CHAIR—Thank you. Have you had a look specifically in terms of the impact on various sectors of farming, such as grain, meat production, irrigation and pastoral grazing? Are there any significant differences in impact across each of those sectors?

Mr McElhone—Enormous. In relation to the impact or the degree of impact changes, depending on what kind of scenarios we are looking at—such as agriculture covered or uncovered within an emissions trading scheme, what kind of emissions-intensive trade-exposed compensation might be available, and what sectors that is available for—it is fair to say that most of our cropping sectors are more exposed in an uncovered scenario. They are more exposed to the use of fuel in particular. It should also be said that our diary sector has a higher exposure to energy or electricity costs than have most other sectors within agriculture.

Proportionately, in terms of fuel and energy use on-farm, that is relatively lower in some of the livestock sectors. But if we are talking about a covered-sector scenario, where agriculture is covered, that proportionate impact swings around completely. It has more of an impact on those livestock sectors and less of an impact, or more of an additional impact, on the cropping sectors.

Senator HUTCHINS—Just on livestock, you are referring to the impending increase in the potential cost of diesel and all that in the ETS. You are not talking about agriculture being included in the scheme after 2015, are you? Is that what you are referring to?

Mr McElhone—I was referring to both, really. If you are talking about just the increasing cost of fuel and energy, we are talking about a greater impact for sectors such as the grains sector, the cropping sector, and also, as I mentioned, dairy.

Senator HUTCHINS—But a bit of that is already happening now in respect of an ETS, is it not?

Mr McElhone—It is.

Senator HUTCHINS—Fertiliser costs have gone up significantly.

Mr McElhone—Most definitely it has gone up significantly.

Senator HUTCHINS—Fuel has gone up and down, and it is down at the moment, but we have not even introduced an ETS.

Mr McElhone—Exactly, and it is significant. The kinds of proposals that we are talking about, while they might look at renewable energy, alternative transport fuels or improved technologies such as GM crops which can reduce your exposure to utilisation of fuel-based fertilisers, and while those kinds of technologies have a carbon benefit, they also provide that additional benefit of purely reducing your exposure to fuel and energy use. That comes on the back, as you correctly say, of significant increases in fuel, fertiliser, chemical costs, debt financing, and labour. We have to look at all those issues.

Senator HUTCHINS—You have probably already made a submission to the inquiry into fertiliser costs, I imagine.

Mr McElhone—We have. We presented in front of the Senate inquiry last Friday.

Senator HUTCHINS—What sort of planning have farmers got underway with the potential that they will be included in the scheme—you know, sheep and cattle farmers—after 2015? One of the things that strikes me from reading publications in relation to the sectors is how innovative the farming industry is. Already there are plenty of schemes underway. For example, where there is difficulty with water, you see in the land for that hectare they are able to use half the water. I am not using specific figures, but they are able to—

Mr McElhone—Do more with less?

Senator HUTCHINS—Yes, than they had the year before.

Mr McElhone—Yes. Senator, there has been an enormous body of work done regarding the issue of carbon and carbon emissions, and sequestration on-farm. I should add that sequestration capacity of the sector is one of the issues that is often ignored through storing carbon in soils, through forestation on farms, and a variety of different methods. It is a biological system, and that includes an emissions and sequestration profile. It should be said that agriculture, even before all the recent debate about emissions trading and carbon emissions reduction, has done an enormous amount already to reduce emissions on-farm.

We look at the adoption of minimum till practices. We look at the fact that Australian plant two million trees a year. There is a whole array. We are also talking about improved genetics from the livestock sector, improved breeding programs, reducing growth times, and therefore reducing emissions profiles. There has been enormous work, which also is linked to productivity gains, that have also delivered offset or carbon efforts. Obviously that body of work has escalated enormously in the last one or two years. That has happened particularly in relation to how and if agriculture can effectively engage within a domestic policy framework, underpinned by the emissions trading scheme, and do that in an appropriate and effective way. I think it is fair to say that there are an enormous number of hurdles, which are recognised openly by government, and which obstruct agriculture from being a covered sector at this point. That is reflected by the green paper recommendation that agriculture should not be covered until at least 2015, if at all.

To decide whether those hurdles can be overcome, the measuring, monitoring and verification issues, some of the international Kyoto accounting rules, the lack of commercially viable abatement opportunities, and managing the international competitiveness issue—a whole array

of issues—need to be examined. There is an enormous body of work happening throughout agriculture to currently look at whether we can overcome those and, indeed, whether there might be more appropriate mechanisms for us to get responses in this area.

Senator HUTCHINS—And ultimately, acceptance that there is climate change underway.

Mr McElhone—Yes. There is always debate within our ranks, but there is an acknowledgement that we are exposed to climatic pressures. Regardless of whether people believe it or not, there is an exposure that is happening. The policy debate has moved on, and we are engaging in that policy debate. We believe that we can make a positive difference provided that we have the right policy framework in place.

Senator FIELDING—On the topic of the farming sector or agriculture, when it is covered, and if so, what is covered, there is the statement that cows put out more greenhouse gases than trucks in Australia. In other words, if you look at the CO2 implications, cows put out more than trucks in Australia. Where is that in your mind as far as a tax or a fart tax and all the sort of things that are being stated are concerned? Are you worried about this sort of stuff?

Mr McElhone—We are incredibly concerned about a situation where the only way that we can meet our liabilities is by reducing production, and in doing so, reducing our efficiencies and effectiveness and indeed our international competitiveness. We realise we have to make a contribution and we are working proactively to do that, but we are strongly of the view that it should not result in jeopardy by having, as the only option, reducing production.

We should also remember in terms of the emissions profile of Australian agriculture and Australian livestock production that, as per unit of production, we are a lower-intensity emitter than are the majority of our OECD competitors. There is the real risk that if we shut down or limit our opportunities here with our domestic industry, then the global consumer will purchase their livestock needs from elsewhere.

We should also remember as well that the only other country in the world that is entertaining having agriculture as a covered sector within an emissions trading scheme is New Zealand, and even there, there is a lot of debate about whether that is an appropriate mechanism for them as well.

Senator FIELDING—You are reassured that you do not have to worry about these methane emissions until at least 2015. Is that correct? Is that your understanding?

Mr McElhone—No, most definitely not. It has been clearly stated in the green paper that agriculture emissions will be monitored even in the lead-up to 2015, and there will be a requirement or an expectation that agriculture is making an equitable contribution. We look at that and say, okay, that is fine; we are already doing things and taking measures to make sure that we make a further contribution to reducing greenhouse gas emissions in the atmosphere. However, we must ensure that there is an appropriate market signal to get farmers to act in the appropriate way.

Senator FIELDING—Certainly, I personally have been aware for years that the CSIRO, which will give evidence next, has been working on this issue for a long, long time about feed stocks and all sorts of things.

Mr McElhone—Yes.

Senator FIELDING—I am not saying we have to do anything by 2015, but what I am saying is that there is no impact directly as far as costs, other than research and development. Is that what you are saying?

Mr McElhone—In terms of costs?

Senator FIELDING—Yes.

Mr McElhone—No, far from it.

Senator FIELDING—In regards to the methane area.

Mr McElhone—In regards to the methane area—

Senator FIELDING—That is what I am trying to get at.

Mr McElhone—Until the agricultural sector is required to purchase permits as a directly covered sector, then issues such as methane from livestock or nitrous oxide emissions from fertiliser will not be covered.

CHAIR—Just as a follow-up to Senator Fielding's questions, if we have a lower intensity than our competitors, is it not important to get an international agreement in place before—

Mr McElhone—Completely. Before we start moving?

CHAIR—Yes.

Mr McElhone—We believe we can still start the process in making a contribution domestically, but the question is: what is an appropriate policy mechanism to drive that change?

CHAIR—Do you mean: what is the appropriate trajectory?

Mr McElhone—Appropriate trajectory and appropriate policy mechanism as well for agriculture. We are talking about 150,000 farmers out there. They all need to be sent an appropriate market signal, and one that is not just about, 'You guys must reduce your production and that is the only way that you can meet your liabilities.'

CHAIR—But you have been given some relief, possibly up to 2015. Let us say in 2015 you are in, how important is it to have an international agreement in place by the time agriculture will be covered, if it is to be covered?

Mr McElhone—That would be a highly desirable outcome for the agriculture sector.

CHAIR—Are you sure?

Mr McElhone—Obviously, it all depends on the framework which is determined to make sure that there is an equitable outcome for any sector, not just agriculture. That has to take into account whether there is or is not an international framework in place.

Senator FIELDING—But I assume that our competitiveness position in the livestock area would be, I would think, significantly impacted if we basically went alone with a fart or a burp tax, if you want to put it in those terms which is what was relayed in New Zealand—at least that is the conjecture there. That would be a concern, do you think, or not?

Mr McElhone—An enormous concern.

Senator BUSHBY—You mentioned that there was some modelling being undertaken of the impact of the ETS on the farm sector.

Mr McElhone—Yes.

Senator BUSHBY—Who was that by again?

Mr McElhone—By the Centre for International Economics.

Senator BUSHBY—Who has commissioned that?

Mr McElhone—RIRDC.

Senator BUSHBY—Pardon?

Mr McElhone—The Rural Industries Research and Development Corporation.

Senator BUSHBY—When are the results from that expected?

Mr McElhone—We expect them in the next fortnight. My understanding is that a draft is now available, but they are currently working through—

Senator BUSHBY—Will that be publicly available when it is?

Mr McElhone—That will be publicly available.

Senator BUSHBY—Thank you. You also mentioned that the rural industry in Australia is effectively a price taker—

Mr McElhone—Yes.

Senator BUSHBY—And does not have the ability to pass on costs. If it is a covered sector or uncovered, and the ETS imposes additional costs onto the farm sector, which they are not able to pass on, what are the consequences going to be?

Mr McElhone—Decreased profit margins for the Australian farmers.

Senator BUSHBY—Do they have the room to take decreased profit margins on the whole? What can they cope with?

Mr McElhone—That will be a case-by-case basis, but as I mentioned, we are talking about some sectors with decreased profit margins of in excess of 100 per cent. That means they are talking about going into negative figures.

Senator BUSHBY—What would farmers in general have to do in response to that? What are their options?

Mr McElhone—Reduce production, reduce productivity, and reduce efficiency. We are also examining what realistic opportunities there are to plant trees and explore other sequestration opportunities on-farm. We must remember that the international carbon accounting rules as they stand today are completely inappropriate for the acknowledgement of soil carbon. For instance, within Australia, the issues that farmers can control on-farm—things like minimum till practices, things like feed supplementation for their livestock, and things they can control particularly in relation to soil carbon—are linked in with things that they cannot control, such as drought and bush fire, all of which have an emissions outcome.

Senator BUSHBY—Especially bush fires.

Mr McElhone—While it is linked in, they have no control over that, but they would be held accountable and liable for those issues, if they were included. There was a real limitation in terms of farmers' ability to engage under those international carbon accounting rules, particularly around soil carbon, which leaves what we believe is a concerning bias towards forestation as the only mechanism to address the carbon challenge.

CHAIR—Just on that point, in the Treasury's *Australia's low pollution future: the economics of climate change mitigation* document, they talk about one scenario where you have around 40 million hectares of fuel.

Mr McElhone—Forty-five million, yes.

CHAIR—Yes, 45 million hectares of new forestry plantations. Can you just quickly comment to us what your views are on that in terms of food security, et cetera?

Mr McElhone—Yes. First of all I think it should be said that the Treasury outcome, in terms of potential for 45 million hectares being transferred to plantation forests, openly acknowledges that that does not take into account the environmental appropriateness of planting those trees. What are the impacts on water? What are the impacts on biodiversity? They are openly acknowledging that that is not taken into account in those numbers. They also acknowledge that that would be predominantly in Queensland and New South Wales.

Obviously, when we are talking about agricultural production in those areas, that would have a significant impact. We have raised some issues through government about the Treasury modelling because, even in saying that in terms of additional land put aside for plantation forestry, it does make the comment that in the longer term agricultural production or output will significantly increase, despite that fact. So we have some question marks about how that would be the case, bearing in mind that without a doubt, under that scenario there would be a portion of productive agricultural land that would be transferred into plantation forestry.

CHAIR—Has the National Farmers Federation reviewed the model as it is has been introduced in Canada, such as the baseline and credit approach versus the cap and trade approach that is being proposed here? What is your view in terms of comparative efficiencies of the two systems?

Mr McElhone—I think it is fair to say that we are keen to examine options looking at market-based incentives for farmers to act positively in the area of carbon reduction. In terms of some of the issues or the mechanisms that are being utilised in places like Canada, where they are looking at those market-based incentives, we want to examine those opportunities much more, bearing in mind that, as it stands today, an emissions trading scheme, as is acknowledged by the government, is a completely inappropriate mechanism for Australian agriculture. We need to look at those alternative mechanisms.

CHAIR—So you are looking, but you do not have a view yet? Is that it?

Mr McElhone—Obviously we would like that decision to be made as soon as possible. We would be very positive about moving down a track like that, but we also recognise that we need to engage in this process of looking at the appropriateness of the ETS for agriculture.

CHAIR—My final question is this: do you see any significant shifts in the kinds of food production we will see in Australia as a result of changes to energy prices? What is your assessment of the impact of this in terms of global food security?

Mr McElhone—We are already getting a bit of a taste for what kind of impacts we are going to be seeing in the longer term. As you mentioned, Senator, we have already seen a significant cost impact in some of the key elements which will also have increased effect with an emissions trading scheme, such as the cost of fuel and the cost of fertiliser. That has put farming systems globally under an enormous amount of stress. As you mentioned, in a time of global food security problems, that has challenged farmers to be able to maintain their productivity growth levels at a time when it is needed most, but without using as much fertiliser.

We have to acknowledge as well that if you look at productivity growths globally for agriculture, it is plateauing out. We have had a significantly higher productivity. Outside the information technology sector, we have the highest productivity growth over the last 30 years by a significant margin. That productivity growth level has been dissipating in recent times. We are seeing that the positive effects of the green revolution of the seventies are dissipating now. Where is the next line of productivity growth benefits to come from? We want to make sure that we are not jeopardising that through any domestic policies that might be imposed in other areas.

Senator BUSHBY—Mr McElhone, as I understand what you have been saying today, essentially you believe that there is a lot that the farming industry can do to contribute towards the reduction of carbon pollution, but that to achieve that, there needs to be a degree of sophistication in the mechanisms that are applied to the rural industry as part of the Carbon Pollution Reduction Scheme, and a blanket approach of a generic ETS may not achieve the outcomes that could be achieved. Is that really what you are saying?

Mr McElhone—That is correct.

Senator BUSHBY—The government needs to take a very careful look at how it approaches it, basically consult, listen to what it is told about the best way of achieving, and take action based on what it is told or on the advice it receives.

Mr McElhone—That is correct.

CHAIR—Thank you very much for your contribution to the committee.

Mr McElhone—Thanks very much.

[9.06 am]

GRAHAM, Mr Paul Wayne, Theme Leader, Energy Futures, Commonwealth Scientific and Industrial Research Organisation

SCHANDL, Dr Heinz, Group Leader and Senior Researcher, Commonwealth Scientific and Industrial Research Organisation Sustainable Ecosystems

Evidence from Mr Graham was taken via teleconference—

CHAIR—I welcome Mr Graham, via teleconference, and Dr Schandl from the CSIRO. I invite you to make a brief opening statement and then the committee will ask some questions.

Mr Graham—I will make the opening statement. I just want to briefly go over the CSIRO's submission. We focused on four areas where we thought we could have an input to this committee. The first one was that we completed some research recently on the outlook for petroleum product prices. We have also made some submissions about the price and employment impacts of emissions trading, on the expected role of alternative fuels, and the outlook for oil and gas exploration and production.

In relation to the outlook for petroleum and oil prices, our submission notes the significant uncertainty in the outlook for oil. Although the high oil prices of recent times should be high enough to encourage significant investment in new supply, our submission acknowledges that there is no guarantee that that supply will be forthcoming. If it is not, we will be entering a time in those circumstances where the price of petroleum oil products could increase significantly. If that occurs, those impacts will be felt the hardest by regional and low income groups, and indeed will impact upon the growth rate of the Australian economy.

In relation to carbon prices, our submission notes that relative to the uncertainty in the oil price, the potential impact of carbon pricing on transport prices is relatively modest. Each $4 per tonne of carbon tonne price only adds a cent per litre to the petrol price, and even with the recent projections of carbon prices by the Treasury and other groups, it appears that the recent increases in the oil price will far exceed anything that we will see even in the next few decades from the impact of the carbon price.

In relation to the future outlook for the role of alternative fuels, the CSIRO generally sees diesel, electricity, liquefied petroleum gas and natural gas as having an increased role in the next decade because those alternative fuels are the only ones that have a significant existing infrastructure, although in some cases it will require some expansion of that infrastructure. Looking further ahead beyond 2020 or so, we can expect to have available some advanced biofuels which are less dependent on food as their feed stock, and we can also expect to see the availability of synthetic fuels produced from fossil fuels. I am talking about natural gas and coal. But both of those new production processes, the advanced biofuels and the synthetic fuels, unlike the other alternative fuels I mentioned, will require substantial investment in new production facilities to reach any scale.

The final comment I would make is in relation to our submission on oil and gas exploration and production. It simply notes that the CSIRO is working in a number of areas here. First of all we are trying to improve production from existing basins. We are trying to improve exploration success. Finally, we are trying to enable the use of most conventional gas resources from coal-seam methane and another source, which we call tight gas. That concludes the opening discussion.

CHAIR—Thank you very much, Mr Graham. You mention in your submission that the impact on employment of a rapid move to sustainability, as you call it, through an ETS will be minimal. Can you talk us through that? You also talk about recent research that demonstrates that. Can you just talk us through that—the basis for your conclusions and the sorts of modelling you might be aware of that indicates that?

Mr Graham—Can I pass that one to you, Heinz?

Dr Schandl—Right. I might take up this question and this is why I came here, actually.

CHAIR—Excellent. I should have known that.

Dr Schandl—I was involved in this research. We had the opportunity a couple of months to report to a parliamentary commission on education and training already on this topic. What we did in this area was flag whether there is a national problem in regard to skills and employment when an emissions trading scheme is introduced and becomes effective. The first question we asked was: would there be an effect on employment, either negative or positive? We tested this with two very different models, but both models are very accepted ones. The first one is the CGE model, which is widely used in all kinds of assessments.

We adapted the Monash University CGE model to be able to capture all the specialities that would occur in the energy sector and in those activities in the economy which are more exposed to the trading scheme and which are more exposed to export and which are more relevant in regard to emissions. So when we did this adaptation, we looked at future employment numbers, and the result was that the introduction of carbon trading overall, if you take a systemic view of the overall economy, would be marginal. Jobs would grow in 2020 by additionally 2.5 to 3.3 million new workers. Also in those sectors which we would identify as the more important sectors in terms of being more resource intensive, like the mining and energy sector, transport and construction, also in those sectors employment would grow, especially in transport and construction.

We then looked at the technology-based physical economy model, the CSIRO in-house Australian stocks and flow model, which starts from very different assumptions. It is not about money but about flows of resources and stocks of resources and flows and stocks of labour force and employment. Again, there was a very similar outcome with regard to employment numbers in the near future, in 2020, and in the more far-away future, 2050. What the modelling told us was that actually the effect on employment would be marginal. Employment would grow under a new environment of a carbon trading scheme. I think what I should mention is the speciality of our approach whereby we do not look specifically at the more exposed sectors; we look at the overall economy and allow for all substitutions that may occur in the economy. Sorry for being a bit lengthy on that.

CHAIR—No, that is okay. You mention the impact overall. Have you looked at these on a state-by-state basis? Are there some states that are better off than others? Are there some states that are worse off than others?

Dr Schandl—No, actually we did not, although we would have liked to. This was a very small project. The consultancy, which we did with minimal effort, looked at the national economy. The reason why we could do that very quickly was because the CGE model had already been established and in-house capacity of stocks and flows modelling had been established over 10 years of research. We had all the models ready for the national assessment. For a state-by-state assessment, we would need another wave of research.

CHAIR—I guess that national assessments miss out on some of the state-by-state specificity. According to the Treasury modelling and the document *Australia's low pollution future: the economics of climate change mitigation*, Queensland and Western Australia will be the most affected by the introduction of a Carbon Pollution Reduction Scheme. We had evidence from the WA Treasury on Monday in Perth that Western Australia has the most energy-intensive and trade-exposed economy and is feeling particularly exposed. I hear you mention mining and energy related sectors that would experience increases in employment.

I am interested in understanding the assumptions that lead you to that, particularly as we have Woodside and Chevron on record in Western Australia saying that there will be projects that will not come on stream, or that are less likely to come on stream, as a result of this. We have Alcoa that made an announcement a week ago about not proceeding with an expansion at Wagerup, and pointing to wanting to assess the impact of an ETS before it will make a final decision. I am trying to understand the underlying assumptions that lead you to your conclusions.

Dr Schandl—When we did our report, that was before the green paper was released and before the economic modelling of the government had been released.

CHAIR—Okay.

Dr Schandl—In order to appropriately deal with those more exposed sectors, we insulated them in our modelling for a period of 15 years, after which we expected that these sectors would be treated like all other economic activities. So it might be that in our modelling the effect of this insulation is a bit too sharp, but on the other hand what we can see in the national model is that there would occur enough substitutions effects, at least as far as we can see from our modelling, whereby activities that would not happen under new circumstances, or that would change considerably, would be matched by new activities that would either appear in the same sectors—like transitions within the energy sector—or activities that would appear in other sectors, such as in service.

CHAIR—Essentially, what you have just said is that your modelling or your research was conducted before the green paper and before the release of the Treasurer's economic modelling.

Dr Schandl—Yes.

CHAIR—So I guess you might want to have another look at it. What assumptions have you made when you came to conclusions in terms of the speed with which other countries around the world might get involved in action on climate change?

Dr Schandl—That was not a question in our research, so I cannot really respond.

CHAIR—Yes, okay.

Senator HUTCHINS—Dr Schandl, you would agree with the Western Australian Treasury assessment? My notes tell me that they said, when asked about whether the economic impacts of the introduction of an ETS, that they would be quite small over a number of years. Is that what both your models suggested?

Dr Schandl—The overall result is employment under an emissions trading scheme would not differ much from employment without such a scheme over at least the next 12 to 15 years. We did the modelling to 2020 and there is not much difference. The dominant reading for the introduction of an emissions trading scheme or of other environmental measures was that they would destroy employment, and that view was held for a long time. It is still prevalent in the heads of many people. But that did not come out of our modelling. We used two models in parallel to be more secure in being able to say this.

Senator HUTCHINS—My next question is on a different area, not the model. As you would imagine in an inquiry dealing with fuel and energy and with the introduction of carbon and emission trading schemes and all that, we have had people come before us who represent solar energy, wind power, wave power and biofuels. We have also had a number of social engineers appear before us who want to whack on high fuel prices to change people's behaviour. This is a question that you may wish to take on notice. With the introduction of the alternatives I have just mentioned, how realistic are these alternative energy sources, such as solar, waves, wind, and biofuels? Realistically, are they achievable within our lifetime as an alternative to the current fuel we use?

Dr Schandl—I can start into this and maybe Paul might come in too, and then we might take part of the question on notice.

Senator HUTCHINS—That is fine.

Dr Schandl—When you ask this question, what occurs in my mind is first of all the question: what are you actually asking? Are we talking about technical feasibility, the economic viability of such things, the ability of a social system, or an economy if you wish, to change in these directions, or the ability of the governing structures to provide enabling environments for this to become more likely to happen? There is a large set of questions.

Senator HUTCHINS—Mankind can adapt and has adapted quite rapidly, even despite people predicting we could not. When I grew up we were being told that we would not have enough food to feed the growing world population and now we have butter mountains. We were told that China and India would not be able to be fed because there were too many people.

Dr Schandl—Yes, exactly.

Senator HUTCHINS—We have managed to find a way to do that, economically as well as technically.

Dr Schandl—If I quickly may report on an example from Europe, there is this idea that innovation—and I guess it is an idea we would share—would occur quasi naturally within society and within the economy, but that, because there is often a dominant structure or a dominant way of how you do things, some of the innovations cannot survive or cannot pass through. In order to achieve change, governments like the government of the Netherlands or some Scandinavian governments purposely create enabling environments for such innovations to survive at a time when they are not viable or not feasible to the extent they should be in order to challenge the dominant way about how things are done. That is a good example. We can trust that innovation will occur but we can do something actively to further support it.

Senator HUTCHINS—It may be that the remainder of my question could be taken on notice, or the specifics of it, or perhaps you would like to comment. All our farmers have been quite innovative because they have to be.

Dr Schandl—Yes.

Senator HUTCHINS—They are changing and they have been changing rapidly for some years because they realised that change needed to occur. They have been able to do it economically. I do not know if your colleague wants to make any comments at all.

Mr Graham—Yes. If you look at the National Electricity Market's website, they discuss their power system planning. They show what power stations are, if you like, at different planning stages that will come on stream in Australia. You will see that the majority of those power stations are of natural gas, open cycle or combined cycle power plants, or wind power. That reflects the fact that they are the two most mature lower emission technologies available. However, there are working models of just about everything else you discuss in your question. We know there are solar PV systems that work. They are using tidal power in France. There are wave power systems.

But the question is that we know we are going to need much lower emission technologies in the future. What we will see in the next 10 years is a period when people are attempting to demonstrate some of the newer technologies on a much larger scale and at lower cost. The question of feasibility is not such a difficult one. It is more that technology developers and investors would, if possible, like to be able to deploy those technologies at lower cost.

Senator FIELDING—A constant question in the minds of a lot of people is that fuel for homes and business is an issue, but fuel for motor vehicles is always prominent in people's minds more so. The issue being bandied around, and that is part of the other Senators' questions, is that we are going to run out of oil soon. By putting the taxes up even higher we burn the platform and get people off, or wean them off, the oil addiction that they have, thereby forcing people into horses and buggies, or something else, in the meantime. How serious is the issue about running out of oil? Is it that oil will be harder to find and that the cost of oil will increase? In other words, there is plenty of oil around; it is just that the cost of getting it and extracting it and distributing it will be high. Can you help me with that issue? People come to me and say, 'We've run out of oil.' Are we going to run out of oil?

Mr Graham—It is not the case that we will run out of oil. The people who talk about peak oil are not talking about running out of oil either. The idea is though, essentially, that whenever you tap an oilfield, the pressure in that field is declining from day one, so you have to keep tapping more. You have to do things like using different techniques for enhanced oil production to try to keep the pressure higher, such as putting in more wells, and so forth. But eventually, in order to fight this declining pressure problem you have to keep bringing on new oilfields.

What happens is that, as we go forward in time, we have to bring on so many oil fields that we can no longer guarantee that we can continue to meet growth and demand. So it is not the same as running out of oil. It is more of a question of whether we can keep up the global pace of investment in oil production facilities. What the International Energy Agency, which released a report last week, said is that it is possible that we will be able to do that, but it is very challenging. What most global oil market analysts will do is have a bet both ways and say that the investment may be forthcoming, but essentially there is no guarantee. In essence, we do not know. We just have to simply acknowledge that there is a risk that in the future global oil production may not keep pace with demands. That means, not that we have run out of oil, but that it could become costly. That is the essential problem. That is the question for government: how do we manage that risk?

Senator FIELDING—That has myth-busted one, and now for myth-buster two. If Australia had had enough production of, say, a biofuel—let us take ethanol—and let say we did have enough biofuel being produced in Australia not to export, but enough to handle 50 per cent of our need of fuels for cars in Australia, do you see the price at the pump going down? I will preface this by saying that I was in Brazil and I went to about seven or eight garages. They are self-sufficient in ethanol. They are self-sufficient in oil. The price at the pump is identical for both, given the efficiency differences between the two energy substances. In other words, the price of energy, or fuel for cars, is set basically and in essence—and I am happy to be corrected—by OPEC, or a cartel. Everything else that comes into it, such as the production of an alternative and acceptable fuel for cars, is not sold by the people producing it at the lowest price, but for the maximum price, which is the equivalent of the oil price as energy to fuel cars. What are your thoughts on that?

Mr Graham—I think you are basically right. If you have a product that you have made available and which is highly tradable in the global market, that product will cost whatever is the global price of that product. In other words, the price will be set by the larger oil consuming and producing countries overseas. Maybe in that case we would become an ethanol exporter, much as is Brazil.

Senator FIELDING—The issue is that a lot of people come to me and say, 'Look, if we could only hold hands together and get into biofuels, we will be saved from higher petrol prices.' I am not so sure that is totally true. My next question is: where is hydrogen fuel for cars at? Where do you think that will be? When do you think that may come into the realms of possibility? A lot of people have said to me that basically everything else is a holding pattern until we get to hydrogen fuel for cars.

Mr Graham—There are several issues with hydrogen. We have technology today that can produce hydrogen. The most basic one that we are probably all aware of is that you can use electrolysis to convert water into hydrogen-oxygen. So you can make hydrogen. I believe that

the cost of hydrogen varies depending on the electricity. It might be something like—I will not hazard a guess, but I think the cheapest way of making hydrogen is by re-forming natural gas. You essentially convert methane into hydrogen. That was around $30 a gigajoule, but it may have increased recently with the increase in gas prices. That is not an incredibly expensive fuel.

The issue with hydrogen is actually more to do with the vehicle. You have to put it in a fuel cell vehicle. I believe you can put in an internal combustion vehicle, but the ultimate goal is to put it in a fuel cell vehicle. There is no real fuel cell vehicle on the market that you can buy right now for a commercial price. Fuel cell vehicles are being leased by some companies in the US to get consumers used to that idea, but those leasing prices do not, I believe, reflect costs. Essentially you have a big question mark on what a fuel cell vehicle will cost, but I believe they have solved some problems around being able to store enough. I think the fuel cell vehicles that you can rent have a range of something like 400 kilometres. If the price is right, I believe people will buy those, but there is no clear message yet on what a fuel cell vehicle will cost.

Then there is the question of fuelling stations. Does everyone have an electrolysis kit sitting in their garage, or will someone have to build a whole lot of hydrogen refuelling stations? That is another issue. One of the competing technologies for hydrogen fuel cells is that, instead of having a fuel cell driving an electric vehicle, you could just have batteries driving an electric vehicle. Battery electric vehicles have been announced by several car makers to be available within around three or four years as commercially available vehicles. That seemed to be indicating that a battery driven electric vehicle may arrive before a hydrogen fuel cell driven electric vehicle.

Senator BUSHBY—I thank CSIRO for attending today. Just coming back to the issue of renewable energy to provide electricity, are any of the current renewables at the stage of technological development at which they are capable of providing baseload power at this point in time?

Mr Graham—I guess the big hope for baseload large-scale renewable power is hot fractured rocks, or geothermal hot fractured rocks. If that works, in theory, that can provide around-the-clock power. The issue is that at the present time that has not been commercially demonstrated. We cannot say right now that that is going to be available. The other options, such as wind, solar and wave power, are somewhat intermittent. I believe that tidal power has some ability, if you construct the inlets and outlets in a certain way, and that it can achieve something near around-the-clock power. However, there is only one really large resource, and that is up in northern Western Australia, and I am not sure about the viability of that.

CHAIR—Just on that point, has the CSIRO done any recent work to assess the viability of a tidal project in the north of Western Australia?

Mr Graham—I am not aware that we have any ongoing research, but I might have to take that on notice.

CHAIR—I would very much appreciate if you could have a very thorough look at whatever work you have done. It is a very popular project in Western Australia.

Mr Graham—I should add to my earlier answer that there are of course storage technologies that could augment solar and wind technologies to make them more similar to baseload power. However, with nearly all of those technologies, we could not say exactly how well they will operate in the future. They are all at different stages of development.

Senator BUSHBY—We had some evidence yesterday from some gentlemen representing the WA Sustainable Energy Association that solar power was being used in California to provide baseload power. Are you aware of that? Do you have any views on that comment?

Mr Graham—I am aware that solar power, particularly solar thermal rather than the photoelectric version, is a relatively simple method of storing. You are not storing electricity; essentially you are storing heat, and heat is easier to store than is storing electricity. I understand that it is much closer than is anything else to being able to be a genuine low-cost storage option for solar thermal power, but I was not aware that they had already achieved that.

Senator BUSHBY—If you would not mind taking that on notice, I would appreciate the CSIRO's advice on that matter. I would be interested in knowing whether that is in fact the case. I note also on alternative fuels that you state that the extent of the use of some of the advanced biofuels that are coming will depend on the price of fuel and the government greenhouse gas emission targets at that time. Are you suggesting that even these new advanced biofuels that may be available after 2020 will not competitive on price in their own right and will require some artificially higher price or requirement that a certain percentage would have to be used before they would be widely available?

Mr Graham—The future cost of these technologies is really too uncertain to second-guess at this point. The point I was actually making in regard to how the carbon price interacts with some of the future fuels was more around the synthetic fuels, such as gas and coal-to-liquid fuels, which have a greenhouse gas signature. Therefore, if the carbon price is very high, that could start to rule out synthetic fuels, particularly coal-to-liquid fuels, which even with capture would be more emission-intensive than regular petrol and diesel. But in relation to biofuels, a carbon price would probably only benefit those fuels. If you think about transport fuels in general, there are only two big ways of reducing emissions from fuels and that is either by biofuels or low emission electricity. Generally I think a carbon price would be of benefit to the biofuel industry in competing with the other fuel.

Senator BUSHBY—In either your modelling or your other research or considerations that you have carried out, have you examined the efficiency of Australian industry or any aspects of Australian industry compared with similar industries in other nations in terms of their carbon outputs per unit?

Mr Graham—No, we have not done that.

Senator BUSHBY—For example, I have seen evidence that the carbon emissions per tonne of aluminium produced in Australia is about one-seventh the emissions for a similar output in China. That type of analysis has not been conducted or considered by the CSIRO in the context of its modelling?

Mr Graham—I do not believe so, but it is possible. We have 6,000 people here, so you never know. I guess the basic observation there would be that, because we have a lot of coal in our electricity supply in Australia, a lot of our manufacturing industries will be more emission intensive than are overseas countries that do not have as much coal in their power mix.

Senator BUSHBY—That is an interesting comment because the evidence I have seen suggests that a lot of our industries, not all of them, are quite carbon-emission efficient compared with particularly some of the developed nations that are growing rapidly, like China and India. I was wondering whether the modelling you have conducted, which looked at employment effects, had taken into account carbon leakage effects as well in terms of the overall desirability of achieving the objectives of the ETS?

Mr Graham—No, we have not. I would again hazard another guess and say that both China and India are both heavy coal users like Australia. Perhaps we have more modern facilities here. What you are saying sounds right, but I could not confirm that with any existing CSIRO research.

Senator BUSHBY—Thank you.

CHAIR—Has the CSIRO done any work to assess the impact in terms of global emissions of the proposed Carbon Pollution Reduction Scheme as opposed to the impact on domestic emissions?

Mr Graham—We do not have a model of the global economy from which we can put in a carbon price and see what that does to global emissions. So, no, we have not done that type of research.

CHAIR—Are you aware of any research that has assessed the impacts of a proposed Carbon Pollution Reduction Scheme in terms of reducing global emissions as opposed to domestic emissions only?

Mr Graham—That should be in the Treasury modelling. The Treasury modelling employed a model of the global economy. If it is not published in the report, then they would certainly have those modelling results.

CHAIR—Okay. I will ask Treasury some questions about that. Your submission mentions carbon capture and storage. Can you tell us where that technology is at and how far off it is in terms of being commercially viable and available, if at all?

Mr Graham—There is obviously a whole bunch of different aspects to carbon capture and storage. There are the capture technologies themselves and then there are the pipelines and having somewhere to store it. My general feeling from my colleagues is that we are understanding, and we are actually already demonstrating at several sites, the capture of CO2 from power station flue gases, both in brown and black coal power plants. But there is a lack of information in Australia on suitable sequestration sites, and we really cannot say how long it will take the industry to discover those suitable sites.

In terms of the capture technologies, the issue there is the need to demonstrate that on a large scale. Again the uncertainty there is around who is going to put up the money for that to occur. There is a lot of uncertainty around when that will happen as well. I guess the planning in the industry is to bring all of this together in around 2020 though. That is the general aim.

CHAIR—There is a general aim, but at this stage we do not know if, when, and where that technology will be able to work commercially.

Mr Graham—No, we cannot know that right now.

CHAIR—What sources of energy does CSIRO feel would be most competitive in the short and medium term, absent major breakthroughs in technology, to address global emissions?

Mr Graham—As I mentioned in an earlier answer, the two most mature low-emission technologies are switching to high-efficiency natural gas power stations, because natural gas has a lower carbon content than has coal, and combined cycle gas plants can achieve a higher efficiency. The other technology is wind because of its maturity relative to the other renewables. But I think the dominance of those two technologies will wane at some point during this next decade as we see other technologies starting to come down their cost curves and compete. I guess I should mention that wind is not necessarily appropriate in all areas of Australia. The wind resource is strongest down in the south and the west, and other parts of Australia will be looking to other renewables, such as solar thermal, to begin their path towards low-emission electricity.

CHAIR—Just finally, perhaps on notice—I do not expect you to answer this now—could you perhaps provide us with a list of projects that the CSIRO is currently undertaking in the area of energy research and sustainability more generally? With that, I thank the CSIRO for your assistance to the committee today.

Mr Graham—Thank you.

[9.48 am]

DWYER, Mr Damian, Director, Energy Markets and Climate Change, Australian Petroleum Production and Exploration Association Ltd

McCALLUM, Mr Mark Brian, Deputy Chief Executive, Policy and External Relations, Australian Petroleum Production and Exploration Association Ltd

ROBINSON, Ms Belinda, Chief Executive, Australian Petroleum Production and Exploration Association Ltd

CHAIR—I welcome Ms Robinson, Mr McCallum and Mr Dwyer from the Australian Petroleum Production and Exploration Association. I invite you to make a brief opening statement and then the committee will ask you some questions.

Ms Robinson—Thank you very much. We appreciate the opportunity very much to appear before the committee in which is a very significant issue, both currently and certainly for the long-term economic and energy security of the country. APPEA is the peak national body representing the petroleum, exploration, development and production industry in Australia. As you know, APPEA has made a submission and a supplementary submission to this inquiry and we welcome this committee's interest in this critical matter of national significance.

Our submission focused on items (c) to (h) of your terms of reference, namely: the operation of the domestic petroleum, diesel and gas markets; the impact of an emissions trading scheme on the fuel and energy industry; the role of state government regulatory powers; taxation arrangements; the domestic oil and gas exploration and production industry. I am aware that the particular focus of today's public hearing is on terms of reference (d), the impact of an emissions trading scheme on the fuel and energy industry, so that is where we will focus most of our comments.

But before doing so, it is important to understand the role of the upstream oil and gas industry in Australia. Reliable, secure, and affordable-priced energy secures not only our everyday lives, but also that of our industry in Australia and our communities. Energy is not just a commodity; it is actually a commodity that underpins all other commodities. Within that framework, oil and gas play a key role in meeting many of our energy needs.

At present, petroleum, oil and gas account for more than 50 per cent of Australia's primary energy needs, and this is expected to increase in the foreseeable future. Just as importantly, the industry creates significant wealth for the country, including through the employment of many Australians, through the revenue collections of governments, and through generating valuable export revenue for the Australian economy. A strong, vibrant and growing oil and gas sector is inextricably linked to the ongoing health, not only to Australia's natural environment but also to the Australian economy.

Together with government and non-government stakeholders, the industry has developed a national industry strategy with the aim of maximising the potential contribution that the

upstream oil and gas sector can make to the wellbeing of Australia and Australians. This strategic leaders report was released in April 2007 and had the title *Platform for prosperity: Australian upstream oil and gas industry strategy.* As well as being a very useful resource document, it also provides the underpinning of the industry's advocacy at the highest and most strategic level. It articulates where the industry, in consultation with government officials, feels it can be over the next decade, and what it will take to get there so that the benefits to Australia can be maximised.

The range of targets and options were identified as part of the strategy, a number of which form the basis of the issues raised in our submission. The key targets jointly agreed are as follows: that in the decade to 2017—and at the moment we say 2017 to 2020—oil and condensate production, as a proportion of liquid fuels consumption, on average, is maintained at the 2006 level of 50 per cent or better; that LNG, which is liquid natural gas, production capacity increases from 15.5 million tonnes a year in 2008 to at least 50 to 60 million tonnes a year; that natural gas, used for industrial purposes and as a competitive feed stock for resource processing, doubles; and that in a competitive electricity market, 70 per cent of all new electricity generation capacity installed in Australia is gas fired.

The development of Australia's oil and gas resources generates significant economic benefits. Enhancements to both our regulatory and fiscal parameters are important elements in aiding the development of the nation's petroleum resources. In addition, ensuring that our workforce is capable of meeting both the ever-increasing technical and project challenges is also critical. The oil and gas industry is arguably one of Australia's most capital intensive sectors with tens of billions of dollars of capital needing to be spent in the next two decades if frontier exploration is to expand and new oil and gas projects are to be developed. Establishing and maintaining an economic framework that is conducive to investments of this magnitude is critical if the industry is to deliver the potential economic gains to Australia. We have touched on these and a range of other issues associated with the future of the sector in our submission, and certainly would be happy to answer any questions.

The final details of Australia's response to greenhouse issues also will be important in shaping future investment decisions in the sector. I would like to conclude my remarks with some comments on the future of Australia's greenhouse response and its implications for the upstream oil and gas industry, particularly the future of Australia's natural gas industry. There is a global environmental benefit in encouraging the expansion of the natural gas industry, including cleaner global contributors, like Australian liquid natural gas. Natural gas produces between 30 and 70 per cent fewer greenhouse gas emissions compared to coal when used in electricity generation, and, under an efficient carbon pricing regime, could be expected to increase its importance in Australia's domestic energy mix and play a key role in Australia's future export growth.

It is important that the proposed domestic emissions trading scheme delivers outcomes consistent with those that could be expected under a global carbon constraint. With this in mind, Australia is sitting on a magnificent national asset, with 110 years of proven and probable reserves of gas, or probably more likely 200 to 300 years of proven, probable and possible reserves of gas. Unrealised, those resources matter little; but these resources have the potential to make a substantial and material difference to the efforts of the world—not just our country, but our region and the world—to reduce greenhouse gas emissions, and to make a very substantial

economic contribution. In the case of LNG, it is important that the emissions trading scheme recognises the global benefit of Australia's LNG production.

As we transition to a low or no carbon world, Australian LNG offers a unique opportunity for Australia, for our domestic economy and for our potential to contribute to reducing global emissions. It is therefore in Australia's best interests to foster LNG as an integral part, not only of the long-term economic sustainability of this country, but also as a significant part of the global solution to climate change. The scale of prospective investment in Australian LNG development already is significant, but it is embryonic compared to its potential. Achieving this potential will bring with it economic growth, export, employment and government revenue benefits while providing diversity to Australia's energy economy with increased penetration of gas in the domestic manufacturing industry, and a major boost to remote regional economies, particularly in Western Australia, Queensland and the Northern Territory.

Reduced competition in the LNG sector arising from a constraint in the sector through the imposition of costs on Australian production that is not faced by our customers or our competitors ultimately will lead to higher global emissions as energy customers substitute away from Australian gas to coal in the short term and to alternative sources to LNG in the longer term. APPEA is therefore proposing a complementary mechanism to capture LNG within the scheme as a cleaner global contributor. A cleaner global contributor mechanism would offset international competitive disadvantage through the grant of free permits up to the total of their direct and indirect emissions. Other measures of corresponding value also could be considered. APPEA submits that the cleaner global contributor mechanism would be transitional, continuing only until international competitors and our customers face a comparable cost on carbon. Thank you. We welcome any questions.

CHAIR—Thank you for your opening statement. Senator Fielding will ask a question because he has to leave before we get into it.

Senator FIELDING—Yes, unfortunately, and it probably will not cover the heart of your submission. But in a submission to us Qantas noted that Australia's refining capacity has fallen while demand has increased. Is that true? If it is, why is that the case? Are there any consequences?

Ms Robinson—Thank you, Senator. My understanding is that that is the case, except I should point out that I do not represent the refining industry. We represent the exploration and production industry of oil and gas. That question would be better put to the Australian Institute of Petroleum, which represents refining.

Senator FIELDING—Do you have a thought on it though? I just thought I would ask you while you are here, that is all.

Ms Robinson—That is my understanding but, as I say, only as a casual, reasonably interested observer, rather than at any level of professional responsibility.

CHAIR—Ms Robinson, we had a number of witnesses in Perth who were strongly supportive of action on reducing greenhouse gas emissions. But they agreed with the proposition that what is important ought to be the priority of the reduction in global emissions and that it is less

relevant to look at what happens domestically and that more relevant is the net effect in terms of global emissions. I am just interested in your assessment as to the role that the LNG industry can play in helping to reduce global emissions, even though it might result in increases in emissions domestically in Australia.

Ms Robinson—I can make two points in relation to that and both of them are supported by other work which we can provide to the committee if necessary. Firstly, it is important to be aware that for every tonne of carbon dioxide or equivalent that is produced in the production of LNG for export, we save in Japan four tonnes when they use it to generate electricity, and we save in China somewhere between 5.5 and 9.5 tonnes of greenhouse gas emissions when they use it to substitute for coal in electricity generation.

CHAIR—Can I just interrupt you there. So, if we have a net increase domestically of one tonne in emissions, that can result in a reduction of emissions globally, if we export it to China, of 5.5 to 9 tonnes?

Ms Robinson—Nine point five.

CHAIR—Nine point five, and about four tonnes in Japan.

Ms Robinson—That is right. That is where we get back to this net global contributor. We need to recognise, in any scheme that we design, any industry that is able to make a very substantial and material difference to global emissions. We know that to be the case, but of course the Kyoto accounting rules do not enable the full benefits of those global savings to accrue back to Australia. So I guess it is that sort of distortion, if you like, that needs to be understood and corrected through a domestic scheme.

The second point I would make on that is that if we did have a global price of carbon, which is what everyone is aspiring to—everybody now would really say that the world does need to do something and we absolutely support that—the Australian natural gas industry would do very well, and the gas industry would do very well as, I guess, our key competitor vis-à-vis fuel-coal, with a price associated with it. If that is what we are (1) seeking to achieve as a country, a global approach to carbon pricing, and (2) we want to kick the ball off with having a scheme of our own, it therefore becomes incumbent on that scheme to try to ensure that the sort of outcomes that we could reasonably expect of a global scheme are delivered through the domestic scheme as well.

CHAIR—So does the domestic Carbon Pollution Reduction Scheme, as it presently proposed, facilitate reductions in global emissions as opposed to merely domestic emissions through the LNG sector?

Ms Robinson—No. In fact, it would deliver the opposite. By impacting quite significantly on the expansion prospects of Australia's LNG industry that is denying the world a cleaner source of energy, which would be substituted in the main by coal-fired power generation. Understanding that 1 to 4 and that 1 to 5.5 to 9.5 demonstrates that any reduction of LNG production in Australia leads to a net increase in global emissions.

CHAIR—What changes would have to be made to the Carbon Pollution Reduction Scheme as it is currently proposed to facilitate the LNG industry being able to contribute to a global reduction in greenhouse gas emissions?

Ms Robinson—We have proposed that there be a separate mechanism that sits alongside some of the other mechanisms in the scheme, assuming the scheme goes ahead more or less in its current form. That would take account of those industries that deliver a very large material significant net greenhouse benefit to the world and can demonstrate that to be the case. Those industries that can demonstrate that under a global price scheme, which is what we are all aiming at, would grow and expand. But for those industries, any additional costs that would therefore impact on the economics of projects going forward would be met through the allocation of permits to meet that additional cost, while ever our competitors and our customers do not wear a price of carbon.

CHAIR—You might have heard the evidence from the CSIRO just as you walked in. They made the point that natural gas is the most competitive and efficient energy source to help address the challenge of greenhouse gas emissions. In that context, how does a mandatory renewable energy target impact on the capacity of your industry to maximise the benefit of what CSIRO agrees is the most competitive and most efficient way of reducing greenhouse gas emissions?

Ms Robinson—The modelling that we had commissioned to try to better understand what the impact of the MRET would be, not just on gas but on the economy as well, demonstrates that meeting that target will come at the cost of gas—Damian may have the figures—to the tune of around 10,000 gigawatt hours.

Mr Dwyer—That is correct.

Ms Robinson—By artificially carving out what would otherwise have been the emissions trading market to one of the highest cost forms of energy comes at the cost of natural gas and squeezes natural gas.

CHAIR—I am sure you are aware of *Australia's low pollution future: the economics of climate change mitigation* document. There are several instances there where Treasury states that 'fears of carbon leakage may be overplayed'. Does APPEA agree with the statement that 'fears of carbon leakage may be overplayed'?

Ms Robinson—I can answer only on behalf of the LNG industry.

CHAIR—Okay.

Ms Robinson—I think it is important to distinguish another reason why LNG is perhaps significantly different than some of the emissions-intensive trade-exposed industries. For the LNG industry, we are not just talking about carbon leakage. When we talk about carbon leakage, we are talking about if there is a price on carbon in Australia and that price or that cost is not shared by competitors, the investment in those industries will go to countries where the additional costs are not being borne. That traditionally is what people think of as carbon leakage.

There will be some elements of that, no doubt, with gas. But one of the bigger issues for gas is what we call carbon leakage plus. Our customers of Australian LNG have energy options. It is not as though they have a set demand for LNG and they will meet that demand from whichever country will supply. They have a net demand for energy, and they will source the energy they need from wherever it comes. If we deny the world cleaner sources of LNG and our customers do not have a price on carbon, they will substitute with coal. We know that. We have many discussions with our customer countries. In some cases they have very low penetration of gas. They would like to see the penetration of gas increase substantially, but not at any price. Because they do not bear a cost associated with carbon, coal continues to be much more competitive than gas, which is why gas has not made the inroads that we would have expected and we would have liked and the globe would have liked.

CHAIR—Following up on that a bit, I must say we have had a number of large oil and gas companies, such as Chevron and Woodside, mention or discuss how the Carbon Pollution Reduction Scheme is likely to impact on future expansion, putting off future investment and perhaps even putting future expansion of various projects and new projects in doubt forever. What is your comment on that? Have you any other feedback from members on how the Carbon Pollution Reduction Scheme, if not amended to take into account the requirements of the LNG industry, would impact on future investment and future expansion?

Ms Robinson—There is no doubt that, unamended, it will impact on future expansion. We know this for a number of reasons. One is because project economics of LNG projects are very marginal and very difficult. As many of you will probably be aware, we still have only two LNG projects in this country, despite having this massive amount of gas—well over 100 years worth of natural gas. We still have only two LNG projects and one being built. That in itself is testament to just how difficult it is to make the economics of these projects stack up.

Imposing a price on carbon that, as I say, is not able to be passed through to our customers, for the reasons that I outlined before, just makes the cost profile so much more difficult. We commissioned Concept Economics, using one of the general equilibrium models of Access Economics, to do some modelling on the impact of the draft CPRS on the growth prospects of the LNG industry—and, as I mentioned before, this is an industry that should be in a growth phase. What they came up with, and I am happy to share this with you, is that they did three different scenarios: first, to model a 10 per cent decrease in carbon emissions by 2020 on the way through to a 60 per cent reduction to 2050; second, they modelled a 20 per cent reduction of greenhouse gas emissions by 2020 on the way to a 60 per cent reduction by 2050; and third, nil reduction in greenhouse gas emissions by 2020, but still on the way through to 60 per cent by 2020. So really you are just seeing a difference in the steepness of the curve leading up to 2020.

What that showed for the 10 per cent scenario was that there would be a 28 per cent reduction in the growth of the LNG sector against a business-as-usual case. On the 20 per cent scenario, it showed a 37 per cent reduction on the business-as-usual case going forward. The difficulty is that we do not know how those numbers will play out because it is very lumpy investment in LNG. It is impossible to say which projects will go ahead and which projects will not. But we know that across the board, they are the sorts of numbers that we are looking at. I am very pleased to share this with you because if you look at the assumptions, I think you will agree they are very, very fair and realistic assumptions that have been made, and they take into account the absence of the global agreement. Modelling that has been done around the traps is pretty is

pretty thin on the ground that looks at the period that gives us the most grief. That is the period while ever we do not have that international carbon price in place.

CHAIR—Thank you for that. The Treasury modelling assumes that there will be global action on climate change in the four scenarios that it has assessed. What is APPEA's view of what the impact would be if Australia went it alone with the Carbon Pollution Reduction Scheme as currently proposed? Do you have a view on the relative impact of going it alone versus waiting until other significant relevant nations are on board?

Ms Robinson—If the world agrees to a carbon price, there is no issue. The issues for us, and probably most industry, dissolve because there will become that level playing field and the world will sort itself out in terms of the energy sources that are the most and the least intensive under that scenario. The Treasury modelling, which assumes different countries coming in at different rates, creates a situation under even that scenario that foresees some decline for LNG—I think it was about a 17 per cent decline even under that scenario—but that scenario is not the one that troubles us. The scenario that troubles us is the one that we do not our competitors and our customers subject to a price on carbon.

Australia is the only producer of LNG supplying the Asia-Pacific region that would have a price on carbon. Our competitors are Nigeria, Algeria, Qatar, Trinidad, Tobago, Indonesia and Malaysia. They are competitors. While we would dearly love them to come to the table to address climate change by imposing a similar price of carbon, the realistic expectation is that that is still a long way away. At the moment, our having a price on carbon and their not, and their not being obliged to, of course gives them a very strong competitive advantage against us. Secondly, there is India and China and the customer countries. I do not think anyone knows when they are going to impose a price on carbon, or whether in fact there will end up being a Kyoto-style agreement at any point.

Maybe it will be a series of unilateral decisions, perhaps defined through bilateral or other multilateral agreements. There is a whole range of mechanisms on which a global price on carbon could be delivered. But there are no signs that any of those countries, particularly our competitors, will do anything soon. And why would they?

CHAIR—Have you put all of these arguments and your suggestions for improvements to the proposed scheme to the government?

Ms Robinson—Yes, we have, and we continue to be in a process of doing that and we are continuing to keep them briefed on work that we do and work that we have commissioned to underscore the point. I think the points are well understood. I think the discussions are open and have been very constructive. I guess it all will not be over until the fat lady sings later in December.

CHAIR—How confident are you that in late December the importance of your industry, environmentally, economically and in terms of our energy security, will be taken on board and that those changes that you are pushing for will be made?

Ms Robinson—Senator, all I can say is that I do believe we are being heard. I think the arguments are understood in some quarters. I really do not feel comfortable speculating, nor do I feel able to speculate, on where it might take us in terms of the ultimate design.

CHAIR—Have you been given any commitment so far that the representations that you have made have been heard and that adjustments to the design will be made?

Ms Robinson—The commitments we have been given are that they are listening and they understand the problem.

CHAIR—But there is no commitment so far that the actual design will be changed to accommodate the LNG industry?

Ms Robinson—Not in those sorts of words, but the fact that there is a very high level of interest we hope will evolve into a better scheme that does not result in this very paradoxical position. The paradox is that of course under a global scheme the industry would do well; under a draft domestic scheme, it does not. That is the paradox that we are going to see evolve.

CHAIR—Yet the priority is to reduce emissions globally rather than domestically. Just a final question from me and then I will pass questioning on to the other Senators. The government has just committed $6.2 billion to assist the car industry. The significant part of the argument was that it was important for Australia to maintain a manufacturing skill base from an economic and national security point of view. Would you care to comment on the importance of your industry from an economic and national security point of view?

Ms Robinson—Obviously, as I pointed out in my opening statement, it is a very critical sector for Australia for a number of reasons: first, because of the contribution that it is able to make not just to Australia's energy security but to energy security and in turn security more broadly of our region because of the vast resources and this magnificent national asset that we have in our gas resources; and second, as I say, it is still in a fairly embryonic stage. Even though we have had the North West Shelf project for quite a number of years, we still only have two projects—that one and now Darwin with Pluto under construction. We know that there are many others—around 16 projects in total—that are in the planning phases, and none of which have gone to final investment decisions.

That give you a sense of the magnitude of the resource that we have. Being embryonic, it is a massive amount of potential revenue to governments to use for purposes such as the car industry plan, renewable energy schemes or energy research and development programs, hospitals, schools and all the other things that are ultimately the priorities of governments. We are in a situation at the moment where the industry is on the verge of a massive explosion, or could be on the verge of a massive explosion. That can only deliver benefits. There are really very few downsides that anyone could speculate on. We have very few industries in Australia that people could identify as being able to deliver the sorts of benefits that we are talking about and the magnitude of the economic contribution of benefits back to the Australian people of the LNG sector.

There is massive potential that could end up being, or continue to be, the goose that lays the golden egg. But, as I said before, they do need feeding every now and again, and certainly any impediments to that growth would impede the ability of the industry to realise that potential.

CHAIR—So we have 16 projects that could help reduce greenhouse gas emissions globally and that could have a significant impact on our economic prosperity and help to ensure energy security. It would be fair to say that all of them are at risk if we do not get the design right of a Carbon Pollution Reduction Scheme in Australia?

Ms Robinson—I will take you back to the findings of the economic modelling. How that plays out, I am not sure, but between 28 per cent and 37 per cent of the total value of those projects would be at risk in some way or are likely not to go ahead on the basis of that. I will also table here for your benefit a map of those projects that are on the drawing boards at the moment, as well as a list of those projects and their LNG capacity. But just to give you a sense of the size of the prize, at the moment we export around 16 million tonnes of LNG. If you add up the total capacity of the projects on the drawing board, we have 97.8 million tonnes, which is almost 100 million tonnes. They are very significant benefits flowing from that which represent what we have.

Earlier you raised the car plan. In Australia for very good reasons we try to identify the industries we want to keep here and maintain. The car plan expenditure is an example of that. Perhaps what we are not quite so good at is identifying those industries that represent real growth and prosperity as well as environmental benefits.

CHAIR—Industries for the future.

Ms Robinson—Yes, industries that really represent a very strong economic future for Australia. Part of the conversation around energy and energy security has to be around identifying the sorts of industries we have that could be the key to long-term prosperity.

Senator HUTCHINS—Just along the line of the Chairman's questions, I want to be clear that you are saying that 16 projects are at risk because of the potential introduction of an emissions trading scheme that includes only Australia. Is that what you are saying—that is the only reason?

Ms Robinson—I need to clarify that. There are 13 projects on the drawing board. Three are already either built or are under construction. We are talking 13 projects on the drawing boards at the moment. At risk is a very strong term. I guess I would just—

Senator HUTCHINS—I am just saying that that was the impression I got from your statement—that they will not proceed because of this.

Ms Robinson—No, I am not saying they will not proceed. I am saying that of those 16 projects, representing that 100 million tonnes per annum, our modelling shows that somewhere between 28 per cent and 37 per cent of that capacity will not go ahead. It is impossible to say how that plays out on a project-by-project basis, but it will play out in some way.

Senator HUTCHINS—All these projects have investors and everybody is signed up. They have committed capital.

Ms Robinson—No. As I say, not one of these projects has gone to a final investment decision. These are projects that are in varying stages of development, but where companies and joint venture partners are spending millions of dollars with the intention—something which they do not do lightly—of wanting to see these move through to fruition. The joint venture partners are spending considerable sums in the planning of these projects with the intention of having them up and running.

Senator HUTCHINS—In your submission you make the statement, 'Australia ranks relatively poorly compared to competitor nations in terms of overall attractiveness for exploration.' That has not happened because of our potential to introduce an emissions trading scheme. What has contributed to that? I assume that did not happen in the last year, but it has happened over some years.

Ms Robinson—Exploration has been fairly stagnant for a long time. There are a variety of reasons for that. One is a perceived—

CHAIR—Tax on condensate?

Senator HUTCHINS—I said that last year.

Ms Robinson—That is sovereign risk. One is the perceived prospectivity of Australia. It is quite risky exploring in Australia. We have somewhere in the offshore areas between a 1 in 10 or 1 in 12 chance of finding something compared with the Gulf of Mexico, which is a 1 in 4 chance or, in western Africa, a 1 in 3 chance. So it is risky and it can be at a very high cost. The water is very deep and often a long way away from infrastructure and so on. So there are a lot of reasons why exploration is difficult. That said, expenditure on exploration has gone up significantly over recent years, but the real metric of metres drilled and the number of wells drilled has been maintained or declined. That is simply a reflection of the rapidly increasing costs associated with exploration.

Senator HUTCHINS—When we were in Perth the other day, I was given to understand that the Western Australia government reserves 15 per cent of gas production. That is correct, is it not?

Ms Robinson—Yes.

Senator HUTCHINS—Does the industry association have a view about reserved gas supplies? Does the association believe it should be freed up, and that the market should determine what is available or what can be sold?

Ms Robinson—We do not support a gas reservation scheme. That is reasonably well known.

Senator HUTCHINS—Not to me. I am from the east coast.

Ms Robinson—Okay. The gas reservation scheme is really, I guess you could say, hopefully an insurance policy in that if the gas is not supplied, there is a capacity for obliging LNG producers to contribute that percentage of their reserves for domestic markets. Increasingly the Western Australia government is realising this too: we do not believe it is good public policy, nor

do we believe that it is necessary. The reason for that is because in Western Australia the reason it came about in the first place was because Western Australia had some of the cheapest gas in the world for a very long time. As a consequence of that there was under-investment by those companies that were probably best placed to explore for and produce gas for the domestic market. Inadvertently Western Australia became very dependent on two sources for their gas and primarily LNG producers for its gas, which is really not perhaps the most desirable market you would want for domestic gas.

Ideally you would like a number of players with greater competition that are well suited to supplying domestic markets. What we have seen since the price started to go up in Western Australia has been a substantial increase in the investment. Obviously there is a lag time between making that investment and seeing the gas start to flow. But what we and the community would not want to see, if the community understood the implications, is continuing reliance through interventionist policies on a very few large LNG players. The policy settings are probably better directed at trying to encourage a more dynamic, competitive gas market in Western Australia comprising a number of players who are good at, interested in, and motivated primarily towards supplying gas to the domestic market.

That said, LNG is critical to ensure that there is no doubt that supplying domestic gas is inextricably linked to a growing and vibrant LNG industry because of its capacity to open up domestic gas reserves. We are seeing that on the east coast with the coal-seam gas industry in Queensland. By opening it up with the big driver being the LNG export market, it opens up a whole lot more reserves for domestic gas. To summarise that point, we do not believe the intervention is necessary. We do not believe it is good public policy. Ultimately it delivers only precisely what we are trying to avoid—greater concentration, intervention and market manipulation.

Senator HUTCHINS—In your opinion, or in the association's opinion, has that reservation policy been a disincentive for investors or explorers in Western Australia?

Ms Robinson—I think it is probably better to put those questions to the companies.

Senator HUTCHINS—I have heard that.

Ms Robinson—Certainly any goalpost changes or any rule changes that go on through a process of approvals and production make the environment less stable and more risky. I guess I am not prepared to say that any one particular policy suddenly makes the big change, but when you see a number of changes made that shift the goalposts for projects that really do need certainty, and if you are going to sink $20 billion or more into a project—and that is what they cost—when you are not generating profit for 10 years, you need to be reasonably certain of what the agreement is going to be and what it is going to look like over that time.

Senator HUTCHINS—You are not getting market price for the gas either, are you?

CHAIR—Long-term contracts.

Ms Robinson—No, because it is a long-term contract market, which is very different to oil, for example. Once you lock in a contract subject to the conditions of those contracts, that is the deal that you are stuck with for the term of that contract.

CHAIR—Can I just make sure I understood your answer to Senator Hutchins' first questions correctly? It is fair to say that Australia is a high-cost destination for investment in LNG, and that is well established for technological and geophysical reasons, et cetera. But our competitive advantage has been low sovereign risk, strong skill base, et cetera, et cetera. The challenge with an ETS is if we do not design it properly to cater for the opportunities that come out of the LNG industry, we will add further to what is already a very high-cost destination and could well encourage investment to go into lower cost destinations, even though they might not be as politically stable and have as low a sovereign risk. Is that it?

Ms Robinson—I think perhaps we have got two things a little bit confused here. I understood Senator Hutchins' question to go to exploration and the impact of the emissions trading scheme on exploration, which is why I talked about prospectivity and all those sorts of things. LNG production is different to that. Exploration is one issue, which is quite separate really to the issue that we are talking about. While there are issues around exploration, the key issue—

CHAIR—You were talking about those 13 projects, of course, that might be at risk.

Ms Robinson—Yes. The key issue is around the development of LNG projects, which is not much to do with exploration, except that you have to explore first to be able to get the gas to be able to produce it.

CHAIR—Yes.

Ms Robinson—I guess the issue is that we cannot pass through to our customers a price on carbon. We cannot because it competes against coal for electricity generation in those countries, and that is uncompetitive against our competitors. We are also a very high-cost destination; in fact, the highest-cost destination in the world for LNG production servicing the Asia-Pacific region for a variety of reasons. For whatever reasons, we are the highest cost quite substantially. There are swings and roundabouts, as you quite rightly mentioned. But any additional cost just makes those economics that much harder. I am not going to say that this project or that project will not go ahead. None of those planned projects have gone to final investment decision. Any additional prices will have to be taken into account in working out whether those boards can give consent to those projects going ahead.

CHAIR—Is there any evidence that major international gas producers are perhaps looking more favourably at less developed nations that might not be moving as rapidly as we are in terms of an emissions trading scheme, such as the one proposed in Australia?

Ms Robinson—I think international companies are weighing up their options constantly. They have a register of possible projects they would like to go into. They are constantly looking at shuffling those projects around, depending on all sorts of reasons. I cannot give you an answer specifically yes or no to that, except to say that this capital is footloose. The LNG industry is dominated by very large international players. They have choices, and what those choices are will depend on a variety of factors known only to themselves. But the important thing that we

know is that that capital is footloose and they have choices. Whether it is to go into LNG in Australia or into LNG somewhere else or oil somewhere else or other energy projects completely somewhere else, or returning dividends back to their shareholders, all those are questions that only they can answer.

Senator BUSHBY—Most of the issues I wanted to explore have been explored by my colleagues, but there are a couple of things. In Perth on Monday, we had evidence that the effect of the ETS, because of the price difference in producing energy between coal and Western Australia—and we were talking about the Western Australian market where I think it is more expensive for gas—would be that it would make coal-fired power more expensive, but still not actually as expensive as is energy produced by gas in Western Australia. Therefore the only net effect would be a higher price of energy to consumers without any real reduction in emissions because they would still be producing by coal. As I understand what you are saying, unless the measures that you are suggesting are adopted, then an ETS, as proposed, would only back up that outcome essentially. It would not make gas any more competitive against coal.

Ms Robinson—That is a very interesting observation. It could be very well true in Western Australia because it is such a small market and is relatively uncompetitive in terms of fuel-on-fuel competition. I think probably what they are saying is that because there would be a price on carbon, the price of gas would go up a bit more and therefore coal gets a windfall by being able to put its price up, perhaps to just under the price of gas.

Senator BUSHBY—Possibly, but also the effect of the ETS on coal makes it more expensive as an option to produce energy. It is still cheaper than gas in WA; therefore, coal would still be selected. The consumer ends up paying more, and there is no net benefit in terms of carbon reduction.

Ms Robinson—I have not done the analysis on that. I can see in principle where the argument from that goes to. It is kind of interesting to look at it.

Senator BUSHBY—Where I come into it is that the question for you is: are the measures that you suggest required to ensure that gas is more competitive in that scenario so that you have carbon reduction benefits?

Ms Robinson—We were focusing only on LNG, the export product, so it is probably important to understand the difference between gas as a domestic source of energy and heat compared with LNG. You only liquefy gas to stick it on a tanker and export it. Our focus is very much on the LNG sector. I guess the two issues that you raise are a bit hard to draw together because we are specifically focused on the LNG part of the equation.

Senator BUSHBY—We have also had evidence, particularly in WA that because LNG is a direct competitor for domgas, or the domestic gas there, in a sense it is a driver of the domestic gas in actual fact, and makes that possible to some extent. But you end up with prices for gas in the domestic market in Western Australia effectively taking on an import parity price. If you are producing gas in Western Australia and you can sell it at a higher price by liquefying it and putting it on a ship, then why would you not do that instead of selling it at a lower price in the Western Australia market. It does have some impact.

Ms Robinson—There are a lot of myths and legends around that issue. It is a very simplistic way of looking at it. The fact is that the domestic gas is not always competing with LNG and there are a number of benefits in supplying gas for the domestic markets. Just as consumers like to have a diversity of supply of energy—such as China, which likes to source it from all different places and all different types of energy—sellers also like to have a diversity of customer base.

Senator BUSHBY—And probably some more.

Ms Robinson—And the other thing is that supplying for domestic is very much cheaper than putting it on a tanker. There will always be attractions for supplying to the domestic market, plus you want to balance your contracts as well, so the domestic market is there for that. This is what we should be encouraging in a whole lot of players in the gas production industry that do not have the capital to be an LNG player, but who are interested and whose business model is all around domestic gas. We also need to think about how we can continue to encourage those guys. The issue around price is not so much therefore a comparison or the competition offered by LNG, but has simply been a supply-and-demand issue in Western Australia. What I mentioned to you before is that we had gas at the world's lowest prices. While that is great for the short term, the long term is a massive under-investment in the infrastructure and production that you need to keep it going.

Senator BUSHBY—Yes, a disincentive.

Ms Robinson—As a consequence, we have a very significant shortage of gas. That is what has driven the price increases in Western Australia because the contracts have been signed, sealed and delivered for overseas markets for a 25-year period. It is not as though they are suddenly selling more to overseas markets because the people in Western Australia will not pay for the gas. There is a shortage of domestic gas, and there has been a shortage of domestic gas because of failure of public policy to ensure that the price has been allowed to stimulate the investment that is required.

Senator BUSHBY—Okay. Thank you for that. It is very useful. Because we are running out of time, I will ask you this: you mentioned that we have 100 to 150 years worth of gas and maybe more; are you talking in Australian proven reserves? If so, at what consumption rate? Are you talking about export or domestic use? In what context are we talking about 100 to 150 years worth of supply?

Ms Robinson—The latest figures, which are pretty old now, on reserves is 110 years worth of proven and probable reserves at then the current basis of production for both LNG and domestic purposes. That does not take into account coal-seam gas, and with coal-seam gas, we know we have about 7.5 trillion cubic feet of gas that is proven and probable. But the CSIRO have anticipated 200 TCF just in coal-seam gas. So it is a bit hard to say exactly how much gas, but the 110 years is of conventional sources of gas at current production levels.

We are one of the few countries in the world that is actually finding more gas than we are producing. That gets back to the point of this magnificent national asset that we have, which we really should be better exploiting, and that does not take into account the coal-seam gas. As I say, CSIRO has identified up to 200 years of reserves of gas, so we could easily be looking at 300

years at the moment of gas at existing production levels, and possibly more because there is still much more to be discovered.

Senator BUSHBY—Given that the figure bandied about is that we have about two to three per cent of the world's reserves of gas—

Ms Robinson—That is of that 110 years proven and probable of conventional sources.

Senator BUSHBY—So we might have a slightly larger proportion.

Ms Robinson—And we have no doubt that we will find a lot more.

Senator BUSHBY—That would suggest that there is a fair bit of gas in the world and that gas could provide a reasonably voluminous long-term method of providing energy on a low-emissions basis.

Ms Robinson—On the basis of the reserves that we know of, the Australian government in a terrific little brochure that it put out on LNG not so long ago estimated we could be exporting 80 million tonnes whereas we are exporting 16 at the moment. Our own target, which I mentioned to you before in relation to our industry strategy, is that we could and should be exporting between 50 and 60 millions tonnes over the next decade. That gives you an indication—

Senator BUSHBY—And that could be sustainable for quite a long term.

Ms Robinson—Yes. When you build an LNG plant, you are planning on producing for 50 years or more. Obviously that is taken into account by the boards of the companies who make those investment decisions. So we have enormous volumes of gas, and the trick is being able to commercialise them to the mutual benefit of the industry and this country.

Senator BUSHBY—In summary, what you would like to see as an ETS which is set up in a way that encourages the production of that because it provides a long-term solution to the low-emissions supply of energy.

Ms Robinson—Yes. I think that is one part of it. We would like to see not just an emissions trading scheme that does not penalise gas, but I think it is to Australia's advantage that we look at getting back to this point about identifying industries that can make a very significant ongoing contribution. It is very hard to get LNG projects up, regardless of the emissions trading scheme. Certainly an emissions trading scheme makes it only that much more difficult, but we should also be looking at measures, perhaps through our regulatory fiscal policy settings, that really encourage these projects, so that we are not still left in 10 years time with only three projects being built in this country.

CHAIR—I have a question that has not been raised yet. In your assessment, how does the global financial crisis impact on any assessment of when and how we should introduce an emissions trading scheme from the point of view of your industry?

Ms Robinson—That is a very good question. There has been a lot of debate around whether we should delay or not. It is our view that we should not. It is our view not so much that we

should not, but that the scheme must be designed properly to take into account the sorts of issues that we have raised. If it is designed properly when it is introduced really becomes irrelevant; it becomes delayed because more time is required to get the policy settings right, and that is one thing. But it is true that the longer we delay, the more uncertainty there is. In a global crisis, perhaps there is some upside in that in that it really ensures that we all focus our minds on getting this thing right and really understanding what is at stake if we do not.

We do not advocate a delay. We advocate getting it right and making sure we really understand what we are doing, what the impacts are, and how we can attract the investment in those industries that make this material difference. Just adding to that, of course we have the oil price now down to $50 a barrel or less. It was not long ago when it was $143 a barrel and when Treasury officials and others would talk about affordability, capacity to pay, and the ability of industries to be taxed higher, and all that sort of stuff. At $50 a barrel now, we do not see the same people coming in and saying, 'This is an industry that maybe needs some assistance.' That is the sort of volatility that the industry has to deal with. Often that is not well understood at all.

CHAIR—I certainly understand where you are coming from when you say the importance is to get it right. Can I get your sense of the priorities as we are considering our recommendations to the Senate? Out of getting the system up and running quickly versus pursuing and reaching global agreement and getting the design features right, what is your order of priority?

Ms Robinson—I am not a policy maker. It is really not within my bailiwick to make policy recommendations. The government has clearly announced and has a mandate through the last election to take serious action on climate change, and we respect that. From that point of view, taking serious action on climate change means doing something, and it means doing something probably sooner rather than later, but only on the condition that it is correct. If we wait for the rest of the world to sign up, we will be waiting forever, and that creates an awful lot of uncertainty. I know that is not a popular view for some people.

CHAIR—Not for some of your members, I think.

Ms Robinson—But I guess the key point is that we should not be rushing into an emissions trading scheme here that is designed as if there was a global scheme. That is my point.

CHAIR—Okay.

Ms Robinson—If we want to take early action, we need to design the scheme that puts in place the appropriate transitional measures and that recognises that there may never be a global price on carbon, but at least puts in place transitional measures to ensure that we do not have distorted scheme producing distorted outcomes, which are those outcomes that will differ from those that would be the case if we had a global scheme. It is incumbent on this scheme to ensure that the sorts of outcomes that would be achieved under a global scheme are achieved under a unilateral scheme.

CHAIR—Ms Robinson, Mr Dwyer and Mr McCallum, thank you very much for your contribution to the committee.

Ms Robinson—Thank you.

CHAIR—The committee will adjourn for five minutes and will reconvene at 10.50 am when we will hear from Qantas.

Proceedings suspended from 10.44 am to 10.52 am

BROSCHOFSKY, Mr Peter, Group General Manager, Environment and Fuel Conservation, Qantas Airways

ELVERTON, Ms Jean, General Manager, Procurement Services, Qantas Airways

CHAIR—I welcome Mr Broschofsky and Ms Elverton of Qantas. I invite you to make a brief opening statement and the committee will ask some questions.

Mr Broschofsky—Thank you, Senator. At this time we are happy with our submission and we will invite you to go straight to questions, if that is okay.

CHAIR—We will go directly to the international competitiveness of Qantas. Can you perhaps talk a little further about the effect of fuel prices, both or your customers and on your business?

Mr Broschofsky—Specifically fuel price?

CHAIR—Yes.

Mr Broschofsky—There is no question that fuel price over the past six months has been a significant issue for the industry. In fact, it was a crisis not three to four months ago. Thankfully, since then the price of oil has dropped. But equally, unfortunately, we appear to be in the perfect storm; at the same time we have been hit on the demand side. As a business, whilst we are thankful to see the cost of fuel coming down for our organisation, on the demand side, the pending financial situation is impacting on our demand equally. The net impact on our organisation appears to be minimal.

Ms Elverton—I want to add a little bit on the competitiveness. Australia being at the end of the line in international travel, if you want to call it that, the oil fuel price and the jet fuel price in particular, all over the country—but I will talk about Sydney—is a lot more expensive relative to some key hub ports that we go to; for instance, Singapore, Dubai and Hong Kong. I can provide one example from Qantas' own experience. We pay for jet fuel based on a Singapore escalator. However, in addition to that, you add on the local supply and logistic costs, such as storage, overheads, insurance, and labour costs, et cetera. Currently in Sydney we are paying 600 times what we are paying in Singapore, or approximately that differential. It is a very small amount, but if you time it by the billions of litres we consume, it is a huge amount.

Senator HUTCHINS—Six hundred times, not 600 per cent?

Ms Elverton—Six hundred per cent, six times.

Senator HUTCHINS—Is that due to climate change?

Ms Elverton—No, I would not say so. It is due to infrastructure and supply.

Senator HUTCHINS—This is an inquiry about—

CHAIR—You are all right. Keep going.

Ms Elverton—It is due to the logistics supply situation, the high costs in Australia, and the lack of competition in Australia. That is the main reason. Singapore Airlines uplifts half of its jet fuel in Singapore, and Qantas uplifts 25 per cent of its requirements in Sydney, so you can tell where the competitiveness is. If you spread that cost out to 100 per cent of the requirement, Singapore Airlines has a lot lower cost base than we do, just on the jet fuel side. I do not know whether I have addressed your question, Senator.

CHAIR—In a general sense, how responsive to price are passengers—in particular, international customers of Qantas?

Mr Broschofsky—That depends upon where we are in the cycle. I think it is true to say that over the short term, aviation finds it very difficult to pass on incremental costs. Our own treasury people indicate that over the longer term a single full-service carrier like Qantas Airlines, for example, potentially could recoup up to 60 per cent. I think that is addressed in our submission.

CHAIR—Yes.

Mr Broschofsky—For our low-cost carriers, the figure is upwards of 83 per cent. It is important to stress that over the short term—which is what we are talking about with the impending CPRS implementation; that is, short-term transitional impacts—it is very difficult for us to pass on those costs, particularly given that we are now entering a downturn. That ability becomes all the more difficult for us.

CHAIR—Before I get into the emissions trading scheme, which is what we are here for, what is the impact of increased fuel prices on long-haul flights—for example, between Perth and Canberra?

Mr Broschofsky—The impact specifically—

CHAIR—In terms of price and how you plan.

Mr Broschofsky—Fuel represents, on average, over a third of our cost base. It is a significant burden on our costs and on our bottom line. Obviously the longer the sector, the more impact the fuel price has on our organisation. Does that answer your question?

CHAIR—Yes. The green paper does not recognise the aviation industry as an energy-intensive trade-exposed industry, but you believe it should be. Can you talk to us about that more?

Mr Broschofsky—Absolutely. Let me preface what I am about to say by saying that we are not opposed to the implementation of a CPRS. In fact, we support the implementation provided that the CPRS is equitable, fair and considers the transitional impacts, which it does not.

CHAIR—Provided that the design is right?

Mr Broschofsky—That is what I am saying.

CHAIR—I am hearing that a lot today.

Mr Broschofsky—And it is very important. I think that much of the debate has been focused on the long term. That is very important but, equally, the short term or the immediacy impacts are as important—but back to your question with regards to trade-exposed emissions-intensive. You need to look at the metric in terms of winners and losers. The current design of the CPRS creates the concept of winners and losers, and aviation is very much a loser under the design. The emissions-intensive metric is not really an emissions-intensive metric at all; it is about capacity to pay. It is a financial metric.

We feel that that a more appropriate mechanism of determining whether you are an emissions intensive industry in the first instance is to look at your overall footprint. We have an enormous carbon footprint. In 2010, we are talking in excess of 4.5 million tonnes globally, which is on the public record. We are a 12.6 million tonnes global business. So we have a large carbon footprint, and therefore our potential carbon exposure is significant. Once you have addressed that, you need to look at our ability to pass on those costs. As I say, it is highly variable at the moment. We would find it very difficult over the short term to pass on the full cost to our passengers without seeing a deleterious impact on our demand.

CHAIR—Have you modelled the impact of the CPRS as proposed on Qantas?

Mr Broschofsky—We have. We have done a lot of modelling. Unfortunately, we have not disclosed the impact specifically because there are far too many unknowns. The absolute impact is dependent upon the price of carbon—the absolute carbon liability and so forth. There is a price.

CHAIR—Which is what, for liability?

Mr Broschofsky—I would be prepared to say that it is certainly in nine figures annually.

CHAIR—Say that again.

Mr Broschofsky—Nine figures. In excess of $100 million per annum is our potential carbon liability. In the worst case, it is significantly more than that.

CHAIR—You mentioned how there will be an impact, and it has a disproportionate impact on regional aviation. In your modelling, have you worked on some assumptions on how some of the regional routes will be impacted? Can you give us some detail about that?

Mr Broschofsky—Absolutely. There is no question about it. We have many regional sectors that are marginal at the moment anyway. What we fear is the introduction of a deadweight cost, which we see this as being potentially, which will exacerbate that issue. The sectors that are most likely to be impacted upon from a profitability perspective are the leisure sectors, the sectors that are highly competitive, the short-haul regional operations, and the sectors that typically have highly efficient modal substitutes, like car and train transport—those types of things. We have not been so definitive as to come down and say, ‘These specific sectors will be at risk’ because there is far too much unknown with regard to the specifics of the detail of the Carbon Pollution Reduction Scheme. There are far too many unknowns.

CHAIR—You have given a generic description as to the sorts of sectors that would be at risk in terms of regional routes. Which sectors would fall into the category that you have described?

Mr Broschofsky—I can give you examples of the types of sectors.

CHAIR—Yes, give us examples.

Mr Broschofsky—But I must stress that these are not necessarily sectors that we are looking at. There is the Newcastle-Sydney, Canberra-Wollongong, and Canberra-Melbourne routes. It is those types of things—those types of short sectors that are highly competitive and more leisure related—although not the Canberra sector.

CHAIR—There is not much leisure in Canberra.

Mr Broschofsky—I am sure there is not.

Senator HUTCHINS—I did not know you flew to Wollongong.

Ms Elverton—We fly to Albion Park.

Mr Broschofsky—Some of the northern New South Wales, QantasLink type, Jetstar type routes.

Senator HUTCHINS—Do you fly from Canberra to Albion Park?

Mr Broschofsky—No, Sydney.

Senator HUTCHINS—That is what I thought.

CHAIR—In your submission, you refer to the emissions trading scheme as being regressive. By that I take it that you mean it will impact on lower income earners more dramatically than it does higher income earners? Can you talk us through that?

Mr Broschofsky—You have got it right. That is basically what we are saying.

CHAIR—What leads you to that? What are your thought processes that lead you to that?

Mr Broschofsky—The thought process there is that if we are to apply a carbon surcharge to a particular sector, that surcharge will not be dependent upon your income levels. It will be based on that particular sector. From that perspective, we are saying that it is regressive.

CHAIR—For the lower income earners.

Mr Broschofsky—For leisure, absolutely.

CHAIR—So air travel will become less affordable for low income earners

Mr Broschofsky—Correct.

Senator HUTCHINS—It would be like that Ansett levy.

Mr Broschofsky—Pardon?

Senator HUTCHINS—You would see it like the Ansett levy.

Mr Broschofsky—Not necessarily. This is very much a carbon levy.

Senator HUTCHINS—But that is what you are putting to us, are you not—that it would be a levy? We are still paying the Ansett levy now, are we not?

Mr Broschofsky—I think the industry has not determined that yet.

Senator HUTCHINS—But there is already a levy on passengers travelling now.

Mr Broschofsky—There is.

CHAIR—Presumably Qantas would not have the capacity to means test the application of an additional cost.

Mr Broschofsky—Absolutely, nor would we want to. That is the point is that we articulate that leisure may be impacted more severely. Let us remember, travel is very much a discretionary activity.

CHAIR—But if you have a cost of $100 million-plus in the worst case scenario and you have to pass that on in pricing, essentially what you are saying that is lower income earners are going to more affected?

Mr Broschofsky—Potentially, yes, because it is not means tested; nor would we want to do that.

CHAIR—If you had to summarise in a few sentences the improvements that Qantas would like to see in the emission trading scheme design, how would you describe the improvements that you wish?

Mr Broschofsky—First of all, I draw you to the point of it being fair and equitable. The metric that creates winners and losers with regard to emissions-intensive trade-exposed is flawed. It is very much about capacity to pay and not about emissions intensity. I find it very difficult to understand how Qantas, an organisation which consumes 33 million barrels of fuel per annum and which has a significantly sizeable footprint, is not seen as being emissions intensive. I do not understand that. I am yet to have had that clearly articulated to me.

Certainly, on the metric they are using, which is revenue dollars per tonne of carbon dioxide equivalent, we fall below the line, although only marginally. But that has nothing to do with intensity; it has more to do with the fact that we have a large revenue line, but we equally have

an extremely large cost line. Margins in our industry are very, very low. That is something that needs to be looked at.

Equally, we need to explore and accelerate the concept of adopting complementary measures. I know the government is looking at that. We firmly support looking at measures such as green or accelerated depreciation on our aircraft. As an industry, we have two main options in terms of reducing our emissions footprint. We have three, but two are the biggest. The first is effectively renewing our fleet. As an organisation, we have a sizeable fleet renewal program that is worth in excess of $30 billion over the next decade. But our ability to renew our fleet is very much dependent upon our being able to facilitate the renewal of that fleet financially. That is our first option.

The other option is exploring or accelerating the commercialisation of alternative fuels. They are the two big ticket items that over the medium term have some options for us. Both have significant issues. I think that as part of the complementary measure and the CPRS design, the details need to facilitate both of those—certainly for our industry, and specifically around alternative fuels. There is much that the government can do in terms of accelerating the deployment and commercialisation of those types of fuels.

In terms of the first point with regard to our fleet renewal program, we need to be a healthy industry to facilitate new aircraft. If we cannot afford to buy new aircraft, we will be able to do it, and therefore the benefits to the environment will not accrue. A financially healthy industry is an environmentally healthy industry.

CHAIR—Presumably, Qantas being the very big business as it is, you would have a risk management strategy in place and you would be looking at how to mitigate the risk of CPRS worst case scenario presumably, assuming that CPRS will proceed the way it is currently on the table. Related to this, there has been some discussion in recent times that Qantas might be moving jobs and parts of its operations offshore. In your risk management assessments, are you looking at a scenario where you would be moving jobs and parts of the operations offshore, if the CPRS design is not adjusted as you have suggested?

Mr Broschofsky—I am not aware of anything specific to a CPRS design. I am not aware that that would be an issue.

CHAIR—So if the CPRS design is not improved from your point of view, that will not have any impact on jobs?

Mr Broschofsky—It may. The price of fuel has already had an impact on jobs. We recently announced a 1,500 jobs reduction within our organisation. The economic climate has already done that; the price of fuel has done that. It is possible that, by adding a further significant deadweight cost to the business that we have to absorb, it is possible that there are further implications, but they have not been planned at this stage.

CHAIR—There are further implications for jobs?

Mr Broschofsky—Yes.

CHAIR—What other risk mitigation strategies is Qantas looking at, assuming that the government proceeds with the CPRS as it has been presented?

Mr Broschofsky—Our risk mitigation strategy with regard to CPRS is well defined. We have a four-pillar strategy. I have already spoken about the two major pillars of our risk mitigation strategy. If you go to the last one, which is accelerating the development, employment and commercialisation of alternative fuels, we are quite active in talking to a number of organisations with regard to accelerating that development. Unfortunately, many of them are the subject of non-disclosure agreements, so I cannot talk about them here.

We also have a $35 billion fleet renewal program. We also are actively engaging with our air navigation service providers in Australia—that is, Airservices Australia—to deploy the latest technology and to improve airspace inefficiency. In Europe, for example, airspace inefficiency adds about 12 per cent to the fuel bill of airlines on their floor and roughly the same in terms of emissions. In this part of the world it is less than that. It is somewhere in the order of three per cent to five per cent, as best we can estimate it. They are the options and there are risk mitigation strategies.

However, I must stress that, equally, we have been employing these strategies for some time, except for the alternative fuel one, because of the fact that there are they are efficiency measures and they would improve our fuel consumption. Our global fuel consumption makes 96 per cent of our carbon footprint. Whatever we do to improve our fuel consumption and our operational fuel efficiency ultimately will improve our carbon emissions footprint.

CHAIR—For the purpose of your modelling , did you review the government's modelling when you conducted your own modelling?

Mr Broschofsky—Yes.

CHAIR—You would have seen the government's assumption that fuel prices would be impacted only slightly. Do you agree with that assessment? What is Qantas's view?

Mr Broschofsky—Are you talking about the assumption for the average driver, not aviation fuel now? Is that what you are talking about?

CHAIR—Yes.

Mr Broschofsky—We state in our submission that we feel that demand elasticity as it relates to gasoline—not Jet-A1 fuel, or aviation kerosene—appears to be quite elastic. I think that is contrary to the government's view.

CHAIR—What is the impact of that? What is the impact of your view? If the government took your view into account, how would that impact on its conclusion?

Mr Broschofsky—What we are on about is looking for transitional assistance. Qantas is not looking for preferential treatment. If anything, we are looking to be treated as every other industry is treated. If I could draw upon a scheme that we feel would be more appropriate in terms of design, I would be drawing on some of the design fundamentals of the European Union

ETS, for example, because at least early on it affords industry a significant measure of free allocation and steps that up over time. You still get to a point by, I think, 2020 when you have to acquire all your permits, but you have a period of eight or nine years in transition where you can prepare yourself. Eight or nine years is not necessarily enough to prepare us fully, but it is certainly better than going from no carbon liability to quite a significant one overnight.

Senator HUTCHINS—I think you were explaining to us that you use the Singapore price for Jet-A1. Is that correct?

Mr Broschofsky—Yes.

Senator HUTCHINS—Has that reduced in the past six months, or is that still the same high figure it was at the beginning of the year?

Ms Elverton—It has reduced, especially in the past three months because of the time lag. However, yes, we see the reduction in Singapore a lot more pronounced than we see in Australia because Singapore's market is a lot more competitive. The market here—

Senator HUTCHINS—I understand that. You have made the point about different factors in your Australian operations. However, the cost in US dollars for a litre of that Jet-A1 has gone down, has it not, in the past three months?

Ms Elverton—Yes, it has.

Senator HUTCHINS—How has that impacted on your cost base? Has that reduced your cost base at all?

Ms Elverton—It definitely has had an impact. However, the latest estimate of the new Jet-A1 price has not been published within the company, so I am unable to comment on that.

Senator HUTCHINS—Fair enough. You may wish to take that question on notice and provide a reply. I am very interested in your comments about the commercialisation of alternative fuel. Before I nearly got to watch *Mama Mia* three times yesterday—I was not taking much notice of it—I saw Deborah Hutton talking about advertising for the new A380s, and mentioning alternative fuels.

Mr Broschofsky—Was that on our in-flight show?

Senator HUTCHINS—Yes.

Mr Broschofsky—She was talking about ASPIRE.

Senator HUTCHINS—Can you explain that? As you said you are already looking at it. Is there already a system underway to—

Mr Broschofsky—If your question what is ASPIRE, I can answer it any way you like.

Senator HUTCHINS—Yes.

Mr Broschofsky—The acronym, ASPIRE, refers to the Asia Pacific Initiative to Reduce Emissions. It is fundamentally a collaboration between the three southern Pacific air navigation service providers—the Federal Aviation Administration in the US, Airways New Zealand and it is Airservices Australia. In partnership with airlines such Qantas, Air New Zealand and United, ASPIRE was a demonstration flight that was meant to prove the benefits that could accrue out of, if you like, perfect air traffic management processes.

Senator HUTCHINS—So it is not necessarily any alternative fuels?

Mr Broschofsky—No, it had nothing do with alternative fuels.

Senator HUTCHINS—It was slowing down, using wind, or something like that.

Mr Broschofsky—Correct. It was a high-speed departure out of LA. Typically what happens out of most ports nowadays is, on departure, air traffic control will hold you at an elevation below optimum to take into account other traffic. Fundamentally ASPIRE meant air traffic control clearing the air path for the aircraft. So there was a high-speed departure to cruise, flex track or user-preferred routes, which is flying the winds across the Pacific, and what we call a constant descent into Melbourne, which basically means an idle-speed approach. In theory it was the most fuel efficient flight path that we could hope for. The trick was that it was the first time it was done globally with the A380.

Senator HUTCHINS—Right. You may not be able to answer this, but are biofuels part of this commercialisation?

Mr Broschofsky—That is what I am talking about.

Senator HUTCHINS—Do you see any future for low emission aviation?

Mr Broschofsky—That is the same thing. We see low emission fuels over the medium to long term as a significant aspect of any push for a lower emission footprint for the industry. That is based on third generation biojet concepts. It was not 12 to 18 months ago when there were some significant technical issues associated with biofuel and aviation, specifically around freeze points, energy content, and those sorts of things. Those things have largely been resolved, but not totally. The issue for our industry, and I think for biofuels generally, is finding the appropriate biomass feed stock that does not compete with food, does not actually lead to deforestation and those types of social issues, delivers the benefits we need it to, and equally is lower cost. That is a strategic imperative for us.

Senator BUSHBY—I thank Qantas for coming along today. I have a number of questions and some of them might jump around a little bit because of the way I have put them together. In your modelling, have you modelled the effects on Qantas of the rest of the world not joining in the Carbon Pollution Reduction Scheme, or a world carbon price not being achieved?

Mr Broschofsky—No, but we have modelled the impacts of the other schemes around the world that would impact the group; namely the EU, Australia and New Zealand. No, we have not done that modelling. If there is not a global scheme, I do not see that we would be impacted. The

potential impact, perhaps, would be from a tourism perspective. In Europe there is a growing groundswell of opinion that is anti long-haul flying. We are not seeing that in our bookings.

Senator BUSHBY—I guess what I am getting at relates to what Ms Elverton said earlier. If, for example, Singapore did not come on with a similar scheme, and as a result the price of jet fuel in Singapore did not include a carbon price in the long term and yet Australia's did, have you modelled the impact of that type of scenario on your future or the impact of the CPRS on your scheme?

Mr Broschofsky—CPRS is only relevant to our domestic fuel uptake.

Senator BUSHBY—So your modelling is only looking at your domestic operations.

Mr Broschofsky—It is only based on our liability and under the current—

Senator BUSHBY—Is that because of the different treatment by the CBRS of international—

Mr Broschofsky—International aviation is exempt under the CPRS.

Senator BUSHBY—That is as I understood it. Will there be any impact on your competitiveness at an international level?

Mr Broschofsky—Yes.

Senator BUSHBY—I think in your submission you actually said there would be higher input costs, which would disadvantage you.

Mr Broschofsky—Yes, absolutely. There are a number of areas we see as being competitively disadvantaged. That is one. Whilst of the fuel associated with our international operations is exempt—

Senator BUSHBY—And it is easy enough to work out the fuel being used for that.

Mr Broschofsky—Yes. We would do that. We have very good fuel systems.

Senator BUSHBY—But there are other input costs.

Mr Broschofsky—Absolutely. Whilst the fuel is exempt, we have significant infrastructure costs, if you like, that are international business related in Australia. So we would see higher input costs, energy costs and those types of things impacting the business, where other international operators would not. Equally, I think destinational substitution is a real concern for us.

Senator BUSHBY—You talk about Fiji and Vanuatu being more attractive because of price.

Mr Broschofsky—Correct.

Senator BUSHBY—Are there examples of where that destinational substitution has occurred in the past, where for whatever reason you have had price shocks, and relative to other—

Ms Elverton—Cairns and Hawaii, for instance, for Japanese tourists.

Senator BUSHBY—When was that?

Ms Elverton—Very recently. Because of the exchange rate before—

Senator BUSHBY—Before it came down.

Ms Elverton—Yes, the Japanese tourists found it much cheaper to go to Hawaii than to go to Cairns. That is why we have taken the main Qantas brand off the Cairns to Japan route and put Jetstar on as the low-cost carrier because there are declining inbound tourists from Japan.

Senator BUSHBY—In your submission that demonstrates the potential impact on destinational choices that changes in price can have. Theoretically, CPRS, because of the higher input costs and other local costs not being taken into account as part of the design of the scheme, could increase your international prices.

Mr Broschofsky—Leisure travel is seen to be very price sensitive. They will change quite readily if the price is such—

Senator BUSHBY—That is very interesting. We will move from the international market right down to the regional market again. I would like to revisit that. You mentioned some of that to Senator Cormann. I am interested in that as a senator representing a state that is largely considered regional and rural, which is, Tasmania—my home state. You say that regional aviation will be disproportionately impacted. Can you explain for the record why that is the case?

Mr Broschofsky—Because of the fact that much of our regional network is already marginal.

Senator BUSHBY—That is because?

Mr Broschofsky—That is because of the economic situation.

Senator BUSHBY—The sales?

Mr Broschofsky—Correct—all of that. Our regional business is a good business, but it is littered with marginal sectors that we continue to fly for a variety of reasons—all good reasons. We are not saying that we would not continue to fly them. I am just saying that I think it would be disproportionately impacted by any addition of a fairly sizeable deadweight cost to the business that we could not pass on.

Senator BUSHBY—In the scenario where pressure increased on those routes—for example, in the case of my home state, flying into Launceston or Hobart—what are the options could Qantas employ to address those pressures?

Mr Broschofsky—We are lucky in the sense that we took as a group the decision to implement a low-cost carrier, not in anticipation of a CPRS, but we do have—

Senator BUSHBY—Presumably, it puts pressures on that as well.

Mr Broschofsky—Absolutely, but we do have that option to switch.

Senator BUSHBY—So Hobart could lose its Qantas flights?

Mr Broschofsky—I am not suggesting that, but in theory.

Senator HUTCHINS—The Gold Coast lost it long ago.

Mr Broschofsky—Yes.

Senator BUSHBY—But not due to the CPRS.

Mr Broschofsky—No.

Senator BUSHBY—That shows that things can change.

Mr Broschofsky—That was a strategic reason, and it was the right reason. But it is being serviced by a very good carrier in Jetstar.

Senator BUSHBY—I come back to the options that Qantas would have whether through Jetstar, Qantas, QantasLink or its other carriers. With those pressures being increased, what choices do you have, particularly in regional areas?

Mr Broschofsky—The actual network strategy is not my area. If you like, I can take that on notice and provide some further detail.

Senator BUSHBY—That would be appreciated. But an example is maybe moving from a full service to a low service scenario.

Mr Broschofsky—Correct.

Senator BUSHBY—The CPRS green paper does not recognise aviation as a EITE or a strongly affected industry.

Mr Broschofsky—Yes.

Senator BUSHBY—You said that it is hard to see how you are not emissions intensive. Is the reason that you have not been recognised because you are not emissions intensive or because they do not consider you are trade exposed?

Mr Broschofsky—We do not even get to the trade exposed piece because we are not seen as emissions intensive.

Senator BUSHBY—Based on a metric?

Mr Broschofsky—Based on a metric that, in my view, has very little to do with emissions intensity. You may have heard of the carbon disclosure project. If you look at a chart of the five organisations with the largest carbon footprint, Qantas is in there. Three of those five are not deemed to be emissions intensive. I do not know how that works.

Senator BUSHBY—You do not understand why you are not considered emissions intensive?

Mr Broschofsky—I understand why we are not because in my view it is based on a metric that has very little to do with emissions intensity.

CHAIR—Has Treasury or the Department of Climate Change explained to you why they have used the formula they have chosen?

Mr Broschofsky—You would have to ask them.

CHAIR—I will, but has that been explained to you?

Mr Broschofsky—To be fair to Treasury, they need a metric that is readily available.

CHAIR—To keep it simple rather than to focus on emissions?

Mr Broschofsky—You would have to ask Treasury.

Senator BUSHBY—I think a Treasury official is sitting at the back of the room. A couple of have been coming in and out. They are coming on next. We will ask them some questions. Is there anything on that that you would like us to ask them to help clarify that?

Mr Broschofsky—You might want to ask them that question.

Senator BUSHBY—We will ask that.

CHAIR—We will try to be very diplomatic.

Senator BUSHBY—Just because we are under pressure of time, I will move on. You state that the impact on domestic aviation will have negative implications for regional communities, which we have discussed to some to extent in the tourism industry. Does the CPRS recognise the impact on the tourism industry? Does it see that as an energy-intensive trade-exposed area?

Mr Broschofsky—No. Obviously we are reactive in the tourism market: aviation generally is a facilitator of it. By virtue of the fact that more than 50 per cent of tourism's emissions footprint comes from domestic aviation, any negative impact on aviation itself will have negative impacts on tourism itself.

Senator BUSHBY—It is not a direct link in a sense, but there is a direct link.

Mr Broschofsky—There is a direct link. Without domestic aviation, tourism would not be very effective in this country. There is very little modal substitution, it is a vast country, and we need aviation to facilitate that industry.

Senator BUSHBY—Does Qantas consider that there should be greater examination of the effect on tourism of the CPRS in its design?

Mr Broschofsky—Yes.

Senator BUSHBY—You mentioned also that, despite the fall in the price of fuel, the decrease in demand, presumably occasioned by the uncertainty as a result of the global financial crisis, has affected your bookings. Can you tell us today what sort of fall in your bookings you can attribute to the financial crisis?

Mr Broschofsky—I cannot. I am not sure what has been disclosed publicly or commercially. That is another thing. We can come back to you on that.

Senator BUSHBY—Thank you.

Senator HUTCHINS—That would be different in different sectors, too.

Mr Broschofsky—Absolutely.

Senator HUTCHINS—Business class and first class may not been affected all that much, or vice versa.

Mr Broschofsky—It will be different by different sectors, but I think generally the sectors have been adversely impacted.

Senator BUSHBY—If you can provide that on notice it would be appreciated.

Mr Broschofsky—Sure.

Senator BUSHBY—You are aware that you can request that the information can be treated confidentially.

CHAIR—That was going to be my closing comment. I refer back to your comments earlier about Qantas's modelling in terms of the impact of the CPRS. To assist the committee, could you give consideration to providing the committee with a copy of your modelling on a confidential basis? If there is any other information that you think might be useful for the consideration of the committee, that you are uncomfortable providing publicly, you can consider providing it on a confidential basis. We would very much appreciate it if you could give that some due consideration. Thank you very much for your contribution to the committee.

Mr Broschofsky—Thank you.

Ms Elverton—Thank you.

[11.33 am]

STERLAND, Mr Barry, First Assistant Secretary, Emissions Trading Division, Department of Climate Change

QUINN, Ms Meghan, Manager, Climate Change Modelling Unit, Treasury

CHAIR—I welcome Ms Quinn from the Treasury and Mr Sterland from Department of Climate Change. I remind Senators that the Senate has resolved that an officer of the department of the Commonwealth or the state shall not be asked to give opinions of matters of policy and shall be given reasonable opportunity to refer questions asked of the officer to superior officers, or to a minister. This resolution prohibits only questions asked for opinions and matters of policy and does not preclude questions asking for explanations of policies or factual questions about when and how policies were adopted.

Officers of the department are also reminded that any claim that it would be contrary to the public interest to answer a question must be made by a minister and should be accompanied by a statement setting out the basis for the claim. I invite you to make a brief opening statement, after which the committee will ask you some questions.

Mr Sterland—As Senators know, the government is committed to reducing Australia's greenhouse gas emissions by 60 per cent on 2000 levels by 2050. It has chosen to use the Carbon Pollution Reduction Scheme as the primary policy instrument to achieve that at lowest cost to the economy. The title of the scheme emphases its objective—that is, to reduce carbon pollution—and it is relying on using a cap and trade emissions trading scheme as the means to achieve that goal, drawing on the power of the market to minimise those costs. It sees that domestic action as contributing to a global response and being part of a leading group of countries. It has seen the need to introduce a scheme to provide certainty and clarity for businesses' operations to understand future climate policy responses. It is a predictable framework to reduce carbon emissions.

I will provide a bit of information about the process. As Senators know, the green paper was released in July this year. We received over 1,000 submissions. There has been ongoing consultation with stakeholders since that time, and that is still continuing. I will leave Ms Quinn to speak to the Treasury modelling that was released in October 2008. The government intends to release the white paper with final policy positions by the end of 2008, including its medium terms emissions trajectory. The green paper itself was a set of proposals and preferred positions put out to receive stakeholder response, and that is very much the way we have seen it. We have been speaking to those preferred positions and understanding stakeholder views of them, and the government is currently considering them.

The intention in the longer time frame is for the passage of legislation in 2009—obviously subject to the decision of parliament—and the introduction of the scheme in 2010. I think it is probably best to leave it at that rather than to summarise what is in the green paper, which you have all seen, and the executive summary. We can answer questions about those elements later.

Ms Quinn—I will outline Treasury's role in relation to economic modelling. Treasury was asked to look at different trajectories and targets by the government. The government released a modelling report on 30 October 2008. The modelling was coordinated within Treasury, but it drew on a wide range of experts, both domestically and internationally. We had a fairly comprehensive modelling exercise, looking at three computable general equilibrium models for the whole economy, bottom-up modelling from emission intensive sectors, such as electricity generation, transport and the forestry sector. Various reports have been published and there are various extra consulting reports on the web page. I was not intending to go through the report, but I am happy to take questions.

CHAIR—Thank you very much.

Senator HUTCHINS—You said there were 1,000 submissions to the Garnaut report. Ms Quinn, you have clearly been involved in that and spoken to a lot of people in relation to your model. No doubt you have had people question the model.

Ms Quinn—Yes.

Senator HUTCHINS—What sort of consultation has there been with people affected by the ETS and CPRS? Do you meet them daily, hourly, weekly, monthly, or minute, by minute, by minute? We had before us a number of people who have expressed different points of view, including state government departments that have queries about the model.

Mr Sterland—There are two issues. With regard to the policy itself, it is obviously the responsibility of Senator Wong to lead that consultation. The Department of Climate Change is involved around all elements of that policy. The Garnaut review was quite separate. It had its own series and an enormous number of submissions. But the government's green paper received the 1,000 submissions to which I referred.

Senator HUTCHINS—Right.

Mr Sterland—There has been extensive consultation on all elements of that. I could list a few elements of that consultation. The first element is that there was a significant road show to major capital cities and key regional centres through late July and August. We were there to explain the positions in the green paper. Around the margins of the very large public meetings that were held, we had concentrated meetings with smaller groups of affected stakeholders all through that period.

We have had a number of specific workshops for each of the potential emissions-intensive trade-exposed industries to talk about the details of the proposal as it affects those industries and to get a handle on their views about the data and some elements that are necessary for the scheme implementation. A series of workshops were held that were quite specific. There have been a very regular—I think daily would not be too strong a word—bilateral consultations with key affected stakeholders throughout the period.

I think there is a question on notice from our Senate estimate committee on the numbers we have seen, but several hundred individual stakeholders have been directly seen through those smaller meetings or the bilateral one-on-one meetings with particular stakeholders. Ms Quinn

and the Treasury have conducted separate consultation on modelling issues. Ms Quinn will talk about that.

Ms Quinn—There have been two types of consultation. There was pre-report consultation while we were undertaking the modelling work itself. We engaged through the industry roundtables convened by the Department of Climate Change in terms of explaining the process, what we were planning to do, the framework in which we were planning to do it, and the models we were planning to use. There was an open invitation for people to come and talk to us about any information they wanted to provide to us, and any issues they wanted to raise with us.

Through that open invitation, we met with a large number of individual companies or organisations. There were also discussions through the COAG working subcommittee meeting with the states in particular about what we were doing, how we were doing it and who we were engaging as part of the modelling process. Similarly, there was also an open-door invitation for state departments and states to come to us to have conversations.

There was the release of the assumption book in early October. That drew on those bilateral consultation processes with experts and organisations. Following that we also gave an open presentation to industry and stakeholders on the assumptions. It was an opportunity for them to ask questions and to clarify their understanding. There have also been various submissions, letters and requests for further information, which we have responded to.

Following the release of the report there has been a series of stakeholder meetings. We have had road shows in major capital cities that have been open to people to ask question and clarify issues. We have had a series of bilateral meetings with particular companies, organisations and industry groups. That process is ongoing. The report was released on 30 October. It is quite a weighty report and it is taken some time for industry and stakeholders to go through, to look at it, and to raise questions. We are still in the middle of ongoing consultation with people who want to talk to us.

To date we have an open-door policy. To my knowledge we have not turned down anyone who has wanted to come and talk to us. We have received all the information, processed it and tried to pull it together with all the various other sources of information from our external consultants, literature and individuals who have been helping us in our process. We also have a question on notice in terms of the precise people we have consulted with, and we will be providing that through the usual course. But it has been quite extensive. There is obviously a limit to the number of hours and a limit to what people have wanted to share with us, but there has certainly been no barrier to communication on our side.

Senator HUTCHINS—Thank you. I know my coalition colleagues will ask more specific questions of you. I have one final set of questions. One of the things that came out in Western Australia, and even here this morning, is that we want to be reassured about the importance of certainty in investments is being into account. Mr Sterland, is that the feedback you are receiving from your consultations?

Mr Sterland—Yes, we have. People are keen to understand the parameters and see that in legislation in the end because that is the certain element to plan on. But there is feedback that people want to know what the framework will be, and they want that framework to the extent

possible to be as predicable as possible so that the key parameters that matter for their business are understood. That has been part of the way the preferred proposals in the green paper have been designed.

People want that certainty. They will often follow that by saying that they want the scheme to be designed in this way and predictable. That is part of the consultation process. We are receiving views about what the scheme design should be. The whole nature of a green paper process is to take those views in, consider them and provide a considered response. So that is part of the package of requests, in a sense, but I think there has been quite a lot of feedback saying that they want to know what the framework will be.

Senator HUTCHINS—They want that certainty with the outcome, whenever it is?

Mr Sterland—Yes.

Senator HUTCHINS—And that has been impressed to be significant to yourself?

Mr Sterland—That is a fair comment.

CHAIR—You have gone through the extensive process that you have followed in terms of the offering the opportunity for consultation and making yourself available. I guess that was very much a description of the process. I am interested in the nature of the representations you have received and how far that is ultimately going to be taken on board in the final design. I understand there will be limits to how much you can share with us today. Do you have a summary document that lists the representations that you have received from states, territories and relevant industry groups? Is there something you might be able to provide to the committee?

Mr Sterland—We do not have a public document on that. We imagine that when the white paper is released, that will significantly and explicitly draw on stakeholder feedback as part of the consideration for the final policy positions that the government chooses to adopt. Obviously, all submissions that were not confidential have been put on the website, so they are publicly available.

CHAIR—But there are 1,000 submissions. I am trying to get a sense of how far Treasury or the Department of Climate Change might be able to assist the committee as we are ultimately called upon to work our way through our recommendations. I am trying to get a sense of whether there is a summary document which lists the representations. Perhaps you can start by telling the committee what are the major themes put forward to you in response to the green paper in terms of major criticisms or suggestions for improvements?

Mr Sterland—It is probably easiest for me to start with one where our response has been quite public. One of the many issues people have raised relates to the emissions-intensive and trade-exposed assistance. There has been a question about whether the metric used in the green paper to determine that eligibility should be the revenue basis, which was the preferred position in the green paper, or another basis.

Business has been raising the use of a concept such as value added to be used as a metric for working out eligibility. In a sense it is what is the best metric to be able to judge what a material

impact on a business is from the carbon cost. In response to that feedback, we put out a supplementary discussion paper, which is again available, and had a whole round of face-to-face consultation on that. That was enormously productive. That was an example of a very public process.

Because it was dealing with a technical issue by and large, which is how you can best measure this effect, we wanted to have that discussion early because it is one in relation to which inherently the government does not have the full set of information it needs. Because the request coming from business implied a shift, we did not want to put ideas on that out in the white paper, but rather have an earlier discussion with business. That is one example of quite a public round of response. I think one of the reasons I would hesitate to pick on themes is because inevitably someone will make the comment that you are being selective.

CHAIR—Are you able to provide us with a comprehensive list of themes on notice? I do not want you to be selective; I do you want you to be comprehensive.

Mr Sterland—Let me go through the elements. We can come back to that. The themes are extensive as is the green paper in terms of the issues raised. On most of the larger issues, there are views taken on either side. That is the key thing to point out. There has been a range of points of view raised about the early targets, so early target setting has been a subject of comment even though the green paper explicitly did not address that issue; that was for later in the year. There is a very wide range of views expressed on the targets Australia should be adopting for its national emissions task and the caps that flow from that. That would be one set of commonly discussed themes.

I think there has been a high level of engagement from potentially compliant parties. These are the people who will operating under the scheme on all of the technical elements that will go to the heart of the scheme, such as how the compliance and reporting works and how the liable entities are judged. There is a number of views on all elements of those parts of the green paper.

There has been considerable discussion of the emissions-intensive and trade-exposed assistance proposed in the paper. That has been a commonly discussed theme. There is a range of views that would be reasonably well known from the public record on that. There have been a range of comments from industries. The section of the green paper that dealt with the power generation sector has been another common and much-discussed element.

CHAIR—As I said, perhaps you could provide the committee with a more comprehensive list on notice. At least please give that some consideration. A lot of the witnesses that we heard in Perth who were strongly supportive of taking action in terms of reducing global greenhouse gas emissions agreed with the proposition that the priority—in fact, the key objective—is to reduce global emissions through action in Australia, and that that is more important than reducing domestic emissions in isolation. In that context I am asking you to comment about how far your modelling has sought to assess the impact of the CPRS, as proposed, on global emissions and what your assessment of that proposition is in terms of the LNG industry and the arguments that the LNG industry has put forward?

Mr Sterland—I will take the general point first and then Ms Quinn might want to comment. In terms of where the scheme fits into the general framework, the government wants to

implement a robust domestic climate change response so that it takes its place as part of that global response. The two are connected and there are various elements of the scheme that allow it to be calibrated in the light of international action. Our preferred position was that there would be a range in the Australian government's medium-term trajectory. That was partly to allow the ambition of the scheme—if you like, the goals of the scheme—to be set in the light of ongoing progress in international negotiations. It is a pretty central part of the framework.

The other part of the framework that is quite relevant was that one of the objectives of the preferred positions on emissions-intensive and trade-exposed support was to deal with the issue of leakage. That is where Australian emissions are reduced, but because of the order in which this response happens internationally—that emissions-intensive firms and emissions associated with them do not leak offshore, which is the terminology—there are offsetting increases somewhere internationally.

The other element of that support was a transitional element. These are some of the most emissions-intensive industries in the economy, so part of the objective of that regime of support was to ease that transition. The elements of domestic action in the context of global action have been quite at the centre of consideration in the green paper.

CHAIR—Do you have any measures that will assess the impact of the domestic Australian scheme in terms of its impact on global emissions?

Mr Sterland—Do you mean in the future?

CHAIR—Are you proposing as part of the scheme that is currently on the table—and all we know is what is in the green paper—to assess the impact of that scheme on global emissions?

Mr Sterland—The scheme itself will be reviewed regularly. That is built into its framework. The proposal in the green paper was that those reviews be comprehensive reviews of the policy.

CHAIR—I am sorry, I am not really understanding. As far as the modelling you have conducted is concerned, have you assessed the impact of the scheme as proposed on global emissions?

Ms Quinn—With regard to the modelling, I did not answer the questions about the types of things people have engaged with us on.

CHAIR—We are going to get that on notice. I would rather not do that now. We only have limited time, so can we continue with the impact on global emissions?

Ms Quinn—I am happy to answer the question. If you want me to, I will answer that one. In terms of the way the economic modelling was done, what is important for reducing greenhouse gas emissions around the world, in terms of achieving an environmental objective, is to stabilise greenhouse gas emissions at particular stabilisation levels. The economic modelling was in the context of choosing an environmental target or thinking about an environmental objective.

What was the stabilisation level that the world might choose? In that we looked at a range of between 450 parts per million and 550 parts per million stabilisation by 2100, which is looking

at attempting to keep the temperature increases between two and three per cent, or a 50 per cent chance of keeping temperature increases between two per cent and three per cent relative to pre-industrial levels. Going from a global environmental objective, you then need to think about what that means in terms of how many emissions the world can sustain between now and 2100. That gives you the carbon budget.

Then there is the question about who gets to produce those emissions and how that carbon budget is divided between countries. We looked at two different mechanisms for allocating emissions between countries, one proposed by the Garnaut review—the contraction and convergence framework, which is a particular way of doing it—and another way that we examined was in the context of the Carbon Pollution Reduction Scheme scenarios, which was another way of allocating emissions. Both those mechanisms result in an emissions allocation for Australia that is consistent with the environmental objective and the global objective.

You get an emissions trajectory for Australia and then you look at the economic implications across Australia and the globe. We looked at the implications for how many emissions Australia would receive under different allocation frameworks, what global contribution that was, and the economic consequences in Australia, in the world, and in different regions of those different allocation methods.

CHAIR—I think we are talking at cross-purposes. I understand what you are saying. You are saying that you are making an assumption about what the global reduction target might be, and then you are working out in that context what will be Australia's necessary contribution. My question is totally unrelated to that. I will be more specific.

There might well be activities in Australia that will increase emissions domestically while reducing emissions overall in the world. Specifically, the LNG industry has put forward a proposition through modelling that one tonne net increase in emissions to produce LNG will result in roughly a 5.5-tonne to a 9.5-tonne reduction in greenhouse gas emissions in China, or about a 4.5-tonne reduction in greenhouse gas emissions in Japan.

Ms Quinn—That was looked at in the context of the economic modelling. What happens in our economic modelling, depending on the scenarios—and if we take the Garnaut review scenario as the one to explain because it is a bit more straightforward—and in the two scenarios looking at the Garnaut review, there is a price across the world, and all nations, all countries and all sources of emissions in those countries are part of the trading scheme across the world.

CHAIR—That is assuming that they are all part of it.

Ms Quinn—Yes. That is the Garnaut review assumption. From 2013, all countries take on a target and they all take action to reduce emissions. A common carbon price is applied across emissions in the world. Therefore, as a result, mitigation or abatement takes place in the least cost way and in the least cost location. If it is cheaper for Japan to achieve emissions reductions by shifting towards gas production rather than using other sources of energy, or if China shifts from coal production to gas production in the energy sector and that gas is sourced on the international market and it comes from Australia, that is captured in the international modelling that was in the report.

To the extent that there is a switching from coal to gas, or from coal to nuclear in those countries that have a existing nuclear program, or a change in the pattern of demand, that is captured in the international modelling undertaken for the report.

CHAIR—If that is the case, why is it that APPEA this morning and various LNG project proponents make the point that the domestic scheme as proposed will actually provide additional hurdles for future expansion and future investment in the LNG industry? Why is it a general proposition by the industry that the emissions trading scheme, if not amended, will result in a reduction in environmentally beneficial LNG production that could have beneficial impacts in terms of reducing global gas emissions? Can you explain that?

Ms Quinn—There is an issue that different people have different views about what will happen on the international stage in terms of what is going to happen overseas and the action other countries may take. If someone thought that Australia was the only country in the world to take action on greenhouse gas, they may come to a conclusion about the implications for industry versus someone else who may make the assumption that they are consistent with current plans.

CHAIR—Okay. This now brings us to the crux of it. In your modelling you put forward four scenarios.

Ms Quinn—Four main scenarios with several sensitivities.

CHAIR—That is right. If you look at the continuum of possible scenarios, it is quite a reasonable proposition that there is at least the potential that Australia will go it alone in the early stages, if we proceed with the time frame and the design that is currently on the table. Who made the decision—

Ms Quinn—Abstracting from those people who already have schemes. There are people who are already taking action, whether they have a price on carbon through the European scheme, for instance, or other countries that are taking other action, such as regulatory action. In our modelling, in our reference case scenario, we have taken out all action on climate change, including intensity targets, environmental regulation, proposed trading in the US states and Japan, and the actual trading in the European Union. We have taken out all those policies currently in place or that are planned to be put in place. In the reference scenario, we have put those together and remitted the action of those plans through putting a price on emissions.

We are clear in the report that that could be through emission trading or other mechanisms that achieve the same result of putting a price on emissions. I do not think it is true to say that there is no action around the world at this point in time.

CHAIR—I am not saying there is no action. We should not get bogged down in semantics. Clearly there is a reasonable scenario under this proposed scheme, as we know it from this green paper and with the time lines that are on the table, that Australia will go significantly faster than other relevant jurisdictions, such as the United States, China, India and others. Who made the decision not to include that scenario as part of the scenarios that Treasury modelled? You mentioned that the government asked you to conduct some modelling. What is it a Treasury decision or a government decision?

Ms Quinn—The scenarios that were modelled by Treasury were done at the direction of the government.

CHAIR—So it is the government that essentially gave you the direction on which scenarios to model?

Ms Quinn—Yes, and the Garnaut review. We did work with the Garnaut review and with the government. Depending on who the main client was, there was interaction, obviously because we were talking advice from both sources. But the Garnaut review scenarios were at the request of the Garnaut review, working jointly with us to define what that meant. It is was an iterative process, because you have to go back and forward to make sure the framework is understood and it is consistent.

Similarly, with the more realistic scenarios relative to the Garnaut review with the multi-staged process of China taking action from 2015, India taking action from 2020 and other low income developing countries not taking any action until 2025, that multi-staged stepping out was judged to be more realistic in the context of the international negotiations.

CHAIR—It was judged to be more realistic by the government?

Ms Quinn—Yes, and by people within Treasury and the Department of Climate Change.

CHAIR—This is what I am trying to get to. You modelled those four scenarios at the direction of government because there was a judgement that those were the most realistic scenarios according to the government.

Ms Quinn—More realistic. Obviously there is a continuum of different alternatives that you could look at, all of them within the plausible range. But assumptions need to be made to do modelling and there is a limit on how many you can do. The key was to judge what were the key things that needed to be looked at. The first was the environmental objectives—what environmental objectives should we be looking at in terms of the eventual concentration levels? Within that there is a range between 450 and 550 that we looked at.

The second was how to allocate those emissions across countries. The Garnaut review had on the table the contraction and convergence framework. There was some commentary and discussion about whether that was a realistic proposition, and the Garnaut review obviously thinks that it is. Others have different views, so there is a question of what other framework you can use to think about allocating emissions across countries. There was an evaluation of what other modelling exercises had looked at and what sorts of scenarios are consistent with achieving an environmental objective.

There are scenarios that are inconsistent with achieving the environmental objective and it was judged that, in terms of the order of priority, those scenarios were lower priority than achieving environmental objectives.

CHAIR—To conclude on this point, much of the public policy debate in Australia, whether it is across industry or across parliament, has centred around the timing on whether Australia should go it alone, what Australia should do if countries like the United States, China and India

do not come on board in terms of action to reduce greenhouse gas emissions. Surely, it would have been a plausible scenario at least to assess as a reference—even if the government wanted to say down the track, 'We don't think that is what is going to happen'? Surely you would have wanted to put in black and white what the likely outcomes would be under this sort of scenario so you could have a proper understanding across the whole spectrum?

Ms Quinn—I guess it was judged that having China take on no targets until 2015, despite currently doing quite a lot in the greenhouse gas space to reduce emissions, we are being more pessimistic than current government policies out to 2015. Then from 2015, China's emissions allocation continues to grow until 2030, which was judged to be realistic. Similarly, India does not do anything at all in the greenhouse gas space until 2020 and then its emissions allocation continues to grow until 2040.

Other developing low income countries do not do anything until 2025. It was judged that annex B countries that have made an international commitment to set certain targets and to take certain actions would continue along the path of their international commitments with the negotiations that are currently underway, and that those countries that have not yet taken on targets would do so in a measured and staged way. That was judged plausible. Then there was a discussion about what environmental targets people may go for with 550 and 510 being two possible ones to take.

There was sensitivity analysis around the world of delaying and no-one taking action for seven years, and what the implications were for the economic costs of Australia in the world in that scenario. There was also sensitivity analysis between the Garnaut fully optimal scenario where everybody takes action versus this multi-staged path and looking at what the economic implications for those were. It is a matter of priorities.

In the context of the government's three pillars of objectives to reduce emissions in Australia and engage in the international community, it was judged that it was very important to get on the public record the analysis about the international action.

CHAIR—Going back to your previous answer, the government directed you what to focus on in terms of your modelling. Does that mean that the government also made the decision not to include an assessment of the impact of the global financial crisis on the timing and design of the emissions trading scheme?

Ms Quinn—The economic analysis modelling was undertaken over 18 months. The report was released on 30 October. There is an issue of timing in terms of getting modelling results and getting a report ready for a particular point in time. There was no explicit decision to exclude the implications of the global financial crisis. It was judged in the context of the knowledge at the time that it would not materially affect the analysis in the report.

There is an explanation in the executive summary to that point. What is important for greenhouse gas emissions over the long run is the long-run trends in the Australian economy and the world economy, and cyclical ups and downs around that long-run trend are important in the context of the macroeconomic stability and macroeconomic cycle. However, in the context of looking at trajectories and targets over 20, 30, 40 and 50 years, we do not feel that it is material to the analysis in the report.

CHAIR—You say cyclical and not material, but the government has said that this is the worst financial crisis in 80 years. We have been dealing with this now for a couple of months and we have passed urgent legislation through parliament. Your modelling was released on 30 October. By then policy-makers across Australia were well and truly focused on Australia's response to the global financial crisis. Is there going to be some work between now and when the white paper is released in terms of reviewing and assessing the impact of the global crisis on the timing and design of the emissions trading scheme?

Ms Quinn—That is a matter for the government in terms of what work goes into the white paper.

CHAIR—So you will do that if you government asks you to do it?

Ms Quinn—We work at the direction of the government.

CHAIR—That is a rhetorical question. Thank you.

Ms Quinn—I reiterate that there are swings and roundabouts. Looking at the long-run trend in the Australian economy, it is likely that the cyclical economy will be slower than the long-run trend. But policymakers are responding in Australia and around the world, both with fiscal and monetary policy.

CHAIR—Sure.

Ms Quinn—What typically happens is that economic growth goes below trends in response to a shock. There is a reaction at both the policy level and within companies, and the response is to go above trend. To the extent that that historical behaviour continues into the future, any cyclical deviation around the trend will affect in the near term possibly, one, two, three, four, five years. Looking at the 2020 targets and the 2050 targets and at the action to reduce greenhouse gas emissions, it is not clear, and certainly the judgement was that it is not material to the analysis in the report.

CHAIR—Did Treasury get an independent peer review of its modelling?

Ms Quinn—We have used external consultants in Australia. We have looked at the economic modelling of what was done before. Three computation general equilibrium models have been used in Australia in the past for extensive research. We have used the G-cube model of Warwick McKibbin and Peter Wilcoxen from the Centre for Macroeconomic Analysis at the Australian National University, the Monash University Centre of Policy Studies by Dr Philip Adams, and the Australian Bureau of Agricultural and Resource Economics GTEM. We have used those three models and those experts as part of our report. So in a sense we had independent experts within the project to review it.

We have also had conversations with people who have used these models externally. In terms of the international model, the International Monetary Fund used the G-cube model as part of its analysis published earlier in the year. We have had conversations with them. In terms of other external modelling, the modelling is now public. There is more information than is typically

provided in terms of modelling reports in the public domain. There are people who are providing independent assessments of the modelling report.

CHAIR—So the answer is no?

Ms Quinn—The answer is that we had independent expert as part of the process.

CHAIR—You had independent input, or you used independent people in terms of informing your approach to it—

Ms Quinn—And doing the modelling.

CHAIR—Okay. But in terms of assessing the integrity and reliability of projected outcomes, you have to have a very close look at the assumptions that are being used.

Ms Quinn—Sure.

CHAIR—And get somebody to review the assumptions that are made.

Ms Quinn—And the assumptions were publicly released prior to the report being finalised. Those assumptions were discussed extensively with stakeholders through the Garnaut process and through the government process. The Garnaut review modelling was released prior to the government modelling being released.

CHAIR—Why was that?

Ms Quinn—The Garnaut review had a different timetable. Its modelling was released in advance of the government's modelling.

CHAIR—I refer to some specific modelling questions. Did you model the costs of what Professor Garnaut refers to as type 2 costs, like building, construction, road and bridge maintenance and international tourism, geopolitical instability, and so on?

Ms Quinn—In terms of the impacts?

CHAIR—Yes.

Ms Quinn—No. The impact analysis was done independently by the Garnaut review. We focused on the mitigation costs of climate change. We focused on the implications of putting a price on emissions and what impact that had on the Australian economy. We did not model the climate change impacts themselves on the Australian economy; that was done independently.

CHAIR—So you did not model the type 4 costs either—like non-market costs, such as transactions costs, the permit market lobbying costs and so on?

Ms Quinn—No, we did not.

CHAIR—Can you confirm that your modelling finds that real wages will be lower than they otherwise would be after the introduction of a carbon pollution reduction scheme?

Ms Quinn—It is true that the introduction of emission pricing results in a shift of resources around the economy and results in the income in the Australian economy being lower relative to the reference case, although continuing to grow strongly over all scenarios. It is true that real wages continue to grow, but relative to the reference case, they are lower.

CHAIR—Can you give us those percentages quickly to lead in to my next question?

Ms Quinn—I can refer you to the report. I do not know them off the top of my head.

CHAIR—Wayne Swan does not know the inflation figures off the top of his head, so you are excused.

Mr Sterland—While Ms Quinn is looking, it is important to note that her comment is true, no matter what the form of climate action. Any climate action that is going beyond what people would naturally do in their own business decisions to reduce emissions will have the effects outlined. The reason the government is choosing a market mechanism is to minimise those, any regulatory impact, or other policies that are mentioned.

Ms Quinn—Real wages across the four scenarios are on page 151 of the full report. There is a chart. The data underlying the charts are available on the web page. Across the scenarios, by 2050 real wages in Australia are expected to be 6.8 per cent to 9.25 per cent or something like that across the different scenarios lower than they otherwise would be. It is important to understand that that is against a reference scenario in which real wages are expected to grow very strongly. So, really wages do continue to grow at all points in the future.

CHAIR—Can you also confirm that under all modelling scenarios, investment in every sector in the economy, except agriculture, is lower than under the reference scenario? The effect is particularly significant, I think, in coalmining, other mining and construction.

Ms Quinn—I do not have that. The investment industry is the next one.

CHAIR—Page 152, perhaps?

Ms Quinn—That is right. Relative to the reference case growth, I do not have the numbers here in terms of the level deviations. But it is true that investment in some sectors goes down and in other sectors goes up. I would have to check for you exactly what happens to the level of investment.

CHAIR—Can you provide the underlying detail on notice?

Ms Quinn—I can certainly take the question on notice.

CHAIR—Thank you very much. Have you modelled how many Australians will be better or worse off as a result of the CPRS as currently designed?

Ms Quinn—How many individuals?

CHAIR—Yes.

Ms Quinn—No.

CHAIR—Is that something you will be doing?

Ms Quinn—It is not something that is supported by the data. It is not something that it is possible to do.

CHAIR—So you cannot assess how many Australians will be better or worse off?

Ms Quinn—In my judgement, given the economic data provided by the Australian Bureau of Statistics and other statistical agencies, it is not possible to independently identify individual behaviour. It is difficult to do it as a counter factual because you have to understand what people's outcomes are, independent of any government policy, and then say what happens for a policy.

CHAIR—That is understood. Let me rephrase the question.

Ms Quinn—The counter factual is impossible. I do not know whether I am going to be better or worse off under any government action going forward.

CHAIR—Let me rephrase the question: have you done any modelling or will you do any modelling to assess which group or category of individuals will be better or worse off under the CPRS as currently proposed?

Mr Sterland—I think it is probably worth mentioning that the government made a range of commitments to households that are outlined in the green paper. We could go through them quickly if you wanted to. That is about the impact upon introduction of the scheme. The government has made a commitment, first, to use all or any revenue raised through permit options to assist households and businesses to adjust to the scheme. It made particular commitments on fuel taxes and to various types of households. The government is currently considering those commitments and how to deliver them.

CHAIR—I have been looking through your document entitled *Australia's low pollution future*. I have been trying to find data that would substantiate the proposition that the economic cost of inaction on climate change is far greater than the economic cost of action on climate change. Can you perhaps point me to where in the document it shows that that is a reasonable conclusion to draw?

Ms Quinn—To be clear, the document you are referring to looks at the mitigation costs of climate change. It looks at only one side of the story. It looks at the implications of putting a price on emissions.

CHAIR—Has Treasury done any modelling at all which would substantiate the proposition that the economic costs of inaction is far greater than the economic cost of action on climate change?

Ms Quinn—We looked only at the mitigation costs. The costs and benefits of climate change was the specific remit of the Garnaut Climate Change Review. That looked at the economic implications of climate change on Australia, drawing on the mitigation assessments done by Treasury. In terms of the costs and benefits, you need to look at the Garnaut review modelling to be able to assess the implications for Australia and other sources.

Mr Sterland—The Garnaut review was an independent review, as you know. You are going through some of the types of costs of benefits. They were fully outlined in that review.

CHAIR—But Treasury has not conducted any—

Ms Quinn—Treasury did not undertake economic modelling of that, but the Garnaut review did. We did commission an independent report from Graeme Pearman to look at the qualitative implications.

CHAIR—Is that public?

Ms Quinn—Yes, it is; it is on the Treasury web page. We drew on that information in terms of the consequences of climate change in the report. There are several boxes and several discussions of what a world with climate change would be; that is, to the extent of our reference case, which is plus eight degrees increase in temperature, we drew on the qualitative implications for Australia in terms of the risks and the possible consequences for different industries, regions and people. That qualitative assessment, summarising across the board literature in both Australia and the world, forms part of the analysis done by Treasury. But we did not quantify the impacts of climate change. That was done by the Garnaut review.

CHAIR—I would like to look at the impact on the Australian economy. You mentioned how the global financial crisis was seen as cyclical and perhaps not relevant to the modelling that you conducted.

Ms Quinn—It does not do cyclical analysis, and the intergenerational report also does not include cyclical analysis.

CHAIR—Yes. But during the early 1990s recession we had to have, I understand that greenhouse gas emissions actually fell significantly during that period. Is that not going to be relevant? There is a risk that we might as a result of the global financial crisis—hopefully not—that we could end up in a period of recession, as Europe already has. Is that not going to be a relevant consideration in terms of timing or design?

Ms Quinn—In terms of the near-term implications, there is a link, certainly in the very near term, a link between the economy—

CHAIR—The timing is very near term. We are looking at 2010.

Ms Quinn—There is a link between economic activity and emissions, just as there is a link between the weather and emissions given the agricultural component of Australian emissions. There are cyclical and temporary factors that affect emissions that will mean emissions are higher or lower than what you might see in any economic modelling or forecasting exercise. As I said, to the extent that it is linked to economic activity and economic activity is expected to be below trend in the near term, typically what happens is that economic activity then goes above trend in the recovery phase following economic policy reaction, and firms rebuilding et cetera. Those two things, if the trend is unchanged, would mean that following below trend and above trend economic activity would be back to where they are.

CHAIR—That is what you are assuming.

Ms Quinn—That is typically what has happened in the past as well. Historical experience would support that proposition.

CHAIR—Has the government asked you to satisfy yourself through modelling that that is indeed likely to be the case?

Ms Quinn—Historically that has been the experience. Specifically, what happens when you do economic modelling and you draw on history, that is typically what you get to see.

CHAIR—Has the government asked you in the context of the global financial crisis to have another look at your economic modelling in terms of risk mitigation strategies, timing, design, et cetera?

Ms Quinn—At this stage we have not been asked to look at that.

CHAIR—Thank you.

Ms Quinn—Partly because we judge it not to be material to the analysis of setting medium-term trajectories and timing, which is what the report was commissioned to achieve.

CHAIR—I take you to Professor Garnaut's final report. I assume that Treasury officers were involved in the modelling contained in that document.

Ms Quinn—In terms of the mitigation analysis, yes. But as I said, we were not involved in the impact of climate change.

CHAIR—Who provided the advice and support in terms of the modelling of the impact?

Ms Quinn—It was the Garnaut review.

CHAIR—They had their own contracted resources and Treasury does not have a view?

Ms Quinn—For the Australian and the international analyses, they used the same economic models that we used. So they used the—

Senator HUTCHINS—That is Professor Warwick McKibbin's—

Ms Quinn—They did not use G-cube, but they did use the MMRF of Professor Philip Adams and the ABARE model—the GTEM. They used the same underlying data and the same underlying model. We provided the mitigation analysis and they looked at the implications of climate change on the world and Australia. They used the framework, but they looked at the impact analysis.

CHAIR—I refer you to page 253 of the Garnaut final report and the chart in which estimates GDP cost of unmitigated climate change to Australia. It shows that the cost of not mitigating is roughly two per cent of GDP in 2050. Does that accord with what you recollect? I might just pursue this. The reason I am asking the question is because in your data, in chart 6.10 on page 145 of the Treasury modelling, you show that the cost of the CPRS is about 3.5 per cent of GDP in 2050 in every scenario, and almost six per cent in the Garnaut minus 2005 scenario. I am just trying to understand which modelling is correct. What should we look at—the Garnaut modelling, or the Treasury modelling?

Ms Quinn—In the Treasury modelling we have three models, so there are always three numbers for any point in time for the implications for Australia and the world. The Garnaut review also used two models. There were also different scenarios done for the Garnaut review. So, without having the exact page before me—if I could get a Garnaut review I could explain the difference more precisely—we provided sensitivity analyses, which are explained in our report and in their report. It may well be that that number is referring to one of the sensitivity analysis outcomes. All the numbers are consistent and they are all right in the sense that they come from a model that has been verified.

CHAIR—Expect that the figure in the Garnaut report is two per cent and the figure in the Treasury model is between 3.5 per cent and six per cent.

Ms Quinn—Except that we did some sensitivity analysis as well.

CHAIR—So your modelling is more accurate. Is that what you are saying?

Ms Quinn—No. All the modelling is as accurate as each other. It is all a function of what assumptions you make. Different assumptions provide different answers.

CHAIR—Which brings me to my opening proposition: in order for us to have any confidence in the answers that we are getting, we have to have a very thorough look at the credibility and integrity of the underlying assumptions. I will let that just stand; it is just a statement on my own behalf. I refer you to the Department of Finance's handbook of cost-benefit analyses. Are you aware of that?

Ms Quinn—I am aware that there is a Department of Finance cost-benefit analysis. We were not engaged in a cost-benefit analysis.

CHAIR—Do you not think you should be?

Ms Quinn—We were engaged to look at the mitigation costs in the Australian economy. There were two reasons for looking at the mitigation cost in isolation. One was to make it comparable to other modelling exercises in Australia so that it is clear and transparent, relative to

other modelling that has been undertaken in Australia. The other is that we were very much looking at between now and 2050, and certainly out to 2030, the implications of any impacts already in train, and any action that Australia or the world takes is unlikely to have a significant impact.

CHAIR—This is probably not a question for you but for the Department of Climate Change because this is the crux of the issue. I quote page 62 of the Department of Finance and Deregulation's handbook of cost-benefit analyses, which states:

> A project should be accepted if the sum of its discounted benefit exceeds the sum of its discounted costs. That is where the net present value exceeds zero.

Have you been asked by the government to calculate the net present value of the Carbon Pollution Reduction Scheme?

Mr Sterland—Is that the net present value of climate action?

CHAIR—The net present cost benefit. Essentially it is the cost-benefit analysis in accordance with the Department of Finance's handbook of cost-benefit analysis. Have you been asked by the government to conduct a cost-benefit analysis of the Carbon Pollution Reduction Scheme in accordance with the instructions in that handbook?

Mr Sterland—As part of our policy analysis we will be looking at the regulatory impact, how it affects the scheme implementation and the costs of that. You are asking about the macro benefit of climate action in a sense, I think, and the cost and benefits of climate action, are you not? That is what the government commissioned the Garnaut review to report on. It was to look at both the costs and benefits. Because it is on such a long time scale, it requires quite a sophisticated analysis. I think you were referring to the various types of costs that Garnaut referred to, some of which were quantifiable and some of which were very difficult to quantify.

CHAIR—The Prime Minister and your Minister Wong have repeatedly said in recent months that Professor Garnaut's report is one input. We are now in the province of a government process. The government is considering a significant change that is going to have an impact on our economy, and hopefully a beneficial impact in terms of reducing global emissions. The proposition is that what we want to achieve is reducing global emissions. The assumption is that Australians are prepared to pay a price for it.

I am asking you to tell me whether the department has been asked by the government to conduct a cost-benefit analysis to ensure that essentially, as it says in the handbook of the Department of Finance, that in the project you are pursuing the sum of the discounted benefits exceeds the sum of its discounted costs; that is, the net present value of what you are proposing exceeds zero. Is that something that you have done as part of the government's consideration of a very significant policy change?

Mr Sterland—As I said, the government commissioned the Garnaut review to make an assessment of the costs and benefits of climate action in the broad.

CHAIR—So the answer is no. In other words, neither the Department of Climate Change nor Treasury has done a cost-benefit analysis of the proposed Carbon Pollution Reduction Scheme.

Mr Sterland—We are not doing something independent of that very comprehensive analysis.

CHAIR—No. I do want to give a bit of time to Senator Bushby, who has been very patient. However, in conclusion from my point of view, on Monday we heard evidence in Perth from the Western Australian Treasury which put the proposition that Western Australia will be particularly impacted because it is the most energy-intensive and trade-exposed economy in Australia. Senator Hutchins can correct me if I am misrepresenting the evidence, but as I understood it the Treasury officers said that from their point of view perhaps the Commonwealth did not sufficiently understand the specificities of Western Australia's energy market and the role it plays in our economy in so much as that we do not have one single integrated electricity network.

Of course, are there are issues, particularly in regional and remote areas, where many communities are reliant on diesel-fired power stations that are not part of any grid. There will be some ramifications for those sorts of communities and for the Western Australian economy overall that perhaps had not been taken sufficiently into account as part of the original green paper. I would like to give you the opportunity to reassure the state of Western Australia and the people of Western Australia that since then you have very much got your head around it and that the future design will take those issues into account.

Ms Quinn—Sure. It is not true that Western Australia is the most emissions intensive state. According to the information, Queensland is the most emissions intensive.

CHAIR—I am just telling you what the Western Australian Treasury said.

Ms Quinn—Sure. Western Australia starts off roughly around the same as New South Wales, but over time it is certainly true that it has different mitigation possibilities than other States. We have done bottom-up electricity generation modelling at a very disaggregated level across the whole of Australia. We have looked at the Western Australian grid in isolation and we have also looked at off-grid energy needs and electricity needs. So the details of the Western Australian system have been examined equally along the lines of all other states.

CHAIR—Before the green paper was released?

Ms Quinn—As part of our economic analysis we were doing this process through the green paper process and after the green paper process. As much attention has been placed on all the states as the data is supported. It is true that Western Australia is towards the top end of emissions intensity, but it is not the most emissions intensive. It is true that it has different mitigation possibilities and a different mix of economic activity in relation to mining, manufacturing and agriculture. Those sorts of issues have been taken account of in our economic modelling. So I would like to reassure the Western Australian Treasury that we have given it due weight in our economic analysis. We have had ongoing conversations with them.

I would like to take up an earlier issue and the numbers you quoted. You quoted 2.2 or 2.1 for the economic costs. I am just wondering whether that was for the world versus Australia because

table 6.9 on page 158 is consistent with the numbers in the Garnaut review to the extent that they report just mitigation costs in isolation.

CHAIR—Can you have a look at your chart 6.10 on page 145 of the Treasury model?

Ms Quinn—There is an issue about different models?

CHAIR—Yes.

Ms Quinn—On page 145—these results are from the MMRF model. I think that the results that you were talking to in the Garnaut review, without the benefit of the Garnaut review page, refer to the GTEM. I refer to the Garnaut scenarios of minus 10 and refer to the sensitivity scenario, which is reported in table 6.9 in the Treasury report.

CHAIR—Thank you for that.

Senator HUTCHINS—The Western Australians are concerned about the export-exposed industries.

Ms Quinn—Yes.

Senator HUTCHINS—They also thought that the definition was too narrow. They were concerned about the impact on value-added industries. One of the things they did say was that they did not see any change in economic growth in that state over the next coming years. They thought the impact would be quite small, but that was on balance.

Mr Sterland—On that policy question, to the extent that there is a generic policy that targets emissions-intensive and trade-exposed industries, and the state has more of those industries, then the effect of that policy, the transitional support, will be weighted regionally, even though the policy is designed in a national way. So I think the transitional elements in the green paper and the follow-up—and obviously we have had lots more discussions and feedback on that—to the extent that they are concentrated in some regions, those regions will receive the majority or a disproportionate amount of that transitional assistance.

CHAIR—Going back to Western Australia, the definition of what are emissions-intensive and trade-exposed industries was a matter of concern to them. Can you comment from a federal Treasury point of view on the issue that Western Australia has raised in its submission, which is on the record?

Ms Quinn—Treasury is working with Department of Climate Change jointly in this issue. In terms of the economic modelling, we modelled proposals on the table at the time of the green paper. In terms of any other comment, I will leave it to the Department of Climate Change.

Mr Sterland—If you are going to policy, or what is the government considering, obviously that is not in scope here.

CHAIR—I am not asking you what the government is considering. If you are saying to me that the government is considering changes as a result of representations by the Western

Australian Treasury, I will be very pleased, and then I will not ask you any more questions. I will look forward—

Mr Sterland—I am not making that comment, Senator.

CHAIR—If you are not making that comment, then my question is: what is the department's response to the concerns raised by the Western Australian Treasury in relation to the inadequacy, from their point of view, of the definition that you utilise of an emissions-intensive trade-exposed industry?

Mr Sterland—My only response is that a number of industries have raised various points about the emissions-intensive and trade-exposed policy framework and the proposals in the green paper, and that is what a consultation process is about. We are hearing those views along with others, and the government will be considering them.

CHAIR—Has the government asked you to consider the representations made by the LNG industry, in particular, in terms of the need for transitional arrangements to ensure that we do not have a negative impact on greenhouse gas emissions as a result of the emissions trading scheme?

Mr Sterland—I go to the nature of our policy processes. We have met directly with the LNG industry on a number of occasions. It is just an inherent part of the green paper process that if people raise a proposition you assess it.

CHAIR—I point you to the opening statement. Can I ask you a factual question about when and how policies were adopted? I take it from your answer that no policy has been adopted to date to take into account the representations of the LPG industry in relation to the design of the Carbon Pollution Reduction Scheme.

Senator HUTCHINS—That would be inevitable because there is still the government response.

CHAIR—Are you answering the question on behalf of the department?

Senator HUTCHINS—No. It is just that, logically, I do not think they are in a position to answer because it is up to the government.

CHAIR—I do not know whether we know whether the government has adopted a policy, Senator Hutchins. I put the question to the department.

Mr Sterland—The government has indicated that it is will announce its response to the green paper. I do not think it would be appropriate for me to comment on one way or the other.

CHAIR—So no policy has been adopted so far?

Mr Sterland—I do not think it would be appropriate for me to comment one way or the other ahead of a government announcement.

CHAIR—So no policy has been adopted so far?

Mr Sterland—I repeat my previous answer.

Senator BUSHBY—I would like to ask one question regarding the modelling conducted by Treasury and the criticism it has attracted for assuming that the rest of the world joins in. If major emitters—either all of them or some of them, or just one of them, such as the United States, China, India, Brazil, et cetera—did not come on board in the way that has been assumed in the modelling, would that affect the result that comes out at the other end of the models?

Ms Quinn—Any changed assumptions would change the results.

Senator BUSHBY—And they would be potentially significant changes in the results?

Ms Quinn—It would depend on the alternative proposals. Some changes would be at the margin and some changes would be significant. It would depend on the precise alternative assumptions.

Senator BUSHBY—So, theoretically, depending on the way the cards lined up, it could be irrelevant or it could be significant.

Ms Quinn—It could be.

Mr Sterland—In both directions.

Ms Quinn—It could be positive or negative.

Senator BUSHBY—The reason you are doing the modelling is to see what the economic impact will be in Australia, at least in part, of the CBRS policy. A lot of the criticism has been levelled at the fact that the assumptions—which I understand from your earlier answer were given to you by the government or that the parameters were basically provided to you by government—do not fully take into account the potential for industry to leap to China, or for the loss of comparative advantage to other nations in the event that those other nations do not have the same cost.

Ms Quinn—To be clear, some of the criticisms appear to be based on not full knowledge of what we have done. Nobody takes action until 2013 in the Garnaut scenarios, and in the CPRS scenarios China does not take action until 2015. That is five years after annex B countries take action. So, to the extent that there would be any leakage expected, that would be captured by the models in that period. That was not found to be the case.

Senator BUSHBY—I have learnt a little bit today in terms of the extent to which it is taken into account. The question I am asking is: if the assumptions that you have made about when they come in do not come to fruition, either in part or in whole with some countries or a number of countries, what effect might that have on the results? I am happy with that. I will move on.

Mr Sterland—The point to make is that you need to make assumptions about what the policy framework is in response to that action. Remember that in the green paper, which Ms Quinn and her team modelled, there are policies in place precisely because of that. The transitional support for the emissions-intensive and trade-exposed industries is precisely because of that scenario,

and the modelling took that into account for the period in which that phase-in was occurring. You have to play through the whole thing.

Senator BUSHBY—I guess the flip side of that is what changes will be made to those policies in the event that the assumptions did not eventuate as you have assumed?

Mr Sterland—I am saying that in the green paper there is a set of conditions laid out for that transitional support continuing under certain scenarios, and in which scenarios would that transitional support be phased out. That was based on those factors. So to what extent are major competitor economies—

Senator BUSHBY—For example, heavy road transport has transitional arrangements for 12 months. Are you saying—

Mr Sterland—I am talking about the emissions-intensive trade-exposed industries, because there is no leakage from those other ones by definition.

Senator BUSHBY—But in those scenarios—and forgive me for not knowing this, but I am obviously not across it to the extent you are—you are saying that if there are changes in international policy—

Mr Sterland—Consistent with the green paper proposals, you would have to think about what that implies for the transitional assistance to those industries.

Senator BUSHBY—Then the green paper has built in some flexibility to actually extend transitional arrangements?

Mr Sterland—Absolutely.

Senator BUSHBY—That is good to hear. Mr Sterland, you mentioned in your opening statement that there are workshops for potential EITEs that have been held. How broad was the inclusion of the membership of the EITEs? Was it just those that fit the definition as it currently stands, or did you actually include consultation with those who think that they should be included, like airlines, tourism industries and other areas that believe that should be classified as such?

Mr Sterland—We had specific workshops. The data we have on industries is at an aggregated level and not at the activity level that the proposals in the green paper provide. We had a genuine interest in exchanging data, so we had a much wider range of industries. In those proposed positions there were thresholds and specifics, but we needed to do more work.

Senator BUSHBY—So you consulted more widely than those that would ostensibly fit within those—

Mr Sterland—Within those intensive trade-exposed frameworks.

Senator BUSHBY—We heard evidence from Qantas earlier that it is not classified as being part of an emissions-intensive trade-exposed industry. The witness highlighted how much jet

aviation fuel Qantas uses in a year, which seems to be quite a lot, and in layman's terms would seem to be quite emissions intensive. But apparently it was not even considered whether Qantas was trade exposed or not because it did not fit the emissions-intensive definition. Why would an industry such as the airline industry, which uses so much hydrocarbon fuel and effectively puts so much carbon dioxide equivalent into the air, not be considered emissions intensive?

Mr Sterland—Obviously emissions intensity has a numerator and a denominator. You need to know emissions and it needs to be compared to some metric. In the range of metrics outlined in the green paper we looked at revenue. We have since put out a paper on how the value-added metric changes that. So it is emissions relative to some other economic concept that gives you some sense of how material something is. There could be quite large service industries, for example, that use lots of power, but they generate lots of revenue with that shopping centre or something else.

When you compare it on an even metric with all the industries in the economy, there are quite large differences in the emissions intensity relative to those common metrics. Revenue was what was used in the green paper. We do have value-added data on an industry basis.

Senator BUSHBY—So you selected a metric that for whatever reason is considered appropriate. But the purpose, as I understand it, behind the—

Mr Sterland—The whole point is that the policy issue that this is getting at, which we talked about, is both leakage and transitional issues. That is an economic concept. It is how valuable it is to do this activity somewhere else and how material the impact is. The metrics we chose were to get at that issue basically.

Senator BUSHBY—Presumably you have received a lot of feedback from airlines and other industries that feel those metrics are not appropriate for achieving the outcomes that the government is looking to achieve?

Mr Sterland—We have a variety of views. They would cover a lot of differences. As well as those views it would be remiss not to mention that there would be other stakeholders that strongly object to the metric from the other direction. They have provided views; they disagree with this assistance, and think it is too generous.

CHAIR—The point that Qantas made was that three of the top five emitters, including themselves, are not considered emissions-intensive trade-exposed industries. As Senator Bushby said, Qantas does not even make the past the first hurdle of emissions intensive. If our policy objective is reducing emissions, how can it be that we are working with a definition of emissions intensive that does not include three of the top five emitters? Is there not something wrong with the formula we are using? Is it appropriate to use a revenue base to assess whether somebody ought to be categorised as emissions intensive?

Mr Sterland—As I said, we put out a paper on using a value-added base. Some people have said value added is a better metric to compare this with—that is, the combined value of the profits and labour input in a certain activity, or the measure of how much income is being contributed through that activity to the economy. That has been another metric that is used. Again, if you have emissions intensity, it inherently involves a comparison. So, to compare

different industries you have to think value added, which some have argued is a more economic concept. It changes the order for some mid-stream industries.

Petroleum refining is one of the industries that changes a lot between a revenue and value-added metric. For most other industries it does not have a very large impact on ranking, but emission intensity inherently involves comparing it on a metric. So, absolute numbers of emissions, if that is associated with lots of revenue or lots of value adding, means that it is inevitably ranked or ordered in a different way.

CHAIR—Surely, if the government gives you a policy instruction that its objective is to reduce emissions to what is judged to be environmentally sustainable levels, how can you then come up with a definition of emissions intensive that does not include three of the top five emitters?

Mr Sterland—As I mentioned, emissions intensity inherently involves comparing like with like. You have to compare industries against some benchmark to be able to possibly compare them.

Senator BUSHBY—I will move on from there. Page 44 of the Australian government's Best Practice Regulation Handbook states under the heading section 4.3 Green Papers, states:

> For regulatory proposals of major significance, a policy options paper is required to be released as a basis for consultation. Commonly known as a 'green paper', it should contain most of the elements of a Regulation Impact Statement (RIS).

Mr Sterland, you mentioned a regulatory impact statement earlier. Why does the CPRS green paper not contain most of the elements of an RIS; that is, a full cost-benefit analysis of all the options?

Mr Sterland—It said 'most of the elements'. The key part of an impact statement, as I understand it, is assessing options and coming up with conclusions. That is very much how the whole green paper is structured.

Senator BUSHBY—You are saying that it does contain most of the elements of an RIS?

Mr Sterland—I would think that is a fair statement.

Senator BUSHBY—Okay. Will the white paper contain any further cost-benefit analysis?

Mr Sterland—That is our intention, yes.

Senator BUSHBY—I look forward to that. I have a question for Ms Quinn. Are there any factors, assumptions or other matters which Treasury would have liked to include in the modelling, or excluded from the modelling, or treated differently, but was constrained from doing so, due to government preference, direction or request?

Ms Quinn—Not any that come to mind. There is always in any exercise an issue of timing and how much time. Any model exercise that has 10 years will obviously do more things than an exercise that has a year. There is an issue about prioritising and going through and doing what is

available in the time. There are some things that are not supported by the existing models or data within the Australian environment.

In the report of the government there were some highlights of things that both Treasury and the government thought would be worthwhile examining over time in terms of building the knowledge base within the Australian community, either in the academic community or within the public service. There are some areas where the tools were not up to scratch, and we hope to improve going forward. But, nothing precisely springs to mind.

Senator BUSHBY—Other than those things you just mentioned, and without asking what they might be—I do not think I am entitled to ask that, but I am entitled to ask the question I am asking—there were no constraints placed on Treasury by government in respect of the parameters of the modelling that you felt you would have liked to have included or addressed in that modelling?

Ms Quinn—Not to my knowledge, no.

Senator BUSHBY—Thank you. Will the white paper include any updated modelling that will take account of any revisions that have arisen as a result of consultation?

Ms Quinn—That is a matter for the government.

Senator BUSHBY—Okay. Have you conducted any revisions to the modelling that you have done following the consultation with parties that reflect matters raised by stakeholders?

Ms Quinn—No. In the sense that we have examined underlying data that may not be in the report and had conversations with various stakeholders, we have had a process of reviewing things jointly with various stakeholders or in response to their questions, and we have not undertaken any whole-scale new scenarios at this stage.

Senator BUSHBY—But you have rerun modelling with tweaked assumptions or tweaked parameters in response to—

Ms Quinn—Not at this stage. In some sense we have to rerun the models to get data out of them because in some cases there are more than 10,000 variables. You have to run the scenario to get data out. But in the sense of looking at alternative scenarios, we have not at this point, no.

Senator BUSHBY—You have not. But you anticipate that that is probably something you would do once the government has considered the consultations and the matters raised and comes back to you? Do you anticipate that the government is likely to ask you to rerun the modelling on that basis?

Ms Quinn—That is a matter for the government. I am not entirely sure.

Senator BUSHBY—Okay. We touched on this earlier with Mr Sterland's answer, but does the modelling look at regional impacts?

Ms Quinn—It looks at state impacts. The MMRF model, which is one of the three general equilibrium models that we had, has analysis at the state level. Some of the bottom-up model that we commissioned also has state-level implications. That is the extent of the regional analysis.

Senator BUSHBY—So it does break it up by all of the individual states?

Ms Quinn—It does break it up by all individual states, yes.

Senator BUSHBY—Is that because ABS or others collect data by state?

Ms Quinn—The models that were available for us that could capture the implications of greenhouse gas modelling did not go to regional detail. There are models within Australia that look at some regional detail in more depth below a state level, but they were not consistent with being able to use them in a greenhouse gas analysis.

Senator BUSHBY—Okay.

Mr Sterland—I think the other thing to mention is that because some greenhouse gas intensive industries themselves have regional presence, from the sectoral information analysis you can gain some perspectives. It is not a comprehensive regional analysis, but they have implications.

Ms Quinn—We have by state, by industry. It is only that in some industries in some states, you can get a little bit of extra information.

Senator BUSHBY—Okay. On the industry issue, does the modelling go down to the extent that you can look within industries at the effects?

Ms Quinn—The most detailed analysis is in the Prismod model, which is 109 industries on the basis of input-output tables. Then the most comprehensive CGE modelling data set was 58 sectors.

Senator BUSHBY—At sector level it does not go down and look within the industry?

Ms Quinn—No.

Senator BUSHBY—I refer to the information upon which you based your modelling. We had evidence from the Western Australian Treasury on Monday that it does not have access to the information that you use to a sufficient degree for them to analyse it in any in-depth way.

CHAIR—And that they have asked for access to it.

Senator BUSHBY—Yes. They have asked for access to it. They did make the point, which I think is probably relevant in a political sense, that no other state has been provided that, given that they are now a Liberal-led government or a coalition government—I do not know how you refer to it in Western Australia—so it is an equitable position across the country. Why has the

information upon which the modelling has been based not provided been provided to state treasuries?

CHAIR—In the spirit of cooperative federalism, of course.

Ms Quinn—The information contained in the report is all public. All the data underlying the charts in the report is public for all stakeholders. Additional analysis in the consulting reports does have more detailed information than was in the published summary report. That is all available to all stakeholders. Any additional information requested from an industry, a stakeholder, a non-government organisation or state government is a matter for the government to decide whether it is released or not. We are in consultation with various people who would like additional information.

Senator BUSHBY—So you are essentially saying that if the Western Australian state treasury—who we have evidence from—is not getting the information they feel they need to do a full analysis of the impact of the CPRS in Western Australia, it is because of a decision at government level not to release that.

Ms Quinn—It is a government report, so it is up to the government what level of information it provides.

Senator BUSHBY—Ms Quinn, either you or Mr Sterland mentioned earlier—and I wrote down a quotation—that one of the reasons the modelling was done was in the interests of providing a clear and transparent analysis of the effect. I will put that out there as a statement. It does not appear particularly clear and transparent if the government is making decisions to withhold some information.

Ms Quinn—I remind you of my earlier comments that we have provided more information than has previously been provided by any modelling organisation on this issue. It is always a matter of degree in terms of the level of transparency and information. The information we have provided in terms of the underlying assumptions, the results, the report, the analysis, the information on the web page is the most comprehensive that I have seen in relation to any modelling in this context or other contexts within Australia.

CHAIR—It would have been good to have that or the Medicare levy surcharge, but that is another issue.

Ms Quinn—To the extent that there has been a high bar set by this exercise in terms of transparency and consultation and to the extent that there is always a request for additional information, some of that is protected. For instance, we do not own the models that we use; they are proprietary models that are independently available to other people to contract and discuss with. So there are some contractual issues around some of the information provided.

Senator BUSHBY—You also indicated that the decision on whether to release some of the other information is a decision of government.

Ms Quinn—Is it information we are allowed to release in the context of the contractual arrangements we have with the modellers who helped us in terms of the consultation process? If

it is something that the government is contractually allowed to release, there is a question of whether it will or not.

Senator HUTCHINS—Do you recall a specific request from the Western Australian Treasury?

Ms Quinn—Yes. We have had some individual requests. I was also in Perth on Monday and discussed some of the issues with the Western Australian Treasury. They are going to put together a more comprehensive list of what it is that they would like.

Senator BUSHBY—That is interesting to hear. They will be sent a list. They are not yet aware of how much of that information will be provided. Changing the subject slightly, over the past 10 or 15 years I have seen evidence that a lot of what would be commonly thought of as emissions-intensive industries—certainly, high energy users—have taken steps voluntarily to increase their energy efficiency and reduce their emissions. I think industries that have taken those steps should be applauded. To what extent are such past efforts to reduce emissions intensity been taken into the account as part of the CPRS?

Mr Sterland—The proposed model for emissions-intensive trade-exposed assistance is to provide assistance on an industry average basis. To an extent an industry is below that average because of it past action or for other reasons, it will receive the same assistance as others in that industry.

Senator BUSHBY—But that is the industry as a whole. If you have an individual entity within that industry that has been taking a corporately responsible approach to it emissions, whether for altruistic purposes or because it thinks it will have a market edge as a result, which I think is ultimately irrelevant, they may well be penalised effectively because they have a lower base to work from than do other entities within that industry.

Mr Sterland—It is precisely the opposite, Senator. They would be advantaged because of the proposal in the green paper to provide the assistance on the basis of the industry average. If individual entities have lower emissions—

Senator BUSHBY—That is for assistance. What about industries that are not trade exposed?

Mr Sterland—If they are not trade exposed, they will face a lower obligation than other entities within their own industries when the scheme commences. So they will be entering the scheme commencement with a lower requirement to purchase emissions and will benefit in that way.

Senator BUSHBY—So the CPRS will look at each entity's individual emissions?

Mr Sterland—No. It will assess emissions on an individual basis. That will be the basis of assessment. Industries themselves have to obtain permits. If they are receiving free permits because they are part of the transitional assistance arrangements, they will receive them that way. However, say there is an industry that is below the threshold—this is in the green paper proposal—and there is variation within that industry because of past action, the ones that have moved earlier will face a lower obligation under the scheme.

They will have fewer emissions when they record those emissions at the end of the year. They will face a lower liability to surrender permits for those emissions and they will benefit in that way. That is just the straight way. I suspect a particular entity that knows its carbon footprint and energy use well is better placed in a dynamic sense to respond because they better understand the carbon implication of their business.

Senator BUSHBY—If they have already made cuts and basically have removed a lot of the easy gains that can be made in terms of emissions, as the CPRS moves forward, they will have less room or ability to make easy cuts in the future because they have already made them whereas other competitors in the same industry may have some easy steps to take because they have not taken them up to that point. Will that not impact on them?

Mr Sterland—Those steps will require effort. The liability is about how many permits you have to surrender. If you have to surrender less, your carbon costs are less than other firms in your industry. Even if those other firms have potential to come down to your level, while they are coming down they are surrendering more permits. The firms that are well placed will be well placed to relative to their competitors.

Senator BUSHBY—I have one question that is relevant to my home state of Tasmania. Most of the energy in Tasmania is renewable energy, primarily hydro. To what extent will that be taken into account when assessing industry in Tasmania? We have the cement industry, zinc smelting and an aluminium refinery, all of which are very energy intensive. To what extent will the fact that they use primarily renewable energy with a very low carbon dioxide equivalent be taken into account when assessing their obligation to buy carbon?

Mr Sterland—In those cases, to the extent that they are emissions-intensive trade-exposed industries, they do not have to surrender permits for the emissions produced providing them with electricity. They have to surrender permits for their own emissions. What you might be referring to if they are emissions intensive and trade exposed, and therefore are eligible for the transitional assistance, which includes an assessment of the carbon costs coming through electricity use, will they be penalised because the electricity being supplied to them is from lower carbon sources.

The intent of the scope two emissions policy—these are the emissions embodied in the electricity that firms use—is to provide them with the same transitional assistance for the impact of the carbon cost that comes through the electricity. The details of this still have to be worked out for the white paper. It was always the intent that the assistance for carbon cost embedded in electricity use was to reflect the carbon costs that they face. If it is true that the electricity price is set because of electricity that is not renewable—it is from Basslink or whatever—the intent of the policy is to provide transitional assistance for the carbon cost that they are seeing. It is not necessarily related to where the actual electrons are generated; it is a carbon cost that they will see. We will be looking for the government's response in the white paper to that proposal. But that was the intent behind the proposal. It was not the cost.

CHAIR—I will ask some quick final questions. I refer to the ongoing cost-of-living impacts of the emissions trading scheme. Is it not a fact that your modelling scenarios do not assume a one-off change in the price of carbon dioxide; on the contrary that you assume that the permit price rises by four per cent in real terms each and every year between 2010 and 2050?

Ms Quinn—That is correct. In terms of the global prices and the expected increase in real terms of four per cent a year, the Australian price might deviate from that depending on what happens to the Australian exchange rate.

CHAIR—But you are working on your assumption of a four per cent increase in real terms each year between 2010 and 2050?

Ms Quinn—Yes.

CHAIR—Have you done any work to assess how the global financial crisis might impact on the enthusiasm of other nations to become part of a early adoption of the global action against greenhouse gas emissions? Is that something you have assessed?

Mr Sterland—Can I take that on notice? It involves other parts of the department and it would not be right for me to speculate.

CHAIR—Thank you, Mr Sterland and Ms Quinn for your contributions today. I think it is fair to say that we will ask for the benefit of your evidence again once the white paper has been released. With your indulgence we might put a number of other questions on notice because there is a lot of stuff we did not get to today because time is limited. In the interests of making sure that we are all able to have a bit of lunch before we meet with the Australian Pipeline Industry Association, I propose that the committee now adjourn until 1.35 pm.

Proceedings suspended from 1.15 pm to 1.38 pm

[1.38 pm]

CARTWRIGHT, Ms Cheryl, Chief Executive, Australian Pipeline Industry Association

DAVIES, Mr Steven, Policy Adviser, Australian Pipeline Industry Association

CHAIR—I welcome Ms Cartwright and Mr Davies from the Australian Pipeline Industry Association. I invite you to make a brief opening statement and the committee will then ask you some questions.

Ms Cartwright—I will give you a brief outline, or make a brief statement, based on our submission. I point out initially that the APIA represents transmission pipelines and not the distribution pipelines, which is quite a different mindset. We need to ensure that policymakers understand the difference as they are quite different industries. The APIA represents all long-distance transmission pipelines. It is mainly gas but it is also other products. The other thing that is quite unusual about the association is that we represent all sectors of the industry. While government policies generally impact mostly on the owners and operators of transmission pipelines, the impact on those companies eventually filters through to the service providers, the consultants, and the construction industry. One sector of our membership is impacted on by government policy but that filters through to the other sectors.

We have over 400 members, which is quite unusual because most energy associations have fewer, but larger, members. The gas transmission companies each have mainly one, two or three customers. Those customers are large manufacturing or power generation companies, or energy companies such as AGL and Origin. The customers at the end of the transmission pipelines tend to be companies that are bigger than the transmission companies themselves. Often there is a difficulty with that because regulatory policy is directed to favour the receiver of the services rather than the service company or the transmission company. The regulatory policy will often favour a larger company than the transmission company.

That background explains some of the comments in our submission. With regard to higher prices and economic challenges, the government could face pressure to intervene to reduce prices for consumers. Again that will go beyond transmission pipelines and down a couple of sectors. Most natural gas is directed or goes to major manufacturing companies or large providers. Generally, less than 10 per cent of natural gas goes to households. It is a little more in Victoria but, generally, it is only 10 per cent. It is difficult to measure as it depends on customer requirements, but in a customer's ultimate fuel bill for a household it probably represents only about five per cent of the bill, if you are looking at electricity. If you are looking at the gas bill, obviously it would be a little more.

In the scheme of things in providing power, the costs passed on by transmission companies to households are very low. Regulatory policy and government policies are often directed at the consumer and impact negatively on transmission companies. You are probably aware that the new natural gas law is in place. During that process there was consultation with the industry. We did not get all that we wanted but, basically, we are getting on with business. We did better than we did in the original plan but we are now getting on with business and we are working within

the new national gas law. One of the challenges we are facing involves the next steps beyond the national gas law.

If we are not careful, more intrusive regulation could be introduced. Industry is again working closely with government bodies to ensure that that does not happen. An example is the proposed short-term trading market, which could introduce more intrusive regulation. Through negotiation, discussion and sensible consultation we have managed to come up with a solution that meets what the government requires through a short-term trading market that does not impact on transmission company members' long-term contracts. I understand that you are much more interested now in the emissions trading scheme.

Under the new scheme—what is now called the CPRS, or the Carbon Pollution Reduction Scheme—it is expected and predicted that the demand for natural gas will increase. That is because gas is a cleaner burning fuel than coal and the technology is there right now. While we are waiting for carbon capture and storage technologies and renewable technologies to become commercial, in the meantime gas should step up and help us immediately to reduce our carbon emissions. We need a decision on the scheme as soon as possible because transmission infrastructure involves long-term private sector investment. For the private sector to make those decisions they need to know on what they are basing that.

There are some questions about how the scheme will work. The scheme could come in and impact on transmission companies' long-term contracts. It is possible that any costs imposed on the transmission companies might not be able to be passed through because of the long-term contracts. We need some mechanism to allow those costs to pass through. In the draft CPRS there seems to be some confusion about the definition of 'operational control'. That will have to be clarified. If it is not clear the transmission sector will not be able to operate under the scheme. The system uses the term 'fugitive emissions' for the transmission of natural gas, which seems to be based on the distribution pipeline industry.

Transmission pipelines do not have fugitive emissions; they are a very different product from the distribution pipelines. They operate at much higher pressure and they have different safety and maintenance requirements. If there is an escape of gas on a long-distance gas transmission pipeline it is part of the management of the transport of the product. Because it is the product that is being transported if it were travelling on trucks you would be recording what was missing. If you moved it from one truck to the next you might lose a bit of the product. Because it is a product that you are transporting it is recorded in the company's records.

During the transportation process any loss of gas is already recorded because those are the commercial requirements of the companies doing the transporting. The CPRS draft as it stands does not account for and does not understand that. There is another challenge for us that we are hoping will be clarified. This will be clarified when a final decision on the scheme is made. When there is an increase in demand the large gas transportation companies use compressors to increase capacity. Transmission pipelines, unlike electricity transmission, are also storage vessels.

To increase the capacity you increase the compression and you have more product stored in the pipelines. However, to a certain extent the compressors emit CO2 gases. When a large transmission company decides to increase the amount of product it is moving it will have to

decide between using compressors or what we call looping, which is doubling the pipeline—building a second pipeline in different sections along the way and linking it into the original pipeline—thus increasing the capacity of the pipeline. We will need to know fairly soon what the CPRS is doing and what its measurements are so that major companies know, when it is time to increase their capacity, whether they will be looping or building new compressor stations along the way.

The renewable energy target is a scheme that will decrease the use of natural gas. It could act against the government's intention to reduce carbon emissions because I understand that the renewable energy technology will not be ready quickly. The extra cost involved in introducing renewable energy could see power generators retaining coal—moving to coal or keeping coal-fired power—because of the extra costs involved in enforced renewable energy. That does not fix the problem of reducing emissions, because it delays the move to natural gas. However, once renewable energy is introduced most of the renewable energy systems will need natural gas as a backup fuel because of the intermittent nature of renewable energy.

I refer, next, to assistance under the CPRS. On the one hand trade-exposed industries are often customers of gas transmission pipeline companies. If those companies moved offshore that would impact on the local industry downstream. Any indication of what the government plans to do about trade-exposed industries will impact on what the gas transmission industry does. We accept that coal-fired generators would need some assistance in the early stages but we suggest that, rather than discouraging the move to natural gas, that assistance should be given fairly quickly.

One of the questions in your inquiry relates to state regulatory requirements. Of course, we are keen to have state regulatory requirements streamlined as much as possible, but we have to be careful that the lowest common denominator state is not the regulation of choice. Logic must apply across the board. We are keen to work with the government to help to streamline the regulations. If you have any questions I would be happy to answer them.

CHAIR—Thank you very much for your opening remarks, Ms Cartwright. You are right; today we will be focusing on the emissions trading scheme in particular. We might ask you to come before us again at a later stage to deal with some of the other issues in our terms of reference. I refer specifically to the CPRS. I assume that some of the issues that you have raised have also been raised directly with the government?

Ms Cartwright—Yes. They are explained in our submission to the CPRS.

CHAIR—At this stage has the government given you any indication that it has taken on board any of your suggestions?

Ms Cartwright—It is interesting, because when we speak to the government there is an acknowledgement that natural gas is the logical solution immediately to reduce greenhouse gas emissions. However, when it comes to making public statements that does not always seem to be the case. An example in point is the recent case in Victoria. Environment Victoria recommended a doubling of the use of natural gas in Victoria as part of its report for going forward in Victoria. However, when the minister made his statement he commented on renewable energy and carbon capture and storage, but he did not give natural gas equal weight. We raised that point and we

hope that it will be addressed at some stage. I think there is a general assumption that because natural gas is the logical alternative it will just happen. We must be mindful of the fact that the policies that are being introduced do not discourage the move to natural gas.

CHAIR—Members of the CSIRO appeared before us this morning and made the point that natural gas is the most competitive and most efficient energy source currently available in helping to address greenhouse gas emissions. Can you explain how the mandatory renewable energy target and the objectives of the emission trading scheme interact? Why do you think renewable energy targets should be phased out? Could you give us some details about that?

Ms Cartwright—We would be pleased if the renewable energy target were not introduced at all. If it was introduced it should certainly be phased out very quickly and it should also take account of the emissions trading scheme. I note that it is now called the renewable energy target and the word 'mandatory' seems to have been dropped. We are hoping that that is a positive sign. If it is mandated that power generators provide 20 per cent of their power from renewable energy, that will be such a large overall cost for them that they will have to look at ways of reducing the costs of the remaining 80 per cent of their power generation.

Of course, it will cost those companies some money to move from coal to gas, although a lot of the companies are already making those changes. If there is not the right encouragement to make those changes to natural gas the simple introduction of a mandatory renewable energy target will discourage them from moving to natural gas for the other 80 per cent.

CHAIR—Do you see any other inhibitors to the move to natural gas in the Carbon Pollution Reduction Scheme?

Ms Cartwright—It depends on the price of the carbon. If the price on the carbon is too low there will not be a move away from coal-fired power towards natural gas. It will also depend on the assistance to coal-fired power generators and whether they move away from coal to natural gas. If the assistance is too generous and it remains for an extended period there will not be a move to natural gas. On the other hand, representing the whole of the industry we are also involved in discussions with the government on carbon capture and storage.

In initial discussions about carbon capture and storage—I know that overseas they have ignored the transportation element—I can happily report that the Australian government, ahead of international governments, understood the challenges for the transportation of CO2 waste. APIA and the carbon capture task force are working with the government on that. If carbon capture and storage go ahead, the transmission pipeline industry will look at expanding to accommodate those requirements.

CHAIR—You said in your opening statement that the CPRS works on the assumption that demand for natural gas will increase. In my home state of Western Australia there is already a shortage of supplies when it comes to meting demand. I think that some of your members, who are also members of the DomGas Alliance, made that point quite strongly in Western Australia. Are there any issues at present about the design of the Carbon Pollution Reduction Scheme that would inhibit the expansion of the domestic gas supply, considering the linkages between the energy industry and the domestic gas supply?

Ms Cartwright—As you would be well aware, the situation in Western Australia is a little different from the eastern states because they supply LNG for export. In the eastern states there are plans for LNG terminals—I think for about four terminals but only one or two might go ahead—to make the most of the discoveries or the accessibility of coal seam methane. We believe that there is enough coal seam gas to supply LNG to international as well as domestic markets. In the eastern states the coal seam gas is a little closer to the markets than the smaller gas reserves up on the North West Shelf, so gas supply is unlikely to be a problem.

CHAIR—In the eastern states?

Ms Cartwright—Of course, the producers can give you exact figures on what is available.

CHAIR—You mentioned the necessity to have certainty and said that your industry has to plan to increase its infrastructure capacity, et cetera. There is a symbiotic relationship, is there not, between producers and the industry that you represent?

Ms Cartwright—Yes.

CHAIR—I am taking a bit of a parochial angle from the Western Australian point of view because representatives from the Western Australian Treasury who gave evidence said that those who designed the CPRS probably did not sufficiently understand the energy market dynamics in Western Australia. If the CPRS, as it is designed, had an adverse impact on future investment in gas and energy production that would have a flow-on impact on your industry and on our capacity to have sufficient natural gas to meet that increased demand.

Ms Cartwright—The CPRS would need to encourage investment in natural gas production and transmission. We were quite enthusiastic about Minister Ferguson's comment with regard to the Western Australian gas supply. He said that he would review very closely the leases that are not being used on the North West Shelf , which would result in the provision of more natural gas for Western Australia. It is important that the CPRS ensures it does not discourage investment in natural gas.

Mr Davies—In response to the question about the design of the CPRS and the potential impact on the demand for gas domestically, as has been pointed out, LNG is the other major use of natural gas. The LNG industry is an emissions-intensive trade-exposed industry that is highly likely to receive some form of compensation under the CPRS.

CHAIR—Not so far as we know, unless you know something that we do not?

Mr Davies—No, we do not. We would have to say that they are arguing strongly to receive some sort of compensation.

CHAIR—Are you making an announcement, Mr Davies?

Mr Davies—Not at all, Mr Chairman. There is some concern. If there is compensation or some sort of exemption for emission-intensive trade-exposed industries it means that you will have to choose to put your natural gas down one path and you might not necessarily have to

account for the emissions involved with that natural gas. That might steer the market away from the domestic use of natural gas.

CHAIR—Let us go back to the overall objective which is to reduce emissions globally. Has a case not been made out for that? I understand that that might not necessarily be in the best interests of your domestic industry, but should you not deploy your environmentally beneficial energy source where it can have the biggest impact on reducing emissions?

Mr Davies—Certainly. There is some case for that but we should also be employing that in the domestic market as much as possible to reduce our own emissions.

CHAIR—Sure.

Mr Davies—Because they are the ones for which we are directly accountable.

CHAIR—Sure.

Senator BUSHBY—Thank you for coming along today. Just following on from the questions we have had, this morning we heard from APPEA that there are about 110 years of proven gas reserves, and up to about 300 years depending on the as yet unquantified coal seam gas.

Ms Cartwright—I have been told that there are 400 years.

Senator BUSHBY—There you go. Apparently, we also have two per cent to three per cent—I think that is probably the 110-year reserve figure that has been used—of world gas reserves. We are a significant and major exporter of gas, in particular, in the Asia-Pacific region, over and above what that two per cent to three per cent suggests. This suggests to me that we are able, simultaneously, to meet ambitions for gas exports and domestic supply under a CPRS. Would you agree?

Ms Cartwright—As Steve said, as long as the CPRS does not discourage investment in natural gas. When it finally comes out it will be a case of the devil being in the detail. We have to make sure that all those considerations have been taken care of.

Senator BUSHBY—I think that the key question relates to the detail. Both major parties support an emissions trading scheme. This inquiry has included in its terms of reference the effect of the emissions trading scheme to try to shed light on some of the potential consequences and to try to influence the details that might go into it. We are hoping that you will shed some of that light and help us to guide the government in that regard. We have a given—we have a 110-year to 400-year supply of gas. As I understood it from the answers we got this morning, that is on the basis of the current output from Australia. Obviously, if it ramped it up significantly that number of years might change. However, if you had 400 years it would have to ramp it up reasonably significantly before it became a worry that gas supplies might run out.

The obvious issue is getting the gas from where it is produced to where it needs to be used. You mentioned in your submission that a substantial investment in infrastructure would be required to do that. What are we talking about? What sorts of timelines and how many dollars

are we talking about? If gas becomes the dominant source of energy generation in Australia, how much would you have to invest in transmission to make that possible? How long would it take?

Ms Cartwright—A piece of string comes to mind.

Senator BUSHBY—Or a piece of pipeline.

Ms Cartwright—If you are talking about from where to where to a certain extent you would be talking about billions of dollars.

Senator BUSHBY—I assumed that it would billions of dollars.

Ms Cartwright—It depends very much on the locations. Traditionally, the industry built the transmission infrastructure to meet the demand. The moment a production company finds a buyer for their gas they then organise the gas haulage. It is done by the private sector through a bilateral contract and there is no government funding. They are very happy to do it that way and to leave the government out of the whole process. We are looking for certainty, whichever way the government goes, so that the companies know where to make their investments.

The CPRS will impact on industry on a secondary basis rather than on a primary basis. The customers of the transmission companies will be impacted first and, as a result of that, the transmission companies will be impacted. Obviously, to a certain extent, this industry must be involved in emissions reporting, and comparing compressors and looping. Most of the impact for the demand for transmission services will be as a result of the impact on the manufacturing companies, the power generators, and also the production industry.

Senator BUSHBY—Okay, I understand that.

Ms Cartwright—Basically, that is why we are asking you to give us an answer soon.

Senator BUSHBY—If after receiving the degree of certainty that you or your members required they decided that they needed a new pipeline from where the coal seam gas is generated—I understand that most of that comes from Queensland—to Brisbane or to the generation facility near Brisbane, after having received certainty about an investment decision how long would it take to put that in place?

Ms Cartwright—Again I will not give you a simple answer. In a lot of those cases pipelines are already delivering gas. Those pipelines would be expanded, that is, looped.

Senator BUSHBY—What do you mean by that?

Ms Cartwright—Looping means that stage by stage a second pipeline is built and it is linked into the first pipeline, which basically expands the size of the pipeline. Gas transmission pipelines are storage vessels as well as transportation vessels. When you increase capacity, or when you need more gas along one of those transportation mechanisms, you increase the capacity by using compressors, or by looping. The Dampier to Bunbury pipeline in the west—the biggest capacity pipeline—is almost half to two-thirds looped now and in the end it is

expected to be looped all the way. You loop that pipeline instead of taking the pipeline out and putting in a bigger one.

Because of the nature of the product you can do that without interruption to supply. There would already be some pipelines along the route to the coal seam methane fields and they would be expanded to meet the demand. Occasionally a new one would need to be built, but that takes longer to do. Getting the environmental and heritage approvals along a new route takes longer than it takes to build the pipeline.

Senator BUSHBY—I imagine that that would be the case. I guess that to some extent with looping that would be less problematic?

Ms Cartwright—That is right, yes. When they first built the Dampier to Bunbury pipeline some years ago, the pipeliner was very conscious of the environment. They backfilled, kept the original topsoil, put the original topsoil back and planted new trees. Apparently, they wanted to do some looping on one part but they were prevented from pulling out the trees that they had planted themselves. That is one of the reasons why it takes a little while to get through.

Senator BUSHBY—Planning issues across Australia is a matter for another Senate inquiry. We will not deal with them today.

CHAIR—Have you reviewed federal Treasury modelling at all as it relates to this?

Ms Cartwright—I do not think so.

CHAIR—Have you conducted your own modelling by looking at the green paper and establishing how your industry will be affected?

Ms Cartwright—We are about to do that. We are a small organisation so we are about to undertake that now.

CHAIR—Once you have reached a conclusive stage in your modelling would you make a copy of that available to the committee?

Ms Cartwright—Absolutely.

CHAIR—That would be very much appreciated. I refer to attracting investment into your infrastructure. How will the CPRS impact on that? This is where I was going with my question about federal Treasury modelling. Federal Treasury modelled on the basis that they thought there would be international action at an expected level to address greenhouse gas emissions. There is, of course, a scenario that has not yet been modelled and the United States, China and India, in particular in the context of a global financial crisis, might not be quite as fast as Australia in taking action under the current timelines. If Australia went significantly faster than other relevant countries to implement a scheme such as the CPRS, would the capacity of your industry to attract investment be impacted?

Ms Cartwright—Obviously it would depend on how the scheme was designed. If the scheme was designed in such a way that the customers of the transmission pipelines were not impacted

negatively there would not be a negative impact on investment in our industry. However, if by going ahead of other countries there was a negative impact on, say, our exporters that used natural gas, that would have a significantly negative impact on the haulage companies, the gas transmission pipelines.

CHAIR—Presumably your members would be looking at this closely right now. What is their expectation, accepting that it is based on assumptions and there is a certain element of the unknown? What are their current expectations based on the way the CPRS is designed without amendments?

Ms Cartwright—Because of the way it is designed at the moment and because of the information we have, we do not have any expectations. We are waiting for a clearer indication of how it will work.

CHAIR—So the green paper, the government's modelling, and all the information that is currently out there does not give you enough information for you to be able to assess the impact on your industry?

Ms Cartwright—No.

CHAIR—In a couple of short sentences could you tell me specifically what you need from the government in order to be able to make a thorough assessment of the impact on your industry?

Ms Cartwright—Because investment in the transmission industry is very long term and it needs to plan ahead, the industry needs to know what will be the impact on the customers. There is an assessment of the amount of gas that will be required. We also need to know how much assistance the coal industry will get and whether that assistance will be phased out quickly to allow investment in natural gas. Once there is more investment in natural gas—that seems to be the assumption but there is no definite or clear direction—and once there is a clear indication that there will be investment in natural gas there will be investment in the transmission system.

CHAIR—I refer again to your submission, Essentially, you support the introduction of a CPRS, but subject to addressing a number of challenges. One of those challenges is to ensure that the scheme does not distort markets. This is where you are saying that you have not got enough information. You are not saying that the current design will distort markets, but you are saying that you do not have enough information. Is my understanding correct?

Ms Cartwright—It appears as though the current scheme will distort markets.

CHAIR—Okay. From your point of view where does the current design have to be changed?

Ms Cartwright—We would like to ensure that export-intensive industries are not disadvantaged to the point where they move offshore and do not need natural gas, because they will not be there to supply. We need some assurance that assistance to the coal industry, which is in competition with natural gas which is more of a polluter than natural gas, will be phased out very quickly so there is a clear move forward towards natural gas.

Mr Davies—Essentially, as we said previously, it is in the detail. The scheme itself states that there will be some assistance for strongly affected industries and it highlights the coal-fired generation sector as the key strongly affected industry. However, at this stage we do not know what form that assistance will take. Again, for the emissions-intensive trade-exposed industries we do not know what level of assistance they will be given, if any.

The nature of the assistance packages that are given to those industries will have consequences on the demand for natural gas. For example, it would be one thing if coal-powered generators were given a one-off amount of compensation to compensate them for the loss of value of their investments under a Carbon Pollution Reduction Scheme. If they were given an ongoing free allocation of permits that would entirely change the impact on gas.

Ms Cartwright—There is no indication as yet. On the emissions reporting side there seems to be a misunderstanding about the difference between long-distance transportation companies and short-distance transportation companies. We must ensure that that is clarified because it could have a negative impact.

CHAIR—What would be the impact of that misunderstanding spelled out explicitly?

Ms Cartwright—The short version is that it would be so expensive and so impossible there would be no investment. The difficulties are the misunderstandings about the way in which transmission pipelines operate. It is like comparing taxis that ferry people around the city with international airlines. You would not have the same rules and regulations for them. The scheme, as it was originally designed—we are in discussions with departments about that—does not take account of the fact that the transmission pipelines are a very different business.

CHAIR—Just to ensure that I understand you correctly, the scheme as it is currently designed makes the assumption that transmission pipelines operate under the same sorts of physical parameters as the distribution pipeline?

Ms Cartwright—The same sorts of physical parameters, yes.

CHAIR—A distribution pipeline is what you might find somewhere in a metropolitan area delivering gas to individual households?

Ms Cartwright—That is right.

CHAIR—Whereas the transmission pipeline is like Dampier to Bunbury—in big volume?

Ms Cartwright—That is right. It is a huge volume and there is huge pressure, whereas at the distribution level it is transported under some pressure. If there are fugitive emissions it is because the gas cannot get out. It cannot get out of the transmission pipelines unless it is let out.

CHAIR—Unless we get it right it will become prohibitive to invest in transmission pipelines. Presumably the government is saying to you, 'Yes, we understand what you are saying and we will make some adjustments to cater for it.' It seems pretty obvious.

Ms Cartwright—It seems obvious when you think about it but, clearly, it does not come to mind immediately. It is always a constant battle for us to make that case. Whether it is with the CPRS or whether it is with the gas law it is a constant challenge to demonstrate the differences between gas distribution and gas transmission. Surprisingly, it is sometimes difficult to get an understanding of the policy differences between the electricity and gas industries.

CHAIR—After looking through your list of qualifiers of your support for a CPRS I think we have talked through most of them. You mentioned in your submission that the government must ensure that the scheme operates at minimum cost. Would you like to comment on how you think the scheme, as it is currently designed, fits in with your expectation that it should be at minimum cost?

Mr Davies—That is part of our interaction with other government climate change related policies. The CPRS is bringing about a massive structural change in the Australian economy and it is giving a price to carbon emissions. We would like to see that happening at the least cost to the economy. In that situation, gas would probably stand to benefit. In interacting with other policies such as the renewable energy target, the government is implementing a policy that forces the energy sector to choose options that are not the least cost options to reduce their emissions. But that is not part of the CPRS itself. The government must consider the interaction between the CPRS and other policies to ensure that the Australian economy can make those structural adjustments at the most efficient and economic price.

CHAIR—That is a bit different. You are not actually talking about the cost of the scheme; you are talking about the cost of the overall policy objective.

Mr Davies—That is right.

CHAIR—Is that what you are talking about?

Mr Davies—Yes.

CHAIR—Do you have any concerns, for example, about compliance costs, under the CPRS as it is structured now?

Mr Davies—Not particularly. We are already subject to the National Greenhouse and Energy Reporting Scheme. The CPRS will be building off that in relation to administrative costs. It remains to be seen how the market for carbon permits will evolve and what costs will be involved in interacting within that market. In relation to monitoring emissions and emissions reporting the industry is already subject to pretty stringent requirements.

CHAIR—Compared to what you are doing now and what you will be required to do under the CPRS, you are saying that there will not be a significant change in compliance?

Ms Cartwright—As long as they get the policy right and as long as they explain the cost of emissions from compressor stations compared with looping and that type of thing. They must recognise that transmission pipelines do not have fugitive emissions because it is a product that is being transported. Over those long distances all changes to the product must be clearly

recorded. The system must not impose the same kinds of requirements as it does for distribution pipelines. The system is up and running and it is ready.

CHAIR—If you had to point to one issue that is an issue of concern for you would it be the confusion between distribution and transmission pipelines? Is that your number one concern?

Ms Cartwright—No, that is one of our main concerns. The other is the impact on the demand for natural gas.

CHAIR—Okay.

Ms Cartwright—The impact on the demand for natural gas is the big picture.

CHAIR—Obviously, from your point of view you would like to see demand increasing, but you would like to have some sort of certainty and predictability as to how that will occur?

Ms Cartwright—It would be good for the country for there to be an increased demand for natural gas.

CHAIR—Ms Cartwright and Mr Davies, thank you very much for your contributions to the committee today. As I said, it is likely that we will again ask you to appear when we deal with the other parts of our terms of reference.

Ms Cartwright—Thank you for the opportunity.

Mr Davies—Thank you.

[2.21 pm]

BAIN, Mrs Robyn, Chief Executive Officer, Cement Industry Federation

FARLOW, Mr Andrew, Sustainability Development Policy Manager, Cement Industry Federation

CHAIR—I welcome Mrs Bain and Mr Farlow from the Cement Industry Federation.

Mr Farlow—I would like to table these graphs of the industry.

CHAIR—I invite you to make a brief opening statement and the committee will then ask you some questions.

Mrs Bain—In talking about the CPRS it is a good idea to look at where the industry has come from. For the past 20 years the cement industry has been playing in the CO2 and CO2 reduction space. In Australia the demand for cement is 12 million tonnes and the current capacity to supply that demand is 10 million tonnes, so we are importing around two million tonnes. In the early 1990s our industry grew from around an eight million tonne capacity to 10 million tonnes now. Over that time the industry has significantly changed its process from old technology to new technology.

The old technology meant that you incorporated water. You ground the limestone, mixed it with shale and clay, combined that with water and made it into slurry. You then took that slurry and put it into a kiln and heated it to 1,450 degrees. With the old technology that kiln needed to drive off the water and calcine the limestone. The new technology is dry technology, so all we have done is take away the water in the first part of the process and that means we have reduced our energy consumption by about 30 per cent. The industry has also increased its use of what we call supplementary cementatious materials.

You have cement that is clinker-based cement and supplementary materials are other cementatious like material such as slag and fly ash that you can add to clinker-based cement that will bulk it out. Slag and fly ash from the steel mill and from the power stations is already cooked and already calcined, so we do not have a CO2 output. This is the second major area in which they have worked. The third one is the use of alternative fuels. Our traditional fuel to run the kiln is gas and coal.

Alternative fuels comprise waste from other industries. We use waste tyres, tallow, waste oil, carbon dust from the aluminium smelters, demolition timber from landfill sites—anything that has calorific value. Importantly, in the CO2 context, the more we can use the biomass, which has the CO2 to it, the more industry benefits. Over the past two decades industry has improved its CO2 output by 20 per cent per tonne of product. That is a straight technological change. We incorporate what we tend to call industrial ecology, in other words, incorporating waste from other people's processes into our processes. That concludes my opening remarks.

CHAIR—Thank you very much. You made the point that over the past 20 years the cement industry has already made a lot of progress?

Mrs Bain—Yes.

CHAIR—Do you think that the way in which the Carbon Pollution Reduction Scheme is designed sufficiently acknowledges the progress that the cement industry has made in reducing greenhouse gas emissions?

Mrs Bain—The green paper does not refer to previous gains that any industry has made. Let us talk about the CPRS and about what is laid out in the green paper as at 16 July. It will be difficult for the cement industry to soak up that 20 per cent import replacement. To deal with that 20 per cent import replacement and to manufacture it ourselves would require an investment of around $1 billion, which represents a new kiln. More than likely that kiln would go into Queensland. If the CPRS were as it is in the green paper that kiln would not be built. This nation would continue to import clinker, or cement, to soak up the demand by society.

CHAIR—Can you explain why that is? Bear with me as somebody who does have expertise in cement manufacturing.

Mrs Bain—Mr Chair, I would have thought every day everybody wakes up thinking about cement.

CHAIR—On occasions I do.

Mrs Bain—Do you want me to explain the difference?

CHAIR—You made a statement about the impact of the CPRS on your industry as it was announced in the green paper on 16 July. I am trying to understand what it is in the CPRS that will have that impact and why?

Mrs Bain—Okay.

CHAIR—You said something very quickly, but as I am not across the lingo and the technicalities of cement manufacturing I was wondering whether you would take little steps. What is it in the green paper that causes particular concern and how does it impact on your industry? I want to know why you reached the conclusion that you described.

Mrs Bain—Okay. From our point of view there are three main areas of concern in the green paper. As you would have heard today, obviously the most contentious are the trade-exposed and emissions-intensive sectors. The government recognised in the green paper that cement is a trade-exposed and emissions-intensive sector. On that basis they said that they would allocate 90 per cent of the permits in year one, or 2010, to the cement sector. As Cheryl Cartwright said earlier, the devil is in the detail. There is a difference between cement and clinker. Clinker is the intermediary product before cement. It is a little black rock and it is the product that produces the majority of the CO2 because you heat limestone and limestone throws off CO2.

In the green paper it is called cement clinker. After the green paper came out I phoned the department to clarify what they were talking about—whether it was about cement or about clinker. They said that it was about clinker. A 90 per cent free permit allocation over the clinker sector means an 84 per cent permit allocation for cement because you have the other part of the cement-making process. Cement is trade exposed and it is import parity priced. If we buy 16 per cent of our permits, whatever the permit price is, that is 16 per cent more than our competitors, who are predominantly in the Asian region, have to purchase. The second point is that, over the life of the CPRS, you will have a gradual decay of the permit allocation for the trade-exposed emissions-intensive sectors.

In 2010 for cement you would get 84 per cent of your permits upfront and every year that would decline in line with the trajectory, so it might be two per cent and it could be four per cent. That means that every year the sector would have to purchase more permits from the market, whereas our competitors do not. Over time it would render us uncompetitive. The third part of the CPRS that is an issue of concern to our sector is that it does not allow for new investment to come in. That depends on the trajectory that is set. Those are our three major concerns. If you look back at the cement sector you will see that it allowed supply and demand to get out of whack.

When it gets to a certain level the industry will build a new kiln and it will then supply that demand domestically. The 20 per cent import replacement means that this country is currently in a situation where it should be able to build that new kiln to supply the domestic market. Shareholders of companies are very mindful of what is in that green paper. If we went ahead with an ETS as outlined in the green paper we could not invest and the company could not ask its shareholders for the money to invest in a new kiln. The shareholders are global shareholders and they would say, 'Why would we want an extra 16 per cent cost which will grow each year when we could build that kiln in Indonesia and supply the Australian market anyway?'

CHAIR—Why is it important to establish that kiln in Australia?

Mrs Bain—The cement industry is a relatively small industry but cement is the glue that keeps our material world together. It is a major component of the building, construction and infrastructure sector. If we do not supply our cement domestically we are reliant on getting it from other countries. Let us take, for example, the United States prior to the financial crisis, when their boom was going. They do not have complete domestic supply so they are reliant on imports. At a time when the world is growing and the demand for cement is high each country chooses to supply its own demand before it exports. In the case of the United States, they were on cement rations for four days a week.

CHAIR—You are saying that if we do not preserve a reasonably sized domestic industry essentially we will become reliant on the overseas market?

Mrs Bain—Yes, you will. You are then at the whim of what is happening in the global market relating to the manufacture of cement and you are also subject to the price that they choose to put on it. If you have your own domestic industry you have that competitiveness and the product goes out to the market at quite a competitive price.

CHAIR—You talked about expansion and new investment and you said that because of the way in which the CPRS is currently designed shareholders would not want to invest in new capacity. What about existing capacity across Australia? How will that be impacted?

Mrs Bain—In 2010 the existing capacity should be fine because you have a permit allocation in 2010. However, existing plants will have a problem over time because of the decay of the cap each year. As that decay eats away industry has to buy more and more permits. When a major event affects a cement plan, which happens quite regularly—let us say that the kiln had a major breakdown and you needed $50 million to invest in a new kiln—you would have to go to your shareholders and ask them to spend that capital, knowing full well that you are becoming less and less competitive against imports.

The shareholders would say, 'Why are we going to do this when we are not competitive against imports? Why are we not shifting our focus to become an importer of clinker and then grinding it in this country?' Our fear is that if the ETS is not designed correctly for this sector, companies will quite quickly start to transition themselves into importing companies rather than manufacturing companies.

CHAIR—What sort of solution have you put to the government to address your concerns and to prevent the scenario you are playing out from eventuating?

Mrs Bain—Going back on our three main points, we put three propositions to them. The first is that trade-exposed emissions-intensive sectors should have their 90 per cent allocation fixed. That is an allocation over cement, not over clinker.

CHAIR—Rather than to graduate it down?

Mrs Bain—Rather than to graduate it down. The reason for that is to ensure that our competitors have a cost on carbon. We are not saying that you should leave it forever and a day; we are saying that, if you really believe that that global scheme will come into play, continue down that path and work away internationally to get global agreement.

CHAIR—If all our overseas competitors were on board with similar or equivalent schemes obviously the problem would disappear?

Mrs Bain—That is right. We would not need permits if we had a global scheme.

CHAIR—We want 90 per cent up until such time as the rest of the world comes on board with whatever Australia decides to do?

Mrs Bain—Yes. We believe that the 10 per cent the industry would have to purchase is fair. The sectors should be asked to pay for climate change, just as the mums and dads of Australia are asked to pay. Can the industry remain competitive with a 90 per cent allocation? Yes, it can. Will it hurt? Yes it will, and it will certainly wipe off some of the profit. But it will also increase mums and dads electricity and petrol bills, et cetera. My first point is that we must keep it at 90 per cent sustained until there is a global agreement. My second point is that we must ensure—and this really comes down to the cap question—that we have new investment in manufacturing sectors such as cement.

The government proposed a 30 per cent allocation of the permits for trade-exposed emissions-intensive sectors. I think Mr Sterland would have referred to 10 per cent of that. Thirty per cent is for agriculture, so we will set that aside. The 20 per cent permit allocation is not large enough to cover the trade-exposed emissions-intensive sectors in this country. Existing facilities are not covered. You heard earlier from representatives of the LNG industry who said that they had no coverage. If they removed that 30 per cent and increased it to somewhere around 45 per cent that would cover trade-exposed emissions-intensive sectors and give us the ability to grow. That would deal with the new investment.

A third point that I have not touched on before relates to carbon leakage. As I said in my opening remarks, the cement industry is an economically competitive industry in Australia but it is also very efficient in CO2 terms compared to our competitors. The only country that is more efficient in CO2 than Australia is Japan, and they have nuclear. They also have much more biomass than Australia. If you imported cement from Japan via ship and you included the CO2 for the transport of cement into Australia you would find that it is higher than the CO2 emitted by Australia.

CHAIR—You are saying that if we had to substitute Australian cement with Chinese cement, Indian cement, or even cement from Japan, because of the transport the effect on global emissions would be negative?

Mrs Bain—That is right.

CHAIR—And it would be counterproductive to what the government said it wants to achieve?

Mrs Bain—Yes.

CHAIR—When you made those representations to government did you point them to those three areas where you would like to see some improvements? What sort of response are you getting from government? Are you getting any indication that they are taking your suggestions on board? How confident are you that you will see your recommendations catered for in the white paper?

Mrs Bain—My confidence is probably reflected in the dark rings under my eyes from sleepless nights because I have been worrying about the CPRS. It depends. Minister Wong keeps stating that this is a negotiation, that we have our point of view, that he has his, and that we will negotiate through it. We have given the government a lot of information via the department and we have spoken directly to Minister Wong, Minister Ferguson and Minister Carr.

There is not a lot of feedback. We are hearing 'We are concerned about maintaining Australian industry and we are concerned about jobs.' At the last roundtable meeting we had with the Department of Climate Change, the department was asked, 'What are you doing about this?' Their response was, 'You will see in the white paper.' By the time you get to the white paper you have a policy and it is difficult to bring it back.

CHAIR—At this stage you have had no indication whether there has been any shift in relation to the propositions you put forward since the green paper. The time frame is: a white paper in

December, or before the end of the year; and legislation in March. It will be a pretty tight timeframe.

Mrs Bain—It is an incredibly tight timeframe. Minister Ferguson talks to us a lot about jobs and about maintaining the industry. He also asks a lot of questions about our concerns, for example, 'Why are you really concerned about that? Is there a big difference between cement and clinker?' Those are the types of questions he asks. While it is comforting that he is worried about us, we still cannot sit here and say, 'Yes, we have seen a shift from the green paper until today.'

Senator HUTCHINS—Thank you for your submission, Mrs Bain and Mr Farlow. It is a very good submission in which you articulately outlined your concerns. I think you would probably agree with me that, at the moment, every industry group is probably in the same position as you. The government is probably keeping its lips closed until it is ready to make the announcements?

Mrs Bain—Yes.

Senator HUTCHINS—You seem to have pretty extensive access to senior government ministers to voice your concerns. Is that what you have been saying?

Mrs Bain—We have, yes.

Senator HUTCHINS—I am interested in the reaction of public servants to you. This morning I specifically asked Mr Sterland this question and he answered positively. You might wish to comment on his statement. I said, 'Has your department received feedback on the importance of certainty in allowing investment decisions to be made?' He said that they had. Is that also your observation?

Mrs Bain—My observation is that the department has received an enormous amount of feedback—well and truly over 1,000 submissions to the green paper. We have had seven industry roundtable meetings with the department and we have had individual sector-by-sector meetings with the department, but I still cannot tell you what their feedback is. So it is a one-way street.

Senator HUTCHINS—In a way, Mrs Bain, it is probably not their job. It is the government's job to provide you with feedback. That is not the department's call.

Mrs Bain—Absolutely. I understand that, but we have not got feedback from the department and we have not got feedback from Minister Wong or Minister Ferguson.

Senator HUTCHINS—You might not have too many sleepless nights ahead.

Mrs Bain—I hope not.

Senator BUSHBY—I thank the representatives from the Cement Industry Federation for coming along today and for giving very illuminating evidence. I want to follow up on your comments about carbon leakage. The recently released Treasury modelling stated at several points that 'fears of carbon leakage may be overplayed.' In launching Treasury's report Mr Swan

said, 'The carbon price will not impact significantly on businesses and force them to move offshore.' Am I safe in assuming from your comments that you do not agree with those remarks?

Mrs Bain—I think that is a very safe assumption, yes.

Senator BUSHBY—The treasurer was speaking on the basis of advice from bureaucrats and you have modelling that is based on all sorts of assumptions. You are speaking from the perspective of an industry representative understanding the industry you are in, the challenges that you or your industry face, and the likely consequences of government change on your industry?

Mrs Bain—Yes.

Senator BUSHBY—Once again it would be safe to assume that your view is based on fact rather than assumption?

Mrs Bain—Yes.

Senator BUSHBY—That is good.

Mrs Bain—Can I make a comment relating to the Treasury modelling? You can get modelling to do a lot of things. It depends on the assumptions that you put in at the beginning.

Senator BUSHBY—This morning the officer from Treasury admitted that. She used almost exactly the same words.

Mrs Bain—On Monday I attended a Committee for Economic Development of Australia lunch in Brisbane at which Warwick McKibbin was the speaker and I was a panellist. Warwick McKibbin described the Treasury modelling assumptions as heroic at best. I think they are heroic. They have put down timeframes for the United States and the rest of the developed world to have a cost on carbon. The time frame for China—

Senator BUSHBY—The timeframe for China is 2015.

Mrs Bain—And they have ramped up the timeframe for India. The best answer I can give you in relation to carbon leakage is to refer you to the European Union scheme. The cement industry obviously has had a lot of experience with the EU scheme. This morning I received a report from the Boston Consulting Group which our counterparts the Cembureau, that is, the Cement Industry Federation for Europe, commissioned to have a look at what happened to cement and carbon leakage. It is quite clear that when you distort your market—when you have a cost on one country that you do not have on another—cement manufacturers will build their plants where they have least cost.

Egypt is doing very nicely in a considerable number of brand new best state-of-the-art plants. Egypt is exporting its clinker to countries based around the coast. Spain is the best example of that. Spain is building grinding plants, it is grinding clinker, and it is sending it into the market. That is carbon leakage. Australia is in exactly the same situation as the countries on the border of

Europe, in that it is not landlocked. We have good port facilities, we have silos sitting at those ports and we ship a lot of cement around this nation fairly frequently.

When the assets of those companies have a major disturbance and they need a significant input they close down those assets, they will not invest in that new kiln, and they will simply import the clinker, put it through the grinder here and send it out to the market. If that is what we as a country choose to do that is fine, but it will not assist in climate change. I know that Treasury made that statement but I am not quite sure, Senator, how it backed that up.

Senator BUSHBY—We tried to explore that a bit this morning. There are alternative approaches such as those outlined in the Shergold report which states:

> Allocate free permits to existing investments in trade-exposed emissions-intensive industries equivalent to the carbon costs flowing from their direct industrial process and indirect energy and embodied production imports of post-tax costs. Over time allocations to offset direct emissions could be based as if firms were using world's best practice, low emissions technologies.

In your opinion is the green paper a backward step from the position outlined in the Shergold report?

Mrs Bain—Significantly.

Senator BUSHBY—Significantly, okay. We heard earlier from the Department of Climate Change in response to a question that I asked about renewable energy electricity, particularly in my home state of Tasmania where I think over 80 per cent of all electricity supplied or consumed is generated from dams or hydroelectricity. What is your understanding of the effect of the CPRS on energy-intensive operations such as the Railton cement works, which runs primarily on renewable electricity? Will it still have a significant impact?

Mrs Bain—Absolutely.

Senator BUSHBY—Do they take into account the renewable energy? That really is my question.

Mrs Bain—That is a question that they have put in the green paper. They have asked for a response to whether or not you average your electricity, whether it is La Trobe Valley electricity or whether it is hydroelectricity. We said that it could be averaged. The reason for that is that one company is not operating wholly in Tasmania; it is operating all around the nation, so an averaging suits our sector. I imagine that if you had a company that was based only in Tasmania it would argue quite strongly not to have an averaging on electricity. Electricity is one component of cement manufacturing.

Senator BUSHBY—The burning of the limestone?

Mr Farlow—It is roughly only 10 per cent of our total emissions. Of about 7.2 million emissions only 10 per cent is indirect electricity.

Senator BUSHBY—Indirect electricity, okay. Does Australia, as a producer of clinker, have any advantages compared to other nations? If the CPRS comes in and it increases the cost of

producing clinker, will companies still invest in Australia because there are other natural advantages?

Mrs Bain—Not really. Cement is cement and the technology is global technology. The process is pretty well known. We make very good clinker in that we make consistent clinker. I should go into marketing for the cement companies. Making cement means that you have to keep everything as even as you can. So you keep even temperatures, the limestone mix that you put in is the same chemical composition all the way along, and the heat that you put in through your coal or gas burners is consistent.

The more consistent that you make the process the more consistent is the glue that comes out. The Australian industry is very good at it. It grinds for the market and it grinds finely. The finer you grind it the better it sticks together. That is not to say that other countries cannot make it like Australia. Japan makes very good cement and we import Japanese cement.

Senator BUSHBY—Other than essentially process and the way in which we approach it, there are no natural advantages that would keep the industry here in the event that costs became uncompetitive?

Mrs Bain—I cannot think of any. Australia has always had an advantage in cheap energy.

Senator BUSHBY—Yes, and we have a stable political environment.

Mrs Bain—And that is about to go up. No, Senator, I cannot think of anything.

Mr Farlow—It is only in emissions intensity where we are below Japan. But we are close to world's best practice.

Senator BUSHBY—The best thing that we have going for us is that we produce cement without too many greenhouse gases.

Mr Farlow—Exactly.

Mrs Bain—That is right.

Senator BUSHBY—That leads me to my final question. You noted that the cement industry in Australia has reduced its CO2 output by 20 per cent per tonne in the past decade?

Mrs Bain—Yes.

Senator BUSHBY—This morning the Department of Climate Change told us that that means you will be very well placed under the CPRS compared to other industries that have not already taken those steps. Is that a position you hold? Because you have proactively taken steps to reduce your CO2 off your own back, so to speak, that places you well in the CPRS, or do you think you would have disadvantages in the CPRS? How do you see that playing out?

Mrs Bain—It depends on whether or not the department or the government chooses the path of industry averaging. If you take an average across the industry the plants that are more energy

efficient, which are predominantly the big ones, for example, Gladstone, Berrima, Railton, Birkenhead and Waurn Ponds, would be a bit better off than the smaller plants because they are more energy efficient. If you said, 'The average is 0.8', some of the bigger plants might come in at 0.74 or 0.76, so they would be slightly better off. But each company owns a big plant and a little plant, or a couple of big plants and a couple of little plants.

Senator BUSHBY—If that reduces over time and you have to buy more carbon imports how will that play out, given that you have already exercised a lot of the efficiency measures and you do not have a lot more room in which to move?

Mrs Bain—That really is the point. We do not have a lot more room in which to move. The technological changes that are required to get large CO2 savings have already been made. That low-hanging fruit has been picked.

CHAIR—That goes back to the original question. Because your industry did so well over the past 20 years perhaps you are now being penalised because you cannot make that much more progress. I conclude with a question that I probably should have asked you at the beginning. Can you give us a quick snapshot as to where the cement industry is located across Australia and the numbers of jobs involved? Will the cement industry in some states be impacted more than the cement industry in other states? Do you have some sort of perspective of that regional variation and of the way in which the CPRS will play out in your industry?

Mrs Bain—Sure. There are 10 major players in Australia and the largest, which is at Gladstone, is owned by Cement Australia. Let me go back a step. There are three cement companies in Australia—Cement Australia, Blue Circle Southern, which is part of the Boral group, and Adelaide Brighton Ltd, which is a publicly listed company. Cement Australia owns the largest plant at Gladstone and a small off-white plant, which makes off-white and not grey cement, at Rockhampton. They also own a small plant at Kandos out near Lithgow and they own the large plant at Railton in Tasmania. Blue Circle Southern cement has its largest plant in Berrima. Do you want the electorate names or only the town names?

CHAIR—No, only the town names, thank you.

Mrs Bain—Berrima makes grey cement.

Senator HUTCHINS—I have been to Kandos.

Mrs Bain—You should go out to the cement plant; it is quite unique.

CHAIR—Make sure that the senator is appropriately briefed.

Mrs Bain—You will know all about cement and clinker.

Senator BUSHBY—I have been to the Railton plant.

Mrs Bain—Yes, you have. It is a very good plant. Blue Circle Southern owns the Berrima plant, Maldon and the plant down at Waurn Ponds next to Geelong. Adelaide Brighton owns the Birkenhead plant, the Angaston plant, which is an off-white plant up in the wine country, and a

plant at Munster. Adelaide Brighton also has a grinding plant in Darwin where they import clinker, grind it and send it to the Northern Territory market. That is where they are all based. The industry employs 1,870 employees and their average salary is about $82,000.

The majority of employees are engineers of one shape or form, usually chemical, electrical and process. The new investment that is at risk and that is looking very sick is at Gladstone. The smaller off-white plants are the ones at Rockhampton, Maldon in New South Wales, and Angaston in South Australia. Not all of them can exist under the design of the CPRS. Referring to the large ones, it really depends on what happens to the plant. When the decay kicks in over time you might think it could be the Gladstone plant, but you never really know because you do not know what might happen to the kilns. One of the rollers might collapse, or whatever.

All I can say is that if that decay occurs over time it is inevitable over the next 10 to 15 years that they will begin to close those large plants. They simply will not invest in capital. It will result in import replacement. As our economy grows the demand for cement grows. We are losing future opportunity and, over time, we will lose our manufacturing base.

CHAIR—And we would be losing future opportunities to supply cement in a more environmentally sustainable fashion than would occur if cement was imported from China or anywhere else?

Mrs Bain—Absolutely. If the green paper went ahead we might get to a situation where Australia reaches its cap. I have no doubt that we would do our darnedest as a nation to reach our cap, but we would simply add to the climate change problem. We could stand up nationally and say that we had reached our cap, but globally we would simply add to climate change. I think that is fraudulent.

CHAIR—Finally, this is a question that I have asked all witnesses representing industry. If we had to prioritise as we make decisions on how to proceed with our recommendations on this, do you think it is more important to get the scheme right, or is it more important to implement the scheme quickly, even though it might be flawed?

Mrs Bain—It is vital for this country to get the scheme right. If you get the scheme right by 2010, so be it. But if you cannot, do not do it. Get the scheme right, but there is no screaming rush to do so. If you have it right by 2010, by all means go ahead, but let us not put our nation at risk because somehow we put down a time. We have to get the fundamentals of the scheme right, not only for what is potentially at risk for industry but also because in the international context this is all about leadership.

We are told all the time, 'This is all about leadership. We as a country need to participate and lead other countries to have a low carbon environment.' I totally agree with that. However, if we design a scheme and implement it and cause major damage to our economy and our industries what kind of leadership would that be showing to China, India, Indonesia and Thailand? If we want to do it let us do it right; we are good at it. Australia is very good at process. However, time is not of the essence.

CHAIR—Getting the scheme right is related directly to what other countries such as the United States, China and India are doing. The nature of the design should be informed. Is that what you are saying?

Mrs Bain—Yes. We need to ensure that the global problem with which the world is trying to grapple comes together so that the emission trading schemes we design can be linked. We need to encourage and assist developing nations and ensure that clean development mechanisms from the developed world are used in the developing world. Importantly, the developed world needs to be able to show—but Europe cannot—that we have a scheme, that it is implemented, that it is doing well in our economy, that it has not impinged on any part of our economy, and that we are reducing CO2, both nationally and globally.

We can take that to other countries. If we wanted to we could go to COP16 rather than COP15 and say, 'Here is the scheme. This is how you design it and this is how you develop it. If you implement it these will be the good outcomes. You will have a growing economy and you will also have a reducing CO2 or greenhouse gas outcome.'

CHAIR—Mrs Bain and Mr Farlow, thank you so much for your contribution to the committee.

Mrs Bain—It was a pleasure.

Mr Farlow—Thank you.

[3.05 pm]

COLLEY, Mr Peter John, National Research Director, Mining and Energy Division, Construction, Forestry, Mining and Energy Union

CHAIR—I welcome Mr Colley from the CFMEU Mining and Energy. I invite you to make a brief opening statement and we will then ask you some questions.

Mr Colley—Certainly, Chair. The CFMEU Mining and Energy Division has made a brief submission to this inquiry. We have not sought to cover most of the inquiry's terms of reference as they are quite extensive. Our comments or input relates to two areas. We have made general comments about the fuel tax credits arrangements and how they relate to the CPRS, and basic points of contradiction between the two. The second area in which we have commented relates to the rate of fuel tax credits by the mining industry where we consider ourselves to have particular expertise. Before I go further and make additional comments, I wish to make a couple of preparatory statements.

The CFMEU Mining and Energy is the principal union in the Australian mining industry. Most of our membership is in the coalmining part of the industry, which is substantially majority unionised, so we have a particular interest in the CPRS, emissions trading schemes, emissions reduction and how they impact on the coalmining industry and on power generation, where we also have significant membership. We also recognise that the mining and power generation industries take place primarily in regional areas rather than in major urban areas and that because of that they tend to have a significant multiplier effect on jobs at the regional level.

The mining and power generation industries tend to pay reasonably well compared to a lot of other industries, so the multiplier effect is also amplified for that reason. We are aware that changes in the cost structure of the mining and energy industries will impact on those rural mining dependent regions. The mining industry in particular is intensely internationally oriented. The vast majority of what our members produce is exported overseas. We are acutely aware that the mining industry is not a cost plus industry and that it is not able readily to pass on its costs to its buyers; it must compete against other international producers.

With respect to the CPRS, we have made a submission to the green paper, which I believe you have. Overall we are a supporter of the government's intentions in this area. I will leave it there. You will probably have more questions to ask me about that. We have certainly not chosen to take the path of resisting change in this area. We regard the CPRS as an essential component of Australia's efforts to reduce its emissions and to work with the rest of the world in reducing emissions so that we can mitigate global warming, which we frequently and openly acknowledge is a major threat to the world.

I will deal now with specific issues. Firstly, I will comment on the relationship between the fuel tax regime—perhaps we should call it the fuel tax credits regime—and the impending emissions trading scheme. The excise scheme on fossil fuels was introduced to discourage fuel use in the light of drilling Australian and global oil reserves. That rationale dovetails with the CPRS, which is seeking to reduce fuel use for other reasons, in particular, emissions rather than

fuel scarcity. Even before the introduction of the CPRS the use of the fuel tax credits has become hard to justify.

There is now a large number of these tax credits. The mining, agriculture and heavy transport industries get the bulk of them. It seems to us that, over the past few years, the government has been increasing the use of the fuel tax credits scheme. In the area of our expertise in the mining industry we find that this is hard to justify. The mining industry receives a full rebate of the fuel excise at a rate of 38.143¢ a litre, and most other Australian industries do not. The mining industry has become the heaviest user of the fuel tax credit scheme, claiming $1.47 billion of the $4.9 billion claimed in 2006-07.

The mining industry receives such extensive fuel tax credits while claiming to be internationally competitive and unsubsidised, which has attracted significant criticism from an environmental point of view. Industry frequently states that it is internationally competitive and that it is not subsidised or protected like mining industries in many other parts of the world. In general the union agrees with industry on this. However, the fuel tax credit scheme is one area where the industry receives a significant tax concession and a significant subsidy.

Environmental organisations frequently claim that the coalmining industry is heavily subsidised. We dispute that and we dispute that the mining industry as a whole is heavily subsidised. But the fuel tax credit system is a significant area of subsidy that industry receives. We do not think that the mining industry is a deserving case in this area. Overall, it is a hugely profitable industry. The average before-tax profit rate in 2006-07 was 36.5 per cent; a rate that would be the envy of most other industries. The operating profit before tax was $42.1 billion. In this context the fuel tax credit of $1.47 billion that the federal government gave to the mining industry in 2006-07 is not an efficient or effective use of taxpayers' funds.

Our recommendations in this area are that the fossil fuel excise and tax credit scheme should be restructured to complement rather than contradict the CPRS. It is our view that the mining industry should not be subsidised at all as an internationally competitive industry and it is our ideal view that it should not receive fuel tax credits at all. We recognise, however, that a large number of Australian businesses now receive those fuel tax credits for some of their activities, but they receive that at a reduced rate, that is, 19.0715c a litre.

If we got rid of the total fuel tax credit regime for the mining industry it would leave it disadvantaged relative to other industries. In that context and, in the absence of a more substantial reform of the fuel tax credit scheme, the mining industry credit rate should be reduced from 38.143c per litre to the rate that applies to most other Australian industries, which is 19.0715c. That concludes my introductory comments.

CHAIR—Thank you for your opening comments, Mr Colley. You said in your submission to the green paper that it was hard to draw a conclusive opinion about its impact until the economic modelling was available. Have you reviewed the economic modelling released by the federal Treasury?

Mr Colley—Yes, I have.

CHAIR—What are your conclusions now?

Mr Colley—Over the past two decades I have seen a lot of economic modelling results. As a qualified economist I would say that most economists are wrong most of the time when predicting the future, and most of the economic modelling is wrong most of the time.

CHAIR—Sure.

Mr Colley—The only thing that economic modelling does is give you an idea of the sensitivity of different issues on the functioning of the economy, so at best it is a guideline. We do not see the modelling as a predictor of the future, and there are assumptions in there that we do not like. But, overall, we think it is a substantial and useful contribution to the introduction of the CPRS.

CHAIR—I agree with you. Economic modelling will not tell you what will happen; it will enable you to guess on the various scenarios based on various assumptions. You are then able to measure when things have happened, how right or how wrong you were, and you are able to draw conclusions and to move forward. The important things—and you touched on this—are the assumptions. As you assess the credibility of outcomes and projections you have to have a close look at the integrity of the assumptions on which the modelling is based. Can you give us a few pointers to reveal what are your concerns about some of those assumptions or the way in which they have been framed?

Mr Colley—As an earlier witness stated, there are assumptions about the participation of the rest of the world. I think that is really up in the air. Clearly, many major developing countries are reticent to join the scheme. On the other hand, there is evidence that they recognise there is a substantial problem. We do not really know on which date they are likely to join, but unless we all try it will definitely not happen. The developed world must have runs on the board to show that they are attempting to reduce their emissions. The developing world will do nothing unless it sees some effort by the developed world to do something. We are unhappy with a particular area of assumptions that might be considered by some as obscure.

We looked at the modelling impacts on power generation in Australia. A lot of brown coal will be phased out by 2030 and carbon capture and storage will only come in by 2033. That is because they rely only on the emissions trading scheme and on the price of carbon to achieve the introduction of carbon capture and storage. We have always argued that the emissions trading scheme will not be sufficient to bring on carbon capture and storage at the required rate.

We want to see a commitment by the developed world, including Australia, to bring on carbon capture and storage as a commercial scale technology by 2020. The G8 has made a commitment in that area, the Australian Government has made statements supporting the G8 goals, and certainly the global CCS institute is an effort to help coordinate and promote that. But the Treasury modelling does not reflect that. The Treasury report also criticises the renewable energy target. Clearly, it seems to us that Treasury is looking for a quick fix to achieve some emissions reduction quickly and as least painfully as possible. We think that the emissions trading scheme will not of itself set up Australia for the long term.

There is a need for complementary measures around renewable energy, around energy efficiency and around CCS carbon capture and storage. We would like to see mechanisms that

bring on CCS as a commercial scale alternative by 2020. That is not in the Treasury modelling and we are unhappy with that.

CHAIR—Senator Bushby will ask some questions about the CCS in a minute. Focusing on the speed with which other nations will come on board do you, as a qualified economist, think that is one of the plausible economic scenarios that should have been assessed, at least as a point of reference, so that we have some sort of understanding of the impact on the Australian economy if other nations, despite all their positive statements about being committed to doing the right thing, do not come on stream as fast and as hard as Australia is proposing to do?

Mr Colley—I do not think the Treasury option for an emissions trading scheme is coming on hard and fast. I think they are fairly conservative options.

CHAIR—Harder and faster than what is currently emerging—what the rest of the world is doing, or a plausible scenario for what the rest of the world is doing?

Mr Colley—Arguably they could have modelled a number of additional scenarios. Perhaps it would have been useful or perhaps it would have confused the picture more. We do not have a strong view on that. We think that the range of scenarios that was covered basically was adequate. Certainly informed readers who are looking at it can extrapolate what they want from it and what it means if other nations do not come on board. Regardless of whether other nations come on board we think that Australia should be implementing an emissions trading scheme to give the signals to business about where Australia wants to go.

CHAIR—I understand your position, but two answers ago you made the point that you thought there was a deficiency because no scenario assessed the assumption that other countries might not come on board as quickly as Australia. I am trying to establish from you as an economist whether or not you think that is surprising. Part of the public policy debate across Australia by industry and economic commentators is whether Australia should go it alone, or whether it should wait until China, India and the United States are ready to come on board. That has been a significant part of the public policy debate. You might have a particular position on it. From an economic modelling point of view is that not something that a government should have assessed so that we can go into it with our eyes wide open?

Mr Colley—I certainly do not have strong views on that subject.

CHAIR—How do you think the global financial crisis will impact on our capacity to implement a carbon pollution reduction scheme such as the one that has been proposed?

Mr Colley—For a while at least the world will not be as wealthy as it thought it was. The world needs wealth to implement environmental measures. Poor countries find it much harder to introduce environmental measures. It is a necessary prerequisite of significant action in this area that there be sufficient wealth. That said, recovering from the financial system crisis and the economic crisis will require a lot of stimulatory measures from government. We have already seen that happening around the world. We think that the economic rebuilding task that needs to take place should be strongly oriented towards emissions mitigation.

We will need to invest in various ways to stimulate our economy. We should be making sure that the things in which we invest reduce emissions rather than increase them. We think that whilst the economic crisis is an unclean and undesirable thing, it opens up an opportunity. It is not simply a negative and it is not simply a factor that prevents us from acting in this area. We are acting to stimulate our economies because of the crisis. We need to ensure that that stimulatory action contributes to emissions reduction.

CHAIR—I agree with you that we should focus on things that contribute to emission reduction. This morning the Commonwealth Scientific and Industrial Research Organisation told us that the most competitive and most efficient energy source to help achieve emissions reduction is natural gas. You stated in your submission that you want to see an increased mandatory renewable energy target. The evidence that we heard this morning showed that the increased use of natural gas as an energy source to help reduce emissions would be counterproductive. How do you come to the view that we ought to increase mandatory renewable energy targets?

Mr Colley—Some modelling was commissioned by WWF that shows we need to proceed down multiple paths at once to achieve the most efficient and cost-effective long-term outcome. Switching to natural gas is the quick fix to achieving some emissions reduction quickly. If Australia simply built a whole set of gas-fired power stations we would not be setting ourselves up for the future. Gas-fired power stations will need CCS, particularly if the world acts in concert on a stringent basis. Natural gas power stations will require CCS, and so will most heavy industrial plants. The power industry clearly has its eyes set on a quick dash for gas as a solution.

The emissions trading scheme, by itself, will just cause a dash for gas. Australia's natural gas reserves are valuable long-term reserves. It is our view that they should not be actively squandered on a dash for gas in power generation. We need to be planning our response over a matter of decades. Because gas is simply half the emissions of coal that does not make it a long-term solution. At best it makes it an intermediate solution. There is real risk that Australian industry will be heavily investing in a short-term solution rather than investing in a long-term solution.

CHAIR—Have you examined which of those industry sectors in which your members work will be compensated under the current CPRS model? Do you think particular industry sectors are neglected in the model as it currently stands?

Mr Colley—In the power generation area we have the novel view that most people would not expect to have—that is, we support the Ross Garnaut view that compensation to power generators in general is not warranted. First, we do not think that compensation will achieve any emissions reduction at all, so it is wasting the revenue from the emissions trading scheme; it is not achieving emissions reduction. Second, we do not think that compensation will affect the decisions of those power companies as to whether or not they should keep the coal-fired power stations running.

We think there is a strong risk of the generators simply taking the money and running. If there is to be compensation for generators it is our view that it needs to be tied to reinvestment plans so that those power generators are simply not trousering the money for their shareholders but they are repositioning the industry for the long term.

CHAIR—The government has just committed $6.2 billion to assist the car industry. Much of the argument was about the need to maintain the manufacturing skill base from an economic and national security point of view. Do you not see similar sorts of requirements for the forestry, mining and energy sectors in relation to economic and national security? Do you not think that the Carbon Pollution Reduction Scheme, as it is designed, should take on board those economic and national security interests?

Mr Colley—Are you making that comment with respect to mining as well as to power generation?

CHAIR—Yes.

Mr Colley—Australia has an enormous international comparative advantage in mining. In the past few years our biggest problem has been a ridiculously strong rush into more mining investment, which has been causing significant dysfunction in mining towns, significant social service problems, and problems for other Australian industries. The mining industry has been this vortex sucking in skilled labour from other industries and they have been suffering. We think that, regardless of the CPRS, the mining industry in Australia as a whole will continue to be remarkably successful internationally.

It is a combination of the superb geological resource base, the access to capital, the access to skilled labour and, last but by no means least, the strong governance regime that we have in Australia. Look at a mineral such as coal, which is widely geographically dispersed, and then look at other countries involved in international trade and you find that they have a lot of problems. Look at Indonesia with its governance problems. Look at Columbia which is engaged in civil war. Look at South Africa which has enormous domestic structural problems.

Australia is a very safe place for mining investment. I do not think that the CPRS will cause long-term problems for the Australian mining industry. The Australian mining industry is a larger part of our economy than I think is the case in any other developed country in the world, except possibly Norway.

CHAIR—I think there is pretty broad consensus. Even the government would concede that. In fact, the government put forward economic modelling that reveals there will be upward pressure on the cost of energy. There will be some transitional issues for a range of industries, including the mining industry and industries that rely on energy. Of course, the mandatory renewable energy target potentially will be another hurdle for business, mining, energy and power production companies to access the most cost-efficient and most competitive energy source. As you said, it will prevent, as you call it, a dash for gas. Should we minimise the impact at least in the transitional stages of a CPRS scheme being introduced? Should we not recognise that there will be significant additional pressure on some industries and that there will be an impact on jobs?

Mr Colley—I think the impact of the CPRS on energy prices for mining will be small relative to the fluctuations that we have seen in petroleum prices over the past few years. That has not slowed down the mining industry at all. Most of the modelling does not show the effect on the renewable energy target. It does pose higher costs than simply an ETS by itself, but it does not impose significant costs that will affect industry investment decisions. I am aware that the

mining industry is choosing to invest in solar thermal not to replace but to supplement diesel power plants in remote sites. It has now reached the stage where solar thermal is competitive with diesel, particularly when it is high priced diesel in remote areas.

CHAIR—If it is competitive do you need a renewable energy target?

Mr Colley—Our view on this is strongly flavoured by our position on carbon capture and storage. Renewables are not the solution overall; they are part of a suite of solutions. However, they need economies of scale in order to become more internationally competitive. I do not think the renewable energy target should be there in the long term; it is a transitional thing to achieve economies of scale. In some cases it is there to overcome pre-competitive market hurdles, particularly, in, say, geothermal. Clearly it is the case that the first generation of CCS power stations will not be commercially competitive—not remotely. They will not be commercially competitive even with an ETS, or for the first several years of an ETS.

Many studies have shown that if we do not have a CCS the overall cost of achieving 2050 targets will be a great deal higher. I think the IPCC said that, without CCS, meeting 2050 targets will be at least 30 per cent more expensive. But we will not get CCS going in substantial volumes if we do not give it assistance in the early stages with the first set of commercial-scale power stations. That same argument applies to much of the renewable sector. It is a matter of giving assistance in the early stages to get it to commercial volumes and then the assistance would no longer be required.

Senator BUSHBY—Thank you, Mr Colley, for your evidence. I am interested in your position on the CCS. If that gets up it would be a great thing. There are significant question marks about its development, the cost of developing it, and doing it safely. Last night we learned of the European proposal to spend €11 billion testing how to pump greenhouse gases underground. I think that proposal, which went before the parliament of the European Union on 7 October, is falling over. There is significant disagreement between the EU countries. Some countries were keen to see the money being spent on developing solar technology and hybrid cars. Basically, the agreement that was there is falling apart. Even huge things like that are falling over, which makes it questionable.

That leads me to my question. Without CCS technology, Treasury projects that by 2050 Australian coal production would fall to 18 per cent, which is below current levels. That is in their modelling which no doubt you have seen and at which you have had a look. What would be the impact on your members of an 18 per cent fall in production below today's level? How many members would be out of a job? Do you expect that there would be reductions in wages and other conditions? Would your members be willing to accept those reductions in wages and other conditions in the interests of addressing climate change?

Mr Colley—You would need to refresh my memory about the 18 per cent. Is it 18 per cent of coal use in Australia, or is it 18 per cent of production as a whole?

Senator BUSHBY—Coal as produced in Australia.

Mr Colley—Is that not an 18 per cent reduction from business as usual?

CHAIR—Below current levels.

Senator BUSHBY—From current levels, as it is today.

Mr Colley—Okay. Obviously, we do not regard that as a desirable outcome. We think that there is a valid role for coal in general, and Australian coal in particular, in a greenhouse friendly world, or in a climate constrained world. Referring to the impact of jobs, so many factors are at work influencing labour demand in the mining industry it is hard to plan where it will be in 30 years time. It is my view that automation would have had a greater impact than it has had over the past few years. I have been surprised that the demand for labour in mining as a whole and in coalmining in particular has grown so strongly over the past few years. We know that companies like Rio Tinto are planning driverless truck fleets and driverless trains. It seems to me that they simply cannot get the technology right to achieve a significant required level of safety.

Senator BUSHBY—They are no substitute for people.

Mr Colley—That is right so far. However, price of computing power drops by half every 18 months. Each truck costs a couple of million dollars and that pays for a lot of computing power on board. We think that sort of change in volume would be undesirable. We would prefer to see the Australian coal industry grow strongly. We would prefer to see the Australian coal industry grow and jobs with it. That said, many other factors are affecting the level of employment in the mining industry and the impact of the CPRS might well be lost amongst the noise of other international and national pressures.

Senator BUSHBY—But it would still add to the pressures? My question is: do you think that the overriding need to reduce CO2 and CO2 equivalent emissions would outweigh the interest of your members in that sense, or would your members accept that overriding need in that scenario, or at least in a scenario where that was adding significant pressure to the industry?

Mr Colley—The union has taken the public position that the future of the coal industry depends on the CCS.

Senator BUSHBY—Okay.

Mr Colley—There is no long-term future for the coal industry if you cannot transform the industry, both coalmining and coal use, into low emission industries.

Senator BUSHBY—That leads to my next question, which is: even with Treasury's assumptions on CCS technology becoming available, investment in the coal industry is projected to be between eight per cent and 19 per cent lower than the reference scenario in 2020, and between 26 and 42 per cent lower than the reference scenario in 2050. Even in that scenario that will add significant pressure to the coal industry, and that is with the CCS.

Mr Colley—The 'business as usual' scenario is as unrealistic as the other scenarios. We have a global warming problem. It must be addressed or we are all finished. So the 'business as usual' scenario is not a realistic scenario. In recent years the level of growth in coalmining has been at an absurd level.

CHAIR—Has Treasury modelled any realistic scenario? Do you think that the most realistic scenario has been modelled by Treasury?

Mr Colley—All scenarios are artificial.

CHAIR—I understand that. We have gone through that. My specific question is: do you believe that the most realistic scenario has been modelled by Treasury? What you are saying is right. The reference scenario is not realistic, but neither are the four scenarios that have been modelled because they work on the assumption that everybody will come on board. My question again is: has the most realistic scenario been modelled by Treasury?

Mr Colley—I think I have to draw a distinction between my view as an economist and the view of the general reading public. None of the scenarios is particularly realistic, but they all give guidance to the informed reader as to the likely scale of the impact.

CHAIR—None of the scenarios that have been modelled so far is particularly realistic.

Mr Colley—I do not think any of them is realistic. You could have more scenarios and each of them would have problems. There could be six scenarios rather than four scenarios, or five including the 'business as usual' scenario.

Senator BUSHBY—Could they be made more realistic by including other parameters that were not included?

Mr Colley—Possibly.

Senator BUSHBY—Would you care to offer any suggestions as to which parameters might assist in making the output more useful?

Mr Colley—It is not something that is in my mind, so I will not do it off the cuff.

Senator BUSHBY—What action is the CFMEU taking? Are you talking to the government to minimise the consequences of the CPRS on employment in your industry? What has been the government's response if you have spoken to them? Have they guaranteed to you that the CCS will be viable? If not, does that mean that they cannot guarantee to you that there will not be significant job losses?

Mr Colley—We still do not think that there will be job losses in coalmining due to the CPRS. We think that the growth in the coalmining industry will be less than what it otherwise would have been. If there are job losses in mining that would probably be due to changes in technology in mining as much as anything else. Our relationship with the federal government has been good in this area. At least we have access to the Australian government—access that we were denied for over a decade. We have strongly lobbied the Australian government on various measures with respect to the coalmining industry.

We have been fortunate and pleased that the Australian Coal Association—the industry itself—has dramatically lifted its game in this area in the past few years. They have gone from being climate change deniers to embracing the issue and seeking to clean up the industry's

emissions. Our only concern with their position is that it is not enough fast enough. I have one little anecdote to this. We hate the phrase 'clean coal'. To us it has been an own goal by industry and by government.

CHAIR—It means that all other coal is dirty.

Mr Colley—It is an oxymoron, it makes our members laugh and it encourages widespread scepticism. It has been refreshing and pleasing over the past few months to see that the Australian government has almost entirely dropped the term 'clean coal'. We have a national low emissions coal council, a carbon storage task force and a global CCS initiative. We are no longer using the phrase 'clean coal'.

CHAIR—Have you noticed they have also dropped the term 'mandatory' out of the mandatory renewable energy targets?

Mr Colley—I have not paid attention to that, but I have noticed that the 'm' does not always appear.

CHAIR—Would that be a matter of concern to you?

Mr Colley—We are strong supporters of a mandatory renewable energy target.

CHAIR—Just going back to the point that you made earlier that none of the scenarios were realistic scenarios, for us to properly assess the impact and for you to be able to properly assess the impact on your members of a change of this magnitude in government policy, surely you would be keen to see the most realistic economic scenario assessed so that you can have some sense of predictability about what you have to prepare for as you are servicing your members? What confidence can you have in the soundness of government policy if they do not assess the most realistic economic scenario that is likely to play out?

Mr Colley—As I said in my response to earlier questions, we regard all economic modelling as extremely speculative and only mildly informative. We have had the ability to look those scenarios, to decide what is realistic and unrealistic about them, and to contemplate what the results would be if those various assumptions did not hold. We have been happy enough with the Treasury modelling, though it could always be improved.

CHAIR—I am sorry to dwell on this, but I think it is the crux of how far we can rely on what the government is telling us on this. I agree with you that economic modelling will always have margins of error, but surely we should attempt to get as close as possible to what we think will be the most likely scenario that will develop so that we can make public policy decisions on the basis of what we think will be the most likely scenario. You can take this question on notice, but in your view what would be a more realistic scenario than the four scenarios that have been put forward by the federal Treasury?

Mr Colley—There are so many things that are unrealistic about modelling. When I went through this set of assumptions that were released earlier by the Treasury, I found that the most obvious things in economic modelling were that, first, it was very long term, and models get more and more unreliable in the longer term. Quite small changes in the assumptions generate

very large differences in the long term. The second and most obvious problem was that most modelling does not incorporate economic cycles. We all know that economic cycles exist but most modelling does not incorporate them.

That is the case with the Treasury model; there are no economic cycles through to 2050. Clearly, that is ludicrous. We all know that there are economic cycles. We all knew that the boom that we were in could not last forever, but it is not factored in. We found the Treasury modelling useful but we did not place great store on the Treasury modelling telling us what would happen. Perhaps more scenarios could be modelled. It is our view that they might have provided more illumination but they might also have confused the issue.

CHAIR—My final question is: would you be willing to go before your members and say, 'Treasury is telling us that the impact of this will be an additional cost of $7 a week to the cost of energy'? On the basis of the modelling that Treasury has released are you confident to go before your members and say, 'We want you to support the CPRS as proposed, given what Treasury has told us the impact will be'?

Mr Colley—Yes is the simple answer. Our membership has already voted to support the implementation of an emissions trading scheme. We did that before the Treasury model.

CHAIR—Even though there is no realistic modelling that will tell you what is likely to occur?

Mr Colley—We would never base our policy position on a set of modelling.

CHAIR—On what do you base your policy position?

Mr Colley—It is ridiculous. Modelling is not that key a factor; it is simply a relevant input into the policy formation process. We are paying far too much attention to modelling to place that centrally in the debate.

CHAIR—But modelling would inform a responsible course of action, would it not?

Mr Colley—It informs but it does not determine.

CHAIR—I am not suggesting that it determines, but there will be some impacts on your members. The question is whether they have been appropriately assessed so far. You are saying that Treasury has not assessed them properly so far. How do we know?

Mr Colley—Basically, we are taking a very pragmatic approach to the emissions trading scheme because it is recognised that it is a domestic and not an international scheme. Only 20 per cent of Australian coal is used domestically and 80 per cent is exported. Where that 80 per cent goes depends on what the rest of the world does. If the rest of the world implements a strong emission trading regime the prospects of the Australian coal industry would be less than they otherwise would have been. But the Australian coal industry would remain tremendously internationally competitive.

There could conceivably be a role for increasing Australian exports even within a carbon constrained world because Australian coal is produced so efficiently and cost competitively compared to coal in many other parts of the world. We have accepted that it is essential to move towards a less carbon-intensive economy. That will affect the growth prospects of the coal industry and we accept that that is part of achieving a solution.

CHAIR—I assume you agree that the priorities should be to reduce global emissions as opposed to what happens domestically in Australia? Let me rephrase my question. I assume you agree that whatever we do in Australia ought to be focused on reducing global emissions overall rather than reducing emissions in Australia irrespective of whether that has an impact globally?

Mr Colley—There is no solution to the climate problem if we do not have a global solution. Australia cannot achieve anything by itself.

CHAIR—That is what worries some of us. If we do not get the design right we might well end up closing down industries that would increase emissions domestically but that could have a net positive effect in reducing emissions globally. Your members and the economy at large will pay a price and we will be doing counterproductive things to the goal that we want to achieve, that is, reducing global emissions. That is where we need to ensure that we get the policy setting right.

Mr Colley—I think it is abundantly clear from the positions that have already been taken to date by the Australian government that it will be a pretty soft start to the emissions trading scheme—to the CPRS. We think it is better to get the scheme in place early and to adapt it as we go on. We think it will be such a soft start that there will be large and unintended consequences. Some industries may find that they have problems that were not foreseen or that are bigger than they expected. The scheme can be tinkered with and adjusted. We also think that people will find that, once it is introduced, it is not nearly as difficult as they were expecting. I have as an analogy the white goods industry with energy efficiency labelling.

CHAIR—That is the optimistic view.

Mr Colley—For a decade they said that it could not be done and that it would be disastrous for the industry. In the end they were able to do it relatively easily. Industry needs to be pushed to change its ways. Even within the COAL21 program it has been recognised that the reason why CCS technologies have not been developed over the last one and a half decades is that there was no price signal. The CCS technologies have been around for decades but there has been no progress on them because there was no price signal. Once there is a price signal we think a wave of innovation will be released.

That may be optimistic but, in the absence of any market mechanism, these things never get going. We think it will prove that Australian industry has been innovative and flexible. We think it will continue to be so. The CPRS will be a challenge that industry can meet and it will not be the end of heavy industry in Australia.

CHAIR—Let us hope that we do not look back 10 years from now and find that we have exported jobs overseas into areas that are much more polluting than they would have been in Australia, and that we have paid a price for something that does not achieve the stated objective.

Mr Colley—In response to that I should inject an important statement about sectoral agreements. We think Australia is undoubtedly a cost-effective producer of a large number of minerals and transformed minerals. In many of these mineral sectors only a small number of countries and companies are involved. It is usually multinational corporations.

If we had sectoral agreements across the world that would be in Australia's interests. Garnaut said that and the green paper said that. In many ways, sectoral agreements possibly will be easier to achieve than multilateral agreements, where we have to get every member of the United Nations to agree. We think that Australian industries will thrive under global sectoral agreements covering various industries.

CHAIR—Let me pick up on that. You said you thought we would have a soft start to a carbon pollution reduction scheme. What evidence do you have to make that statement? What does that mean? What is a soft start? What would that mean in relation to the carbon permit price?

Mr Colley—We thought there was merit in Garnaut's idea of a training wheels start to the scheme until after Copenhagen and until the shape of a new scheme was more obvious at $20 a tonne. The fact that a substantial amount of compensation in the form of free permits has been allocated to emissions-intensive trade-exposed industries clearly is a soft start. The fact that compensation has been promised to strongly affected industries indicates a soft start.

We have a government that is very close to business in Australia and very close to big business in Australia. I do not think it is the case that they will wilfully proceed with a scheme that will inflict high costs on big business in Australia. We think they will introduce a scheme as it is an election promise. We well know now that Kevin Rudd, as prime minister, wants to keep all his election promises. But the scheme will have enough of a soft start that it will not impose high costs on energy. If the evidence either beforehand or afterwards is that particular industries are adversely affected—I will not name names but I have already talked to government about particular firms and particular types of industries—we think they will have a legitimate case.

CHAIR—Are you suggesting that you will be making representations on behalf of individual businesses as opposed to specific industries?

Mr Colley—In those cases where businesses are a certain type or category of industry. That has not been addressed in the green paper.

CHAIR—Without naming names can you tell us the sorts of industries about which you are making representations to government?

Mr Colley—They are industries that will have their input costs increased, but they will have significant international competitors who are importing to Australia. They are industries that are locked into long-term fixed-price contracts.

CHAIR—Like LNG?

Mr Colley—No.

CHAIR—The gas industry is locked into long-term contracts. Where do you make the differentiation between industries that you represent? Is it right from a policy point of view? Are you representing them because they are industries in which you are involved, or because you think a policy issue ought to be addressed?

Mr Colley—The LNG industry is not my specialty or a specialty of the CFMEU, but it seems to be the case that the LNG industry has been making loads of money over the past few years. I think Woodside Petroleum was proudly announcing that they fully expected to be continuing to be making loads of money. If the CPRS affected them as strongly as they have said in their representations they should have been telling the stock market that, but they do not appear to have done so.

CHAIR—Are you representing industries because you are close to the reality? You referred to long-term contracts. From your point of view are all industries that are locked into long-term contracts in a similar situation?

Mr Colley—No. It depends on the nature of the contract. Lots of long-term contracts have price variation escalation clauses in them. I would be very surprised if any long-term contracts in the international market did not have significant variation or escalation clauses.

CHAIR—We heard from the cement industry and you are across the coal industry. Looking at sectoral agreements, how likely are we to have sectoral agreements for cement and coal? Perhaps you could take on notice that part of the question relating to energy. Has the government given you any indication that there will be sectoral agreements for those industries over the next couple of decades?

Mr Colley—No, it has not. We do not see any evidence that the effort has been put in by Australia or by other nations in this area. We think that some effort should be put into this area. We think it is quite prospective and it would address Australia's problems in this area. It would be an effective contribution to the global mitigation problem to have global sectoral agreements.

CHAIR—Mr Colley, thank you very much for your contribution to the committee.

Mr Colley—Thank you very much.

Committee adjourned at 3.59 pm