



TURNING POINTS FROM COPENHAGEN

Many of us hoped the UN's Climate Change Conference in Copenhagen in December would come up with the answers, firmly moving the global political community in one direction to act on reducing emissions. More than six months later, the issues are still mired in uncertainty. Here, **Sir David King**, director of the Smith School of Enterprise and the Environment at Oxford University, reviews the "urgent task" ahead.

BOB STRONG/REUTERS/CORBIS

As the global population rises towards nine billion – likely by 2050 – a continued dependence on fossil fuels for energy generation and on deforestation to create additional farmlands will lead to global temperatures increasing by up to 6°C and average sea levels rising by up to one metre by the end of the century. The impact on societies would be severe, driven by heat and drought in some areas and flooding in others – especially coastal cities.

There is worldwide recognition that cutting greenhouse gas emissions and moving to a defossilised economy is the right thing to do. The question is: how do we achieve it on a global scale?

It is more than six months since the 15th meeting of the Conference of the Parties in Copenhagen. There is much to do ahead of the meeting in Cancun in Mexico in December.

Despite the unfortunate level to which expectations were raised, I believe that Copenhagen was a step forward. We must acknowledge that a group of 55 developed and developing countries, which together account for almost 80 per cent of global emissions,

did agree to some very important and, indeed, groundbreaking commitments:

- They endorsed the limit of two degrees' warming as the benchmark for global progress on climate change, the figure first agreed during the 2005 G8' Heads of State at Gleneagles.
- Unlike every previous agreement, it wasn't just developed countries, but also all leading emerging economies, that agreed to make specific commitments to tackle emissions.
- For the first time, these countries have signed up to a comprehensive measurement, reporting and verification of progress agreement.

“Getting an agreement was always going to be tough, but I believe that no protocol is better than a weak one.”

SIR DAVID KING

Significantly, though, the group includes only Brazil from South America and just six out of 55 African countries. In all, 137 (out of a total of 192) countries have not made pledges. Independent analyses indicate the pledges as they stand are about half of what is required

to avoid the worst impacts of climate change. This needs to change. We need more certainty and perhaps even more ambition.

A COMMUNITY OF SCIENTISTS

The science of climate change has come under a lot of media attention lately, with the most recent landmark reviews of the Intergovernmental Panel on Climate Change (IPCC) on the state of climate science being at the heart of this lobby-driven storm. Following leaked e-mails from the University of East Anglia and some poor referencing in the IPCC's 2007 report, through the efforts of well-paid US lobbyists the work of thousands of remarkable scientists is now being questioned.

The climate science community is vast: palaeo-climatologists studying the planet's past climate behaviour; analysts determining sea-level rises; scientists taking detailed measurements in tropical forests; scientists studying the loss of ice on mountain peaks in Greenland and on Antarctica; those analysing changes in levels of greenhouse gases in the atmosphere and the acidification of the oceans; and those modelling the potential impacts of global warming in different regions

MAIN IMAGE

Horns Rev 2 near Esbjerg in Denmark is the world's largest wind farm. Although wind power currently accounts for less than one per cent of global electricity production, the figure rises to about 20 per cent in the case of Denmark

01 The plenary session of the 2009 Climate Change Conference in Copenhagen, Denmark

02 A house model at an exhibition of pollution-free technology in Qingdao in China. The country has committed to stringent reduction targets on carbon intensity by 2020

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OLIVIER MORIN/AFP/GETTY IMAGES

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WU HONG/EPA/CORBIS



JAMES BARBER

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around the world. Their progress is untouched by the hullabaloo in the media. They challenge each other, debate and push back the frontiers of their science in the process.

The urgent task is now to move forward and broaden, deepen and strengthen the commitments made in Copenhagen, drawing on the large coalition of countries that wanted more from the agreement.

THE STRUGGLE FOR CONSENSUS

Greater certainty about emissions is necessary to provide the strongest incentive to business, through the establishment of a long-term carbon price. I am not going to suggest what such a figure will be, but it needs to provide assurances to the global market while ensuring that renewables and other low-carbon technologies can be competitive. The Smith School of Enterprise and Development is currently developing optimal strategies for moving forward, using existing international processes, such as G20² meetings, UN meetings and the World Trade Organisation (WTO), as appropriate instruments.

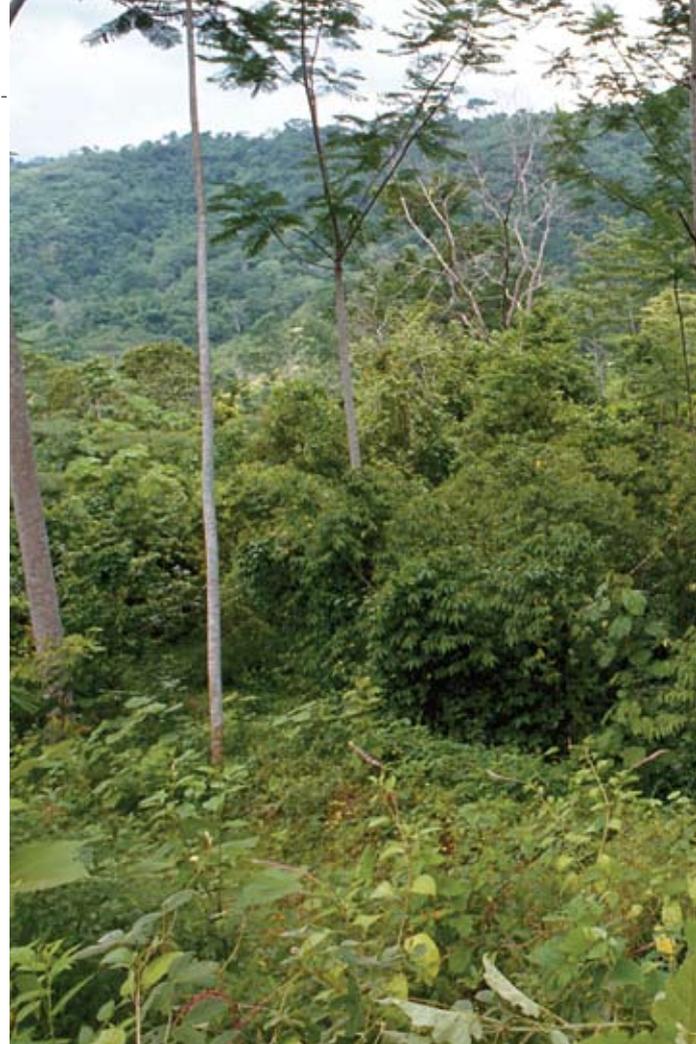
Looking back at Copenhagen, we must bear in mind that getting an

agreement was always going to be tough because we are seeking consensus among almost 200 countries. We all knew that that it would be messy and complicated. In particular, without backing from his Senate, President Obama could not have signed up to such a deal and, without the US, no lasting deal could be reached on a protocol.

I believe that no protocol is better than a weak one. Signing up to something that could not deliver the cuts needed would, in the long term, have presented more problems than it solved.

As part of moving towards a low-carbon economy, we need a step-change in driving through new low or zero-carbon technologies. Throughout the world, we need to develop new technologies and implement policies that will improve energy efficiency, increase investment in low-carbon power, develop hybrid and electric vehicles and smart grids, and reduce deforestation – and, in doing so, provide a stimulus to grow our economies.

The changes we need to make by 2050 are large and complex. Many of the decisions that need to be made now, and the innovations that must be



GARY BRAASCH/CORBIS

01 Rechargeable electric cars are already becoming a familiar sight in many cities, such as London

02 New policies are being called for to reduce deforestation and increase reforestation – as is being undertaken in Costa Rica

developed, will have an impact on what the energy system will look like in 2030 and beyond. This will have significant implications for industry, businesses and consumers. Therefore, it is critical that we develop a shared understanding of what technologies are available now and potentially coming on stream in the near future, as well as the practical challenges and constraints we need to manage and the implications for society.

This global shift has not yet found international legal form, but scientific evidence, public opinion and business opportunity will ensure that it emerges over the coming years.

COMMUNITY INVOLVEMENT

It is particularly noteworthy that the US, as well as the emerging powers – such as China, India, Brazil and South Africa – have added their voices very clearly and constructively to the debate, demanding action from the



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advanced economies. For example, the US and Chinese governments have each pledged their commitment by setting stringent reduction targets on, respectively, greenhouse gases and carbon intensity by 2020.

Brazil is committed to ending deforestation by 2025, and is thinking practically about how it can more effectively supply energy. CRERAL, a co-operative in the south of the country, supplies electricity to a mainly rural customer population of around 6,300, using river-based, low-tech and low-cost mini-hydro plants, which increase both capacity and reliability.

In Europe, progress in wind energy is growing steadily. Denmark has proved particularly successful; its model of ownership has led to community groups owning half the country's private wind farms. Around 85 per cent of the nation's wind-generation capacity is made up of small clusters of turbines,

rather than large developments. Similar schemes, in which people are encouraged to join forces to create a renewable energy supply, can be found in The Netherlands and Germany.

The poorer nations, the small island states and African countries are making their concerns and demands clear. Many are already setting examples for others to follow. In Tanzania, for instance, the Mwanza Rural Housing Programme trains villagers to set up enterprises to make high-quality bricks from local clay, fired with agricultural residues rather than wood, which helps reduce deforestation.

The key to the success of these initiatives is the buy-in of the local community and making them part of the economic and practical solutions – a bottom-up approach. The UK has recognised this, with its innovation body, NESTA, leading a yearly challenge with a £1 million (c. \$1.5 million) prize fund to reward collaborative community efforts. This year's four winners have all reduced carbon emissions – and, in the case of a project on Scotland's Isle of Eigg, by as much as 32 per cent.

A COMMITMENT FROM EVERYONE

In many respects, the move towards a new paradigm began at Gleneagles in 2005. The process started in January of that year at the Met Office in Exeter, which the then Prime Minister Tony Blair asked me to oversee. A meeting of the world's leading climate scientists was convened to address the topic of 'Avoiding dangerous climate change'. This was the first time that a consensus was reached on the need to limit global warming beyond a certain limit, and provided an important backdrop to the first meeting of the G8+5³ grouping later that year to discuss climate change and African development.

Five years later, the whole world is now engaged in the issue. We do need a solution that involves everybody – industrialised, rapidly emerging and developing countries alike – or emissions will simply 'leak' from the countries where CO₂ rules apply to those that are not part of the agreement.

By 2050, average global emissions of CO₂ must fall to around two tonnes per person per year if we are to mitigate against the worst effects of climate change. One response might be for each nation in the industrialised world to be assigned a straightforward downward trajectory to this figure. This has, in effect, been accepted by the EU, and is a personal commitment from President Obama for the US. Emerging economies such as China and India, which have relatively low levels of emissions per head, could temporarily increase their emissions before these too would start to fall towards the designated figure of two tonnes per person. Again, this is now a formal commitment by China.

Inaction over the coming decades could disrupt economic and social activity as we approach mid-century – making the financial downturn of the past two years pale in comparison. Tackling climate change is the pro-growth strategy and it can be done in a way that does not cap the aspirations for real growth of rich or poor countries. The earlier effective action is taken, the more advantageous the outcome will be. 

¹ Canada, France, Germany, Italy, Japan, Russia, the UK and the US.

² Argentina, Australia, Brazil, Canada, China, France, the European Union, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the UK and the US.

³ The G8 (see '1') plus Brazil, China, India, Mexico and South Africa.