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Emerging Leadership on Climate Change

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OUTLINE

- Real leadership or diplomacy?
- Why lead (not ride)?
- What's going on in practice?

China-US Cooperate on Climate Change





US-China Joint Presidential Statement on Climate Change

- September 25, 2015, Washington DC

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Joint Presidential Statement on Climate Change

- Vision for the Paris Climate Conference
- Advancing Domestic Climate Action
- Enhancing Bilateral and Multilateral Climate Cooperation



Vision for the Paris Climate Conference

- Parties' mitigation efforts are crucial steps in **a longer range transition to green and low carbon economies** and they should move in the direction of **greater ambition over time**.
- Formulate and make available **mid-century strategies for the transition to low carbon economies**.
- Accord greater prominence and visibility to adaptation



Advancing Domestic Climate Action: China

- Carbon peak around 2030 or earlier
- -60-65% carbon intensity target by 2030
- 4.5 billion m³ forest stock
- Green power dispatch
- 2017 national emissions trading system, covering iron and steel, power generation, chemicals, building materials, paper-making, and nonferrous metals
- 50% green buildings by 2020
- 30% public transport
- HDV's 2016-2019
- HFC-23



Enhancing Bilateral and Multilateral Climate Cooperation

- US \$3 Billion to Green Climate Fund
- China: **\$3.1 Billion for China South-South Climate Cooperation Fund**
- Bilateral investment to support low carbon technology and climate resilience
- US ends public financing for new conventional coal-fired power plants except in the poorest countries
- China strictly controls public investment flowing into projects with high pollution and carbon emissions both domestically and internationally



President Xi Jinping's three meetings with President Obama

- June 2013 Sunnylands, California
 - Agreement on Hydrofluorocarbons (HFC's)
- November 2014, Beijing
 - US-China Joint Announcement on Climate Change and Clean Energy Cooperation
- September 2015 Washington DC
 - US-China Joint Presidential Statement on Climate Change

US-China Joint Announcement on Climate Change and Clean Energy Cooperation

- US plans to reduce 26-28% of greenhouse gas emissions by 2025 compared to 2005
- China plans to peak carbon dioxide emission by 2030
- China to increase non-fossil fuel share of energy to 20% in energy mix



US-China Joint Announcement on Climate Change and Clean Energy Cooperation

- Set foundation for INDC's
- Encouraged similar efforts
- Built momentum for Paris
- Helped domestic debate

Yet a new joint presidential statement



Ed Miliband has pointed the finger at China over the outcome of the UN climate summit in Copenhagen.

Photograph: Anja Niedringhaus/AP

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"hold the world to ransom" to prevent a deal being reached.

Miliband says the UK will make clear to those countries holding out against a binding legal treaty that "we will not allow them to block global progress".

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Why lead?

14 February 2014,
President Xi Jinping
met with John Kerry,
US Secretary of State



Not because others ask us to do, but because we want to do it. We have taken many measures and will continue to do more in future. There are areas of differential strengths and shared interests between China and US on green, low carbon development and energy-saving and pollution reduction. Look forward to productive cooperation.

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But why?



But why?

- Moral obligations
- Domestic concerns
- New world view
- Energy and economic and energy strategy
- Global governance

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US-China Joint Announcement on Climate Change and Clean Energy Cooperation, 2014

The United States of America and the People's Republic of China have a critical role to play in combating global climate change, **one of the greatest threats facing humanity**. The seriousness of the challenge calls upon the two sides to **work constructively together for the common good**.



Pope Francis: Climate Change A 'Principal Challenge' For Humanity

- Climate change is a global problem with far reaching environmental and social consequences — especially for the poor.
- "The earth, our home, is beginning to look more and more like an immense pile of filth. In many parts of the planet, the elderly lament that once beautiful landscapes are now covered with rubbish. ... Frequently no measures are taken until after people's health has been irreversibly affected."

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Moral obligation calls for moral leadership!



Domestic concerns

- Climate impacts
 - Air pollution and health
 - Energy security
 - Land and water degradation
 - Coal mine safety
 -
-
- Political legitimacy is at stake!



Coal mining and burning

- ❑ More than 70% of SO₂, NO_x, soot and other conventional pollutants from coal burning and vehicle exhaust
- ❑ 50% of PM_{2.5} from fossil fuel consumption in the summer, 70% in the winter.
- ❑ In eastern coastal areas, environmental and health losses from coal combustion is about 200-300 yuan/ton
- ❑ Coal production results in land subsidence and groundwater pollution



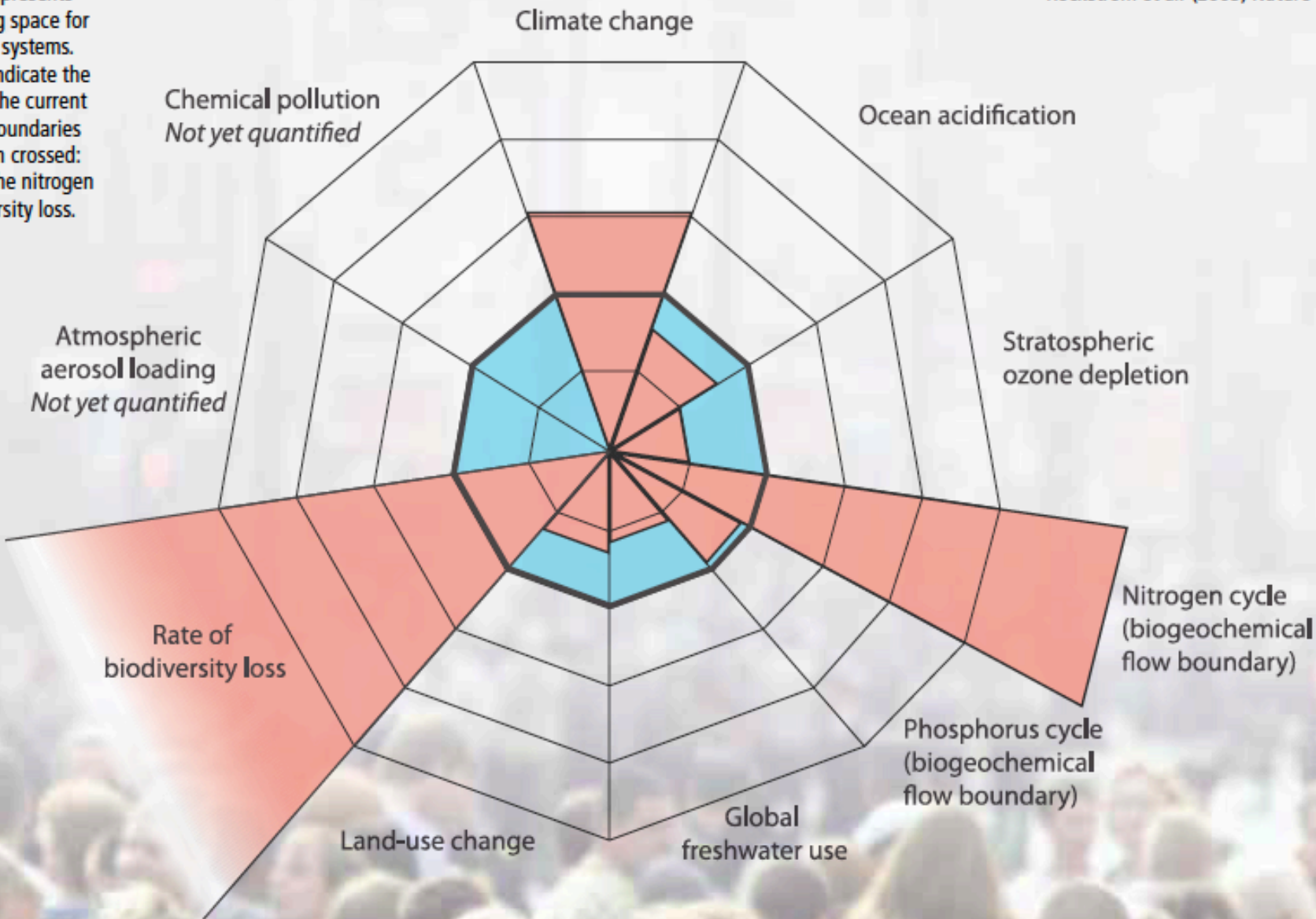
New Leadership, New Vision

- In promoting mutually beneficial cooperation, we should **raise awareness about human beings sharing a community of common destiny**. A country should accommodate the legitimate concerns of others when pursuing its own interests; and it should promote common development of all countries when advancing its own development.

New Leadership, New Vision

- Countries should establish **a new type of global development partnership** that is more equitable and balanced, stick together in times of difficulty, both share rights and shoulder obligations, and boost the common interests of mankind.

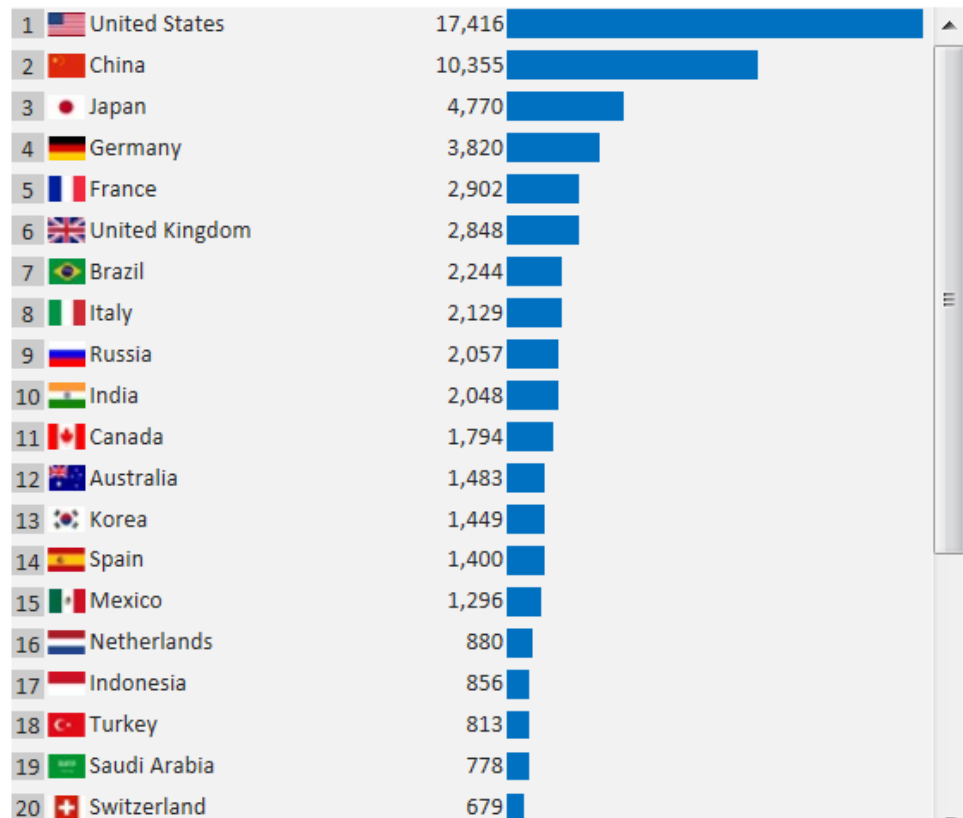
The inner circle represents the safe operating space for the key planetary systems. The red wedges indicate the best estimate of the current situation. Three boundaries have already been crossed: climate change, the nitrogen cycle and biodiversity loss.



Building world's largest green economy

GDP, current prices

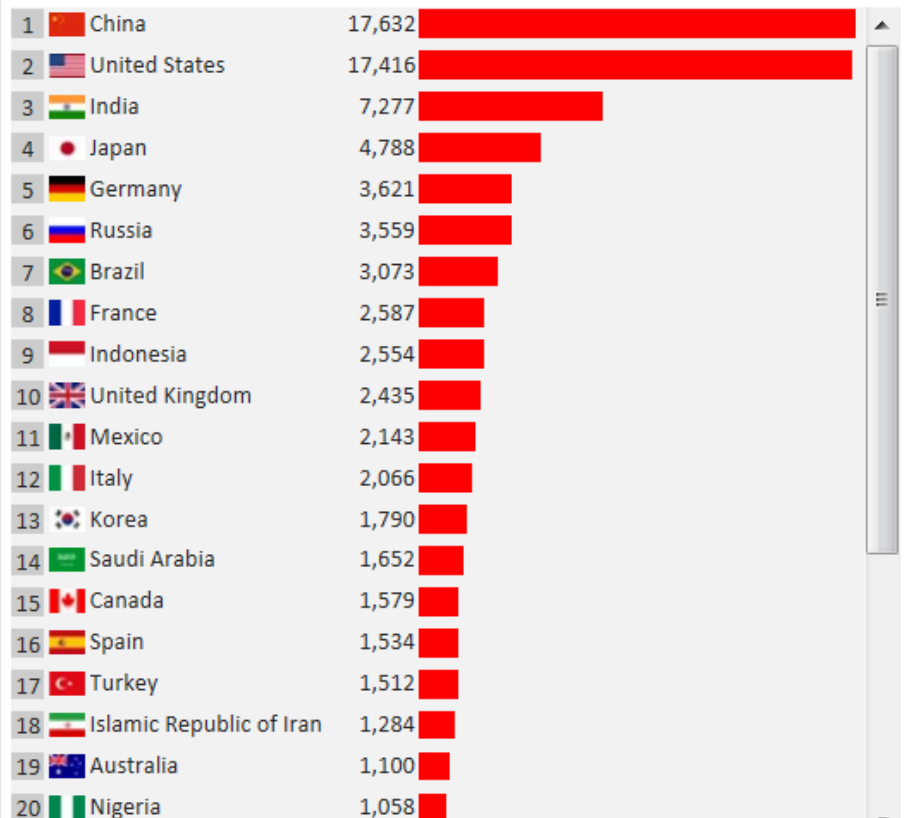
U.S. dollars (Billions)



Source: [IMF World Economic Outlook, October 2014](#)

GDP based on PPP valuation

Current international dollar (Billions)

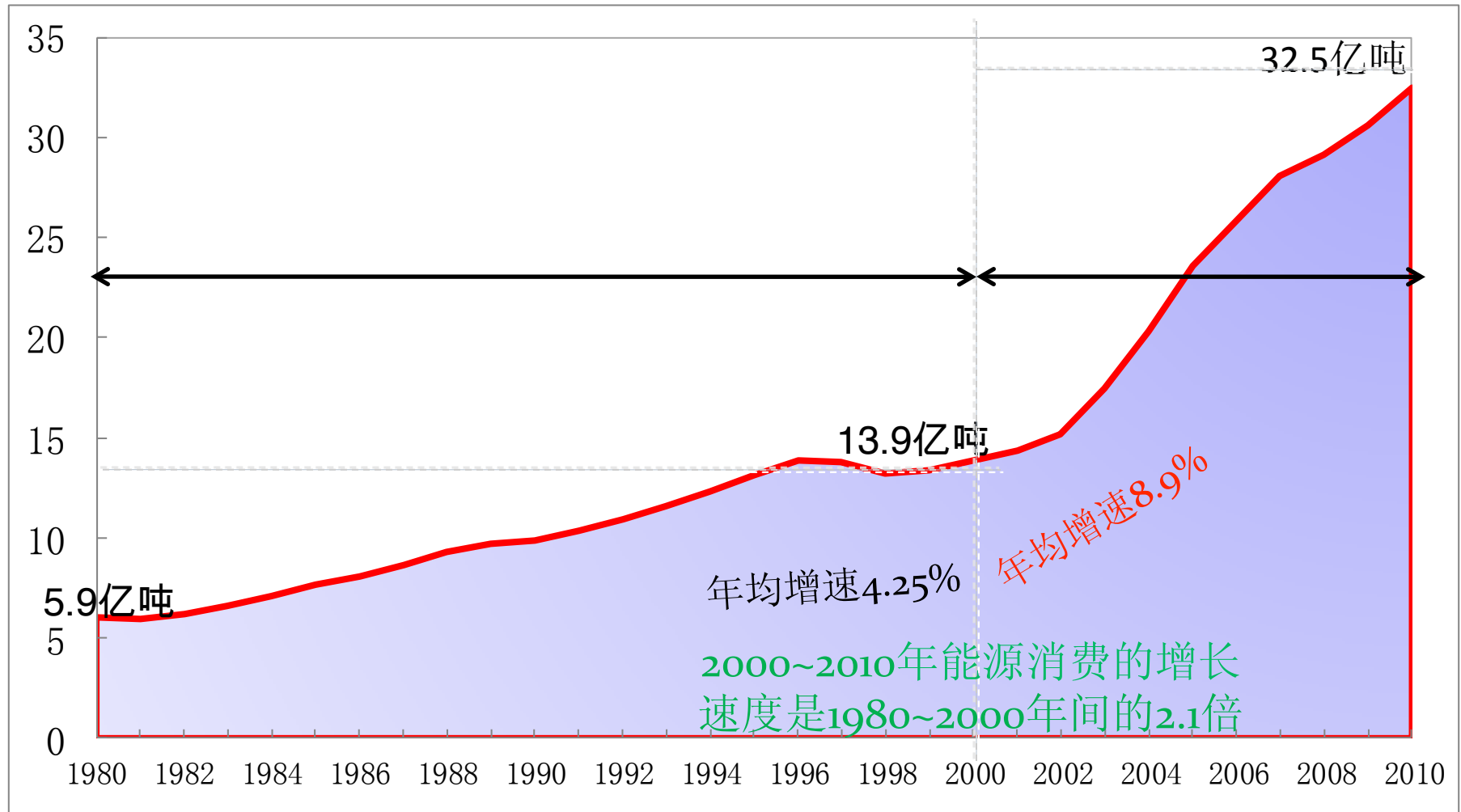


Source: [IMF World Economic Outlook, October 2014](#)

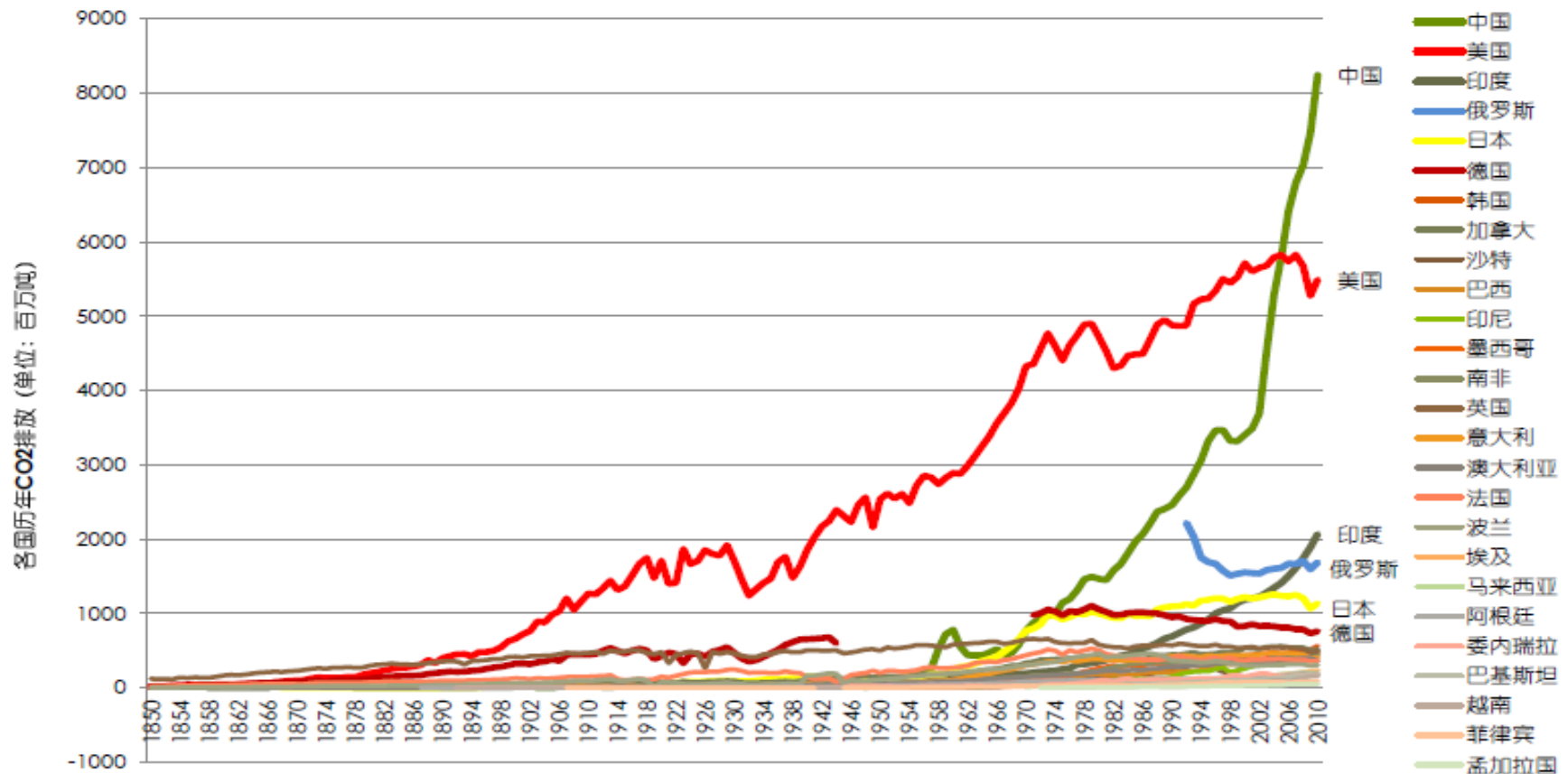
China's Economic Achievement

- ❑ 1980 China's GDP ranked 9th in the world after Italy and Canada
 - ❑ 700 million out of poverty (3/4 of the world)
 - ❑ Extreme poverty rate down from 84% in 1980 to 10% now
-

Rapid and unsustainable energy consumption



China's becomes the largest emitter



数据来源:

1. CO2排放数据主要来自二氧化碳信息分析中心(Carbon Dioxide Information Analysis Center, CDIAC), 美国橡树岭国家实验室 (Oak Ridge National Laboratory), 2011, 包含化石燃料燃烧的CO2和水泥工艺过程的CO2。
2. 德国1971-1990年数据来自IEA, CO2 Emissions from Fuel Combustion 2011
3. CDIAC的化石燃料燃烧的CO2与IEA的化石燃料燃烧的CO2数据基本一致, 误差在1%左右。



Revolutionary thinking

- Energy revolution: production and consumption
- Transforming the economic growth model
- Third industrial revolution
- Towards an ecological civilization



Global governance

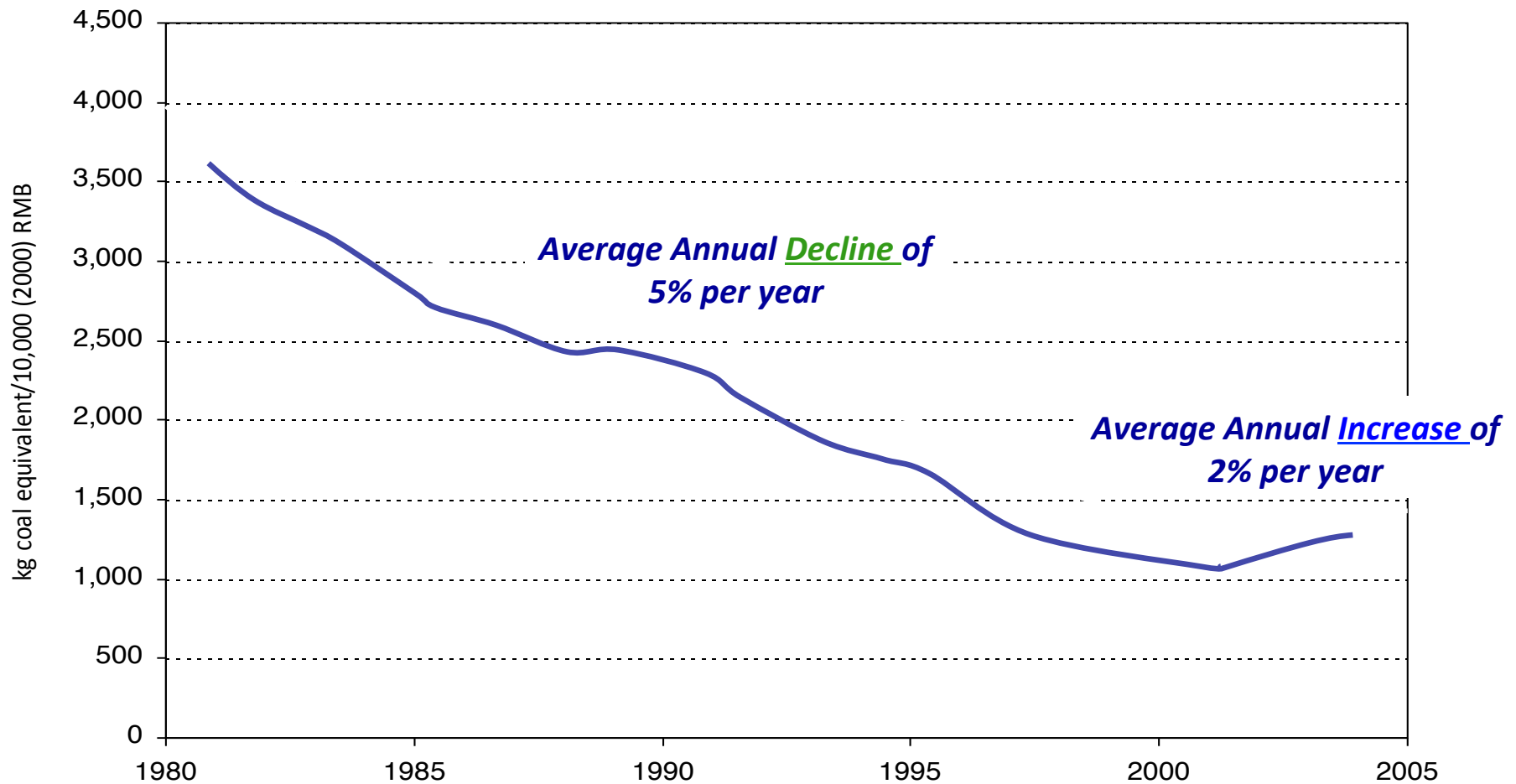
- Participant, builder and contributor
- Global commons
- Common threats
 - Climate change
 - Natural resource and energy security
 - Cyber security, and
 - Natural disaster relief



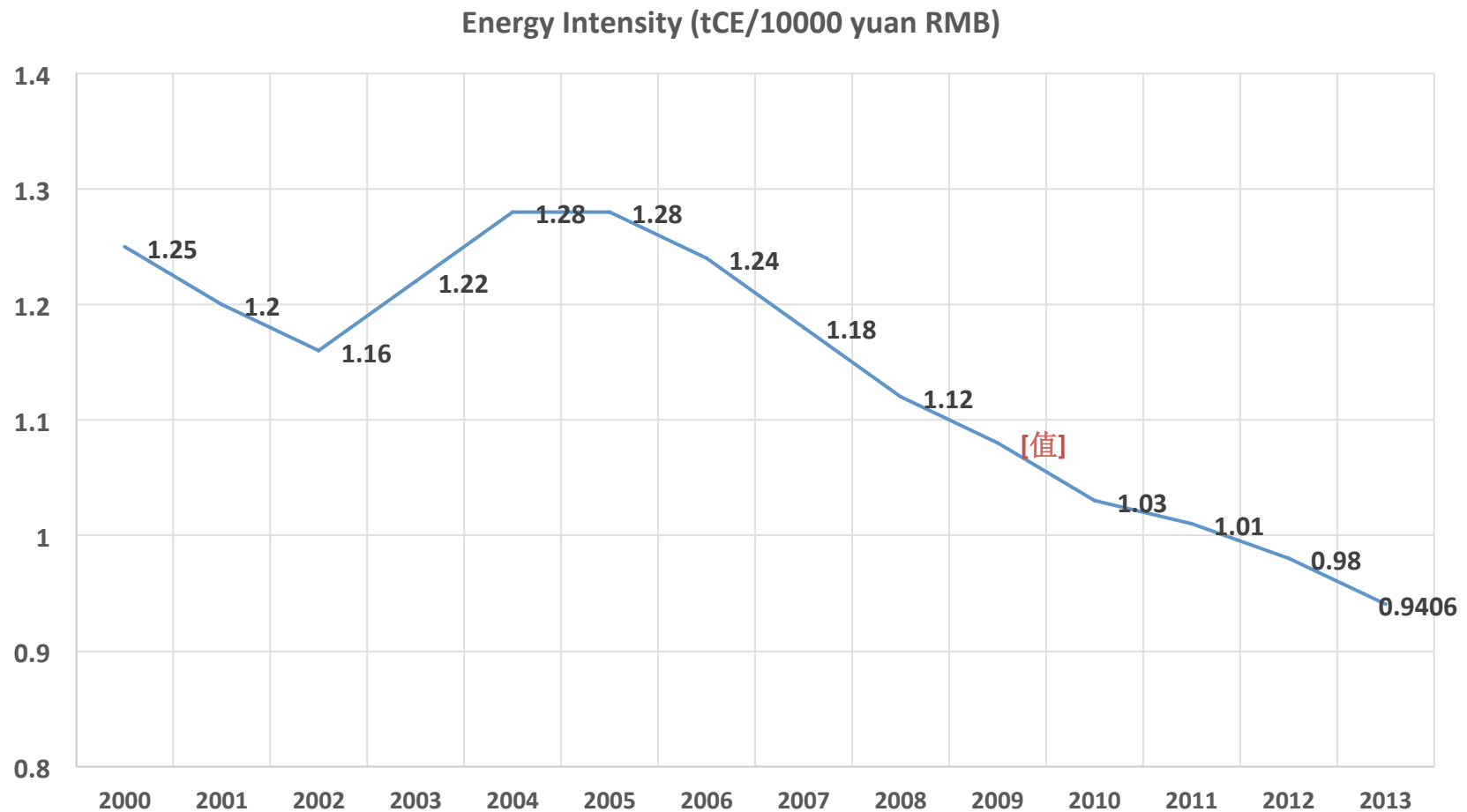
Making real changes

- 2014 Carbon intensity: -6.2% vs -3.1% planned
- 2011-2014 cumulative -15.8% (12th FYP 17%)
- 2005-2014: Carbon Intensity -33.8% (3.76% a⁻¹)
- Energy related 1625 million tons CO₂
 - Energy efficiency 1336 million tons (82.2%)
 - Non-fossil fuel energy 169 million tons (10.4%)
 - Fossil fuel energy mix improvement: 120 millions (7.4%)

Historical change of energy intensity

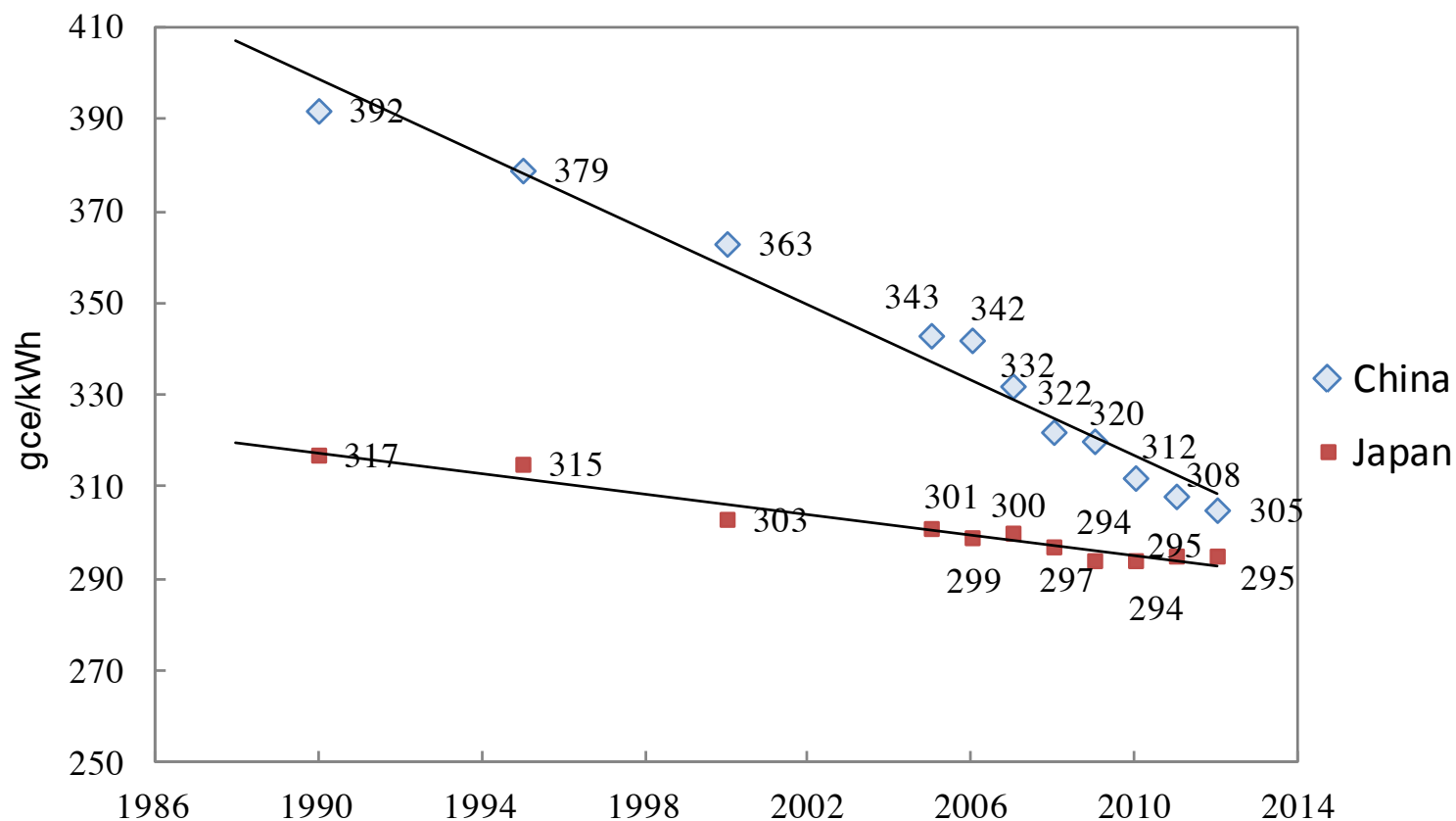


Reversal of energy intensity trend



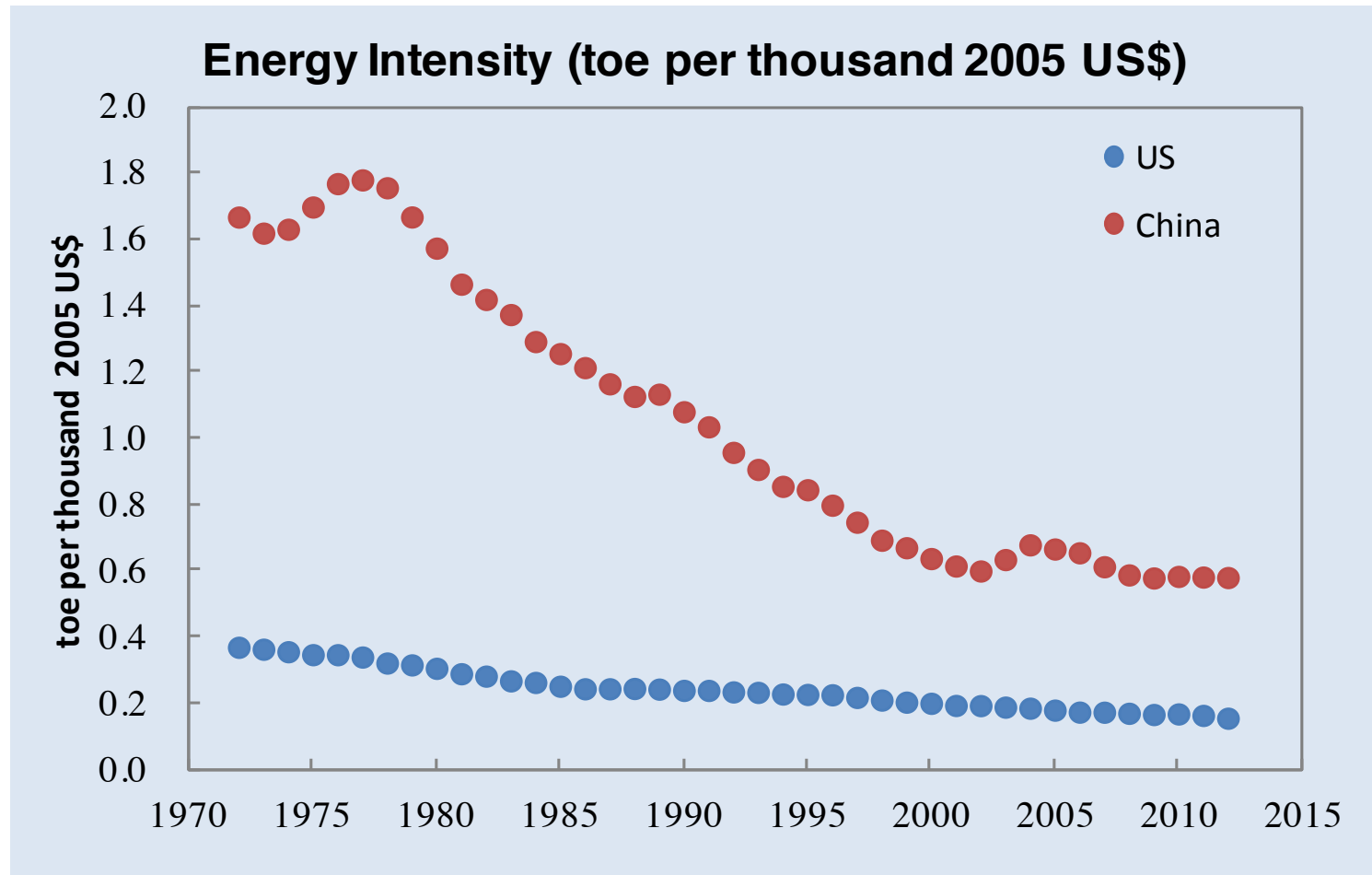
Closing the gap in efficiency

Gross Coal Consumption Rate for Fossil-Fired Power Plant



Source: China Energy Statistical Yearbook 2013.

Closing the gap in efficiency



Source: (1) BP, BP Statistical Review of World Energy 2014 Workbook.
(2) IEA, CO2 Emissions from Fuel Combustion Highlights 2014.

Energy Efficiency

- 2005-2013, China shut down inefficient production facilities: 150 million tons of iron, 120 million ton of steel, 870 million ton of concrete, and 94.8 GW of Coal-fired power generation
- Yet, the energy consumption per GDP is the 1.8 times of world average, is 2.3 times in the U.S. and 3.8 times in Japan

Renewable Energy:2013

- ❑ Hydro: 280 GW
- ❑ Wind: 75.5GW
- ❑ Solar PV: 14.8
- ❑ Nuclear 37.23 GW, 40% of the world total
- ❑ Non-fossil fuel supply will reach 700 million tce, equivalent to Japan's total energy consumption.

Greening of Power System: 2014

- ❑ Coal consumption: -2.9%
- ❑ Power generation: 3.2% (5,545 TWh)
- ❑ Thermal:
 - Generation: 4173 (75.3%)
 - Change: -48TWh (-1.1%)
- ❑ Non-Thermal:
 - Generation: 1372 (24.7%)
 - Change: 221TWh (19%)
- ❑ WWS: 1245, 200TWh (19%)
- ❑ Solar: 175%

Measures Taken Since Copenhagen

- Consensus building among the leadership;
- Strengthening the Target Responsibility System;
- 12th Five Year Planning
- Low-Carbon Pilots
- Carbon Market
- ESCO and other market instruments
- Broader and stronger programs
- Public and private financing

Renewable energy finance

- Ranked No 1 since 2009 (BNEF data)
- 2012, \$64.7 billion, 22% of the world
- 2013, -3.8%, \$61.3 billion, <35% of the world
- World: -12%, \$244 billion
- US: -8.4%, \$48.4 billion
- EU: -41%, \$57.8 billion
- Germany:-46%, \$14.1 billion
- France: -34%, \$4.1 billion
- Italy: -73%, \$4.1 billion
- UK: -8%, \$13.1 billion



Emerging leadership on climate change?

- China's role has become more proactive and prominent in the global effort to address climate change
- Remains primarily domestic until recently
- Greater global leadership is expected