

Post-Kyoto pact: shaping the successor

As discussions get underway over a global agreement to slash CO₂ emissions beyond 2012, Amanda Leigh Haag looks at how the Kyoto Protocol has fared and the issues that will shape its successor.

Last November, as nearly 6,000 participants gathered at the United Nations climate talks in Nairobi, Kenya, a sea change was taking place in American politics on the other side of the Atlantic. Many at the conference walked away disappointed in the lack of momentum on discussions about post-2012, when the Kyoto Protocol expires. But the shifting leadership in the US House and Senate injected the climate community with hope. To some, the Democratic takeover in Congress holds the key to adoption of domestic policies that could bring the US — and ultimately developing country powerhouses like China and India — into serious policy actions on curbing greenhouse-gas emissions in time for a commitment beyond Kyoto.

The Protocol was adopted unanimously in 1997 in Kyoto, Japan and entered into force in February 2005, after Russia's ratification brought it into acceptance by industrialized countries representing 55% of the world's greenhouse-gas emissions. Developed, 'Annex I, nations that ratify are legally bound to mandatory emissions reductions that vary from country to country, with a goal towards bringing all nations' combined global emissions to at least 5% below 1990 levels during the first commitment period. Developing nations that are party to the Protocol have no obligations to reduce emissions and instead can benefit from hosting clean-energy projects financed by industrialized nations hoping to offset their own emissions. Under the terms of Kyoto, significant progress towards a mandate beyond the first commitment period of 2008–2012 is overdue. Many countries within the international community are edging for a finalized agreement to be put in place by 2009, or at the latest by 2010, in order to ensure a smooth transition into even bolder actions in the next phase.

TROUBLED TARGETS

Although most climate experts have long acknowledged that Kyoto's first round of emission cuts would make only a small



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dent in the build-up of greenhouse gases, it was viewed as a significant first step towards long-term stabilization of the world's climate. A prominent failure of the agreement thus far is that some nations are falling far short of their commitments. Emissions targets that were perceived as modest first attempts have, in some cases, proven too ambitious. Canada recently announced that it will not meet its Kyoto commitment, prompting concerns that other countries may follow suit. "One can argue forever about the realism of the targets," says Michael Oppenheimer, a geoscientist and climate-policy expert at Princeton University in New Jersey. "But given that the timelines were relatively short, I think it's no surprise that some countries had difficulty. And given especially that the US decided not to play at all, it's remarkable that any countries are doing anything serious."

The Bush administration backed out in early 2001, taking a strong stance against the fact that Kyoto does not limit emissions from developing countries like China and India and claiming it would

put undue pressure on the US economy. The US is responsible for a quarter of the world's greenhouse-gas emissions, but China is close behind and stands to outpace the US by later this year or 2008. China's newly built coal-fired plants alone have the capacity to nullify the global carbon dioxide emissions that would be achieved by Kyoto reductions during the next five years. Most agree that without the participation of both the US and the leading developing countries in a post-Kyoto agreement, the aim to stabilize greenhouse-gas emissions below dangerous levels may be a dead end.

POLITICAL PULL

To many who believe that the US holdout has been both a symbolic and effectual linchpin in the Kyoto process, its future leadership will be crucial in reaching a workable successor. In addition to being the world's largest greenhouse-gas emitter, the US is also the world's only economic superpower, with more resources than any other country to invest in clean technologies and development. It has also

been a historical leader in environmental circles, including drafting of the Kyoto Protocol in the 1990s. And economically, countries like China and India have no incentive to take on emissions targets if their biggest trade competitor — the US — is not leading the way. “It’s absolutely critical, if you’re going to get any interest from major developing countries, for them to see that things can happen on the ground here, and that it’s not hurting the economy,” says John Drexhage, director of climate change and energy programs at the International Institute for Sustainable Development in Ontario, Canada.

Canada, experts say, highlights the crippling effect that the US has had on other countries’ lack of progress under Kyoto. “The absence of the US from the process is the single most important reason why the whole system didn’t do as well as it should,” says Rob Bradley, director of international climate policy at the World Resources Institute, in Washington DC. “Canada does 85% of its trade with the US. When you’ve got that elephant just across the border that suddenly decided not to play, that becomes a political uphill struggle.” Although it will not meet Kyoto targets, Canada hopes to cut its emissions by 20% of current levels by 2020. This target falls well below their Kyoto goals, but as the second commitment period has not been negotiated, it is unclear what penalties they will face.

A GLOBAL AFFAIR

Some EU countries, such as Austria, Spain and Ireland, face challenges similar to Canada’s. However, under the umbrella of the European Union, which has stated that it will reach its emissions targets unilaterally, nations will not endure penalties if they don’t meet their individual targets. Countries that are on track, such as Germany, Britain and Sweden, have been adopting aggressive energy policies for years. The ramping-up time is one reason why future commitments must be negotiated so far in advance of 2012, especially if countries are to eventually take on steeper reductions.

There are signs that Australia, which has not ratified the Protocol, could be brought back into Kyoto talks even before the US. Their Labour Party, which supports Kyoto, has a substantial lead in the polls prior to a general election to be held late this year. The government is currently considering a national carbon-trading scheme that could kick-start in 2010. Australia leads the world in per capita emissions, owing in large part to its dependence on coal-fired electricity, but it contributes less than 2% of global greenhouse-gas emissions.

If Australia doesn’t beat the US — its political ally — to it, experts agree that it would almost certainly come onboard the treaty if the US led the way.

In the meantime, lobbyists are pushing for the US to enact a strong domestic policy under the new Democratic congress, which they believe will trigger cooperation from developing nations. This includes adoption of a domestic cap-and-trade system and a nation-wide carbon market by 2007 or 2008, so that the US can begin trading in other flourishing markets and tap innovation in favour of clean-energy technologies. Although it has encountered some obstacles, the European Trading System has proved highly successful overall and, according to Oppenheimer, is “the single greatest achievement of Kyoto”. Policy-makers envision linking individual markets into a global carbon market that could get underway in 2013, when a new climate pact is launched. In the meantime, as individual markets take shape, experts say they can be designed to provide incentives for recalcitrant nations to come onboard.

The European Trading System *“is the single greatest achievement of Kyoto.”*

Michael Oppenheimer

SOFT SOLUTIONS

Discussion abounds about how to woo countries like China, India and Brazil into taking bold steps to reduce emissions when Kyoto expires, without hindering

their development. A mosaic of policies could constitute developing-country commitments, with hopes of bringing those nations into firm emissions caps in the future. Such policies might be aimed at immediate needs, such as reducing air pollution and improving public health, with the dual effect of assisting with climate-change mitigation. China already has some aggressive domestic policies in place, including higher vehicle fuel-efficiency standards than the US and a pledge to meet 15% of its electrical demands with renewable energy by 2020. “In the US, we have a one-dimensional view of the term ‘commitment,’” says Elliot Diring, director of international strategies for the Pew Center on Global Climate Change, based in Arlington, Virginia. Now, Diring says, there is a growing recognition that emissions targets aren’t going to work for everybody, “so we need to broaden our concept of commitment and allow for other possibilities”. Roger Pielke Jr, a climate-policy expert at the University of Colorado, Boulder, believes that future policies should involve actions that are “justified on their own merits in the short term”. For instance, if nations like China emphasize reducing air pollution from dirty coal in order to improve public health, it will be much more motivating than simply focusing on the idea of reducing greenhouse gases in 50 to 100 years, he says.

For an arrangement of ‘soft’ commitments to proceed, it will need to be very clear that countries like China are wholly committed to making a meaningful contribution to the fight against climate change, in whatever



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Regions such as the Amazon are being rapidly deforested. Negotiations are underway on how to reduce deforestation to stem further growth in emissions.

form it takes. The China of 1997, when the Kyoto treaty was first established, and the China of 2007 are two entirely different worlds, Drexhage notes. “When it comes to competitiveness, particularly in resource-based industries and manufacturing, they’re every bit as much our peer, and in some cases very much superior than was the case before,” Drexhage says. Unless it is apparent that China is ratcheting down its greenhouse-gas emissions substantially, what will result is an “incredibly massive and gross leakage to developing countries on dirty and energy-intensive industries that gets us absolutely nowhere”. At this stage, India’s participation in reducing its emissions has been primarily through acting as a host nation for some 233 clean-energy projects sponsored by Annex I countries. Such investments will allow poorer nations to leapfrog over fossil fuel-intensive technologies, avoiding the mistakes that industrialized nations have made.

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FURTHER CONSIDERATIONS

Brazil has asserted itself as a progressive leader in the transportation sector by converting the majority of its passenger-car fleet to run on sugar-cane ethanol. It stands to play a key role in cutting emissions in the next commitment period through market incentives to reduce deforestation. As the world’s fourth largest contributor to greenhouse gases, 70% of Brazil’s emissions are from deforestation.

Negotiators are now hoping to move quickly on the issue of avoided deforestation to stem even further growth in emissions. Within the Kyoto framework, industrialized parties must account for their land-use activities, including deforestation and replanting projects, as forests represent enormous potential carbon ‘sinks’ to soak up carbon. Developing parties do not currently pay a penalty for deforestation, yet the yearly greenhouse-gas emissions from destruction of the world’s rainforests closely rival total annual US emissions. A handful of Brazilian non-profits and US-based organizations have proposed ‘compensated reduction’ as a means to offer incentives for nations to avoid deforestation. Nations that curb their emissions by reducing deforestation below a baseline level would be compensated through credits that could then be sold to governments or private investors via the carbon market. Hopes are high for an agreement at the next UN climate conference in Bali, Indonesia, that would send a strong market signal to governments to begin reducing deforestation immediately.

The issue of adaptation will take on much greater prominence in the post-Kyoto framework. Discussions on how to assist countries like Africa, small island states

and other ‘least developed countries’ in adapting to the effects of climate change are very preliminary. Some experts say that Kyoto focused to such a large degree on mitigation of climate change and reduction of greenhouse-gas emissions that it largely neglected the looming need for adaptation. “We can’t lose sight of the broader context,” says Pielke. “Whatever we do on mitigation and whatever successes we have, we’re going to have to adapt no matter what.”

Under the Kyoto Protocol, an adaptation fund would help nations that are most vulnerable and least equipped to cope with the impacts of climate change. Proceeds for the fund are generated by a 2% levy on CDM transactions and currently amount to some \$9^{million} dollars, although the fund is not yet operational. The World Bank estimates that between \$10^{billion} and \$40^{billion} will eventually be needed to assist countries in adaptation efforts for new infrastructure alone. Proposals for how to generate substantial sums are sure to be on the table for post-2012 discussions. Polluting activities such as commercial airline flights could eventually be eligible for the levy. “We need to have a vehicle that taxes the bad, taxes pollution, taxes emissions, and puts it into a fund for adaptation,” says Saleemul Huq of the London-based International Institute for Environment and Development. “There’s no way that the aid channel is going to be sufficient for adaptation.” How the funds would be allocated to various nations and which forms of adaptation should be addressed first will have to be negotiated. Efforts might include providing crops that would thrive in more arid conditions, introducing new irrigation practices or relocating whole coastal communities threatened by rising seas.



Any post-Kyoto pact will have to address how to adapt to climate change impacts such as increased flooding in countries like Bangladesh.

BRIDGING THE GAP

As post-Kyoto talks begin in earnest, one thing is clear: a large gulf exists between the global emissions trajectory of today and that which is needed to stabilize emissions in the long term. There is wide agreement that warming should be held at a level below 2°C over pre-industrial levels in order to avert 'dangerous climate change'. This would require that greenhouse gases be stabilized at between 450 and 550 parts per million (p.p.m.) of CO₂ equivalent, which could be achieved by halving today's greenhouse-gas emissions by 2050. Current levels are at roughly 430 p.p.m. CO₂ equivalent and are rising at an average of 2 p.p.m. per year. Opening talks on post-Kyoto were kicked off in May at a two-week UN climate meeting held in Bonn, Germany. Long-awaited discussions at the G8 Summit in Heiligendamm, Germany this week will look to set a timeline for post-Kyoto negotiations. Prior to the current round of talks, the US reportedly worked to remove portions of the draft that call for emissions caps and establishment of a global carbon market. The US has also said it is unlikely to participate in further negotiations on a global agreement to cut CO₂ emissions at the end of this year.

But many see the next commitment period beyond Kyoto as a narrowing window of time in which to slash emissions growth. Britain recently



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Commercial airline flights could be eligible for a levy in a post-Kyoto pact.

pledged cuts of 60% by 2050 and the European Union has pledged to reduce its emissions by 20% of 1990 levels by 2020 if other nations make comparable efforts. It is likely that negotiators will agree to a longer commitment period for the second round, perhaps an eight or ten-year period rather than Kyoto's five-year timeframe. This week, world leaders plan to rally for global negotiations on the framework to be launched in Bali in December and to be concluded by 2009. In the meantime, the world is poised to

see whether domestic policies will take shape on the US home front, and whether the US and China will be willing to come to the table with policy measures they are open to negotiating. "That's the kind of dialogue that is really essential in order to be able to see anything moving forward," says Bradley of the World Resources Institute. "I don't think it's impossible, but I think there's still a mountain to climb." □

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In the Future.....

- Robots will fulfil us spiritually and intellectually
- There will be designer drugs for lovers
- Fans will clone the cells of their idols
- The Dead will be revived as SPAM filters
- Theatre actors will be replaced by stars of the past

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