



# **HOUSE OF REPRESENTATIVES**

**STANDING COMMITTEE ON ENVIRONMENT, RECREATION AND THE ARTS**

**Reference: Trading in greenhouse gas emissions**

**CANBERRA**

**Monday, 29 June 1998**

**OFFICIAL HANSARD REPORT**

**CANBERRA**

HOUSE OF REPRESENTATIVES  
STANDING COMMITTEE ON THE ENVIRONMENT,  
RECREATION AND THE ARTS

Members

Mr Causley (Chair)

Mr Jenkins (Deputy Chair)

Mr Anthony	Miss Jackie Kelly
Mr Billson	Mr Kerr
Mr Robert Brown	Dr Lawrence
Mr Eoin Cameron	Mr McDougall
Mr Entsch	Mr Mossfield
Mr Hockey	Dr Southcott

The committee will inquire into the regulatory arrangements that would need to be put in place to support a market in greenhouse gas emissions including:

mechanisms for measuring, verifying and monitoring emissions and the compliance with contracted arrangements;

mechanisms to integrate emissions trading with the development of carbon sinks (such as timber plantations, gas aquifer reinjection, soil rehabilitation etc), including the science, measurement and security of such arrangements;

the allocation of the right to emit greenhouse gases;

regulatory mechanisms to support a national market and potentially an international market in emissions trading;

possible emission traders, administration and transaction costs;

roles and responsibilities of governments and other stakeholders; and

the impact of emission trading on the environment and industry and the economic and social welfare of the Australian community.

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HOUSE OF REPRESENTATIVES STANDING COMMITTEE ON ENVIRONMENT,  
RECREATION AND THE ARTS

*Trading in greenhouse gas emissions*

CANBERRA

Monday, 29 June 1998

Present

Mr Causley (Chair)

Mr Billson

Mr McDougall

Committee met at 8.48 a.m.

Mr Causley took the chair.

**CHAIR**—This is a hearing of the House of Representatives Standing Committee on Environment, Recreation and the Arts for its inquiry into the regulatory arrangements for trading in greenhouse gas emissions. This is the committee's eighth public hearing for this inquiry and follows hearings in Sydney, Brisbane and Melbourne. Two more hearings are planned after this one: one to be held in Canberra and one in Perth.

Before proceeding, I advise witnesses that committee public hearings are recognised as proceedings of the parliament and warrant the same respect that proceedings in the House of Representatives demand. Witnesses are protected by parliamentary privilege in respect of the evidence they give before the committee. You will not be asked to take an oath or to make an affirmation; however, you are reminded that false evidence given to a parliamentary committee may be regarded as contempt of the parliament. The committee prefers that all evidence be given in public but, should you at any stage wish to give evidence in private, you may ask to do so and the committee will give consideration to your request.

[8.48 a.m.]

**ANDREWS, Ms Gwen, Chief Executive Officer, Australian Greenhouse Office, GPO Box 621, Canberra, Australian Capital Territory 2601**

**HARRISON, Dr David, Special Adviser, Emissions Trading, Australian Greenhouse Office, GPO Box 621, Canberra, Australian Capital Territory 2601**

**PALMER, Mr Paul, Manager, Emissions Trading, Australian Greenhouse Office, GPO Box 621, Canberra, Australian Capital Territory 2601**

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**IRWIN, Mr Stephen, Assistant Secretary, Greenhouse Response Branch, Energy Division, Department of Primary Industries and Energy, GPO Box 858, Canberra, Australian Capital Territory 2601**

**WEIR, Dr Anthony, Manager, Greenhouse Policy Section, Greenhouse Response Branch, Energy Division, Department of Primary Industries and Energy, GPO Box 858, Canberra, Australian Capital Territory 2601**

**CHAIR**—We have received submissions from the Australian Greenhouse Office, the Department of Industry, Science and Tourism, and the Department of Primary Industries and Energy, and we have published those publications. Do any of you wish to propose changes to your submissions at this stage? No? Everyone is happy.

You are appearing together before the committee at your suggestion so you can provide a concerted view of the Commonwealth government's approach to trading in greenhouse gas emissions. We have allotted 2½ hours to hear from you and have suggested we aim to deal with emissions trading under a series of topics which the secretariat has arranged with you. We understand that you have come prepared to provide a brief opening statement for each of the topics as we come to them, which will be followed by our questions.

I am aware that there are some members of the committee who are not able to be with us for the entire hearing. They may wish to ask questions while they are here which are out of step with the topic currently under discussion. I will try to accommodate that.

We will now move on to the first topic. I invite the witnesses to provide the committee with some background information about the operations of the Australian Greenhouse Office.

**Ms Andrews**—Thank you, Chair. If I may, I will make an opening statement on that topic. As you know, in November 1997 the Prime Minister put together and announced a package of climate change measures pre the Kyoto conference. One of the initiatives in that package was the creation of the Australian Greenhouse Office.

The Australian Greenhouse Office was created as a coordinated policy response to an issue that crosses a number of borders in terms of the portfolios of the Commonwealth government. The key shareholder departments in the Australian Greenhouse Office are the Department of the Environment—it is, in fact, in the environment portfolio—the Department of Primary Industries and Energy, who are appearing with us today, and the Department of Industry, Science and Tourism.

The Greenhouse Office and I report directly to a ministerial committee of three. Those ministers are Senator Hill, the Minister for the Environment, who is the chair of the committee; Senator Parer, Minister for Resources and Energy; and Minister Moore. That ministerial committee may also include from time to time other ministers with an interest in the issue. Minister Anderson has attended. Minister Downer may attend when we touch on international measures. Minister Vaile, for example, if we are dealing with transport and regional development measures, may attend as well.

The ministerial committee is supported in its work by a committee of secretaries which includes the secretaries of the three departments. It includes me, it includes the Ambassador for the Environment and it includes a senior official from Prime Minister and Cabinet.

I was appointed in March. The AGO itself was formally established on 24 April 1998 when it was gazetted as a prescribed agency under the Commonwealth Financial Management Act. We have therefore been in existence legally for about two months, although we were operating to some extent for about a month prior to that.

It is something of an experiment in terms of public service administration in that there is not another model in the Public Service of an agency located in one portfolio but with clear shareholder interests in two others, and with the kind of reporting and support structure that I have just described. We are obviously still working out the administrative arrangements and the protocols around that. We have had two or three secretaries' committee meetings and a ministerial committee meeting, and there is an upcoming ministerial committee meeting this week.

The main task of the office is the coordination of the government's policy on greenhouse response in a domestic sense, and also the delivery of a package of measures



that in fact make up the government's response. The Greenhouse Office is responsible for delivering most of the measures in the Prime Minister's statement. There are a number that are still within the Department of Primary Industries and Energy. In particular, I would note the international greenhouse partnerships program that that department runs which is in fact an amalgam of the activities implemented jointly and the clean development mechanism. In such cases where another department or one of our shareholder departments is specifically running a program, we coordinate on those programs as well.

In terms of emissions trading and the role of the Greenhouse Office in that, obviously the government is firmly committed to the delivery of the full range of measures that were in the Prime Minister's climate change package. That package includes a range of measures which are different in type. In fact, it is a policy response that is quite comprehensive in the sense of including measures that are somewhat regulatory in nature, measures that involve voluntary programs like the greenhouse challenge program, and measures that are more market based—some incentive programs, for example, for renewable energy industries, and also the policy question of emissions trading which is obviously highly market based.

At this stage the government has tasked the AGO with examining and providing advice on policy options for the introduction of an emissions trading system. An emissions trading system, if introduced, would at this point be a part of the mix of policy in program measures and in our view would complement and not immediately displace existing programs.

We would make a statement of principles, the ones that have been recognised already in various government statements about what an emissions trading system might be based on. I would say that at this point they are very broad principles and there is a lot of work to be done and a lot of consultation to be done before we would get to the point where we would be able to design and implement such a system. But we see that ideally a domestic emissions trading system should be comprehensive; it should cover all greenhouse gases from all sources and all sectors and all carbon sinks. This would result in the greatest number of participants in the market, the greatest competition, and the potential for the lowest cost abatement.

We would also see that ideally a domestic emissions trading system would be open to all comers. It would be based particularly on a strategy of maximising private sector involvement and minimising market regulation and management. It would be linked to an international trading system so that trade could occur across national boundaries as well as within boundaries using the same permits.

That kind of design would result in maximum involvement of potential abatement options and a more competitive system, and it would, as I said, be part of an overall policy mix to ensure the most comprehensive approach to climate change response. The

issues require further analysis and consultations with affected sectors and interested parties, and a major concern, obviously, will be the impact on industry sectors, particularly their competitiveness with our trading nations. I will stop there to allow the committee to ask any questions they might have about the role of the Greenhouse Office.

**CHAIR**—I might start off in my usual frank manner and say that having heard the make-up of the Greenhouse Office it reminds me of the camel that was designed by a committee. How do you coordinate that? I daresay that Industry and Primary Industries and Trade would be terribly concerned about how their voices came to the fore in an office like that and whether it would not be driven by the Department of the Environment.

**Ms Andrews**—You are quite right. It is not that easy a task to coordinate amongst three departments, and more departments, the response to this particular issue. Greenhouse is a very pervasive issue and the government has taken a clear decision and a deliberate decision to address it on a whole of government basis. I believe that is the basis on which they have decided to establish a coordinated office.

I might point out that it is the first government in the world to decide to establish a coordinated office. A number have established coordinating mechanisms which are forms of committees that sit over a number of different portfolios. However, the Australian government has gone further and whereas it is a learning experience for all of us and perhaps not the easiest way to work, it is very clearly based on a desire to address this on a whole of government basis. I believe that there is goodwill on the part of all the shareholder departments to get our protocols working properly so that that coordination occurs.

**CHAIR**—If there was a disagreement from industry, from agriculture or from one of the players, even though this committee would be working through the three principal ministers you talked about, and undoubtedly recommendations from there would be going through to cabinet, is there an ability for someone to go to cabinet and say, ‘Look, we disagree with this position’?

**Ms Andrews**—Ultimately, there would be. Obviously, the ideal would be to be able to work that through as we are developing the policy on whatever situation we are dealing with and to accommodate all interests to the extent that we can. That would be the objective in every situation. Should that not be possible, or should a minister feel that a particular interest outweighs others, there is no reason why he could not raise that in cabinet.

**CHAIR**—You mentioned that the committee was set up two months ago, which was after the Kyoto Protocol. I recognise that it is the first in the world—there is no doubt about that—and the rest of the world is watching very closely. Having said that, we are running fairly quickly at the present time because we have already had a meeting after Kyoto in Bonn a fortnight ago, and I believe there is another one to be held before Buenos

Aires in November. It seems to me that in such a complicated area we are running very fast at the present time. Do you find it difficult to try and set policy in this sort of fast lane?

**Ms Andrews**—What is difficult is determining at the international level which areas are being dealt with in a very rapid sense and which are not, that is, the strategic focuses that we need to take in order to respond to the international timetable. Yes, there are meetings, as there are every year, between the conference of the parties. We recently went to a meeting in Bonn and we are leading up to another conference of the parties. The art in that is to know very clearly what is most likely to be addressed at each of those meetings and to have developed a full Australian position on that so that our international negotiators will know what the domestic policy is.

Obviously, we rely heavily on our international negotiators because DFAT is responsible in the international realm. They feed us information, for example, that the issue of carbon sinks is something that we need to address on a technical level and that we need to be able to develop the Australian position quickly. That then goes into our domestic planning in terms of what our priorities are for work through the office.

Obviously, we are tracking very closely the development of the debate on emissions trading at the international level, and that is something that Dr Harrison might like to talk about a bit later. Again, it is not our direct responsibility but we are working with DFAT to ensure that the Australian position domestically can be developed for them to reflect at the international level. It seems on that particular front that things are not moving quite as quickly as one might have expected they would.

**CHAIR**—Where do you see your situation as far as giving signals to industry in Australia as to what they should be doing is concerned? In this regard I have some concerns about the fact that people are pre-empting what might occur internationally and nationally. They are racing out there trying to tie up deals about this emissions trading area, which could probably kick back on us later.

**Ms Andrews**—If we were to give a signal at this point, probably the most responsible signal we could give would be caveat emptor. We recognise that this is an area in which people have become very well aware of the issues and the potential future effect on emitters, in particular of the Kyoto Protocol and future variations of it coming into effect, so they are beginning to undertake activity which will hedge against those effects. That is natural in a market based economy. It is activity that one would have to consider is highly speculative at this point, but it is their right to be speculative, if you like. We are simply pointing out that there is as yet neither an agreement on international trading rules nor any domestic system developed.

**CHAIR**—Bruce got out of his sick bed. I thank him for coming.

**Mr BILLSON**—My pleasure. I am stimulated by the subject, as I am sure we all are. I think the matrix model you are operating under is first class. It staggers me that it has taken so long for governments to realise that the taxpayers do not care about the internal machinations of government; they want an outcome. And this seems a better way of going about it. As I understand it, though, the buck stops with Senator Hill in terms of implementation; it is not a defraying of accountability in that respect, more an organisational arrangement to deliver on undertakings that are across many portfolios. Is my understanding correct?

**Ms Andrews**—Yes, the buck stops with Senator Hill and the environment portfolio in the sense that the office is located within the environment portfolio and that Senator Hill chairs the committee. I should point out that there is one important program, Greenhouse Challenge, which is a voluntary industry program, for which I report directly to Senator Parer, so he remains responsible for that. In the broadest sense, government as a whole and executive government will remain responsible for delivering the outcomes.

**Mr BILLSON**—In relation to the resolution of differences, I am pleased to hear that every effort is made to do that before advice goes to government or cabinet. The regional forest agreement process looms large in my mind as people airing their washing at one another, and each of the portfolios was feeling pretty good about what they were saying, but the government was not getting anywhere. Have you come across any difficulties there or is it too early at this stage to be concerned about the nuts and bolts of some of the things that we are doing to have those problems arise?

**Ms Andrews**—I think the issues are there, it is pretty obvious: you would have to be reasonably naive to suppose that you could set up an office and ask three portfolios and more to work together and not assume that there would be policy differences that needed to be worked through. And they do. A very recent example where we have done that quite constructively would be in our development of the national greenhouse strategy, which is currently being considered by the executive government. We did that in negotiations with the states and with reference back at all points to our shareholder portfolios. There were some variations of view. I will not say that there were direct conflicts, because there were not, but there were some variations of view that we needed to take into account and accommodate. That was done successfully and a single submission was sent forward.

**Mr BILLSON**—I am just busting to ask you questions on other things—

**CHAIR**—We will get to those.

**Mr BILLSON**—This discipline is killing me! On the issue about how the unit interrelates with the departments, the portfolios, that it is associated with, do you find that those portfolios outside your immediate contact points within the office have respect for what the office is doing or is that cultural change taking a little bit of time?

**Ms Andrews**—It will take a little bit of time. I would have to admit that my concentration to date has been on what I call our shareholder portfolios, because it is important we got the administrative arrangements and the operating protocols set with them first. We have not, to the extent that we should have, made all the contacts that we need to with other portfolios in the government to discuss these issues. That is something that we will be doing, beginning in the new financial year.

One of our key tasks in the new financial year is going to be starting our corporate planning, which we hope to do between July and about September, to produce a corporate plan for the office. We are already committed to involving stakeholders, both in industry amongst the non-government organisations that are interested and throughout the government, in developing that corporate plan. I am very much hoping that will be a vehicle to allow us to reach out and make the contacts we need to across government.

**Mr BILLSON**—One final question on the way that this interrelationship works: if, for instance, you are bonding with DFAT about the negotiations and some person on a parliamentary committee says, ‘How does it interrelate with our trade commitments?’ do you have to go through that nominated DFAT contact point or is it quite within the realms of the way you operate for you to go directly to whoever is holding the WTO flag at the given time?

**Ms Andrews**—We would go through the Ambassador for the Environment. Again, the protocols may work themselves out such that all we need to do is alert her to the issue and ensure that she knows what we are doing and why, and that she knows the outcome, but there may be some issues in which she wants to be involved because of the importance on the international negotiating front. That is certainly her judgment and her prerogative.

**Mr BILLSON**—Do the portfolios have a nominated gatekeeper that keeps the national Greenhouse Office in line from their point of view, where the information flows are coming through?

**Ms Andrews**—The nominated gatekeeper with our shareholder portfolios is the secretary, because I sit on the secretaries’ committee with them. But at the working level there are very many contacts that we have with those portfolios and others that are just worked out on a cooperative basis.

**Mr McDOUGALL**—I just have one question. The government is trying to organise itself; what sorts of signals do you send out to the people—in particular, industry—who are going to have to work with government? Industry has got used to working down different avenues, probably directed at the way in which the individual departments want them to work anyway. Now there is going to be a change. How is industry going to work with this new organisation?

**Ms Andrews**—One very key contact for us in terms of industry is the Australian Industry Greenhouse Network, which represents a number of the larger players. They have been very supportive of the establishment of the office. I think in principle they support the idea that they have one door to come through, because it is easier in some senses. That does not negate their prerogative to go to any particular minister or department about any particular issue, if they wish to do so. Again, that is something that we need within government to develop our approaches and protocols towards, because the whole idea is a whole of government policy response. Therefore, it is important not only that the departments that are working together through this office coordinate on policy development but that they also coordinate in dealing with stakeholders—and that has been working pretty well to date as well.

**Mr McDOUGALL**—You do not think it sets up an opportunity for them to play one off against the other? They already do it, let us be honest.

**Ms Andrews**—You might like to ask them that. There probably is an opportunity to do that, if they wish to. But, again, it really depends on how well we can deliver what this office is meant to deliver. As long as we can do that well, then I think we will be able to work effectively with the stakeholders, and they with us.

**CHAIR**—This is going to be an enormous power play between industries within Australia and industries around the world and countries, isn't it?

**Ms Andrews**—Very obviously, the major concern for Australian industry is its competitiveness, its international competitiveness in particular. That is something that we are very well aware of and something that was reflected in the Prime Minister's statement that we need to develop an effective greenhouse response that is effective in environmental terms but that also is at least cost to the national economy and does not impinge on the competitiveness of Australian industries internationally.

**Mr McDOUGALL**—I do not want to get into the detail of it, but one of the things that have been coming out to me very clearly—with no hard evidence but I can see the underlying thing going on—is the difference in how industry is going to treat annexure 1 countries and non-annexure 1 countries. In other words, it is how they are going to treat this whole question in their decisions to make investments in developing countries who do not have to comply, and the effect that is going to have.

**Ms Andrews**—I wonder if my colleagues from DPIE would like to comment on that.

**Dr Weir**—I agree with that statement. This is probably not the time to elaborate on that in great detail.

**Mr BILLSON**—Can you give us a feel for what these categories are?

**CHAIR**—I think we might move on. You mentioned the trading scheme. Sorry, do you want to ask a question?

**Mr BILLSON**—Yes. I am just wondering how you claim to run these categories.

**CHAIR**—We will try and move down those subjects we have got. You did open up by mentioning how you saw the framework of a trading scheme, which probably falls in this first category. In your opening statement you said that you saw it as being a broad trading scheme. I dare say we move from there to how we get this broad trading scheme in place, or how we would suggest we get it in place. That then probably moves on to the next question, which is the emissions permits and how we do that. We have had a lot of evidence before this committee.

The committee secretary has just reminded me of the first statement's coverage of the Australian emissions trading scheme. I dare say that we would get into that, if someone would like to move off on that one. I know we like to jump around on this because we have all got interests in it, but we should try and keep it and structured as we can at this stage.

**Ms Andrews**—I might ask Dr Harrison to give our statement on the emissions permits.

**Dr Harrison**—I would like to make an opening statement on the coverage of sectors, sources and gases. In principle, an emissions trading system should cover all greenhouse gases from all sources, all sinks, and cover all sectors. The principle is quite clear: the greater the number of participants and the greater level of competition we have in the marketplace, then the greater is the potential for finding least cost means of abating greenhouse gases, and therefore the lower the abatement costs.

If the market does not extend as widely as possible, there is also the possibility of introducing competitive distortions. That is, if some sectors are bearing cost disadvantages from being in or out of the trading system versus other sectors, that will of itself introduce distortions.

Some sectors, where there are large emitters at a small number of sites, would clearly seem to be better suited to an emissions trading system because the transactions costs of monitoring the emissions would be much lower in that situation. On the other hand, where there are a large number of very small, widely dispersed emitters, such as motor vehicles, the transactions costs may exceed the cost savings obtained via a trading system. In these cases, other market mechanisms might be more efficient. Alternatively, permits could be held by upstream parties—for example, in the transport sector, by the fuel suppliers. However, where demand is not influenced significantly by price, as is largely the case for domestic motor vehicle fuel, the increased costs of purchasing emission permits could be simply passed on by upstream firms in higher prices without very much change in behaviour.

A transitional strategy for introducing an emissions trading market might help to minimise disruption of the introduction. As one possibility, the transition could be staged by initially covering only a small number of sectors and/or gases, those that are better suited to an emissions trading approach, such as the energy sector, which accounts for approximately 30 per cent of total carbon dioxide emissions. Then, as experience was gained, trading could be extended over time to other sectors. It would be important in designing the system for those first few sectors to take it into account that the intention would be to extend the system, over time.

Do you want me to get onto the subject of emission permits now, or stay with coverage?

**CHAIR**—We might just stay with that for a little while, if you do not mind. There are a few questions raised there.

**Dr Harrison**—The other coverage issue, of course, is the carbon sinks issue. I might just lead off with a few words on that.

Carbon sinks could be integrated into an emissions trading system by the allocation of credits for carbon sequestration. The main issue there is the accuracy of measurement, monitoring and verification costs. For example, emission permits could be issued with a face value equivalent to the amount of carbon sequestered. Potentially, the permits could be identical to those issued for emission sources, though it is not clear that that would necessarily be the case. There would be no need to limit the quantity of permits issued for carbon sequestration, provided they were based on verified sequestration, since Australia's ability to meet its net emissions cap would not be affected. That is, the increase in the gross emissions enabled by the permits would be fully offset by the increase in the carbon sequestration.

There are issues about the types of carbon sinks that could be incorporated. For example, it may be necessary to register the sinks. It may be necessary to restrict coverage to those that are professionally managed.

There are difficulties associated with the time periods that could apply. Permits could be allocated for the entire life of the plantation at the time of planting, or allocated on a regular basis as the trees grew. Clearly, if it is allocated earlier in the piece, you are allocating on the basis of future projections of growth; that introduces risks that the projected growth will not occur. When the trees were harvested, it would probably be necessary to hold permits to cover the carbon that was deemed to be emitted at the point of harvesting, under current IPCC guidelines. Because of the uncertainty in carbon measurement, monitoring and verification, there are risks associated with incorporating carbon credits into an emissions trading system.

You mentioned before, Mr Chairman, that speculation has been occurring in carbon



credits. I would reinforce your comments on that and the comments of Gwen Andrews that it is a buyer beware market. There are no formal mechanisms for the creation of those credits. At the end of the day, any Australian credits must be issued by the Australian government, and there is no framework in place for the government to issue such credits at this stage, nor are there any international agreements on how carbon being sequestered should be measured—or, indeed, whether carbon sequestration is going to be an acceptable form for international trading.

There are, however, risks on the other side. Businesses that are not thinking forward now about the implications of a world where carbon credits are traded are at risk of missing out in the marketplace. I think the biggest danger there is that some transactors are operating in the marketplace, very consciously pricing in what they think might be the future carbon credit values. My worry is that there might be other transactors in the marketplace who are less aware, and that trading is taking place on a very unequal information basis at the moment. Perhaps I could leave it there and give the committee an opportunity to raise some questions.

**CHAIR**—Tony, would you like to make a statement?

**Dr Weir**—I would just like to add slightly to that. Dr Harrison has already referred to the technical issues that arise in different sectors of the inventory in terms of measurement, the numbers of players and so on, the suitability for incorporation in an emissions trading scheme that arise from that. I just note that our submission goes into considerable detail on that in one of the attachments compared with some other submissions, although there is plenty more work on elaboration that could be done on that.

**CHAIR**—You raise a dozen questions in my mind already, and I am sure there are a fair few around. We have had considerable evidence before the committee about how a system of trading could be set up. We certainly have had evidence from some of the larger emitters that they would like to get involved now. I think they do see a panacea in carbon sinks in forests which may be there or may not be there. I suppose an easy way to start a scheme is to start with those you can measure easily and those that are the big emitters, and then we can go towards reducing our greenhouse gases under the Kyoto Protocol. However, if we did that, would we take the risk of penalising those particular emitters and then maybe disadvantaging them in the marketplace?

**Dr Harrison**—There are risks on both sides in that regard. One concern might be that, if we envisage, say, an early cap and trade system where we cap the emissions in years prior to the 2008 commitment period, in order to make emissions trading sufficiently attractive to the covered sector we could, for example, end up giving them an overly generous allocation of permits in the early years that would put new entrants at a disadvantage coming into the system later. So I see risks on both sides. Clearly, there are also risks, of course, if one sector is covered and restricted, that that would impose costs on that sector also.

Might I point out, though, that I think the costs to industry come not from emissions trading per se but from the imposition or the acceptance of a cap on emissions for that particular sector. Indeed, emissions trading is an attempt to find a means of meeting that abatement target that yields the lowest costs. So, if a sector is part of an emissions trading scheme, it might well have lower costs of abating its emissions than another sector which is not part of the scheme but which is also given an emissions target and has attempted to meet that target through regulatory means which might be a much higher cost means of meeting that target for that particular sector. So I think yes, there are risks in competitiveness between the different sectors in all these things, but the risks can go two ways depending on how the system is implemented.

**CHAIR**—If these large emitters—which are certainly fairly big companies in most instances, and in some instances international companies—see that it is in their interests to speculate and go down this track of trying to hedge their bets, I suppose, on this trading scheme, wouldn't they then drive the scheme? If they were committed to it, they would drive the scheme completely, wouldn't they? That would almost guarantee you that you were going to go down that track.

**Dr Harrison**—I am not quite sure that I understand in what sense you mean 'drive the scheme'.

**CHAIR**—I am talking about trade in business, because there is no doubt in my mind that if these big companies are committed to it—and I am probably jumping the gun here—assuming that the American companies, the EU companies or the Japanese companies are considering that we will go down this track, if they commit themselves to this sort of buying or hedging the carbon credits, then it will almost drive the scheme.

**Dr Harrison**—There is certainly a concern that, in a market where we do not know how these credits are going to be allocated—and given the uncertainty that entails—there will be trades taking place at a low price to reflect that uncertainty. And, by the time the credits are put in place, there is certainly a risk that we might find too many have been sold at too low a price. Yes, I think that is a matter of concern.

**Ms Andrews**—Yes, in the broad sense, it is very true that the more interest there is on the part of the private sector in trading and the more trades that occur in the marketplace in an unsanctioned manner, the more pressure there is on government for policy development, and we are very well aware of that. I would just make the point that we are operating in a very complex field at the moment where it is early days on the issue. Within Australia there are a range of opinions, as I am sure you are aware, on the efficacy and the desirability of introducing emissions trading, certainly at the international level, where we do not appear to be close to an agreement on international trading roles. Yes, the pressure is there; it will probably build. We will try to respond to it.

**CHAIR**—Thank you. I suppose I am very well aware that America drives, as well.

Could I just step a little bit aside from that and move on from the big emitters. You mentioned that we had to embrace all greenhouse gases, and that does raise some very complicated and difficult questions. You did mention the fuel area as far as transport is concerned and how we could control that. I think you talked about the fact that if we tried to talk to individuals, with every individual who was going to trade in units, it was a very complicated and very costly process. You did suggest that maybe the big fuel companies might be the area, and I think you also outlined the problems with that. How about if, in fact, the manufacturers were the people who had to hold the permits? Wouldn't that give some incentive to use other fuels and better technology?

**Dr Harrison**—That is a debate in the area. At this stage we have not developed policy options to any stage where I could comment on that, but it is certainly one of the possibilities mentioned in the debate, yes.

**CHAIR**—You would probably have to look and see where it is practical; where it will drive it. There is no doubt in my mind that if people can pass on the cost, they will. So you have to get down to where you are encouraging alternate technology.

**Dr Weir**—Can I just add on that? We did give some brief thought to that. Although, as David says, there is no firm policy on any of these issues within government departments, perhaps I should make an overview point that all of this is evolving debate, so when you hear different views around from this table, it is precisely because nobody has really worked through the issues. There is no firm government policy and you can hear that we are canvassing issues—what are the pros and cons of different options—just as you are.

**Mr BILLSON**—We would move very quickly to the second 11 in to bat.

**Dr Weir**—With that general remark, let me say that one of the difficulties with getting the manufacturers to work on it is, of course, the time lag, in that the average age of the car fleet in Australia is getting on for 20 years. So there would be a considerable lag in that working its way through into the national greenhouse gas emissions if you put the onus on the manufacturers. You could hardly fairly do that retrospectively.

**Mr Irwin**—I think that you also have a problem, if it is an emissions trading scheme, in that, unlike the regulatory approach where that would cover all cars in Australia, you would have to ask how you would bring imported cars into that scheme, as well, rather than just having the trading credits or domestic vehicle manufacturing incorporated in the trading scheme in Australia?

**CHAIR**—Realistically though, any reduction is going to take a lot of time, isn't it?

**Dr Weir**—Yes, but you have got to drive that perhaps a little bit more immediately than the life of the car fleet. That is a tool that you might want to work on

through other means. For example, there is a measure in the Prime Minister's statement about looking at the national average fuel efficiency, which, indeed, covers new cars, including imports, I believe.

**CHAIR**—Actually, you surprise me. It looks as if you can turn water into wine.

**Mr Pennifold**—Two of the issues here are the cost and complexity of going to the end users, because there are many more end users than there are primary suppliers of energy. You would need to do a pretty careful analysis of whether the costs of going that route would outweigh the benefits, certainly in terms of monitoring, enforcement and compliance.

The other question you raised was that of passing on the costs. In terms of how you would drive behaviour, one would expect that if the costs of complying with the scheme were imposed, say, at the electricity retail end, or the energy production end, they would be passed on to consumers and consumers would then be getting those price signals coming through, be they manufacturers or domestic.

**Mr BILLSON**—But you still hit that demand in elasticity issue which would suggest that in the vehicle industry, for instance, the registration point may be a way of sending a price signal directly to motorists that, when they are making a judgment about vehicle type at a point of purchase, at least they know that they might be up for an extra \$30 a year if the fuel economy is rotten. Even if you work from a PMU rating, which is already available, and start factoring some of those smaller signals in under an aggregate permit allocation for motor vehicles, you could then work through at the licensing level.

I understand your point. I think that the one that was made earlier about trying to get the signals to land at a point where you can get behavioural change is something we should not lose sight of; otherwise you have got a carbon tax, haven't you?

**Mr Pennifold**—Yes.

**CHAIR**—The point we are getting at is: who pays? That is obviously going to be the question in all of this. If I move to some of the other gases, such as methane, if the cost is going to lie with the producer of these particular gases, how am I going to go out to Camooweal and tell people who are on a negative income at the present time that they are going to have to buy units for their cattle?

**Mr BILLSON**—Very carefully.

**Ms Andrews**—Can I just point out that there is in the Prime Minister's package another initiative that potentially responds to the cattle problem—

**CHAIR**—Because they cannot pass it on anywhere else. They are at the end of the

line, so to speak.

**Ms Andrews**—It is currently under development with the CSIRO and it has to do with a vaccine against methane production.

**CHAIR**—The mind boggles.

**Ms Andrews**—The mind does boggle. It is in the very early stages for that, as well, but I understand there is some early evidence that not only does it suppress the methane production, but also it increases the weight gain in the animals. So there may be a win, win situation. Let us hope so.

**Mr McDOUGALL**—I remember sheep coats many years ago. They were going to do similar sorts of things, but they did not quite work out that way.

**Ms Andrews**—I remember the first time I saw a coat on a sheep in Australia. I thought it was very strange.

**CHAIR**—I have to say to you I have been in those parts in the bush and I can just imagine what they would say.

**Dr Harrison**—With regard to methane, there is an issue with sector coverage as well as gas coverage. That is, clearly the transactions costs of measuring methane emissions from cows might be quite prohibitive when we come to look at it. But that would not be any reason for excluding—

**CHAIR**—There could be an estimate though, couldn't there?

**Ms Andrews**—There is currently a gross estimate in the national greenhouse gas inventory.

**Dr Weir**—But it is more than a gross estimate. It is actually based on micro-estimates. In my opinion, the technicalities of that would not be terribly awkward because the estimating technique is basically based on how many cattle you have, what they are feeding on and what season it is—that kind of thing—and the laboratory data that converts all those different activities to emissions is fairly well known. So it is not a particularly difficult technical problem, although the conversion factor is, perhaps, a little uncertain. But you could use standardised ones without too much problem.

The social issue that you have raised is, however, a much more tricky one, especially if you were dealing with an area where you had to do allocation based, for example, on current cattle numbers in a depressed market and then the market came up and people had to get more cattle. That could get very tricky from a social perspective.

The technical problems are actually not as severe.

**CHAIR**—When you say ‘what they are feeding on’, you mean feedlot versus rangeland?

**Dr Weir**—That, and the quality of the grass, because essentially the methane arises—

**CHAIR**—That complicates it a bit though.

**Dr Weir**—Well, I say essentially, but you can average that out a bit. You do not have to measure that to the nearest one per cent of what the quality is. In broad terms, if it is very coarse dry feed, then it is not digested so well and you get more methane.

**Mr BILLSON**—In regard to the comprehensive policy response, it seems to me that having non-emission trading measures factored back into an emissions trading framework is probably going to be necessary so that there is rigour to some of these other policy measures. For instance, let us just stick with the methane subject. Let us say that we have got three million head of cattle. Suppose we were to say to the peak cattle body, ‘Here is a permit that provides for emissions to three million head of cattle discounted to take account of these other policy measures. Thanks very much; that is the scene’. If there is a growth in herd numbers, then they do have to do something about it. Or if there is a reduction in herd numbers, it gives those peak bodies an opportunity to think about how they want to handle that. Doesn’t that need to be plugged into the trading framework rather than just being left to hang around out there, with us hoping that everyone plays by the rules?

**Dr Weir**—You have raised two issues there. Firstly, it again puts back the issue of the allocation to some higher level body rather than the individual farmer. I suppose, in that context, state governments might also be a candidate for some other farm related emissions. Secondly, there is the issue of how that interacts with another measure—for example, the methane vaccines, the anti-methanogen vaccines.

We would have thought, from the farmer perspective, that the best thing would be to allocate not allowing for that and that would encourage the take-up of that measure because it is just like energy efficiency gains. If you improve your efficiency, in this case of animal production, then you are doing better than your quota and you have actually got a marketable asset to sell. The initial cost of taking up the vaccine—which may well be partly overcome, I might add, by improved productivity of the animals—is also offset in the sense that you now have an extra gain, namely the excess emission permits.

**Mr BILLSON**—Wouldn’t the counter-argument be that, if you had the trading framework in place, there would be a penalty for not performing, for not taking up the vaccine, for not considering other measures, and therefore that would be more likely to

promote behaviour than what you are talking about? I could imagine that, if I am having a bad year and my herefords are not selling for what I had hoped, probably the last thing on my mind would be to go and buy a vaccine that I was not sure would make a difference, whereas, if there was a penalty to me for not doing that—for instance, the peak meat body would not flog my meat because it has not had that change made to it—then I might be more inclined to do something about that. If I overperformed, then I would generate some credits, some value.

That is the concern. So many people have said, ‘This is a great idea but, gee, not us. As long as someone else does the hard yards, we are all for this.’ There is a point in time when we have all got to cop a bit of this. That is why I think there should be some macro treatment, even in the energy sector where we have talked about those five per cent renewable contributions to our generators. We should factor that in as a given on the permits. If they overperform, fine, generate some new value there. That is how I would see the other policy measures interrelating with an emissions trading framework. Surely, we should be encouraging people to do better and, if they do, they generate new value and that new value is some slack to trade some permit capacity. Is that how the two would plug together?

**Ms Andrews**—I would think that probably is the appropriate broad policy view that we should be taking of the mix of measures.

**Mr BILLSON**—It leads on to the allocation question. Again we have heard everybody saying, ‘Great, as long as you give us permits that let us do all that we want to do now—and, in the energy sector’s submission, everything we foresee we might do in the next few years.’ That puts us about 40 per cent over our targets. There is a little bit of problem there for everybody else.

Would you support a notion where the initial permit allocation was made early but the value of it discounted over time, so at the end point, we had aggregate permit value equivalent to our 2008 starting position and that way you could change behaviour gradually: if someone has a windfall gain, they can trade it and the like? Are they the sorts of ideas that you are toiling with?

**CHAIR**—Before you answer it, that is moving on to the next section. Does anyone want to make a preliminary statement before you answer that?

**Mr BILLSON**—Do you want me to go back to the other subject? It is very hard to separate them.

**CHAIR**—No, we do need to move on to that—it is the allocation of permits. Keep in mind what Bruce has said. We can move on to that section, if someone wants to make a preliminary statement.

**Mr BILLSON**—Sorry about that. It is my untidy mind showing. Hang on to that question and we will come back to that one later. In regard to the sequestration issues, they are potentially the same face value as permits. I understand all that. We have had a submission that says there would be a second board, that sequestration measures would generate a credit that was like an apprentice credit. I have got no idea who I should be looking to here, so forgive me while I pan. Because the science is unclear, or not as precise, you would have a second board and you could cash out, say, six imprecise one-tonne equivalent CO<sub>2</sub> into five real things in the first board. Now, we have heard heated opinions for and against. I would be interested in your collective view on that.

**Ms Andrews**—I will take a shot at it first, again in the broad sense, and then pass it to Dr Harrison. The first point to make is that there is, again, another measure in the Prime Minister's package that is very clearly aimed at improving the science as it relates to carbon sequestration, and that is the national carbon accounting system. This is a measure which begins in the new financial year. We have already undertaken some work on it, setting up a peak steering committee of important stakeholders in this and holding a three-day workshop, which brought together a number of the academics and others who were involved. That is a project which is going to take a number of years. Carbon sequestration is an extremely important issue to Australia within the Kyoto Protocol, with or without an emissions trading system.

So the first point is that we are working very hard on improving the science, and our policy position would be that we should not be talking about, if you like, discounting carbon credits. What we should be doing is improving our understanding of sequestration so that they need not be viewed as something that has to be discounted.

I would also point out that, apart from improving the science, which we are going to be putting a fair amount of time and money into doing, there are already approaches that can be taken at the project level in terms of verification of carbon credits which essentially set aside a form of buffer so that, if there are uncertainties, there is a certain percentage of the credits that may be put into a buffer and the others can be certified as fully verifiable and tradable.

**Mr BILLSON**—I am pleased to hear that. It leads into the next question, though. We have talked about cows. We might have a wonderful 20-acre property on the Mornington Peninsula in Victoria. We might have pressure to have grapevines growing on it, but they say, 'No, let's go long; let's go for a sequestration project.' I would like your reaction to an idea that says there should be two ways to go. Firstly, picking up on that earlier point that you would get the science right and then the face value of the credits would be the same as the permits, therefore, you could trade that with your free will, therefore, the transaction costs might be a bit higher if you go that way because you are going to have to do the leg work.

The other option would be if there was a whole bunch of us who, on our own, do



not have enough sequestration effort to enter the market—we are not significant enough in our value. We might decide to do a deal with Mobil and say, ‘You can cash in our effort. You do all the verification. You use it as a net or a deduction on your permit requirements and all the verification rests with you. See you later; pay me an annuity; have a nice day.’ Are they two concepts that you can see happening simultaneously or are we not at that point yet?

**Ms Andrews**—They are two viable concepts.

**Dr Weir**—Yes, they are not mutually exclusive. I would also support the point David made earlier in his introductory remarks that with sinks you can start the trading well in advance. Essentially, as soon as you start a plantation and have it running—let us say a year in advance there are seedlings there, it is clear that there is a good forestry management company actually running the forest, et cetera, you know it is on the Mornington Peninsula, you know the species, you know the rainfall, you know the soil and you know what the expected growth rate of that particular species is—you could do a trade in advance, on the basis that that particular species in that place would produce at least X amount of carbon.

**CHAIR**—So you would borrow the credits in advance? In other words, you would get credited before the carbon was actually sequestered?

**Dr Weir**—You are allowed to trade on it. You are trading in advance; it is a futures trade.

**CHAIR**—But it has not actually been sequestered, has it?

**Dr Weir**—No, because probably the only sequestration that would count is that under the period of the cap—in the case of the Kyoto Protocol, between 2008 and 2012. So you are actually trading on how much will be sequestered in that period. But you could make a reasonable anticipation of that, and then you could come back during that period to do forestry measurements and verify that in fact you were getting at least that much. So that is a perfectly workable scheme.

**Mr McDOUGALL**—But, in two senses, who determines the number of sinks and the total volume of sinks available? We have plenty of evidence coming in from a couple of industries that believe they are going to solve the whole problem of sinks for the next 100 years. I do not know that Australia can carry that amount of trees. Who is going to determine where these sinks will be, what the total capacity will be and how they will be divided up by the industry sector that wants to get into them before we even start trading in them? At the same time, who is going to make the economic determination as to whether we are going to give up some alternative cropping system or income generator to simply satisfy a problem of sinks, rather than doing something about technological development to improve emissions—to get a reduction in emissions, rather than simply

having something to take up what is being emitted?

**Dr Harrison**—Ideally, in a market trading system, that is a decision that should be taken in the market on the basis of the value of the crop with the carbon credits included. It just means that, since you will be adding in the carbon value of forestry where previously that was valued at zero, there will be an increased price in favour of increased supply of forestry. Just how far you take that into marginal territory, et cetera, will be a market decision based on relative prices.

**Mr BILLSON**—So the start-up issues are not just about who gets what and when, as my colleague Mr McDougall has alluded to. Somehow, we need a fairly clear price discovery sequel at some point so that informed judgments can be made. But we are getting onto the next subject. Why don't we get back to the one we were talking about.

**CHAIR**—On that point, one of the issues that certainly arises in my mind is the distortion of the marketplace, because if carbon credits have a higher value than agriculture, the market could then take out land for carbon credits. But, in fact, it is going to have another bearing on our exports because 28 per cent of our income still comes from agriculture.

**Dr Weir**—That is correct, but that happens now—for example, under farm forestry. I could certainly point you to some farms, not a million miles from here, where they are moving out of sheep and into trees because that is a more paying product. If carbon credits accrue to those trees, then that would probably just accelerate that trend.

**Mr BILLSON**—Certainly, harvesting blue gums.

**CHAIR**—I am not arguing that point. I am looking, I suppose, at the balance of trade or the economic factors involved. We earn a lot of our income from trade, so we will trade in carbon credits.

**Dr Harrison**—Could I point out that, once we get into an international trading system for the Kyoto commitment period—2008 to 2012—our carbon credits will have, presumably, an international value. If we can generate more carbon credits in Australia, if we have got a surplus we can sell them overseas and generate revenue on the balance of payments. Alternatively, if we are in a deficit situation and we are a net buyer on overseas markets, then producing more sinks in Australia will save us from having to make those imports of carbon credits. There is a balance of payments benefit to the value of the carbon as well as to any other form of export or tradable commodity.

**CHAIR**—I understand the theory.

**Mr BILLSON**—Could I just bring you back to the aggregation of, say, individual land-holder effort. Someone mentioned the possible need to register participants. Is that

alluding to catchment boards, local councils, brokers, going around trying to aggregate 10-hectare plantations into something that is marketable, either in the domestic trading environment or internationally? Is that what that reference was alluding to?

**Ms Andrews**—Yes. It was a topic of some discussion at the National Carbon Accounting Workshop recently, in that several people proposed a form of pooling arrangement for smaller land-holders. I think our assumption would be based on the principle that if there is to be a market it should be, essentially, based on market mechanisms and run by the private sector. We would be looking at brokers doing that.

**Mr BILLSON**—They would be the silviculture advisers and they would match—

**Ms Andrews**—Yes. They may be government brokers or they may be private sector brokers, or there may be a range of brokers.

**Mr BILLSON**—That is on the supply side. No-one was suggesting some pre-registration test on the demand side? For instance, in the sulfur dioxide experience in the US, you have got environment groups camping on permits just to bring about a greater pace of change. We had somebody saying that only legitimate people should hold permits. I know what they mean; that is, we do not want some ratbags or a modern day Soros, rather than going long on currencies, going long on carbon credits and camping on them. That idea has been blown out of the water, has it not?

**Ms Andrews**—The idea that there should be some restriction on this?

**CHAIR**—It should be a free market.

**Mr BILLSON**—It should be literally open to all comers on both sides of the market.

**Ms Andrews**—That would be our basic policy position, yes.

**Mr Palmer**—The point about the registration of carbon sinks is related to also having to register the emitters so that you can do an actual balance at the end. If those people were to cut down their trees, for example, they would then be required to hold permits equal to that value of carbon lost. That was the registration—not that anyone could not enter the market, but just that the sinks themselves had to be registered so you could do an accounting at the end.

**Mr BILLSON**—That feeds into the brilliant work that the Bureau of Resource Sciences is doing.

**CHAIR**—As time is running along, could we move on to the allocation of permits. That is an issue we can discuss quite at length.

**Dr Harrison**—Perhaps I will handle the opening remarks on that. First of all, the government would be able to issue permits for a total volume of emissions of greenhouse gases within Australia's internationally agreed target, apart from any permits backed by carbon sinks. The government could always choose to retain some emission permits, to meet emissions from sectors that are not covered by emissions trading and ensure a supply of at least some new permits regularly to the marketplace for new investments.

To enhance the efficiency of the market, the unit of trade, or the permit, would need to be clearly denominated, divisible and freely transferable amongst trading participants. Each permit could provide the holder with the authorisation to emit a specified amount of greenhouse gas. There is an issue as to whether a time period needs to be specified on the permit.

In terms of the Kyoto Protocol, the accounting period is 2008-2012. Each individual year within that period is not critical from a time point of view. However, the government may decide to set domestic targets prior to the commitment period. If it did that, it might be concerned about the transfer of those earlier permits into the commitment period.

The legal implications of the design of the permit would need to be worked through before a definitive position could be developed. The overall aim would be to maximise the flexibility for the market participants. There could be flexibility for borrowing permits from future years and banking existing permits for later use. In this way permits could be used beyond 2012, though at this point the ability to do that is still subject to international negotiation. The Kyoto Protocol, in effect, allows unlimited banking and borrowing of permits within the commitment period to 2008-2012 but makes no allowance at all for banking or borrowing outside that commitment period.

There is an issue about who should be able to participate in the trading system. One approach would be to specify which emitters or types of emitters were covered. They would then be expected to account for their emissions. However, this would not in any way restrict the ability of other parties to trade in those permits. The advantage of not restricting the trading participants is that it would lead to a more competitive market.

There is an issue about who should be the specified participants, the actual emitters or upstream parties, where the actual emitters are too numerous, too small or too dispersed—for example, domestic motor vehicles. There are difficulties shared throughout the world in obtaining data on source emissions and tracking developments. Further work is being done in this area.

There would not seem to be any optimal approach to the initial allocation of permits. Some grandfathering may be necessary to provide certainty and to make the system acceptable to existing industry. A variation on this approach could be to offer the permits at some fixed or lower than market price. There is also a need to accommodate

the entry of new industries and firms and the expansion of existing firms. One way this could be done is by auctioning a small reserve of permits on a regular basis.

Grandfathering could be based on the current level of emissions. However, some firms may have been reducing emissions in recent years and would thus be disadvantaged for having been good corporate citizens in the lead-up period to the allocation year. Others, on the other hand, may well be increasing emissions in the hope of obtaining additional permits out of the system. One approach to address this may be to grandfather permits based on an average level of emissions over a set period, rather than just on one emissions year, which could be an unusual year for a particular company. Another approach may be to set targets for firms up to 2008 and allocate permits based on the reductions they had been able to achieve, which they could then sell to others who might have exceeded their targets.

I will leave my remarks there and give you an opportunity for questions.

**CHAIR**—There has been a spirited debate, I suppose, before this committee, on the allocation of permits. I note that you mentioned that there is a possibility of government holding back some permits. I think you did mention holding back permits for new entrants.

**Dr Harrison**—Yes.

**CHAIR**—I suppose the great argument has been: should these permits be given? Should they be auctioned or should there be a mix where, say, two-thirds of them would be given and the rest be left open to auction? Should some be held back by government? Should the permits be allocated on the present emissions and then gradually reduced, maybe in the first few years at a greater rate than later on? They are the real issues, I suppose, that the committee has been grappling with as to what we might recommend.

Without being too presumptuous, I think the committee probably comes down on the side of allocating a percentage, holding back a percentage and auctioning a percentage, and also having that reduction built in. Would you like to comment on that?

**Dr Harrison**—This obviously is a very open policy area that the government is also grappling with. Given that our targets are below the emissions that would otherwise occur, it is impossible to fully grandfather everybody that would otherwise have expected to emit in the commitment period. So, in a sense, full grandfathering for the commitment period is basically impossible. The more emission permits you tie up through grandfathering, the less you have available for new investments and new entrants and economic growth—expanding firms and so forth. Grandfathering comes at a very clear cost to efficiency and competitiveness in terms of allowing new entrants.

**CHAIR**—But not in equity?

**Dr Harrison**—Equity is a very complex topic. Rather than equity, I would rather focus on competitiveness and dislocation to existing industries which may be heavy emitters and may be in competition with non-annex B countries, as was mentioned earlier. Clearly, where we have a company that is competing in world markets with non-annex B countries, the avoidance of disruption to those industries would be a very critical issue. For example, when we get to try and work out solutions in this area, one may well wish to distinguish between emitters who are operating in world markets in competition with non-annex B countries and other emitters who, for example, might be supplying only into the domestic market.

Sometimes, in the case of, say, fuel for private motor vehicles with quite inelastic demand, there might be a very different case for grandfathering allocations in industries which face a very elastic demand curve versus industries which face quite an inelastic demand curve and would therefore be able to pass on price increases, whether or not you grandfathered them. You would be at risk of transferring rents to industry in a situation where that industry was facing relatively inelastic demand for its product. The whole issue of grandfathering is a very complex one and it is going to be very hard to come up with a set of allocation rules that minimise any disruption to industry and maximise competitiveness and new entry.

**CHAIR**—Isn't this a little bit of our old idea of British justice—not only has it got to be done, it has to be seen to be done to be fair, otherwise you will have a great debate?

**Dr Weir**—Indeed, you will have more than a debate. If our department's experience with, say, fisheries permits is any guide, you will have serious litigation continuing for some time, if company A perceives that company B has got in some sense an unfair slice of the cake because the basis was not right for them. Our experience with the fisheries is indeed that litigation has taken place, and is taking place. Therefore, the potential for that is quite large; and, therefore, it is clear that a lot of consultation and agreement on the initial allocation—or as much agreement as you can secure—are essential. A very clear signalling of the rules is clearly going to have to take place.

Just to elaborate a few more of the issues that you have touched on and that David has already touched on, we spoke about the need for perhaps special consideration of industries which are facing international competition, as distinct from inelastic home demand. But even within an industry that operates internationally—and we think instantly here of, say, the liquefied natural gas set-up and the petroleum industry, in the export sector—you could have new entrants into that industry. And, to put it mildly, they are considerably agitated right now—as I am sure Mr Mansfield would tell you if you asked him—about how to treat new companies coming in, which have projects on the drawing board, whose past emissions are, of course, zero. But they may be very major projects, accounting for one or two per cent of Australia's national projected emissions in 2010, so you really have to give very serious consideration to how you treat that. That is one issue.

I would, just in passing, on the issue of grandfathering, point out that, while the crudest thing is simply to say that you are allocated the emission that you had in some base year—say, 1990 or whatever—there are many other variations on that. In a sense, you need to take the projected emissions in the commitment period of, say, 2010 and allocate them in proportion to some historical basis, if you are using the general philosophy of grandfathering and free allocation. But that historical basis need not be 1:1 with emissions. It could be in proportion to the emissions. It could be in proportion to some other things.

In the cattle industry it might be just the straight number of cattle or even the carrying capacity of the farm. In the case of electricity, because of the different fuel mixes, you might allocate not on the emissions. I can see a big argument developing here and I have seen it in the submissions. Those who had generating capacity based on renewables could say, 'I have had a proportion of that, but it is not fair to allocate on the basis of past emissions'. I am sure the Snowy Mountains authority would not think that was a good idea, whereas the brown coal based producers would think that it was a terrific idea. If you wanted to encourage fuel switching, you might want to allocate on the basis of kilowatt hours sent out. Surprisingly enough, I notice that the brown coal producers do not think that is a terribly good idea.

I am just saying that you can do your proportioning on something other than past emissions. But if you do that, then you raise different equity issues, and people will say, 'That is unfair to us.' In fact, whatever you do in this field I would say it is a safe bet that someone will say it is unfair to them.

**Mr BILLSON**—What about that earlier question I asked about allocation with a depreciation element in it? At times it is easy to lose sight of the fact we are trying to reduce our emissions. We can get so involved in all the economic gymnastics of it that we miss the whole point. If we went down the depreciation path, we would at least have signals that brought about change in emission levels and rewarded people for doing things early and, depending on the depreciation rate, created some space for new entrants and also something you could auction because, without price discovery, who would do what? It is just a gamble.

**Dr Harrison**—That is certainly a very sensible way to phase things in. We have a lumpiness problem here in the sense of the Kyoto Protocol commitment period 2008-2012. Certainly one of the policy options, if we go down an early domestic trading system, would be to have caps for the years pre-2008. In those years, of course, we have no international commitments, and therefore you could imagine starting off with a very generous allocation for the early years and slowly phasing it down. That is an option we have for the domestic trading system pre-2008. Once we get into the 2008-2012 commitment period, then we have a very hard allocation decision to make for that period.

**Mr BILLSON**—My former life had a bit to do with fisheries as well, Dr Weir.

**CHAIR**—So did mine.

**Mr BILLSON**—I think most of us have, as consumers or as policy advisers or ministers. The question about whether the permits are property rights or licences frankly fascinates me. You can have the joy of reading through the submissions to find an industry group we had that was very strong on the idea of having free allocation of generous property rights that the Commonwealth can buy back. I thought that was a pretty interesting idea.

The thing that it also triggers, and it came up in Bonn, was this issue about reviewing the commitments to see whether they are bringing about some decrease in pressure on climate change, which could see our post 2008-2012 accounting period commitments fall further. Then we, the taxpayers, are faced with property rights wafting around not only in a domestic marketplace but also in an international marketplace, and we have this—I cannot use the expletive—‘oh, my God’ arrangement where we have to claw them back. I reckon people will be just delighted to activate the compensation provisions of the constitution and buy back property rights that were given free in the first place. What are your thoughts on the subject?

**Dr Harrison**—The issue of whether they are property rights or licences is to be addressed. There would certainly be a lot of caution on our part in deeming these as property rights as opposed to licences, for the types of reasons you mention.

**Dr Weir**—In fact, the US precedent with sulfur dioxide is that they have very carefully avoided that. They have put them in as essentially licensing permits on the model of what state EPAs do here with certain pollutants.

**Mr BILLSON**—That is the way I think you should go, but then doesn't that confound your earlier proposition about sequestration credits? In effect, you would then have a quasi-licence being created by a non-government agency and the interplay between licences for emissions versus credits which create emissions capacity. You might be dealing with two different legal concepts that, in my view, would just come crashing into one another.

**CHAIR**—There is a lot more confidence in a property right in the marketplace.

**Mr BILLSON**—You would go with a credit. Working through these issues, you would go with a sequestration credit that was generated free of the licensing framework because you would have a greater degree of certainty over it, wouldn't you? That is a rhetorical question but can I have your thoughts on that?

**Dr Weir**—A sequestration credit would be associated effectively with ownership of the trees in question. They obviously constitute a real property and one that is already an undisputed property.



**Mr BILLSON**—You could be trading in two different currencies.

**Ms Andrews**—I think these are extremely complex legal issues that we have not yet had the chance to pursue. I would hate to signal a particular position on any of them. We are not unaware of the complexities of those issues and we are not unaware of the need to define very carefully and closely what right, whether it be a property right or a licence right, is available under an emissions trading scheme. We need to take a lot of legal advice on it that goes straight, I am sure, to the constitutional level. As with everything, we also need to make sure that all interests have the opportunity to make their case to us. I believe that the work of this committee is going to make that a lot easier for us because a lot of those cases have already come out on the table. We do intend to start producing some public issues papers on specific implementation issues. I have no doubt that this issue will figure fairly prominently.

**Mr BILLSON**—The reason for saying it is that, if you go down the licence path, the sequestration effort starts looking more and more like an offset capacity against the licence rather than a credit in its own right that can be traded. It all has to fit together and that is the thing that has fascinated the committee. Look at the incremental parts. We are so wise about the individual parts. It is only when you try and put the package together that you think ‘Hang on; we have a couple of different notions that do not connect terribly well’, let alone getting into the international thing, which we can talk more about later.

**Ms Andrews**—You are absolutely right on that. I think to some extent we are still at an early stage where we are using words without thinking about them sufficiently—

**CHAIR**—You have to understand the psyche.

**Ms Andrews**—as in rights, licences, credits, et cetera. You are quite right. We need to get the legal concepts behind those clarified and see how they all do fit together.

**CHAIR**—I think we have to understand the psyche here. I have dealt with forestry in the past. The fact is that private people are reluctant to get involved in plantations at the present time because they are not confident of governments and confident that their investment is secure. The only time you can get something that is secure is when it is backed up as a property right under the constitution.

**Ms Andrews**—Yes.

**Mr BILLSON**—If I can just pick up on that point, even under the regional forest agreements, which are designed to bring about more certainty, you have got the foresters now wanting their licence capacity underwritten by the Commonwealth because there might be some change in the biology that led to the allocation of those rights. If they are not deliverable, they are wanting that to trigger compensation.

**Ms Andrews**—Yes, I do understand that. I would also postulate though—without having thought it through a great deal—that in a funny way, there may be a way of providing more certainty to people through the offsets concept because essentially the firms who are investing for offsets purposes are taking the risk.

**Mr BILLSON**—Absolutely, and you are transferring there. You are transferring the transaction costs so that the small punter can get involved, bearing in mind that they have to have a relationship with an emitter to have something that has a value. I am offering evidence rather than asking questions, sorry.

**Mr McDOUGALL**—I just want to throw a third thing in there: how do you deal with an emitter who buys a permit to be able to utilise the carbon uptake of a state forest through obviously some sort of licensing arrangement with a state? We have seen this, I believe, recently where a power generator in New South Wales just bought some sort of deal with the state government.

**CHAIR**—It cannot be a state forest; it would be a plantation, I would say. I think 1990 rules off the state forest, doesn't it?

**Dr Weir**—I think that is part of the problem with that very transaction, actually.

**CHAIR**—Yes.

**Mr BILLSON**—Some of that pre-dates that; that is my advice.

**CHAIR**—So it is an incestuous, political decision.

**Mr McDOUGALL**—What I am getting at is do we count state forests in as a possible sink or do we count them out?

**Ms Andrews**—The first thing to recognise is that Kyoto forests are post-1990 forests. Beyond that, and somebody may wish to correct me if I am not absolutely right, I do not think the ownership of those forests through a government corporation or a private land-holder is particularly an issue under the protocol.

**Dr Weir**—That is correct.

**Mr McDOUGALL**—It is only an issue in relation to the legality of what is the property right.

**Ms Andrews**—If it is a property right.

**Mr McDOUGALL**—Because some state forests—I beg to differ—if they have

been logged after 1990, would have regrowth and therefore should be counted.

**CHAIR**—But they are not.

**Mr McDOUGALL**—They are not going to be?

**Dr Harrison**—Not if they were logged after 1990. You would have to offset the regrowth against the carbon emitted from the logging.

**Mr BILLSON**—Which then brings in the argument of what you are doing with the wood.

**CHAIR**—Could I go back to the permit allocation?

**Mr Pennifold**—It was an issue that we raised earlier. That is a suggestion of dealing with export industries perhaps differently. I just want to make a point that Australia does not only compete with other countries in export markets; we also compete with them in our own market. In the case of Australia, most of the manufacturers' imports come in at around three per cent duty, so it is a fairly open market. I just want to draw that to the attention of the committee when those arguments have been made, and I am aware that some industry groups have made them.

**Mr McDOUGALL**—That raises the point about the cement industry. They had a very interesting submission and we had an interesting discussion here. They said here on evidence that there is very little distance for them to go in regard to technology improvement to reduce emissions because of their process. Their argument is that on that basis, if they are not grandfathered in some way and they have to buy at full value their permits, they may be putting themselves in a position where importers from overseas who are not having to meet emission controls are then going to be more competitive. If they are not grandfathered, they are going to possibly go out of business. Where do we go in those cases? Does government make a choice of which industry survives and which industry doesn't, based on a trading system?

**Mr Jones**—This brings up a broader point, which is that the whole argument about allocation is an argument about the distribution of costs and benefits among the participants in the scheme. Again, the fact that there are costs is due to the fact that there is a cap on emissions, not due to emissions trading or any other mechanism. It is the fact that there is a cap on the mechanism in the first place.

The important point about emissions trading schemes is that they have the potential to lead to the most efficient allocation of emission permits, of the right to emit—whatever you like to call it. Regardless of the initial allocation of permits, you will come to the same efficient outcome in the end in theory. The argument is about how that initial allocation works its way through into the distribution of costs and benefits on the way, and

that is what needs more study. That is the point you are making. How does it affect industry A versus industry B versus consumer C?

There are a number of ways it can be worked through, depending on your starting point, but I do not think we understand enough about the starting point, about the way the different allocation mechanisms might impact on industries, to give you an answer to that question yet. The argument is over the distribution of costs, not the fact that there are costs in the first place.

**Mr BILLSON**—Graeme's point is very important because a lot of what we are hearing are the sorts of arguments we ran at Kyoto. A lot of industry sectors are spinning the rhetoric back this way to advance their case for permanent allocations—the pain of doing things, all those sorts of issues that were very legitimate arguments in the international forum. The calcination process in concrete is chemistry. They are saying, 'Do you want us to create new chemistry?' Therefore, there is not a whole lot we can do about that if we want concrete. These are the sorts of things that we are hearing, and I am pleased that you guys are hearing them as well because we are stuffed if we know what to say to them when they give us these arguments.

**CHAIR**—Can I go back to another easy one?

**Ms Andrews**—Good.

**CHAIR**—In the allocation of permits, how can we ignore the clean industries? Why shouldn't the clean industries be allocated permits according to carbon dioxide equivalents—hydro, wind, solar and, to an extent, nuclear?

**Dr Harrison**—Once we have a trading system and you price carbon into the market, that gives a competitive advantage to the clean industries.

**CHAIR**—I have heard that argument.

**Dr Harrison**—But there is also another issue there and that is whether you want to give credits—in terms of the early allocations, say, of 2008 to 2012 permits—to firms as a reward for early action in reducing greenhouse gases. That is certainly a policy issue that is being considered by the US government, for example.

**CHAIR**—If we are serious about reducing greenhouse gases—forget the science and the argument about greenhouse gases—then there have got to be some incentives for these industries to get up, haven't there?

**Ms Andrews**—Speaking about the clean energy producing industries in particular, yes, I agree. The incentives are to some extent built into the Prime Minister's package, in that there is a significant amount of money to be put forward to support the development

of renewable energy in Australia. There is also a requirement for electricity retailers and large users to source an extra two per cent of their electricity from clean sources by the year 2010. That would take us, we estimate, currently from slightly over 10 per cent to slightly over 12 per cent renewable energy in Australia and that compares extremely favourably with renewables in Europe, for example, if you discount for nuclear.

So yes, we are very well aware of the need to provide incentives for renewable energy. The government was well aware and has certainly done that in the Prime Minister's package. We do believe that the prospect of having to live within an emissions cap—again, with or without emissions trading—also provides an incentive for the private sector to take renewables more seriously.

**CHAIR**—We have had a fair session so we might have a break and come back to this. I know that we have got a lot more questions.

**Proceedings suspended from 10.29 a.m. to 10.39 a.m.**

**CHAIR**—Theoretically, we have 20 minutes left for this group, so we might try to focus on what I see as the important points. Obviously, the regulatory framework is important. We know the importance of consultation and research, but we hope you are doing that.

**Mr McDOUGALL**—I think this is pretty good, anyway.

**CHAIR**—One point that I made is that most of the players in this field said to us that they would like to have a state, federal government and industry consultation process as soon as possible. It was very vital to them, so I think we could probably leave it at that unless you want to go further. The start of trading and the regulatory framework are probably two important points that we could try to focus on, so I would like to go to the regulatory arrangements.

**Ms Andrews**—I might make theory remarks about that to begin with. For a domestic system, we see that the government's broad roles would be to set the overall emissions target within the context of our Kyoto obligations and to establish the legal framework for the system. Tasks that would be included in that, for example, would be allocating and auctioning permits, maintaining a register of emissions and permits, recording trades, monitoring gas emissions and carbon sinks, and enforcing market regulation.

One important policy issue is that we believe that costs would be minimised and efficiency maximised by adopting a strategy of maximising private sector involvement and minimising market regulation and management. Towards that end, we would be looking at existing institutional structures to see the extent to which they would be able to respond to the needs of a carbon trading system—for example, the Australian Securities Commission

in terms of regulation of the market; the ACCC may have a role; the Stock Exchange or the Futures Exchange could easily be the key broker and have advisory capacity for a market. There would be a need, obviously, to introduce specific compliance measures. Certainly, at the legislative level, you would want to have penalties established in legislation for breaches of emissions trading systems rules, and those penalties would have to be reasonably substantial.

You would want, I believe, to make the market itself and the participants in it responsible for measuring, reporting and verification issues to the extent possible. So, in overall terms, we see the government's role in a trading system as establishing the framework on a legislative basis, ensuring that existing institutional structures are sufficient to support the trading system as defined and, if they are not, adding whatever capacity was possible and then taking an oversight role in terms of the monitoring, verification and compliance issues; again, to ensure that institutional and legislative arrangements were sufficient to ensure that those were happening properly.

**CHAIR**—Could you see the situation where, as far as government was concerned, government would be involved in allocation of permits either to industry or to the states—I suppose it does not really matter which way—and then probably in a fairly simple control system? Could there be an industry body that ran this and kept bureaucracy out of it as much as possible?

**Ms Andrews**—I think keeping bureaucracy out of it as much as possible is a laudable aim, not from the point of view of questioning the ability of bureaucrats but from the point of view of ensuring that the costs are as low as possible. I do believe that it is possible to set up framework structures—for example, a framework for verification of emissions and a framework for verification of carbon sequestration—that could then be taken and applied in an appropriate and possibly accredited manner by private sector players. That is the area in which we would be looking at government intervention taking place, because it is the least cost kind of intervention.

**Mr BILLSON**—On the penalties issue, given that compliance I think is going to be a really nightmarish issue and looking at, say, the sulfur dioxide experience where those who overextend in terms of their emissions not only face a punitive fine but also face an obligation of purchasing permit capacity at twice their noncompliance, that makes a lot of sense to me. But it also underlines the need for government to retain some permit capacity for new entrants and for the naughty boys and girls to be able to acquire. Is that the sort of penalty framework you see? Would the pricing issue come down to the auction model so that those noncompliant companies would have to compete with start-up businesses to buy the extra capacity they need? What sort of ideas have you had there?

**Ms Andrews**—Basically just the essential principle that whatever the penalties are they must be financial and they must be of sufficient weight to make the whole system operative. We had not really thought through the option, I think, of using the sulfur

dioxide penalty system as a possibility. Certainly that is one we will take on notice and put into the potential policy mix, because it does have possibilities, but, as you know, some downsides as well in terms of the retention of permit capacity.

**Mr BILLSON**—The concern I have with purely financial penalties is that it may well ignore the fact that we do have a cap, and somehow we have got to—

**Ms Andrews**—Okay. When I say ‘financial’ I mean they must be cost penalties in some form or another.

**Mr BILLSON**—Sure. The thinking I have is that if everybody weighed up their options and they made a commercial decision just to overrun, it is the government that is the party to the commitment and we are going to end up having to face the music one way or the other. Therefore, something that still works within the ceiling as a penalty framework makes some sense to me.

**Ms Andrews**—It does.

**Mr McDOUGALL**—While you could have the states involved in the issuing of the permits to, say, existing industry, how would you then start to determine what the states’ involvement would be for extension of industries, new permits, new industries? How would you start dividing up permit systems amongst the states? I can see a minefield there, that you are starting to dictate economies and development of economies, based on that sort of principle. That really would worry me greatly.

**Ms Andrews**—I think we do not begin with the assumption that we divide up permit allocations on a state basis. We begin with an assumption that we definitely want the states to be involved with the policy development in the system. However, the commitment to the Kyoto Protocol, once made, is a Commonwealth commitment, therefore it is an issue for the Commonwealth government.

**CHAIR**—You would have to get an agreement through COAG on that, though, wouldn’t you?

**Ms Andrews**—On?

**CHAIR**—You would have to get the states to agree, through COAG, that it was a Commonwealth responsibility. A lot of these issues, under the constitution, are controlled by the states.

**Dr Weir**—That is the question. But, most obviously, there is the foreign affairs power if the Commonwealth ratified the protocol and—

**Mr BILLSON**—But there are two issues here, aren’t there? One is the

commitment and the second is what you actually do to achieve it.

**Dr Weir**—Indeed.

**Ms Andrews**—That is right.

**Dr Weir**—And indeed, given the state roles and responsibilities in the current discussions on how that would work, I would think there would be extensive consultation with the states on the mechanisms, but the states have already said to the committee, I understand, that none of them wants a state-by-state system, they want a national system. If there is to be any emission trading system at all, they certainly want it to be on a national basis.

**CHAIR**—I think there is one state outside that, from our submissions.

**Dr Weir**—I stand corrected.

**Mr McDOUGALL**—But I am coming back to the point that you are going to have a cap on permits because your permits are going to be related to your total emission target, aren't they? And if you start dividing that up amongst the states, you can do it for the existing—that is not a problem—but how do you go from there? That I see as a real problem.

**Dr Weir**—We would query dividing it between the states, and we think that most of the states would query that, too. They do not particularly want a state-by-state allocation. In fact, I have heard the secretary of the premier's department in one state say publicly that that would be a good way to set the emission trading system back a good 10 years. That is how long it would take them to settle that argument.

**Mr Jones**—It is also the case that once you have a market up and running, the market to some extent takes care of which industries come in and out. The problem, really, is an initial allocation problem. Once you have the permits allocated and once the market is up and running, then the market determines the distribution of industries and industry structure from then on, according to the costs of holding permits.

**CHAIR**—What is the attitude coming through from Kyoto and Bonn? Is the world talking about nations trading or companies trading?

**Dr Harrison**—The Kyoto Protocol makes provision for parties to the protocol—that is, national governments—trading. It is within the domestic sovereign policy of the various parties as to whether they wish to allocate that trading power to entities within their own economy. In the case of most of the umbrella group countries, for example, you would imagine that would get delegated to private sector traders, but certainly you would not assume that all parties to the protocol would elect to have a private trading system.



Some of them may wish to restrict it to government-to-government trading.

**CHAIR**—But surely the American attitude would be that they would allow their companies free rein, wouldn't they?

**Dr Harrison**—The Americans would, we would, New Zealand would. Japan is a bit more circumspect. Russia is a bit more circumspect.

**Mr BILLSON**—A couple of quick ones. Firstly, the penalty framework, even though it is a domestic trading arrangement, would need to pretty much mirror what is happening internationally as you would have some multinationals deciding to send their permits to Australia because our penalty regime is more punitive than somewhere else. Is that your understanding as well, that some consistency between domestic penalty arrangements would need to work, otherwise you will get perverse behaviour in the international scene?

**Mr Irwin**—I think you would need to look at that across the systems as a whole. It is desirable that, across the board, they be as consistent as possible. Penalties are just one of the issues you have to look at there. But, again, it would need to be looked at in an iterative sense as both our domestic considerations and the international negotiations progress in terms of how the two systems start to emerge.

**Mr BILLSON**—In the institutional framework that we are talking about, it is my view that we would have a whole lot to offer internationally, both from the science and from the work we have had to do to argue our case at Kyoto which I think is very admirable. I have written to most of your ministers suggesting that we try and translate that into a UN bureau in Australia, given that with a lot of the cooperative clean development mechanisms the action may happen within our region. We are not the US, we are not Europe, so we are a bit of an honest broker there. Maybe we could play a role as a UN site and get some added economic value out of the serious legwork we have done in pursuing the Kyoto outcome and the work that is subsequent to that.

**Dr Weir**—I remember you raising that issue when I came with the Bureau of Resource Sciences.

**Mr BILLSON**—That is right.

**Dr Weir**—Certainly there is expertise in Australia. The institutional possibility you look at is one that we would want to examine.

**Mr McDOUGALL**—I have a question on how we deal with international companies, both in a domestic sense and in an international sense, in the way in which they go ahead with their development programs. I can see great manipulation opportunities for major international companies in this game. Let us be honest, it is going to happen: if

the frameworks and the regulations are tough in the signatory countries to this protocol, they are going to look at alternative places. How are we going to deal with that, both in a domestic sense in relation to those companies who are acting within Australia, operationally, and in an international sense?

There is one running around at the moment—an aluminium smelter. Where is it going to go? With the discussion that is going on at the moment, I think there is a pretty good idea where it might go, because it is going to solve a problem for them, isn't it, if they do take it up above us, with the potential of what that cost will be. One of the problems is that at the moment they do not know what that cost will be. So where are we going to set ourselves in being able to handle people like BP who come up with a world statement, 'This is what we are going to do within our own operation.' Who is going to monitor that and how it is going to be monitored?

**Dr Harrison**—That is clearly an issue and a problem. I would point out that, in terms of where an aluminium smelter may end up, the cost to the aluminium smelter is basically being caused by acceptance of the target in the first place as opposed to emissions trading, which is a means of minimising the cost of meeting that target. I would not want to speculate on how the international community might handle that carbon leakage problem over time. Clearly, any resolution over time will involve encouraging some developing countries to start with, and more over time, to accept targets and to be engaged in discussions. No doubt, that will involve being fairly generous in allocations to those countries if they seek to engage in the framework. All of that is speculative and a long way down the road. But, while most developing countries remain outside the framework, that is clearly a problem and an issue for the countries that are within the framework.

**CHAIR**—Would it not be fair to say that unless the international negotiations can get this clean development mechanism right, this scheme is not going to work? Surely there have to be some incentives in the system that mean that those with the technology to reduce emissions are given credits for going into Third World countries? You cannot put penalties on Third World countries. There would have to be some credits for those with the technology to be able to go in there and reduce emissions in those countries and, therefore, bring all the total world emissions down. If that is not the way it works, I do not think it will work.

**Dr Harrison**—That is a specific question about the clean development mechanism, and I might refer that to the Department of Primary Industries and Energy, which has portfolio responsibility for the clean development mechanism.

**Mr Irwin**—There is obviously a desire to make that system work as effectively as possible. Again, we are in a similar position to the international emissions trading regime. We are still at the very early stages of trying to look at making it operational, given that all that came out of Kyoto was a very broad in-principle statement enshrined in the

relevant article. It will be important in terms of providing a further avenue for least-cost emission abatement avenues. At the end of the day, in terms of dealing with the broader problem of potential carbon leakage, that is why an essential part of Australia's approach to the international negotiations has been to push very strongly in the area of non-annex 1 commitments in terms of getting a more equal situation across the board.

**Mr BILLSON**—Congratulations, Dr Harrison, on the answer before. It is a hazardous area, but we would like to talk more about it if we could. The trade implications are, in my view, quite profound. An idea that we have floated—and it sounds like and looks like a tariff, but we are not calling it that—is some climate compliance obligations on trade from non-annex 1 countries into annex 1 countries so that the importer, or somebody else, would need to at least trick up the goods. Let us use aluminium as an example. If you are bringing it in from Indonesia, as distinct from using it here, given that the Kyoto obligations are not controlling their emissions there, they would have to have a climate compliant attachment to the product coming into an annex 1 country.

That would give some incentives for non-annex 1 countries to opt in. That would neutralise, we would think, some of the trade imbalances that were going to happen there, but it would also amount to a nightmare for international trade. Have you guys had any discussions about those sorts of ideas to try to ensure that annex 1 countries are not left suffering the economic consequences of carbon leakage?

**Dr Harrison**—International negotiations at the moment are focused on finding ways to encourage developing countries to engage with us in accepting targets through the clean development mechanism and related discussions. There is no move at the moment for a model of the type you are mentioning. However, I guess any options are open several years down the track. It is hard to imagine the industrial countries of the world standing by and watching industry relocate because they have accepted a set of rules which others have not.

Who knows what may eventually come out of that sort of scenario if discussions on trying to engage developing countries do not work out? It is certainly not on any international agenda at the moment. It is hard to envisage that it would not become an issue if current attempts to get countries to voluntarily become part of the framework do not work out. I would stress that it is not on any international agenda at the moment. It is certainly nothing that is being discussed in the Australian government and it is a long way down the track and would only come about if current efforts for engagement do not work.

**Ms Andrews**—Could I also make the point that it is rather beyond our remit as a domestic Australian greenhouse office and we certainly would not be discussing it without the presence of DFAT.

**CHAIR**—Inevitably, it comes down to the allocation of permits for these

companies who are really on an international scale. It has been put to us by some people within industry in Australia where we are trying to get value adding in Australia. But take the aluminium industry: if it has to buy the permits for the gases that it emits to manufacture this particular product, then it is going to put that industry at a distinct disadvantage. On the other hand, if you try to transfer those permits across to the users of the product, I daresay it then has a bearing on our own coal industry, which is a big industry.

**Dr Harrison**—I think it again comes back to the point that we have accepted a target for our total emissions, and the costs to the aluminium industry in sharing the burden of meeting that target are imposed by the fact that we have the target; the emissions trading is actually an effort to find least cost means of meeting that target.

**Mr BILLSON**—Under the sort of model that we were talking about before, you would give life to that idea—I am not sure which one of you mentioned it earlier—about export. For instance, if we were exporting from our country to another annex 1 country, you carry the Kyoto compliance—the climate change costs—with you. If you were exporting to an annex 2 country, you might be able to drop them at the gate. The flip side would, therefore, apply: those you have dropped at the gate someone might need to buy to bring some stuff in.

What fascinates me is how to consistently apply defensible principles to what, I do not think anyone disagrees, is a good idea, a good concept. Making it work on the ground in a way that is fair is a fascinating area. Would you accept that something like what we have just discussed would encourage non-annex 1 countries to opt in or would enable them to develop in their own free way within their own domestic borders, if that is their choice, but not with the advantages of an unfair trade advantage?

**Dr Harrison**—I think that is getting way down in the realm of speculation.

**Mr BILLSON**—Past your brief? Okay. Coming back to compliance, we have trouble persuading people that weapons of mass destruction are a bad idea and getting people to even handle the nuclear issues consistently. I have heard—I think DFAT was telling us—that they hope that trade sanctions are not part of Kyoto compliance arrangements. I find that admirable sentiment absolutely naive. Would you accept that non-compliance of other annex 1 countries would need to have some fairly significant penalties attached to it, and are there examples other than trade?

**Dr Harrison**—Again, I think that is getting well into DFAT's area, but it also depends largely on the outcome of current efforts to engage the developing countries on terms that are equitable to the developing countries.

**Mr BILLSON**—It is your good fortune that DFAT is not here.

**CHAIR**—You had them last week.

**Mr BILLSON**—I know, but we didn't get any nearer to it then, either.

**Dr Weir**—It is fair to say that compliance issues are on the long-term agenda of the Kyoto Protocol. There are no compliance penalties written in; it just says there will be negotiations. They have not started yet.

**CHAIR**—There is very little time left but there is one subject I would like to touch on. We have had submissions put to us about when we should start a trading scheme in Australia. The question I would put to you is: what is our commitment internationally? Is this the final one? Have you any opinions on when we should start a trading scheme in Australia?

**Dr Harrison**—The international commitment relates at this stage only to the first commitment period of 2008 to 2012. Subsequent commitments have not yet been negotiated. There are no legally binding commitments before 2008.

When we are talking about when to introduce domestic trading it is useful to distinguish between two quite different ways that we could introduce trading earlier than 2008. On the one hand we could have a domestic cap and trade system based on self-imposed caps prior to 2008. The case for something like that would be based on the fact that if we are going to meet our 2008 to 2012 commitments then we have to turn the trajectory around a long time before 2008, and imposing self-imposed caps which would basically get us on to that trajectory for complying in 2008 would be one way to go. Trading in those permits would have value only within Australia; they would not have any international value because there would not be any international caps. There is also concern about introducing self-imposed caps too early, which might lead to the disadvantage of some of our industries versus industries in other countries.

There is another way you could get trading going earlier than 2008 which would not involve caps in the years prior to 2008 and that would be to allocate permits for the 2008 to 2012 period ahead of time for whatever reason so that those permits—we are now talking about real permits that have international value in the commitment period—could then be traded. In essence, they are a futures market in the commitment period permits.

That would lead to the issue of how might you issue permits early and how many permits would you want to issue early and how early would you want to issue them—because you would not want to issue them before any other countries had tradeable permits out there; otherwise you could see Australian permits being sold around the world but no permits available for Australians to buy in. It would clearly be dangerous in that situation.

You might allocate some permits early on to firms that achieve early action in

terms of getting on to and exceeding the trajectory that they would need to get onto to meet their 2008 commitments. You could, for example, draw a line between where we are now and where we need to be in 2008 at the individual company level and reward those companies that get ahead of that trajectory line by issuing permits that they would then have available to sell to the companies that were having trouble getting to 2008 compliance.

That would be one way of getting early tradeable permits into a system so people could get experience in trading the permits and think about the value of those permits in a way that is at the same time encouraging companies to get on to early action to get on to a trajectory to meet the 2008 target. It would be helping us to meet our 2008 commitment in that sense by encouraging companies on a voluntary basis to take on these permit—

**CHAIR**—So you would see a fairly clear and vigorous interaction between government and companies in Australia to try and work out exactly how we go about this?

**Dr Harrison**—Yes.

**Dr Weir**—Clearly, consultation is an essential part of the proceedings. Just to add a couple of points that elaborate a little on what David said, it certainly is important to set the trajectory towards the ultimate target, where that is possible. Of course, the current set of measures, the Prime Minister's measures and the other measures in the soon to be issued national greenhouse strategy, are designed to do just that. That, we hope, will start to bend the trajectories in the right way. That is part of the work of the Greenhouse Office and others to ensure that that happens.

The other issue is that experience with the electricity market shows that an early trial run is a very useful learning experience for all the players. Concerning the way that David spoke about possibly using a domestic cap early, you can have a paper trial where players get used to how this might happen without having to suffer the full financial penalties, and that is a possibility that bears thinking about. It certainly proved to be very useful in the development of the national electricity market.

**Mr BILLSON**—This is an idea that appeals to me, but I would like your comments on it. Given we have a good relationship within the umbrella group, is it worth the umbrella group countries collectively agreeing on a broad framework for trading that would start with a paper model that might then evolve into a cap and trade system domestically for a couple of years while things are sorted out and there is price discovery and those sorts of things, and then, say at 2005, you could get into international trade within the umbrella group on systems that have evolved together where we can learn from one another's experience before the full show begins at some later point in time—no doubt prior to 2008? Is that an idea that is worth pursuing?

Given we have talked about all these interrelationships with the domestic scene, the

international scene, trade, penalties, compliance regimes, the verification and all that, isn't that worth looking at, where we could all walk into the sunset together with our friends before we get into the stormy world that will follow?

**Dr Harrison**—That is highly speculative and it assumes that other umbrella group countries would be willing to accept early caps. Given the difficulty of negotiating the differentiated targets at Kyoto, I would not underestimate the difficulty of negotiating the allocation of targets even within the umbrella group for any years earlier than 2008.

**Mr BILLSON**—Given that uncertainty, the hazard of doing something ourselves which may be out of sync and not entirely compatible with some of the other trading countries, you would see that hazard as more worth while than maybe spending a bit more time trying to knock the edges off some of the issues with at least the umbrella group companies. Is that correct?

**Ms Andrews**—The question of early trading is really one for the government to decide because there are key questions of strategic advantage for Australia here. We are very cognisant of the fact that a domestic emissions trading system ideally would develop in lock step with an international trading system. If that is not going to happen as an ideal situation then what we need to be able to do is, in concert with our colleagues at DFAT, present the real options that are available to the government at some point in the future—sometime between now and 2008—and to give them advice on what the strategic advantages and the strategic risks are. We are not near a position to be able to do that.

**Mr McDOUGALL**—One thing that bothers me is that, if you start a paper experiment, you are dealing only with permits in relation to emissions. What would you be doing about setting targets for actual reductions in emissions? How would that fit together? What bothers me about going out to an industry like the energy producing industry saying, 'We are going to give you a trial', is that there are other industries that may be able to make sizeable reductions through technology development. They are going to go forward with that. How do they get rewarded if they continue down that path while we have this trial going with just one industry? It bothers me.

**Ms Andrews**—Yes. I do not think we are suggesting that we would give any particular industry an advantage by a trial. It would be something we would very much have to take into account. I would make the point again that any trading system, and early introduction of any trading system on a trial or other basis, would have to be considered in terms of the mix of policy measures it is going into. A number of those policy measures already provide incentives, whether on a voluntary or a more regulatory basis, for emitters to reduce their emissions to proceed towards abatement, and will continue to do so. One of the considerations we would have to take into account, if we did recommend any form of early trading trial or otherwise, would be its effect in the total mix of policy measures.

**Mr BILLSON**—The treatment of harvested timber is frankly not a very good outcome for us. In light of the sequestration efforts that are going in through plantation forestry and the risks that are presented by that current IPCC harvesting treatment, is there some prospect of having captured carbon recognised at harvesting as an end use as distinct from just saying you have to have permits for the whole lock, stock or barrel, whether it becomes pulp or whether it becomes timber framing for housing?

**Dr Weir**—I am glad you asked me that question.

**Mr BILLSON**—I thought you would not let me, but we did not think you would leave without me asking it.

**CHAIR**—Do you need half an hour?

**Dr Weir**—Last month in May, I was at an IPCC workshop on that very issue, looking at the guidelines for treatment of harvested wood products in greenhouse inventories. That workshop looked at three different allocation options, all of which turned out to be technically feasible, including allocating the emissions when and where they occurred, allowing for the life of the timber in tables, building construction or paper or whatever. That can all be done. The decision whether or not it is done is essentially a political one, although in the Kyoto Protocol context it would probably only really come into effect in the second commitment period, because essentially the existing IPCC guidelines are locked into the relevant article of the Kyoto Protocol about how inventories and targets are done.

**Mr BILLSON**—And there would be no movement for that first period, you think?

**Dr Weir**—I don't think so. The technical development would or could go through. It is by no means certain that it would through the political processes. It would be treated in the context of article 3.4, which is on essentially additional activities.

**CHAIR**—Thank you very much. We have had a cursory look at the subject.

**Ms Andrews**—Thank you, Chair. I thank the committee for taking on the subject because your investigations are providing us with a wealth of information we would not otherwise have had.

**CHAIR**—Yes, there is a lot of information coming out. Thank you very much.



[11.19 a.m.]

**BEASLEY, Dr Allen, Deputy Chief Executive, Australian Gas Association, GPO Box 323, Canberra City, Australian Capital Territory 2601**

**CHAIR**—Welcome. We have received a submission from you and have authorised its publication. Do you wish to propose any changes to that submission?

**Dr Beasley**—No, I have no amendments to that submission. I will commence with a short introductory statement. The Australian Gas Association is a private not-for-profit organisation. We have around 280 corporate members across the whole spectrum of the natural gas industry. That includes producers, the high transmission pipeliners, distributors and retailers, as well as manufacturers of appliances. To the extent that it is possible, we seek to have a whole of industry perspective on issues and that includes greenhouse issues before us today. We also have a special role in representing distributors and retailers on some issues such as access arrangements relating to pipelines.

Within this industry we have adopted a vision statement that natural gas provide more than 20 per cent of Australia's primary energy requirements by the year 2000. As things stand, that target is 17.7 per cent and remaining fairly static. I might add that the growth goal has the support of both sides of government and the opposition at the national level.

Clearly our interest in this debate relates to the fact that natural gas is the least greenhouse intensive fossil fuel available. I would imagine you have figures on brown coal relativities with fuel oil and natural gas. Suffice it to say that natural gas has around 40 per cent less emissions per unit of useful energy than coal resources. Those benefits become even more apparent when the energy conversion costs are considered—that is the cost of converting primary energy into a useful form. There are obviously large losses when coal is converted into electricity and, with natural gas, the figures are only around 30 per cent to 35 per cent of emissions from Australian mainland electricity on a whole of cycle basis. I suppose that is the first point and reinforces, in our perspective, the need to consider emissions on a whole of cycle basis, rather than focusing on discrete sectors and basically enabling customers to identify and evaluate the overall greenhouse implications about their actions and their options.

In the context of emissions trading, many, but not all, applications of natural gas are really analogous to a partial sink. This is shown by the following four examples that I would like to read out. There is, firstly, the conversion of Micas Creek Power Station in Mount Isa to natural gas. It formerly operated on coal. That has actually meant that carbon dioxide emissions will be reduced by 540,000 tonnes per annum. Australian natural gas, in the form of liquefied natural gas, replaces other fossil fuels like coal and oil that would otherwise be used for power generation overseas. Whilst this undoubtedly leads to some increased domestic emissions resulting from the LNG conversion process, this is more

than offset, at least in the case study we have available to us using North West Shelf Gas, by the global reduction in carbon dioxide emissions. The issue of competitive position is a very important one for our LNG exporters.

Recent media reports say Delta Electricity is considering conversion of the coal fired Munmorah Power Station to natural gas. That is perhaps indicative of the benefits that can flow from natural gas switching. In this case, the reported benefits are in the order of a 35 per cent saving in greenhouse gas emissions.

Finally, at the domestic level, according to the AGA—and we have published reports on this—if all households were able to use natural gas for cooking, heating and hot water, then residential energy and carbon dioxide output from that particular sector would be reduced by two-thirds. AGA, as a participant in the Commonwealth government's greenhouse challenge program, has prepared a greenhouse inventory covering gas transmission and distribution activities across the industry. The focus is not on production—that is covered by another industry association. The total figure in 1996 is 2.66 million tonnes of carbon dioxide equivalent and that comprises emissions from the transmission sector of 507,000 tonnes and distribution of around 2,100,000 tonnes.

At the distribution level, and that is the main source of emissions within the industry, it is mainly in the form of methane leakage from the older style cast-iron mains. I might add that that level of emissions has decreased substantially since the early 1990s, from four per cent of gas issued in 1990-91 to 2.5 per cent in 1995-96. In overall terms, the emissions from that downstream industry are around 3.4 kilograms per gigajoule and you can compare that to the raw emission figure of, say, brown coal, which is 95 kilograms per gigajoule. So it is a relatively small amount on a whole of industry basis.

Gas market development will undoubtedly include increases in emissions for producers as well as small transmission increases and increased emissions for new customers. But it will also lead to offsets—decreased emissions for customers who are switching to gas from more carbon dioxide intensive sources like coal and oil. Certainly, from AGA's perspective, in the greenhouse emission arrangements being developed, there should be some allowance for contractual arrangements to internalise those positions so that you end up with a net position in respect of emissions.

AGA supports the principle of greenhouse gas emissions trading as a cost effective mechanism that will be more efficient than command and control mechanisms like carbon taxes. Some of the general principles that we believe are relevant for greenhouse gas emissions trading include the need to include all substantive emissions, noting that carbon dioxide and methane comprise the vast majority of emissions in the Australian context; the need for a credible means of measurement, monitoring and verification, with minimal compliance costs based on self-assessment and random auditing; the inclusion of carbon sinks with market mechanisms used to deal with uncertainties and risks associated with the accuracy of those figures; a free allocation of initial permits on a grandfathering basis with

no auctioning of permits, as our industry believes that would represent a carbon tax; the need to integrate domestic arrangements with international arrangements as they develop; and the need to recognise the special position of energy intensive exports like liquefied natural gas, where Australia competes with countries which are not yet committed to greenhouse gas abatement.

We certainly support national and not state based systems to ensure consistency and hopefully simplicity of arrangements. As an industry, we are seeking a genuine partnership with government at both the federal and state levels in implementing these arrangements. Finally, we believe that there is a need for a continuing assessment of the environmental, economic and social effects because those parameters can clearly not be determined at present.

**CHAIR**—Can I take you up on your point when you said that there should be no auctioning of permits because that is a carbon tax. If you are arguing that your industry is a smaller emitter than some other industries in the generation of energy, how are you going to get an advantage if there is not some cost to those who are high emitters?

**Dr Beasley**—In terms of the abatement methodology, this is an issue for customers. I am not speaking specifically in terms of our own emissions. They are very small and I think the evidence shows that they are very small. The real emissions occur at the end use in the cycle. Clearly, you do need a mechanism that allows you to put some value on the scope to reduce emissions. We certainly think that value is given by giving an initial allocation that gives the appropriate signals to enable that fuel switching to take place.

**CHAIR**—I do not quite understand your logic. Bruce, do you want to have a go?

**Mr BILLSON**—If you are saying that the allocation itself, on a grandfathering principle, will factor in the price signal to consumers, doesn't that contradict your competitive advantage position that says that you are, relatively speaking, compared with electricity low emitters, a more virtuous source of energy—

**Dr Beasley**—But to have the basis to enable that fuel switching to take place it is an issue of putting some value on that switching.

**Mr BILLSON**—I understand your argument about fuel switching and I understand the gas industry's position—here is the best competitive advantage opportunity you have had since Adam was a boy. I understand all that. What I am getting at, though, is that your argument of having no auction of permits undermines your competitive advantage.

**Dr Beasley**—I am not going to get into a position whereby the gas industry is suggesting it is supporting some sort of carbon tax arrangement. We do not.

**Mr BILLSON**—No, but it is an enormous leap of logic to argue that auctioning of permits equals a carbon tax. That is an assertion. What I am trying to do is suggest to you that that is fiction, and that explaining it, simply reasserting the point, does not make it true. The auction process has a price discovery function as well as a chance to let new entrants come into the marketplace. If you grandfather all permits, how are you going to let people in the electricity industry increase their production? I understand your point that you are at the consumption end of the gas industry, but spare a thought for your brothers at the production end of the gas industry. How are new entrants going to come into the market if you have got all the permits locked up by those people that are emitting now, and no mechanism for making new permanent capacity available? How are you going to bring about the sort of change that is the very essence of your competitive advantage?

**Dr Beasley**—I can understand your logic. I am just—

**Mr BILLSON**—‘Help us understand yours’ is the question.

**Dr Beasley**—In terms of our industry, we have taken a view that in the past those emissions have been factored in as part of normal decision making and that there should be a zero cost associated with those particular emissions.

**Mr BILLSON**—So how do you bring about change? We are already way over our accounting period goal. If we grandfather everything—

**Dr Beasley**—I think a lot of that has to do with the glide path or the path you take in achieving targets. I am not saying that you allocate a set of permits and keep that static. There may well be options relating to glide paths, preferably longer-term glide paths, that take you in the same direction. What I am saying is that in an initial allocation based on an auction system where highest bidder takes all you are adding costs onto a whole series of downstream industries, not just the gas industry, that are really unwarranted.

**CHAIR**—I do not think this committee is about to make any radical decision that is going to suddenly change the position of industry in this country, because people have made investments in good faith. But what you have to look at is how do you gradually change that. There have been suggestions put before the committee of a hybrid system, whereby some are allocated, some are auctioned and some are held back by government.

**Dr Beasley**—That is certainly the option you are talking about in terms of the previous evidence. I am not in a position to support or not support any particular option. I think the important issue is the path that it takes. You could allocate permits tomorrow and auction them, and have no net result in terms of greenhouse gas benefits. The real issue—

**Mr BILLSON**—I have only had one person suggest that, and that was the Queensland government.

**Dr Beasley**—The real issue is in respect of where the glide path takes you in terms of reduced emissions over time across a sector, across a series of sectors and across the whole range of emissions.

**Mr BILLSON**—But would you accept that that glide path should account for creating space for permit capacity to be auctioned so that new entrants, or even your very sector that does a wonderful marketing job on energy shifting, can actually get involved?

**Dr Beasley**—Without getting into a discussion on auctions, as opposed to allocations, certainly the principle of creating a wedge of opportunity is one that this industry would support.

**CHAIR**—Surely there are benefits in this scheme for your industry, though. One of the problems we have in Australia is that we have this enormous gas resource over in the west of the country and all our industries in the east of the country. Surely in a system such as this, where you see yourself as having a competitive advantage, that generates the possibility of piping some of that gas to the east and making you a very competitive industry, doesn't it?

**Dr Beasley**—There are a couple of issues here. One is the supply of natural gas to meet east coast markets, and it is by no means certain in terms of the time path for that Western Australian gas to find its way eastwards. There are other options in terms of supplying east coast demand. I think the more pressing issue in respect of Western Australia and its natural gas endowment is the fact that a lot of those resources are being developed quite specifically for export markets. Of course, it is the interaction between your domestic arrangements and your international arrangements that becomes far more critical when you consider the Western Australian situation, be it for increased exports of liquefied natural gas or be it for exports of direct reduced iron where you are meeting a global demand, notwithstanding the fact that there is an increase in your domestic emissions which, in the case of LNG, is more than offset by the global benefits resulting from use of that particular resource instead of alternative fossil fuels.

**Mr BILLSON**—We have largely had that argument though, haven't we, with the way the protocol is framed and the way the accounting is done. Harvesting production emissions in Australia alone vary from eight per cent down in the Bight up to mid-20s over in the west. Would you accept the point that says that if we could accommodate that in a domestic scene, then the export potential of the gas would not be undermined as long as it was going to another annex 1 country?

**Dr Beasley**—As long as there is an offset that could be implicitly built into that particular arrangement—that would be critical.

**Mr BILLSON**—Like an export credit?

**Dr Beasley**—Yes. Without that, you are seeing an increase in costs to your industry locally, notwithstanding the fact that there is a global greenhouse benefit. I would not see that that would be to the advantage of anyone, either within Australia or internationally. That is why, in moving ahead with negotiations on the international front, it is very important to consider those competitive neutrality positions and recognise the fact that there is a greenhouse benefit from that arrangement as well.

**Mr BILLSON**—Has the sector confronted concerns about the former USSR pipeline network and that some of these leakages that are not accounted for are actually about twice what we need to reduce, by way of our emissions, in Australia? There is that fuzziness around the consumption used to maintain pressure in the pipeline and the leaks in transmission, and also some question marks over accounting at the harvesting end. Is that being viewed as a weakening of the gas industry's position and is it something that you are working on?

**Dr Beasley**—I am only here to comment on the domestic gas industry within Australia. As I indicated, on the figures in terms of transmission losses, 500,000 tonnes per annum in CO<sub>2</sub> equivalents is a very small figure, as is the distribution loss. I am not in a position to comment on those overseas countries, except to perhaps make one comment. The continued position of Australia, in terms of maintaining those very high standards, relies primarily on the ability of the industry to achieve a rate of return that is commensurate with the operating and maintenance costs associated with the industry.

**CHAIR**—But surely the gas industry in Australia would be looking, under the clean development mechanisms, at the possibility of reducing those losses in those pipelines as an international credit?

**Dr Beasley**—Certainly some of our member companies have taken a specific interest in overseas gas industries. They certainly have the technology to reduce greenhouse gas emissions in the form of methane leakage. Commercially, they will form a judgment as to how they move ahead with those particular commercial opportunities.

**Mr McDOUGALL**—Do you see your industry getting a credit for a conversion of an energy producer—say, a power station that goes from coal to gas? Who gets the credit?

**Dr Beasley**—I think we have to follow that through the chain to really understand who should get the credit. I think the credit should rest with the person who has control in terms of who takes the decision. In that instance, it is a customer of a transmission pipeline service and a customer of a producer who is supplying that gas who is taking the commercial decision in terms of reducing greenhouse gas emissions.

Maybe I could give an example in terms of the Mount Isa Mines power station where there was a decision by the power generator to switch from coal to natural gas. Undoubtedly, there were small increases in emissions at the transmission level, because

you need natural gas to drive compressors and that generates a small amount of CO<sub>2</sub>. Undoubtedly, there would be an increase in emissions on the part of producers because there is a small amount of entrained CO<sub>2</sub> in the raw natural gas, and you need to use natural gas to drive the processing of raw gas into sales gas. Taking those two aspects out of the equation, any net result really rests with the person who took the decision—in this case, the power station.

**Mr McDOUGALL**—You were here when the departments were giving evidence. What do you think of the idea of a possible trial going on in the energy industry?

**Dr Beasley**—Principle number one—and we set this out in our submission—is that we think all substantive sinks and sources should be included. We certainly would not support it being applied solely to the energy industry but, as we indicated in our own submission, the principle of a paper trial is attractive, mainly to come to terms with what is going to be a very complex smearing of rights and responsibilities across a whole range of participants, large and small. If one is considering a paper trial, I think AGA would be more supportive of arrangements that look at the large scale sources first.

That having been said, we certainly would not want arrangements that act to the detriment of participants who have entered other voluntary arrangements. As you move along the path of paper trials and then a trading scheme, it is clearly going to be a situation where we do not want to see those people disadvantaged by decisions they have taken in good faith.

**Mr McDOUGALL**—Help me through a bit of technology here. You are taking your gas out and you are liquefying it: other than through leakage in pipelines, what other technology improvements are available to the gas industry to reduce emissions?

**Dr Beasley**—We are talking about a couple of concepts here. Liquefaction relates to taking natural gas and converting it at low temperature into LNG for export trade. That is very different from putting it into pipelines within Australia where the only processing is to remove CO<sub>2</sub>, water and other contaminants to take it through to be a saleable form. That is the answer to the first question.

In terms of the technology options that are available, there is a wide range of emerging technologies in the natural gas industry to reduce greenhouse gas emissions, but they are mainly focused at the end use side of the equation such as gas airconditioning which has scope to reduce greenhouse gas emissions. The use of natural gas as replacement fuel in the transport sector also has major opportunities to reduce greenhouse gas emissions.

In the longer term, opportunities are arising from such technologies—and even in the shorter term there is co-generation—as fuel cells, which have an opportunity to produce electricity directly at around an efficiency of 80 per cent thermal efficiency,

which is much higher than the current coal fired thermal efficiency of about 35 per cent or the highest efficiency one can achieve from combined cycle gas fired power generation, which is a little over 50 per cent, or even co-generation, which is typically 70 to 80 per cent. There is a spectrum of opportunities.

**Mr McDOUGALL**—Following what you said earlier, if my memory is right, you are going down into a lot of smaller users in that, so who then gets the benefit of the use of the gas, and how do you measure it?

**Dr Beasley**—There are many larger users who can gain benefits from some of those technologies such as co-generation. A large co-generation is about a 10 petajoule load, which is quite significant. As you drive it down towards smaller and smaller customers, you are right that there is a real dilemma in terms of who controls those particular emissions. I am not going to speculate on those mechanisms that could be applied, but the principle probably goes beyond emissions trading as a mechanism in its own right, in the same way as fuel efficiency in motor vehicles. Who do you hold responsible for the emissions from petroleum products? Is it the retailers? Is it the refiners? Is it the end users, or is it someone acting on their behalf in a regulatory sense? I think those are questions we are all grappling with. I do not think there are any simple answers.

**CHAIR**—Could I take you to page 12 of your submission where you raised some very interesting concepts. As you probably realise, this committee is trying to look at a recommendation to the minister that will provide an efficient, cheap and non-bureaucratic outcome for this scheme. You talk about what I would probably call a laissez-faire proposal about not just national but international arrangements of compliance. Could you elaborate on how you see that working?

**Dr Beasley**—I certainly would not describe it as laissez faire. All I am saying is that the risks of having a scheme that is not seen as being credible, particularly when one looks at international developments, will be that that scheme will be devalued. AGA is not forming a view on what arrangements should apply in Australia, but there is a real risk that if that particular approach is laissez faire it will be discounted appropriately when it comes to those international negotiations.

**CHAIR**—But you are really suggesting self-regulation and self-enforcement, aren't you?

**Dr Beasley**—We talk about private verification agencies and we talk about the market setting an exchange rate on those particular developments. Perhaps that is more the characteristic of a mature trading scheme, rather than one in its initial stages. Certainly, in terms of the initial stages, given the complexities within Australia alone, let alone internationally, there is going to be the need for credible verification arrangements. AGA's point is that, over time, all regulatory bodies should seek to lower those transaction costs



as opposed to embedding them as another regulatory cost for the industry.

**CHAIR**—Obviously, we are trying to explore how we do something like this without it becoming too bureaucratic. Could you see a scheme like this working whereby, in the measurement field, there would be a random individual test from time to time and those penalties would then be very high?

**Dr Beasley**—We certainly speak about random tests and auditing playing a major role. Certainly, in terms of compliance, we would prefer a scheme that is characterised by random auditing and monitoring rather than one that monitors absolutely everything an industry does. I am not in a position today to discuss what incentives should be there and how big the stick behind the back should be. I think that is an issue that is going to be debated for some time to come in this country and internationally.

**CHAIR**—It would be fair to say though, if there were some self-assessment or self-control and you had big credits in the international marketplace and all of a sudden you were found to be cheating and you lost those, that would be a fairly big disincentive not to comply, wouldn't it?

**Dr Beasley**—Markets can usually work out mechanisms to allocate risks, and it is about risks, rewards and penalties. There are a range of options that are going to be available to government in Australia and, in time, interact with international jurisdictions. Quite clearly, we do need to be serious about the accuracy and honesty of the data we put into what will be public and international fora. Those penalties have to be commensurate with the consequences of not being seen to be doing the right thing.

**CHAIR**—When I think of self-enforcement I mainly think of the press council or the law society, and they are not very good examples, so there has to be a stick in there somewhere.

**Dr Beasley**—I am certainly aware of government's approach on this, and this is an international issue. You are not going to draw me any further on that particular one!

**Mr BILLSON**—On the issue of initial permit allocations, it has been put to us that we do that on the basis of emissions per gigawatt hour. That was in one of the submissions put to us. That would obviously send immediate signals that some of the electricity sector's practices need to be changed. That would probably bring in an enormous advantage to the production end but it would bring a biblical sized advantage to the good folks sitting behind you from the Snowy Mountain Hydro-Electric Authority. Do you have a view on that?

**Dr Beasley**—I would just relate this discussion back to one of my very first points, that unless and until you start looking at your emissions on that whole of cycle basis, you are really kidding yourself that it is an honest scheme. For example, if we take fossil fuel

energy conversion, we may improve that by one per cent, two per cent, even five per cent, but the benefits of doing that relative to some of the other options may be very small in the overall context.

**Mr BILLSON**—But in fairness, occasionally we lose sight of the whole point of this, and that is to actually wind back our emissions.

**Dr Beasley**—Correct.

**Mr BILLSON**—So far we have heard from industry representatives, who probably account for 75 per cent of the country's emissions, and most of them feel that someone else could do a better job of it than them. So that 25 per cent are working very hard to meet our international commitments.

Just looking at the vehicular transport consumption of gas, the fact is we do not have a standard for LPG and you get these significant mixes of butane and methane in proportion that drives the manufacturers of the technology. How would we bring about more certainty there by having a standard formula for LPG fuel?

**Dr Beasley**—On the LPG issue, it is certainly a very fast growing market. The industry must have something right because there are something like 450,000 vehicles in this country operating on LPG.

**CHAIR**—Tax is a big incentive.

**Dr Beasley**—The excise free status of that fuel, which has been guaranteed on a five-year rolling cycle by this particular government, is an important element of certainty in terms of not only the LPG industry but also the emerging natural gas vehicles industry. It is not just an issue of LPG; it is the raft of technologies that come in behind it that can sustain those sorts of opportunities well beyond the end of this century.

**Mr BILLSON**—But if we cannot be confident about the composition of the fuel—and I do not know what the translation is from different proportions of butane to emissions—if the fuel is all over the park, how do we know what—

**Dr Beasley**—I am not going to subscribe to a view that says it is all over the park. If there are differences they are accommodated within a market that allows 450,000 vehicles around this country to operate safely and efficiently on that particular fuel.

**Mr BILLSON**—I understand that, but the fact is that fuel varies quite markedly, as people who are in the industry tell me. Your members are telling me we need a standard for LPG fuel for cars. That is what your members are telling me.

**Dr Beasley**—Sorry, a word of correction. They would be members of the ALPGA

rather than the AGA.

**Mr BILLSON**—The membership in an industry allied to your constituency are saying that the variables in the fuel make it hard for them to make the technology they are using as efficient as possible because the fuel composition changes. Is that something that would impede further improvement in emissions performance because the technology cannot match its performance to a standard of fuel?

**Dr Beasley**—I cannot get into discussions on optimising fuel mixes, I can only talk about the overall position of LPG which places it in a better position than, say, gasoline or diesel.

**Mr BILLSON**—You are not able to tell us whether we can get even better performance by some standardisation?

**Dr Beasley**—Most fuels today can be optimised. There is a whole range of electronic strategies that allow you to monitor fuel mixes. That may be one option for the future. I am not across the costs and benefits of those different approaches.

**Mr BILLSON**—In the vehicle sector and even in the electricity generation sector, the Prime Minister's package introduces measures other than a pure trading measure. Is there scope amongst your membership for similar sorts of prescriptive measures to improve the fuel performance of hot water appliances, climate control devices, cooking appliances and the like that you could suggest should be part of a package to show the goodwill of the industry?

**Dr Beasley**—That is a very good question. For over 30 years the AGA has managed codes and standards relating to the industry and those include codes and standards relating to energy efficiency performance. In natural gas, for the last 30 years to my knowledge, there has always been a minimum energy performance standard on things like hot water heaters. To the extent that there needs to be a process of continuous improvement, that is something the industry would always consider on its merits.

That having been said, it is important not to lose sight of the whole of cycle benefits of those very natural gas heaters where, for example, when you are comparing them to a solar electric boosted system, those high efficiency gas appliances have a better greenhouse gas performance than the other hybrid technology. Perhaps that question leads us in another direction, which is the future of gas renewable solar technologies for the future.

**CHAIR**—Are you arguing about the manufacturing of solar panels?

**Dr Beasley**—No, I am not arguing on the manufacturing; I am talking more about the whole of cycle in terms of the electricity you need to use to boost those appliances. It

is very well documented in our report.

**CHAIR**—The electricity that is coming from current generators?

**Dr Beasley**—Correct. That is very well documented in *Global warming: cool it*, a report put out by Environment Australia.

**Mr BILLSON**—So in aggregate energy requirements you are saying that gas stacks up pretty well?

**Dr Beasley**—The five star natural gas appliances are more efficient than solar electric in cool climates.

**Mr BILLSON**—Just one final question, and it is something that we have talked about with the rural sector and with the motor vehicle sector where you have got a number of microscopic emitters but in aggregate terms, significant emitters. Where the signals land is an issue we have been grappling with to make sure that behavioural change is brought about. If, as I understand your submission, the signals land more at the consumer end, how would we invite producers to choose between liquefaction of, say, gases in Western Australia to bring them to the eastern market versus a pipeline from Western Australia to the eastern market in terms of emissions? How would we send that sort of signal to the producer in a trading scheme or in a permit scheme?

**Dr Beasley**—This is very much an issue of relative emissions for liquefaction. I find it very difficult to compare those markets. The prospects of liquefied natural gas coming to the east coast are very small. You will always be comparing competing pipeline proposals such as gas from PNG to that particular market. I do not think it is fruitful talking about the north-west in the context of east coast markets. That may happen within 20 years but we have been talking about it happening within 20 years for most of my lifetime.

**Mr BILLSON**—The thing that concerns me is exactly your point that people are not talking about liquefaction to bring the north-west fields into the eastern marketplace, that it is an argument about pipelines. What is going through my mind is that there may well be emissions advantages in bringing the liquefied product around rather than a higher emissions load to send gas down the pipeline, keep it pressurised and all those sorts of things.

**Dr Beasley**—But, as I said, those losses in terms of transporting gas through pipelines are very small—

**Mr BILLSON**—Right, okay.

**Dr Beasley**—And when you see those figures, I think you will realise just how

small they are.

**Mr BILLSON**—So liquefaction is just uneconomic?

**Dr Beasley**—Liquefaction takes relatively higher amounts of energy, but do not forget the fact that, when it gets to Japan or other countries, if they have technologies and industries that make use of the latent low temperature, they are recovering some of that. So again, it takes me back to that whole of cycle issue.

**Mr BILLSON**—So the choice of production and transportation options is not a close enough choice to make emissions a determining factor?

**Dr Beasley**—If that were a determining factor, I think we would have had more proposals for these sorts of technologies.

**Mr BILLSON**—Thank you.

**CHAIR**—You make mention here of a suggestion that carbon sink credits could be discounted. It is something the committee has looked at, in particular in the measurement of carbon sinks. It could be fairly expensive to go to the nth degree of measurement. In fact, we could accept some discounting of that as just an estimate of what is being captured in carbon sinks. Is that what you are getting to?

**Dr Beasley**—I think it is really an issue of using a market mechanism to put a value on the commodity that you are dealing with. In the case of energy, there is no real uncertainty. You can quantify your emissions. In the case of, say, offset arrangements, be it land clearing or embodying carbon in respect of plantations, the element of certainty is likely to be higher. I think they are allowing the market to form a judgment on what that risk is and what uncertainty is, and to form a value on that particular traded offset makes more sense than saying that we are going to spend millions and millions of dollars. I know we are going to spend some money and that is important, but it does not make sense to spend a fortune to get those things down to the nth degree now. If there are uncertainties in the particular sink, the market can factor that in, in terms of its judgment of value. Markets do that all the time.

**CHAIR**—Is your industry interested in sinks?

**Dr Beasley**—I would imagine, having spoken with a cross-section of our members, there will be a range of interests in sinks. There will also be a range of interests in offsets in terms of fuel switching. It will be a mixture of measures. For those of our members who have forestry interests as well, naturally it is the sort of area they would perhaps see as one of their future competitive advantages and it would be in their interests—  
notwithstanding the risks and uncertainties for the future—to start looking at some of those opportunities.

**CHAIR**—You could see companies broadening their base to get offsets in other industries?

**Dr Beasley**—It depends very much on the business focus of that particular company. Quite clearly now, the emerging retailing companies are selling electricity, gas and other energy products. They will clearly look towards the range of business opportunities that meet their future growth and development needs. I certainly would not rule out those sorts of opportunities.

**CHAIR**—Thank you, very much. I think we have gone through that fairly thoroughly.

**Dr Beasley**—Thank you.

[12.04 p.m.]

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**WILLIAMS, Dr Phil, Chief Executive Officer, Snowy Hydro Trading Pty Ltd, (Snowy Mountains Hydro-Electric Authority), Level 22, Pacific Power Building, Cnr Park and Elizabeth Street, Sydney, New South Wales 2000**

**CHAIR**—Thank you. We have received a submission from you and have authorised its publication. Are there any changes you wish to make to that submission?

**Dr Williams**—No, thank you.

**CHAIR**—Would you like to make a brief opening statement?

**Dr Williams**—Yes, please. Mr Chairman, committee members, I would like to refer you to our presentation that is being handed out at the moment and I would like to take you through this. I would also like to comment that I will be looking for help from my colleagues who are with me today, as I have been heading up the company for three months and, obviously, the submission pre-dates my appointment. We welcome the inquiry. We are very pleased to be able to put forward our views today and we welcome any comments or questions that you might have.

Our presentation really wants to cover four key points. We want to say a bit about the Snowy scheme itself, about the solution as we see it and, in particular, we would like to talk about ensuring an efficient, effective and equitable market. We would then like to summarise and conclude with the key issues as we see them.

Firstly, the Snowy scheme has been referred to and, in fact, has won awards as an engineering wonder of the world. It is something we recognise and understand is something of a national icon. The authority itself is the operator and maintainer of the asset. It is actually administered through the Snowy Mountains Council. Snowy Hydro Trading Pty Ltd is the business which markets the renewable electricity from the Snowy scheme into the national electricity market on behalf of the entitlement holders.

The Snowy scheme itself was designed to capture the clean and renewable water of the Snowy Mountains and divert it west to irrigate the now \$3½ billion per annum Murray and Murrumbidgee agricultural industries. In doing so, it provides a major source of renewable electricity for the nation.

It consists of seven power stations, 16 dams, 80 kilometres of aqueducts and 145 kilometres of interconnected tunnels. It has a generating capacity of 3,756 megawatts and each year produces, on average, around 4,500 gigawatt hours of renewable energy. It is also the largest greenhouse gas free generator in the competitive marketplace. It is the largest producer of electricity in the national market, providing over, I would say, 85 per cent of the renewable market and five per cent of the total market.

Through its generation of its greenhouse free renewable energy, the Snowy scheme reduces emissions of carbon dioxide by five million tonnes per annum. This is equivalent to an extra million cars on Australian roads. Hydro-generation currently provides 97 per cent of all renewable energy on the electricity grid.

The solution, as we see it, is about creating an emission trading scheme that really provides for an efficient market solution. Snowy supports the early introduction of an emission trading scheme that provides the right financial drivers needed to achieve the right environmental objectives.

Snowy supports a trading scheme that is efficient, effective and equitable. It also provides the right financial drivers, is durable and certain, is based on sound environmental principles, treats new and existing emitters equally, is accounted only at the source of the emission and is introduced sooner rather than later. Ad hoc solutions, we believe, should be avoided. In ensuring an efficient, effective, equitable trading scheme, we believe the right financial drivers are such that, in order to meet Australia's commitment to its greenhouse strategy, we need real financial drivers placed on greenhouse emitters, not voluntary or free reduction schemes.

All carbon sources must be treated equally in the market, including gas, oil, coal and transport fuels, to avoid cross-subsidies and inappropriate fuel technology or sectoral substitution. The market operation should: allocate initial permits through the market by full auctioning; have permits valid for one year only and re-auctioned yearly; and progressively reduce available emission permits to achieve national emission targets.

A durable and certain trading environment will rely on the market design being based on proven trading principles—for example, sulfur dioxides trading in the USA. The market should also treat all technologies, energy forms and industry sectors equally in order to avoid ad hoc market solutions. A properly applied emissions trading scheme will more efficiently perform the functions of other suggested targeted emission reduction schemes such as efficiency standards for generation and renewables target schemes.

Ad hoc proposals should be avoided as they place participants at regulatory risk and thus will not deliver long-term solutions, whereas long-term schemes like emission trading can deliver a greater degree of regulatory certainty. The market must support responsible approaches to environmentally sustainable development—in particular, we are thinking about emitter pays.



Greenhouse gas emissions must be accounted only at their source to avoid distortions and manipulation. An open greenhouse gas trading market will ensure efficient economic and environmental solutions to greenhouse gas reductions. We believe in adopting a trading scheme which provides the best result for the investment—for example, different renewables have very different life cycle carbon intensities. I refer the committee to the diagram over the page where we are comparing the life cycle carbon intensities of various generation technologies. I think our point is made there, given that hydro is the lowest point on the chart.

We would like to see new and existing emitters treated equally. We recognise the early starters in emission reduction initiatives such as recent renewable projects and existing hydro generation. Existing emitters should not receive grandfathered emission permits; rather they should be fully auctioned. We believe grandfathering creates inequities, distortions and manipulation opportunities.

Under a grandfathering scheme, there is no distinction between existing non-emitters such as hydro generators and emitters such as coal based thermals. This may lead to operational changes resulting in large reductions of existing renewable energy sent out. The worst emitters would be rewarded by receiving the largest number of grandfathered permits, with the opportunity for profiteering from sale of permits—for example, on loss of market share. This is, in effect, a transfer of wealth to greenhouse emitters. With the 20- to 30-year life of many installations, grandfathering of emission permits to existing emitters will have long-term environmental costs.

Finally, to conclude our presentation, we believe that the early introduction of an emission trading scheme that provides the right financial drivers is most appropriate. We believe that an emission trading scheme without grandfathering of initial permits is also necessary—that is, the full auctioning of permits is required. Also required is an emission trading scheme that is based on sound environmental principles and treats existing and new generators equally, and an emission trading scheme that accounts emissions only at the source of emissions. We expect it to be an efficient, effective and equitable trading scheme.

**CHAIR**—That raises a few questions. Given the fact that the science of greenhouse is not yet proven—although we may have accepted that we should go down this track of reducing emissions—why should industries that have gone ahead in good faith and developed their industries around what they saw as a cheap source of fuel be penalised if they are not allowed to grandfather some of their emissions?

**Dr Williams**—Snowy Hydro recognises that situation. It is an issue which is very important to a business like Snowy Hydro too. We no doubt suffer from those kinds of issues in relation to our business in general. What I would say more specifically is that Snowy Hydro does not believe in grandfathering because we believe that the most efficient market solution is brought forward by not introducing grandfathering. We believe

that would introduce distortions and would not really facilitate the most effective market mechanism for tackling greenhouse targets.

**CHAIR**—That would be really like addressing the problem with an axe though, wouldn't it? A lot of our industries need to change their ways, but they cannot do it overnight. It has to be gradually implemented. Really, even though I understand where you are coming from, and I daresay that our commitment to Kyoto really puts us in a position where we need to look at some of these issues, it is going to have a very big impact on some industries.

**Dr Williams**—I agree. I do not think we are saying that those impacts should be forgotten. We should really take time to consider the transitional impacts it has on all players in the marketplace. I would say though that Snowy Hydro believes that ultimately it has to be about consumer choice. It is not in the interests of any particular group to dictate the whole solution. We believe that, in our approach, we are recommending that an efficient market is the best way to deliver consumer choice. We would like to see consumer choice brought about in renewable energy as a major player in green power.

**CHAIR**—Another point which I think you made earlier on, which I took note of—and I think Graeme might have too, so I hope I am not pinching your thunder, Graeme—was where you mentioned that the emissions should rest where they are emitted. I think that was it.

**Mr McDOUGALL**—The emitter pays.

**CHAIR**—Yes, the emitter pays. Taking a look at Australia and the fact that we are trying to encourage value adding in Australia in some of our big industries such as aluminium, if we took that position, would we not be exporting jobs?

**Dr Williams**—Again, I think it is a very important issue. The issue we are talking about generally here is whether one country or another effectively places itself at a competitive disadvantage against other nations. I think the last thing any of us would want to see is the competitive advantage of this country minimised or reduced. We ultimately cannot decouple local and global issues in atmospheric pollution at least. I think it is important for us to recognise that, although our targets are somewhat different from others through the Kyoto Protocols, we have a real opportunity here to introduce renewable energies, green power, into the marketplace. Provided that you have an efficient market mechanism—a practical one, I would add as well—businesses should be able to adapt over time.

It is not for me to comment on economic or social policy in this context, so I will limit my comments to competitive impacts, but I think we have all learnt from the fact that subsidies and the failure to adapt to competitive pressures really disadvantages all players in the long run. Those that are able to adapt quicker and sooner find themselves in

a much stronger position in the long run.

**CHAIR**—I have other questions, but I will let my colleagues have a go.

**Mr McDOUGALL**—Can I just follow on from your comment there in regard to the renewable energy market. At the moment, your contribution, while very worth while, is a very small component of the national energy market. I would assume that your capacity to expand as a percentage of the total energy need is diminishing. Am I correct?

**Dr Williams**—No. What I would say is that Snowy Hydro is, in fact, a peak power provider and a provider of emergency power in the national competitive market. We do not expect to see our market share rapidly growing through an emissions trading scheme, nor do we expect to see it reduced through competitive pressures. We are like any other business in that respect, in that we have to earn our crust, definitely, for our stakeholders, and we have a wide range of stakeholders.

We are a very unusual business probably in that context. In the competitive market, I can say that, without a shadow of a doubt, we are working very hard to maintain our competitive edge in that marketplace. What I would add though is that we definitely do see green power as something which provides competitive advantage to us. That is an important driver for us as a business. I make no bones about that.

But what I would say is that there is a remarkable opportunity here in the Australian industry and economy today to introduce both greater choice and also competitive product in a market along with environmental benefit. It is a very unusual value proposition but, in fact, the Snowy Hydro can deliver those three things. The way that it can do it through its normal operations is to deliver environmental and economic benefit just by going about its normal business, provided it is competitive and a commercially run business. I do not expect to see us reducing our share at all. I think that we have a very clear position in the market.

**Mr McDOUGALL**—I take what you have said, but as a renewable energy producer you have a limit on what you can actually produce in capacity. We have heard some comments from the other end that ‘we want some water back in our river system’—

**CHAIR**—They got some the other day, didn’t they?

**Mr McDOUGALL**—What I am really saying is that we do not have much option in hydro to make a dent in the requirement of energy in Australia, without producing more hydro systems. Can you expand more production out of your existing system?

**Dr Williams**—We have a fixed amount of capacity and we have a given amount of water. You may have been referring to the water inquiry that is currently under way. It is addressing water release in the Snowy catchment areas and potentially addresses water

reform on a much wider basis than that. I have not made reference to increasing the capacity of large-scale hydro in this respect but, like all green and renewable players, we never rule out other issues like mini hydro schemes in this as well. I would not rule out, if we were an effective business, that we would seek to diversify to wider renewables. In fact, there is the opportunity to do just that.

To answer your question specifically, we have a limit on our physical capacity of 3,756 megawatts. The amount of energy that we can produce is really dependent upon the amount of water that passes through the turbines, and that ultimately is a subject of the water inquiry.

**Mr McDOUGALL**—Do not get me wrong; personally, I am a supporter of renewable energies. We know where you are today. Where will you be with production capacity in the demand cycle in the future? That is really what I am trying to get at.

**Dr Williams**—We cannot guess at this stage how much productive capacity we will have, other than the existing capacity and water flows that we are going to be given in the water inquiry. I would say that it really is a matter of business strategy and what the stakeholders of the business really want to do. There is no doubt that, if national demand for electricity is growing, if we stand still we form a smaller fraction of that total amount of electricity production.

**Mr McDOUGALL**—In your current structure down there, in a capital sense what is within your own ability to raise from your own operations? What is the life cycle of that operation down there?

**Dr Williams**—The business has longevity. It is a very valuable asset and one that runs very efficiently. I think one would need to draw the distinction between what financiers of the business might want to see as the duration of the business for depreciation considerations and what the physical life of the asset actually is. I would say that the physical life probably well outlives the financial term of any capital expenditure that we may see.

The business as it stands has \$1 billion of debt—that is public knowledge—it is well understood and it is owned by the Commonwealth. That \$1 billion debt is being serviced by this business very well in a very difficult market. The principal amount is something that is an issue for the Commonwealth government and it would not really be my place to comment about its adequacy or duration.

**Mr BILLSON**—Is it fair to say that the Kyoto process and the whole issue of emissions trading was the best news you guys have had since the decision to build the scheme?

**Dr Williams**—I think it would be very easy to say yes and jump up and down with joy for that. I would say that I recognise the impact that it has on my competitors. Knowing those competitors quite well, I know that it concerns them. Does it make us very happy? It does not make us happy necessarily to see industry suffer, as some believe it may well do. I see it as an opportunity. I see that it is an opportunity for greater choice for consumers. Consumers ultimately must be the arbiter of the value of any of these initiatives and, obviously, we all play a role in addressing the relative importance of those issues.

If the public believes that this is an issue that must be driven through and that we must all adapt, Snowy Hydro would welcome a lot of these initiatives because it believes that, as the major renewable energy provider, it would perhaps benefit from that. But I think that the only way that we will benefit as a business is if we deliver value to our customers and if we are in exactly the same competitive environment as others in the electricity industry.

**Mr BILLSON**—But in terms of the value to customers and the business value, the Kyoto outcome represented an enormous windfall gain for you guys that, I would suggest, has nought to do with choice—because the choice is already available—but plenty to do with relative costs. The Kyoto outcome improves the competitiveness of your operations, with your doing absolutely nothing to deliver that yourselves.

**Dr Williams**—I hear what you are saying. I do not think that, as a business, we can rest on our laurels. We have plenty of issues that will keep us very busy in the next 12 months.

**Mr BILLSON**—This is almost an ambit claim, I would suggest, because you make the point in here—and it is well made and I would certainly like to be on your side of the argument if I had to make a point, because you have got all the cards—that some of the grandfathering provisions for some of your competitors would represent an unearned gain for them. Is it not equally as applicable to say you have an enormous windfall gain for doing nothing, with no effort required other than keeping to the way that things were going already with your internal commitment to efficiency, all of which is a given? Is it not a windfall gain for you guys? Would a fair way of seeing you secure some of that advantage be to cut everyone some slack in the arrangements for emissions trading?

**Dr Williams**—I do not see it as a windfall gain. I see that we have got our work cut out to operate against some very competitive players in the electricity market. I think they are big enough to look after themselves. I can say categorically that we will not be resting on our laurels. We have a number of issues to deal with in the production and the marketing of green power; we have our work cut out there. We are a business that has not been in a position to extol its virtues—if, in fact, there are any—for the last 30 years and yet, with the green agenda coming along, this business has been delivering 30 years worth

of environmental benefit without saying much about it.

**Mr BILLSON**—I agree with you. Is that not the absolute point that I was trying to make? There is a ‘new’ value there which has existed all along but all of a sudden it has got a commerciality about it that would make me tickled pink if I were in your shoes, particularly when it is supported by a government package that prescribes effectively a market for you as well, not to mention the potential for your not having to carry the costs of climate compliance and those sorts of issues.

What I am saying is that it is all running your way as it is. A proposition that says ‘auction permits annually’ is basically shooting your foot off because, frankly, no-one else in the country will cop that. If that is the way we go, all the virtues that have been elevated in their appreciation because of something that has happened through Kyoto will be lost, because you would have blown up the whole framework within which you were to benefit.

**Dr Williams**—I would say, with all due respect, that I am very aware of the practical aspects of implementation of this strategy.

**CHAIR**—So it is an ambit claim?

**Dr Williams**—I would also say that this business, if it were to benefit from such a scheme, would only do so because customers ultimately valued it. We are in no position to dictate any particular economic policy. What we can observe is that the most efficient and effective market should be encouraged if, in fact, there is to be such a scheme. On that basis alone, I recognise and learn from your comments about implementation of annual auctioning.

**CHAIR**—Isn’t it fair, within this allocation of permits, to really look at equality? You might have heard me mention earlier the fact that we need to take into consideration the clean players in the game. You are in a unique position, I suppose. Most of your costs are sunk at this particular time. You have bought into the industry; you have some costs involved. But the newer players in the industry, such as solar and wind and these types of new technologies, probably have a greater chance of supplying some of the energy needed in Australia, given that we are the second driest continent on earth.

What we really have to look at in the allocation of permits is giving some chance to these industries. There have been arguments put to the committee that, because other players are going to have to do something about their emissions, these industries have a natural advantage anyway. Could we discuss whether these clean industries should be given some permits up-front?

I daresay you would go for the maximum and say, ‘Yes, on an issue, we would like to see it on the fact of an equivalent of the carbon dioxide being emitted by another

generator.' The other generator might say that is a bit unfair. I suppose it comes down to what is practical. What would be acceptable as far as these allocations go? Should, in fact, you get any allocation or do you have an advantage in the marketplace by the very fact that some of these other emitters are going to have costs loaded on to them?

**Dr Williams**—I might bring in my colleagues after I have made this next point. I would reiterate that what is likely to outturn from a number of initiatives and inquiries, if we are not careful, is that the major suppliers of green power now—and we hold 85 per cent of renewable power in the competitive market—will actually be disadvantaged.

Let us not forget the businesses that have been delivering environmental benefit with track record for a long time. It is less of a defensive comment and more one of saying that we recognise we have our work cut out to compete in a very intensive market.

We welcome alternative renewables into the marketplace. We may be part of that in the future if we are able to operate competitively. In finishing off my comment to your colleague earlier on, Mr Billson, I would say that we would like to see that the other incumbents in the marketplace are put on an equivalent basis with us. We would not like to see that they have an inherent advantage over us. We are merely asking for that level playing field in that respect. I might ask my colleagues to give you a more specific answer to your question about the allocation of permits.

**Mr Sharp**—I guess an argument based around no grandfathering implies that there are no permits for those generators like us who are greenhouse neutral. There are, on the one hand, the emitters; in the middle, there is the neutral hydro, which has no emissions; and on the far side are the sinks.

In a fully grandfathered environment, the differentials between those players would be based on permits which needed to be bought by the businesses. Under that environment, we would see no permits issued to the likes of hydro and to other parties who might displace other emitters. The cost differential would be purely on the costs of the permits.

A qualification of that, though, is that if there is a partially grandfathered environment, that means that there is a differential between the new and the existing. That is a concern to us because of the need to ensure ongoing viability of existing hydro. You talked about the Snowy being a fairly small component. The Snowy is five per cent of the south-east Australian grid in terms of energy. Hydro is virtually 10.2 per cent of the total renewable energy in Australia, because the other renewables are fairly insignificant: in the order of 97 per cent is hydro.

We have to be very careful not to write off hydro as not being part of the solution into the future as well. The scale of a hydro scheme has to be seen in comparison with, say, wind farms and photovoltaic arrays. There are genuine environmental concerns with

hydro, and these need to be managed. Definitely worldwide there are significant negative perceptions about some hydro schemes—in many cases, based on reality. However, there are plenty of hydro schemes which have very thoroughly managed the environmental downstream issues. We would suggest that there are more hydro schemes available in Australia—certainly, on the mini side, there is no doubt about that. On the large scale, time will tell as to whether the environmental benefits and the environmental costs can be netted out to allow another large hydro scheme to proceed.

**CHAIR**—So money changes everyone's thinking, and therefore there has to be an advantage in hydro because it is a clean fuel?

**Mr Sharp**—The externalities have to be internalised, so that the appropriate decisions can be taken.

**Dr Williams**—I would say that probably that is a reflection of the way in which customers generally are buying into environmental issues. In fact, the environmental agenda has begun to embrace competitive market principles and a new philosophy that businesses have to be managed on a commercial basis, whoever they are owned by. Really, this has been the opportunity, if anything, for businesses like Snowy Hydro. I would not quite call it a windfall gain. We certainly do not expect it to land in our laps, but we will work very hard to introduce renewable choice in the market place. That is our opportunity. Again, it is an opportunity that will only be rewarded if people want it and are willing to pay for it, just as they will pay for any other product.

**CHAIR**—I come from the Clarence River, and 'dams' is truly a four-letter word there.

**Dr Williams**—I understand that the issues driving dams in countries of all sizes are an important issue, and we have to look at those issues in a balanced way. We would like to suggest that that balanced way is by looking at the global and the local issues. Where the Snowy hydro is concerned, that balance has to take into account the fact that this is one of the very few businesses in the world where environmental flows are related to a competing environmental opportunity: in other words, greenhouse gases.

**CHAIR**—How does the community come to terms with that, given that hydro is certainly the cleanest form of fuel? If there were permit allocations that advantaged you, how then does the community see you as producing environmentally friendly energy that they can buy at a cheaper rate or that they can get some advantage from?

**Dr Williams**—That really is the fundamental question for green power marketers, and I do not know all the answers to that. What I do know is that we have to tackle it in at least two ways. Firstly, we have to provide a commercial value proposition to all of our customers. They have to see the commercial benefit to them—and we are talking about, initially, large retailers of energy across the country. We are making some good headway.



Secondly, there is the important issue of differentiation for a business like ours. Green power obviously is a source of differentiation for us in the marketplace, but again it does not come easily. It is important for us to put those two factors together.

That would be the basis on which we can actually deliver the promise of green power to customers. It has to be that kind of commercially managed business that has an effective, well-understood—and, maybe, accepted—place in local communities. Bringing all that together is really the challenge for us. We really have no option but to integrate water, power and the environment into our business strategies. We would be really stupid not to understand the corporate governance and the good corporate citizenship aspects that any business like ours must live up to.

Again, the opportunity is one of embracing and not fighting the change that comes along, and of looking for the best way in which we can deliver consumer choice. People will choose either for us or against us, at the end of the day, and that will be the ultimate decision. We should really understand what people are saying to us, embrace that in the way that we manage our business from day to day, and put to the market the products that they actually want.

**Mr BILLSON**—I congratulate you on the modesty with which you are talking about the great advantage that you have in this new world. I wonder whether the Prime Minister's package and a prescribed amount of renewables do not represent consumers being delivered to your doorstep, as an advantage that is there for you already and that, it could be argued, takes account of your situation to some extent. That is part 1 of my question.

Part 2 is that industry has kept telling us that it is cautious about recognising gains from 1990 that were unintended gains. There have been a lot of energy consultants wandering around talking about energy mix shifts and those sorts of things to generate existing commercial benefits. We are hearing that we should not exaggerate those benefits, because the advantage was already there and it was acted upon for issues unrelated to climate change.

Part 3 is, in terms of internalising the externalities that Mr Sharp spoke of: what if the committee were to recommend a notional kilowatt hour emissions level as part of the grandfathering arrangements, and then it were to suggest that you guys had to make your permits available on the marketplace over a period of time, with the proceeds to be used to wipe out your billion dollar debt? Surely that would be a further internalisation of the externalities and would further strengthen your hand, so that all of the benefits were running in the same way as your water does: down a very big hill at a great pace.

**Dr Williams**—That is a very interesting observation. I would like to come back to that point, if I may, in a moment. Touching on your first point, I would say that, given the Kyoto obligations and targets, Australia has to run very hard just to stand still. I do not

believe that debilitating any part of that industry—particularly hydro, as a major source of green power—will do us any good whatsoever. I would like to see the introduction of renewables. I think they will be an absolutely essential part of the energy mix—

**Mr BILLSON**—Prescribed, or left to the market's devices?

**Dr Williams**—The difficulty with prescription is that customers have invariably rejected prescription. We need to compare that with existing schemes for the introduction of alternative renewable power today, at this very moment, and to understand consumer response in relation to that. That is why we are very strong on consumer choice and also on having to work hard to deliver environmental benefit. People must buy it en masse, and we have to enable that. We believe our business enables that kind of choice.

The free market ultimately will offer a good opportunity for people to buy renewable power en masse, and we think that that approach should be relatively unfettered. As regards industry and whether it should be overburdened with new rules or regulations, I would say that I am the first to recognise that investment decisions are based on both short- and long-term criteria.

I think it is important for businesses to recognise that the future always changes, that it is never what you expect it to be and that we should bring environmental factors into our planning now and recognise that the world has shifted. But I do not think this is a new issue. I am aware that this issue has been kicking around for at least 15 years seriously. I came across it in other jobs that I have been in, in fossil businesses, and I understand the impact it would have.

I would say also that we can wait, we can put it off, we will never get round to it, but the ultimate consumer benefit will be delayed, postponed. Timing is a very important issue and we recognise the transitional impact that it will have on all businesses, including our own. But we do not believe that we should unnecessarily prevaricate either.

On the third point, the suggestion is that there is a trade-off between grandfathering and the pure form of emissions trading, a free market approach. Ultimately, I have no doubt that will be part of the solution. As for our particular position on that, I do not think we are in a position to give you specifics at the moment but we would welcome the opportunity to come back to you on that. Maybe one of my colleagues could provide a little more specific an answer to that question.

**Mr Sharp**—The first question you asked concerned the Prime Minister's renewable target. We certainly would not want to have a double bite at that cherry, and there is no thought on that. I think it was introduced because it is a fairly rapid means of promoting renewables technology and starting to get some mass of renewables and develop the technology and R&D, et cetera. Our suggestion is that a genuine emissions trading market would take over the role of a forced renewables target in any case.

**Mr BILLSON**—Part two of the question was the conventional wisdom in the trading arrangement, that it should recognise new effort towards greenhouse rather than effort targeted at some other outcome that is being claimed subsequently to be motivated by greenhouse, and how that sits alongside what we are talking about. You guys have been doing great things for 30 years. You run headlong into that argument.

**Dr Williams**—It would be a pity to see a business with such a track record finally falling at the last hurdle.

**Mr BILLSON**—I agree, but understand our position. We have to face 18 million people with an argument that is consistent and that is defensible. If we are going to say that we are not going to reward you for doing things, with the exception of the hydro, that creates some policy dilemmas for us.

**Dr Williams**—That is absolutely understood and I would agree with that approach wholeheartedly. We do not expect any special treatment. I think that our historic place would tend to imply that. We do not expect it.

**Mr BILLSON**—It is going pretty well without any special treatment.

**CHAIR**—Can I go to the Clean Development—

**Mr BILLSON**—Can I get an answer on that last point. What I think we accept is a need to have permits available for new entrants. If the government retains permit capacity to auction that into the marketplace, that is one of the ways that is being suggested. I am trying to fold that idea in with your circumstance where you guys might get a notional allocation of permit which recognises what you have done and the virtue of how you do it. But you would be obliged on the government's behalf to release those permits into the marketplace at set periods of time to enable new entrants to come in. We want you to spend the proceeds knocking off your debt so you do not have \$70 million or \$80 million in your P&Ls that you have to accommodate through pricing and therefore get another consumer advantage on the way through.

**Mr McDOUGALL**—Maybe just not knocking it off the debt, but looking at other renewable technology.

**Mr BILLSON**—Yes, something virtuous with the money.

**Dr Williams**—I would wholeheartedly agree with the option in the sense that what it would do is promote, again, consumer choice. I would just reiterate, at some cost maybe, that we are a very unusual business in that respect. By going about our normal operations we both reduce greenhouse gases and provide power when people need it most.

**Mr BILLSON**—That is why I am throwing this idea to you. I think we all

understand that. Our real world dilemma is: how do we recognise that in a scheme that does not cause everybody else in the nation to pack up their bat and ball and go home, but which, at the same time, tries to recognise the virtue that you guys have in a way that helps you, helps the government and is defensible to the broader private sector?

**Mr Sharp**—Can I just make a couple of points on that. I agree with the principle of what you are saying. In fact, the debt reflects a certain amount of what you call the sunk costs, which have not quite been sunk yet because it has been investments at a 70-year time frame, so there are significant ongoing costs associated with the initial purchase of the scheme. To repay some of that in one form or another is an effective recognition of those externalities.

The second point in some mitigation of what has seemed like a fairly strong point that you are making, Mr Billson, is that in our current corporatisation scenario some of our costs of business have now been externalised. We have significant additional costs in terms of water licence fees and operating in national parks, et cetera. We have to accept that we will bear now in one slug the additional costs which were previously externalised. I suggest that part of this internalising of a benefit is fairly much in parallel with that.

**CHAIR**—Could I go to left field and talk about an area where I think you people can probably be of great benefit to Australia and where you might be able to get some external income, which I do not think you would be averse to. I would like to come back to the clean development mechanisms because I think they open up big opportunities for countries like Australia. I have great faith in our technologies and our innovation in this country. An area in my former life that I had a bit to do with was the four Asian countries of Laos, Vietnam, Thailand and Cambodia, who have been dealing with the Murray-Darling council now for some time to try to manage the Mekong River.

The big advantage for Laos, in particular, which is a very, very poor country, is that they have this enormous electrical potential where you do not have to build dams, you just have the flow of the river. Surely, people like you have the expertise to go there—and we already have a foot in the door because we are dealing with these countries at the present time through the Murray-Darling council—and help with the technologies that are necessary to generate electricity for Asia.

**Dr Williams**—I would probably draw a distinction first of all between the Snowy Mountains Engineering Consulting business and the Snowy Hydro. I think any business would welcome the opportunity to diversify into new markets where its own strengths are actually requested and valued. I dare say there is an opportunity for Australian businesses there. I would add that no doubt Snowy Hydro might be at the forefront of some of those businesses to make the most of those skills. I think that ultimately it would be dependent upon both the strategic outlook and the willingness of its stakeholders to invest that would ultimately determine our ability to do that. It would not be inconsistent with our view to diversify the business in environmental management areas.

**CHAIR**—I was more or less looking at that position where you said we had to run hard to stand still, and I accept that. But I think we have to look at some of these other areas if we are going to try to get some credits on the world scene which should help us in the overall argument in terms of emissions.

**Mr Sharp**—I guess the credits will come to Australia with the money that is invested into those schemes. As you are aware with your involvement, they are of enormous potential. I am not sure whether our small company would have the investments to pick up much of those credits.

**Dr Williams**—Or the skill base.

**CHAIR**—As they say, from small acorns, big trees grow.

**Dr Williams**—Absolutely, and we would welcome any investment opportunities that are going.

**Mr Sharp**—And SMEC, with assistance from SMA people, has been working on Mekong River developments for 10 years or more.

**CHAIR**—Thank you very much for your submissions. As Mr Billson says, you are certainly in a very good position on this one.

Resolved (on motion by **Mr Billson**):

That, pursuant to the power conferred by paragraph (o) of standing order 28B, this committee authorises publication of the evidence given before it at public hearing this day.

**Committee adjourned at 12.55 p.m.**