



# CHATHAM HOUSE

Building a Climate of Trust: China, trade and climate mitigation

Unilateral Climate Policy and Carbon Leakage Workshop  
organised by the Öko Institute

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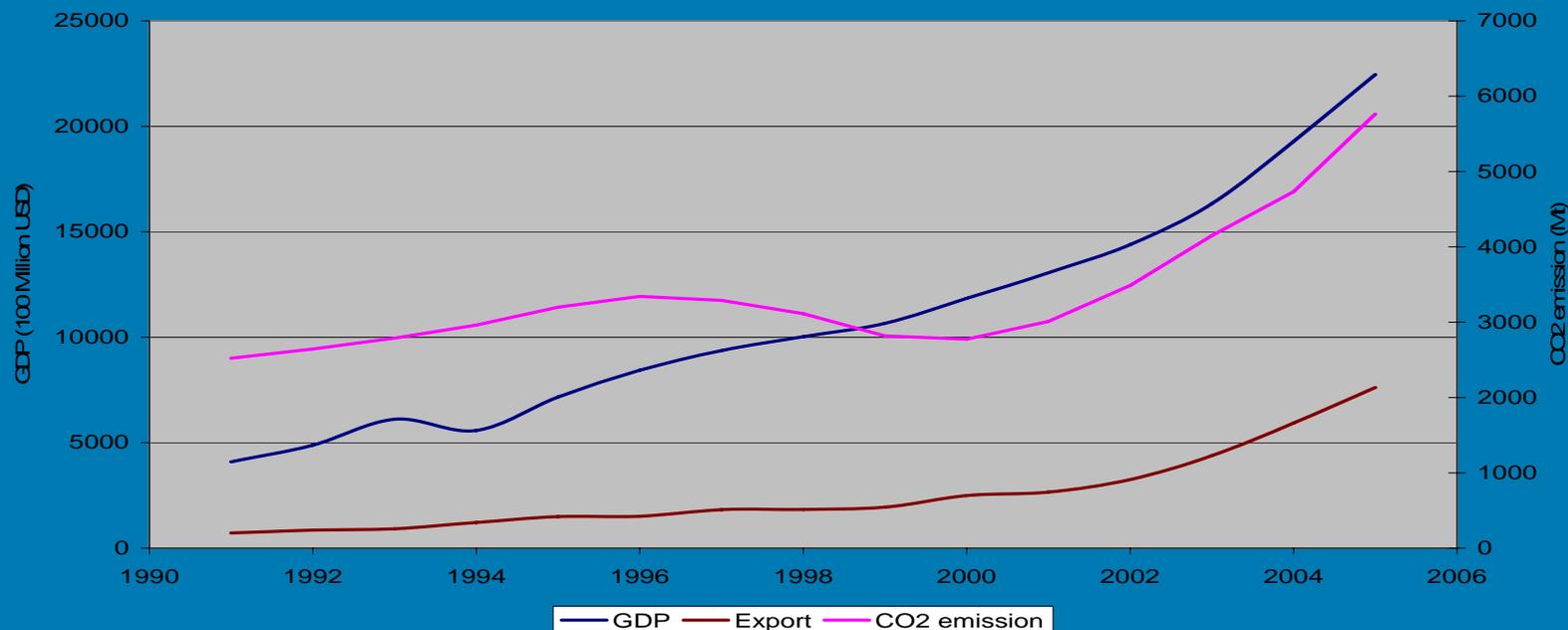
## Decisions in the next 10-15 years will determine whether a 2°C world is possible

- If global emissions must peak by 2015-20 to keep to the low probability of 2°C rise in global temperature, investment in new energy and non-energy infrastructure and technology must be consistent with a low carbon future in all countries. Developed countries have to move to a zero-carbon energy system by 2050 and to a large extent finance the beginning of global decarbonisation.
- Choices made in developing economies matter. Immediate decisions about infrastructure needs and patterns of consumption will have a decisive impact on global efforts to stabilise GHG emissions, and the feasible rate of reduction to sustainable levels. Absolute emission reductions by 2020 will be the largest deviation from business-as-usual – necessitates a collaborative rather than a confrontational approach. This also means the need for a new development model.



# China's export-led growth is carbon-intensive

China's growth in GDP, Export and CO2 emission



**Export of energy, resource and pollution intensive products: cement: increase 200% between 2004 and 2005; rolled copper: 20%; aluminium: 65% rolled steel: increased 44% (2004/2005), 110% (2005/2006), and already 120% higher in first half of 2007 compared with the same time 2006. 58% of China's total export is from the foreign or joint ventures in China**



But there are positive signals (1)...

- First National Climate Change Assessment (Dec 2006)
- China's National Climate Change Programme (Jun 2007)
- Public action on energy conservation and pollutant discharge reduction issued by the State Council (May 2007)
- Policy statements around G-8 (Jul 2005 and Jun 2007)
- Wen Jiabao (State Council Executive Meeting, 11 Jul 07), 'All levels of government must realize fully the grimness and urgency of achieving the energy saving and emission reduction targets.' *Xinhua*



...that China is committed to a deviation from business-as-usual (2)

- National Medium-and Long-term Science and Technology Development Plan (2006-2020) –an innovation oriented economy
- Middle and Long Term Program of Renewable Energy Development Sep 2007 issued by the NDRC
- 17th Party Congress: ‘science-based development’ Oct 2007
- Wen Jiabao statement in the East Asia Summit (Nov 2007) On climate change, ‘China will shoulder its due international responsibilities and obligations.’
- Hu Jintao’s remarks at the Political Bureau discussion on ‘global climate change and China’s response’ (June 2008)



# EU and China have Ambitious and Parallel Energy Plans

## China – 2005-2010

- 10 % reduction in total pollutants
- 20 % reduction in energy intensity (energy consumption per unit of GDP) and by another 20% by 2020
- 20% of electricity (excluding large hydro) from renewables by 2020. 16% of energy, including large hydro by 2020
- Taxes on energy intensive exports, and shutting down most polluting plants (50GW by 2010)

## EU – 2020

- Large Combustion Plant Directive in force and incrementally decreasing emissions of NOx/So2 and particulates
- 20% reduction in energy intensity
- 20% of EU's energy from Renewables
- 10% of transport fuels from biofuels
- Post 2020, if possible, all new fossil power stations with CCS



On 27 June, Hu Jintao chaired the Political Bureau's Meeting on Climate Change and China's Response - the first time climate change was discussed at this level

- Response to climate change shall be based on scientific outlook and SD.... emphasis on energy conservation, energy structure optimisation .... Advancement in science and technology is the key driver for the efforts in controlling and mitigating GHG emissions.
- Enhance measures to implement GHG emissions control and pursue China's new modal of industrialisation pathway. Energy saving and energy efficiency .... China need to actively develop circular economy, **low carbon economy** and to increase forest coverage.
- Accelerate R&D and demo of key mitigation and adaptation technologies is essential - including International co-operation.
- Climate change governance structure needs to be in place. Climate change related regulations shall be improved.... important to facilitate the reform of energy management mechanism and energy price.



# What does this mean?

- 20% reduction in energy intensity by 2010 is equivalent to over 1.5 billion tonnes of CO<sub>2</sub>e – around 4 times more than the EU-15 required to mitigate under its Kyoto Protocol target
- The energy intensity targets have been translated into different and specific targets for the 33 provinces – also to try avoid internal carbon leakage. Coal-based economies like Shandong and Shanxi are asked to reduce intensity by over 25%.
- Internal leakage e.g. Shougang's smelting operations were moved to neighbouring Hebei from Beijing; Guangdong's relocation of industries to its border or to the Western provinces, or to Vietnam
- This is significant for institutional ownership or an opportunity to build institutional backup for MRVs. May also pave the way for an internal trading system.
- Renewables investments – wind, solar, etc – solid numbers

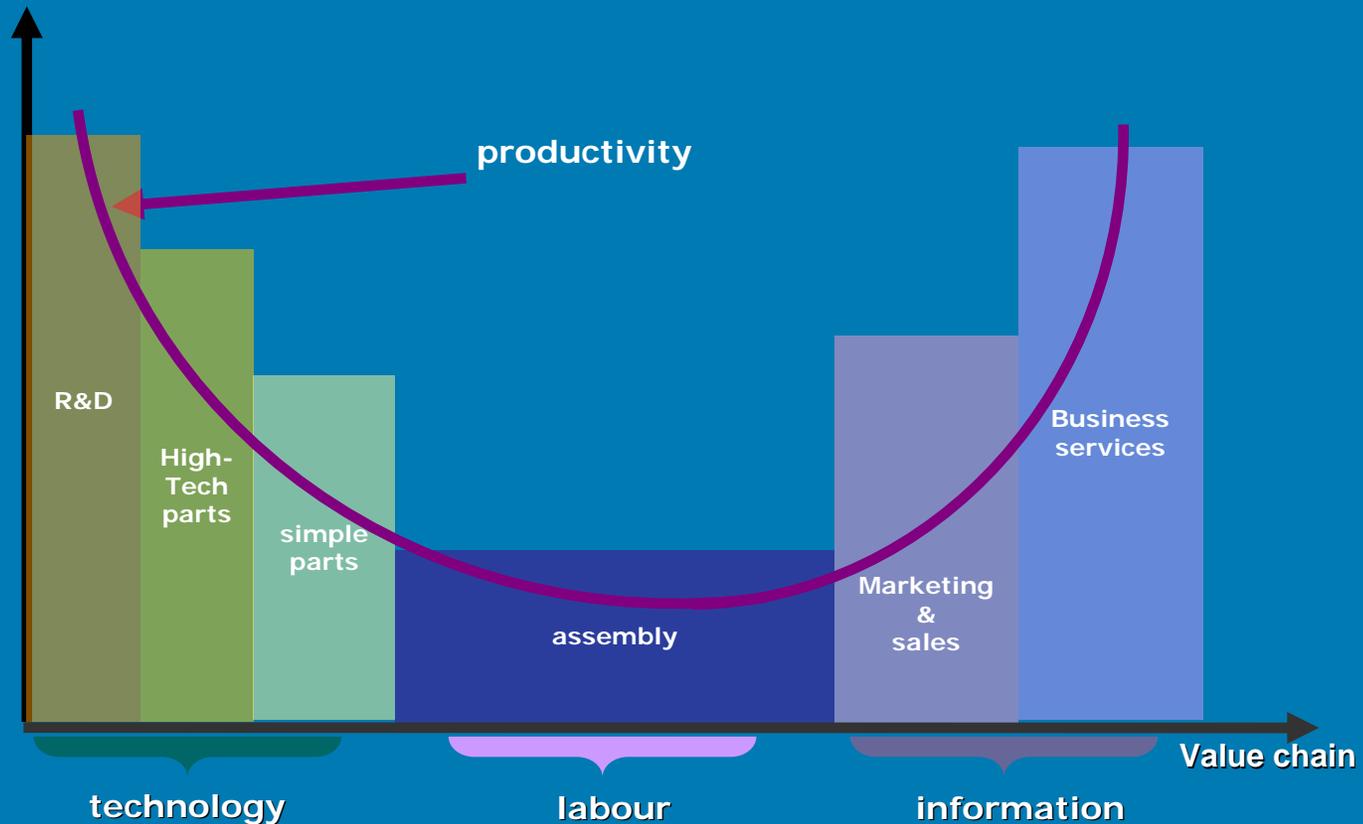


## Use of trade-related instruments

- From 1 July 2007, scrapping or **cutting export tax rebates** for 2831 commodities to curb the growth of energy consuming industries (MOF); From 1 August 2007, **resource taxes** on lead, zinc, copper and tungsten ore by three to 16 times. (MOF); From 1 August 2007, 15% **export duties** on some aluminium products to ‘restrict exports of high energy-consuming and polluting resources, products and encourage imports of raw materials’.
- At the WTO, Members questioned the motivations for these export restrictions, and whether they were accompanied by appropriate domestic measures.
  - US – higher input prices for its investors; Japan – legality; EU – coke.
- Mixed signals in 2008 -To cool investment in the steel sector, export taxes on semi-finished steel products will be raised to as much as 25% and a 15% export tax will be imposed on some stainless steel, welded pipes and other steel products. Existing tariffs on the export of other products, including carbon steel billets and pig iron, will be raised.



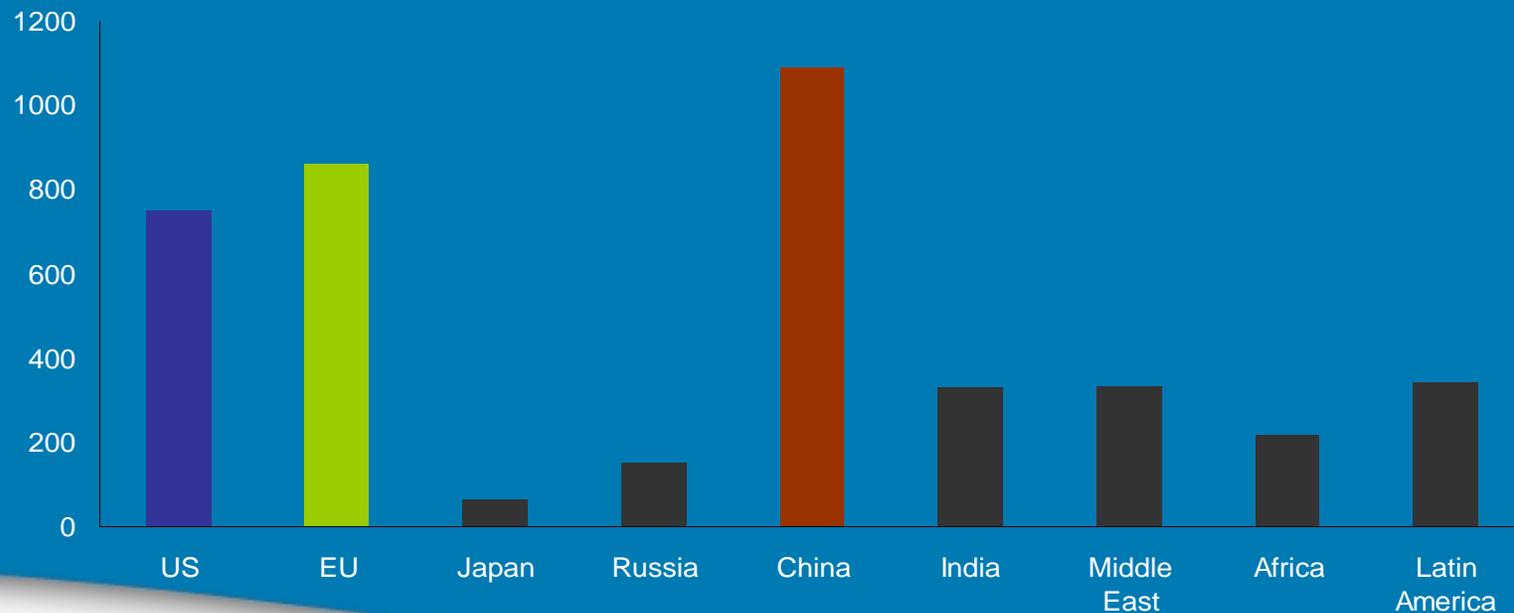
# China's goal of moving up the value chain and scientific development is consistent with low carbon transition



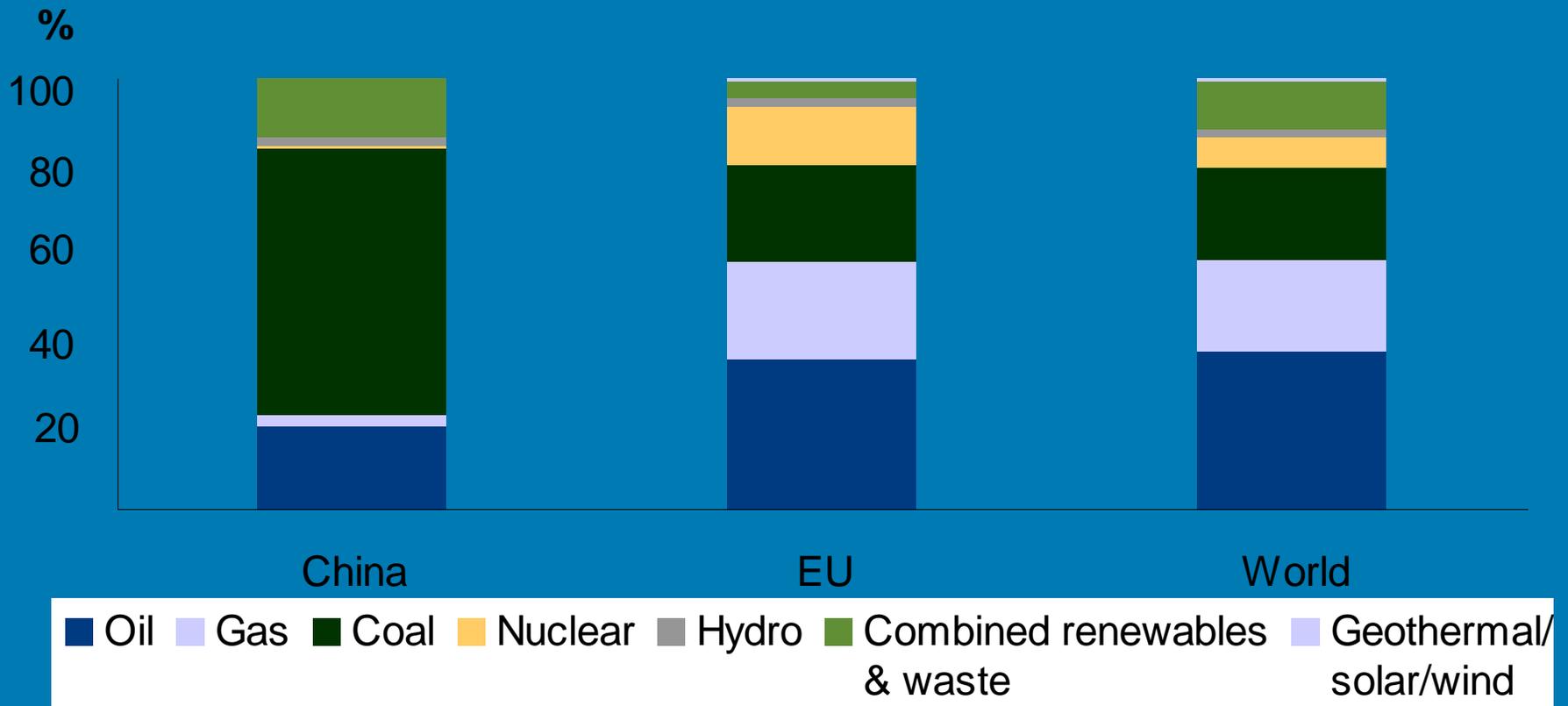
# But challenges abound...

Constructing these facilities with conventional technology would both increase emissions immediately and reduce opportunities for switching to less polluting sources in the future

**New Electricity Capacity 2005-2030 GW**



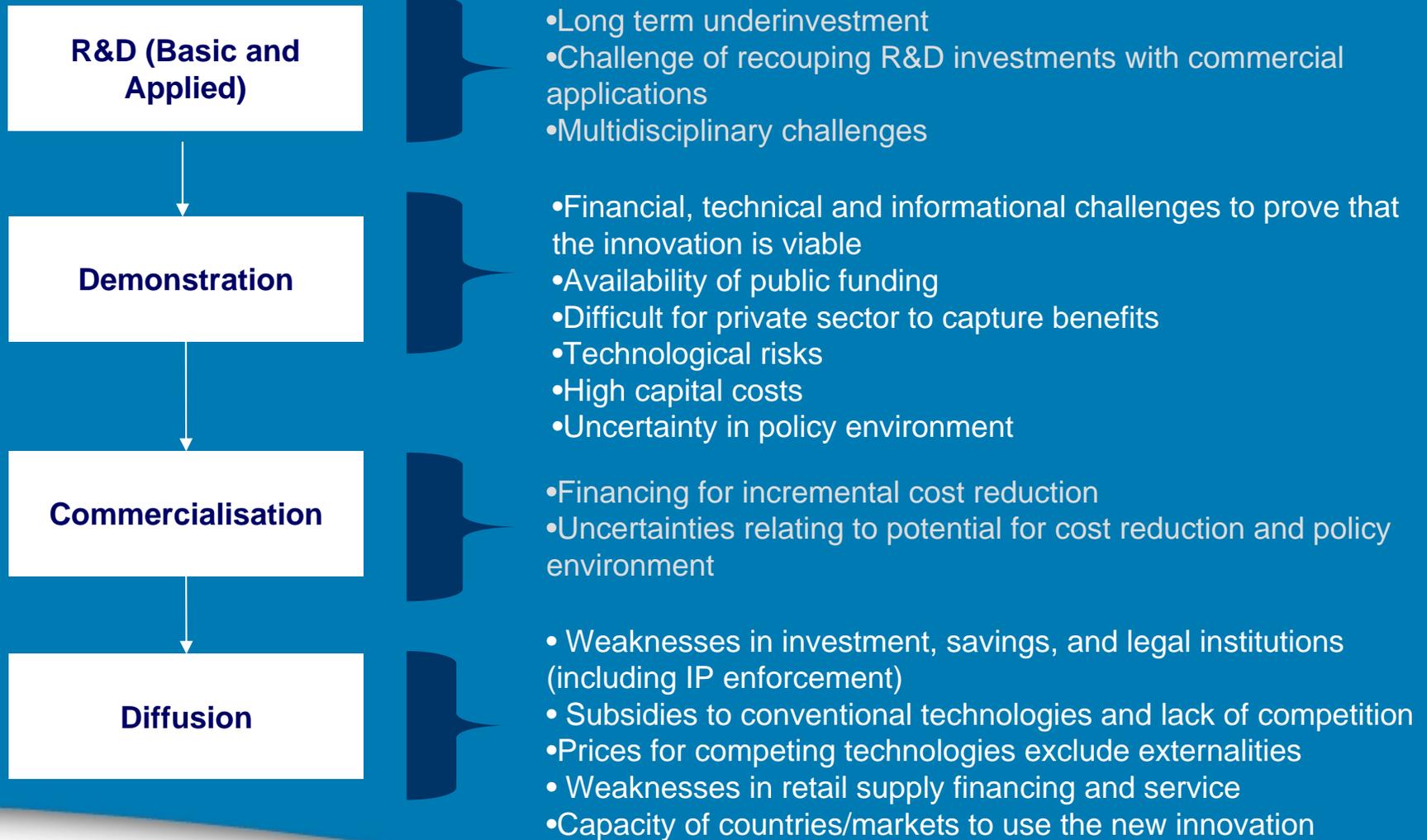
# China is unique in its High Dependence on Coal Use



Source: European Commission (2007)



# How to unlock the barriers to technological deployment



Source: UNDP (2000); OECD (2006);  
Chatham House and E3G (2007-08)



## Sharing the low carbon pie

- Beyond setting targets, need to create opportunities for real & concrete economic changes/ opportunities for developing countries through investments and markets creation. This means moving the \$44 trillion of energy investment forecast by 2030 from high-carbon to low-carbon options.
- Formal negotiations can only be one part of the climate process, which requires a belief that China can decarbonise without threatening domestic well-being/ stability; that all countries are playing their fair part in solving this shared dilemma. The perception of equity is central – given deviation of BAU.
- US and the EU need to convince major developing economies like China that they are critical in driving low carbon transition. Evidence is key.



In America they call it the China question. In Europe they call it the America question. (*Economist*, June 19)

- In the EU, WTO-relevant measures have been suggested as means to deal with leakage, including border-related measures, state aid, free allocation (a form of subsidy).
- Questions over the impact of differentiated carbon pricing (whether through carbon taxation, higher efficiency standards and cap-and-trade) on decisions over production volume, re-location, re-investment and new investment decisions.
- In the US, border tariffs are seen today as the necessary bargaining chip to get the Senate on board to adopt cap-and-trade. Competitiveness concerns are driven by the rising US-China trade deficit – from \$40B to \$250B over the last decade.



## Some numbers (1) Steel

- During the period 1996-2006, China's crude steel production increased by 316.9 %, the highest increase rate compared with those of other countries and regions. By 2002, China has over passed the EU becoming the largest steel producer.
- Total EU Steel consumption is 185 MT. It imported a record 39 million tonnes in 2006 - 12 million tonnes more than in 2005 - 4 million of which came from China.



## (2) Cement

- In 2008 China demand is expected to exceed 1 billion tonnes, around 50% of global total. EU produces around 200 million tonnes
- The international trade volume of Chinese cement is very limited: 4 million tons of cement was exported and 4.5 million tons of clinker was imported in 2003. Surrounding countries are the main importers of Chinese cement produce.
- The trade volumes of cement products were 360 tons between China and European countries in 2006.
- The international trade volume of Chinese cement accounts a minor proportion in the total output (1.2 billion tons) and Chinese total trade volumes.
- EU exports cement equipments and technology to China

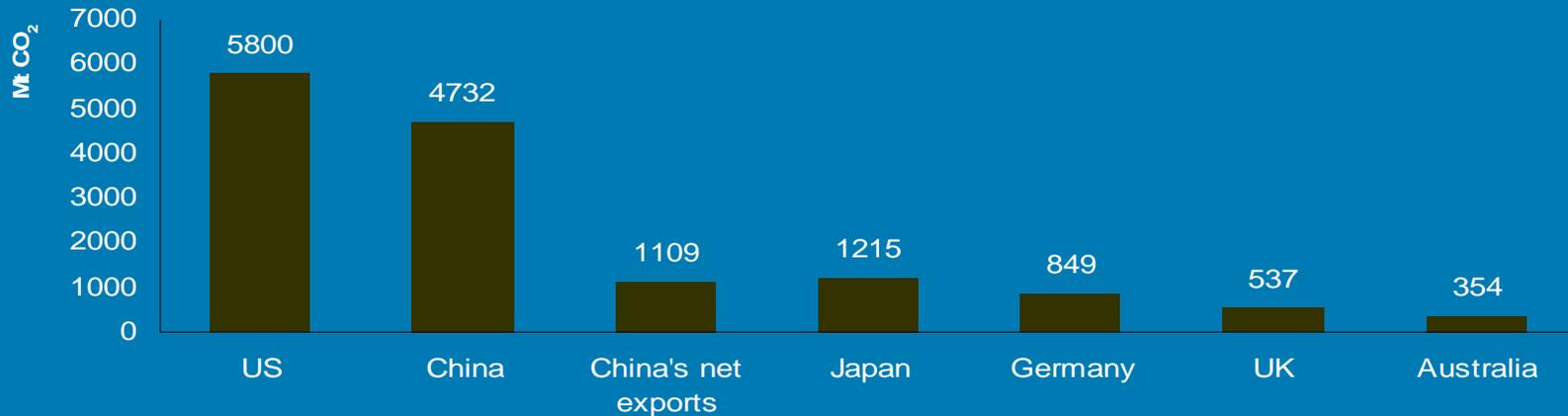


## Measures to address competitiveness and carbon leakage can cause distrust

- In the UK and Germany, 1-2% of all economic activities face significant cost increases relative to their value added (Climate Strategies, 08). A few industries - metals, paper, chemicals, cement etc may be at risk in the US – over 3% of US output in 2005 and less than 2% of its jobs. (WRI and Petersen Institute, 08)
- BTAs may be insufficient carrots for US legislators in the medium term, especially if they are more interested in tackling competitiveness/China rather than climate change. Little of China's carbon-intensive production is actually sold in the US: less than 1% of its steel, 3% of aluminium and 2% of paper.
- A narrow understanding of competitiveness dominates, failing to take into account the dynamic nature of technological change, for example. The backlash against globalisation will continue to stand in the way of change – especially the national industrial policy mindset.
- Implications for the already fragile multilateral trading system and UNFCCC negotiations.



## Embedded Carbon and consumption-based accounting has been the main response



- Assessments are being undertaken to look at the impacts of trade and CO<sub>2</sub> in relation to China. Shui and Harris (2006) 7-14% of China's total CO<sub>2</sub> emissions are caused by goods produced for the US.
- WWF concluded that Chinese emissions associated with exported goods amounted to 2870 million tonnes of CO<sub>2</sub> per year.
- The Tyndall Centre put total at 1490 million tonnes, while finding Chinese imports to account for 400 Mt of CO<sub>2</sub>. It reported a net balance of around 1100 Mt in 'exported' CO<sub>2</sub>, equivalent to about 23% of Chinese emissions.



	Global CO2 in trade (kt CO2)	China CO2 in trade (kt CO2)
Agriculture	2.61	1.10
Mining	8.43	3.46
Processed Food	3.22	1.63
Textiles	5.50	13.69
Energy Intensive*	40.44	28.96
Manufacturing	23.42	44.28
Services	16.39	6.87
Primary	11.03	4.56
Energy Intensive	40.44	28.96
Secondary	32.14	59.61
Tertiary	16.39	6.87

\*Wood, Pulp and Paper, Refineries, Chemicals, Metals



## How to incentivise: Piloting Low-Carbon Zones

- Pilot zones could be used to demonstrate the feasibility and benefits of the low carbon transformation and act as testing grounds for regulatory, economic, trade and investment policies promoting the necessary scale of economic transformation for a low-carbon future and a powerful demonstration of the viability of the low-carbon economy
- They can help attract investment in research and high-end manufacturing - consistent with the desire to shift move up the value chain in China
- They could also serve as experimental laboratory for low carbon services liberalisation – not just environmental services.
- Donors could focus its energy and climate cooperation with developing countries around building these zones to demonstrate large-scale transformations (e.g. centres of excellence on adaptation)

Source: *Changing Climates*,  
Chatham House and E3G (2008)



# Carrot rather than stick

'Steel or aluminum produced in these areas that was no more carbon intensive than U.S.-based manufacturing would require no carbon permits when shipped to the U.S. market. Products produced outside these zones that failed to meet American carbon standards would need to buy permits.

U.S. industry's competitiveness concerns would be addressed. The economic cost and compliance problems associated with a permit system would be minimized. And potential objections by China, India and others would be neutralized because they would have a means of complying. Moreover, the climate would ultimately benefit because foreign manufacturers would have an incentive to hasten investment in cleaner technologies that would first be used in the low-carbon zones and then diffused throughout their economies.'

Source: Bruce Stokes, Congress Daily, 2008



# Devising different kinds of low carbon economies or low carbon developmental models

## Basic metrics:

- Average income;
- Achievement in terms of UNDP Human Development Indicators;
- Characteristic of the provincial economies;
- Energy mix;
- Adaptation needs;
- Regional priorities;
- Urban verses rural divide;
- Political opportunities including the national energy intensity targets;
- The applicability of sectoral approach in specific provinces;
- Incentive systems for low carbon transition.

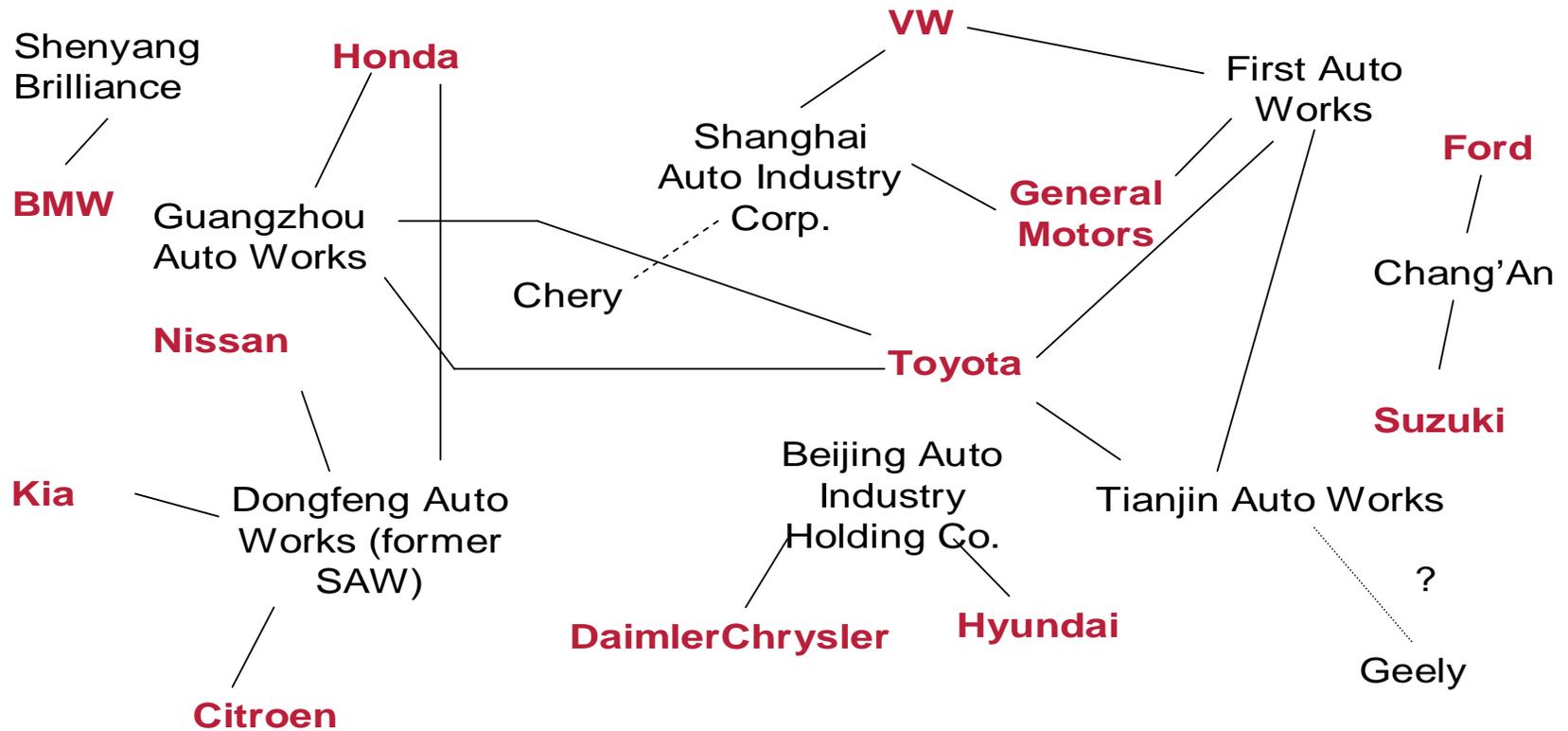


Source: ERI	Energy Per Capita	CO2 total	Co2 Per Capita
		Mt-CO2	t-CO2
Guangdong	1.88	341	3.66
Jiangsu	2.46	397	5.26
Shanghai	4.27	159	8.76
Chongqing	1.48	89	3.18
Tianjin	3.86	91	8.46
Shanxi	6.60	552	16.36
Shandong	2.56	555	5.96
Guangxi	0.95	97	2.06
Ningxia	5.32	71	11.78

## Regional Diversities: A Snapshot



# Driving the enforcement of best available practices and technologies through the integrated supply chain



Source: Kelly Sims Gallagher (2006)



## Building a positive narrative is key

- Demanding energy targets cannot be met by domestic action alone. Trade and investment in low carbon, energy efficient goods and services can be encouraged. Enhancing low carbon trade could create virtuous cycles, stimulating further investment opportunities.
- Even in the US, the political narrative remains negative. Failure to explore the potential economic boom expected from the Lieberman-Warner Bill's aggressive investment in clean energy jobs. In 2006, the renewables and energy efficiency industries generated 8 million jobs in America and nearly \$1 trillion in revenue. But this is not the predominant political narrative.
- Need to encourage the constituencies in China who are beginning to view low carbon economic transition is consistent with its wish to move away from high emissions, low value addition exports in its growth model. The size of their markets are also needed to drive down the cost of low carbon goods and technologies.



Thank you for your attention.



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