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Energy Security and Carbon Policies of China and the US

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The Annual Fossil Fuels Forecasting Meeting

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Copenhagen Commitments

- China
 - China will endeavour to lower its carbon dioxide emissions per unit of GDP by 40-45% by 2020 compared to the 2005 level, increase the share of non-fossil fuels in primary energy consumption to around 15% by 2020 and increase forest coverage by 40 million hectares and forest stock volume by 1.3 billion cubic meters by 2020 from the 2005 levels.
- US
 - In the range of 17% [based on 2005], **in conformity with anticipated U.S. energy and climate legislation**, recognizing that the final target will be reported to the Secretariat in light of enacted legislation. [The pathway set forth in pending legislation would entail a 30% reduction in 2025 and a 42% reduction in 2030, in line with the goal to reduce emissions 83% by 2050]

Cancun Outcomes – US-China

- **Greater transparency** and accountability for all countries, not just Annex I countries to KP: This will include not just reporting on the list of mitigation domestic and internationally supported actions but also a review of the “effect” of these actions and the domestic provisions and timeline for implementation of these actions.
- **Green Climate Fund:** Although China has stated it will not accept funding from this new entity, it was important to China that it was created for the developing country bloc. It was agreed that the Climate Fund will be composed of a Board with equal representation of developed and developing countries
- **Preliminary structure for technology transfer:** The Cancun Agreements include the establishment of a new Technology Mechanism made up of a Technology Executive Committee and the Climate Technology Center and Network.
- **Legal form** for agreement was not resolved in Cancun and will be discussed over the coming year in the lead-up to the next climate negotiations in Durban. Both developed and developing country pledges were “taken note of” in the final decision text.

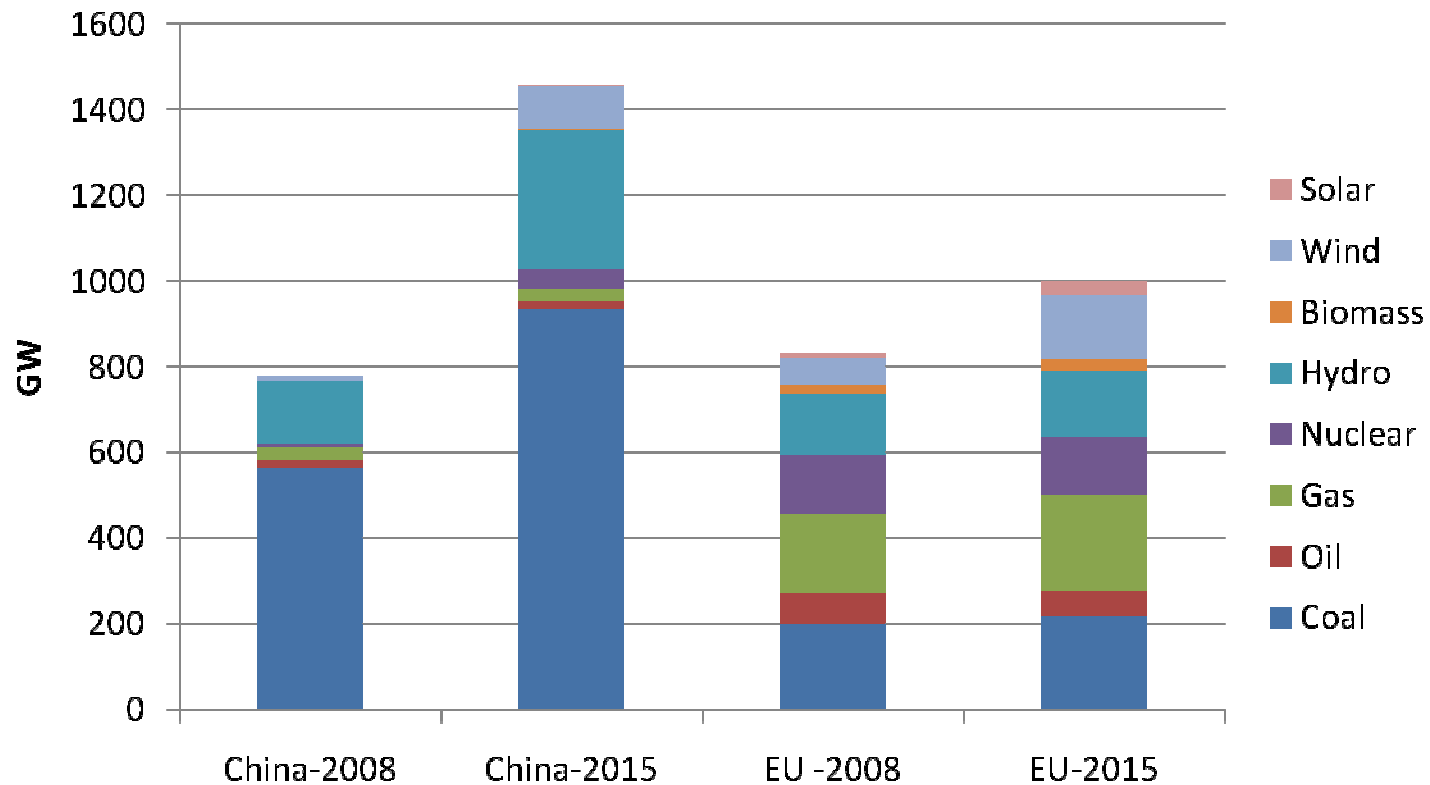
China's 12th Five Year Plan (2011-15)

- The consultative draft was discussed at the Fifth Plenary Session of the 17th Central Committee of the Communist Party of China October 2010. Based on these
- Final draft plan will be completed at the start of 2011
- Submitted to the annual session of the National People's Congress in March 2011 for deliberation and ratification.

Possible issues affecting Energy and Climate

- Carbon Intensity target: Implies a 3.3-3.9% compounded annual reduction, which is largely inline with what China has achieved in 1980-2005
- New Pillar Industries: Energy saving and environmental protection; next generation information technology; biotechnology; high-end manufacturing; new energy; new materials and clean energy
- Industrial upgrading: Pricing reform for energy, accelerated growth of service sector, cut back on high pollution, energy consuming sectors
- Urbanisation: A new target of 55% which suggests nearly 150m people will move to urban areas in the next five years.
- Some other possible issues:
 - Resource tax, including carbon tax?
 - Carbon trading pilots expected? (sector / area)
 - Performance goals (energy per unit output) for major industries

Power Sector



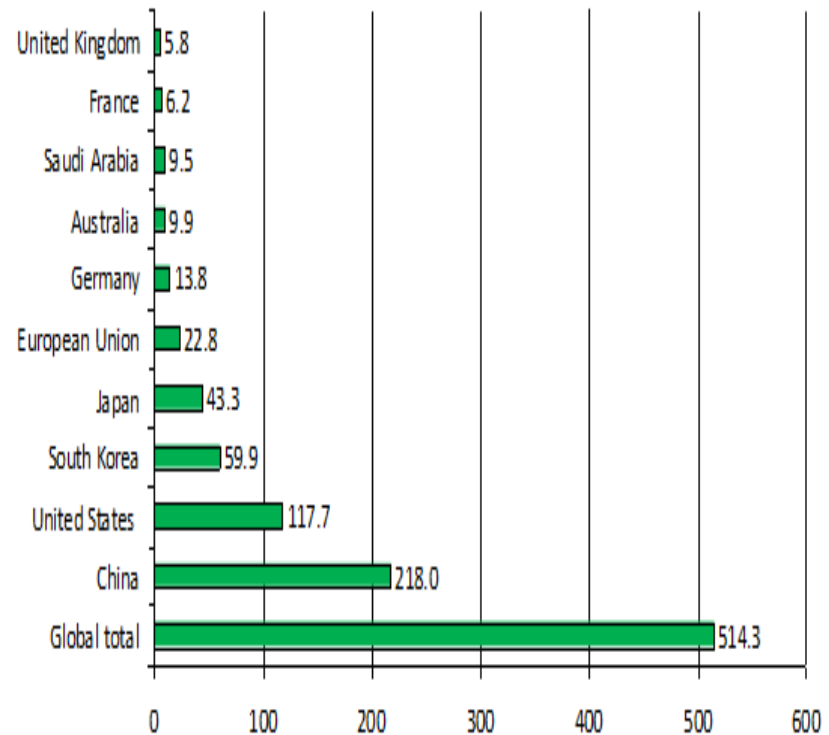
- Total investment in the Chinese power industry to reach 5.3 trillion yuan, an increase of 68% compared to 11th FYP. 2.75 trillion yuan (52%) will go to power investment, while 2.55 trillion yuan (48%) will go to grids.

US

Federal Level

- Recovery Act Investments in Clean Energy (\$80 billion); Renewables, Biofuels, Smart Grids/piloting, Home insulation, Efficiency standards, CCS
- American Power Act – not adopted. While Cap and Trade is ‘dead’ issues being discussed are; ‘clean energy standards’, nuclear power and natural gas
- US EPA, issued plans in Dec 2010 to introduce GHG standards for power stations (July 2011/May 2012) and petroleum refineries (Dec 2011/Nov 2012 (-40% of emissions))

Global Green Stimulus Allocations



State Level Action

- **Renewable Portfolio Standards:** Twenty-two states and the District of Columbia have mandated that electric utilities in their borders generate a specified amount of their electricity from renewable sources.
- **Public Benefit Funds:** Almost half of all the states have funds, often called “public benefit funds,” that are dedicated to supporting energy efficiency and renewable energy projects. The funds are collected either through a charge on the bill or through specified contributions from utilities.
- **Efficiency Standards:** The federal government has established minimum efficiency standards for approximately 20 kinds of residential and commercial products. Numerous states—including Arizona, New York, Rhode Island, Washington, Maryland, Connecticut, California and New Jersey—have set standards on products not covered by federal standards.
- **New Vehicle Standards:** California has proposed a requirement to reduce greenhouse gas emissions from new light-duty vehicles. If finally adopted the California standard will reduce new vehicle fleet emissions by 30 % by 2016. California has unique authority among the states to set vehicle emissions standards, other states have the option of either following federal standards or adopting California’s.
- **Incentives for Climate-Friendly Fuels and Vehicles:** More than half of U.S. states provide incentives for alternative fuels, gasoline/ethanol blends, alternative-fuel vehicles, and low-emission vehicles.
- **Energy Efficiency Resource Standard:** Currently 24 states have introduced EERS which establish energy-savings targets for electric utilities.

China/US Globally Important Fossil Fuel Factors

- Shale gas
- Chinese coal consumption
- Oil demand

Will shale gas be a global game changer?

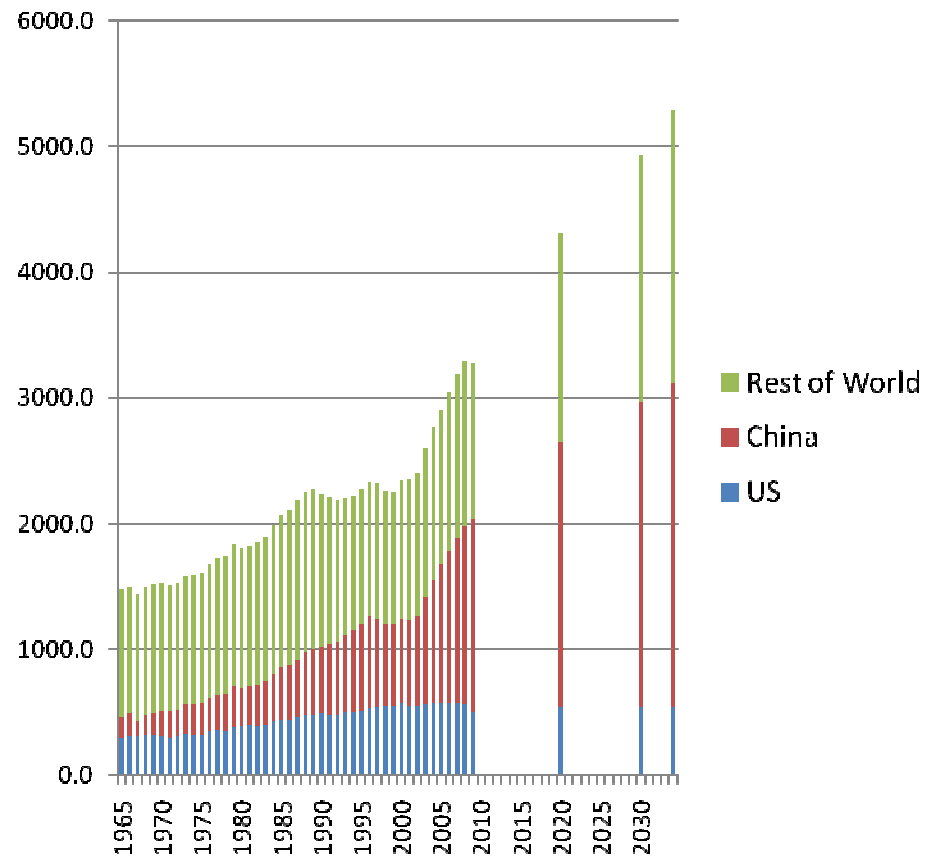
“A major new factor – unconventional natural gas – is moving to the fore in the US energy scene...it ranks as the most significant energy innovation so far this century. It has the potential, at least, to cause a paradigm shift in the fuelling of North America’s energy future.” HIS Cera, 2010

- Shale accounted for 1% of natural gas in US in 2000, today 20%; forecast to reach 50% by 2035.
 - Already impacting on electricity sector
 - Potentially accelerate movement to LPG and electric vehicles
 - Significantly reducing need for LNG import and impacting global trade
- Global potential still unclear – much smaller exploration infrastructure
- Key questions determining extent of global impact:
 - How large is potential economically available resource?
 - What are limiting environmental impacts, water contamination etc?
 - Rate of depletion of fields is undocumented.
 - Impact on price and exploration rate for conventional gas
 - How far will gas be used in non-electricity sectors?
 - Chevron “price tag is too high” to justify the investments required

Coal Consumption

- The increase in coal consumption in China will affect domestic and international markets
- Although China imports only 5% of its coal, this is larger than the export from Australia (the world's largest)

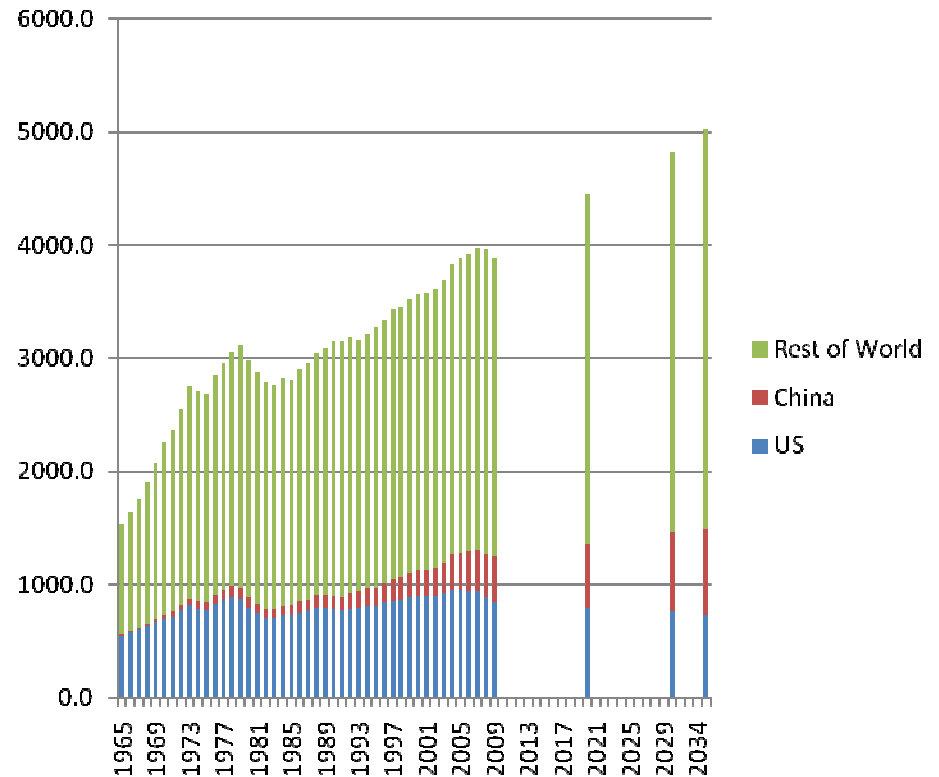
Global Coal Consumption (Mtoe)



Oil Demand

- IEA: decrease in demand from OECD (6.4 mb/d) by 2035 and increase of 7.2 mb/d.
- Chinese oil demand growth maybe underestimated as:
 - Oil demand quadrupled between 1980-2009 (prediction less than double by 2035)
 - Car ownership in China expected to increase 8 fold by 2035, although it doubled in last 3 years (to 40 million)
- What will be the impact of Evs (1,000,000 by 2015); biofuels and efficiency standards?

IEA Current Policies



Other things

- US legislative proposals to date contained border tax adjustment measures which would affect China in absolute terms more than any other country if implemented
- A key issue for the price of fossil fuels will be the deployment rate of nuclear power and renewables.