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SENATE

ENVIRONMENT, COMMUNICATIONS, INFORMATION
TECHNOLOGY AND THE ARTS REFERENCES COMMITTEE

Reference: Energy white paper

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SENATE

ENVIRONMENT, COMMUNICATIONS, INFORMATION TECHNOLOGY AND THE ARTS

REFERENCES COMMITTEE

Friday, 18 March 2005

Members: Senator Cherry (*Chair*), Senator Tierney (*Deputy Chair*), Senators Mark Bishop, Conroy, Lundy and Tchen

Participating members: Senators Abetz, Allison, Bartlett, Bolkus, Boswell, Brown, Buckland, George Campbell, Carr, Chapman, Colbeck, Coonan, Crossin, Eggleston, Chris Evans, Faulkner, Ferguson, Ferris, Harradine, Humphries, Knowles, Ludwig, Mason, McGauran, Nettle, O'Brien, Payne, Robert Ray and Watson

Senators in attendance: Senators Allison, Cherry, Lundy and Tchen

Terms of reference for the inquiry:

To inquire into and report on:

The budgetary and environmental implications of the Government's Energy White Paper.

WITNESSES

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Committee met at 9.08 a.m.

CHAIR—I declare open this public hearing of the Senate Environment, Communications, Information Technology and the Arts References Committee in relation to its inquiry into the government's energy white paper and welcome everyone here today. This is the fourth day of hearings for this inquiry. The committee has held previous hearings on 4, 5 and 10 August 2004, during the previous parliament—it seems such a long time ago. The federal election cut short that inquiry, which was readopted in the current parliament. The reporting date of this inquiry is 18 April 2005. The committee has received 17 submissions which have assisted the inquiry greatly.

For the benefit of our witnesses today, I point out that the committee prefers all evidence to be given in public. Should you at any stage wish to give your evidence, part of your evidence or answers to specific questions in private you may ask to do so and we will consider your request.

[9.09 a.m.]

JACKSON, Mr Erwin Kenneth, Coordinator, Sustainability Program, Australian Conservation Foundation

CHAIR—Welcome. Thank you for your time; it is very much appreciated by the committee. We have received your submission as No. 15. Do you wish to make any amendments or alterations to that submission?

Mr Jackson—No.

CHAIR—You are reminded that evidence given to the committee is protected by parliamentary privilege and the giving of false or misleading evidence to the committee may constitute a contempt of the Senate. I invite you to make an opening statement before we move on to questions.

Mr Jackson—Firstly, I thank the committee for giving the Australian Conservation Foundation the opportunity to appear today. ACF is Australia's leading national environment organisation and has been working for 30 years to protect, sustain and restore Australia's precious natural heritage. I would like to start off today with a bit of context. Climate change is regarded as probably the greatest threat that we currently face to both our environment and society more generally. This is increasingly recognised by world leaders and the scientific community. In Australia we are already seeing temperatures increasing and we are already seeing droughts causing severe economic and social damage to our regional communities and to our economy.

Within the next 50 years, if the science is correct, there is a fairly good chance that we will not have much left of the Great Barrier Reef and many other great Australian treasures. It is also very worrying that, under current climate scenarios, it is projected that thousands of Australians will be killed every year by climatic events over the next century. This threat has also been recognised by the environment minister. Indeed, our Chief Scientist and the environment minister have said that global greenhouse emissions should be cut by 50 per cent to 60 per cent by 2050. However, because fossil fuel based energy is the primary cause of climate change, if we are to achieve such significant cuts in emissions, we will have to change the way we produce and use energy. In fact, by the end of the century, 75 to 100 per cent of our energy will have to come from zero emission sources if we are to avoid the worst impacts of climate change.

The energy white paper has totally failed to control Australia's energy sector emissions and they are spiralling out of control. By 2010 they are projected to be around 40 per cent higher than the 1990 levels. By 2020 this is expected to have grown by more than 60 per cent. This alarming increase is the primary driver behind why it is projected that Australia will be 20 per cent above 1990 greenhouse gas emission levels by 2020. I want to put this in context, because recently EU environment ministers agreed that industrialised nations need to reduce their emissions by 15 to 30 per cent by 2020. So, while Australia's emissions are spiralling out of control, other countries are saying that we need to significantly reduce our emissions.

The energy white paper has also completely failed to deliver a nationally consistent and robust policy response to climate change, and this is stifling investment in clean energy technologies. Indeed, according to the Productivity Commission, this lack of a consistent national approach is continuing to create uncertainty about long-term greenhouse action and is stifling investment in key parts of the economy, particularly in the energy sector. The white paper also totally fails to recognise the economic and social benefits that come from early action on climate change and investing in clean energy technologies. For example, if the mandatory renewable target had been expanded to a real five per cent by 2010, it could have created over 12,000 ongoing jobs, mainly in regional and rural Australia.

To conclude, ACF firmly believes that it is in Australia's national interest to be at the forefront of global efforts to tackle climate change. Climate change induced and enhanced droughts are costing the nation tens of thousands of jobs and thumping our regional economies. By the time a child born today turns 50, our great national treasures—such as the Great Barrier Reef and Kakadu—could be severely degraded. The good news is that we can solve this problem by unlocking Australia's innovative spirit and encouraging vibrant new markets in clean energy technologies. This would not only produce an enormous environmental benefit but also create new industries, provide development in small businesses and create thousands of jobs. Climate change is an enormous challenge but one that must be met head on. The energy white paper fails to do this and ultimately places the Australian economy at risk of severe economic disruption in the future. As the head of BP recently stated, when saying that by 2050 50 per cent of the world's energy would come from low-emission technologies, this is not an unsolvable problem but we must start to act now.

Senator ALLISON—Thank you for your submission. I think it is really useful. I want to ask you about energy efficiency. You say that the GDP could benefit by \$1.8 billion if measures were put in place on energy efficiency—and, as you point out, the white paper talks about energy efficiency. What measures in the white paper give rise to energy efficiency and what measures should be there but are not?

Mr Jackson—There are some measures in the white paper which would confront energy efficiency. For example, the Greenhouse Challenge Plus program potentially could drive energy efficiency in particular—

Senator ALLISON—But that is not new; that has been around for a long time.

Mr Jackson—Yes, but it is in the white paper so that is one potential measure. Also, the Council of Australian Governments, through the Minerals Council, has also agreed on a suite of measures to tackle energy efficiency over the next four years. Overall, energy efficiency requires a very broad policy response. You have got lots of decision makers, ranging from your mum who is buying her next appliance to your big industrial energy user who wants to build an aluminium smelter. So what you need are very broad measures that target all of those sectors. That is what we have not seen in the white paper. We have seen some small, largely voluntary, measures to try to encourage industry to reduce emissions.

The fundamental problem with the white paper—and this relates to not only energy efficiency but also renewables and low-emission technology such as geosequestration—is that it does not send a signal to industry or the community that we are serious about tackling emissions. Until

we get that signal from the government—whether it be a long-term target or a price on carbon—we are not going to see major investments in energy efficiency from anyone. We are not going to see major investments in clean energy technologies.

Senator ALLISON—Do you see a role at all for geosequestration in reducing carbon emissions?

Mr Jackson—It is a potential. It has got a whole range of environmental, technological and economic risks associated with it, and certainly research and development should be undertaken on geosequestration to see if it is viable. However, the key issue with geosequestration is that it is not going to come online, even under the most optimistic studies, for at least 15 to 20 years. In that time, Australia's emissions will have increased in the order of 20 per cent. So it is not going to tackle any short-term emission reductions which are required.

The other point is that, even if it does work, it cannot be the dominant energy system in the world by the end of the century, simply because it is not a zero emission technology. If you are optimistic you might get 80 to 90 per cent emission reductions from a traditional coal-fired power station, but, if you start building large-scale geosequestration plants all over the world, that 10 per cent emission that you still get would compromise the climate system, and we would see dangerous impacts from the destruction of the reef and other things. So it is one potential suite of technologies, but the problem with the white paper is that it really puts all its eggs in that basket, and we do not even know yet whether or not the eggs are rotten or even whether they can be eaten—

Senator ALLISON—Or if there are enough of them?

Mr Jackson—That is right. It is not a serious option overall for reducing emissions on the scale that we need.

Senator ALLISON—Do you say that, anyway, investment in geosequestration will not occur unless there is a price set on greenhouse emissions—that, in other words, unless you have got an emissions trading scheme or a carbon levy, this will not happen? Have you had a chance to look at geosequestration proposals in other countries and how they are being funded? Are they taking the same approach as this government—a kind of grants system for research and development?

Mr Jackson—Those kinds of measures have been undertaken, particularly in the US. The most widely used example of a geosequestration project is the Sleipner project off Norway. That is a gas project, run by BP, Statoil and a number of other companies, which is currently using geosequestration to offset emissions. The reality is that the only reason that got off the ground and is happening is because there is a carbon tax in Norway. If there were not a carbon tax in Norway, they would not have done it.

Senator ALLISON—Do you see any likelihood that, under the various arrangements under the Kyoto protocol, geosequestration will be part of emissions trading?

Mr Jackson—It is unclear where it would fit. For example, there have been a number of papers done recently looking at whether it would be classed as a fugitive emission from an industry or whether it would be classed as a sink—like planting a tree is. Where it would fit is

certainly being discussed internationally within things like the Intergovernmental Panel on Climate Change. You could imagine a situation in the future where companies would get some financial benefit for doing it through something like an emissions trading scheme or a carbon tax. The reality is that it is not going to happen unless that happens.

Senator ALLISON—Presumably, Australia is not at the table anyway to be arguing for or against geosequestration being part of emissions trading.

Mr Jackson—It actually has not got that far yet. Australia is commenting on IPCC work that is being done on geosequestration. It is playing a fairly active role in that. It is also involved in the Carbon Sequestration Leadership Forum, which is a group of smaller countries who are seriously looking at the technology. The bottom line with geosequestration is that what the white paper essentially does is to say, ‘Let’s assume that it works in 2020 or 2030.’ But in order to drive it onto the market, the government would probably have to do something like put on a \$50 a tonne carbon tax in 2030 or 2050. That would be a massive shock to the economy. So it makes much more sense to put a lower cost on carbon now and set a long-term target so we can start getting a whole range of industries investigating geosequestration, low emission technologies and renewable energy efficiency. The other problem with the government’s focus on geosequestration is that it is nearly totally focused on coal. Where is the research and development that is being done on geosequestration and gas? Where is the research and development that is being done on geosequestration and biomass?

Senator ALLISON—Do you think that the cost per tonne of carbon through removal of greenhouse gases from the atmosphere by geosequestration would be \$50 a tonne? Is that what you are saying?

Mr Jackson—That is the kind of figure that is being talked about. For example, the Allen report that was done for the Victorian government on emissions trading recently suggested that that is the kind of cost of carbon that would be required to get it onto the market.

Senator ALLISON—Yet the Greenhouse Gas Abatement Program is achieving greenhouse abatement at a much lower rate than that, is it not?

Mr Jackson—Yes. There are studies that have shown that geosequestration is in the short term one of the most expensive things you could do to reduce your emissions. Energy efficiency and many renewables—such as biomass, wind and gas—are at the moment cheaper ways to reduce your emissions than geosequestration.

Senator ALLISON—I want to ask you about something that you do not go into in your submission to see whether the ACF has considered it, and that is the decision to remove excise from diesel and petrol and to replace the excise with a road user charge, the result over five years of which will be a \$1.5 billion return to the transport sector. Do you have a view about the effectiveness of this? Are there some opportunities as well as some downsides in that approach?

Mr Jackson—It is not really my area of expertise.

Senator ALLISON—Okay.

Mr Jackson—The only thing I would say is that it is another example of a subsidy going in the wrong direction. If we are going to start moving the economy to a low carbon one then the last thing that we should be doing is subsidising fossil fuels.

Senator LUNDY—Can you go through the percentages of growth of emissions that you outlined in your opening presentation—for example, by 2020?

Mr Jackson—Based on the Australian Greenhouse Office's figures, by between 2010 and 2012 emissions are expected to increase to about 40 per cent above 1990 levels in the energy sector. By 2020, that increase will be around 63 per cent. That assumes that all the measures that the government puts in place work. That very large and very alarming increase in emissions is essentially driving Australia's growth in emissions and will mean that by 2020 Australia's overall greenhouse emissions will be at least 20 per cent above what they were in 1990.

Senator LUNDY—We have heard a little bit about geosequestration not being a particularly useful narrow path to follow in the short term. What do you think are the strategies that should be put in place right now to ensure that growth in emissions does not happen?

Mr Jackson—We really need a broad suite of policies, which the energy white paper does not deliver. What we need is a long-term target to reduce emissions. For example, the United Kingdom has a target of a 60 per cent reduction in emissions by 2050. France has set a 75 per cent target. The European Union is currently talking about up to an 80 per cent emission reduction by 2050. A target would tell industry where we are going in the longer term and get them to start factoring that into their energy decisions now. When you invest in energy infrastructure, it is a 50-year investment; you are looking at capital returns on investment for 30 to 50 years.

By saying that we want to significantly reduce emissions towards the end of that period, the industry can then say, 'Okay, that's where we've got to go. Let's not build a traditional coal-fired power station; let's build a gas one or a wind farm or a coal-fired power station which is geosequestration ready.' And so you get that long-term signal which allows the energy system to have a smooth transition. The other thing that we need is a price on carbon. We need that for a whole range of reasons, but principally because it will again encourage companies and society generally to invest in low-emission technologies, clean renewable energy and energy efficiency so that we can actually start the transition to the low-carbon future. If it were done properly, it would also give an income stream to start dealing with issues such as any potential price rise in electricity. You could actually funnel some money to low-income earners to help them improve their energy efficiency. You could start to help communities in the Hunter Valley and in the Latrobe Valley transition out of being coal dependent and into new economies.

We also need targeted measures that start to create specific markets for new technologies, because at the moment we have a situation whereby the coal industry largely dominates the electricity sector and it is really hard for new technologies to get access. If we are to grow the renewable energies and the other technologies that we will need to meet our energy demands, we need to actually create opportunities to create markets for them. The key reason for doing that is to reduce costs. Every time you double capacity, you generally get about a 20 per cent reduction in costs. At the moment they are expensive, so we need to start driving down those costs. Otherwise, you get into a situation where, when we introduce them, they are more expensive

and, therefore, there is a bigger cost to the economy. You also need targeted measures to improve energy efficiency, as I mentioned earlier.

Another thing we need is research and development in new technologies. In the energy white paper there are some good things in that area, such as energy storage, wind forecasting and so forth. But, by itself, that is always going to be the most expensive option. For example, a sports team wants to train and play on the field all the time and get better; they do not want to sit in the gym all the time. That is essentially the analogy: you need to be in the gym and playing the game if you are going to get better at it.

Senator LUNDY—Thank you for that. Going to the point about costs, the Minister for the Environment and Heritage, Ian Campbell, says that emissions trading would increase average domestic power bills by \$239 a year. What is your response to that claim?

Mr Jackson—I am not actually sure what that is based on. The only thing that I can see that based on is an article that was in the *Australian*, which apparently quoted from a draft report by the Allen Consulting Group for the Victorian government. If it does come from an early draft I would recommend that the minister read the final report, because the final report says that if you introduce an emissions trading scheme the cost on the economy is marginal—a 0.1 per cent reduction in the economy.

Senator LUNDY—So that figure has not been published in any formal report?

Mr Jackson—No, not that I am aware of. It appears to be based on just a copy of a report that was leaked to the *Australian*. The full report says that, after 2012, you start to create 3,500 jobs a year by implementing an emissions trading scheme. You actually start to create significant economic benefits simply because you start to move the economy and make it more innovative—people will be doing things smarter.

Senator LUNDY—Why do you think the government continues to reject emissions trading? Do you think it relates to the meetings between John Howard and George Bush, when they talked about rejecting the Kyoto protocol? What do you think it goes back to? What is the view of the ACF about the core of that problem or that decision?

Mr Jackson—The way I often describe it is that the government has coal blinkers on: the only way it can see the energy system is through coal. Coal has an important role in the energy system. It will be around for a little while yet and we need to do things to improve our efficiency and those kinds of things. The other element to it is that, based on reports that have come out in the media—and I will be basing this just on that—there appears to have been a disproportionate amount of influence on the government from the resource industry by a number of companies in particular. That has blinkered the government to the wider societal benefits of actually acting. So, by trying to protect a few aluminium smelters, you are ignoring the benefits to the wider society of creating 12,000 jobs in the renewable energy industry in regional and rural areas.

Senator LUNDY—Further on that, what evidence do you see that the government is actually seeking to cut emissions from those energy sources that you say it has a blinkered focus on?

Mr Jackson—The evidence is fairly thin. I think there are some measures in the white paper which in isolation are okay, such as the clean energy, low emissions technology fund. In isolation, that is not a bad measure, but if you look at the work that has been done by the AGO, you see a seven million tonne reduction from the Greenhouse Challenge Plus program—I would have to check but I think it is from that. A reduction of 7 million tonnes is all they get.

Senator LUNDY—I was going to ask you about your view on that Greenhouse Challenge Plus program and if you think it is having any impact.

Mr Jackson—Should I come back to that afterwards?

Senator LUNDY—Yes, sure.

Mr Jackson—At the same time, we are looking at having an energy sector emissions growth in the order of 60 per cent above 1990 levels, so I think it is fair to say that what the government is doing in terms of the white paper measures that have been put in place is having a negligible impact on our emissions. In terms of the Greenhouse Challenge Plus program, again, some of the things in it are good—mandatory reporting or having to disclose what they are actually doing is probably a good thing. It remains to be seen whether that will actually have any impact on whether companies do anything. That is another question. It will be interesting to see what happens there, because if the financial community, for example, starts to see that companies are wasting millions of dollars a year on energy bills then it might put pressure on companies to do something about it.

But a far better approach, from our point of view, would have been to do something like that which the Victorian government have done, where they have said, ‘We’ll come in and do an energy audit, we’ll work out how much energy you are wasting and, if we find any measures that you can get an economic payback of four years on, then you have to do them. It is to the benefit of the wider society for that to happen: it improves the productivity of our economy and it reduces greenhouse gas emissions.’

Senator LUNDY—But that is not in the federal program?

Mr Jackson—No, it is basically a voluntary program which forces them to disclose.

Senator LUNDY—Right. Are you aware of any progress in implementing the Solar Cities trial?

Mr Jackson—The Business Council of Sustainable Energy would be much better people to talk to about this because they would be more heavily involved in it. All I am aware of is that there has been an ongoing discussion with the renewable energy industry about where and how that program is going. The biggest problem with the Solar Cities program, as I see it, is that we have currently got the Photovoltaic Rebate Program, which is designed to install solar systems in urban settings—you get a rebate of about \$4,000, so you reduce the cost of a solar system down to about between \$8,000 and \$10,000—but it is due to wind up in this year’s budget.

The Solar Cities program is not expected to have any installations for a couple of years yet, so what will happen to all those thousands of people who are employed in small businesses across

rural and regional Australia in the meantime? They are the people who we are going to need the Solar Cities program to work. There was a survey done by the industry that said that if the PVRP is not extended in this budget to go up to the Solar Cities program then about 50 per cent of those businesses would be starting to lay people off, and these are small businesses of one to 10 people working in regional areas.

Another problem with the Solar Cities program is that it is not a national program. It is focused on a number of areas. There has been talk about it being set up in Adelaide, for example, so you might get some benefits to those small businesses in Adelaide and surrounding areas, but what happens to the rest of the people who are working in the solar industry across the country?

Senator LUNDY—I want to focus on this for a minute. You also said that the Solar Cities program is likely to be a very costly option for the nation. What did you mean by that?

Mr Jackson—It comes back to this point that the overall emphasis of the white paper is on research and development, whether or not that is through private-public partnerships—that is, the Solar Cities program, the low-emissions technology fund and things like the specific R&D into fuel storage, energy storage and wind forecasting. I will use another analogy to try and explain it. The energy system takes a very long time to change, so if we are going to have 100 per cent or 75 per cent of our energy coming from renewables by the end of the century, we need to start now to get that change occurring. We are talking about a marathon over this century. Focusing on R&D basically means that you spend all your time in the gym building up your muscles and then you try and sprint a 26-mile marathon, as opposed to starting the marathon when everyone else does and getting there at the end so you do not fall over dead by trying to sprint.

That is the problem with an overemphasis on R&D. You are not training, you are not opening up the innovation within society, you are not encouraging Joe Bloggs who works in a chip factory down the road to think, ‘I’ve got a really good idea about how I can improve energy efficiency.’ He could then get a benefit from that from an emissions trading scheme or another measure that is put in place. That kind of innovation would spread through the economy. That is what focusing just on R&D does not do.

Senator LUNDY—Is it a fair observation to say it also does not threaten the incumbent energy suppliers?

Mr Jackson—That is right, it doesn’t. The other issue related to that is that, while it does not threaten the incumbent energy suppliers, because there is—

Senator LUNDY—Do you think that is a big motivation for the Howard government?

Mr Jackson—Yes, I would say it is. I would say it is a very big motivation. The other thing about it, however—and the energy industry says this themselves—is that the industry is not going to invest significantly in emission reduction because there is no price on carbon and there is no long-term signal in terms of a target.

Senator LUNDY—You talked about the end of the Photovoltaic Rebate Program at the end of this financial year. What is your estimation of the impact on jobs around Australia? You mentioned that it could result in quite substantial job loss.

Mr Jackson—There are, I think, just over 1,000 people employed in these small businesses across the country. As I said, the surveys show that about 50 per cent of those people surveyed in that industry said they would be putting off people. I do not know exactly how many losses that would result in but I think you would be talking about substantial job losses from that sector. I would recommend talking to the Business Council in more detail about that. I think it is fair to say that it would be substantial.

Senator LUNDY—Is there an expectation that there will be additional funding in this forthcoming budget? Is there any signal or understanding from the government?

Mr Jackson—No. The environment minister put out a press release the other day which talked about how wonderful the program was and how they have all these people signed on for the last round of tenders. I have heard no indication that it is going to be extended in this budget.

Senator LUNDY—That was the second round of the rebate program tenders on 2 March?

Mr Jackson—Yes.

Senator LUNDY—How does Australia compare to other countries in terms of the manufacturing or use of solar photovoltaics?

Mr Jackson—In terms of R&D we are still the world leader but in terms of the actual installation of systems we are falling behind rather rapidly. Photovoltaics are probably the only renewable identified in the white paper where we have a leading advantage—where we could actually be exporting the technology globally.

Senator LUNDY—So why is the program ending? I know I should ask the government that question.

Mr Jackson—It is short-sightedness, essentially.

Senator LUNDY—So we are world leaders but the program finishes on 1 July?

Mr Jackson—Our researchers are getting their money in Germany. We have the 100,000 Solar Roof Program that is running in Germany at the moment. The Japanese have installed about 50,000 systems on homes over the last 10 years. It is fairly strongly expected that Arnold Schwarzenegger will announce a million solar roof program in California quite soon. What these countries are doing is positioning themselves to become the world leaders in this industry. Japan is a classic example—Kyocera and Sharp are now the first and third biggest solar companies in the world. They were not a few years ago and the reason they are now is because the interdomestic industries are being supported.

Senator LUNDY—Is there anything in the policy landscape here that shows that the Howard government is focused on maximising our existing lead in this area, perhaps even with a stronger export focus?

Mr Jackson—I think it is fair to say that there is not. I think the Solar Cities program, if it is successful, is a useful program for working out how to best manage solar PV in our electricity market, especially in terms of dealing with peak load problems and so forth. By the time it is finished—

Senator ALLISON—Could I interrupt to ask you to expand on that? How will it inform us?

Mr Jackson—The whole design of the program, from my understanding of it, is to work out how best to meter solar systems and how best to manage the demand. We have a massive peak load problem in Australia at the moment. We are installing lots of airconditioners. It is basically about research and development to find the systems and the mechanisms to put in place that, in the Australian context, would make solar photovoltaics work most effectively at a domestic level. However, while all that is happening, as I mentioned, we have Germany, Japan and probably the US massively expanding their solar markets, and China is also gearing itself up to become a world leader in solar PV. They have a 1,000-megawatt target by 2010 in PV.

Senator ALLISON—To pursue this again, surely you could do that work with just a couple of households. Why do you need a whole city and why do you need some years to develop it? If you turn your mind to getting the best systems, do you need to do it this way?

Mr Jackson—You do not necessarily have to do it in that way but it is not a bad idea. The other thing is that they have also ignored the fact that we already have a solar suburb in Sydney, in Newington where the Olympic site was. I am not sure whether the government has taken that into account for the white paper in terms of the lessons learned. I would hope that they did before they put this program in place.

Senator LUNDY—In five years time where do you think Australia's photovoltaic sector will be compared to the countries you have talked about that are very focused on establishing their own expertise—

Mr Jackson—In five years time, if current policies remain the same, we will have a couple of Solar Cities trials and in 10 years time we will be importing technology from the rest of the world to put solar systems on our roofs. We will be having Japanese, German or American solar panels on our roofs as opposed to Australian technology.

Senator LUNDY—And what do you think would need to happen to ensure Australia turned our current photovoltaic expertise into a far stronger export industry?

Mr Jackson—The key thing is creating the domestic market, and it is the same with all renewables. World experience has always shown that the most effective policy you can put in place in encouraging any renewable—and PV is exactly the same—is mandated targets for its uptake. Otherwise, it simply cannot compete in the current energy system because the price of electricity is too low and it cannot compete with coal et cetera. You would be looking to have some sort of program like the Germans or the Japanese or the Americans are looking at doing.

You would have a target of, nominally, 100,000 solar roofs. The PV industry has actually already done this work. They have said that putting in place a target and a whole range of measures—

Senator LUNDY—So they know what needs to be done?

Mr Jackson—They know what needs to be done and they said that it would create 31,000 jobs in the next 15 years if it were put in place.

Senator LUNDY—Coming back to the issue of jobs, Australia is currently in the grip of a skills crisis and we face the prospect of actually losing skilled people in the photovoltaic industry sector. I do not know whether this is your area of expertise, but would you agree that that would lead to a situation where it is very unlikely that we would ever be able to restore the level of skills in the sector if we lose this expertise now?

Mr Jackson—We could certainly build them up again but in the meantime we would have lost all the skills we have already got and we would again be importing the expertise and the technologies. There would not be home-grown technologies, and that is where we have a global lead at the moment. We would not be using them; we would be using technologies that are developed in Germany, Japan and other places.

Senator ALLISON—In fact our thin film technology developed at the University of New South Wales has gone to Germany.

Mr Jackson—Yes.

Senator TCHEN—In looking through your submission and listening to your opening statement, it seems there are numerous points of departure between the Australian Conservation Foundation and the government's position, one of which is the mandatory renewable energy targets which the government is not proposing to expand but will maintain for the time being. Do you believe that the MRET should be expanded as part of your proposal?

Mr Jackson—Yes, I do. As I mentioned earlier, based on international experience, the key thing in terms of driving renewables and getting their uptake is creating markets for them. That has been shown from international experience. There is a whole range of other measures you would need to put in place besides that. There is financial assistance and there are tax breaks and you need to have high industry standards so that you do not go into communities and have them feel that they have been railroaded into building wind farms. You need to have high standards on noise for wind turbines and all that sort of stuff.

Senator TCHEN—The government believe that, while MRET has so far met its original intention, it would impose substantial costs on the economy and benefit too few technologies. The belief is that renewable technologies are still very much a developing area and many new technologies coming on stream could be far more efficient, whereas what are applicable at the moment are mainly very old technologies. The white paper suggests that a better path is one which promotes private and public cooperation to develop a broader range of low-emission technologies and to tackle the impediments to the uptake of renewable energy. That is the government's role. You do not agree with that?

Mr Jackson—I do not agree that they are tackling the impediments to the uptake of renewable energy. I think that—

Senator TCHEN—You do not think we have the intention?

Mr Jackson—The current policy is not going to tackle the problems of getting renewables up and running.

Senator TCHEN—Can you elaborate on that?

Mr Jackson—It really comes back to their cost. In the current Australian context, if renewables were forced to compete with a coal-fired power station or a gas-fired power station today, they could not compete.

Senator TCHEN—Those are the existing technologies.

Mr Jackson—Yes. But in 20 years they probably will be able to compete. In 20 years time wind technology will probably be as cost-effective as coal and gas. The prices of PV continue to come down. Then the question is: how best can you drive those prices down? The best way to do that is to create economies of scale in their production, and the best way to do that is to create markets for them. Then you have a catch-22 situation: if you have no market you cannot bring the price down significantly enough to have them competitive with other technologies.

I make the point on the low-emissions technologies fund that, by itself, it is not a bad measure. We need to investigate things like geosequestration. We need to investigate new technologies. That is absolutely fine. It is a question of making sure that your overall policy response puts you in a position to achieve the deeper emission reductions that you need in the longer term. Under any realistic scenario of avoiding the catastrophic impacts of climate change, renewables have to be our biggest share of energy by the end of this century and at least 30 to 40 to 50 per cent of our energy by 2050. There is no way you can actually get that kind of up-scaling of those technologies in the energy sector unless you start to do it today.

The other point is that our emissions are spiralling out of control. It is unrealistic to think that Australia will not be expected to significantly reduce its emissions in the future. The longer we delay reducing our emissions, the higher the economic costs associated with our emission reductions are going to be. Even if the low-emission technology fund does help to reduce the cost of geosequestration, for example, you have to then basically drive geosequestration onto the market at unrealistically higher rates to achieve those deep cuts in emissions, and that would be extremely economically costly.

Senator TCHEN—Mr Jackson, you argue that, because of the market conditions at the moment, the renewable technologies cannot compete with coal-fired electricity generation. Isn't that exactly the point that the government is making on this? The white paper suggests that the existing technology would not be able to compete in the market. Unless you change the market, which would be costly, the best way is to develop new technologies that could achieve a breakthrough. We might find one or more new technologies that could compete with the current traditional thermal energy coal-fired power station, which we have plenty of. Aren't you supporting the government's position?

Mr Jackson—No, I am not supporting the government's position because—

Senator TCHEN—I know you are not, but your argument is.

Mr Jackson—I think there are two issues here. One is about, as you said, whether it would be economically costly to change the market. Except for the studies that have been done by the Minerals Council—which I would say make very pessimistic and extremely disingenuous assumptions about the cost of renewables in the future and how much access to the grid they will have et cetera—by most economic analyses, the cost of expanding MRET is tiny. I would actually dispute the government figures. I cannot see how they can actually come up with such high figures for the expansion of MRET.

The other thing is that there is confusion in Australian policy at the moment about the difference between short-term actions that significantly reduce emissions now and short-term actions that will reduce emissions in the future. This is where the low-emission technology fund would come in. So we are not doing anything to reduce our emissions significantly in the short term, we are investigating options to reduce our emissions in the future, but you need to have both if you are going to significantly reduce emissions over the longer term, which is economically costly.

Senator TCHEN—All right. I notice that is another point of departure that we have. Again, the government's position is that Australia is well on track for our Kyoto commitment, which many people have pointed out is actually 108 per cent of the 1990 commitment rather than a reduction. There are good reasons for that. Your suggestion is that the principal reason Australia is on track to meet our Kyoto target is due to the reduction of emissions through land clearance. Don't you think that the reduction of emissions through land clearance is actually a good thing?

Mr Jackson—I think reducing land clearing is a very good thing.

Senator TCHEN—Isn't that an important thing to achieve?

Mr Jackson—The federal government did not do that. If you look at the AGO's report on Australia's emission reductions, it calculates our emission reductions for that Kyoto period and specifically says that this emission reduction has come from measures undertaken by the New South Wales and Queensland governments.

Senator TCHEN—Yes, because they have the responsibility. Australia is a Commonwealth; it is a federation.

Mr Jackson—The other point I would like to make about Kyoto is that the debate in Australia about Kyoto has in a way slightly harmed the long-term energy debate. We continue to think that, yes, we are going to meet our long-term Kyoto target but that is only to 2012. The environment minister has said that the world has to reduce its emissions by 50 to 60 per cent by 2050, and our emissions will be 20 per cent up. If our emissions are that high, under any plausible scenario about what kind of emission reductions we are going to be required to undertake over the next 50 years, we are going to have to start reducing our emissions at rates that are equivalent to when the Soviet economy collapsed. It is better to actually start our

emission reductions now so that we can do it smoothly, as opposed to having a huge jolt to our economy in the future.

Senator TCHEN—Most of the European Union countries are not on track to meet the Kyoto protocol, except for the fact of this very artificial European bubble. The European Union countries are not actually going to meet their Kyoto commitments. If Australia, as you said, is on track to meet our target and, as you described, has increased emissions, wouldn't the situation be even worse in Europe?

Mr Jackson—No, it would be better in Europe because they are positioning themselves now to undertake significant emission reductions that they will need to make in the future. As I said, the environment ministers in Europe have just agreed that by 2020 industrialised nations need to have a 15 to 30 per cent reduction. They have in place an emissions trading scheme and they are getting experience about how these things work. They are working out how best to do an emissions trading scheme. Their industrial facilities are now positioning themselves for a low-carbon future. We are seeing major investments being undertaken in renewable energy technology. We are seeing ambitious targets being put in place for energy efficiency in Europe. They are positioning themselves so that in the future they do not have the economic shocks that I am talking about, which is the fundamental difference between the two.

I also think it is probably fair to say that you cannot really say yet whether Europe is going to meet its target because we are still a way off. Russia has now ratified and that opens opportunities for emissions trading with Russia. There are plenty of opportunities for the joint clean development mechanism and there is projected to be a trillion dollar market in these credits, which the Europeans, the Japanese and the Canadians will probably play a major role in over the next five to 10 years.

Senator TCHEN—You seem to be willing to give the Europeans the benefit of the doubt but not the Australian government.

Mr Jackson—No. All I am saying is that the Europeans are doing much more than the Australian government on any realistic assessment.

Senator TCHEN—They are saying more, but their track record is not all that good so far, is it?

Mr Jackson—It depends on the country. Some countries are doing better than others. I totally accept that Spain and Portugal's emissions are spiralling out of control as well.

Senator TCHEN—In your submission you make some claims that current policies indicate that by 2020 the energy sector emissions will increase above the 1990 level by over 60 per cent and that Australia's total emission will increase by over 20 per cent above the 1990 level. Is that claim based on your own research?

Mr Jackson—No, it is based on analysis by the Australian Greenhouse Office, which the government released in the lead up to the conference of the parties last year.

Senator TCHEN—You understand that that projection is a 'no change' projection?

Mr Jackson—No, but it is with the current measures.

Senator TCHEN—With the current measures, but not with the new research and the other proposals that the white paper suggested might come into place in the future?

Mr Jackson—It is a mix of them. For example, the white paper explicitly states that the low-emission technology fund is designed to reduce emissions between 2020 and 2030. So the biggest chunk of the energy white paper's money is going into reducing emissions after 2020, when you would expect to see those emissions increase. We also have a situation where, because we have no nationally consistent approach to climate and energy policy, all the new generation and infrastructure that will be invested in—such as the \$30 billion that the Energy Supply Association says we need to invest over the next 20-odd years—will go into carbon intensive stock. I am not exactly sure how that is factored into these figures, but that could potentially—as the minister for the environment has already said—blow out our Kyoto target with just one or two gas-fired power stations, such as the gas-fired proposals in WA. We are not doing anything in the short term to constrain our emissions.

Senator TCHEN—But if, for example, geosequestration did work then, in, say, 15 years time—which is how long I think you advised Senator Allison you believe it would take to put it on stream if it works—it would substantially reduce Australia's emissions, wouldn't it?

Mr Jackson—It could potentially substantially reduce emissions from particular power stations—and the resources minister often says that you will get an 80 to 90 per cent reduction in emissions from the power stations—but it takes time for these technologies to work their way into the system. So, unless you actually start shutting down all the coal-fired power stations that we currently have and replace them overnight with geosequestration power stations, you will not get a significant emission reduction in the short or medium term. The estimates suggest that by 2030 you would get about two to three per cent reduction in Australia's electricity sector emissions—so, in terms of overall emissions, much less—and that a combined package of geosequestration, gas, renewables and energy efficiency could deliver about 10 times as much as that over the same period.

Senator TCHEN—There are obviously departures between your viewpoint and what is proposed in the energy white paper. You made some suggestions about various things that you agreed with. Are there any aspects of the policy framework that the energy white paper proposes that you support or agree with and, if so, which ones?

Mr Jackson—As I mentioned, if you had an overall policy framework—and that is a big if—for a long-term target, a price on carbon and you had targeted real measures to actually improve the uptake of clean technologies, then things such as the low-emission technology fund and some of the energy efficiency measures that have been put in place through COAG and other things are potentially quite useful. If we are going to reduce our emissions and meet the deep cuts that are required at the lowest cost then we do need to improve the technologies, whether they be renewables or geosequestration. So research and development in those areas is a good idea. But just focusing on that by itself is going to be the most expensive option.

Senator TCHEN—I do not think there was any suggestion we were focused on that by itself.

Mr Jackson—But if you look at how the money has come forward in the white paper, you will see that about two-thirds of it is focused on R&D measures, whether they be private or public. They are R&D measures. There are very few measures in there—equating to about a third of the funding—that would go to market-creation measures.

Senator TCHEN—So roughly what proportion of the white paper do you agree with—50 per cent, 60 per cent, 40 per cent, 70 per cent?

Mr Jackson—I do not know. Let me think about it. I would say 10 per cent.

Senator TCHEN—So only 10 per cent. Suppose I said to you that if you look at the energy white paper you would see it was really a work in progress, not something set in concrete, and that the paper said quite clearly that this was just a look forward. Would there now be any advance on 10 per cent?

Mr Jackson—The only problem with that proposal is that in the meantime, while it is a work in progress, we are getting large-scale investments in coal-fired power stations and new carbon-intensive infrastructure in Australia. ACF would certainly welcome any opportunity to work with government on sorting out this problem, because we do have a fundamental challenge as a nation. We get most of our electricity from coal and coal is one of our biggest exports but at the same time our biggest export industry, tourism, is under direct threat from climate change and we have got huge opportunities in renewable energy technology. ACF would always welcome the opportunity to work with government to sort this problem out because it is the biggest challenge facing society today.

Senator TCHEN—You raised a number of times—and the white paper mentioned it as well so there is no secret about it—Australia's coal economy and that coal is a very important resource sector in Australia's economy. Can you suggest any alternatives to coal as a viable energy source with zero emissions?

Mr Jackson—It depends on what time frames you are talking about.

Senator TCHEN—What about nuclear energy, which is zero emission?

Mr Jackson—It is not.

Senator TCHEN—It is zero as to greenhouse. There is no greenhouse gas coming from it.

Mr Jackson—But there is in the construction of it. It has a lot of embedded energy.

Senator TCHEN—Yes, but that is so for the construction of everything—wind power et cetera.

Mr Jackson—It is much higher than for wind. The Australian government often says fossil fuels, including coal, will remain the dominant energy source for the foreseeable future. However, there has been plenty of international work to show that by the end of this century we can get nearly all of our energy from renewables, and you do not need to expand nuclear capacity to do that.

Senator TCHEN—Even in Europe? For example, in France nuclear energy accounts for something like 70 per cent.

Mr Jackson—It does in France, but, if you are talking about a foreseeable future of 100 years, the most credible studies that have been done on a sustainable energy system—whether they have been done by the UN or the World Energy Council, which is made up of the nuclear industry, the coal industry and others—have all shown that you can do it with renewables. So it is a question of actually putting the measures in place now to make sure that we can do that. In terms of the specific issues around nuclear energy, putting aside the fact that we actually do not need it to meet the deeper emission cuts that we have to meet, you have obviously got—

Senator TCHEN—What about the world? Would the world need it?

Mr Jackson—No. These are global studies. I am not saying that China is not building four nuclear power stations; I freely admit that it is, and we certainly would not agree with that. But in the long term you do not need nukes to do it. There are plenty of scenarios that show you can do it without them.

Senator TCHEN—Thank you for that, Mr Jackson. We could have a discussion like this all day. I am sure that the Australian government would welcome the Australian Conservation Foundation's participation in future planning.

Senator ALLISON—I note that the ACF has been proposing an increase to 10 per cent in the target. Can you comment on the mix that we currently have under MRET? Seventy per cent is taken up by existing hydro, solar hot water systems and landfill gas. Do we need to look at MRET in terms of the distribution of the sources? Should there be more emphasis on wind and solar? If so, how would you do it?

Mr Jackson—I do not think that with an MRET itself you would need to create undue emphasis on a particular technology, and that is what the end market in MRETs is supposed to do. I think there are certainly technologies that should not be in there, like old growth forests, wood based biomass—

Senator ALLISON—But they are very minimal.

Mr Jackson—Yes, but you should exclude technologies which are not sustainable. If there is going to be an expansion agreement, most of that would come from wind. You are not going to see anymore large-scale hydro in Australia, so the most cost effective of the renewables at the moment is wind. You will get most of it from wind in the expansion. But that is not to say you do not do additional specific measures for particular technologies. So having a solar roof program, for example, would be very useful simply because solar PV is currently very expensive. So having additional measures to diversify our energy mix would be a useful addition.

CHAIR—Thank you for your evidence this morning, Mr Jackson, it is very much appreciated.

[10.06 a.m.]

JEANES, Ms Susan Barbara, Chief Executive Officer, Renewable Energy Generators of Australia

CHAIR—Welcome. Thank you for your time today, it is much appreciated. The committee has received your submission as No. 12. Do you wish to make any amendments or alterations to the submission?

Ms Jeanes—No.

CHAIR—You are reminded that evidence given to the committee is protected by parliamentary privilege and the giving of false or misleading evidence to the committee may constitute a contempt of the Senate. We now invite you to make an opening statement before we move to questions.

Ms Jeanes—First of all, my chairman would like me to apologise to you for his not being able to be here today. He specifically asked me to do that. I also apologise for Ms Kile, who could not get a flight back home—there were too many platinum frequent flyers in the wait list before her, unfortunately.

REGA contends that there is a fundamental disconnect in the government's energy white paper. The paper identified that emissions from the electricity sector in Australia comprise one-third of total greenhouse gas emissions and that demand for electricity, as well as emissions, will grow by over 30 per cent over the next 15 years. The report also identified that \$37 billion worth of new generation infrastructure will be required over that period to meet the demand. There is a growing agreement around the world that greenhouse gas emissions will need to be reduced by up to 60 per cent by 2050 in order to stabilise the earth's atmosphere. The dilemma that the white paper does not address is how the electricity sector should get from where it is today to where we need to be by the middle of the century. REGA believes that the long-term solutions include reduced emissions from fossil fuels, increased uptake of energy efficiency and demand-side management strategies, and the increased penetration of renewables. Obviously, REGA's interest is specifically in the increased penetration of renewables.

The mandatory renewable energy target is a world-leading market based policy instrument designed to bring the next cheapest form of renewable energy into the national electricity market. But it will continue to provide incentives for new projects for only up to about another two years, although increasingly the industry believes that it may not even last that long. The energy white paper announced significant spending levels to assist in the development of new and zero emissions technologies and to address barriers to market entry for renewable technologies. But it included no mechanism to assist those yet to be developed or the existing technologies to get into the national market once the MRET incentives expire.

Commercially viable decisions need to be made now by all energy companies, whether they be renewable or non-renewable energy companies, as part of their strategic planning for a lower emissions environment to meet the predicted increase in demand. But these decisions have to be

made now, without any direction on carbon pricing and without any assistance to get new and existing low and zero emission technologies into the market. That is how REGA would summarise its concern with the white paper.

Senator LUNDY—What carbon price system do you think is most appropriate for the Australian environment?

Ms Jeanes—I suppose we do not want to be prescriptive about it in that there is an international global emissions trading system being set up under the Kyoto Protocol. It appears that Australian companies do not have access to that system at this stage. There are models being promoted or talked up by the Australian government, such as the McKibbin model, which I think a lot of the industry believes is a bit too complex to understand on the global stage. I do not want to be prescriptive about it, but the reality is that we need a framework.

Senator LUNDY—And you think the framework under the Kyoto protocol is the most suitable?

Ms Jeanes—I think it was developed probably because it was the simplest. It is easily understood. It buys the lowest abatement in the global market available. If you are looking at low-cost solutions that is certainly the lowest cost solution that I am aware of.

Senator LUNDY—What changes do you think need to be made to MRET to promote renewable energy technologies?

Ms Jeanes—In the lead-up to the MRET decision, which was ultimately announced in the white paper, REGA argued very strongly for a five per cent MRET and an increase in the scheme up to 2035. We think that that would provide enough time for the new technologies and the emerging technologies to build enough market share to bring prices down comparatively. Then again, they should not be coming down comparatively with existing coal-fired costs; they should be coming down to meet clean coal costs, and they will be required to do so at some stage in the future.

Senator LUNDY—What measures can you outline to provide an easier pathway for new technologies to enter the Australian market? I appreciate that there might be a number but I think it is useful evidence.

Ms Jeanes—I think the renewable energy industry would love to have the answer to that. The MRET was developed because it was the most cost effective way—the market would seek the cheapest available forms of electricity that the market could buy. And it has; it has worked very well in that respect. I remember having discussions with Senator Allison some time ago about the sorts of technologies that the MRET would deliver into the market and I had to explain to her that wind would not necessarily be a winner. Given the work the government had done, biomass was expected to take up a big proportion of the market, and it has not done that. Existing hydro in the early years was expected to take up a large proportion of the market available, and it has done that. But wind has definitely proven itself to be competitive and it has been very successful.

Senator LUNDY—Are there any general comments that you want to make about the prospects for the sector in Australia in terms of global leadership and global participation in the context of the impact the white paper is having on that potential?

Ms Jeanes—I think the most appropriate comment to make is that Australia has had a leadership position. The MRET was a world-leading market based mechanism. Market based mechanisms are things that industry asks governments to do, and the government responded accordingly. Variations of it have been copied around the world, not just by nations but by states within nations. Now that the best solution is not going to be supported further the industry will have to look overseas for new projects to develop. There will be no incentive to do that in Australia, so it will be looking at how it buys into incentives in other countries and other global incentives. We have amassed quite an expertise. You mentioned the skilled work force previously. We have an amazingly skilled work force in some of our companies. Those companies are now aggressively looking at markets in New Zealand and China. Some of our companies that are global in nature are now sending staff around the world for three- to six-month stints because the employment slowdown in Australia is already starting.

Senator LUNDY—The employment slowdown has already started?

Ms Jeanes—Yes, it is starting. People are starting to not want to put staff off so they are having to look elsewhere for things to do with their well-trained staff.

Senator LUNDY—I would suspect from your point of view that that is a very disappointing outcome.

Ms Jeanes—Incredibly.

Senator LUNDY—To what degree are the measures outlined in the white paper going to permanently disable Australia's leadership position in renewable energy?

Ms Jeanes—If we are to consider the white paper as a work in progress paper, as Senator Tchen has suggested, then there is time to make that up and for Australia to maintain its leadership position.

Senator LUNDY—Could that slide or trend downwards be reversed?

Ms Jeanes—The trend downwards? If there is fairly quick response before we do have to start divesting staff and expertise and before we do see a slowdown in the development of new projects, yes. There is time, but we need to know how the government is going to respond if it is a work in progress paper.

Senator LUNDY—Do you need that response in this year's budget? Is this whole term of government enough time? Obviously, the sooner the better.

Ms Jeanes—The longer you put it off, the longer your investment decisions take to be made. The thing that is really important to identify in the white paper is the predictions of increasing demand. You are already seeing blackouts and brownouts—whatever you call them—around the country. I am a South Australian and we seem to get more than our fair share. You are already

seeing the capacity of the market failing at times, for various reasons, so you really cannot afford to have the level of demand increase that is predicted without new investments being made.

It is not just the renewable energy industry. We do talk to the other side, as such, of the industry and we all have a view that sustainability is a long-term goal of the government—as it should and would be of any government—but it must provide a pathway for the development of not only the product that we sell, renewable energy, but the product that the non-renewable side need to be selling, which is cleaner coal production and geosequestration. That is going to be a lot more expensive too.

In many ways, we are caught in political battles around the country over electricity prices because of the market changes over the last few years. Energy price increases are extraordinarily political things. We are copping the tail end of that battering, I suppose. I would like to have the chance to put on the record that it is very unfair because the MRET review report identified that the impact on energy prices would be between one and three per cent by 2010. So we are only halfway through the scheme and yet it is being blamed for increased prices. I am a South Australian. The 25 per cent increases in prices over the last couple of years are not due to the increase in renewable energy projects being built around the country.

Senator LUNDY—Thank you for that point.

Senator ALLISON—Isn't it fair to say that MRETS will have failed to increase the proportionate share of renewable energy in our whole mix by 2010, that we are going backwards despite MRET?

Ms Jeanes—It is highly likely. The increase in electricity demand was understated in 1999 when the target was set. It was converted from two per cent to 9½ thousand gigawatt hours. That was done by the government because of the pressure from the broader Australian industry sectors to define what they would have to bear in terms of the MRET. The figure of 9½ thousand gigawatt hours was chosen. But the government would say that the increase in economic activity has meant an increase in demand for energy and therefore the overall proportion of the 9½ thousand gigawatt hours has slipped, to the point where by 2010 it may well be the minus two per cent measure.

Senator ALLISON—Indeed. You say that in two years time there will be little by way of new investment in wind. We are obviously not going to see hydro expand much more. Most of the other possible parts of MRET are not going to dramatically increase. What is the point of having a fund in the energy white paper for wind forecasting? If there is not to be any further development, do we need to know more about where the wind is? If we have the forecasting and no activity to take it up, what is the point of it?

Ms Jeanes—The industry pretty well knows where the wind blows. If it is going to build something, it is going to be pretty darn sure of the wind speeds that it is likely to experience throughout the period that the wind farm would be in existence. The forecasting program is more about how you forecast where the wind will be producing electricity to feed into the grid. One of the problems is that the more diverse geographical range over which you have wind farms the more reliable your product becomes. You need a considerable core of generation to make it more

reliable. The problem is at the moment with the investment cliff looming we are not necessarily going to get that even geographical spread to make it more consistent or more reliable

Senator ALLISON—Did the government consult your organisation before determining that there would be a wind forecasting element in the white paper?

Ms Jeanes—We were listened to time and time again on the MRET decision, but I do not recall the wind forecasting measure being discussed with us, no.

Senator ALLISON—If the government still refuses to increase the target for MRET, can you make some suggestions to the committee about whether there are useful ways, other than geosequestration, in which the government could, through a grant or some such scheme, benefit particularly wind?

Ms Jeanes—REGA represents all forms of renewable energy. We have members who have interests in geothermal developments. Obviously we have a large number of wind developers. We have hydro developers who are also interested in the increased efficiency from hydro and mini hydro schemes. We have the full range. Whether or not the government looks at each of the individual sources and decides how it will assist them to continue to grow, we are quite happy to accept grant schemes to keep us going at the same rate. I think it is going to cost the government a bit of money. But, then again, that compares with the sorts of industry assistance packages that the federal government has put into the car industry. It certainly compares favourably, as we say in our submission, with the sort of support the aluminium industry gets in terms of cheap subsidised energy for its operations. So I do not think the industry would complain about a direct subsidy for future projects. I just doubt that the government is likely to offer that.

Senator ALLISON—You represent interests in photovoltaic systems?

Ms Jeanes—One of our board members is the managing director of Solar Systems. They have the solar dishes and the concentrated technology. They in effect build solar power stations. We do not have any members of the solar roof program. We have been involved less in that.

Senator ALLISON—So you do not have a view about the Solar Cities program?

Ms Jeanes—We have been involved in it at the margins. We have been invited to participate in some workshops and the like. My take on what the solar industry is saying is that the PV program was working well—so well that it kept running out of money—to encourage people to put PVs on their rooftops. That is what the industry needs to continue: it needs an increased market share. Indeed, we all need an increased market share to build more and get our costs down.

Senator ALLISON—So you would support an ongoing budget for PV rebates?

Ms Jeanes—We would. I would also like to say with regard to the energy statement that the removal of the excise on fuels for electricity production in regional areas has impacted somewhat negatively on our solar systems members. They were getting assistance under a range of government programs and now their opposition—diesel fuelled electricity—has become cheaper, which is possibly not what the government meant to do.

Senator ALLISON—Could you estimate for the committee what percentage of systems might have gone over to a combination of wind and solar that might now consider returning to diesel?

Ms Jeanes—I would not have that information.

Senator ALLISON—You are just aware of it.

Ms Jeanes—Yes.

Senator TCHEN—Ms Jeanes, you said in your submission and also in answer to Senator Lundy's question that the industry is now looking to overseas markets because it expects that investment in new domestic projects will either slow down or cease. Wouldn't Australian industries be looking to overseas markets anyway? Isn't that what they should be doing, given how big the international market is compared with Australia's?

Ms Jeanes—The industry definitely should be doing that, and it has been.

Senator TCHEN—So why is that a bad thing?

Ms Jeanes—In the absence of a domestic market, that is our only choice. If we are to retain the expertise and the staff that we have in many of our companies, we do not have another choice. The problem for Australia is that we are not going to get the economic benefit of the development in regional areas of new projects—and renewable energy is a big employer.

Senator TCHEN—Why will we not get benefits if an Australian company goes overseas?

Ms Jeanes—There would be no construction of projects in Australia.

Senator TCHEN—But if they are Australian companies there will be foreign exchange returns to Australia, won't there? Or would the money be seeded overseas?

Ms Jeanes—The projects would not be built here so there would be less employment generated. By their nature, projects overseas have indigenous employment. It will certainly impact negatively on employment and investment in regional Australia.

Senator TCHEN—But the generation of local employment is not necessarily the only economic benefit.

Ms Jeanes—No, but it is a very real benefit. The MRET review report estimated that the MRET was creating about 2,000 new jobs across regional Australia each year. I think the renewable energy regulator reported to the House of Representatives inquiry into employment in the environment industry that up to 45,000 construction jobs would be created in Australia over the course of the MRET. Those are fairly serious figures. Those are the sorts of things that Australia would lose. Don't think we do not look to exports—but we have to, because that is our only choice.

Senator TCHEN—But energy projects are always capital intensive. They are one-off projects—you do not continue building them—so any employment generated locally is not sustainable employment; only the maintenance part of it is sustainable.

Ms Jeanes—That is true, but 45,000 construction jobs over the period of 10 years is something that is worth having.

Senator TCHEN—Spread across Australia, of course.

Ms Jeanes—Yes.

Senator TCHEN—So it would narrow down a bit.

Ms Jeanes—Would you prefer not to have the 45,000 jobs?

Senator TCHEN—The industry could be employing 40 million people across the world.

Ms Jeanes—I do not know what the global employment rate for the industry is. But countries like Denmark, which has set fairly aggressive and ongoing long-distance targets, have built massive export markets. The industries are built on a domestic base. That is the case not only for the renewable energy industry. Any industry that has a strong domestic base can grow and employ and then go naturally overseas looking for markets. We are not going to have that opportunity to flourish in Australia; it will have to be overseas if we want to keep the base that we have.

Senator TCHEN—Denmark's population base is about four million.

Ms Jeanes—It is about the population of New South Wales, yet it is the biggest exporter of wind in the world. That is because it has set itself strong and aggressive targets for wind. It set a 10 per cent target for wind into the market by 2005, and it reached about 12 per cent by 2000. It has a strong domestic base from which to build.

Senator TCHEN—In that case, I suggest that in that particular example Denmark turned themselves into a laboratory for an export industry. In other words, they used their domestic market for research into new and improved technologies so that they could export. That is pretty well what the emphasis of the white paper is about: that we should develop new technologies so that we can become world leaders.

Ms Jeanes—Absolutely, but without a domestic base you are not making money in your home country to be able to do that. Unless the government wants to fund it all, you have to generate income and activity to be able to afford to continually build and develop new technology.

Senator TCHEN—In your submission you quote an example:

... world leading photovoltaic silicon thin film technology developed by the University of New South Wales will now be produced in Germany with the production facilities and market entry incentives available there.

Isn't this really an issue of whether it was the production ability or the proximity existing in the market in Europe that attracted this production to Germany, rather than it being excluded from Australia?

Ms Jeanes—It was not excluded from Australia. Germany offered a whole range of incentives, including an aggressive target for the uptake of photovoltaics on German rooftops, and Australia's program runs out this year. If you are a company that is being offered ongoing manufacturing incentives and a market, you are going to go to where you are being offered those incentives.

Senator TCHEN—Yes. What I am getting at is that this example you quoted actually demonstrates that Australia has the advantage in research and development. We can do something that Germany cannot do, but what Germany can offer this industry is a very sizeable market with 40 million or 50 million people—bigger than the Australian market—concentrated in one place and also access to the rest of Europe, which is actually where the industry should be growing its market so that we have a global market. Australia's part, which we seem to perform very well, is to carry out the research and development of the technology and then to export the technology to Germany. Isn't that the model that the industry had better be looking at?

Ms Jeanes—There is no doubt that Australia does R&D across a whole range of industries very well. But the problem for Australia is that that is what it does do, and it does not do enough to assist the newly developed technologies to get established in the market here. All the jobs that will now be put in place to build the silicon thin-film PVs will be in Germany. They will not be Australian jobs. With more of a reason to stay in Australia we could have kept not only that existing technology but the ongoing development of that technology, because it is not static. They are going to continue to develop it, to bring the costs down and to put the thin film on the plates, and the new, more efficient and cheaper developments will belong to Germany, not Australia.

Senator TCHEN—Do you mean the production of it, the production technology?

Ms Jeanes—No, that particular technology is a work in progress. It is about getting the thinnest possible film of silicon on a glass plate, and the thinner the film the cheaper it is because silicon is the expensive component. It is also about refining the processes so that you can produce them en masse as cheaply as possible. That part of the technology will now belong to Germany, so they will be exporting partly Australian, partly German technology and the jobs will be in Germany.

Senator TCHEN—So the inventor stays in Australia and the person who carries and packs the cells in boxes will be in Germany. Is there anything wrong with that?

Ms Jeanes—I think the research team have gone to Germany. It is not just about packing. Producing photovoltaics is a highly skilled industry and people are highly trained, so that work force will now be German.

Senator TCHEN—I would like to move on to the second point in your submission. In the last paragraph you suggest:

... that the Senate should closely consider the range of economic analyses that were presented on the costs and benefits of the MRET to the Australian economy. Many outrageous and unsubstantiated claims were made in the debate in the lead up to the release of the White Paper on the cost of the MRET which REGA believes were in some cases wrong and misleading.

It is a very carefully worded sentence, because you have ‘many outrageous and unsubstantiated claims’ but ‘some’ of them are wrong and misleading. Can you elaborate on that?

Ms Jeanes—I think that the submission then goes on to quote the \$21 billion cost of Tambling that was quoted in the *Australian* newspaper. We were very cross about that because we could not get a retraction from the *Australian* and there was no evidence at all. I think the Tambling report identified that its own recommendations—and I could stand corrected on this—would be \$6 billion, and yet the article in the *Australian* used the figure of \$21 billion. After that article appeared it was quoted back at us frequently when we visited the minister’s office, so it hit a raw nerve.

The problem for the industry—and this is something that we have said to the government—is that an awful lot of figures have been floated about the cost of MRET at the various levels prior to the release of the white paper and prior to the closing of submissions for the MRET review. They were all made on the basis, as economic analyses always are, of varying assumptions. We said to the government that we felt that it needed to conduct its own costing review because it needed to believe its figures. We, the industry, believe we need to work with the government—and we want to work with the government now—to produce believable figures, because they do not necessarily exist, on our employment rates, the value of our industry, the value of our assets, how much we generate in Australia each year, what the real cost is of not only renewable technologies but also our competing technologies in the clean and lower emissions sector, and also the external costs of the ongoing production of electricity from non-renewable sources, particularly coal, in Australia. There has been no evaluation of what those external costs are. What are the ongoing costs of climate change over the course of this century? We believe that we are operating in many ways in a bit of an information vacuum when we are making decisions about serious things like the ongoing existence of this industry in Australia, with a whole lot of competing cost predictions from various reports—some of them credible and some of them not. That was the reason for putting that statement in the report.

Senator TCHEN—I was just a little bit curious about the construction of it. Thank you for giving us the background. I think you raised some serious issues.

CHAIR—Thank you for your evidence this morning, Ms Jeanes. It has been very helpful to the committee, as always.

[10.37 a.m.]

WESTLAKE, Mr Phillip, Communications Manager, Australian Liquefied Petroleum Gas Association Ltd

CHAIR—Welcome, and thank you for joining us this morning. It is much appreciated by the committee. We have received your submission, which we have numbered 7. Do you wish to make any amendments or alterations to the submission?

Mr Westlake—No.

CHAIR—You are reminded that evidence given to the committee is protected by parliamentary privilege and that the giving of false or misleading evidence to the committee may constitute a contempt of the Senate. I now invite you to make an opening statement before we move to questions.

Mr Westlake—In the interests of time, I will just reiterate a couple of key points from our submission. The LPG industry is quite diverse. However, there are two distinct parts to the industry. One is the automotive, labelled the autogas part of the industry. The other is, as the industry terms it, the traditional market, which encompasses residential, commercial, industrial and leisure uses of LPG. That is the focus of this submission, as well as what we see as the impact of the energy white paper.

Firstly, the LPG industry is supportive of the principles that the energy white paper is trying to introduce in reducing the cost inputs on business. We are supportive of that aim of government. However, in doing so, with a reduction in excise on diesel and petrol, we see an unintended consequence in removing the differential, or the cost advantage, if you like, on LPG as opposed to diesel and petrol in some parts of the market. The estimated impact of that is something like 160,000 tonnes or one-third of the commercial and industrial manufacturing parts of the LPG business in the traditional market—quite a substantial impact.

Obviously there is a financial impact on the industry, but we also see an impact on the cost of infrastructure in that, with reduced volumes through the supply chain, there will also be a cost impact on our customers who are mostly, for that part of the market, regional and rural customers. On top of that there are some environmental consequences. We see an increase in CO₂ as people switch across from LPG to diesel and petrol. There are some greenhouse penalties. Our estimate is that there will be 10,000 tonnes of greenhouse gas for every petajoule switched across to diesel or petrol. There are some other environmental consequences with methane emissions and organic compounds and, obviously, some particulate emission increases as well.

The LPG industry would like the assistance of government in forming a working party of the various departments involved to try to address those issues. We are not seeking to overturn the energy white paper at all. Rather, we are looking to the government for some assistance as a transitional assistance to help us through the impact we see the energy white paper has placed on our industry.

Senator ALLISON—Is there any indication from the government at this stage as to whether the road user charge will include a loading or a weighting in some way to recognise the emission benefits of LPG vis-a-vis petrol or diesel?

Mr Westlake—We are not aware of any information in that respect.

Senator ALLISON—Is that something you would advocate?

Mr Westlake—That is something we would like to be involved in negotiations with government on.

Senator ALLISON—You mentioned in your submission electricity production and the potential for LPG to be used for that purpose. Are you talking about displacing diesel in this respect or do you see that there is a broader opportunity for displacing coal with LPG as an electricity generator?

Mr Westlake—In our submission we are talking primarily about diesel. We do see and have had some opportunities to replace diesel in some markets with LPG as a means of remote power generation. So we have already made some small inroads into that market with a view to increasing that. However, with the recommendations of the energy white paper we see that that will be somewhat compromised.

Senator ALLISON—Can you give us a case example of the size of generation and the point at which it would be more cost effective to go back to diesel, having already changed over to LPG? Can you give us a picture of where the likely movements are going to come in terms of scale?

Mr Westlake—Probably it needs to start off with the fact that the power generation on LPG at the moment is rather small. We think those industries at the moment that already have LPG would remain.

Senator ALLISON—What do you base that understanding on?

Mr Westlake—For example, one of those applications is Couran Cove Island Resort. They pride themselves on being an environmentally friendly resort and operation, so they are doing that for environmental reasons. In that instance, we expect them to remain. However, there is a substantial reduction in the cost of diesel, and there are other operators who are normally using higher volumes. I cannot tell you what the break point is at this point in time, but if diesel is reduced to the point of having no excise there is a clear advantage for those high-volume users to switch back to diesel.

Senator ALLISON—Of course, for road transport there is the road user charge but there is no equivalent for stationary energy production. Is that correct?

Mr Westlake—That is correct.

Senator ALLISON—What are the future opportunities for LPG or what were they before the energy white paper? Have you any idea of the quantity of diesel which could be displaced with LPG in local energy production?

Mr Westlake—I do not have any figures on that, and we obviously do not have any figures in our submission either. The industry had been working towards and very active in trying to promote LPG as a source for power generation. Now that this announcement has been made by government, a lot of the inroads that we had made and the positive discussions that we had held with companies have been put on hold pending the outcome of the white paper.

Senator ALLISON—A lot of rural domestic situations have gone, as I understand it, from oil burning for household heating to LPG. I do not think there is an excise on that oil, but you could perhaps let the committee know whether or not there is. Are domestic users going to be affected by these changes, particularly users in rural areas?

Mr Westlake—Initially we do not see the residential sector being impacted. However, there will be an impact down the track if everything is to continue as proposed by the energy white paper, in that the cost of delivering LPG to regional and rural areas with the reduced volumes would increase for residential customers in the long term. We are talking about 2012 and beyond.

Senator ALLISON—Is that because you anticipate less LPG being used in transport and therefore the cost of transportation of LPG rising because you have a smaller market?

Mr Westlake—It is not so much the transport side; it is more that the commercial and industrial users who are large volume users and who in the past had used diesel for their boilers or burners would look at the fact that they again have an incentive to use diesel because it has become cost effective. Those users would switch. The basis of our submission is looking at those high-volume users and saying that those people will switch back to diesel. With the resulting lower volume, as you have a fixed infrastructure and a cost of delivering product that cost would then have to be borne by the remainder of the users and would, in turn, increase for each user.

Senator ALLISON—Did the government consult your industry about this change? If so, were you able to point this out to them?

Mr Westlake—We were not aware of any consultation on this particular part of our industry. We were consulted about the energy white paper but not about what they were doing with removing the excise from diesel and petrol.

Senator ALLISON—So they consulted you about the energy white paper but did not mention this part of it? Is that what you are saying?

Mr Westlake—Yes.

Senator ALLISON—Is that correct?

Mr Westlake—As an industry we were not aware of that, otherwise we would certainly have raised it beforehand.

Senator ALLISON—The government and others talk about the future in transport and stationary energy being perhaps based on hydrogen. Do you see anything in this energy white paper which would encourage the transition to hydrogen? What is your industry's view of its role in hydrogen?

Mr Westlake—The LPG industry has had some initial investigations into the use of LPG as a fuel to produce hydrogen. It is very early days at this stage but there certainly are some opportunities. Some work has been done by the University of New South Wales in looking at different fuels and reforming that. Some of the initial results have proved favourable. It is early days, but there is potential there for LPG to be used as a source of hydrogen. Given that there is already an LPG infrastructure in place, it would be quite useful if you are heading down the path of having vehicles running on hydrogen.

Senator ALLISON—As I understand it, LPG uptake is largely within small vehicle fleets. Are there any trends as a result of the long-term projections from this white paper? Are we seeing more or fewer fleets taking up LPG?

Mr Westlake—From the white paper and the way it is constructed, the impact is particular to the traditional market and not the automotive market. In the automotive industry we have seen some recent trends of a downturn. That has been the result of negotiations or discussions on excise on autogas. Over the last 12 months some of the results and figures we have seen have shown a change in that downturn. It is still slightly heading down; however, it looks like it has got through the hurdle and we are seeing some positive trends again. It is good that the government have locked in some long-term policy guidelines for us. We are now set out to 2015 and we know exactly where things will be on autogas excise.

Senator ALLISON—You say that is not in the energy white paper, but the energy white paper rounds out, if you like, the whole excise arrangement that was previously agreed.

Senator LUNDY—Given your prediction that LPG will reduce by about one-third, what needs to be done to support or restructure the small businesses that service LPG vehicles?

Mr Westlake—As I said earlier, our submission looks at the two sectors of the industry, and the main impact we see is on the traditional part of the business, which is recreational, leisure, residential and business. We do not see a great impact initially on the automotive side of the business and the small businesses that are involved in auto. However, there will be some impact with that loss of business. There is a corresponding impact through the supply chain and those small businesses involved with delivering LPG to customers at the residential level. We have looked at a range of options and at this stage we have not been able to come across any that will help, hence the request to sit down with government departments and the relevant departments of regional services to look at what options might be able to be put in place to assist the business in the short term.

Senator TCHEN—I would like to follow up on this point. Both Senator Lundy and Senator Allison talked to you about the proposal for reduction of the excise on petrol and diesel fuel for off-road use. You can take this question on notice if you like. Can you give this committee a more detailed account of what effects you expect this reduction would have, with particular reference to primary producers and the infrastructure to support them? You refer to them, and

obviously you have facts and figures but not necessarily at your fingertips. If you do not have it, you can take it on notice and supply it to the committee.

Mr Westlake—Unfortunately, I do not have the numbers here, so I would not be prepared to comment on that.

Senator TCHEN—Thank you. I think it would assist the committee to consider that point. In your submission you talked about your association taking positive responsibility for assisting the government in developing suitable mitigation strategies. In section 8 of your submission you list a number of strategies. Do you wish to elaborate on any of those?

Mr Westlake—Those points have been included to suggest some of the things that we looked at and where we saw some possible opportunity. However, at this stage it is still early days.

Senator TCHEN—So these are not things that you have done but things that you think you can do?

Mr Westlake—We have looked at these and see them as being the most probable ways forward. We are not necessarily suggesting that this is what we want.

Senator TCHEN—In the section headed ‘key areas for investigation’ you suggested that you are undertaking further research into the environmental impacts of LPG relative to other fuel options. Can you tell the committee how this research is going or whether you have achieved any results?

Mr Westlake—At the moment we have achieved some results, looking more specifically at each sector of the market and the impacts there. Now that that has been done and quantified, we are able to move forward into the next stage of looking at those environmental consequences.

Senator TCHEN—Are you able to supply the committee with your results?

Mr Westlake—We can supply some of the results we have done on some of the sectors.

Senator TCHEN—Could you take that on notice as well?

Mr Westlake—Certainly.

Senator TCHEN—I am not sure what sort of timing we are looking at, Chair.

CHAIR—We are hoping to report within the month, so we would need it within a week or two. Can you do that?

Mr Westlake—Yes.

CHAIR—Thank you, Mr Westlake, for your evidence this morning.

Proceedings suspended from 10.55 a.m. to 11.15 a.m.

BRAZZALE, Mr Ric, Executive Director, Australian Business Council for Sustainable Energy

Evidence was taken via teleconference—

CHAIR—Welcome. Thank you for making yourself available today, especially at such short notice. It is much appreciated. The committee has received your submission as No. 17. Do you wish to make any amendments or alterations to that?

Mr Brazzale—No.

CHAIR—You are reminded that the evidence given to the committee is protected by parliamentary privilege and that the giving of false or misleading evidence to the committee may constitute a contempt of the Senate. Do you wish to make an opening statement or shall we go straight to questions?

Mr Brazzale—I would like to make a brief opening statement. Thank you for the opportunity to give evidence to the committee and, again, apologies for not being able to appear in person. Our association represents over 270 companies active in the sustainable energy industry, ranging from renewable energy to gas generation and cogeneration, as well as energy efficiency. Our key concern with the white paper is that it does not provide a policy framework to guide new energy investments in a manner that also reduces greenhouse emissions in the long term. The white paper estimates that some \$37 billion of new energy infrastructure investment will be required by 2020, electricity consumption will increase by nearly 2½ per cent per annum and greenhouse gas emissions will continue to increase well above 1990 levels.

The government recognises the importance of reducing greenhouse emissions. Indeed, it recognises the need for deep global cuts. However, the policy framework that is in place will support only the development of new technologies, particularly geosequestration. However, at best, geosequestration is more than 10 to 15 years away and then it will be at a significantly higher cost than currently available technologies, such as renewables and gas. We believe it is imperative that policies are introduced that: firstly, encourage greater use of gas and cogeneration; secondly, increase and expand the renewable energy target; and, thirdly and probably most importantly, reduce our growing demand for energy. Finally, we believe that we need a policy framework to guide long-term investment in energy and, unfortunately, we do not believe that this has been provided in the energy white paper.

Senator ALLISON—Could you expand on your knowledge of the New South Wales BASIX scheme for a 40 per cent reduction in household greenhouse emissions. How is that going to work?

Mr Brazzale—The New South Wales BASIX scheme is quite an innovative approach to dealing with the twin challenges we have, both greenhouse and water. There will be a requirement for new homes built in New South Wales after an initial transition period to deliver a 40 per cent reduction in greenhouse gas emissions and a 40 per cent reduction in water use from the New South Wales average at the moment. In terms of energy and greenhouse, that will

mean that new homes will have to be more energy efficient. They will be able to achieve that by improving the building envelope as well as by having greenhouse efficient major appliances such as solar water heating or gas water heating or gas boosted solar, for that matter. They will also get the opportunity to include PV, photovoltaic, systems and get credit for that. We think that is quite an innovative approach that is more outcomes oriented than prescriptive, so it provides opportunities for building developers and home designers to better integrate renewable energy and energy efficiency into the built environment.

Senator ALLISON—Your point in raising this is that this should be a national scheme and should have been in the energy white paper, is it?

Mr Brazzale—That is correct. We think that starts to send an important signal, particularly for new investment in our built environment. We need to bear in mind that homes and buildings are going to be in place for 50 or 60 years or so, so it is imperative that we do not build any more stranded assets. We think that is an immediate first step that should be taken to make sure that any new investment in the built environment is environmentally sustainable on both water and, importantly, energy and greenhouse grounds.

Senator ALLISON—Could you comment on the \$14 million to be spent on wind forecasting? Was your organisation consulted about the usefulness of this measure?

Mr Brazzale—No, we were not. We were surprised when this measure was introduced because NEMMCO, which manages the national electricity market and is dealing with the variability issue for wind, had advised that forecasting had been an issue but that it had started to address the issue. It would require proponents and owners of wind projects to provide it with short-term power production estimates to enable it to better forecast. So we had thought that this issue was being dealt with by the market operator.

Senator ALLISON—So you do not see any real usefulness in that fund at all?

Mr Brazzale—Something useful will probably come out of it, but we think a more important priority is to build the market for these technologies. If we do not extend MRET there will be no need for new wind projects. In fact, the work that we have done recently suggests that we need to commit to only an additional 200 to 300 megawatts of renewable power generation projects to meet the current target. So I would argue there is no need for this, because wind is not going to be a problem unless we increase MRET.

Senator ALLISON—You describe the energy white paper as effectively a 20-year delay in doing anything serious about greenhouse. Can you expand on why you see this as being the case?

Mr Brazzale—The issue comes specifically down to the focus of the white paper on providing funding for research and development and commercialisation, particularly for large emission sources such as geosequestration. Those technologies really are not going to be available for 15 years or so, but we still have the challenge of spending \$37 billion on energy infrastructure. How we are going to do that in a way that reduces greenhouse gas emissions is certainly not in the white paper. The white paper seems to be about R&D and technology, which

is great—and we do need that—but that is going to deliver outcomes in 15 to 20 years time. There is nothing in place that will deliver emission reductions in the short to medium term.

Senator ALLISON—You point out that we do not have a greenhouse policy that tells us what we are trying to achieve over the next 40 to 50 years. What do you think that policy should be made up of? That is apart from MRET, which we all understand your organisation would wish to see at 10 per cent—or is it five per cent?

Mr Brazzale—We are advocating a five per cent increase in renewable energy to 2010 and then a 10 per cent increase or thereabouts to 2020. But we think there are a couple of steps that are important and need to be signalled to both the energy industry and the broader community. Firstly, we need to establish a target for deep cuts in greenhouse gas emissions. The order of magnitude of the target is a 50 per cent reduction by 2040. We will then need to have intermediate steps and targets. That signals to the broader market that the government is serious about reducing greenhouse gas emissions. We think that needs to be backed up with a movement to introduce emissions trading and a significant expansion of the renewable energy target. We need to start to aggressively tackle our burgeoning energy consumption. Those are the three pillars that we think any greenhouse policy should be based on.

Senator ALLISON—On that last point, you have a background in cogeneration. Firstly, is there anything in this energy white paper that would encourage cogeneration and, secondly, what is the opportunity at the present time for improving cogeneration uptake?

Mr Brazzale—We look at cogeneration as part of the energy efficiency agenda. Cogeneration is an attractive, and can be a really cost-effective, form of greenhouse abatement in the commercial and industrial sectors. The white paper has only indirectly touched on this in the requirement for large energy consumers to disclose their energy use and emissions. We think a lot more can be done to support cogeneration—for example, an emissions trading scheme. Market support for industries improving their performance is also required. We need to move beyond voluntary schemes like voluntary disclosure. That is important, but it is insufficient. We need to move beyond that and start to help some of these industries become best practice and start to implement things like cogeneration.

Senator ALLISON—And what about opportunity in terms of abatement?

Mr Brazzale—In the report we released last year with a number of other associations, *A clean energy future for Australia*, we recognised that there is an enormous opportunity for cogeneration. I cannot remember the exact proportion, but I can certainly get back to the committee on that. But there is a significant opportunity for both expanding the use of gas in an efficient manner as well as supporting renewable cogeneration in industries such as the sugar industry and the pulp and paper industry.

Senator ALLISON—It would be useful if you could give us an update on those figures. It would also be useful to know whether you think there are still some opportunities within the Greenhouse Gas Abatement Program for cogeneration.

Mr Brazzale—We think there are. The Business Council for Sustainable Energy put together a cogeneration support program as part of GGAP. We have identified about eight projects that

could proceed with GGAP funding. Under the GGAP mechanism I think we have learnt a lot in the development of that program. I think there are opportunities to support technologies like cogeneration through GGAP, but I think it needs a rethinking of some of the underlying principles behind the scheme because it has been difficult for a number of project proponents to get projects through. We think there are opportunities to improve its effectiveness.

Senator ALLISON—I invite you to comment on the Photovoltaic Rebate Program and the benefits it has delivered. I presume you would like to see that extended. Should it go on pretty much as a permanent rebate scheme or is there a logical period over which it should come to a conclusion?

Mr Brazzale—I will start by saying that the Photovoltaic Rebate Program has been very successful in stimulating the growth of the Australian PV industry. It is one of the sectors of the renewable energy industry that has been successfully exporting, particularly to South-East Asia and developing countries. We have built industry capacity and capability over the last five years or so on the back of PVRP. There has been a significant increase in PV in the built environment and grid connected applications, so it is very successful.

The concern we have is that the benefits that PV provides are recognised in the white paper, where it is expressly stated that PV provides values in addressing peak power demand and starts to address the problems caused by a growth in airconditioning. Unfortunately, it does not do anything to address them. There is the Solar Cities initiative, which we think is important and will be a valuable contribution in the longer term, but there is nothing to bridge the gap. Our concern is that if we do not expand PVRP we are going to undo a lot of the good work we have done. The benefits that PV provides are recognised and, until some other mechanism is put in place to recognise and reward those benefits, we need an expansion of the rebate program.

Senator ALLISON—Why will the Solar Cities program not be yet another pilot that is out there but which we do not apply elsewhere?

Mr Brazzale—It is important to recognise that the Solar Cities program is not going to assist the deployment of PV or in fact any other solar technologies, which is a concern for us, particularly in the context that MRET was not extended. So there is now no mechanism to help the deployment of some of these important emission abatement technologies. Solar Cities can provide some important benefits to show not only how some of the solar technologies can be integrated into the built environment but also, probably just as importantly, how energy efficiency and demand side management can be better integrated into the energy market. We think the national electricity market has been unsuccessful in stimulating demand response and there is a lot more that we need to do. We would have preferred some other mechanism to help the deployment, but the challenge that our industry has now is to make sure that Solar Cities does deliver on some of its objectives.

Senator LUNDY—In your submission you said:

... the government has decided it is too difficult to achieve emission reductions, and instead they will research the issue.

What do you mean by that statement, and what is the evidence for that statement?

Mr Brazzale—To us, that is the implicit rationale behind the approach to the white paper—that the government was not convinced that it was worth introducing some other measures that may increase, say, electricity prices in the short term. So it was not prepared to go down that path. It had argued that the reason that MRET was not extended was that it would impose significant costs on the community and electricity consumers. The point we would make is that greenhouse is starting to impose significant costs on the Australian community and it is recognised that we need to do something to reduce emissions, yet we do not have a market based mechanism in place at the moment. MRET has been successful. It is a market based mechanism, but it will not drive very much new investment because the target was very low and was very modest by international standards and it really has not achieved its objectives—and the independent panel concluded that as well.

Senator LUNDY—That goes to another statement you made in your submission—that the energy white paper is essentially a 20-year delay. Can you expand on that statement, on why that is your view and what the likely effect on the clean energy industry is?

Mr Brazzale—The rationale behind that statement was that the white paper was about cleaning up existing possible fuel technologies—and that was made clear by the Prime Minister when he launched the white paper at a National Press Club function at Parliament House. That was the key thrust of it. The focus of the white paper is on long-term R&D. It is about technology development. The key technology there is geosequestration, which is the burying of carbon from coal-fired power stations. That is at least 10 to 15 years away on the coal industry's own reckoning. So we do not have anything in the short to intermediate term that is going to drive appropriate new investment in energy that will lead to a reduction in greenhouse emissions rather than an increase in overall greenhouse gas emissions.

Senator LUNDY—Do you think that the federal government is actively discriminating against the renewable energy industry?

Mr Brazzale—I do not think it is a matter of discriminating against the industry; I think it is a matter of supporting a technology push. We have a lot of existing technologies that are technically proven; they are just not at sufficient scale economies, particularly wind and solar technologies. They are proven technologies. We do not need to put any more money into R&D. We need to have large scale deployment, and that is what a lot of other developed countries have. We can rattle off a number of countries—for example, Japan, Germany and Holland—and California in the US. They all have aggressive programs to support the deployment of renewable technologies—such as wind, solar and biomass for that matter—because it is recognised that, with significant deployment, you will get cost reductions. We can at least guarantee that these technologies will be there in five and 10 years time to deliver greenhouse abatement. We are just not sure what geosequestration will deliver. Hopefully, for all our sakes, it will be there in the future, but it will be at a cost that will be greater than the likely cost then of renewables.

Senator LUNDY—By virtue of that strong focus on geosequestration in the paper, doesn't that mean by definition that those proven renewable energy technologies are being discriminated against in government policy?

Mr Brazzale—I am not sure whether it is discrimination or whether the government, at least, has not been prepared—

Senator LUNDY—But they have cut you out, haven't they?

Mr Brazzale—It is not so much cutting us out; it is more that the government has missed out on an opportunity to go down a path that will support the growth of sustainable energy. Its rationale for that was that that would involve some increase in costs to the community and increase in costs to electricity consumers in particular. If we do not do that, there will be much greater costs that need to be borne in the future. The government has not supported more aggressive measures on deployment of renewable and sustainable energy technologies because of its concern over the cost. But significant costs will be borne by the community and the economy if we do not do anything.

Senator LUNDY—I bring to your attention evidence we heard earlier today with respect to photovoltaics and, in particular, the solar rebate program. Because funding finishes for that on 1 July we have heard that that is already having a negative impact on, for example, employment in that particular sector. Have you done any work on the costs and the penalties now being effectively borne by that part of the renewable energy industry as a result of the lack of appropriate strategies in the white paper to—as we heard today—‘expand every opportunity for photovoltaics in Australia’?

Mr Brazzale—We see this as a looming issue. We have quite a bit of anecdotal evidence from a number of our members—and many members were active in the solar photovoltaic area—that the uncertainty around the cessation of PVRP is having an impact on their businesses. They are not hiring, they are considering their future—some of them are even selling out. We are starting to see the impact of that, and we will see some real problems looming in the next couple of months. That is why we have advocated that we need to extend and expand the PV Rebate Program, otherwise we will lose a lot of the good work that that scheme has delivered over the last four or five years and we will not have an industry that is capable then of delivering any potential that comes out of the Solar Cities initiative. So it is really important that we find a means to bridge the gap between the cessation of the PVRP and any measure that gets implemented as a result of Solar Cities. We see it is a problem for some businesses now and it will get worse, if the scheme is not extended.

Senator LUNDY—Is your organisation currently lobbying for the extension of the rebate program in the forthcoming budget?

Mr Brazzale—Yes, quite actively.

Senator LUNDY—So what is your general view of the Solar Cities trial, and what is your understanding of the status of the tender process?

Mr Brazzale—We have put in a detailed submission to the request for response on the guidelines. We think that the Solar Cities initiative has the potential to deliver some important benefits, not just to the solar industries but, probably more importantly, to demand-side management and how we can get more effective outcomes from the national electricity market. With Solar Cities, we have been concerned that a sufficient level of specificity has not been defined yet, so it makes it difficult for a number of our members to actively put in proposals. We have been urging the AGO to come out as quickly as they possibly can with some firm details of a process and what is required. Our concern has been that, if that did not happen, there was a risk

that a lot of the industry was going to waste a lot of time and effort putting in proposals that would be ineffective, unless the government had clearly identified what it was seeking from the project.

Senator LUNDY—Can you tell me whether or not the government has called for tenders as yet?

Mr Brazzale—I am not exactly sure. My understanding is that they will do so shortly. I do not think that they have as yet.

Senator LUNDY—Hence you are hoping that that additional detail in the specifications will come out prior to the government formally calling for tenders?

Mr Brazzale—That is correct. We are hoping that they will take notice of some of the suggestions we have made.

Senator LUNDY—Are you able to give the committee an insight into what some of your suggestions have been?

Mr Brazzale—There were a number. Probably one of the most important was that we were keen for the sites for the trials to be determined separately from a whole lot of the other processes, because, unless you had a site and a location determined, it was difficult for consortia to form and put in effective proposals. As an example, a number of our members are active in particular areas and in particular regions, as well, so it would make it difficult for them to put in proposals—in fact, they could waste a lot of time and effort in doing so—where you did not have a defined location. So we thought that was one of the first priorities: choose the location first, then you can choose and then invite submissions and proposals from the broader market.

Senator LUNDY—Are you optimistic that the government will do that?

Mr Brazzale—I am not sure. I am not sure what the current thinking is at the moment. We had understood that the government's approach had been to seek combined proposals and that they were happy to accept all sorts of submissions, but our concern was that you were not going to get any clear definition unless you first selected a site.

Senator LUNDY—If the government is not forthcoming with those details, given your obvious advocacy of that, do you think that will fundamentally undermine any success that that program could possibly have?

Mr Brazzale—I do not think it will undermine the success it will have. I think the issue will be that a lot of effort put in by a lot of industry may not be as fruitful or as productive as it otherwise would, and you may not get as effective proposals as you otherwise would. Once you choose a site, you are more likely to get the best proponents across the energy efficiency, solar and demand-side management fields, and the best businesses in that particular area, getting together and putting up more effective consortia. So we thought that we would get a more effective outcome if we went down the path we recommended.

Senator LUNDY—What do you think of the recently announced Greenhouse Challenge Plus program?

Mr Brazzale—We think that voluntary schemes like the Greenhouse Challenge are an important and necessary step, but they are insufficient in themselves. It is important to go beyond that to introduce some more effective mandatory requirements and, on the other hand, to support businesses to improve their energy performance. We think there is room for government programs, and an example that we have used is a program that the Victorian government is proposing, the Commercial Office Building Energy Innovation Initiative. This will provide funding support for feasibility studies for a number of businesses to improve their energy performance. It aims to take some of the perceived risks out of energy efficiency and also to support the feasibility study for cogeneration. We see that that is an important mechanism to help industry become best practice. Greenhouse Challenge Plus is a necessary first step, but we cannot just stop there; we need to go much further.

Senator LUNDY—On that point, what do you think should have been in the white paper? Perhaps you could develop the list of things you have just started. What are the main things that your organisation thinks should have been in there that would assist?

Mr Brazzale—In the first instance, we think that there should have been a long-term greenhouse reduction target. We have previously talked briefly about the possibility of a 50 per cent reduction in greenhouse emissions by 2040 and having some intermediate steps—a 20 per cent reduction in emissions by 2020, for example. That is important because it signals to the industry that the government is serious about reducing greenhouse emissions. That then needs to be supported by an emissions trading scheme that puts a price to carbon so we can start to get effective investment in energy infrastructure and we do not build stranded assets. That is an important step but, in itself, it is also not sufficient. We would still need an expansion in the mandatory renewable energy target and some aggressive energy efficiency measures, particularly mandated minimum performance standards for new homes and buildings.

We have advocated that the BASIX scheme that we think is working effectively in New South Wales should be expanded nationally. In addition, we think there is an important role for government to play in helping industry to improve its energy performance. Also, there is an important role for government to play in telling the community that greenhouse is important. We need to change behaviour. Energy consumers need to be made aware of the adverse environmental impacts that their energy purchasing and consumption decisions have. At the moment they are not aware—they are not aware that climate change is a serious enough issue and that they are an important part of the problem because of the way they consume energy and the way they choose the houses they live in.

Senator LUNDY—On the last issue that you raised, regarding consumer awareness, do you think the government's refusal to ratify the Kyoto protocol has undermined that effort of increasing public awareness about the depth of the problem?

Mr Brazzale—It is hard to know, but I would imagine that that could be the case, because we understand there is pretty broad based support in the community for doing something about greenhouse and there is support for ratifying the Kyoto protocol. That came out of some research that was done probably a couple of years back. We are not sure why the government has not

ratified the Kyoto protocol, because we are on track to meet our 108 per cent target for the first commitment period. By not ratifying, we are not availing ourselves and our industries of some of the opportunities available through some of the clean development mechanisms and emissions trading. I think that could be an issue, but even if the government does not ratify Kyoto it is still committed to significant reductions in greenhouse emissions and it still needs to tell the community that that is an important issue. It is having adverse impacts on some icon sites at the moment in Australia, like Kakadu, the Great Barrier Reef and the like. I think the community would probably be horrified if they correctly understood what some of the implications will be if we do not tackle this on a global basis.

Senator LUNDY—Finally, what is your organisation's formal position on the Kyoto protocol?

Mr Brazzale—We think that there is no reason why Australia should not ratify and that we are missing out on important opportunities if we do not. We believe that we can deliver emission reductions much more cost effectively than, say, Europe and Japan can, and there is an opportunity to export abatement from Australia to those countries. Having said that, Kyoto is important and it is an important signal the government can provide, but it is even more important to have a domestic policy framework that ensures that we actually reduce greenhouse emissions beyond the first commitment period. That is the problem we see. There is nothing in the white paper that would start the reduction in greenhouse emissions that we need to see happen after the first commitment period.

Senator LUNDY—Thank you.

CHAIR—Thank you very much for your evidence this morning. It is much appreciated by the committee.

[11.52 a.m.]

ROSSER, Mr Matthew, Chair, Western Australian Sustainable Energy Association

Evidence was taken via teleconference—

CHAIR—Welcome and thank you for your time this morning. The committee has received your submission as No. 14. Do you wish to make any amendments or alterations to your submission?

Mr Rosser—No.

CHAIR—Evidence given to the committee is protected by parliamentary privilege, and the giving of false or misleading evidence to the committee may constitute a contempt of the Senate. We invite you to make an opening statement before we move to questions.

Mr Rosser—Thank you for the opportunity to participate in the Senate inquiry process. The Western Australian Sustainable Energy Association has provided a brief written submission. I am happy to read through that if the committee wishes; or if the committee prefers I could take questions on the submission.

CHAIR—We have received your submission so there is no need to read it, but if there are any key salient points you want to draw our attention to before we move to questions, that would be very helpful.

Mr Rosser—In terms of the association's focus, one of the key points in the submission is the decision not to increase the mandatory renewable energy targets above the two per cent level. This has really caused a great deal of concern among the association's members. Also of concern are the white paper's focus on the sustainable energy industry as an industry in infancy and the need for renewable energy storage technologies—which are issues which were dealt with in the late 1970s and the early 1980s. However, I am keen to move on and take some questions.

Senator LUNDY—What sort of carbon price system do you think would be most appropriate for Australia?

Mr Rosser—I think that a system that meshes with the European system that is being implemented at the moment would be the most sensible strategy for Australia.

Senator LUNDY—What are the most important changes your organisation believes need to be made to the MRET in order to promote renewable energy technologies?

Mr Rosser—I think the MRET is a fine scheme that sends all the right signals to the sustainable energy industry to grow; it is just the requirement to increase the level of the target. We see a need to increase the target in line with those targets recommended in the Tambling report, which was an extensive review that we also made extensive submissions to. Those recommendations were to increase the target from 9,500 gigawatt hours in 2010 to 20,000

gigawatt hours by 2020 and to extend the scheme to 2035. However, the association takes a stronger view and would like to see the MRET scheme increased to a 10 per cent target overall.

Senator LUNDY—Over what time frame?

Mr Rosser—In our submissions we were recommending by 2010. We do not see that as being unobtainable.

Senator LUNDY—I appreciate that a lot of this is in the submission, but it is useful to get it as verbal evidence: what measures do you think are needed to provide for easier entry pathways for new technologies in the energy market?

Mr Rosser—That is a very good question. At a systems design level we can design an electricity network that makes it very difficult to implement renewable energy technologies, particularly the intermittent renewable energy generators such as wind farms, by continuing to promote the use of base load coal-fired power stations ahead of gas-fired power stations, which are faster and better integrate with renewables. In better integrating with renewables, they reduce the overall cost of renewable energy on the system. We also need to see a system that fairly rewards renewable energy for its role in the system.

There are also some techniques that have been used successfully overseas by getting information from the community about what types of technologies they would like to see in the system. Deliberative polling in particular has been used very successfully in Texas. That involves going to the community and explaining to them that there is a requirement to source additional energy to meet the needs of a growing population. For example, in Western Australia at the moment we have a process under way whereby we are sourcing additional base load capacity to meet the needs of our growing economy, but the community have not been asked where they would like that energy to come from. We could be in the situation where the community, without their support, are being signed up to purchase electricity from a base load coal-fired power station for the next 25 years. If they were involved in the process of deciding where that energy was to come from, we may see an informed community taking the decision to source a percentage of that energy from renewable sources, with a smaller percentage from coal and perhaps a percentage from gas. Those types of measures would be very beneficial in facilitating the uptake of more desirable energy forms.

Senator LUNDY—In looking at that demand side, the previous witness reflected on the lack of any effort by the government to promote greater consumer awareness about renewable energy sources. For them it was about greenhouse issues more generally. Do you have the same view? Is the point you are making that there is a lot to be gained out of stimulating the demand side of renewable energy?

Mr Rosser—Yes, I agree with those statements. One of the measures that has been used to increase community awareness about the greenhouse gas intensity of the energy they receive is the provision of that information on bills. Was that suggested?

Senator LUNDY—Not specifically—so that is a really interesting point. Perhaps you could identify other market based measures like that that you think would assist in generating a

stronger demand and—I think by definition of your statement—prompt a stronger policy response.

Mr Rosser—Again, I think the strongest measure is a deliberative polling technique—for example, when new capacity is required on the system, there is a process whereby the community are involved through something like a citizen’s jury process in which a section of the community hears evidence from a number of sectors about the need for the additional energy and where that energy can come from and the implications of taking it from those various sources. In that way, the general level of awareness within the community is raised and the community has a greater stake in that energy choice. The implications of our energy choices are affecting everybody.

Senator LUNDY—You mentioned earlier fair rewards. Can you expand on what you mean by that? I presume you are referring to the commercial viability of renewable energy over the long term as well as the short term.

Mr Rosser—It again comes back to being able to send the signals to renewables and to the generators of renewables that the energy is displacing the need for fossil fuel and in some way capturing the true cost of the energy that is displaced. For example, MRET sends that signal through the renewable energy certificates that are purchased. In Europe we are now seeing carbon taxes being put in place which are similarly sending those signals.

Senator LUNDY—My final question is: do you think that the renewable energy sector has been discriminated against, given the various emphases and proposals contained in the white paper?

Mr Rosser—Yes. The white paper’s focus on coal and the linking of Australia’s energy future to coal to my mind was a slap in the face to the sustainable energy industry. Reading the white paper, to my mind, it was quite disturbing in that it was like reading something that had been written in 1975. It treated renewable energy as unproven technology. It talked about the need to implement energy storage devices to cope with wind energy. All of these things were dealt with in the late 1970s and the early 1980s. For example, the issues associated with the variable nature of wind energy, where it was just accepted that there was no need for energy storage—that, in fact, when wind energy was being utilised, fossil fuel was not—were dealt with. In terms of what percentage of renewable energy could be allowed onto the grid, that has already been demonstrated through such successful projects as the Esperance wind farm, where up to 70 per cent of the energy overnight comes from the wind farm without any adverse effects on the system network. The white paper did not really take into account any of those issues in making its statements regarding Australia’s energy future being locked into coal.

Senator LUNDY—I have just thought of one more question. Again earlier today we heard evidence about the likely negative impact on employment in the renewable energy sector—there was a particular focus on photovoltaics—as well as a negative impact on Australia’s leadership role in these established renewable energy technologies. Do you have a comment on both of those points? From your organisation’s experience, what is your expectation?

Mr Rosser—Western Australia has a great leadership role in one particular sector of the sustainable energy industry—that is, in the solar hot water industry. A significant number of

solar hot water systems that are placed in Australia are manufactured in Western Australia, and we have leading companies over here. They have made a great contribution to the goals and aspirations of MRET by being able to participate in that and the industry sector has been growing because of that. I think the capping and the phasing out of MRET will really impact negatively on that industry because that industry benefits from the renewable energy certificates that are generated under MRET.

One of the real benefits for the broader renewable energy sector in Western Australia is the level of potential activity in the regional areas. The vast majority of the grid-connected renewable energy projects such as the wind farms or biomass power stations occur in regional areas and provide additional revenue streams for areas in Western Australia that are particularly having a rough time at the moment. There is also the need in these regional areas to upgrade electricity networks because of ageing equipment and burst generation in the form of renewable energy power stations also provides additional infrastructure in those regional areas that would otherwise not occur.

Senator LUNDY—Thank you.

CHAIR—Mr Rosser, I thank you very much for your evidence. It is very helpful to the committee and your submission was of great interest and good reading. That concludes our evidence today. I thank you for your help and I thank all the witnesses for the informative presentations. Thanks also to Hansard and the secretariat. I declare this hearing closed.

Committee adjourned at 12.07 p.m.