BRIEFINGS

China, India and climate change

Melting Asia

Jun 5th 2008 | BEIJING, DELHI AND TIBET
From The Economist print edition

China and India are increasingly keen to be seen to be tackling climate change; though it is dirtier, China is making a more convincing show of action

EPA

Get article background

SINCE 2006 the railway line across the Tibetan plateau (above) has been carrying passengers and freight across a landscape of snow-covered peaks and tundra, antelopes and wolves. China celebrates it as one of the nation's greatest technological feats. But some experts worry that global warming may render it useless.

The impact of warming can be seen on a road that runs parallel to the line for much of its length. Trucks bump along its cracked and undulating surface, which is being ravaged by the freezing and thawing of the tundra beneath. Since the highway was built in the 1950s, the permafrost area has been shrinking and the layer above it, which is subject to seasonal thaw, has been getting deeper. The railway is vulnerable to the same process.

The vast and sparsely populated Tibetan plateau is the origin of the great river systems of China, South-East and South Asia: the Yangzi and Yellow Rivers, the Brahmaputra, the Indus, the Mekong

and the Salween. The Ganges rises on the Indian side of the plateau's Himalayan rim. These rivers, fed by thousands of Himalayan glaciers, are an ecological miracle. They support some 1.3 billion people.

But the glaciers are retreating. Chinese experts predict that by 2050 the icy area on their side of the Himalayas will have shrunk by more than a quarter since 1950. Predictions for the Indian side are gloomier still. In April a leading Indian glaciologist, Professor Syed Iqbal Hasnain, measured the East Rathong glacier in lofty Sikkim state. It appeared to have shrunk by 2.5km, or half its length, in a decade.

The average global temperature increase of 0.6°C in a century seems an insufficient explanation; but that may combine with a 3km-thick fug of pollution, known as Asian Brown Cloud, that hangs over northern India. Scientists think this haze, which is created by power stations and cooking-fires, may be radiating heat into the lower troposphere, at altitudes in which glaciers are found. Mr Hasnain estimates that Himalayan glaciers will be gone in 20-30 years. That would leave many great rivers depending on seasonal rainfall. According to the Intergovernmental Panel on Climate Change (IPCC), this may be the fate of the Indus, Ganges and Brahmaputra by 2035. Making matters worse, changes to the weather may meanwhile make the rains less reliable.

North India has two main weather systems. In the summer, south-westerly monsoonal winds reach northern India, in an explosion of heat-busting rain, in late June. During the winter, westerly winds blow rain-clouds across Pakistan and northern India, watering the plains and dumping snow onto the tops of the Hindu Kush, Karakorams and western Himalayas.

These systems are liable to change with the climate; some scientists think the Westerlies have been disrupted already. This might explain why India's winter rains were poor this year; but May delivered a drenching. With 168mm of rainfall, Delhi had its wettest May on record. In Uttar Pradesh state, two storms killed 120 people. With seasonal rivers and sporadic rains, India's ecological miracle would become an ecological calamity.

Now that the American presidential race is down to two candidates who are both committed to cutting emissions, China and India, the world's most populous nations, are seen by many as the world's biggest climate-change problems. Russia's economy is more profligate with energy, but

China is widely believed to be the world's biggest emitter of carbon dioxide, and India is rapidly moving up. Their exploding emissions are America's main excuse for failing to take action itself; and their intransigence exasperates those trying to negotiate a global agreement on climate-change mitigation to replace the Kyoto protocol. Meanwhile, both countries are awakening to the problems that climate change will cause them.

In the past couple of years, Chinese officials have begun sounding like converts to the climate-change cause. In late 2006 12 ministries helped produce a 415-page report on the impact of global warming. It foresees a 5-10% reduction in agricultural output by 2030 (a shift from previous thinking on this among Chinese academics which held that global warming might benefit agriculture overall); more droughts, floods, typhoons and sandstorms; a 40% increase in the population threatened by plague. The report also admits the possibility of damage to the Tibetan railway. Last year China published its first policy document on climate change, admitting that coping with global warming presented “severe challenges”.

China also now admits its own contribution to the problem. Officials reacted frostily last year when the International Energy Agency, a rich-country think-tank, said China would overtake America as the world's biggest emitter of greenhouse gases in 2007 or 2008. But the Chinese commerce ministry's website now carries, without negative comment, an article from April this year quoting University of California researchers saying China is already number one.

The impact of climate change on India, a hotter and poorer country, is likely to be worse. According to the Peterson Institute for International Economics, India's agriculture will suffer more than any other country's. Assuming a global temperature increase of 4.4°C over cultivated areas by 2080, India's agricultural output is projected to fall by 30-40%.

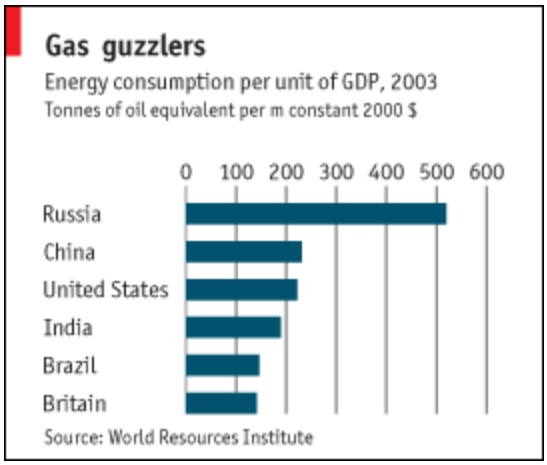
Yet India's response to this doomful scenario has been, at best, haphazard. For example, it has made only occasional studies of 11 Himalayan glaciers. It has also shown little concern for the regional political crisis that climate change threatens. As sea-levels rise, for example, the IPCC warns that 35m refugees could flee Bangladesh's flooded delta by 2050. Yet even in India, attitudes are changing.

Manmohan Singh, its sagacious prime minister, has formed a powerful council of ministers, bureaucrats, scientists and businessmen to co-operate on the issue. It has rarely met; yet it is part of a broader push that has sparked a flurry of climate-related initiatives: to boost energy efficiency, improve seed types, encourage forestation and so on. Given India's historic problems with flooding and drought, many of these are built upon existing policies. Indeed, the government claims that 2% of GDP is being spent on coping with climate-induced problems. To display these efforts, and manage them better, India is due this month to unveil a vaunted policy, the National Action Plan on Climate Change.

It will be welcome; because many consider that India is expending even greater effort on justifying its refusal to control its emissions. In particular it argues that its total emissions are relatively low (see chart above) and that it is relatively energy-efficient (see chart below). China uses far more energy than it does per unit of GDP; Russia, vastly more.

The reasons for India's frugality are not all that creditable. Almost half the population has no access to

electricity. Also, India cross-subsidises power and petroleum products: farmers get cheap electricity, for instance, while industry pays more for it. This is one of many government-imposed hardships that have forced Indian firms to use power and other resources efficiently. As a result, India is one of the world's lowest-cost producers of aluminium and steel.



During the past four years both China's GDP and its energy consumption have grown at an average of 11% a year. India's GDP, meanwhile, has grown at an annual average of 9% while its energy consumption has risen by 4%. And yet, to achieve its target of long-term 8% growth, India will have to boost its power-generation capacity at least sixfold by 2030. Over the period, its emissions are expected to increase over fourfold.

India defends this on moral grounds: its people have the same right to wealth as anyone. Indeed, given their special vulnerability to climate problems, they have a particularly urgent need for economic development. After all, a factory worker with an air-conditioner will feel global warming less than a subsistence farmer will.

This position is also consistent with the UN Framework Convention on Climate Change, which launched the Kyoto process, and recognised that economic development and poverty eradication were the “overriding priorities” for developing countries. The Bush administration's bid to override this principle by refusing to undertake targeted emissions cuts unless India and China accept comparable cuts has therefore caused fury in India. A senior official in the foreign ministry characterises America's line as: “Guys with gross obesity telling guys just emerging from emaciation to go on a major diet.”

India has entered negotiations to replace the Kyoto protocol, which expires in 2012, in the same spirit. Indeed, Chandrashekhar Dasgupta of the Energy and Resources Institute, who was involved in negotiating the Framework Convention and also the blue-print for the current negotiations, which is known as the Bali Action Plan, says it is a “mischievous mis-statement” even to speak of the protocol expiring. Indian officials consider that the negotiations are to refresh, not replace, the protocol, mainly by imposing more ambitious reduction targets on rich countries.

This would make an IPCC target of reducing global emissions by 25-40% by 2020 unrealisable, which is why India's negotiators insisted that the target be removed from a draft of the Bali Action Plan. Supported by other developing countries, they also watered down the draft's most radical feature: a pledge by developing countries to undertake “measurable, reportable and verifiable” efforts to cut their emissions. At India's instigation, the paragraph in which this phrase appeared was reshuffled, leaving its meaning unclear.

With such tough tactics, India has acquired an ugly reputation on the global front against climate change. Among big countries, perhaps only America and Russia are considered more obdurate. Although China has shown no inclination to commit to specific emissions-cutting targets in the post-Kyoto discussions, some Chinese academics familiar with the process say that after China reaches a certain per head emissions level it might agree to cut emissions. It is anxious not to be cast as a global-warming villain, particularly given pressures mounting on it over issues ranging from trade to Tibet. China is looking to America for its cue. If America commits itself to carbon cuts, China will feel obliged to make some kind of promise too.

Many see India as unhelpful by comparison. Almost nothing could annoy India more. Partly in response, perhaps, Mr Singh has shown some flexibility. At a G8 summit in June last year, he

pledged that India's carbon-dioxide emissions per head would never exceed developed countries'. In effect a challenge to the industrialised world to cap India's emissions by curbing their own, this was more imaginative than has been widely recognised. And yet China is perceived to be taking the problem more seriously than India. This is partly because China is doing a lot to try to curb its energy use—but for reasons that have nothing to do with greenhouse gases.

Jia Feng of the Ministry of Environmental Protection says the country's chief concern driving energy policy is security. Imports supply only 10% of China's total energy demand (70% of which is met by coal), but oil is essential for transport. Lacking the military power to protect far-flung sea lanes, China feels vulnerable.

Next on its list of worries is local pollution caused by sulphur dioxide, atmospheric particulate matter and wastewater. Acid rain affects a third of China's land and hundreds of thousands of people die from pollution-related cancer every year. Industrial filth has sparked protests.

A slogan for the planet

The government is trying to curb the use of fossil fuels and promote renewable energy. In 2006 it announced plans to cut the amount of energy consumed for each unit of GDP. The goal is to reduce energy intensity by 20% by the end of the decade. “Save energy, cut emissions” is now one of the party's favourite slogans. Boosting energy-efficiency and the use of renewables not only helps secure energy supplies and cuts local pollution, but also helps keep carbon emissions in check too.

Amid the recent global upsurge of climate-related anxiety, China's leaders have spun its energy-efficiency drive as greenery. In its first published policy paper on energy, which came out last year, the government said it aimed to cut greenhouse gas emissions; and the Beijing Olympic games are to be a showcase for China's new-found greenery. The first “carbon neutral” summer games involve solar power aplenty, tree-planting, banning many cars from the streets and “reducing emissions from enterprises” (temporarily shutting many of them down, presumably). The games, say officials, will produce 1.18m tonnes of CO2 and the countermeasures will save 1.03-1.30m tonnes.

The energy-efficiency drive is spreading out from Beijing. Provincial leaders are required to meet “save energy, cut emissions” targets in order to gain promotion. Of 800 county-level party chiefs questioned in an official survey published in May, a surprising 40% said meeting environmental protection goals should be a critical determinant of their careers. Fewer than 2% said meeting economic growth targets should be given such a priority.

Still, the goal of achieving a 20% reduction in energy intensity by 2010 seems a long way off. In 2006, the first year of the campaign, it fell by only 1.3% and last year by around 3.3%. To meet the target it would need reductions averaging 5% for each of the next three years. It will be hard to do this while holding down energy prices. Academics at the Development Research Centre, an official think-tank, recently said a 15% increase in energy prices by 2010 would promote “conspicuous energy savings”. But the party's political will has its limits. For all its eagerness to save energy, it fears higher prices could stoke inflation and regime-threatening protests.

But China is making considerable efforts to boost the amount of energy produced by non-fossil fuels. By 2020 the aim is to generate 15% of energy from renewable sources, up from around 7% in 2005. This is a big step up from the previous goal of 10% by 2020. China's investment in renewable energy last year, about $10 billion, was second only to Germany's.

Still, even if China meets this target, carbon emissions will continue growing rapidly too. The biggest concern among climate-change activists around the world is the impact of Chinese coal—

and also Indian coal. China and India have the world's third and fourth biggest coal reserves; though much of India's is currently out-of-bounds, under protected forests and human settlements. Both countries are meanwhile trying to develop their renewables sectors. For example, India is the world's fourth-biggest producer of wind power. Its solar yield is also bigger than any country except America. Still, in the coming decades, both countries will remain heavily dependent on coal.

Which is why rich-world climate activists are placing their faith in two factors that appeal to India's and China's self-interest. The first is the Clean Development Mechanism (CDM), a scheme whereby companies in rich countries outsource their obligation to cut carbon emissions, by sponsoring carbon-cutting schemes in poor countries. The CDM both allows emissions to be cut efficiently, because reductions take place where they can be made most cheaply, and offers developing countries an incentive to clean up.

China, which has put a lot of government effort into it, has done far better than India out of the scheme. Last year China made more money than any other country out of rich-world polluters—$5.4 billion, or 73% of the total. India, which, along with Brazil, came second, made $445m, 6% of the total. There are, however, question marks over the future of the scheme, because some rich-world businesses and politicians are beginning to argue against handing over such large sums of money to Asia. China, meanwhile, says that it needs not just money but also clean technology, and accuses rich-countries of being tight-fisted with their intellectual property.

The second factor that may encourage China and India to become greener is the growth of indigenous alternative-energy companies. There, both China and India can claim some remarkable successes.

China's Suntech, which was founded in 2001, is the third-largest manufacturer of solar cells in the world. India's Suzlon Energy is one of the world's five biggest makers of wind turbines; 15 years ago it was a modest Gujarati textiles firm. Both countries have innovative companies hungry to make money abroad and in growing local markets. As such firms grow, so will the volume of calls for more climate-friendly policies in China and India.

This is good. And yet, at a time of fast-melting glaciers and strange rains, of spreading deserts and rising seas, it is a frail and distant promise. As China and India awaken to climate change, few of their leaders and thinkers seem to expect a more solid solution: an ambitious replacement, or refreshment, of the Kyoto protocol. Such an accord would have to involve more specific commitments from China, India and other developing countries. But it would depend, first of all, upon binding action by the developed world.