



Transcript

The Hon Malcolm Turnbull MP

Australian Minister for the Environment and Water Resources

Australian Business Economist Function

06 July 2007

Subjects: Climate Change - the greatest economic challenge

E&OE.....

MALCOLM TURNBULL: I might start with the open letter that a number of you signed in May this year . That was the letter to The Economist relating to global warming and I just might run through the key points in that letter so that you can see the extent to which government policy is very much in line with the points that have been made.

The first proposition that was made in the letter was that there was a growing consensus that higher greenhouse gas concentration will alter the planet's climate system, resulting in significant environmental, economic and ecological damage.

Well, I don't think there is any. There is debate about everything, but the reality is from a human connection from governments all over the world that debate is over.

We have to work on the assumption that the consensus of scientific opinion is correct and that climate change is, as I have said many times over the years, a fact not theory. Global warming is not something that is going to happen - it is happening.

I have to say that anyone that is involved in water, be it as a farmer or let alone as a Water Minister, can not but be impressed that climate change is real.

When you look at some of the graphs - like the one from Perth I'm sure you have all seen, it has been published and republished but it has many counterparts - and the changes in water availability over the last decade or so, it is impossible to resist the proposition that there is a significant change to the environment that is happening in Southern Australia, at least of less precipitation and higher temperatures, which combined results in much lower stream flows.

I think you are all familiar with the reality that in the last ten years, the stream flows into Perth's dams have declined by two thirds. Now that is a phenomenal decline when you think about the growth in that city.

Then you go across to the other side of the continent and look at the Murray Darling Basin and in the Southern Murray Darling system - the Murray River and the Murrumbidgee and the Golburne. Those connected rivers in the southern part of the basin in the past water year were about 54% off the previous all time low. Now, what that means - for those of you who are interested in or make a living from volatility, is that the ratio between the highest and lowest inflows into the Murray shifted from 15:1 to 30:1 in just one year. So there it is, to make that point.

The next point that your letter made was that the future cost of doing nothing is substantial. Now that point is self evident – this letter was addressed to politicians so you have to make these self evident points.

The letter went on to say that the system designed to reduce green house gases must be flexible in order to deal with new information, the initial cost to business and consumers should not be excessive and that it must carry in-built price incentives to change behaviour over time.

I think that you would agree, when you look at the report from the Task Group on Emissions Trading, that is exactly what has been reflected in that design. I'm sure you are all very familiar with the report, but the concept of setting a long term aspirational target - a 2050 target - but still having a series of gateways along that trajectory line, which are then re-calibrated depending on the cost of technology and international developments particularly in competitive countries, is precisely or meets precisely that description.

You also said that the system should be based on tradable emission permits that are obviously fundamental to the scheme, and that it must be a market based mechanism which is naturally more efficient to produce the most efficient production, or what is called in the climate change vernacular 'least cost abatement'.

I think while people could argue about what should have been done in the past and whether an emissions trading schema should have been set up ages ago, we are fortunate to be developing and setting up our system now because we can learn from the mistakes that others have made. I am not so vain to think that Australia would not have made the same mistakes that the Europeans made had we set up an ETS five or six years ago.

So there is the core, or the central part of our response to the need to reduce green house gas emissions from Australia, and it's founded very much along the lines of the letter that many of you signed. I'm sure that is gratifying and it shows that the Government listens; that there is always a ready ear for sound economic arguments and common sense.

Let me turn now to the bigger picture and really ask or pose the question - what are we seeking to do here? What is the real challenge? I think that a lot of people in their anxiety about climate change forget what the real objective is. I think that in politics, as in business, as in anything else, you need to know what you are seeking to achieve.

What we (that is to say, the humans inhabiting this planet) need to achieve is a reduction in green house gas emissions by the middle of this century of a massive order. Now there are different percentages sighted but let's say, for arguments sake, that we are looking for a reduction in green house gas emissions by 2050 to a level equal to 50% of 1990 levels. Some of you may have different numbers in mind but that is the type of the level of reduction.

So, what does that mean and how easy is it to get there? Well, in this very good report there is a very good graph, which you may have seen. I should have a power point but I always associate people with power points as people trying to sell me things; it comes from being an investment banker. Now, that is a graph which shows the sources of all the world's emissions, revealing how much comes from agriculture, how much comes from fugitive emissions and how much comes from types of transport where low emission fuels are not immediately apparent, aviation for example.

The enviable conclusion is that to achieve that type of reduction by mid century, the world will have to be generating all, or almost all of its electricity or stationary energy (which is more than electricity), through zero emission sources and most of its transport energy as well, through near zero emission sources.

That is the scale of the challenge. So, if you want to set the world a target that people can readily understand, we are talking about a massive change - change that is comparable in the scale of the undertaking to the industrial revolution or, in our own lifetime, the information revolution.

A massive transformation in the way the world operates needs to be done globally, and that is the other issue. This is where, if I may - I don't want to introduce too many partisan notes at such a distinguished gathering - but this is where the Labor Party completely failed to understand either the environmental reality of climate change or the economic implications of it. It is fascinating to me to be debating my opposite number on this topic, Pete Garrett, in the NPI in the house as he has never come to grips with any of these issues and indeed seems to be moving further away from what this challenge is about.

The first thing that we need to understand about climate change and global warming is that it is a global problem - a tonne of CO₂ has the same warming effect if it is emitted here, or in Shanghai, or Stockholm, or anywhere in the world.

Equally, we have to recognise that if we impose costs on our own energy intensive businesses - our own carbon intensive businesses, if you like, which are material costs and countries in which they compete with do not have the same material costs imposed, then those industries will be disadvantaged and if they are producers of global traded commodities, will move offshore.

We have seen plenty of examples of this in the past. You only need to look at the way the cement business and aluminium business is moving to the Gulf - why? Because energy is cheap there. There are also plenty of CO₂ emissions as well.

Of course one of the great fallacies of assessing CO₂ emissions only on the basis of national borders is that it fails to take into account not only the global nature of the global warming problem, but the global nature of the globe.

Because if we were, for example, to impose a cost on carbon in Australia which had the effect of making Blue Scope Steel's business uncompetitive, Blue Scope Steel would still continue to be in the steel industry - they would just become steel importers and the emissions would simply be released into the atmosphere elsewhere.

Now, all of you economists have all argued at different times passionately the case for free trade. What we say about the whole free trade proposition is that countries should focus on the industries where they have a comparative advantage. Yes, the people in the t-shirt factory in Sydney would lose their jobs, but the whole economy benefits because they can buy cheaper shirts made somewhere else and they can get plenty of other jobs in a growing economy.

Now, the difficulty with applying differential rates to the cost of carbon is that this carbon leakage is matched by a production leakage as well. So, not only will you see the high carbon or carbon intensive businesses move or not be established in the place where carbon costs are uncompetitively high, but naturally you have the emissions swirling up into the atmosphere somewhere else.

Now, you are starting to see this already to some degree with the heavy industrialization of China. Under the Kyoto Protocol, China is of course treated as a developing country - I might add so are all the Gulf states and Singapore, for that matter. This definition of what is a developing country is carved into stone and no one that is classified as a developing country would ever give it up.

Now China as a developing country is producing half of the world's cement, half of the world's flat glass, 35% of the world's steel and 30% of its aluminium and 11% of the world's motor vehicles, but it only has about 6% of the world's GDP.

So the rapid rise of emissions in China, which has now overtaken the emissions of the United States, is not simply a function of Chinese people purchasing motor cars and air conditioners and televisions and all the energy intensive pertinent stuff in life that we love so much in Australia. It is because of this rapid industrialisation.

Heavy industrialization - and any of you who have studied the economic development of China would recognise that Chinese industrialisation post now was involved with light industries but has since moved dramatically into heavy industries to the point where it is exporting commodities today, steel being a good example, that only five or six years ago it was a significant importer of - is one of the reasons why China's emissions are going up.

Then, of course, the countries that are de-industrialising have their emissions going down and you can be virtuous and say, 'we are good - we are not emitting nearly as much because we shut down the steel plant and we shut down the concrete factory,' but if you are still importing steel and you are still importing cement, then those emissions are going up somewhere else.

So what, then, is the key objective? The key objective is to get global commitment, and that is where the Kyoto Protocol comes into play. I'm not here to chastise the Kyoto Protocol, but with the benefit of hindsight we would all have 20/20 vision.

The fact is that the Kyoto Protocol was built on a false premise - that being that you could make a significant impact on green house gas emissions if the only countries that were bound to cut their emissions or deal with their emissions in a material way were those in the so call developed world, or the 'Annex one countries.'

Indeed, in article 3.9 of the Kyoto Protocol, it states in subsequent commitment periods only - remember we are only just coming to the beginning of the first commitment period 2008-2012 - that only Annex one countries should be bound.

Now, that clearly can't work and so the rather politically incorrect position that the United States and Australia have taken on is one that is increasingly being shared. Countries like Japan have made it very, very clear that with the next stage of Kyoto and the next international agreement - the first substantial steps to which we hope will be made in Bali later this year - has to include meaningful commitment from all the other countries. Again, there is a very good table in here which shows that even if all of the Annex one countries were to cut their emissions by half by 2050, greenhouse gas emissions would remain substantially above today's level if the developing world, so described, were to continue its trajectory.

According to the Dutch scientific institute that published these figures, China's emissions grew by over 9% last year, whereas the US's emissions - according to this study - declined by about 1%. So you're seeing this whale in the bay.

Now, we are very focused on achieving genuine global commitment and that is why we are seeking to engage, or are engaging with all the major emitters across the board, That is, the major emitters in the Pacific Rim, where most of them are, and the Asian Pacific Partnership for Clean Development and Climate. The so called 'AP6' is a very good example of that type of engagement.

Most importantly, it is focused on the type of engagement that is going to help provide the answers because again, while in an economy with relatively low growth, you can make a material impact on emissions with energy efficiency. The Europeans are focused on this and of course Australia is, in many respects, a world leader with our initiative on efficient lighting and our initiative on standby power.

But if you have an economy that is growing at the rate that the Chinese and Indian economies are growing and, in particular, if they are growing in sectors that are energy intensive, then energy efficiency can not catch up.

So the key is meeting that technological requirement of having most of your energy coming from zero emission sources. How do we do that? Well, we have nuclear energy, we have renewable energy which, in the absence of efficient means of storage, can contribute only so much to a grid connector system. They obviously have much more potential in distributed contexts.

But the biggest factor is going to be undoubtedly clean coal and that is because coal is the most ubiquitous source of energy. It is both China and India's largest in situ energy resource. So, from an energy security point of view, that will be the mainstay of their energy generation for many years to come.

And so that task of reducing the emissions from burning fossil fuels is a critical one, and I'm pleased to say that Australia, through the support the Australian Government has given - that the Howard Government has given particularly through the Low Emissions Technology Demonstration Fund, is playing a world-leading role in developing and demonstrating the techniques that will show how coal-fired power stations, or indeed gas-fired power stations can capture their Co₂, either pre- or post-combustion, and then store it under the ground. That is a vital challenge.

Now, in terms of the overall economic picture for Australia, there is a tendency to argue or contend that this adjustment for - this de-carbonisation of the world's economy - is the one that can be achieved easily.

I think it's evident that it can't be, that it won't be achieved easily. You only have to look at the countries committed to the reductions and targets in the Kyoto Protocol itself. There are only a handful of countries - developed countries - that will meet the Kyoto Protocol target that have not had the benefit of being able to incorporate the dramatic cuts in Co₂ emissions occasioned by the fall of the Soviet Union. I mean, Germany obviously absorbed East Germany. The benchmark date, if you recall, was 1990. When West Germany combined with East Germany, a whole smoky inefficient sort of rust belt industrial base was shut down and resulted in, of course, a dramatic drop in emissions. And naturally, the same goes for pretty much all of the eastern bloc.

The only developed countries that don't fall into that category and that will meet their Kyoto targets under their own efforts aside from Australia is Sweden which, of course, has a high percentage of hydro and nuclear power; and the United Kingdom, which had its own structural readjustment. Although, the United Kingdom was coming from the other side of the political spectrum when Mrs Thatcher in effect moved Britain from a coal fired energy economy to a gas fired one, consequent upon the happy circumstance - from her point of view, of successfully taking on the coal miners on the one hand and being able to tap into North Sea gas on another.

You may have seen that yesterday I responded to some of our critics. We get groups like the Climate Institute, or indeed people in the Labor Party saying that Australia is going to miss its green targets, its Kyoto target by one or two per cent. Now, we are on track to meet our Kyoto target and we expect to do so. We're tracking very well to do so, and I emphasise that. We will not, and do not concede that we will miss it at all. We will get our Kyoto target, but Spain will miss its by 36 per cent, Austria by 27 per cent, Canada by 45 per cent - plus they believe that the target for them is completely unachievable. And so it goes on - New Zealand, Japan; all are going to miss their targets by very big numbers.

So, when people say reducing greenhouse gas emissions is easy, it's important to bear in mind that we do have a set of targets set to 2012 and Australia is one country that is going to meet its target. That is an achievement for which there is, I think, very little adequate recognition given.

Let me wrap up and throw the floor open to you. In summary, the Government is extremely focused and very committed to dealing with this issue. It is the greatest economic challenge of our time. We are moving into unknown territory in many respects. Our ability to make these greenhouse gas reductions is contingent upon commercialising and deploying all over the world technologies that are yet to be developed. So that's the scale of the challenge, but it is one we must meet.

We should not imagine that this is costless for Australia. It will be costly and even if the whole world were to act tomorrow and there was a uniform price of carbon around the world, it would still be relatively costly to Australia because we have a very carbon intensive energy base. We have a lot of industries which are based on cheap energy and that is carbon intensive. We are not like France, which can generate 80 per cent of its stationary energy from nuclear power. Nor are we like Brazil with a massive hydro-electricity resource. We don't have that.. We have a coal-fired economy in many respects, and that which isn't coal-fired is gas-fired. So that means it will be costly for Australia any which way. But the idea that we can impose on ourselves massive carbon costs regardless of either the cost - the actual technological cost or what is happening in competitive countries - is naivety of the most dangerous kind. And that is precisely what the Labor Party has committed itself to. A 60 per cent cut in emissions by 2050, no matter what.

Now that will have - could have, assuming Labor are able to do it, a devastating effect on our economy unless other competitive countries were to take a similar approach. And that, of course, is why, consistent with the very sober and common sense sentiments in the open letter of May from The Economist, the Emissions Trading Taskforce has recommended, while nonetheless nominating a target, to have a carefully calibrated set of gateways. These gateways will have sufficient flexibility, both in terms of setting the interim targets and hence, by definition, the cost of carbon. Such will be done in a way that is flexible and at the same time provide appropriate protection for trade exposed industries because in the absence of that, we will simply export the emissions to no avail and export the jobs and prosperity as well.

This is one of those occasions - probably the first occasion, where the world has to act as one. Everybody has to be in this. We have to recognise that all of the major emitting countries have to be party to it and that recognition, I have to say, is one in which the Australian Government is playing a leading and very constructive role. We are engaging internationally everywhere. We are engaging through the UN forums, we're engaging through the AP6 and in terms of immediate action - something we can do right now, we are taking a leading role in the global initiative on forests and climate. What we are seeking to tackle is no mean feat, no mean challenge: the second largest source of greenhouse gas emissions which, of course, is deforestation.

But it is something that can be addressed without any new technology, although the problems of governance and political problems associated with that are, in their own way, just as daunting as the technological challenges associated with moving towards a decarbonised energy world.

So thank you very much and I look forward to your reflections and questions. Thank you.

[Applause]

FACILITATOR: Thank you, Malcolm. We will now have questions. Anyone liking - wanting to ask a question please come up to the microphone up the front here and if you could give your name and affiliation when you ask your question as well please.

MALCOLM TURNBULL: Who's going to be brave enough to step up to the mic first then?

QUESTION: I'll get the ball rolling. Malcolm, it's very depressing to hear you say that whatever we do if the Chinese don't really seriously address their problem then it doesn't really matter for our environment. Would it not therefore make some sense that the costs dedicated to our economy to

achieving the goals that you're talking about should be more directed towards research and technology to help the Chinese with their problem that would of course also assist the [indistinct] and there'd be a number, such as research technology, encouraging the development of Roxbury Downs et cetera.

MALCOLM TURNBULL: Well thank you Bill, and it - well indeed that's exactly where we are focusing our development - our dollars - the - all of the LETDF projects have got an international dimension. Probably the best one to highlight is the project at - in the La Trobe Valley with, between HRL, an Australian research, you know, energy company and the Harbin Power and Light Energy Utility from China to, in effect, clean up brown coal.

Now, everything's relative, but there are some projects that are probably better called clean-er coal rather than clean coal. This is in the clean-er coal category, but it involves drying and pulverising the brown coal in such a way that its Co2 emissions are more like that from black coal. Of course, you know, Victoria's energy base is brown coal, so that's a very good example of collaboration.

We're also working actively with the Chinese on capturing methane emissions from coal mines, obviously underground coal mines. And, indeed, I just gave an award to an Australian company that we've worked with very productively in that area called Envirogen today, through our greenhouse program.

So you're absolutely right. When the history - you know, there's nothing worse than politicians predicting what the history books will say, and I've made plenty of bad predictions, but I suspect in the future it may well be that the most important thing we contribute globally to, apart from the leadership on initiatives like forestry and others and energy efficiency, but probably the most significant thing we can contribute is the technology that allows a country like China to retrofit its enormous coal fired power station base to capture those emissions and store them under the ground.

OFFICIAL: While we're waiting for more people to set up some microphones, just a question on the detail of the last [inaudible] for Malcolm to - my understanding is that they've basically recommended permits that would be issued in relatively limited [indistinct], twelve months on so. My understanding is that a lot of economists think that it's good to have much longer term property rights, if you like, on carbon for the last 20 years or more in order to encourage investment so that people already benefit from the new technology and so on.

So I guess I'm just wondering whether you think it's any [indistinct] the Government is likely to adopt. I mean with your approach it's no longer being permanently based on aspirational target, if you like, topped up all the time with shorter term permits [indistinct] large economic cost to [inaudible].

MALCOLM TURNBULL: Well, you're, Rob, you're, I think, referring to Warwick McKibben's model, which has the idea of long term permits which would represent, if you like, your long term target, and then the balance being intermittently issued, slash, auctioned on the way through. But that is another approach.

I feel the approach the task group has recommended is a good balance. Certainly Warwick's been very positive about it. And I mean it owes a large amount to his work. He, you know, he is entitled to claim a fair bit of credit, intellectual credit for this.

I think the - in terms of certainty, you know, there's no - all of you here, the last thing you want is certainty. What would we do with economists if everything was certain? Your job is to measure and predict, you know, outcomes in an uncertain world. But I think there will - I think once the system is set up, and in fact it will become apparent once the aspirational target is set next year, and that, oddly enough, again is a good time to set it, because in an international context, and I should have mentioned this, in an international context one of the big breakthroughs this year was the decision of the American Government, the US President, to take a leadership role in bringing together the 15

biggest emitters, which includes Australia, with a view to agreeing on a, sort of in a consensual way on a long term target.

And that will be - that is 15 countries that represent, you know, 85 per cent of global emissions. So it's the - that's the key group. And that approach, which is something we've been championing and arguing for, for some time, will then provide a global context in which we can set our own target. But the key price, and again you all know much more about this than me, the key price will never be the spot price. That'll be of interest, and people will make money out of that, no doubt.

The key price is the long term price, because this is like a bomb. I mean ultimately you will - people that are making decisions to build plants, to invest, you know, be it an LNG plant or be it an open up a coal mine or build a power station will be making decisions on assets that will have lives of 20, 30 plus years.

So it's the long term price which is where the market will set that, and that will be affected both by the, you know, mid term calibrations contemplated in the task force report, and, of course, the cost of technology. You know, if you go, if you talk to a clean coal expert, and I've spent a lot of time talking to these people and listening to them, the - you know, the range of what it will cost, post-combustion to capture a tonne of Co2 and put it under the ground, the range is enormous. You know, you're talking from, you know, \$20, Aussie dollars a tonne, some estimates have it well over \$50 a tonne. Now, that makes an enormous difference, and it's only - because that is why we're pouring so much money into getting demonstration plans up, because you're only going to know what it's really going to cost once you're doing it.

And once it's demonstrated then our view is that the role for government starts to recede and of course the market takes over, as it commercialises.

QUESTION: Malcolm, Graham [indistinct]. Question, you talked a little bit earlier about the consequences of incorporating a carbon trading or carbon tax effectively in Australia. I think broad-based consumer consensus would be that we accept that there is a cost to doing this, and you're seeing that in the form of people taking green energy, and there's reasonable numbers in that these days.

So one of the issues that it then gets down to is imports versus domestic production. Has there been any discussion, and my economist colleagues will probably shoot me, about putting a sort of carbon tariff or carbon surcharge, as everybody likes to call them these days, in terms of from, you know, products that come from developing countries vis a vis OECD countries?

MALCOLM TURNBULL: Well, there's a lot of talk in France of imposing a carbon tax on Australian wine and Australian and New Zealand lamb and butter, I can assure you. The Europeans never miss the opportunity for a bit of tariff, you know, for a tariff by any other name. No, this is a very serious point, really. This issue of food miles is one which we have to be very careful about, because whichever way you look at it, every - whether it is inbound tourism to Australia or outbound exports, you know, there is a transport cost, an energy cost associated there with by reason of our distance from many of our markets.

And that will be used - I mean, again everybody tries to gain these systems to their own advantage, and I think somebody once said that the problem that Australia has with so many of these international agreements is that we actually try to abide by them. But there is a degree of gainsmanship going on, and this food miles thing is something that we, I think, we of all countries should be very careful about.

Now, the point you make about a carbon tax, the frontier has enormous implications for, you know, from a WTO point of view, but it's something that certainly is kicked around. But I think from Australia's point of view we would be better off, if you like, compensating the trade exposed

industries, which is what we contemplate in this report. That, of course, means that the rest of the economy has to pay a higher price for the reduction, no question.

I think we would be better off doing that than encouraging carbon taxes at the frontier, because I don't think that is going to be something that will be beneficial relative to us. I think our - those who, you know, don't see a healthy Australian economy as top of their priorities, I think, will be more attracted to that approach.

We are focusing our development - our dollars, the, all of the LETDF projects have got an international dimension. Probably the best one to highlight is the project at - in the La Trobe Valley with, between HRL, an Australian research, you know, energy company and the Harbin Power and Light Energy Utility from China to, in effect, clean up brown coal.

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So one of the issues that it then gets down to is imports versus domestic production. Has there been any discussion, and my economist colleagues will probably shoot me, about putting a sort of carbon tariff or carbon surcharge, as everybody likes to call them these days, in terms of from, you know, products that come from developing countries vis a vis OECD countries?

MALCOLM TURNBULL: Well, there's a lot of talk in France of imposing a carbon tax on Australian wine and Australian and New Zealand lamb and butter, I can assure you. The Europeans never miss the opportunity for a bit of tariff, you know, for a tariff by any other name. No, this is actually a very serious point, really. This issue of food miles is one which we have to be very careful about, because whichever way you look at it, every - whether it is inbound tourism to Australia or outbound exports, you know, there is a transport cost, an energy cost associated there with by reason of our distance from many of our markets.

And that will be used - I mean, again everybody tries to gain these systems to their own advantage, and I think somebody once said that the problem that Australia has with so many of these international agreements is that we actually try to abide by them. But there is a degree of gainsmanship going on, and this food miles thing is something that we, I think, we of all countries should be very careful about.

Now, the point you make about a carbon tax at the front here has enormous implications for, you know, from a WTO point of view, but it's something that certainly is kicked around. But I think from Australia's point of view we would be better off, if you like, compensating the trade exposed industries, which is what we contemplate in this report. That, of course, means that the rest of the economy has to pay a higher price for the reduction, no question.

I think we would be better off doing that than encouraging carbon taxes at the frontier, because I don't think that is going to be something that will be beneficial relative to us. I think our - those who, you know, don't see a healthy Australian economy as top of their priorities, I think, will be more attracted to that approach.

QUESTION: Lewis South (*) from Macquarie Funds Management. I detected - or maybe I was wrong in this - but I detected a little bit of a step back maybe from sort of previous notions that we'd had from the Government in terms of an emphasis on nuclear power. I was getting from you more a sense of this clean coal that's been the far bigger issue at the moment. I'm just wondering the extent to which nuclear is going to be an issue in this debate moving forward and certainly the Prime Minister has made it an issue. How do you weight that up then with the point you made about it in terms of water flows and water scarcity in a situation where nuclear power is such a heavy user of particularly clean water?

MALCOLM TURNBULL: Well as you know, in terms of a coolant, there are gas cooled, you know, there is gas cooled technologies. I'm not a nuclear engineer, needless to say, any more than I'm an economist, but there are techniques for cooling nuclear power stations which do not have a heavy use of water at all. So the water - that's a technological issue.

I think the point about nuclear power really in short compass, brief compass is this nuclear power represents 15 per cent of the world's electricity. It is a zero or near zero emissions energy source. Now we need in my view, by 2050 to have 100 per cent of the world's electricity coming from zero or near zero emission sources.

It is difficult to have a - to be regarded by, I think any rational person as being serious about that and then take nuclear power, which is one proven zero emission or near zero emission source of energy off the table, and again this is the absurdity of Labor's position on nuclear energy. It now accepts mining uranium, the demand for which is driven by what? An increase in construction of nuclear stations. What is driving that? Greenhouse issue.

Now having said that, in answer to the question, should we have a nuclear power station in Australia, or will we have nuclear power stations in Australia, I would say we should not have any institutional or political obstacles to them, but whether they make sense economically will depend on the cost of competitive comparable low emission technologies.

So if you take the view that if clean coal is going to be cost effective, it's going to be cost effective in Australia, it may be that when a utility is looking at a low emission options, clean coal will be cheaper than nuclear energy, in which case there may be no nuclear power stations in Australia at all.

In countries which have to import all of their fossil fuels and don't have - and you know, don't have that asset, that endowment, that natural endowment we have, obviously nuclear energy is going to be a much greater attraction. So it's got to be an option.

I often give the analogy of water, you know, when you talk about cities running out of water, which we're not talking about so much in Sydney nowadays because it's rained but, you know, some people say you can never have desalination because it uses too much energy. All right, scrub that off the list and you can't recycle waste water because we don't want to have - you know, we don't want to be having toilet to tap, you know, that's too yucky. All right take that off the list. And we

don't want a dam, new dams because that interferes with the environmental qualities of the rivers. All right, dams off the list. And you say, well what's left? The only option left is, you know, putting a water tank at the back of your house, perhaps, I mean it is - that's the folly I think of removing legitimate options from the table.

So our position on nuclear is it's real, it's there, it's a significant part of the world's energy source. It's going to be bigger. It must be an option for Australia. Will it be deployed? And again, I'm betraying my background as a business person. I would say it depends on the competitive economics.

QUESTION: Rick Backhouse from BT Financial Group. I've actually got a couple of questions for you. You touched on China, large emitters and so forth and one of the - I suppose one of the things that I look at when you gave us some examples of engaging with particular companies from, say, China, that can it be seen, given that the western countries have been benefiting since the industrial revolution from emissions, that it's rather patronising of western countries to then turn around and make these sorts of comments that they need to cut their emissions. I mean certainly that's - that seems to be the view from some of these developing countries.

Second, or related question is - you gave some examples of engaging particular companies. Are we engaging with them on a national basis or is it just China's obviously centralised economy but are we engaging with individual companies as opposed to China on a national basis? And another question I have which is probably...

MALCOLM TURNBULL: Hang on, just one second. Carbon imperialism was the first one, second one was sectoral approaches. What's the third?

QUESTION: The third is obviously you probably would have seen the comments made by Michael Costa recently regarding Tim Flannery. How does the Federal Government engage with seemingly ignorant but very powerful and influential people in terms of climate change issues? And obviously the Murray basin with the water is a good example.

UNNAMED SPEAKER: Go Tim.

MALCOLM TURNBULL: Well I think those of us that have to - that live or die on the extent to which we can persuade other people to agree with our point of view, deal with everybody be they ignorant or even just seemingly ignorant as courteously and gently as we can. Costa made a fool of himself with those remarks about Flannery. Tim Flannery's a very good and old friend of mine, and Lucy's, and he's - I don't agree with everything Tim says. He doesn't agree with everything I say probably but he's made some great insights. I think some of his books have made an enormous contribution. You know, he has the great facility, Tim does, of being a superb writer. I think his first degree was in English literature actually. But not many graduates in English literature can write as well as Tim can and he's just a phenomenal communicator.

Now our global initiative on forests and climate which is really going to - which will be the leading issue at the Bali talks. Forestry and deforestation are now at the top of the agenda in the climate change debate. We're having a big global conference here in July on it. It's an enormous opportunity and I could have talked about it at great length today but I figured you'd rather be talking about this stuff.

Tim had - Tim and I spent a lot of time talking about that and he's had a - you know, he has a lot of influence on - as do many other scientists - on our thinking on these issues. So I think he's a very smart fellow and he writes like an angel too which is helpful, even when he doesn't agree with us.

Now, the second point you raised, the sectoral approaches. Yes, the answer is we do deal at a sectoral level. There's a great deal of potential in that and particularly through say, in the aluminium sector, through the AP6. one of the ways of tackling this, these problems is by improving energy efficiency, you know, cleaning up industries, if you like, on an industry wide basis and sharing the

technology to do so and there are a number of industries, obviously we all understand, you know, electricity generation, you know, coal fired power stations, but there are, you know, glass manufacture, cement - there is a big sectoral movement on cement, which again is a key part of the AP6, aluminium and other and so forth. So yes, we are dealing at those levels as well.

I mean China is not that much of a centralised economy, I have to tell you. I think China - you know, one of the - I refer you to the very good report, which many of you have probably read. I think it's now available on the web via the Peterson Institute, slash, Centre for International Economics, on China's energy needs. Very interesting. Just about the - you know, it's where I've drawn some of these numbers about the heavy industrialisation of China.

But what is very interesting is the number of firms. See if you, if you go to Europe or you go to the United States and you say how many steel companies are there, there's a handful. How many big cement companies are there? A handful. In China, because the country has become so decentralised you have got steel plants and cement factories and glass factories, almost in every town, in every county and of course this is going to be one of the challenges in terms of the sectoral engagement, because you can't just sit down with three firms in the aluminium - well the aluminium is - but that's not as distributed as the others. But you can't say, sit down with three firms in the cement sector and say, right I've got 80 per cent of the business here and we can clean up the other smaller ones later. So that is a challenge.

MALCOLM TURNBULL: But you can't say, sit down with three firms in the cement sector and say, right, I've got 80 per cent of the business here, and we can, you know, we can clean up the other smaller ones later. So that's - that is a challenge.

Carbon imperialism or you know, patronising developing countries, look, that saved - that's a point that Peter Garrett put to me the other day in an MPI and he said, what about our emissions per head of population? Well, what about them? You know, the reality is we do have high emissions per head of population. That is partly because of our living standards, but partly because we have in large measure, because we have a number of energy intensive export oriented industries. You know, all of those emissions from the north-west shelf gas plant are a consequence of selling gas to the rest of the world.

So we emit tonnes of CO₂ or a... you know, equivalent gases at - up on the, you know, Burrup Peninsula, up in the Dampier Archipelago there, the north-west shelf, and we - and that gas goes off shore and is used to reduce the emissions of other countries, b... assuming they use it to replace the coal fired power station. So this again, is the fallacy.

This is again, where Garrett, you know, frankly has no understanding of the global nature of this problem. Now there is no doubt that there is a share... that the share of greenhouse gases, human produced greenhouse gases resonant in the atmosphere today, has a greater proportion from the developed world than the current annual rate of emissions is represented by, if that makes sense, because we're emitting more when standards of economic development were lower in those countries. But - and that no doubt, will get reflected in whatever global deal can be done.

But I come back to the fundamental fact that you cannot achieve the massive global reductions in greenhouse gas emissions if you continue with the Kyoto false premise, set out succinctly in Article 3.9, which is that developing countries don't have to be part of the emission reductions. That cannot work, you know and c... I could, again we can talk about the clean development mechanism if you like. Again, another classic case of a failed - of a strategy that's actually worked to subvert the overall objectives of the program.

So you know, you can - though, it's not a question of being patronising or, you know, anything of that kind. You will not get there and this - you know, anyway, there's a good chart in here. Lots of good charts in this book, but a good chart in here that shows quite graphically, the hopelessness of the mission if you do not include the major emitting countries in this program - and of course, if

you don't, all that happens is, the developed world becomes deindustrialised and more of a service based economy and all everybody is doing is running investment banks and accounting firms and you know, and hotels and retailing and so forth.

Well, all we're doing is service type industries, of course we're not going to be emitting so much. All - but all we're doing is outsourcing our emissions. And net benefit to the world, no benefit at all. Okay, yes. Perhaps, the lady in the red top there.

QUESTION: [Indistinct] from Citigroup. Malcolm, you talked about setting the long term target...

MALCOLM TURNBULL: Yeah.

QUESTION: ... in conjunction with international discussion. How do you see setting of the first shorter terms target, I imagine for about 2020 or so. And how do you see that fitting with what we don't know at the moment for example, on how long it may take to commercialise carbon capture and storage, so whether a target will be set that will really seem to pull through and stimulate...

MALCOLM TURNBULL: Yeah.

QUESTION: ... and accelerate technology development, or whether it will be, oh, we don't know about that. It's sort of too hard so we'll set an easy target for 2020 and we'll wait till some time later to sort of, set a target that really pulls through actual sort of, engineering action and so on, to cut emissions.

MALCOLM TURNBULL: Yeah, well thank you. I think that's an extremely good question. And like all good questions, not susceptible to a slick answer. The premise both in The Economist's open letter and in this report is that there should be a, if you like, a gentle ramp up, obviously to reduce the early costs that the hardest shocks, early cost shocks and also to recognise that you know, we're reasonably entitled to expect that technology costs will come down over time.

There is, I'd say in answer to the concern you've expressed which is that if the implicit carbon cost is too low at the outset, you won't get the shift to lower or zero emissions sources of energy, and this is of course, an argument put in favour of an extension or an increase [indistinct] for example, from the renewable sector. I think I'd say in answer to that, the key price will be the long term price. And people like yourself will have to form a view about that and firms will have to form a view about that.

The second thing I'd say is that there are - there is a lot of low hanging fruit, which can be achieved, much of it actually with a negative net cost. So it's to say it's saves you money, this is particularly in the energy efficiency area, which of course is, you know, the old efficient light bulbs is a good example of that. But there's a very good table for those of you that want to populate your PowerPoint presentations by the Swedish energy company, Korsetvattenfall [sic] or Vattenfall - anyway, it begins with V - but a very good chart that shows on the vertical axis, the cost of emission reductions. So positive cost, negative cost, ie negative saves you money.

And then quantum of greenhouse gas savings on the horizontal axis, and you start off with the low hanging fruit here - of course, this is Sweden, so insulation's a [laughs], is a big element. And then you know, you move up and as you get into, you know, the more undeveloped technologies, the cost becomes higher. So I think in the early years, the focus is going to be there. That's why we've targeted energy efficiency and again, we have to partner with the states in that regard, and there's a lot of work being done through, you know, the various COAG forums on that, particularly in respect of building design. But we have the light bulbs, we have the standby power, but then, I think perhaps most significantly in terms of early action globally, you've got forestry.

Bear in mind, one of our comparative advantages in addition to having lots of coal, is having lots of land. And we have made carbon sink forestry tax deductible in the year of investment, now as an

additional stimulus. There will be a lot of trees planted, as carbon offsets in the years ahead. And I had an interesting discussion - I'll just wrap up on this - an interesting discussion, economic discussion with a renewable energy generator today, who said to me that the - for a wind farm completed last year, their contract price was \$45 a megawatt hour, plus a REC, you know, equivalent of about the same again. So in effect, they've got to get \$90 a megawatt hour to make that plant pay, which is more - you know, which is double - you know, more than actually more than double the price of a, you know, of contract that you would sign if you had a coal fired power station.

And he said, m... he said you me, he said, our concern is that with emissions trading, in the early years, the people won't be investing in renewable energy, they'll just be planting trees because it's a lower cost of abatement. And I said, ah ha [laughs], you've got it. Because that's the whole reason you have emissions trading, is to have lower cost abatement.

But we do have to recognise, nonetheless that the low hanging fruit, you know, in this imaginary graph I've just outlined, comes to an end, or becomes more costly. And so the - I think notwithstanding the early cost will be lowish, or lower, people will be focused on the higher costs, the higher long term cost, the long term price, you know, the 30 year carbon price, and that will be driving them to focus on the zero emission or low emission technologies.

So thank you very much.