

Will China clean up its act?

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China has paid a high price for its rapid economic growth. But can the world's biggest producer of greenhouse gases now lead a global green industrial revolution?



The fallout from the Copenhagen summit is still reverberating around the world. It isn't just NGOs and academics who are up in arms—many governments, including Britain's, have expressed dismay at the results. And most people agree that China is the principal bad guy.

It wasn't meant to be like that. China's leaders had made encouraging noises before the summit. In November 2009, China made a commitment to reduce the carbon intensity of its economy by at least 40 per cent by 2020 (on 2005 levels). Though falling short of actual cuts in emissions, the move was welcomed since it still represents a huge challenge for the country. And it was expected that Premier Wen Jiabao would have more to offer at the climate change summit itself.

That turned out to be wrong. China only briefly referred to its carbon dioxide intensity commitment. Instead it fought furiously to block any global agreement on transparency in carbon reporting. It manipulated its role as a would-be champion of poor countries,

and joined in the procedural chicanery and bullying with enthusiasm. It caused the accord—signed by China, India, the US, Brazil and South Africa—to be so watered down that the final conference plenary was only prepared to “note” its existence rather than endorse it. (In the idiosyncratic lexicon of the UN, “noting” comes at the bottom of the consensus hierarchy, with only “rejecting” below it.)

Perhaps most worrying was China’s refusal to allow mention of long-term targets in the accord—even those already agreed by the US and the EU. China, it was said, was moving to protect its future status as the world’s largest economy.

There were mitigating factors. Barack Obama’s arrogant and clumsy interventions, geared to appease his domestic critics, could have been purpose-built to offend China. Some developing countries were only too happy to see it play hardball with the west—but many more, particularly in Africa, were disappointed at China’s inability to exercise serious leadership. Criticism from Gordon Brown and energy secretary Ed Miliband on their return home was also significant; no country has done more to get China on board than Britain.

Inside the country, the state-run China Daily depicted the outcome as “a job well done,” shifting any blame for negotiations falling short onto the US and the EU. China’s “right” to maintain economic growth without any legally-binding emissions reductions had been successfully defended.

It is hard to square all this with the idea that China is going green. Over the last few years, the western media has highlighted the country’s new-found enthusiasm for the environment. Its stimulus package, for instance, is held to be one of the greenest in the world. HSBC estimated that up to 40 per cent of its \$600bn spend had some sustainability benefit. So which is the real China? The green country trying to reduce its carbon intensity? Or the dirty one which scuppers any international deal that would slow its growth rate?

DIRTY CHINA OR GREEN CHINA?

In the west, we are used to blaming China as the biggest emitter of greenhouse gases. It is part of our folklore that “China is building one new coal-fired power station every week.” (Subtext: “Why bother changing my lightbulbs?”) Images of horrendous industrial pollution allow us to feel better about our relatively unpolluted air and water. The greening of China is seen by many as a sham—the palest of veils draped over the most environmentally-destructive economy in the world.

The list of environmental woes is long. Cancer is now the biggest single cause of death in China, where it kills 80 per cent more people than it did 30 years ago. Lung, liver and stomach cancers have been linked to high levels of pollution in the air and water. Many of its rivers are now so polluted that they cannot be used for irrigation, let alone domestic purposes. Fourteen hundred square miles of land are turned to desert every year, primarily because of over-grazing, with severe dust storms regularly disrupting city life. Water tables are falling across the country, particularly in the main arable areas in the north. And there are tens of thousands of civil protests every year about the environmental devastation.

China's leaders are largely unapologetic about this. It has a classic FROG (First Raise Our Growth) economy, which has benefited hundreds of millions of people. The number of Chinese living in extreme poverty dropped from 685m in 1990 to 210m in 2007—primarily as a result of the country turning itself into “the workshop to the world.” And who can argue with the mission to eliminate extreme poverty, while improving the living standards of the rest of the population?

But in China, the social and environmental costs of economic growth may already be exceeding its benefits. So profound is the depletion of its natural capital that the viability of its economic model is at risk. The Chinese are aware of this. Notwithstanding its behaviour in Copenhagen, most China-watchers agree that its leadership has a sophisticated understanding of the impact of climate change and the threat it poses to current and future prosperity.

The evidence from the Tibet-Qinghai plateau is particularly disturbing. Its glaciers feed seven of the world's major river systems, including the Yellow river and the Yangtze. Around 400m people rely on rice irrigated from the Yangtze. Yao Tandong, China's leading glaciologist, has suggested that as many as two thirds of China's glaciers could have disappeared by 2050, leading to an ecological catastrophe.

Far from being in denial, China's leaders are intent on developing a unique path to a low-carbon economy. There are two main thrusts: greening existing infrastructure, and building new industries based on green technologies—turning China into “the green workshop to the world” and securing in the process many more highly skilled, high value-added jobs.

China's economy uses seven times as much energy as Japan does for the same amount of economic output. But this means the potential efficiency gains are massive. If China manufactured cement in the same way as Japan, it could reduce the amount of energy the process used by 45 per cent.

At the heart of current inefficiencies lies the issue of subsidies for water and energy. Coal is still king in China—it accounts for around 65 per cent of primary energy consumption—and it is heavily subsidised. Despite developing “super-mines,” with greater mechanisation and improved health and safety, the bulk of the industry is poorly regulated, hugely inefficient, and causes a shocking number of fatalities.

By contrast, electricity generation is improving rapidly. Many of the older, most inefficient power stations have been closed down. Some of the new ones—especially those powered by turbines from companies like GE—are as efficient as any being built in the US. Unfortunately, many of them are a long way away from the main population centres, limiting opportunities for utilising waste heat. One exception is the Taiyanggong plant near Beijing, which runs at around 75 per cent efficiency, twice the rate of most conventional power plants.

Other than enforcing dramatic efficiency gains, China's only serious route to decarbonising its coal-based economy is carbon capture and storage (CCS). There has been a surge of new investment in this technology in China over the last couple of years, and many industry experts believe that the country will crack the problem of large-scale CCS before the west.

THE RENEWABLES REVOLUTION

But none of these improvements to its existing infrastructure will turn China into a low-carbon economy. Something more radical is required, and that lies in a parallel track comprising both renewables, nuclear and other green technologies.

The country's goal is to generate 15 per cent of its power from renewables by 2020. In June 2009, Zhang Xiaoqiang, vice chairman of its National Development and Reform Commission, announced that windpower will provide the largest share of that energy, with its target more than tripling from 30,000 to 100,000 megawatts of capacity. Zhang Xiaoqiang has declared himself confident of reaching the 15 per cent target, even suggesting that it could rise to 20 per cent. That's the same target as the EU has set itself—and if I was a betting man, I know which of the two I would put my money on.

China is ideally suited to offshore and onshore windpower, but other technologies are also being expanded. The 2020 target for solar power is 9,000 megawatts of capacity—75 times its current low baseline of 120 megawatts. Its trio of world-leading solar companies, Suntech, Trina and Yingling, are racing to be the first to achieve “grid parity”—the point at which solar-powered electricity costs no more than coal-powered or nuclear-powered. Solar companies in the US and Germany are worried about this competition.

Elsewhere, biomass, hydropower and geothermal sources are also scheduled for big investment. HSBC has estimated the potential scale of the renewables market in 2020 at \$2 trillion, and China is focused as much on those international markets as on its own energy challenge.

In 2008, Warren Buffett surprised Wall Street by investing \$0.25bn in a little-known Chinese car and battery company called BYD (Build Your Dreams). Its subsidiary BYD Auto was only founded in 2003, but five years later it produced the first plug-in petrol-electric hybrid ahead of similar models from Japan and the US. Middle-class Chinese seem to be more open than Americans or Europeans to the idea of hybrids and electric vehicles; most daily commutes are less than 50 miles and within the range of the new batteries.

There are sustainability issues associated with battery-based technologies, not least the fact that most of the electricity they use in a country like China comes from dirty old coal. But entrepreneurs in China and India seem much more ready to embrace the electrification of ground-based transport systems. In other words, farewell to the internal combustion engine—not overnight, but not as far off as the oil companies and carmakers would have us believe.

GOING GREEN IS EASIER FOR AUTOCRATS

Though hardly to be commended, China's lack of democracy gives it a great advantage in its green revolution. Obama had no choice but to use part of the US stimulus package to bail out GM and Chrysler. It was impossible for him to let those companies go to the wall, and invest instead in companies that could help create a low-carbon world. But the long-term consequences for the US economy may prove devastating.

Naturally, planning is much easier in China; the authorities have no problem deciding where to place a wind farm. And planning over a 40 to 50-year horizon is much easier when you do not face an election in a few years. Peggy Liu, chair of the Joint US-China Collaboration on Clean Energy, underscores this point. “China has the unique challenge in going green at an unbelievably large scale and fast pace. But we also have the advantage that our central leaders can push changes through very decisively. For example, in the US, there are over 3,200 utilities, but in China, we only have two.”

But, of course, it’s not that simple. Beijing’s mandates are often ignored at the local level. Incentives for party officials to meet energy efficiency and other green targets were introduced 18 months ago, but turning round the juggernaut of the industry economy is still proving a huge challenge.

What’s more, China’s politicians cannot simply ignore public opinion. Just as Obama used Copenhagen to send a message to his domestic audience, so did Wen Jiabao: “We know as well as anyone that climate change is important, but we’ll have no truck with western-imposed constraints on our economy—we’ll do this our way,” was the gist. China’s middle classes do not want to be ordered off the ladder of consumption just as they have gained their first toehold on it, and the poor still expect their government to get them onto it quickly. Their leaders fear public anger on economic grounds much more than they do on any environmental issue.

Ma Jun, who runs the Institute of Public and Environmental Affairs, an influential environmental Chinese NGO, is concerned that western commentators shouldn’t get too carried away about the greening of China: “I’m glad to see new investment in renewables and other green technologies but the real focus has to be on cleaning up today’s industry and on dealing with a frightening environmental legacy.”

That said, many commentators believe China is doing as much as most countries, and will overtake all of them to dominate the market for green technologies. The first real test of this will be its next five-year plan, for the period 2011-15. In November 2009, the China Council for International Co-operation on Environment and Development presented Wen Jiabao with a low-carbon roadmap for inclusion in the plan. One of its scenarios is a “business-as-usual” route to prosperity, resulting in emissions of 13bn tonnes of carbon dioxide a year by 2050. Then there is an “enhanced low-carbon scenario” that would see emissions peaking in 2025 and reducing to 5bn tonnes a year by 2050.

Caught between those two scenarios, and the 8bn tonnes a year that divide them, lies the future of human civilisation. Put at its simplest, there is no sustainable, equitable future available to humanity unless China makes that possible.