

TRANSCRIPT

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LAUNCH OF SUPPLEMENTARY DRAFT REPORT

TARGETS AND TRAJECTORIES

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COMPERE: At the National Press Club today, Professor Ross Garnaut, head of the review into climate change with his much anticipated supplementary draft report. It will provide the basis for the review's proposals for Australian emission reduction targets.

The review will draw on industry submissions and economic modelling by Treasury and the review's own independent studies. Ross Garnaut with today's National Press Club address.

KEN RANDALL: Well, ladies and gentlemen, welcome to this special National Australia Bank Press Club address. Our speaker today, professor Ross Garnaut, arguably stands, I think, at the epicentre of contemporary Australian policy making.

As you've just heard in the introduction, the Garnaut Climate Change Review has been commissioned by Australia's Commonwealth, State and Territory Governments to examine the impacts, challenges and opportunities of climate change for Australia.

A draft report was released on 4 July 2008. Today, professor Garnaut releases his supplementary draft report and the final report is due by 30th of September 2008.

Bob Hawke, professor Garnaut's first prime ministerial employer, recently remarked that Professor Garnaut, I quote: operates within the bounds of the doable, not the unobtainable.

Given when he was here last, professor Garnaut described the challenge of climate change as diabolical quote unquote, let's hope Bob Hawke got it right. Please welcome Ross Garnaut.

PROFESSOR ROSS GARNAUT: Thanks, Glen. There are moments in the history of humanity when fateful choices are made. The decision over the next few years on whether to take strong action to mitigate human induced climate change is one of those moments.

When society has received a large shock to their established patterns of life, the outcome is unpredictable and problematic. Things fall apart. The financial shocks that hit Australia in the 1890s, the industrial world in the 1930s and Indonesia in the late 1990s were in themselves of substantial but manageable dimensions.

But they were large enough to exceed some threshold of society's capacity to cope with change. In each case, what might have been a recession of significant but non-historic proportions became a great depression. Total output fell by a fifth and more. The associated social convulsions fundamentally and permanently changed political institutions and shifted the whole trajectory of economic growth.

The Centre for Strategic and International Studies in Washington has recently published a report, a study, on the impact of climate change based on several scenarios.

One of those involves catastrophic climate change, their words, based on an assumed 5.6 degree temperature increase over the course of the 21st century.

This is similar to what the temperature would be in the early years of the next century under the central business as usual case arising out of the analysis presented in the draft report.

The Washington paper found that this extent of climate change would quote: pose almost inconceivable challenges as human society struggled to adapt. It went on to note that quote: the collapse and chaos associated with extreme climate change futures would destabilise virtually every aspect of modern life. And the authors of that are key establishment figures in the United States security establishment. The devastation wrought by a temperature increase of five degrees or more would be global in nature. But Australia and some of its developing country neighbours are amongst the most vulnerable.

One main theme of the review is that the accelerated growth of the developing world, what I've called the platinum age, has not been factored into expectations of emissions, concentrations or temperatures.

This growth centred on but now extending well beyond China is unprecedented and likely to be sustained over a considerable period and I presented the detail of that in the draft report, especially chapter four.

During the extensive discussion of the review's draft report in July 2008, some critics claimed that some of the descriptions of impacts were alarmist. I responded that I was simply telling the story as it fell out of the analysis: when the emissions growth from the review's own work was applied to centre of the road judgements on the relationship between concentrations of greenhouse gases and temperature derived from the mainstream science.

The task of reducing the risks of dangerous climate change to acceptable levels is immense and complex. It requires participation from all major economies. The process of international cooperation, escaping the prisoner's dilemma described in the draft report, is perhaps the most formidable of international relations challenges, more formidable than the multilateral trade negotiations which have recently fallen on to hard times.

The development of domestic policies consistent with an ultimate international agreement is immensely difficult in every country. The saving grace on this particular issue is that in Australia and many other countries, there is an unusual degree of public support for doing something.

Through the extensive discussion of our draft report, there was polling - some of it reported in *The Australian*, some in the Fairfax Group - that showed substantial majorities of Australians supporting the introduction of an emissions trading scheme.

A substantial majority supporting it if it hurt them personally; substantial majority supporting the introduction of emissions trading scheme in Australia even if other countries were not doing similar things at the same time.

For someone who's spent a lifetime on the political economy of economic reform as I have, these are remarkable figures. In the book that I published with Kim Anderson on the history of Australian protection in the early eighties, we presented opinion poll data going back to earlier in the century and it consistently showed very strong majorities against any tampering with Australian high protection.

And as we got rid of protection and as the manifest benefits of that came through the Australian economy, the strong support for protection and opposition to trade liberalisation and the structural change associated with that was maintained.

This issue is different. This issue is one in which the idea of strong government action has widespread community support, not only in Australia but in other countries. It's this savings grace that gives us a chance.

There is a chance, just a chance, that humanity will act in time and in ways that reduce the risks of climate change to acceptable levels. Is it possible to secure effective international action to reduce the risks of dangerous climate change to acceptable levels, presuming that Australia would play its proportionate part in the global effort?

If so, what degree of mitigation would be in Australia's interest and what would be an appropriate Australian contribution to the global effort? What should we do in the interim if it takes time to secure effective international action?

To answer these questions, we must look over the whole canvas of the Climate Change Review's work, all of the work presented in the draft report, importantly including the discussion of a framework for making decisions about these matters presented in chapter two of the draft report.

I remind viewers of the framework of costs and benefits of doing something about the climate change problem there were set out in chapter two. Some of the costs which we called type one costs have standard economic costs, manifested through market processes and can be modelled.

Some type two have standard economic costs through market processes and can be estimated. Some type three are potentially much more serious and could not be included in our modelling because they involve the uncertain ends of the probability distribution. Others, type four, affect non-market values including environmental amenity, but much else besides, and in their nature cannot be included in the modelling.

Our modelling focuses on the costs and benefits of mitigation covering only type one and type two costs and benefits, and covering only the century. It's a very challenging task modelling structural change in the Australian economy through the century. We had a very strong team of people working on that when this began as a state's based exercise from the Victorian government and the Queensland treasury, working closely especially with the modelling group at Monash University.

From early this year it became a Commonwealth/State joint exercise and our team worked closely with the Commonwealth treasury. And what the modelling does is focus on the costs and benefits of mitigating climate change during the 21st century. And

we really were testing the limits of the models in going out to the end of the 21st century.

The modelling of mitigation can tell us how much conventional GDP or GNP we have to sacrifice this century, to insure ourselves against some of the lower probability but much more serious outcomes this century, to protect the non-market values and also to insure against much bigger impacts of all kinds in later centuries.

We would not begin a process of mitigating climate change if we were not concerned about what happens beyond our own life times. The really dangerous outcomes manifest themselves in the second half of the century and increasingly after that.

You have to have a model framework in which the welfare of future generations of Australians matters to want to do anything about this problem. During the modelling exercise we tried to formally analyse these difficult questions of intergenerational distribution of income by applying appropriate discount rates to future benefits. And that exercise tended to reinforce the conclusions that I think come out of standard applications of Australian values. Australians do care about what happens to their grandchildren and their grandchildren's children.

There are several good reasons why it's important for an Australian emissions trading scheme to commence in 2010, but the world in which it will commence will not be an ideal world of an international agreement. In fact it will be a world in which the negotiations over what happens after 2012 are in full swing, or at least it will be being put in place while those negotiations are in full swing.

The remainder of the Kyoto period till the end of 2012 is best considered as a transition period in which the emissions trading scheme is established soundly for the larger task that will lie ahead of it after 2012. Australia's aim should be to work within the international community to secure a global agreement around a firm emission stabilisation goal. It should be prepared to play its full proportionate part in achieving that goal.

Pending the completion of the international discussions on post Kyoto arrangements, it is better not to focus on a single trajectory, but to have in mind a set of possibilities, the choice amongst which will be determined in an international context.

The review has considered two cooperative global mitigation scenarios, introduced in chapter five of the draft report with which you would be familiar. The two scenarios represent cooperative solutions in which the countries of the world agree to share the burden and to work towards stabilising greenhouse gases at a particular level.

Australia's target within the context of a comprehensive global agreement we are recommending should be to reduce emissions by 10 per cent from 2000 levels by 2020. This is 30 per cent per capita, which is a major task of structural adjustment. Our recommendation is that within this same framework, of working within a global agreement to hold emissions concentrations in the atmosphere at 550 parts per million and avoid the worst outcomes from dangerous climate change, Australia should be prepared to reduce emissions by 80 per cent by 2050.

The reduction of 10 per cent by 2020 is a reduction of 27 per cent per capita from the levels that are expected in 2012; 17 per cent absolutely from the levels expected in 2012. I say again, this is a major structural adjustment task.

A binding international commitment to the 2020 outcome would be made within the context of and conditional on an effective global agreement designed to reach the 550 parts per million global objective.

Within this framework, analysis suggests that the price of carbon dioxide equivalent would settle in the mid twenty dollars in 2013 and rise at an annual rate of 4 per cent plus the inflation rate; rise more or less at the interest rate. If this were the outcome, then by the end of the period of commitment, 2012, we would have a carbon price in the vicinity of \$34, in the prices of 2005/6 from which the modelling is based.

Some Australians advocate the postponement of any substantial effort until international agreement is reached, because they think Australia should do as little mitigation as possible. I am linking the central recommendation on targets and trajectories to comprehensive global agreement, because international agreement is urgent and essential. Because agreement is possible if Australia and some other countries attach enough importance to it, because it is the only way to remove completely the dreadful political economy risks to Australia and to the global trading system of payments to trade exposed emissions intensive industries, and because the lower Australian mitigation costs with which it is associated, allow us to be more ambitious about the reductions in emissions.

The analysis presented in the supplementary draft report suggests that a more ambitious objective like 450 parts per million or even 400, would better suit Australian interests if it were achievable. However, the review has reluctantly concluded that more ambitious international agreement is not possible at this time.

If international developments changed the conditions that led to this judgment, Australia should encourage acceptance of more ambitious global objectives. In any case, Australia should now indicate its willingness to play its proportionate part in future, and if possible early movement towards a more ambitious goal than 550 parts per million.

Therefore, the details of the targets and trajectories that the review is recommending will not be the best for all time. They are the best available to us now.

In the absence of comprehensive agreement on global greenhouse gas emissions reductions, in an ad hoc world, Australia as one of the developed countries, should commit to reducing emissions from 2000 levels by five per cent by 2020. This would be a reduction of 25 per cent per capita; again a major structural task.

It happens that the cost to the economy of this more limited objective would be about the same as the cost to the economy of the more ambitious objective; the 10 per cent by 2020 in the context of a global agreement. You can do more at less cost in the context of a global agreement.

The five per cent reduction on 2000 levels by 2020 is consistent with the government's policy of reducing emissions by 60 per cent by 2050. Recall that we're already well above 2000 levels, so the reduction from 2012 to 2020 is very much more than five per cent.

Opportunities to hold risks of dangerous climate change to acceptable levels diminish rapidly after 2013, if no major developing countries are accepting constraints to hold emissions significantly below business as usual by that time. So a lot of the supplementary report is about the role that Australia can play in building an effective, workable, achievable, international agreement.

The success of Australia's mitigation efforts will depend crucially on the competitive sale of permits, and the effective use of the substantial revenues along the lines set out in the draft report. The proposed targets for Australia have been selected because they involve comparable abatement effort to other developed and developing countries, developing taking into account the agreed international process whereby developed countries in the early years take the main burden.

These recommendations have been calculated within an internally consistent framework compatible with global agreement around specified emissions concentrations objectives.

The numbers expressed in absolute terms might look less onerous for Australia in the early years, because they are based - the way they are derived is based on per capita allocations of emissions

rights. Australia's population because of this country's longstanding and large immigration program has been and will be growing much faster than populations in other developed countries.

Australians can think of many reasons why their situation is different from other developed countries, and why their emission reduction targets should be less demanding: So can people from every other country. There will be no progress towards an effective international agreement if each country lays out all of the special reasons why it is different from others and why it should be given softer targets.

When climate change negotiators from any country list reasons why their country has special reasons to be treated differently and take them seriously, we should be quick to recognise that the negotiators and the countries they represent intentionally or not, are inhibiting effective international agreement.

The focus on per capita allocations is legitimate. Indeed, it provides the only possible basis for an international agreement that includes developing countries, many of which have insisted on convergence over time to equal per capita entitlements. The review's approach to allocation of emissions rights requires somewhat higher per capita reductions in Australia than in many developed countries.

The draft supplementary report sets out the cost to the Australian economy to 2020 of the post-2012 proposals. Even the most ambitious mitigation scenarios would include manageable but not insignificant reductions in Australia's growth in living standards. It would carve over a tenth of a percent per annum from annual growth rates in the early decades, and certainly in the decade to 2020.

The costs to GNP growth to 2020 are a bit higher for an objective of 450 parts per million, which I said Australia should commit to in the context of a more ambitious global agreement. Australia can afford to make unconditional and conditional policy commitments as advised, the amounts of economic costs are consistent with continued strong economic growth in Australia.

Australia substantially increases its reductions and emissions at negligible additional cost if the broadest possible agreement can be reached by the global community. The carbon price will be lower and the structural pressure on the Australian economy lower for any given levels of ambition in reduction of emissions if it is done within the context of a global agreement.

The costs of well designed mitigation substantial as they are, do not threaten to derail the long term growth path of Australia, its

developing country neighbours or the global economy. Unmitigated climate change probably would.

The diabolical problem of climate change owes its character to the uncertainties about the science of climate change and the cost of mitigation as well as the deep problems of resolving the prisoner's dilemma in international relations. These challenges, both the challenges of the uncertainties and the challenges of international cooperation can be reduced by research, but this requires time, and it can be reduced by observations of progress in international cooperation and in progress with climate change itself. But again, this requires the passing of time.

Time is an essential element in any resolution of the policy problem and our work in the review on emissions scenarios shows that we have very little time. The faster rate of growth in emissions that comes out of our analysis, principally to do with the accelerated growth of major developing countries, the energy intensity of that growth and the large coal input into that energy growth, is accelerating the movement towards dangerous climate change.

In such circumstances where there are practical limits to what can be realised in terms of international agreement right now but very great time pressures on us, the only way through the constraints is to make a start on domestic and international action, along paths that may now be feasible, but which in themselves do not lead quickly to ideal outcomes. Early action, even if incomplete and inadequate, on a large enough scale can buy a bit of time and begin building the foundations for collective international action. But any old action won't help. To buy time and to help build the foundation for effective collective action it has to be well conceived in domestic and international terms. Actions that have high costs for minimal effects are likely to inhibit rather than to build domestic support for effective mitigation. In the international sphere, policy initiatives which create tensions between countries over perceptions of equity or would set in train protectionist actions and responses, will corrode rather than build confidence in collective action.

This is the context in which the review has framed its recommendations on targets and trajectories. The details of the targets and trajectories that the review is recommending will not be the best for all time. They are the best that are available to us now.

In the context of well designed domestic policies on emissions reduction, encompassing correction of market failures in response to prices being placed on emissions as well as to the emissions prices themselves, and carefully conceived international policies, they will lay the foundations for effective additional steps. Those

steps will become easier to take as confidence grows in the knowledge base for strong policy action, and in the feasibility of effective international action.

The first step built around immediately moving onto a path of global emissions designed to stabilise concentrations of greenhouse gases at no higher than 550 parts per million, is large and far reaching enough to keep open the possibility of avoiding high risks of dangerous climate change.

The path to 450 parts per million lies through progress towards 550 parts per million. The path to 400 parts per million lies through progress towards 450 parts per million. There's just a chance.

Australia has faced diabolical problems before. I'm sure many of my fellow countrymen won't think it light-hearted if I draw a comparison to the situation we were in in Hobart in November 1999. When we began our second innings, the fourth innings of the game against the best bowling attack in the world other than our own - we still had a couple of pretty good bowlers. We had to score 369 to win. That would be the highest last day score that had ever been made to win a test match in Australia. Most people said it was impossible.

Well, we made a start and Pakistan quickly had us on the ropes at 5/126, when Adam Gilchrist joined Justin Langer. Well, the rest is history. After the famous victory Langer revealed the secret of reaching a goal that looks out of reach. I said to Gilly when he came to the crease, I said, Justin [sic], let's have a crack because you never know. The secret, said Justin, is not to get hung up about the impossibility of the goal. Set your mind on getting through the next over, then the next hour, then the next session, then you might think it's possible to get through the day. After you've made some ground, it no longer looks impossible.

That's the spirit in which I commend the goal to Australia of reducing emissions by 10 per cent from 2000 levels by 2020, within a global agreement to 550 parts per million. The path to 450 parts per million lies through early progress on 550 parts per million. The path to 400 parts per million, lies through early progress on 450 parts per million.

Thank you.

KEN RANDALL: Thanks, Professor. We now have our regular period of media questions, and the first comes from Clinton Porteus.

QUESTION: Good afternoon. Clinton Porteus from The Courier Mail. Just on your projecti...or your recommended projection of a 10 per cent cut, you talked about how it might avoid high risk climate change. I'm wondering what do you think that will mean for the reef, for the

flows in the Murray? Are we putting at risk the Great Barrier Reef by going for the 10 per cent cut option?

PROFESSOR ROSS GARNAUT: I have to say that the odds are not great for the Great Barrier Reef or for the economic base of the communities of the Murray Darling if the world gets no further than 550 parts per million, I must say the odds are not great for Ningaloo Reef either. At our meeting in the Perth Town Hall after I talked for a while about the Ningaloo Reef I think it was about 7th July my West Australian friends came up to me afterwards and said that was interesting all that talk about the Great Barrier Reef, I suppose when you're at the Brisbane Town Hall you'll talk about the threat to Ningaloo.

[Laughter]

But there's a chance of saving parts of the reef at 550 parts per million, but to be really confident you'd have to achieve some of the more ambitious objectives. That was put to me very clearly and persuasively by the World Wildlife Fund for Nature, the Australian Conservation Foundation and the Climate Institute. They were right. There are lots of important environmental values in Australia that will be at risk at 550 parts per million.

At where they will be without mitigation of climate change, they're not at risk of certain death, 550 there's a chance, but I accept that 450 parts per million is a better place for Australia. Australia can't do it alone. The only progress will be global progress, Australia should say that it's prepared to play its full proportionate part in more ambitious goals that have high chances of saving those environmental assets and we should play our part if we can persuade the rest of the world to do it.

My judgement is that right now if we made 450 the central goal in the international negotiations the two years ahead the odds are we might not get there so I say that 550 is the realistic immediate objective, but that should not be the end of the game.

KEN RANDALL: Our next question's from David Alexander.

QUESTION: Professor Garnaut the Government in its green paper has exempted, effectively exempted fuel for three years and to be reviewed then. I'm wondering whether you think that in the long run fuel should be included in an emissions trading scheme. And secondly do you think it's reasonable that nuclear power be ruled out on principle as a long run clean energy source?

PROFESSOR ROSS GARNAUT: On the first of those questions my views were put quite clearly in earlier papers. Petrol should be included not only in the long term but from the very first day of the Emissions Trading Scheme. There's no good reason for leaving it out.

Nuclear power is an important part of the global adjustment response to a low emissions economy. As I discussed in the draft report and as we'll discuss at a bit greater length in the final report, in Australia's circumstances it's not obvious that nuclear is an important part of the story. We've got a wider range of low emissions options than most countries and it's not obvious that inclusion of nuclear would change the cost path of Australian adjustment, but we will have further discussion of that in the final report.

KEN RANDALL: Chris Hammer.

QUESTION: Chris Hammer from The Age, Professor Garnaut. There will be a lot of debate today about parts per million and dollars per tonne, targets, trajectories, but I think many Australians will be wondering what it means for them for normal everyday Australians. If the Government accepted your proposal to start with the price of \$20 per tonne in 2010 rising to either \$35 or \$60 per tonne in 2020 what's it going to mean for their jobs, for the prices at the supermarket, for their everyday life?

PROFESSOR ROSS GARNAUT: Australians will feel it mostly through the cost of electricity and through the cost of transport especially petrol once it is included, I hope from 2010. A \$20 price would add about 5 cents a litre to petrol, I was rather surprised the weekend before last at the service station in Curtin to find the price had fallen 15 cents because of the crude oil fall the week before. So let's keep some perspective on five cents. If the carbon price is \$40 it's twice that. You can do your arithmetic from the carbon prices in the supplementary draft report.

On electricity prices in the higher levels of price increases discussed in the supplementary draft report, over the whole period up until 2020 there could be over that period - and remember it's not happening overnight - it could be an increase of 40 per cent in electricity prices. That's going to depend on a lot of issues related to the dynamics of the market. Again keep that in perspective, and I don't underplay the importance of that to Australian households, it's a big hit, but let's keep two other things in mind: Most of the increase in cost paid by households is potentially, if the Government manages the ETS right, coming back to Government as auction revenue from the Emissions Trading Scheme. And that can be given back to households in ways that do not remove the incentive to use electricity more economically, it can be given back as general tax and social security adjustments, it can be given back as various targeted incentives to promote energy efficiency in a transitional period.

If that is done well the revenue from the Emissions Trading Scheme can fully make up for the hit to living standards coming from those

other increases, and that's a very important thing to keep in mind. There's no reason whatsoever why Australian households should be poorer but there is a reason why they will be facing higher electricity prices and petrol prices.

KEN RANDALL: Gerard McManus.

QUESTION: Gerard McManus from The Herald Sun. Professor do you know how much your own personal carbon footprint is? Have you been able to reduce it? How and by how much?

PROFESSOR ROSS GARNAUT: I don't know how much my personal footprint is. I've probably reduced it a fair bit lately, when our old gas guzzler of a Ford gave up the ghost I bought a Prius and find that it costs about one third as much to run. And that's been interesting. While I've been so busy on this report I've probably ridden my bike to the office a bit less often and so that might work in the other direction.

KEN RANDALL: Simon Grose.

QUESTION: Simon Grose from Sciencemedia.com.au. It's common when we deal with this issue of climate change to invoke the scary, fearful prospects and then try to find some hope. You used the word diabolical last time you were here, you've used the word fateful this time, and then you've said there's just a chance, and you've invoked a pretty extraordinary day on a cricket field in Hobart as an example of the chance. I remind you that China doesn't play cricket.

[Laughter]

I know India and Pakistan play cricket but all the wise and hard headed judgements are that China and the G77 come Copenhagen will not agree to what you called an effective global agreement to reduce global emissions. If they do they'll agree to weasel words and probably ignore them.

So as a former ambassador to China I wonder, you talk about just a chance, what kind of conditions and pressures could you see operating that would actually lead China to effectively join and lead the developing nations into an emissions reduction process. You say Chinese don't play cricket. One thing that Glenn(*) didn't read out on my background is that I'm the only ever honorary live member of the Beijing Cricket Club. [Laughs] And we had a lanky Chinese from Xinjiang batting number 10 who once hit a six onto the roof of the Temple of Heaven. [Laughs] The cric... the China Cricket Association was then banned from playing on the oval alongside the Temple of Heaven. [Laughs]

China's better than just a chance. China right now is doing more to inhibit emissions growth in the energy-intensive industries than Australia is.

The week bef... [applause] the week before last, China announced a 15 per cent export tax on aluminium. In a series of measures over the last few years, it's raised the cost of energy to energy-intensive industries, it's discouraged investment in the energy-intensive industries. China has, by far, the world's biggest program for promotion of low emissions energy sources of many kinds; biomass, biofuels, hydroelectric, wind, nuclear. Everyone of these, it has the world's biggest program. And solar, huge program putting solar on roofs, run in the private sector by a bright young graduate of the University of New South Wales who's made himself a very rich man doing it.

The trouble is, China is growing so strongly, its energy demands are growing so strongly that it can be putting in place half of all of the nuclear capacity going in in the world in the next dozen years. It can be putting in place a wind program so big that it has driven up the price of the clever high intellectual property parts of the wind generators so that they become more expensive for everyone in the world, putting in so much hydro capacity on the Yangtze that we're all worried about the environmental consequences. It's promoting biomass and biofuel at a village level right through the country. It's doing all of that but it's still accounting for more than half of the world's growth in coal consumption. The numbers are truly daunting.

China has set the - set itself the goal of reducing the energy intensity of GDP by four per cent each point per annum, set that goal a few years ago. The president and the premier both made reference to it. For a couple of years, they weren't making much progress. I was concerned that the high-level policy wasn't biting. We got figures last week through Xinhua for the statistical office of China on energy intensity last year. It fell by 3.7 per cent last year, 2007 is the first year of concrete progress. The progress on energy intensity, the progress on low emissions energy, all of the low-emission energies that I spoke of, together with other things that they're doing, hold out the prospect of China being able to hold emissions growth to about half the growth of GDP.

What I propose in the Supplementary Draft Report is that China accept a binding commitment to deliver that; half the growth of GDP until its per capita levels of emissions have reached the falling values of the developed countries, and then that it accepts the same decline to a low point of the other developed countries.

I don't think this is pie in the sky. I don't think it's easy. I've talked it over with relevant people in China. I'd characterise it as achievable but difficult.

KEN RANDALL: And the next question's from Stephanie Peatling.

QUESTION: Stephanie Peatling from The Sydney Morning Herald, Professor Garnaut.

Last time you spoke to us in June, you delivered what was quite a compelling picture of what would happen to Australia and its natural landscapes, and indeed its agricultural-based economies, about what would happen if we did not take strong action on climate change. And indeed it was certainly interpreted by many as a call to arms for that strong action.

Today, you seem to have delivered a far more politically palatable but perhaps a solution that will not save us from those consequences that you outlined in June. And I'd just like to know, what happened to your thinking between the end of June and today?

PROFESSOR ROSS GARNAUT: The broad themes and the detail of the Supplementary Draft Report are fully consistent with the Draft Report. What we are proposing does involve strong action by Australia. It will not be easy to achieve.

The per capita reductions in emissions that I propose from 2000 to 2020 are substantially higher than the per capita reductions in emissions that Europe has committed itself to, and Europe is in the forefront of thinking about those things.

So Stephanie, I don't accept that there's any pulling of the punches there. I know much higher numbers have been talked about, but I don't think they are achievable at this stage.

And on the goal of 550 parts per million, my aim is to nurture the splendour chance that humanity can get it all together. And my judgment is that the best chance is to, in the next couple of years, lock up an achievable but extremely difficult agreement around 550 parts per million, that we use the confidence that the beginnings of progress towards that will give us all to start designing another step.

KEN RANDALL: Malcolm Farr.

QUESTION: Malcolm Farr of The Daily Telegraph, Professor.
How will ordinary consumers know that their efforts are working?
How will they know that their lifestyle, their financial sacrifices, are

in the short term, improving things? I mean, it's a bit much to ask us to hang around and wait to see whether the Greenland glaciers are going to melt or not. Is there any sort of annual reporting that can be done to reassure people that what they're doing is heading in the right direction?

PROFESSOR ROSS GARNAUT: Regrettably Malcolm, we might be able to wait around and see the Greenland glaciers melting. All of that is going faster than the science had suggested. But we can track the outcomes in terms of emissions, emissions concentrations.

The awful reality is that we're too late to avoid some impacts from dangerous climate change. Australia will feel negative effects from a warming that's already occurred and the warming that's already in train from emissions that are up in the atmosphere. There's about a 30-year lag well defined in the science between doing anything and starting to get a climate response, so emissions we've been putting up in the last few years will have their effects in 30 years' time.

Yes, the best Australian applied science says that we can identify climate change effects damaging Australia now clearest in the south-west of Western Australia, where the climate patterns are more straightforward. In eastern Australia, with the complex interaction with other climate systems, El Niño and so on, it's more complicated, but the CSIRO and Bureau of Meteorology judgements are that you can see the footprint of climate change already. But Australians will see the progress in changes in emissions, in measurement of concentrations before they see a cessation of worsening of the actual impacts of climate change.

KEN RANDELL: Kathy Alexander is next.

QUESTION: Hello, Professor. Kathy(*) Alexander from Australian Association Press. You've spoken today about the saving grace that people want to do something that will be better for future generations, people are worried about their grandchildren's grandchildren, yet you've also chosen this target of a 10 per cent reduction on 2000 levels by 2010, you've noted there are calls for much bigger cuts. Can you say if you bear future generations in mind, can you say that this decision is the right decision for them that it's the best decision?

PROFESSOR ROSS GARNAUT: Yes, I had them in mind in formulating the advice. The best chance of getting to the more ambitious global agreements that will actually reduce the threats to things we value a lot to manageable levels lies through our first step along the lines that I propose.

KEN RANDELL: David Denham.

QUESTION: David Denham from Preview Magazine. In your modelling for GDP sacrifice and all the rest of it, how much positive factors did you put in for the growth in the technologies associated with solar and wind and all these other energies and there's a second part to this question. You've talked a lot and we've talked a lot and all the economists and politicians talked a lot about GDP. When I read what GDP does, is it really an appropriate measure in this day and age when if you pull out an irreplaceable resource, the GDP goes up. When you calculate the GDP input from a sustainable industry it's just the same as one that's burning a lot of rubbish and polluting the atmosphere and all the rest of it. So do you really think that we should be looking for some other measure to see how we're going?

PROFESSOR ROSS GARNAUT: GDP and GNP are not full measures of all of the relevant issues affecting Australian welfare, related to climate change, that's why I put such effort in Chapter 2 of the draft report into explaining exactly that. The costs and benefits of mitigating climate change are not all about the measurable numbers that can come through the model. What the modelling does is tell us what the sacrifice in terms of material consumption now, this century, will be to buy.

The insurance, against much worse things happening this century as they may and having their impact through economic phenomenon. Buying protection against the degradation of a range of values, not only environmental. The - the social heritage of our rural communities. Australians' concern for conditions in other countries it would be very deeply affected by climate change. The fourth category of impact of climate change and benefit of mitigation is all about these things. In their nature, you cannot measure them by putting them through a macro-economic model. That is why we have taken such care in this work set out in chapter two of the draft report to say the modelling numbers don't tell you the costs and benefits of climate change mitigation, they do tell you the costs, pick up - picks up all the costs. They are economic costs through conventional economic processes. They only pick up some of the benefits. We've tried to bring to account the other very important benefits in making our recommendations. It's because of the importance of the things that can't be included in the model that we came to the view that I've said in the report that for 50 parts per million is a better resting place than 550. I don't think we've undervalued those things. I hope that you won't once you've read the supplementary draft report and re-read the draft report.

KEN RANDELL: Lenore Taylor.

QUESTION: Lenore Taylor from the Australian newspaper. In your draft report and repeated in your supplementary draft report today, you

propose a quite different formula or mechanism to address the problem of trade exposed industries in the period before an international agreement can be reached. What do you believe would be the consequences of the sorts of formulas being discussed by the Government and the sorts of formulas being put forward by business groups like the BCA, why do you think your formula is better and second - if I can have a second question. How do you think your model for divvying up emissions between countries is going to go down internationally given that at Bali they were talking about cuts for developed countries of 25 to 40 per cent?

PROFESSOR ROSS GARNAUT: On the second one first, the 25 to 40 per cent, I think that the numbers that I've put forward are fully consistent with the numbers proposed in the IPC report from which the 25 to 40 was drawn. There are other numbers in the IPCC report for less ambitious outcomes, the 550 outcome. Our number for 450 and 550, when you take the whole context into account, including our higher starting point which means we have to come down more, including our strong population growth which means that if we take that into account, in absolute numbers we have to come down less, quite a lot less than countries with stagnant or declining populations like Germany or Italy or Japan. So I think that my numbers fit in that context. Naturally that question crossed my mind. How will this look in Europe which has been at the forefront of putting forward more ambitious goals.

KEN RANDALL: Andrew Probyn.

QUESTION: Professor, Andrew Probyn from The West Australian. I think what you're outlining is essentially like an insurance policy we pay now because it's going to get much more expensive in the future to tackle.

But at what stage in the future is the cost of the insurance cheaper than the economic impact of climate change.

PROFESSOR ROSS GARNAUT: On the modelling - and bear in mind that the only cost we're modelling are the type one and type two costs, with their impacts through market processes. And it's an error to talk of the costs of climate change only in those terms.

The costs in climate change include the chances of much more severe and catastrophic options which are not included in the modelling. They include all the environmental costs that - the real costs include the environmental costs that are not included in the modelling. There's no value in the modelling for the Great Barrier Reef or Ningaloo. The modelling, if a lot more Queenslanders die in hot periods each summer, the modelling will include the cost of their hospitalisation. It will not put any value on their shortened life.

So by just focusing on the costs we can measure and the benefits that come through market processes - ignoring those other benefits. In the later years of this century, GNP will be back at the levels that it would have been if we had not been spending anything on mitigation.

We start to get a pay back in the - early in the second half of the century, and it grows, and it becomes substantial from about 2070. And it keeps on growing. And all of the serious studies of the costs and benefits of mitigation have been done by others, including Klein(*), at the institute of national economics in Washington, including Nordhaus at Yale, including Nick Stern, have the main benefits of mitigation, the main costs of climate change coming in the 22nd and 23rd century.

We haven't counted any of that as benefits.

We get - we're back to the old levels of GNP late in the century. And so everything that happens after that is a bonus.

COMPERE: And our last question today is from Bernard Keane.

QUESTION: Bernard Keane of Crikey, Professor. Your report today explains how, with an international agreement, we can do more with - or more for less, as you put it, both in terms of things like GDP and also to carbon price. On that basis, if there is an international agreement pitched at something like 550 parts per million, why shouldn't Australia use the benefits of an international agreement to pursue a more ambitious target like 450 or even 400 in order to get the benefits of moving quickly?

PROFESSOR ROSS GARNAUT: Well, we are pursuing a more ambitious target, the 10 per cent reduction over 2000, in the context of an agreement than in the context of the ad hoc world where it's only five per cent.

[Applause]

COMPERE: Yeah, thanks Professor. We've got a nice bottle of wine here for you. I can't vouch for the fact that it's low carbon, but I'm told it is low carbs. So...

[Laughter and applause]

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