

China and Climate Change: Spins, Facts and Realpolitik

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Question by a senior Chinese energy official before Copenhagen

How serious is Europe about climate change? We are having black-outs in some places in order to make the energy conservation targets, is any European countries having comparable measures in order to reach their Kyoto targets?

Blame Game in the Aftermath of Copenhagen?

Mark Lynas, "How do I know China wrecked the Copenhagen deal? I was in the room," - probably the most read English report about Copenhagen:

- “To those who would blame Obama and rich countries in general, know this: it was China's representative who insisted that industrialized country targets, previously agreed as an 80% cut by 2050, be taken out of the deal.”
- “China, backed at times by India, then proceeded to take out all the numbers that mattered. A 2020 peaking year in global emissions, essential to restrain temperatures to 2C, was removed and replaced by woolly language suggesting that emissions should peak "as soon as possible". The long-term target, of global 50% cuts by 2050, was also excised.”

What do these numbers mean?

Emission-reduction goals of 50% for the world and 80% for developed countries, by 2050 compared to 1990. Sounds good?

- It implies that developing countries would have to cut their emissions overall by about 20% in absolute terms and at least 60% in per capita terms. By 2050, developed countries with high per capita emissions – such as the US – would be allowed to have two to five times higher per capita emission levels than developing countries.

By Martin Khor, South Centre (Geneva)

- Assuming that 80% of the 80% reduction will be done domestically in Annex 1 countries, while the rest is done by international offsets (like CDM, clean development mechanism). One can calculate that this would give **the rich countries three times the emissions per capita compared with developing countries (3.7 tonnes per capita compared with 1.25 tonnes per capita)**.

By Dennis Pamlin, Global policy Advisor for WWF and campaigner at Greenpeace

According to the World Resources Institute, China is 85th in the world in per-capita carbon emissions, polluting 4 tons per person in 2005 vs. 20 tons per person in the United States. “China’s number one crime is its population. It has 1.3 or 1.5 billion people,” stated Khor. “It should be 60 countries and by historical accident it ended up as one country...we have this basic problem, do we look at per-capita or absolute emissions?”

“So what we need to do is to treat the developing countries as developing countries,”

Martin Khor, Director of South Center

In the case of the ... 'contents of the atmosphere,' it is hard to think of an argument as to why rich people should have more of this shared resource than poor people. They are not exchanging their labor for somebody else's and they are not consuming the proceeds of their own land, or some natural resource that lies beneath it.

-Lord Nicolas Stern

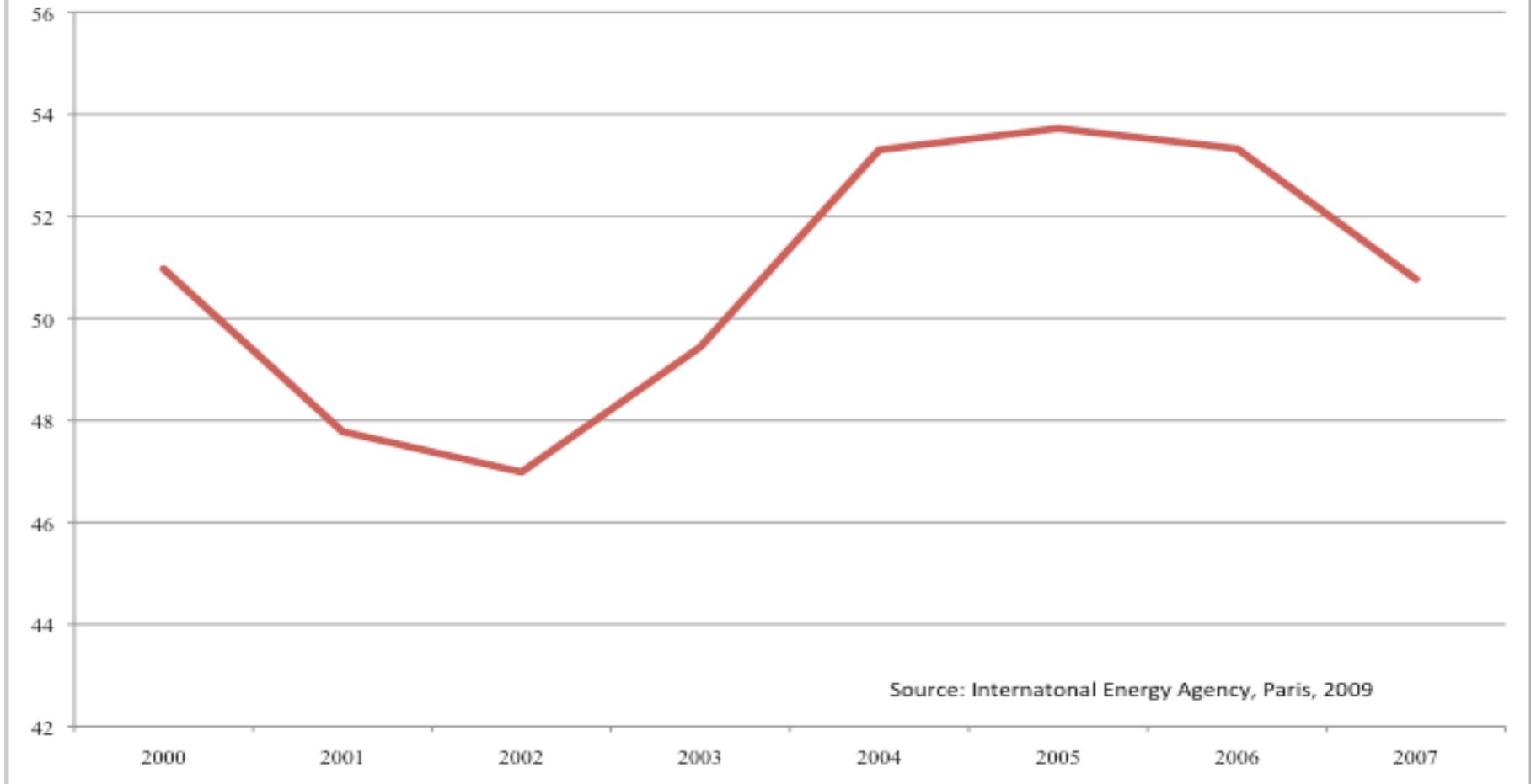
China and US Comparison: Responsibility and Capability

Measures	US	China
GDP Per Capita (2010)	PPP \$45,592	PPP \$5,383
Emissions Per Capita (2008)	19.2 tons	4.9 tons
Cumulative emissions as percentage of global emission (1850-2006)	29.00%	8.62%
Per-capita cumulative emissions (1850-2006)	1,125.6 tons per person	76.0 tons per person
Access to improved water source	100%	82% in rural areas
Access to improved sanitation	100%	52-58% rural and urban areas

China and US Comparison: Actions and Measures

Measures	US	China
Investment in clean energy (2009)	\$18.6 billion, or 0.13% of GDP	\$34.6 billion, or 0.39% of GDP
Implied carbon price in electricity sector	\$5.10	\$14.20
Military vs. climate spending	\$94 on the military for every dollar spent on climate in 2010. Down to 41:1 in 2011	between \$2 and \$3 on the military for each dollar on climate.
Emission reduction in CO ₂ Gt according to 2020 pledges in Copenhagen	0.8 Gt	2.5 Gt

Figure 1: China's Carbon Intensity, 2000-2007
Index: 1990 Carbon Intensity = 100



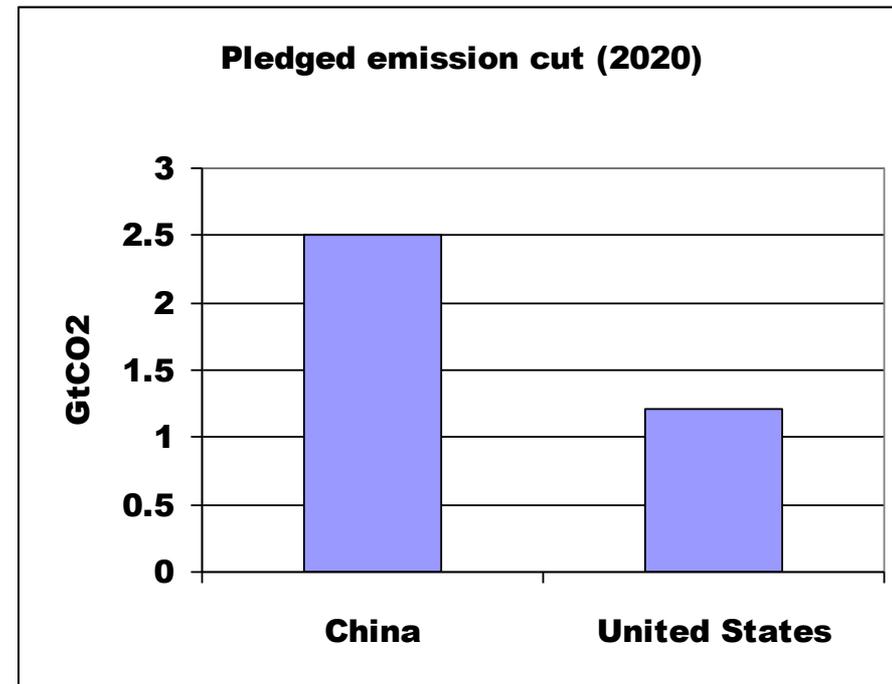
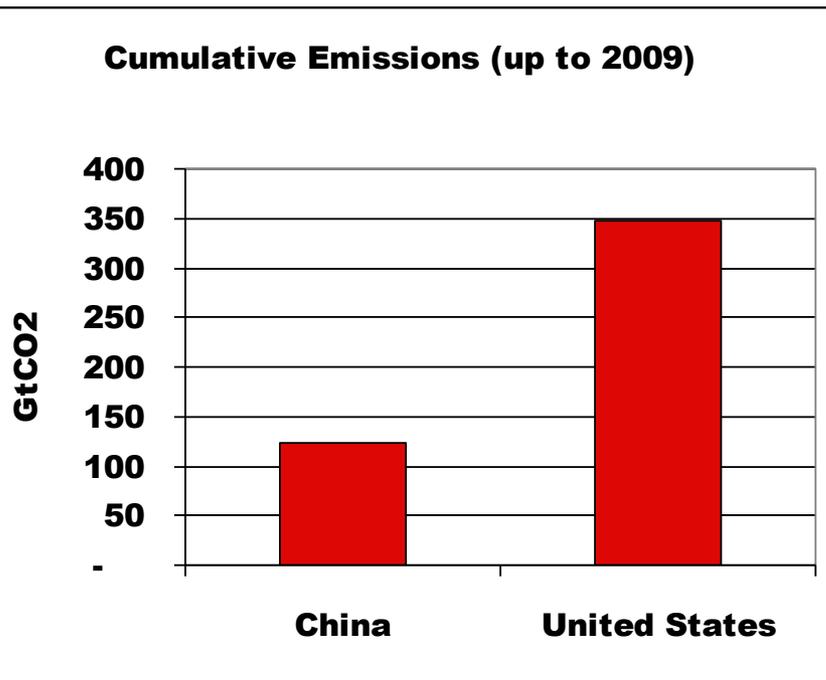
2002-2005: average 2% annual growth of carbon intensity

2005-2006: 1.79% decrease

2006-2007: 4.04% decrease

2007-2008: 4.59% decrease

The first chart is responsibility, i.e., contribution to global warming. (United States: 347 GtCO₂, China: 124 GtCO₂, Source (Carbon Dioxide Information Analysis Center, US Department of Energy)). The second chart is a reflection of pledged effort: Chinese reduction pledge of 40-45% improvement of energy intensity (based on analyses by the UNFCCC Secretariat), US 17% reduction.



What Happened in 2005?

- Ambitious energy efficiency and renewable energy target set for the 11th 5-year plan (2006-2010)
 - Reduce national energy intensity (unit energy per GDP) by 20 percent in 2010 compared to that of 2005
 - To raise the proportion non-fossil energy in the primary energy supply by up to 10 percent by 2010, and 15 percent by 2020.

No-regret measures, but not painless

Massive close down of small inefficient thermo-power plants.

Between 2006-2009 June, a total of 54.07 GW generating capacity was closed, surpassing the 50 GW goal set for the 11th 5-year plan.

Gain: Cost recovery at most 4.5 years with the better efficiency and coal saved

Pain: About 400,000 job posts were eliminated. State owned enterprises had to step in to help at-least 260,000 people to find employment again.

Massive growth of renewable energy

- The case of wind
 - For the last five years, wind energy doubled every year.
 - In 2005, China set two wind power goals — 5 GW by 2010 and 30 GW by 2020 — but it has consistently outpaced them. 500 MW of new wind capacity was installed in 2005, The pace of installation accelerated considerably in 2006, with 1.3 GW installed—equal to the total over the previous two decades.
 - By 2007, it had already reached 5 GW, and it raised its 2010 target to 10 GW, 2020 target to 100 GW.
 - 41.46 GW installed in 2010, the highest newly installed capacity in the world.

Massive growth of wind, why?

- Proper policy and technology domestication leads to huge cost reduction, making wind energy much more affordable
 - Between 2006 and 2010 , wind turbine cost per kw installation decreased from around 8000 Yuan to 3000 Yuan (1\$=6.5 Yuan).
 - Cost was high because high import cost. A new bidding process was introduced in 2006: turbines with domestic content over 70% can apply for extra subsidy of 600 Yuan per kw. For each producer, only a maximum of 50 set can enjoy this subsidy.
 - Policy scrapped in July 2011 under the US pressure, as the US filed a WTO case against China claiming relevant policies were incompatible with WTO rules.

Is China Doing Enough?

- According to WRI analysis, China's goal is in line with what the IEA's scenarios suggest would be necessary from China if the world wants to keep total emissions within a target of 450 ppm, a level that IPCC suggests gives us a fighting chance of keeping warming within 2 degrees Celsius.
- Various estimates conclude that Cancun pledges would lead a world much warmer than 2 degrees.

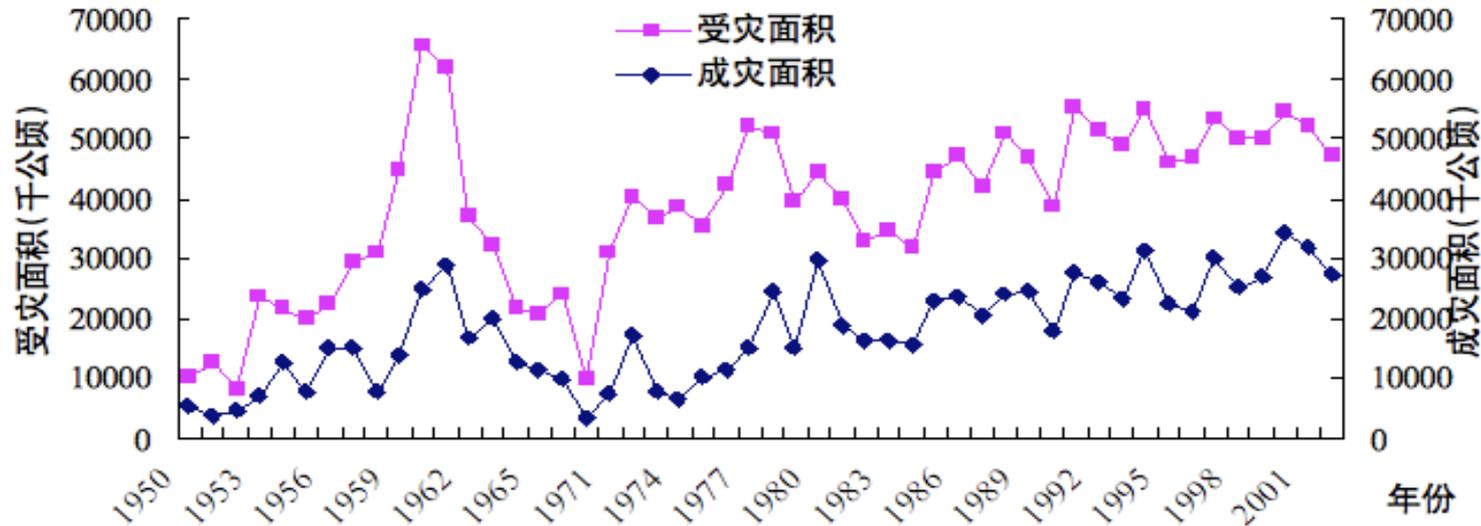
Still, Probably not Enough to Address Ecological and Resource limit

- Considering ecological footprint, about 1.1 earth is needed for every Chinese to achieve American lifestyle.
- “High carbon development will kill itself” Zhou Dadi, former director of Energy Research Institute.

More than 50% of oil and gas consumption depends on import, known coal reserve will be exhausted in 41 years with current level of consumption.

- China is still more than 95% self-sufficient with major grains, but it uses about 1/3 of world's chemical fertilizers. Guangdong province, the economic engine of China's reform and the envy of other provinces, only produces 1/3 grains needed for its population.

Climate change already an existing and growing threat to Agriculture



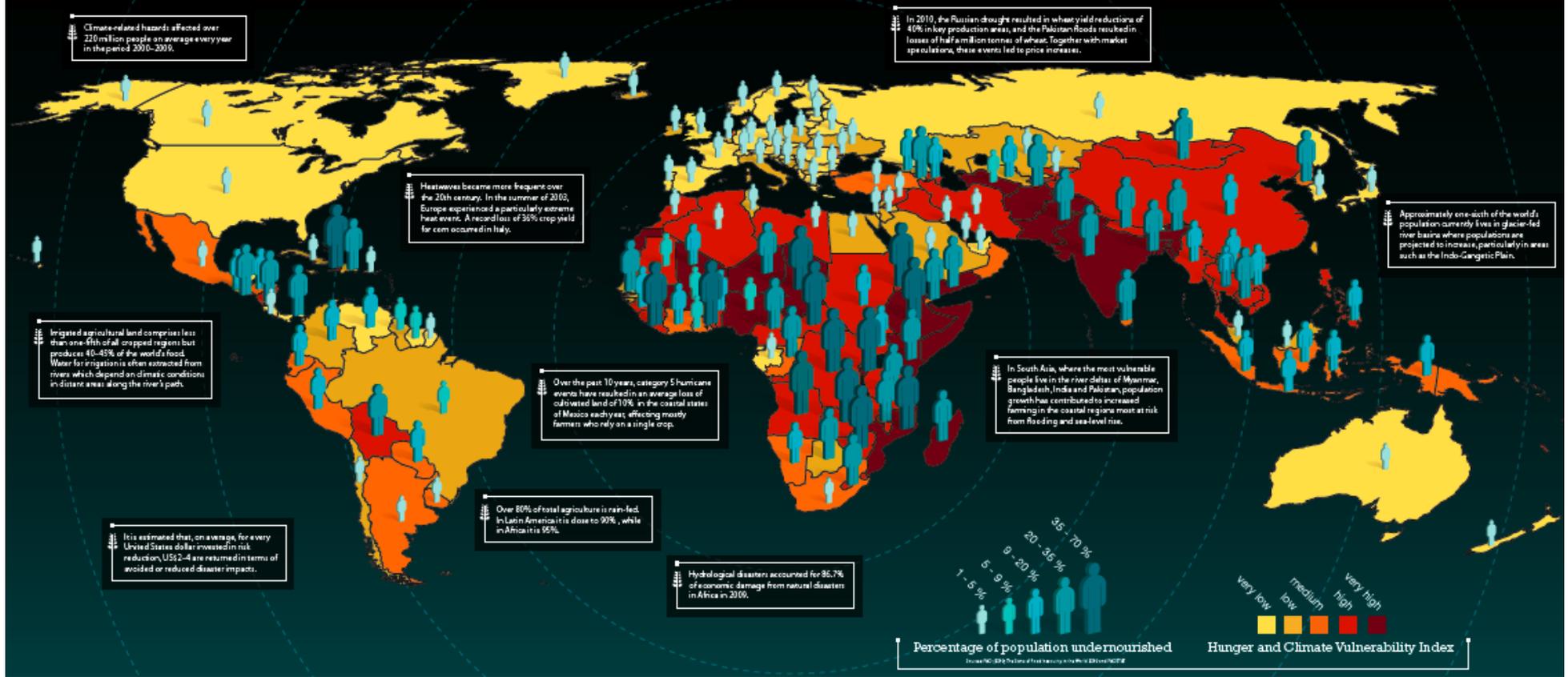
Hazard-afflicted and disaster-affected area

Estimation crop losses for 1988-2004

by drought	75.69 billion RMB/a	1.2% of GDP
by flood	51.16 billion RMB/a	0.8% of GDP

In 2011, government announced the plan to invest four trillion Yuan (more than 600 billion Dollar) in irrigation and rural water works within the next 10 years.

Food insecurity and climate change



Competing Thoughts within China (1)

- The limit and constraint on growth is physical and biological. There is no way to negotiate with that, thus the growth paradigm has to be changed. Constraint posed by international regime can be considered if it is fair and science based.
 - China's pledges under Cancun agreement are unilateral and unconditional.
 - NDRC is proposing to put an absolute carbon cap on certain rich provinces now, and a long term cap for the whole country is being discussed.
- No constraint on growth should be accepted, especially as climate change is just a western conspiracy to constrain developing countries.

Competing Thoughts within China (2)

The sad consequence of the China bashing game

- Mark Lynas has probably pushed more Chinese to become climate skeptics than all the western skeptics combined.
- China should have put its targets as conditional, as the EU did.
- Before: how can international negotiation facilitate more domestic action?

After: we should not talk about “low carbon” anymore, because it is absolutely poisonous. Talk “energy security” instead. How can we build a firewall to prevent international climate politics from doing further damage?

Competing Thoughts within China (3)

*“Snubbed In Copenhagen, EU Weighs Climate Options”
Reuters January 10, 2010* told us that

"Officials acknowledge privately that the mandatory system for enforcing emissions curbs created by the 1997 Kyoto protocol is doomed because China won't accept any constraints on its future economic growth, and the United States won't join any agreement that is not binding on Beijing."

A dangerously wrong assessment, because it could be a self-fulfilling prophecy.

China as a Microcosm of the World

- Even with convergence of accumulative per capita emission, China will use up its carbon budget between 2040-2050.
- Alarming polarization of rich and poor: Gini coefficient more than 0.45, the per capita GDP ration of the richest and poorest province is more than 8:1, roughly similar to the US vs China ration.
- Su Wei, China's head negotiator, admits that he also faces very tough negotiations at home with the province heads to distribute the national target.
- Quote from some Chinese experts: *“No matter how much ecological space we still have, if we don't change the current growth model, the rich cities will use up most of it, leaving little space for the rural areas to develop.”*

Some Inconvenient Truth in Climate Negotiation

- The US signed up to UNFCCC in 1992 and negotiated the Kyoto Protocol in 1997. In 1992, under the UNFCCC, they agreed to stabilize emissions on 1990 levels by 2000. They never kept this promise, instead they increased their GHG emissions from 6.1 Gt to 7Gt, an 15% increase, during this timeframe.
- Five years later, 1997 in Kyoto, they told the world that they would reduce their emissions by 7% compared with 1990 by 2012. In order to agree to this 7% reduction they made the protocol a lot worse and filled it with loopholes. They also had a fight with G77 (the developing countries) that wanted to bring in equity and per capita targets into the discussion. India did a fantastic job in bringing this issue up, but the US refused to discuss any issues related to equity or unsustainable lifestyles. Then they ditched Kyoto.
- It was the Democrats (with Al Gore flying in at the last minute) who were negotiating in Kyoto, so it is the same party that Obama and the current US team belongs to.

Some Inconvenient Truth in Climate Negotiation

Annex 1 spent huge amount of time dodging the responsibilities they had unanimously agreed

- Under the Poznan decision, the AWG-KP(Adhoc Working Group on Kyoto Protocol) proposed to adopt an aggregate target for the second commitment period for Annex I by the seventh session (Bonn I, March 2009) and individual targets by the eighth session (Bonn II, June 2009).
- Neither was achieved by now.
- Instead, US pushed a pledge and review system, which is getting more and more traction within Annex 1 countries.

EU's Role

- The biggest mistake of EU before and during Copenhagen is that it did not work with China and G77 group to build credible pressure on the US, which contribute in no small part to the failure in Copenhagen.
- EU not only went along with the US, but sometimes became the top gun of the US in the China bashing game (for example, Mark Lynas and Milliband from UK).
- Knee jerk from Chinese public: Let's align with the US right wing to defeat the European environmental agenda.
- No improvement since CPH. EU is no longer taking a leadership role, especially with a recent report that EU may propose to extend KP without binding targets but only markets.

The North is Forcing the South to Repeat its Mistakes

“Years ago a now-retired senior German official became agitated when I remarked that if the Chinese wanted to combat climate change, his country’s car manufacturers could go home and the Chinese could return to their bicycles. This would not do, he said, the Chinese should keep buying cars, but only drive them once a week.”

Gao Feng, China's head negotiator 2000-2005

Private car ownership has exploded in China within the last decade, with EU/US/Japan/Korea auto makers all made handsome profits in China. Car owners have fiercely and successfully beaten back government proposal to increase fuel tax.

EU and China down the Road

- Europe and China need to support each other to stand up to the US, otherwise the whole world is kept captive of US internal politics.
- Europe and China should work together to stop the US lead "race to the bottom" in climate politics, and hopefully step up the global efforts down the road. And as the respective leader in emission reduction in developed and developing countries, they can achieve that if they work together.
- The possibility does not stop at climate politics: for example, in the ongoing financial/economic crisis, if EU and China could work together more, they could do so much more to challenge the dollar hegemony, and move international financial settings towards a more fair and mutually beneficial direction.

Hans-Josef Fell: Hope in China?

Hans-Josef Fell, Green PM, spokesman on energy for the German Green's parliamentary group, when asked about his expectation of Cancun on 11/26 2010, answered

- *I don't have much hope for Cancun.*
- *Yet I have great hope for China. China has the world's biggest reforestation project, and the fastest growing renewable sector. We can all learn something from China.*

More mixed feelings from me

- China's leadership do take science very seriously.
- Energy efficiency and renewables are important first steps, which China is going full gear. But they probably will not be sufficient, consumption and lifestyle change is necessary. Emulation of US lifestyle is a dead end.
- The hope has been dampened with international climate politics within the last two years.
- China will likely do what the west does, not what the west says.
- So back to the question raised at the beginning: How serious is EU about climate change? Does the west behave like they actually believe in climate science?