

Prospect of China's Energy & Climate Policy Development by 2020

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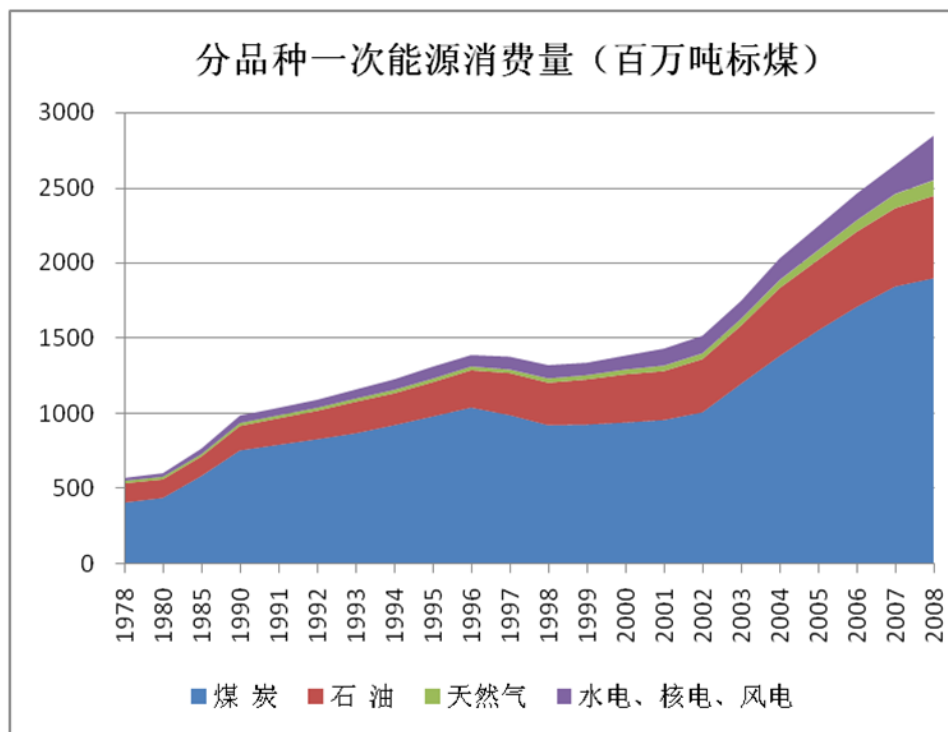
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Current situation of energy system in China

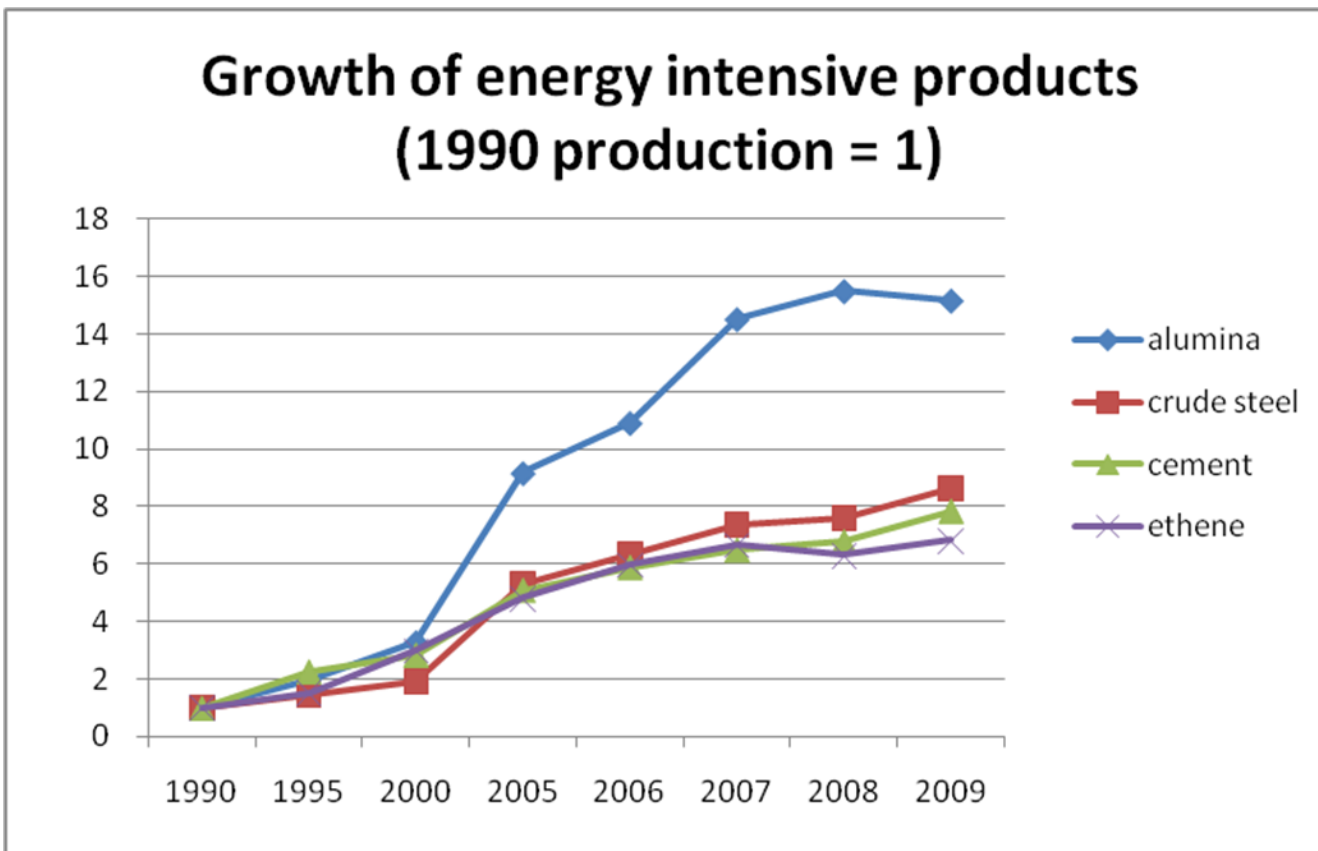
Energy consumption and carbon emission

- ▶ Coal dominant: 70% of total primary energy consumption
- ▶ Rapid growth: difficult to change
- ▶ Higher pressure of carbon mitigation



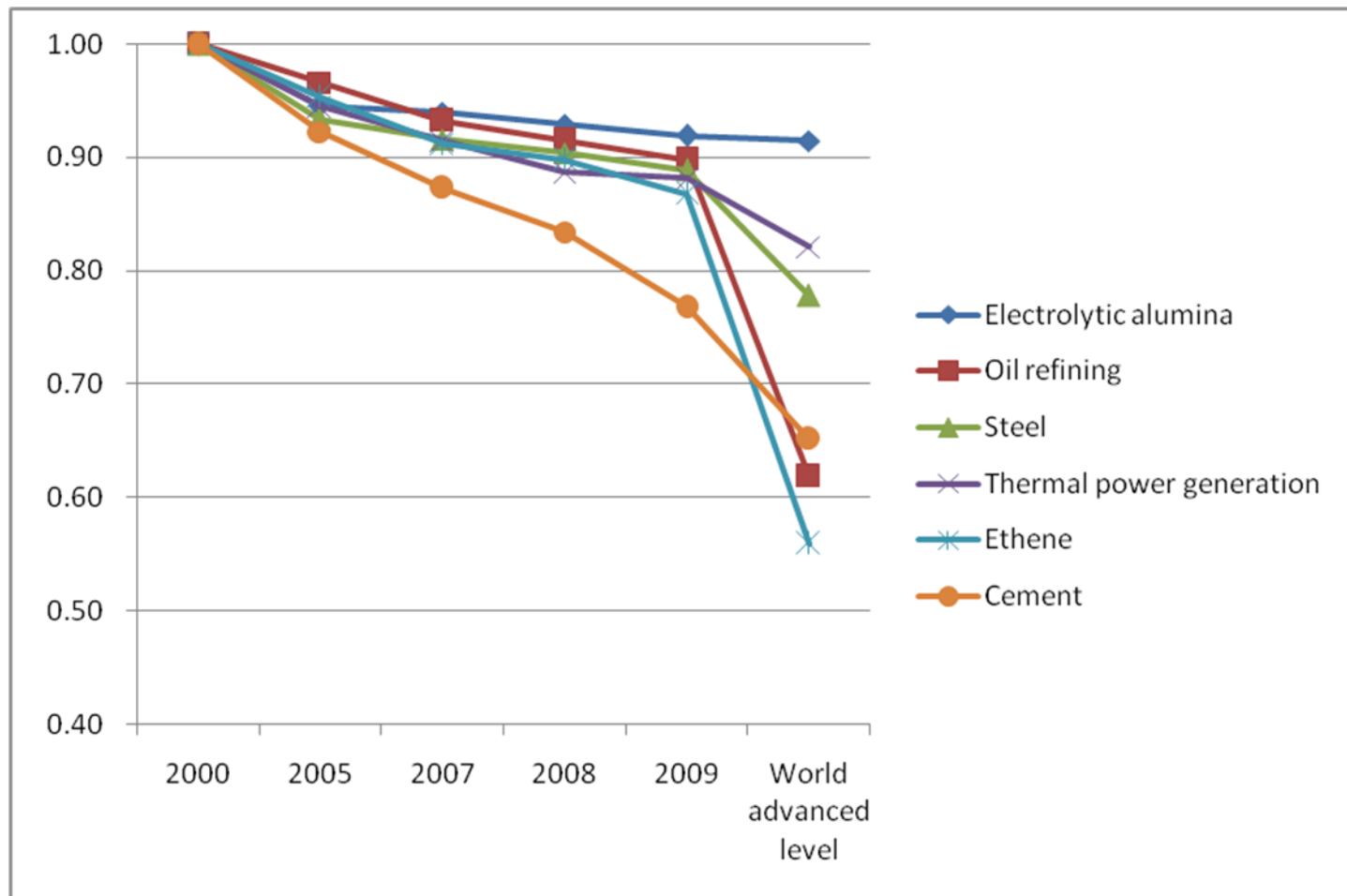
Data source: NSB

Energy intensive sector situation



	Crude steel	Cement	Alumina	Ethene
2009 production (Mton)	572.2	1644.0	12.9	10.7

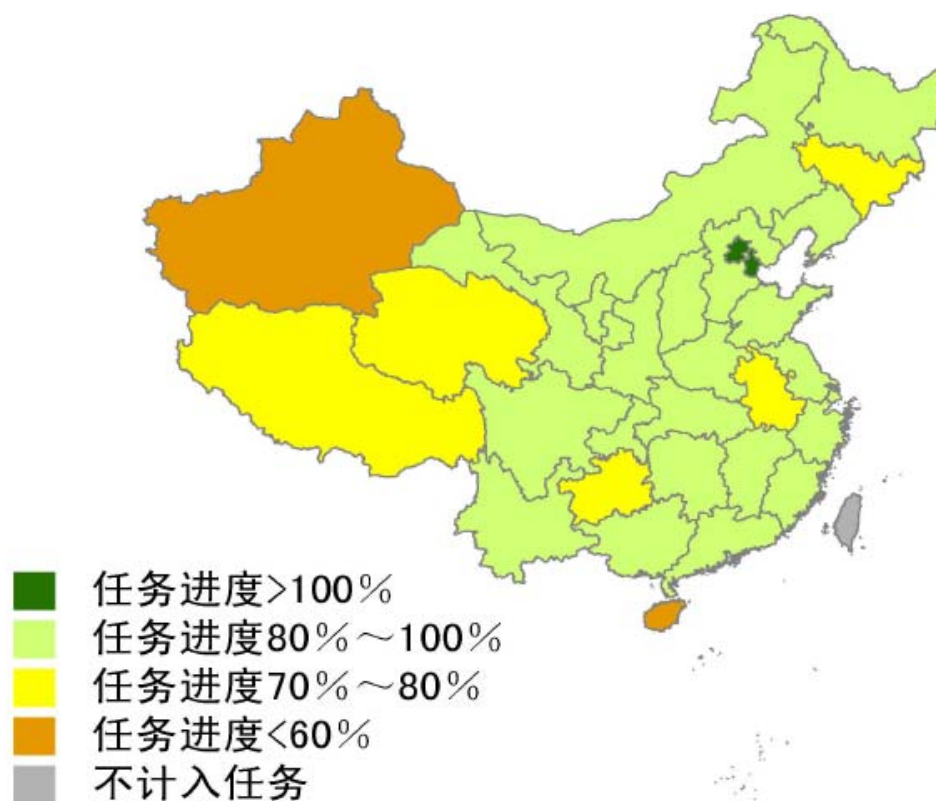
Change of energy efficiency level of main energy intensive products



Achievement in 11th-5-year planning period (2005-2010)

Energy Intensity reduction: 20%

- ▶ By the end of 2009, 2 cities has achieved target, 22 provinces has achieved 80% of targets
- ▶ 20% target is expected to be achieved during 2006-2010.

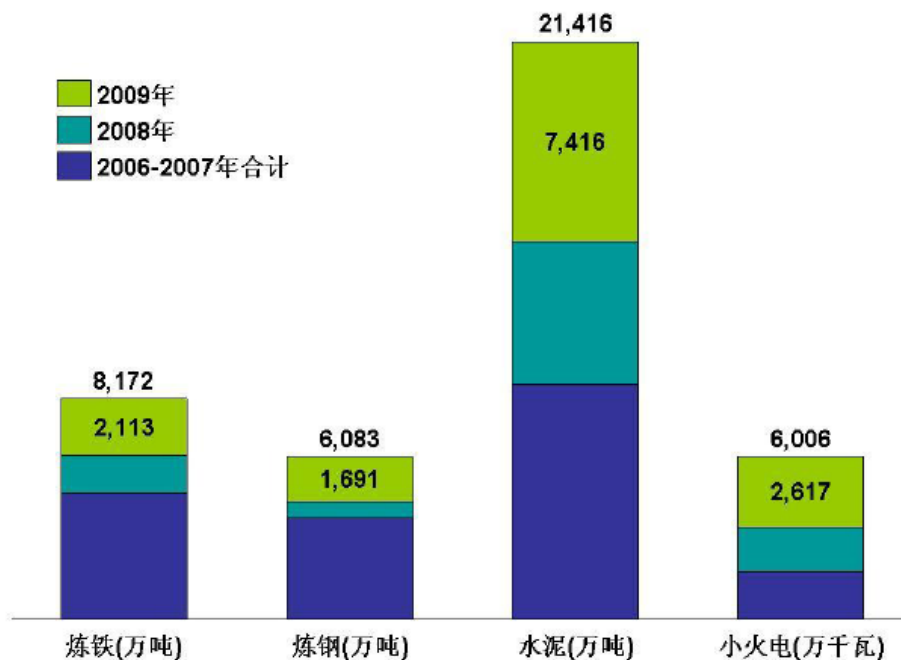


Energy Conservation

--- Elimination of backward capacity



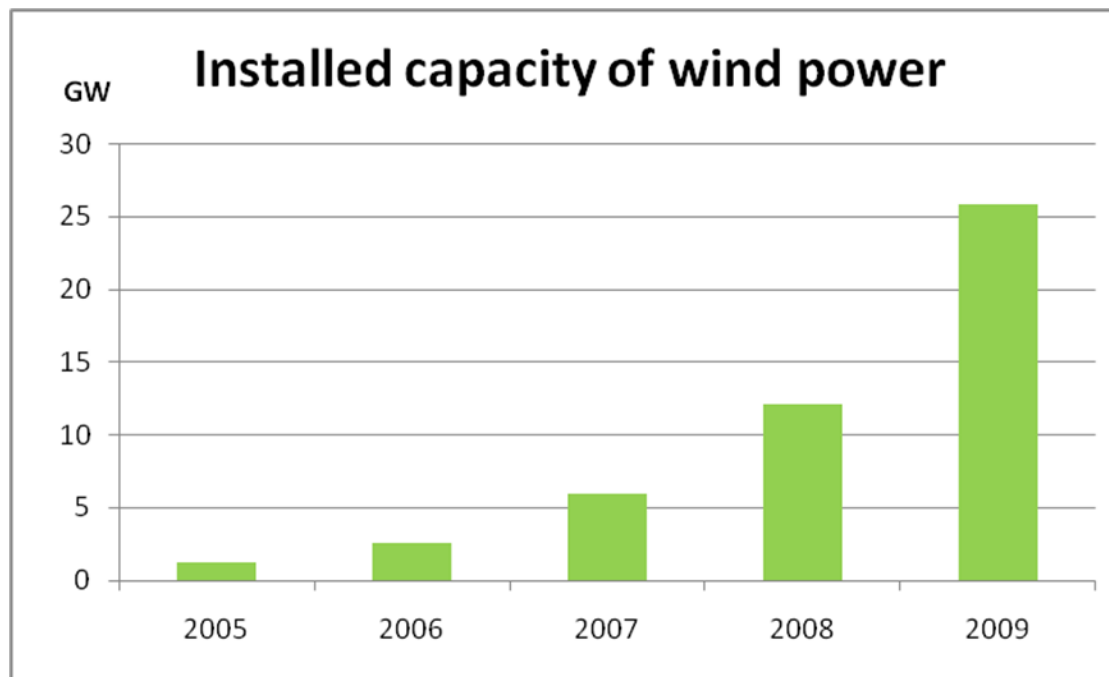
- ▶ From 2006 to 2009, totally **110 Mtce** of energy saving has been achieved, equivalent to **256 MtCO₂** reduction.
 - ▶ Stop and close small thermal power units: 60GW
 - ▶ Eliminate backward iron and steel making capacity: 60.8Mton steel and 81.7Mton iron
 - ▶ Eliminate backward cement capacity: 214Mton



- ▶ “Notice on Further Elimination of Backward” (Feb, 2010):
 - *Key sectors: iron and steel, cement, glass, Non-ferrous metal, coking, paper making, printing, etc.*
 - *Comprehensive measures: target split to province, enhanced policy constraint, incentive and supervision mechanism, etc*

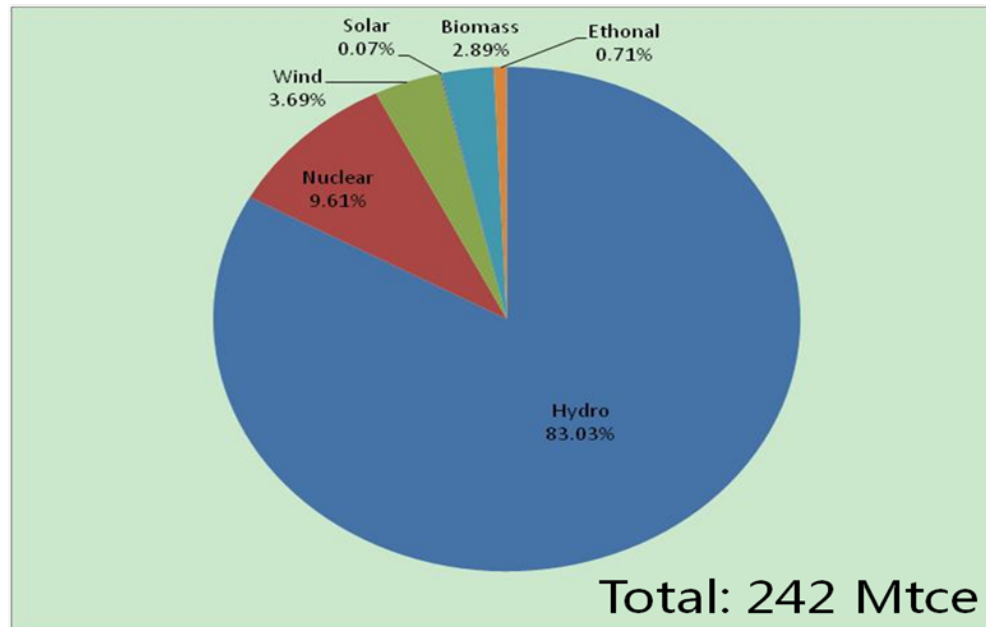
Non-fossil fuel energy development

- ▶ By 2009, installed capacity of wind power has achieved 25.8GW.
The previous target for wind power in 2020 has been achieved 10 years before.
- ▶ 7 wind power bases with capacity of 10GW being constructed



Non-fossil fuel energy development

- ▶ By 2010, the installed capacity of hydropower has exceeded 200GW, ranking 1st in the world. Also highest in installing capacity and growth of hydropower
- ▶ By 2009, the total area of solar thermal power has achieved 1.18 billion m², shallow-layer geothermal 139 Million m², solar-PV building capacity 420 MW, the total heating area of solar-heat-water 145 Million m²;
- ▶ Active development of nuclear power: by the end of 2009, 24 units with total capacity of 26.7GW being constructed, ranking 1st in the world



Trends in 12th-5-year planning period (2010-2015)

Continuation of Energy conservation and non-fossil fuel development



- ▶ Continuously setting energy consumption intensity reduction goals as restrictive targets in next 5-year period (2010-2015): **16% reduction**
 - Strengthened responsibility examining system for energy saving goals
 - Improved standards, laws and regulations on energy conservation
 - Sounder market system and incentive mechanisms, e.g. extending Energy Management Contract (EMC) coverage
 - Manage the total energy consumption in a reasonable range: pilot cap for total energy consumption in some regions
- ▶ Adjusting energy structure and increase the proportion of non-fossil-fuel energy
 - ▶ The share of non-fossil-fuel energy in primary energy will increase to **11.4% in 2015** and **15% in 2020**, including RE and nuclear
 - ▶ Keep providing financial support for energy saving, renewable energy and carbon mitigation: **driving 5000-billion-Yuan investment in next 10 years**

Enhancement of low carbon development



- ▶ CO2 emission intensity reduction goals as restrictive targets:
 - 17% reduction from 2010 to 2015
 - 40%-45% reduction from 2005 to 2020
- ▶ Building up a sound system to monitor data on GHG emissions and mitigation
- ▶ Establish carbon emission trade markets step by step
- ▶ Speeding up low-carbon technology R&D and application

Low carbon policies and measures

- ▶ Carbon intensity reduction target
 - ▶ Separated to regional targets
 - ▶ Translated to industry index
- ▶ Low carbon plan: regional and sectoral
 - ▶ Provinces and cities
 - ▶ Industry park
 - ▶ County
- ▶ Regulation:
 - ▶ Low carbon standard
- ▶ Market-based measures
 - ▶ Carbon trade market
 - ▶ Carbon tax

Carbon mitigation on sectoral level

▶ **Energy conservation:**

- ▶ Biggest contributor for low carbon development but face more difficulties in “12th-five-year” period, and depend more on market-based mechanisms
- ▶ Industry sector is till the key sector for energy conservation, in which energy management shall play more important role

▶ **Non-fossil-fuel energy**

- ▶ Rapid growth in next 10 years
- ▶ Need to improve the supportive policies and mechanisms
- ▶ Need to establish the instrument and technology system for large-scale use of renewable energy and consider how to ensure the growing financial support for RE

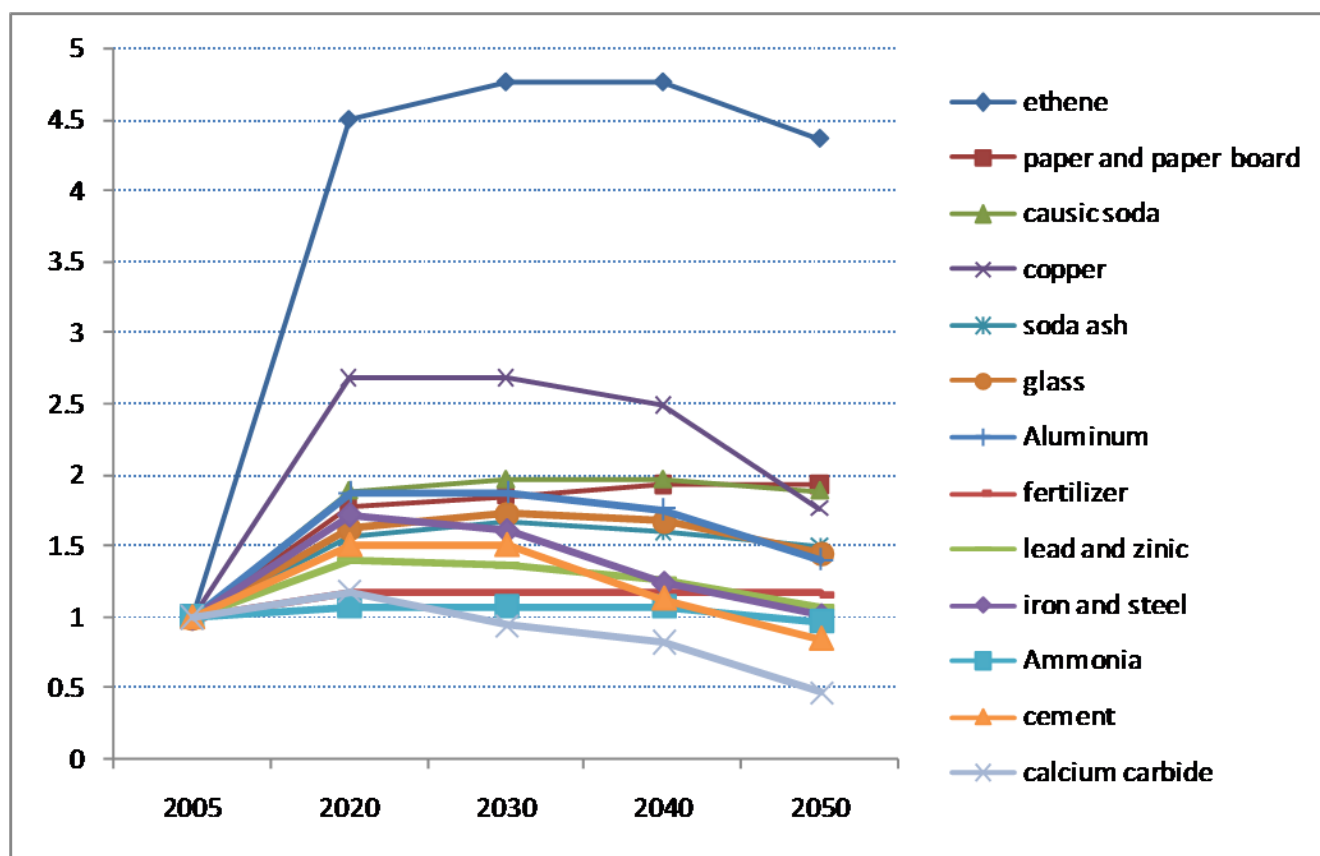
▶ **Clean energy technologies**

- ▶ Clean coal technology: high potential (including R&D&D of CCS)
- ▶ New energy vehicle: hybrid will play main role in short term
- ▶ Natural gas use: supply is key

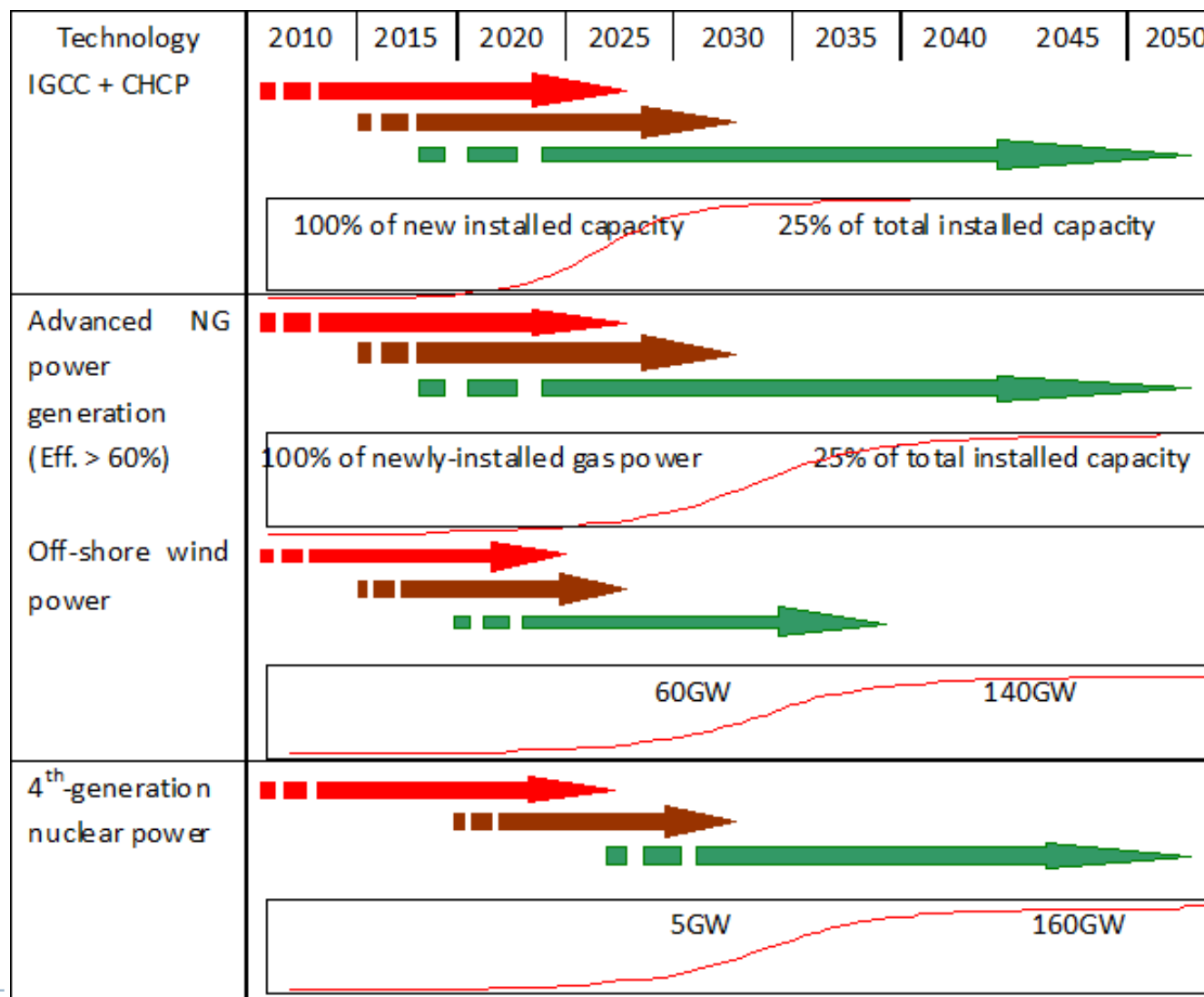
Trends after 2020

Carbon mitigation on sectoral level

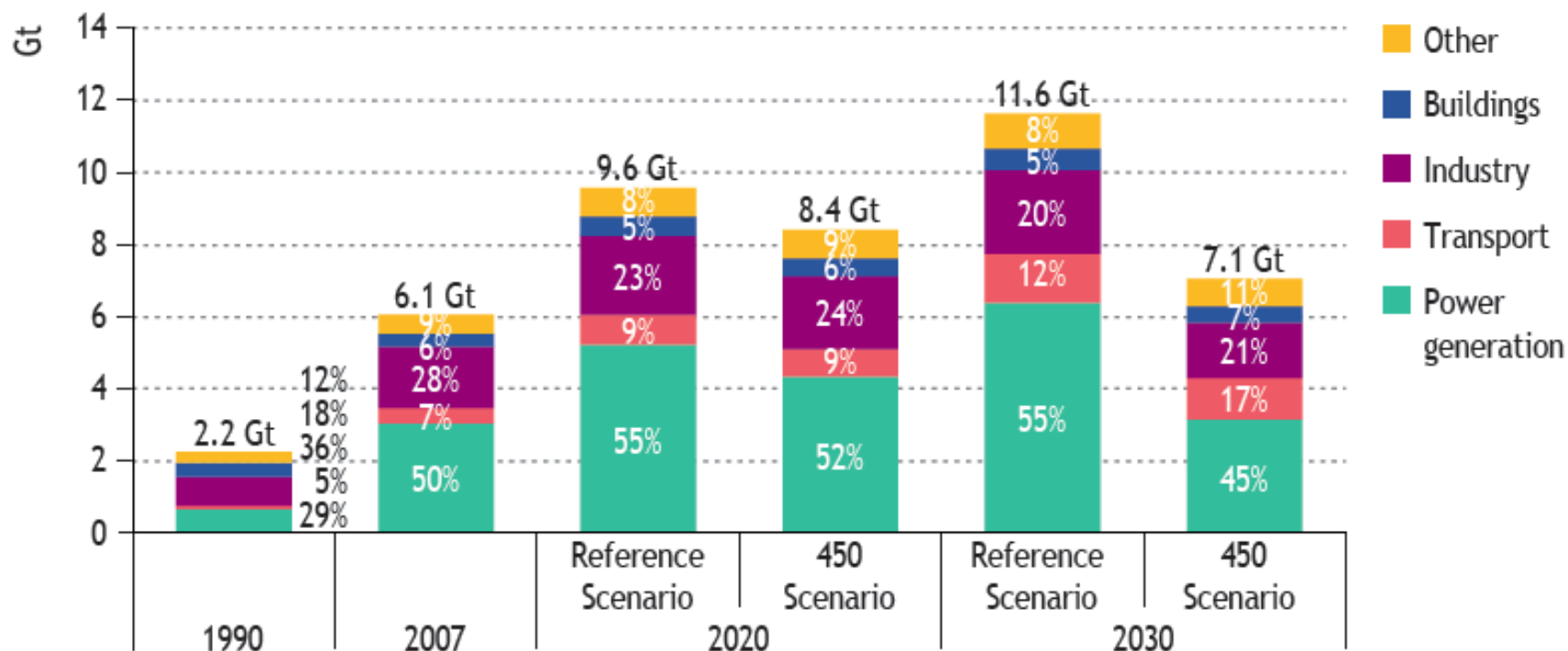
- ▶ The trend of output of main industry products (2005 output=1)



New low carbon technology penetration

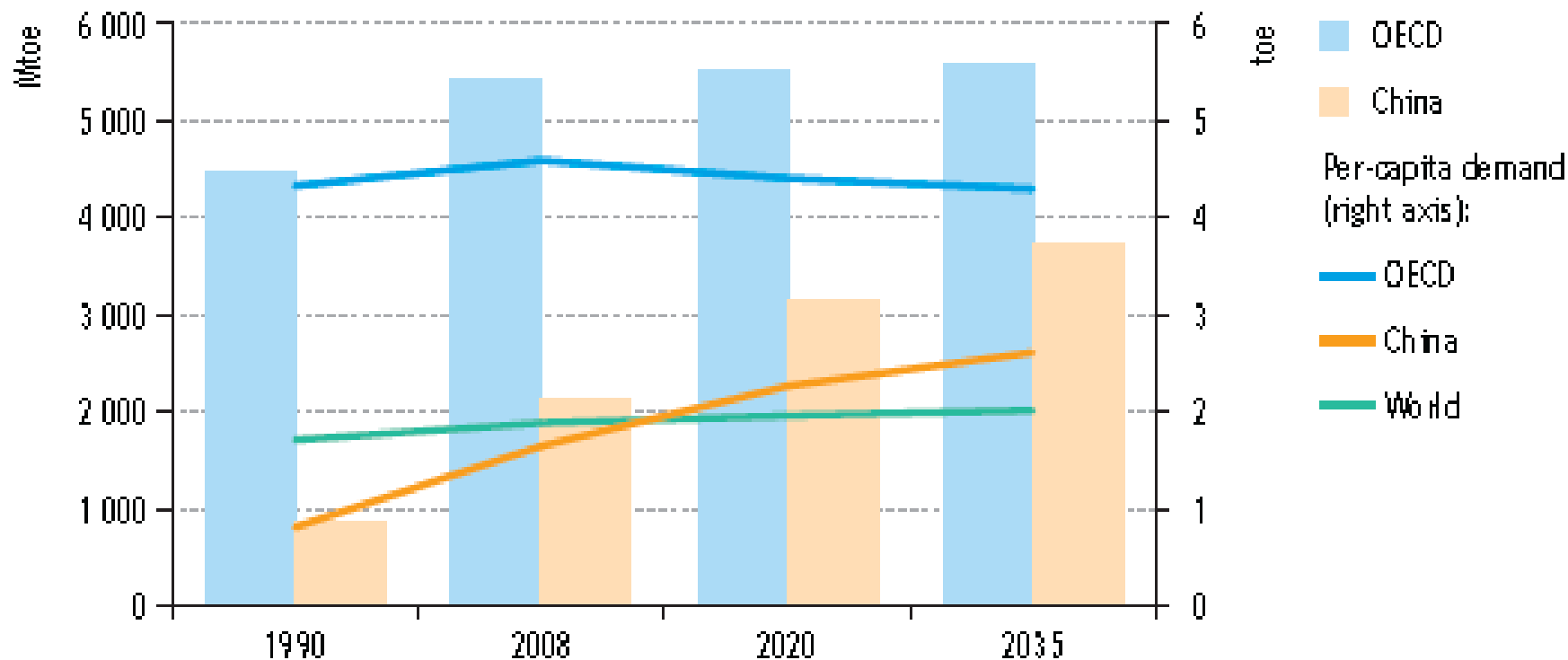


China energy-related CO₂ emissions



(Source: WEO, 2009)

Total primary and per-capita energy demand in China and the OECD in the New Policies Scenario



Source: IEA WEO2010

Impact of low carbon policies on energy development

- ▶ **Controlling on total energy consumption**
 - ▶ Key for sustainable development
 - ▶ Translation of intensity target
- ▶ **Reasonable energy growth**
 - ▶ Slowdown of growth rate
 - ▶ not too rapid in short time
- ▶ **Energy structure optimization**
 - ▶ Fossil fuel structure
 - ▶ Non-fossil fuel ratio
- ▶ **Better planning and management**
 - ▶ Pre-planning
 - ▶ Potential finding

Thank you !

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