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Garnaut Climate Change
Review Update 2011

Compere: Maggie Abernathy, University of
Melbourne

Speaker: Ross Garnaut

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MAGGIE ABERNATHY: Colleagues, students and members of the public, I am welcoming you on behalf of the University tonight. Our Deputy Vice-Chancellor Academic was supposed to do this welcome, but she is caught up in Perth due to the volcanic ash. So I'm not only going to welcome you, but I'm also going to have the pleasure of introducing Ross.

My name is Maggie Abernathy and I'm Dean of the Faculty of Business and Economics. So, on behalf of my colleagues from the Vice-Chancellor's office, the Melbourne Energy Institute, the Melbourne Sustainable Society Institute, it's my great pleasure to welcome you to this public lecture by Ross Garnaut.

On important occasions like this at the University we always take the time to acknowledge the traditional owners of the land on which we stand, the Wurundjeri people of the Kulin nations.

Now, before we start tonight I'd just like to make a couple of security remarks. This is an open forum. It's an academic public lecture given by a very esteemed professor of the Faculty of Business and Economics and the University. Bad language, personal attacks on an individual, shouting out of turn and derogatory remarks are not welcome.

In case of emergency there's two exits to the theatre; one at the front here and one at the back. May I also ask everyone to be aware that the event is being recorded and live streamed. So please be sure that all mobiles and pagers are turned off. I'll give you a minute to do that. I hope I turned mine off.

So tonight we are going to hear an important lecture from a significant public figure on the pressing concern of climate change. Can I say that the University takes great pride in such occasions because they offer us an opportunity for academics to fulfil one of the most important missions of the University, which is to be an active participant in a public conversation about matters of concern to the public, to the economy and to the society at large?

We have many other occasions occurring regularly, particularly this week, which is the week of the 2011 Festival of Ideas. I hope you're able to participate in some of those activities.

So in tonight's lecture, which will have - Ross has informed me that he is going to keep it to 35 minutes so that we have twenty to twenty-five minutes for questions. It's going to follow on the climate change report that Ross wrote in 2008 and the review that he published in May of this year.

Now, I'm going to try to summarise for you a little bit about Ross, Professor Ross Garnaut. And, again, I could probably take as much

time as his lecture's going to take, so I've had to edit my remarks down to a few highlights.

As you know, Professor Ross Garnaut is an economist whose career has been built around the analysis of and practice of policy concerned to development, economic policy, international relations in Australia, Asia and the Pacific.

He has held senior roles in universities, business, Government and other Australian international institutions. He is currently Vice-Chancellor's Fellow and Professorial Fellow in Economics at the University. He is also Distinguished Professor of Economics at the Australian National University.

In December 2009 Ross was awarded the Honorary Doctor of Letters from the Australian National University. He was head of the economics department and division of the Research School of Pacific and Asian Studies at ANU for over a decade. He's played leading roles from the mid seventies until 2009 in building ANU's capacity in research and graduate education in the region.

He's been an author of many papers - very distinguished papers, publications. He's influenced Government policy. He's been an advisor to the highest level. He's held positions as chairman of boards of large Australian and international public companies continuously, as well as having such a prestigious and successful academic career.

As you know, in 2008 he wrote the Climate Change Review, and in November 2010 Professor Garnaut was commissioned by the Australian Government to provide an independent update to that review. He's also an independent expert advisor to the Multi-Party Climate Change Committee. The Garnaut Climate Change Review is, I believe, going to be at the heart of what Ross is going to talk to us about tonight.

And without further ado, I would like to welcome Professor Ross Garnaut to the podium.

[Applause]

ROSS GARNAUT:

Thank you Maggie, and thanks to the Faculty of Economics and the University of Melbourne for welcoming me to a new intellectual home a couple of years ago, as part of Jayne and my relocation to Melbourne. That has been wonderful. I appreciate Maggie and Deborah and the Vice-Chancellor's support when, again, I asked to be absent for an extended period to immerse myself in a climate change policy review update.

Last night I was part of a large meeting in Latrobe Valley, and was warned by the host that there might be some unfriendly communications, but it turned out to be warm and constructive. So here, in my new intellectual home I'm expecting it to be warm and constructive; so it can only be better from there.

We're in the midst of a great struggle about whether Australia should encourage and do its fair share in an effective global effort to reduce the dangers of climate change. It's a struggle over policy between special interests and the national interest.

The conflict is not new. Indeed, it is always with us, and always will be. But there are periods when the special interests have had the strongest hold on policy, and others in which policy making is strongly grounded in the national interest.

In this context we have to recognise, I think, that the current Government has taken on the most difficult and long-dated policy reform that has ever been attempted. Parts of big business have taken on the role of spoiler. The outcome of the struggle will depend on whether we are able to rebuild an influential role for an independent centre of our political community which elevates the pursuit of the national interest above the claims of interests that see themselves as being negatively affected by mitigation.

There is no reason why carbon pricing should be a matter of partisan political division in Australia. In much of the world - perhaps everywhere except Australia and the United States - concern for global warming is a conservative, as much as a social democratic, issue.

The conservative governments of Germany, the United Kingdom, France and the Republic of Korea are playing important global leadership roles. And many of you will recall that it was a conservative leader - Margaret Thatcher in the United Kingdom - that first made this issue a big issue on a European policy agenda. And it's been a central concern of British leaders of Labour and Conservative persuasion ever since.

Even in the United States the most effective political leadership on climate change has come from a Republican governor of California and a Republican mayor of New York.

A concern to avoid dangerous climate change fits naturally within the Conservative tradition. It may be rational for the radical to risk the institutions of human civilisation in a throw of the climate change dice; just as Lenin saw merit in inflation in the capitalist economies. The radical may hope that the outcome will open the social and political order to new shapes. It is strange for the conservative to embrace such risk.

It has been suggested by a couple of people that my work became politically partisan when, on one occasion, I used the term ignorant to describe some reported views of an Opposition political figure. Thankfully, those views had been repudiated by their author by the time of my comments, and I was happy to make it clear that my description was not applicable to the updated views. Those views have been upheld since that time. So there was no suggestion at the time, and there has been none since, that that figure's current views were or are ignorant.

The reality of the independence of my judgements on climate change policy is clear from the public record over more than four years. In early 2007 I was asked by all the Premiers and chief ministers of Australia to prepare a review of climate change policy and to make recommendations in the national interest. The terms of reference required me to exercise my independent judgement.

A bit over three-and-a-half years ago the Commonwealth joined the exercise, so that my independent review was prepared for all of the heads of Government of Australia. With an excellent secretariat based in Melbourne and Canberra I set out to work through the range of scientific and economic issues relevant to the analysis. The logic and information on which I relied is transparently available in daunting detail on the review's website.

Three years ago I was contributing ideas and policy proposals to a bipartisan effort to build Australian climate change policy in the national interest. My recommendations three years ago were broadly consistent with what became Opposition and Government approaches to climate change policy.

Nine months ago I was asked to update my 2008 review for the Government and to act as an independent advisor to the multi-party committee on climate change. I took the same open mind to the update as I had taken through the 2008 review. Regrettably, I have concluded that the case for Australia taking firm action to reduce greenhouse gas emissions within a global effort have been strengthened by the advance of scientific knowledge since the original review.

Regrettably, because it would have been very nice if further scientific evidence had suggested that the earlier conclusions from the science had been overdrawn. Unfortunately, the opposite is the case. The extensive research and analysis carried out by my team and I in the update has not fundamentally changed my conclusions about the relative merits of regulatory and market based approaches to reducing emissions; so that part of my recommendations has been confirmed as well.

My views on the fundamentals have not shifted since I was contributing bipartisan ideas to a bipartisan challenge less than three years ago. It may appear non-partisan for some people to change their views on fundamental questions of science and economic policy when a leader of the Opposition changes party policy. That is not how I look at it.

I see the exercise of independent judgement as requiring good information and sound logic to dictate the conclusions about policy, independently of change in the political firmament. Incidentally, I have received as much or more encouragement in my update work - as reflected in the papers on the website and, now, the final report from multiple figures in the senior ranks of the Liberal Party - as from equivalent ranks of the Government. And not only or mainly from people who are known sceptics about Opposition policy.

In 2008 I pointed out that Australia would be affected more by climate change than other developed countries. There's several reasons for that, but we're already a hot and dry country with many areas of economic activity, including in agriculture, close to the margins of conditions under which similar activities are carried out elsewhere on earth, so that variations carry a greater risk of pushing us into difficult territory. If it gets a bit warmer in East Anglia they can start using wheat varieties that were developed in New South Wales. But our wheat growing areas don't have types of grain already adapted to even hotter and drier climates.

Australia is also very vulnerable because, of all the developed countries, we are especially located in a region of developing countries. And developing countries are going to have especially large challenges in adapting to climate change. The problems of our neighbours will become our problems.

It's true that Australia has done well in the high carbon global economy of the past several decades. But we also have the natural resources and human capacities to do extremely well in a low carbon world economy. The natural and human resources to do well from biosequestration and geosequestration, and all of the low and lower emissions sources of energy.

The careful quantitative and qualitative analysis of the 2008 review demonstrated that it was in Australia's national interest for there to be an ambitious and effective global mitigation effort, with Australia doing its fair share. The update of the review confirmed and strengthened these conclusions.

Incidentally, in the final report I've sought to bring together the main conclusions in a highly readable way. I hope I've succeeded, and you will all be the judge. That's backed up by many detailed papers on the review's website. If it hasn't worked, then it means that I haven't met the ambitions of an early mentor of mine, Max Corden, who's been pressing me to do a simple version of the original review for some time.

If strong global mitigation is in our interests, then it's important that we do our fair share to improve the chances of effective global mitigation. I discuss at some length in the final report, and in a couple of the papers along the way, why it's important for us to do our fair share; why the activities of one country actually do matter for the global effort. I won't go into that now.

Fortunately, the public discussion over recent months has narrowed the range of serious debate, intellectual debate, about greenhouse gas mitigation policies in Australia. It is now a while since any but the fringe dwellers of Australian public policy debate have denied that there is a warming trend. Nor is there now much serious denial that there is substantial human contribution to that trend. The excellent Productivity Commission report has settled the question of whether other countries are taking action to reduce the risks of dangerous climate change.

The Productivity Commission report has also played a significant role in what is now a decisive victory for carbon pricing over regulatory intervention in the battle of ideas. Carbon pricing happens to be the low cost way of meeting national targets. But if some countries want to shoot themselves in the foot by doing things in an expensive way, they are free to do so. But in this world in which each country is reducing emissions in its own way, how do we work out what is a fair contribution from each country?

The Productivity Commission was not asked, and did not seek to answer that question. A few commentators who sought to draw an implication that the Commission's report contradicted my statement that Australia was a laggard were wide of the mark.

My 2011 review update proposes that Australia should not seek to be a leader in global emissions reductions. We are too far behind many countries for that to be a realistic aspiration. I suggest that we should aim to place ourselves in the middle of the developed countries, so long as developing countries are broadly contributing their own fair shares.

To determine what is in the middle for developed countries and a reasonable contribution from developing countries, we need some clearly defined principles for allocation of effort. I have proposed a modified contraction and convergence formula which would require gradual movement from current levels of emissions per person to equal emissions per person in the middle of the century.

This formula is consistent with emerging international approaches. It is likely to draw widespread international support, so long as it is backed up by measures to assist adaptation and mitigation in lower income developing countries. Its provision for larger entitlements with population growth makes it as favourable for Australia as plausible alternatives.

The allocation relates to entitlements which can be traded amongst countries - so some countries can, through their policies, choose to emit more and to buy permits from countries which choose to emit less than their targets.

Australia stands out for the modesty of our ambition, with our bipartisan unconditional target of reducing emissions by five per cent by 2020 from 2000 levels. I say that in full acknowledgement that the number - the five per cent - adopted by government and opposition, comes from my 2008 report.

As the reduction, the recommendation in the 2008 report was that that reduction of emissions would be appropriate in the absence of a global agreement, simply to keep alive the possibility of eventual agreement. Well I set out in Chapters three and four of the final report why I think there is a global agreement that can be made to work.

We also stand out for how much our emissions are increasing relative to our modest unconditional target. The Department of Climate Change and Energy Efficiency estimates that with all the existing policies in place, the mandatory renewable energy targets, solar programs and other measures, our emissions will grow by twenty-four per cent by 2020.

Since those estimates were made on 2020 emissions, under current policies, we have had several gas liquefaction projects announced which would take that number higher still.

If the world were to take effective action towards achievement of the agreed objective of holding temperature increases to about two degrees above pre-industrial levels, our fair share under the review's formula would require reductions of emissions by twenty-five per cent by 2020 and ninety per cent by 2050. Our share would be lower for less ambitious global action.

Well, I suggest in the final report that there's no alternative to looking at what is actually happening in emissions in comparing the effort and working out what is a fair share of effort amongst countries.

Can you compare effort in other ways - for example by looking at carbon prices across countries? All countries do not have carbon pricing so we cannot compare actual carbon prices.

The Productivity Commission report demonstrates that it is impractical to compare implicit carbon prices. It's hard to calculate because there are so many different policies in place - hundreds in America for example; even hundreds in Australia.

It is also difficult because policies that reduce emissions often have many motives. In my report I quote from Barack Obama's State of the Union address this year - in January this year - in which he declares an objective of having eighty per cent of American energy coming from clean energy sources by 2035. He says this is important for the security of our country, for the security of the planet - i.e. avoiding global warming - and for jobs.

Well if that is a policy, is it a climate change policy? It's one of many policies that has multiple objectives.

The Productivity Commission describes how China has reduced emissions greatly from where they would have been through its forced closure of small, environmentally and economically wasteful power generators and replaced them with technologically superior plants - plants with much lower emissions.

This is called the 'large substitute for small' scheme. The Commission excludes actions under this scheme because they are economically profitable and so should have been taken independently of concern for climate change. It is only this exclusion that allows the judgement that Australia's effort in the electricity sector - and the Productivity

Commission only talks about the electricity sector and transport - Australia's effort in the electricity sector is comparable to China, included, and our effort as the Productivity Commission calculates it is much smaller than China's.

Similarly the Commission excludes energy efficiency measures because they should be undertaken without concern for climate change policy, because they are economically profitable and yet in many countries, including China, climate change has been the central reason for elevation of the priority of energy efficiency.

I don't raise any question about what the Productivity Commission has chosen to do. That's a reasonable approach - simply to focus on policies that are clearly climate change policies. But there's an awkward reality that many of the most important policies from a climate change point of view have multiple objectives and multiple effects.

I think you keep being driven back to comparing fair shares and comparing international effort by looking at what's actually happening to emissions.

There's another complication of using price to measure comparable effort. You can do things that are expensive but that do little to reduce emissions. If you count the cost of a program as the measure of your effort, then it might put us up fairly high in terms of effort, but in terms of the actual effect on emissions it is fairly low.

Photovoltaic electricity has a great future but policies we have used to promote it in Australia have exceptionally high costs.

This drives us back to looking at what is actually happening to emissions against some standard for allocating the emissions reduction task amongst countries. By this standard Australia is a laggard.

Carbon pricing accompanied by support for innovation in new technologies will allow Australia to catch up without putting prosperity at risk.

Given our starting point it is inevitable that our early steps will be modest, however the framework that I have proposed is efficiently and easily geared up for a stronger contribution as the international mitigation effort is scaled up and as Australians absorb the reality of international action.

Under carbon pricing we will be automatically strengthening targets in line with stronger action in the rest of the world, and I've recommended that that process of strengthening targets be intermediated through the independent advice of a climate committee with a similar role to the committee of the same name in the United Kingdom.

The carbon price will rise as the rest of the world does more, because we will be linked to the world price through trade in entitlements.

Our carbon price will be the world price after we move to traded entitlements with international linking. Under my recommendations we'll have a fixed price for three years and will then have a market-based price linked to international prices.

That international price will become the Australian price intermediated by the level of the Australian dollar. If the resource boom in three and four years time is still running with full steam when we move to trade-

in permits, the exchange rate will still be high and the Australian dollar price of permits correspondingly lower.

We would then be tending to import a large number of permits and would be in a good position to pay for them from the proceeds of our exports. Indeed, the payment for permits would reduce the real exchange rate somewhat and reduce the downward pressure that the resources boom is placing on manufacturing, higher education, tourism, farming and other trade exposed industries.

If you are concerned about the effect of the resources boom on the viability of our steel industry, then you'll be supporting stronger targets.

If the resources boom **has come to an end**, then the exchange rate will be lower, the carbon price higher. We will see expansion of our low emissions industries in the process of doing more of our reduction in emissions ourselves. Both the fall in the exchange rate and the larger investment and production in low emissions industries will help hold up economic activity after the end of the resources boom.

So the type of arrangement that I have suggested can be stabilising for the economy, both during the febrile period of the resources boom and after its inevitable end.

Well a few words on the scheme - I have suggested that a carbon pricing scheme started in 2012 should initially have a fixed price and I have recommended a starting price between twenty and thirty dollars, and in the absence of compelling reasons to move away from it I would focus on the middle of that range.

That would put us more or less in line with current international prices at the current strong exchange rate.

If the scheme were at this midpoint around twenty-five dollars, twenty-six dollars, it would raise a large amount of money - around eleven billion dollars in its first year. I have suggested that a bit over half of that be passed back to households as tax cuts and social security adjustments and if they're well designed then they can have a positive effect on labour force participation and additional economic benefits.

I have suggested that about thirty per cent of the revenue should go initially to support for trade exposed emissions intensive industries for the first three years and in that first three years I'm not suggesting a large change from the proposal that was within the government's old carbon pollution reduction scheme.

On average, I think that that over-compensates many industries. It may under-compensate some. So I'm suggesting that after three years we go to a disciplined approach in which an independent institution like the Productivity Commission apply rigorously clear principles that secure Australia's national economic interests.

I would expect, but I don't assert that it is certain, that under this principled approach the proportion of the revenue going to support for trade exposed industries would decline over time.

I'm suggesting that substantial amounts of the revenue from carbon pricing should go to support for innovation. There's a strong economic case for fiscal support for innovation. The private markets will never give us enough of it at a time when we need rapid technological change because the pioneer develops knowledge that is valuable for the whole community.

I have suggested that substantial funds be allocated for bio-sequestration in the land sector.

You may have noticed in the newspaper today - I think the first time I have actually been the billboard of one of the national papers - some discussion of vexed questions of compensation for electricity generators. This was based on the leak of a document provided by the Australian Energy Market Commission - I must say a document that I had never seen, although the newspaper report said that it had been, amongst other things, prepared for the multi-party committee to which I'm an independent advisor and other members of the committee hadn't seen it either.

That document was placed on the Commission's website this afternoon. It is a slight document with conclusions but not supporting analysis. I am pleased that it concedes one major point of my analysis in its recognition that there is a need for review. I go further and identify the need for fundamental change in the regulation of network infrastructure.

Flaws in that regulatory process have been the main source of electricity price increases in recent years and threaten to be so in the years ahead, independently of the introduction of carbon pricing - and we can't expect the community to sort out the relative contributions of carbon pricing and other unnecessary sources of large increases in electricity prices.

The Commission says that it favours a system of conditional tradeable permits for each specific power generation plant. This is equivalent to handing out cash. From other communications it is clear that they have in mind a lot of cash. This is said to serve two purposes - to maintain sufficient net equity in the generation businesses for them to be in a position to support the contract market and invest in the future - that's there in the document. Second, it is said to lead to changes in operating decisions and the merit order thereby helping to achieve the policy outcome of a carbon pricing mechanism.

What is missing is any tight logical link at all between the handing out of cash to generators and the behaviour that this is meant to induce. I would like to see a carefully argued case before we handed over large amounts of public money to private businesses.

From an economist's point of view, the need for compensation for loss of asset value does not stand up. In Australia we are fortunate to have a national electricity market in which electricity is bought and sold. While not as perfect or as flexible as it could be, it does have the capacity to cope with the transition to carbon pricing.

There are two principal arguments underlying claims that electricity generators should receive compensation for loss of market value - of asset value. One relates to energy security and that all comes back to effects on the value of assets.

We looked at the question of energy security again carefully in the review update and determined that it was unlikely that the impost of a carbon price would result in any significant threats to energy security.

That's partly because most of the costs of the carbon pricing will be passed on to consumers, many of whom will receive assistance to cover the price rise.

A plant which finds it unprofitable to continue operation and withdraws from the market would result in an uplift in the electricity prices for those players who remained, ultimately making them more profitable and smoothing the transition. So the scenario that's postulated by the Commission and others of a series of early failures of generators just doesn't take account of the price dynamics within the market - take one generator out and it makes all the others more profitable.

This analysis of the market dynamics led us to the conclusion that it would be unlikely that carbon pricing would lead to any significant threat to energy security. Nevertheless, as a safeguard for those concerned about the resilience of the market I recommended a couple of measures that could be used in the unlikely case of financial contagion affecting the sector.

And I won't go into that now. They're there in the detailed paper on electricity on the update and summarised in the final report.

Well the story of adjustment to a carbon price and the adjustment to a low carbon economy is the story of innovation. From 2012/13, if my recommendations are accepted, we will have embarked upon the transformation towards the low economy - the low carbon economy of the future.

All Australians want to know where the new jobs and incomes will come from in a low carbon economy. The question is related to another one - where will we find the reductions in emissions that meet increasingly ambitious targets?

Questions about where the jobs will come from were always on people's minds as we - Max Corden and others - began to reduce protection over a quarter of a century ago.

The answer that my economist colleagues and I would give at the time never sounded convincing - from everywhere - but now we know that the jobs did come from everywhere - millions of them.

So it will be with the reduction of emissions under the market-based scheme I propose. The reductions in emissions will come from everywhere and everywhere where you get new investment, new production to reduce emissions there will be jobs with them.

Consumers will use less energy and other goods and services that embody high levels of emissions and will spend more on other things. Natural gas exporters will try harder to find opportunities for sequestration of fugitive emissions and waste from liquefaction. Land owners will think hard about the parts of their properties that would have more value as carbon sinks than they do carrying sheep - although those parts might be a bit larger with the big increase in wool prices in the last month.

Lots of people with clever ideas of doing things in ways that reduce emissions will find equity investors and lenders more interested than they were before.

Every producer will think about whether it is more profitable to spend a bit to reduce emissions or to buy more permits. Millions of Australians will set to work finding cheaper ways of meeting their requirements and servicing markets.

We don't know in advance what the successful ideas will be, but I am pretty sure that there will be extraordinary developments in technology and that the change will happen faster than we expect.

This is the fourth time that Australia has moved towards economy wide carbon pricing. Each time the retreat of economy wide action did not mean the end of climate change mitigation policies. An array of regulatory interventions took their place with little effect on emissions but large effects on the Australian standard of living.

So if Australia doesn't move forward on this occasion, doesn't introduce carbon pricing as a result of the current processes then that won't be the end of the matter. That will not be the end of the debate

about how we reduce emissions but it may be the end of the debate about low cost ways of reducing emissions.

Of the many costs associated with trying to reduce emissions in an ambitious way through regulatory rather than market based approaches, perhaps the biggest cost will be the entrenchment of the old political culture of Australia, the culture of political pressures on government determining how money is spent. The really big cost will be the reassertion of this old political culture after that brief period of reform in the late twentieth century.

If we reject carbon pricing today the climate change policy debate will still be here tomorrow but our hopes of dealing with it in a way that preserves Australian prosperity may not.

Thank you [applause].

MIKE SANDIFORD: Thank you very much Ross. By way of introduction I am Professor Mike Sandiford, the director of the Melbourne Energy Institute. I am also a professor of geology here and probably as you can guess my discipline areas have been challenged considerably by the debate over climate change information.

I think the words savvy, clear thinking, independence in good grace are not always ones that you would associate [unclear] but I do think they are ones that Ross has shown for a considerable period of time in helping our country come to grips with issues around climate change. Good grace in particular I think in the face of often provocation which would be very hard to show that.

So in that spirit I would like to open this up for question and answer from Ross. Questions I emphasise we have only time for brief questions and good grace. So are there any questions? Any from the back, do we have some main points off it?

SPEAKER: You could take this one and I will...

SPEAKER: We can share this.

SPEAKER: Yeah, [unclear] from Environmental...the centre for...

My question is this, you mentioned about arguably what...of this emission and my problem...is the motive for the whole thing. Is it actually on a...

My...concern is, in Africa for example in Nigeria...basis and the provision of...they use...to...and they emit carbon in the process and there seems not to be nothing done in this regard to mitigate this and...carbon...

Thank you.

ROSS GARNAUT: Yeah, that's a really important question and both in the original report in 2008 and in the update I spend a lot of time talking about fair shares because we have a problem of collective action here. We are not going to get a solution unless all countries, all substantial countries make a substantial effort and that includes substantial developing countries.

So all countries will have to accept disciplines and will need to put in place incentives to avoid the flaring of large quantities of gas to no good purpose in Nigeria.

If you look at a table in the last *World Bank Development Report* which I have reproduced in the final report it shows selected countries, a

couple of dozen countries by emissions per capita and Australia is at one end, over twenty seven tonnes per capita and the other end you've got I think Rwanda with much less than half a tonne per capita and that really makes a point about equity in allocation of a global effort.

And the formula that I ended up focusing on - modified contraction and convergence - has the world converging on equal per capita entitlements I said in the middle of the century. Some of my friends who are very close to high policy in China and India say that that lets Australia, Canada and the United States off the hook. It lets them off too lightly that we should have convergence at an earlier date.

I was trying to be practical and not argue the special case for a few countries that are like Australia, but once you introduce into the discussion what a game theorist might call side-payments but support from the high income countries for adaptation and mitigation in developing countries, then the possibility emerges of building international support around such a formula.

So if every country has a target, even if that target is developed in a different way, even if Rwanda has a target that allows it to increase emissions for quite a while, while Australia has to reduce emissions quite strongly, then we can still introduce the disciplines that are necessary to get our global effort.

To make the whole system work, the country that has a target that allows it to increase emissions but which is able to reduce emissions at relatively low cost and maybe Nigeria is one of those, should be able to sell excess permits if it gets its emissions well below its target and that will give it an incentive to stop flaring that gas.

Thanks.

DOUG MITCHELL: Hi, I'm Doug Mitchell I am from the Citizens Electoral Council. Ross, I want to know why do you hide your green agenda which is to smash what's left of Australia's national histories just as you have done your whole career? [Unclear].

Thank you.

SPEAKER: Good questions are what we are after.

MATTHEW WRIGHT: Hi Ross, thanks for your talk, Matthew Wright here from Beyond Zero Emissions. My question is in regards to the Productivity Commission's report which was a simplistic analysis of the cost of emissions reductions in Germany and they showed that the European ETS saved zero to four million tonnes through switching to gas while the green waste [unclear] achieved 65 million tonnes in 2009.

They did say that solar [unclear] is eight-hundred-and-ninety dollars a tonne but they misrepresented [unclear] Government's Abatement Strategy which was to reduce the cost per tonne of emissions abatement from renewable energy sources like solar [unclear] with every additional year's significant addition to the grid. And the example being if they compared 2011 to 2009 they would have found that the [unclear] installed this year in 2011 will cost forty per cent less per tonne of emissions abated than in 2009.

Now where do you get those kinds of savings over two years in any other field than under the [unclear]. So we are now down below five-hundred dollars a tonne for 2011 versus '09, so can you explain why you are so against that sort of system and referring to the Productivity Commission's report?

- ROSS GARNAUT: Matt, I am not on top of every detail of that thousand page report which came out just a few days ago [laughter] - I am sure you did and I think you should discuss it with some of the well trained and clever people in the commission and between the two of you, you will reach some better conclusions.
- MIKE SANDIFORD: More questions please, in the middle here. Keep your hand up so that we can get the...
- SPEAKER: Ross, thank you very much for an excellent lecture. I have got one question around a carbon price clause, that is the need to actually put in a rising price for an extended period of time to basically improve the certainty of the current price.
- We are in a situation now where there are uncertainty windows occurring and the first uncertainty window is the next election as the Government has proposed that we wind back the current price at some point if they become cheaper. The second uncertainty window is the point where we go from a fixed price period to a floating price period.
- You have suggested that we wait until we have got international certainty around equity in the international markets, yet in the international space we are not really seeing that sort of coming together at the speed we...
- So do you believe there's actually a case where a price floor is needed to actually provide certainty for long term assets, so things like [unclear] power where you have got the need to invest over a thirty year time frame...and you don't actually, you need to have that...
- ROSS GARNAUT: Well one hears that argument, it's often to put to me. One hears about as often, an argument that we need a price ceiling because the price might go very high. Every business that is exposed to the emissions price wants a price ceiling for the reciprocal reason.
- There is a little bit in both arguments, especially when there is a great deal of political uncertainty about the future of this scheme and is one of the big reasons why I recommended starting with a fixed price which has both a floor and a ceiling equal to that price [laughter].
- I think it is very likely that we will have opportunities to go, liquid markets for international trade and entitlements to go to a floating arrangement after three years, that's four years from now.
- We don't need the whole world to be involved in international trade. In fact we can get most of the gains from trade through trade with a limited number of countries and I have suggested we look very closely at a Western Pacific regional trading arrangement.
- Now those of you who know my lifetime work will know that I am a long term critic of preferential trading agreements. I think that in international trade in general all the benefits are with multilateral free trade.
- The difference with a regional arrangement for trade and entitlements is that so long as each member country is free to sell and buy permits in other countries, there's no equivalent of the trade diversion you get in a preferential trading agreement. So there's no risk of diverting trade into a high cost channel.
- So if we had some other countries and I would include Indonesia amongst them which are naturally large exporters of permits, lots of opportunities for low cost reduction in permits, include a country which is naturally probably a large importer of permits like Australia, you can

get those opportunities for deep trade. Allow both countries to trade with other countries and you have that well developed market in Europe and there will be a tendency for the regional price to settle on the price in the large international market and at the moment that's the European market.

So I think it will require work, concerted work by government over the next few years, but I think we can have in place arrangements that give us opportunities for deep trade in permits when it is required in four years time.

Now there would still be a problem if there was great political uncertainty about whether the scheme was going to survive. I have recommended that from the beginning some long-dated permits be sold at auction and they would have a compromised value if they faced the uncertainty of losing value because the scheme was scrapped after a few years.

So I have suggested there needs to be a contractual arrangement that has the Commonwealth buying back those permits at their face value in circumstances where the scheme is withdrawn – amongst other things, that will increase the budgetary cost of getting rid of the scheme. But one of the possibilities is that within a short time after this scheme is legislated, people will wonder what all the fuss was about.

All of those generators who are making a very big fuss now about how it is impossible for them ever to reduce emissions by one tonne will have no incentive for making that argument to government because of the question of whether or not they get compensation for loss of asset value will be settled and they will get on with reducing emissions and reducing their costs.

The adjustment in prices is going to be small, on average from my recommendations, less than one per cent on the CPI which is a good deal less, much less than the Goods and Services Tax. And the Goods and Services Tax was highly contentious before it was introduced, but wasn't something that an opposition could credibly promise to withdraw after it had been introduced.

We have to wait and see but I would expect that soon after this scheme is legislated, probably legislated late this year to come into effect in the middle of next year, certainly soon after it is working, it will be very difficult to develop a head of steam in favour of its abolition.

MIKE SANDIFORD: Thank you Ross. I'm afraid we are out of time. So just to finalise we would like to invite Professor David Karoly up. David is the acting director of the Melbourne Sustainable Society Institute and [unclear] at the university.

DAVID KAROLY: Thanks very much Mike and my role is to offer a vote of thanks to Ross, but before I do that I want to thank a number of other people and groups. The most important group to thank first of all is in fact all of you in the audience here for coming along, participating and showing as I guess was commented several times, good graces in your questions and in your participation.

I would also like to thank the Faculty of Business and Economics, together with the Melbourne Energy Institute and the Melbourne Sustainable Society Institute for hosting this forum and this opportunity for Ross to talk about his efforts over the last nine months.

There are two other groups that I want to thank as well and these are groups that perhaps aren't recognised sufficiently. Those groups are in fact the members of Ross's team because the success of Ross's

review is very much dependent upon the small but very, very hardworking group of people that have worked diligently over the summer break and over an extended period above and beyond the call of duty to support Ross in the preparation of his review.

I also want to thank another extremely important group and that is Ross's family, some of whom are here tonight who have rarely seen Ross over the last nine months and they are important members. And in particular they have supported Ross enormously, not only over the last nine months but throughout his efforts on the first review and in this review update.

I also want to remind people that there will be refreshments and invite you all at the end of this lecture to retire to the, I guess it is the foyer above, in the level up here, will be refreshments provided. And as a token of our gratitude we have hidden away here some low carbon Australian wine, I hope it is not 2009 vintage because there was a heat wave that meant that the grapes weren't good in that year.

Thank you very much Ross [applause].

- ENDS -

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