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Submission

The Implications of Delaying Abatement Measures

There are two dimensions to the debate about delaying domestic action. Firstly, whether debate on the CPRS legislation should be held over until after the Conference of the Parties in Copenhagen later this year. Secondly, whether early action with weak targets via the CPRS is better than waiting for stronger commitments at a latter stage.

Delaying the CPRS debate until after Copenhagen

There are essentially two arguments on this issue. One side argues that the speedy passage of the CPRS legislation will help support Australia's negotiation efforts at the Conference of the Parties and provide certainty for business. It will also ensure the scheme can commence in the middle of 2010, and thereby start the process of reducing Australia's 'net' emissions (gross emissions are likely to continue to increase as polluters will import permits from abroad).

The contrary argument is that delay until after Copenhagen will ensure Parliament is able to consider all relevant issues when voting on the CPRS legislation, in particular Australia's national targets and the corresponding CPRS caps. Further, delay until after Copenhagen will not have a significant adverse impact on Australia's emissions profile, business certainty or the commencement date of the CPRS. At worst, it would delay the start of the CPRS by around 6 months until early 2011. Personally, I favour the latter argument, but this is obviously an issue for the respective political parties to weigh up.

Move early with weak targets or wait for stronger targets

The Government has stated that it wants the international community to agree to a regime that results in a 450 ppm CO2-e outcome. This commitment is set out in the White Paper. The Prime Minister also expressed support for a 450 ppm CO2-e target in the lead up to the 2007 federal election.

As Dr Raupach and his colleagues have outlined in their submission, in order to achieve a 450 ppm CO2-e outcome, global greenhouse gas emissions would have to be reduced by 5-10% on 2000 levels by 2020 and 70-80% on 2000 levels by 2050. For developed countries, an often quoted abatement target range for a 450 ppm CO2-e outcome for 2020 is 25-40% below 1990 levels. The most recent science on emissions and climate-carbon cycle feedbacks, as well as the

nature of climate diplomacy, suggests the upper end of this range (i.e. near 40%) is likely to be necessary if the 450 ppm CO2-e target is to be achieved.

The critical issue in relation to diplomacy concerns the willingness of major developing country polluters to agree to short-term emission constraints. Developing countries (i.e. countries without emission targets in Annex B of the Kyoto Protocol) are responsible for around 65% of global emissions and their emissions have grown rapidly in recent years. At this stage, it looks unlikely they will agree to binding near-term caps (i.e. to 2020). If developing countries agree to any targets, they are likely to be relatively weak and are unlikely to be binding absolute caps (i.e. they may be one-sided targets or be emission-intensity targets, but even this is optimistic). Due to this, the only real chance of achieving a 450 ppm CO2-e outcome hinges on developed countries pursuing aggressive near-term targets to provide headroom for emissions growth in developing countries. After a short interim grace period of around 10 years, all major polluters will need to cut emissions sharply.

This is the background context for the debate about whether Australia should move early with relatively weak targets or delay until the government of the day is willing to adopt stronger targets. The near-term target range put forward by the Government is 5-15% cuts on 2000 levels by 2020. Given the conditions put on the higher 15% target (i.e. all major polluters agree to 'substantially restrain emissions'), the 5% target appears to be the more likely outcome. If other developed countries respond with comparable targets for 2020, a 450 ppm CO2e outcome is likely to be unachievable. By 2020, assuming developing country emissions grow at an average rate of around 2% between 2010 and 2020 (they were growing at 4% prior to the global financial crisis), approximately 1000 GtCO2-e is likely to have been emitted over the period 2001-2020. This constitutes around 70% of the allowable emissions for the whole of the 21st century for a 450 ppm CO2-e outcome, and 30-40% of the allowable 21st century emissions for a 550 ppm CO2-e outcome. Even if aggressive targets were pursued after 2020, keeping the atmospheric greenhouse gas concentration below 600 ppm CO2-e would be unlikely because of the quantity of greenhouse gases emitted up until 2020.

A common response to this type of scenario is that while the 450 ppm CO2-e target will be exceeded by a considerable margin over the first half of the 21st century, the international community can pursue an 'overshoot' strategy where greenhouse gas concentrations exceed the desired limit for a period but are brought down to 'acceptable' limits at a future time. Already, achieving the 450 ppm CO2-e target involves an overshoot. The critical issues about overshoot strategies concern the risks of prolonged and extensive exceedences of 'safe' limits and whether overshoots of the required magnitude are realistic on human

time scales. Both of these issues raise complex questions. Important points that you should be aware of include the following.

(a) Any overshoot carries risks of crossing thresholds in natural systems that are irreversible (e.g. triggering the melting of ice sheets).

(b) Temperature responses brought on by high CO2 levels are likely to be effectively irreversible on human time scales.

(c) The rate of draw down of the major long-lived greenhouse gases from the atmosphere (particularly CO2) is very slow. Attached is a figure taken from the Fourth Assessment Report of the IPCC (WGI, Chapter 10) showing the likely response of the atmospheric concentration of CO2 to several different changes in CO2 emissions at 2000. The top black line shows the relative change in the concentration of CO2 if global CO2 emissions were held constant at 2000 levels. The red, light green and dark blue lines illustrate what would happen if emissions were reduced by 10, 30 and 50% and then held constant. The light blue line shows what would happen if CO2 emissions were reduced to zero at 2000 and stayed at zero over the following 200 years. This light blue line highlights how slowly the CO2 ppm levels are likely to fall to any aggressive abatement strategy. Even if CO2 emissions were immediately reduced to zero, something that would be impossible, the atmospheric concentration of CO2 would only fall by around 40 ppm over the 21st century. The implication of this is that if the atmospheric concentration of long-lived greenhouse gases is allowed to exceed the desired target by a significant margin, it will be impossible to bring them back down on human time scales without the development and deployment of technologies allowing carbon to be drawn from the atmosphere.

It is important for policy makers to be aware of the implications of weak short-term abatement targets. Locking in weak targets for 2020-2025 effectively closes off options associated with important climate objectives. Delaying aggressive abatement until after 2020 would make achieving 450 ppm CO2-e virtually impossible without new technologies.