Climate Countdown

Contributed by David Spratt
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The urgency of climate disruption makes it important to focus on priorities to prevent the world from tipping into uncontrollable climate catastrophes. David Spratt's recent debate in Australia includes consequences for humans and the environment for 5 degrees of climate disruption, the case for emergency action and an action list for governments. -- Ed.

Last night, Monday 20 April 2009, I had an opportunity to debate the topic "Climate Change: What Should the Federal Government Be Doing?" with Kelvin Thompson, the Labor member for the federal parliamentary seat of Wills at a public meeting organised by the newly-formed Moreland Climate Group. The meeting was recorded and a DVD will be made available. Here are the comments I made in the opening half of the meeting. The two speeches were followed by almost an hour of energetic comments and Q and A. Thanks to Moreland Climate Group for putting on a great event, with more than 150 attending.

Thank you to Kelvin for engaging in this public conversation on climate between electors and their member of parliament. It is important to make this happen in electorates across the nation, for the conversations to be public rather than private.

The Intergovernmental Panel on Climate Change (IPCC) predicts a 2-to-6 degree Celsius temperature rise by 2100. But emissions are going up at an increasing rate and tracking on or above the IPCC's worst scenario, so we are headed for the high end if we keep on going as we are.

Yet neither major political party has a policy as to what the maximum safe temperature rise would be.

The Australian government has a "business as usual", high-emissions plan.

The Carbon Pollution Reduction Scheme outsources our responsibility, rewards the biggest polluters, and plans no sizeable reduction in national emissions in the next 40 years.

According to resources minister Martin Ferguson:

…although greenhouse gas reduction targets may be necessary, any frank review must conclude that the world’s greenhouse emissions are not going down in the short term: they are simply being shifted from one country to another.

Dr. Vicky Pope, head of climate change predictions at the UK Met Office’s Hadley Centre says that:

In a worst-case scenario, where no action is taken to check the rise in Greenhouse gas emissions, temperatures would most likely rise by more than 5 degrees Celsius by the end of the century.

So let's count down from 5 degrees.

5 DEGREES: In 2007, former PM John Howard told an ABC interviewer that an increase of 4–6 degrees Celsius would be "less comfortable for some than it is now" but "it's very, very hard for us... to sort of extrapolate what things might be".

Well, it's not that hard.

Five degrees of warming occured 55 million years ago: breadfruit trees grew on the coast of Greenland, while the Arctic Ocean saw water temperatures of 20 degrees Celsius. There was no ice at either pole (today that means a 70-metre sea-level rise), and much of the world would have been desertified.

Prof. Hans Joachim Schellnuhuber, Director of the Potsdam Institute and adviser to the European Union and to the German Chancellor, told the Copenhagen science conference in March that a rise to 5–6 degrees Celsius above preindustrial would reduce "the carrying capacity of the planet (to) below 1 billion people".

4 DEGREES: Sussan Ley, the federal liberal shadow for customs and justice told one of her constituents in a recent letter that "I agree with my colleagues that an acceptable increase in the mean temperature would be 1.8–4 degrees C." (see correction by Sussan Ley in comments)

At 4 degrees Celsius hundreds of billions of tonnes of carbon locked up in Arctic permafrost – particularly in Siberia – would melt, releasing methane and carbon dioxide in immense quantities, and make further human action to mitigate emissions futile.

In Europe, new deserts would be spreading in Italy, Spain, Greece and Turkey: the Sahara will have effectively leapt the Straits of Gibraltar. In Switzerland, summer temperatures may hit 48 degrees Celsius. The sort of climate experienced today in Marrakech will be experienced in southern England. Europe’s population may be forced into a “great trek” north.

3 DEGREES: 3 degrees Celsius is the cap effectively being advocated by Australia’s Labor government. Labor policy is a 60 per cent reduction in Australian emissions by 2050. Sir Nicholas Stern says explicitly that for developed nations this is a 3 degrees Celsius target, telling the National Press Club in Canberra it would be "a very good idea if all rich countries, including Australia, set themselves a target for 2050 of at least 60 per cent emissions reductions" and this would leave us with "roughly a fifty-fifty chance of being either side of 3 degrees above pre-industrial times".

This is the target that both Stern and Garnaut advocated, but Stern now says that “We haven't seen 3 degrees Celsius for a few million years, and we don't know what that looks like”. But from the Pliocene 3 million years ago we know what a 3 degrees Celsius world would likely be: a northern hemisphere free of glaciers and icesheets, where beech trees grew in the Transantarctic mountains, sea levels were 25 metres higher, and probably permanent El Nino conditions.

NASA climate chief Dr James Hansen (PDF) has warned that a 3 degrees Celsius warming "threatens even greater calamity, because it could unleash positive feedbacks such as melting of frozen methane in the Arctic, as occurred 55 million years ago, when more than 90 per cent of species on Earth went extinct".

2 DEGREES: I understand that Kelvin has suggested Australia should set a 2 degrees Celsius or 450ppm target.

2 degrees Celsius has been a target of convenience in international negotiations, but is now losing consensus as the politicians head to 3 and 4 degrees Celsius, and the scientists towards zero.

To have a 2 in 3 chance of holding to 2 degrees Celsius, atmospheric carbon needs to be held to 400ppm CO2e (carbon dioxide equivalent) and that requires a global reduction is emissions of 80% by 2050 (over 1990) and negative emissions after 2070. For Australia, a 2 degrees Celsius target means a more than 95% cut by 2050.

A rise of 2 degrees Celsius over pre-industrial temperatures will initiate large climate feedbacks in the oceans, on ice-sheets, and on the tundra, taking the Earth well past significant tipping points. Likely impacts include large-scale disintegration of the Greenland and West Antarctic ice-sheet; the extinction of an estimated 15– 40 per cent of plant and animal species; dangerous ocean acidification; increasing methane release; substantial soil and ocean carbon-cycle feedbacks; and widespread drought and desertification in Africa, Australia, Mediterranean Europe, and the western USA.

Hansen told the US Congress last year that: “We have reached a point of planetary emergency… climate is nearing dangerous tipping points. Elements of a perfect storm, a global cataclysm, are assembled… the oft-stated goal to keep global warming less than +2 degrees Celsius is a recipe for global disaster, not salvation.”

1 DEGREE: Today at just less than 1 degree Celsius of global warming we are witnessing of the destruction of the Arctic ecosystem. Eight million square kilometres of sea ice is disappearing fast each summer and may be entirely gone within a few years. Already 80% by volume of summer sea-ice has been loss, and regional warming of up to 5 degrees Celsius may have already pushed the Greenland ice-sheet (eventual sea- level rise of 7 metres) past its tipping point.

At less than 1 degree Celsius there is more frequent and intense heatwaves, ongoing drought in Australia, sub-Saharan Africa and the western US, and the swift retreat of river-feeding mountain glaciers. The eastern Amazon is drying (some tributaries ran dry in the 2005 drought), low-lying island states are on the edge of a precipice, as are coral reefs. Britain’s Hadley Centre calculates that warming of just 1C would eliminate fresh water from a third of the world’s land surface by 2100.

ZERO DEGREES: Yet we know that the present level of greenhouse gases is enough to increase temperatures by more than 2 degrees Celsius over time. We have already gone too far, there is already too much carbon in the air. At less than 1 degrees Celsius we are on the way to triggering a multi-metre sea level rise than will devastate coastal infrastructure, delta peasant–farming communities and some of the world's biggest cities.

Our only choice is to head back to zero degrees Celsius of warming, to halt all emissions and drawdown atmospheric carbon to return the planet to a safe-climate zone.

Schellnhuber, Europe's leading climate scientist, says that “we are on our way to a destabilisation of the world climate that has advanced much further than most people or their governments realise”, so “our survival would very much depend on how well we were able to draw down carbon dioxide to 280 parts per million”, compared to the present level of close to 390 parts per million.

Put starkly, we either keep warming under the range where carbon feedbacks become sufficiently pervasive as to make further human action futile, or we do not. We have a safe climate or we have a global catastrophe. There are no middle-of-the-road compromises. We must head back towards zero. At 1 degree Celsius the genie is out of the bottle, at 2 degrees Celsius the bottle is broken.

WHAT HAS TO BE DONE:

Presently there is political denial, an arrogance of power that leads governments to believe that they can negotiate with the climate and the laws of physics and chemistry, a land of tradeoffs, where climate is just another issue, the politics partisan, and where the biggest polluters are appeased, all embedded in a culture of compromise and failure.

We are treating climate in the business as usual mode rather than the emergency mode with which we respond to fires and natural disasters. We faced by an overwhelming, human-caused "natural" disaster — global warming — yet our government fails to recognise this emergency.

An emergency exists when:

- events threaten to overwhelm
- when the outcome is often, like an election, binary (you either win or lose big time)
- when delay in action comes at a great price, even tipping the system into a different state
- when the imperative is to apply large amounts of resources quickly

This precisely describes the climate threat today.

We need an emergency transition plan, a whole-of-society plan, a vast remaking of how we live that is zero-carbon and sustainable; a just transition, a vast restructuring of jobs and skills and industry and economy. The obstacles to such a plan are not primary economic or tecnological, but political and social.

We have the technologies or they are within grasp. We have the economic capacity: $50 billion has just been spent on two stimulus packages, but not with a climate focus.

We have a Future Fund. Should we use it wisely now to make sure we have a future?I am sure governments do not want to go down in history as having saved the banks but not the planet.

Ian Dunlop, formerly a senior oil, gas and coal industry executive and CEO of the Australian Institute of Company Directors, says:

Honesty about this challenge is essential, otherwise we will never develop realistic solutions. We face nothing less than a global emergency, which must be addressed with a global emergency response, akin to national mobilisations pre-WWII or the Marshall Plan… This is not extremist nonsense, but a call echoed by an increasing numbers of world leaders as the science becomes better understood… In the face of catastrophic risk, emission reduction targets should be based on the latest, considered, science, not on a political view of the art-of-the- possible.

WHAT GOVERNMENT MUST DO

Be honest about the science, rather than the present approach of downplaying the severity of the problem and celebrating dinky achievement wrapped in delusional, up-beat rhetoric. Remember, Australia's emissions are still rising and the extra volume of coal flowing through two new export facilities, approved by Labor, will increase global carbon pollution by more than Australia’s total greenhouse gas output .

Government must have a frank conversation with the Australian people about the problem and how we can solve it together. Contrast the approach of the Australian and US energy Secretaries. US energy secretary Stehen Chu recently told Californians "We're looking at a scenario where there's no more agriculture in California (and) I don't actually see how they can keep their cities going" either, saying the need was billions of dollars for alternative energy research and infrastructure. Then look at Australian energy minister Martin Ferguson's love affair with coal, and his opposition to feed-

in tariffs because "it is too early to be picking winners", when the government's "clean coal" initiative is precisely about "picking winners".

Start planning and implementing a rapid transition to a post-carbon economy.

This requires:

* Serious funding for safe climate innovation and scaling up of technologies, the drivers of change.

* A large-scale national, all-sector energy efficiency and plan: many of the actions that can be taken today actually save money in the long- term. And an efficiency programme reduces the amount of new generating capacity to be built.

* Constructing a smart grid for demand management and a new high- efficiency national grid to effectively hook renewables into the system. Even Garnaut recognise the need for such grids as a public responsibility due to market failure.

Plan and implement the rapid phase-out of the coal industry. The coal industry is a toxic asset. Carbon capture and storage is a cargo cult that cannot deliver in the relevant time frame and may not deliver at all. As Guy Pearce notes in his Quarterly Essay "Quarry vision", McDonalds employs twice as many people as the coal industry. We can have a coal industry or we we can have a planet fit for succeeding generations, but we cannot have both.

Spend the annual $9 billion subsidy the fossil fuel industry receives to start constructing some of the big building blocks of the post- carbon economy; for example an all-scale gross feed-in tariff to drive the construction of renewable capacity. Spend on public transport infrastructure what we spend on road infrastructure. Since 1996 the Victorian government has allocated more than $9 billion on road network expansion, and less than $2 billion on public transport infrastructure. Let's swap the columns.

Provide transformative political leadership. An opportunity exists within the Labor caucus, if not yet in the Cabinet, to stand with the climate action movement, to link people power with a courageous moral stance by parliamentarians. Recently I asked a former senior federal minister what it would take for a group of Labor parliamentarians to publicly argue that the scientific imperatives should be put first and campaign for a rapid transition to a post-carbon economy. The answer was simple: "Some people, including in cabinet, are going to have put their their career second".

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