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Countdown to  
Copenhagen



## Forty days to get a climate deal

The Copenhagen summit opens in December. Many see it as the last chance to limit the consequences of global warming – but failure is a real prospect. Here, we examine the complex trade-offs that will have to take place for the summit to succeed

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Global warming has brought hard times to Hebei, the dry northern province of China that envelops Beijing. Rising temperatures and unpredictable rain patterns have forced farmers and nomads to flee the land and move to cities. Lakes are drying, crops are withering, deserts are spreading and food production is declining: all reminders to the Chinese government that it cannot afford to ignore the danger of climate change.

Yet there is another side to life in this overheating region. At the former agricultural town of Baoding, a hub of low-carbon technology has been created. Hundreds of workers are constructing giant towers and blades for wind turbines. Tianwei, the company that runs the facility, has increased output from 20 units last year to 150 this year. Next year, they aim to build 500.

In the deserts and grasslands of northern Hebei, Inner Mongolia and Gansu, a new wind turbine is erected almost every hour. Thanks to these great machines, Baoding alone will reduce its carbon dioxide emissions by 35% by 2020. "Human society is moving from industrial civilisation to eco-civilisation," says its young mayor, Yu Qun.

It is a remarkable vision. On one hand devastating weather is triggering key changes to the landscape; on the other, glittering low-carbon technology is being set up to tackle the problem. The question – not just for China but for the world – is simple: can this technological fix of wind turbines, solar plants and other renewable energy generators be assembled quickly enough to prevent rising levels of atmospheric carbon dioxide from destroying the farmlands of Hebei, and all those other fertile regions of the globe, and so prevent widespread loss of life by the middle of the century? In short, does humanity have the will – and the time – to halt global warming?

Answers to these questions are now becoming increasingly urgent as politicians enter the final stages of preparations for the Copenhagen climate summit that starts on 7 December. World leaders will then have the chance to hammer out a deal to halt ice caps melting and sea levels from rising catastrophically. Many believe this will be their last chance to save the world.

Only "a clear, politically binding treaty" that puts limits on every nation's carbon output and pledges specific sums of money – to be spent on renewable technology across the globe – will be acceptable as a summit outcome, Britain's chief climate negotiator, Ed Miliband, told the *Observer* last week. "We have put our cards on the table," said Miliband, the secretary of state for energy and climate change. "We need other nations to do the same."

It is an uncompromising stance. Yet the creation of a binding Copenhagen deal now looks increasingly unlikely as the summit looms. Despite the fact that negotiators have had two years to prepare, they now enter the final phase of talks with a real prospect of failure ahead of them.

"It is realistic to say that in Copenhagen we will not be able to conclude a treaty," Angela Merkel said on Friday at the end of a two-day meeting of EU leaders. The best that can now be hoped for is the establishment of a framework for future negotiations, warned the German chancellor.

This depressing vision flies in the face of Miliband's hopes for the summit. So who is going to be proved right? Will the Copenhagen talks falter, fail and doom the planet? Or will there be sufficient progress to raise hopes that measures can be introduced to limit global warming to a 2C rise by the end of the century? It should be noted that to achieve the latter, each developed nation will have to agree to the introduction of massive limits to its greenhouse gas emissions: by between 20-30% by 2020 and by around 80% by 2050. Only radical changes in the way we power our factories, homes, cars and planes will bring about this goal.

Yet it is clear that there is a will to act to save the world. Constant reminders about the world's warming seas, extreme weather events, eroding glaciers and disappearing wild animals have made politicians aware of the dangers of global warming. The construction of those wind turbines across the barren Hebei landscape shows that even the Chinese, once the most difficult of nations to convince about the need for greenhouse gas reductions, have got the message. The same is true of other nations.

The problem is agreeing a common strategy. How much aid should rich countries pay developing nations to combat climate change? What assurances should the latter give about the way they spend this money? How can the world halt the clearance of forests which play such a crucial role in absorbing carbon dioxide? The developed world wants pledges, the developing nations want cash. Each expects the other to act first. The result has been stalemate.

Nor is there much doubt about the principal cause of this failure to act. It is the fact that the United States has not passed legislation that would limit its own colossal emissions of greenhouse gases. Per capita, the US is one of the greatest emitters of carbon dioxide. The average American is responsible for pumping out almost 25 tonnes of the stuff every year. By contrast, a European produces about 10 tonnes, an Indian 2 tonnes and a Chinese person around 6 tonnes. (China, overall, is the biggest national emitter because its population is so vast.)

The world needs the US to set an example. However, despite pledges by the Obama administration, it has so far not managed to do so. A bill is being discussed by the Senate but will certainly not be passed in time for Copenhagen thanks mainly to fierce opposition from conservative Democrat politicians as well as Republicans. Polls also indicate that ordinary Americans are becoming less engaged with climate change issues while environmentalists warn that the Senate bill is likely to be weakened during committee negotiations.

It is a depressing scenario. If America does not set a lead, the world is unlikely to act effectively. On the other hand, all is not gloom. In the past week or two, signs of a shift in America's attitude have become unmistakable. The prominent Republican Senator Lindsey Graham, of South Carolina, has written a column for the *New York Times* in support of the climate change bill, for example.

Similarly, in Senate hearings, critics of the bill have stopped debating the scientific evidence for global warming and shifted to a debate about the economic costs of cutting greenhouse gas emissions. "Eleven academies in industrialised countries say climate change is real; humans have caused most of the recent warming," said Lamar Alexander,

a Republican senator from Tennessee. "If fire chiefs of the same reputation told me my house was about to burn down, I'd buy some fire insurance. But I'd buy insurance that worked. I wouldn't buy insurance that's so expensive I couldn't pay my mortgage or my hospital bill."

This shift is one of several tangible signs that Barack Obama has helped turn around American thinking on climate change. Last week the White House renewed these concerns when Obama toured a solar facility in Florida and announced some \$3.4bn in grants for the development of America's "smart grid".

At the same time, the vice-president, Joe Biden, visited a factory making plug-in cars in Delaware while John Kerry, the former presidential candidate, has been lobbying hard for a change in climate law. For months, he has been hosting a Tuesday breakfast club where he tries to persuade the doubters to support a bill.

Phil Leventis, a state senator from South Carolina who came to Washington last week to campaign for a climate change bill, believes change is taking place. "I'm thinking a light bulb has gone on in the minds of the general public," he said, adding that the spate of high-profile conversions – especially from Republicans – could produce the votes senators need to pass the bill. "Lindsey Graham has given them cover."

Change is coming though it is almost certainly too little and too late to allow America to play a strong leadership role at Copenhagen. Instead the European Union, with Britain in the vanguard, will take the driving seat. At its summit last week, the EU decided to call for the establishment of a £90bn a year fund to help the world's poorest nations develop new energy technologies. It has also promised to reduce greenhouse gas emissions by 20% from 1990 levels by 2020 and to raise this level to 30% if a global deal is agreed at Copenhagen.

"Europe has put its cards on the table," says Miliband. "Now we want others to do the same. That is China, Russia, India and the US. Everyone needs to come forward with specific proposals. They need to come with ambitious reductions. An agreement without numbers would not be a satisfactory agreement."

The problem is getting the world to agree on those numbers. While Europe may have trumpeted its proposal to up its carbon cuts to 30% provided a global deal is agreed, this is still not enough for developing nations. Virtually all the excess carbon now in the atmosphere has been put there by developed nations, they point out. If the world is overheating it is the west that it is to blame. Hence the demand by the Group of 77 (G77), which represents China, India and the developing nations, that the developed

world must cut its emissions by at least 40% by 2020 – a huge decrease in a very short time.

To date, only Norway has agreed to try to meet this challenge. Few other developed nations – and certainly not the US – are likely to take this step. The arithmetic of climate change is going to prove to be a tricky business.

Some signals are more encouraging, however. At the UN climate summit last month, President Hu Jintao of China said he was prepared to set his country's first carbon targets. This will not involve an overall cut, but an "intensity" reduction relative to the growth of the economy, he added.

He was, however, short on specifics and merely pledged that it would be a "notable margin" by 2020. Most analysts suggest that in the absence of rich nations setting ambitious targets for their emissions, China is likely to set a goal of around 20%. This is "not quite enough," as one observed. China says it will also establish national tree planting campaigns and even provide a small amount of support for renewable energy projects for poorer nations. It will also raise its renewable energy target and set a date to start reducing overall emissions.

This is promising, admitted Miliband, but still not enough. He is to travel to Barcelona this weekend to take part in the final interim negotiating meeting before Copenhagen and is to hold special talks with his Chinese counterpart.

"I will be asking the Chinese minister how he plans to build on President Hu's speech and say exactly what they intend to do," he said.

And then there is India. It emits just 5% of the world's carbon compared to China's 23%, but is still preparing to unveil a carbon scheme and a boost in investment for renewable energy. This point is seized on by Rajendra Pachauri, head of the Intergovernmental Panel on Climate Change, who told the *Observer* that China and India could make an important contribution by putting their domestic policies into a global plan. "As far as large developing countries are concerned, I hope they come with their national action plans and put them on the table and say this is what we are planning to do. You cannot expect developing nations to reduce emissions. But you can ask them to deviate from business as usual."

Such signs suggest all is not lost and that a global climate deal can be hammered out. The only issue is one of timing for it is certainly not clear it will be possible to resolve, in the next few weeks, the issues of setting up methods for financing the developing world to help it survive global warming, of setting ways to ensure these funds go on renewable

energy technology and are not diverted illegally, of fixing specific limits for carbon reductions for every country, and for establishing schemes that would halt the continuing deforestation of the planet.

Yes, it looks gloomy, but there is still hope, argues Miliband. "The most important commodity that we have is momentum," he said. "Things will go down to the last day at Copenhagen, I know. However, if we have to spend Christmas there, then we will."

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## **Emission sources**

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According to the World Resources Institute, carbon dioxide makes up 77% of all greenhouse gas emissions, with methane (14%) and nitrous oxide (8%) making up the bulk of the remainder. The largest annual emitters of greenhouse gases are as follows:

### **Electricity and Heat**

Worldwide electricity production and heat generation are the cause of 24.6% of total global emissions, with 9.9% of emissions from residential buildings and 5.4% from commercial property. This results in an estimated 10,269 million metric tons (MtCO<sub>2</sub>) released into the atmosphere each year.

### **Industry**

Industrial processes add up to 21% of global emissions, with the chemical industry accounting for 4.8%, followed by cement production at 3.8%, and iron and steel at 3.2%. An estimated total of 8,856 MtCO<sub>2</sub> are released by industry each year. (chemicals production at 2,013 MtCO<sub>2</sub>, cement 1,588 MtCO<sub>2</sub>, iron and steel 1,319 MtCO<sub>2</sub> and aluminium only 324 MtCO<sub>2</sub>.)

### **Deforestation**

Land use change and forestry (deforestation, harvesting and land management) is contributing 18.3% of greenhouse gas emissions, resulting in 7,619 MtCO<sub>2</sub> of emissions annually.

### **Transportation**

13.5% of emissions. Of this, 9.9% comes from traffic, 1.6% from aviation and 2.3% from rail, ship and other transport. Adding an estimated 5,743 MtCO<sub>2</sub> to the atmosphere.

### **Agriculture**

Land cultivation and animal husbandry also accounts for 13.5% of emissions, including 5.1% from livestock and manure, meaning the agriculture sector, including soils management and methane emissions from livestock, creates an estimated 6,205 MtCO<sub>2</sub>.

### **Waste**

Landfill, wastewater management and human sewage accounts for 3.6% of emissions, including 3% from landfill and 1.6% from waste water and other sources, releasing 1,484 MtCO<sub>2</sub>.

Source: CAIT

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