

Where Will We GO: China's Future

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**INTERNATIONAL RESEARCH NETWORKFOR LOW
CARBON SOCIETIES9TH MEETING:**

Clean growth and innovation in a changing world

12-13 September 2017

China's INDC: keywords

- Considering global 2 degree target
- China: peak by 2030, make effort to peak earlier
- 60-65% carbon intensity reduction by 2030 compared with 2005
- 20% non-Fossil fuel energy in primary energy by 2030

INDC+/NDC for China

- Peak CO₂ emission in 2030, **try to peak earlier**

peak 2020-2022

- 60% to 65% carbon intensity reduction by 2030 with comparison with 2005

70%-75% carbon intensity

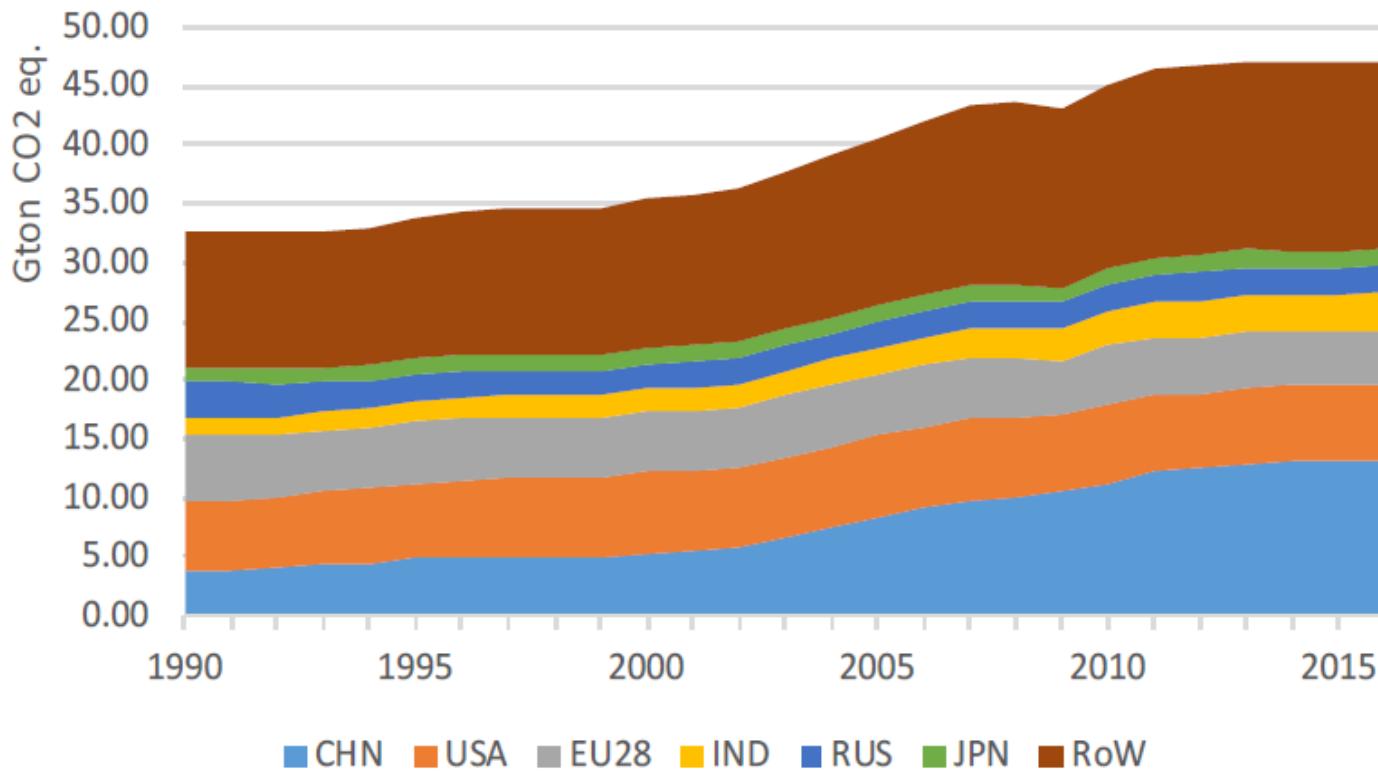
- 20% non-fossil energy in TPE

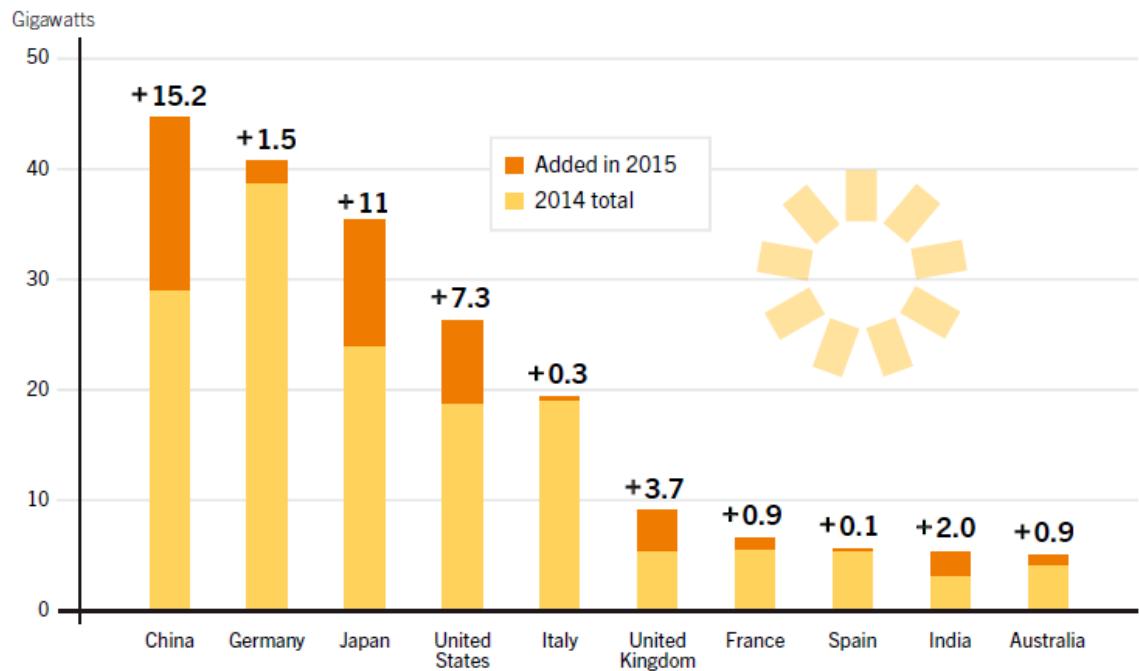
25%, based on NEA's picture

Copenhagen for China: progress

- 40% to 45% carbon intensity reduction in Copenhagen
- 2005-2010: carbon intensity 22% reduction
- 2010-2015: carbon intensity 21.8% reduction
- 2015-2020: 18% reduction based on the 13th Five Year Plan
- Then it is around 50%

GHG emissions

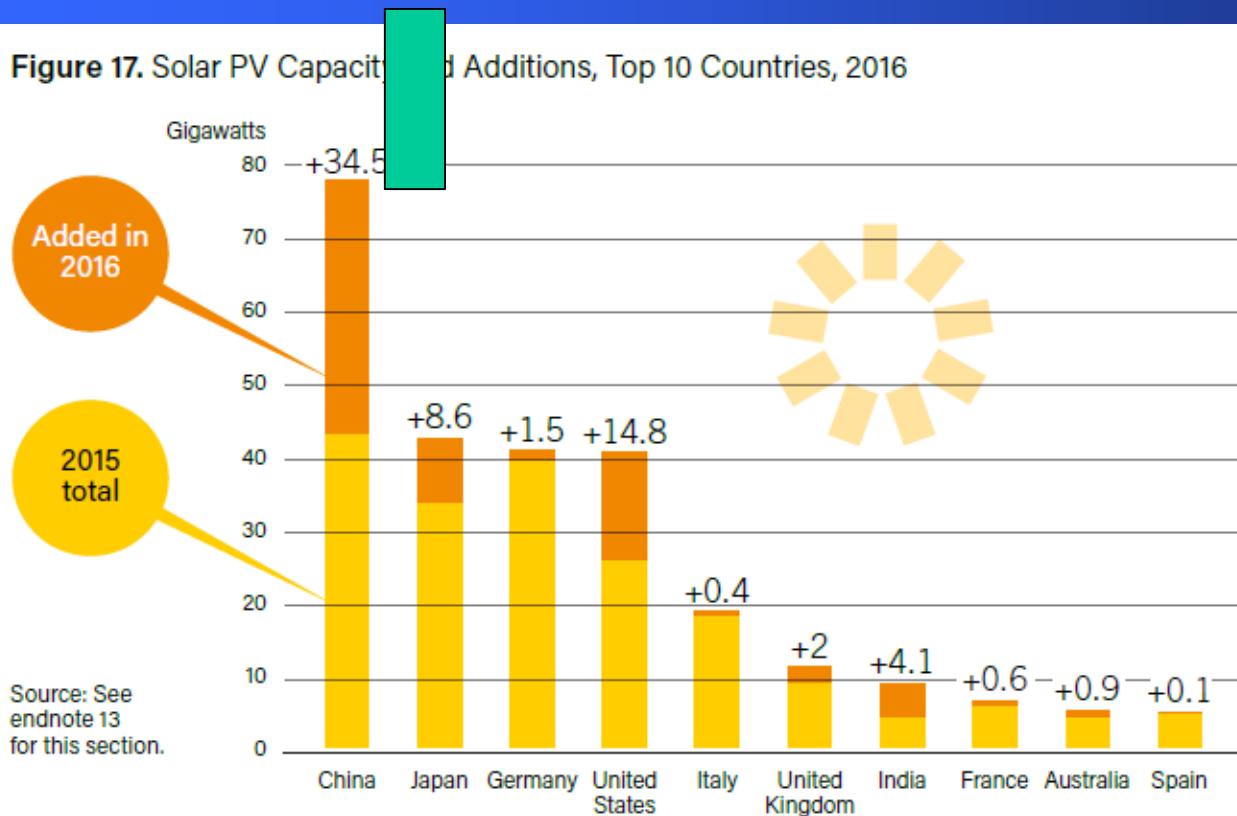




**50 GW
ADDED IN 2015**

+24.5GW from Jan. to June 2017

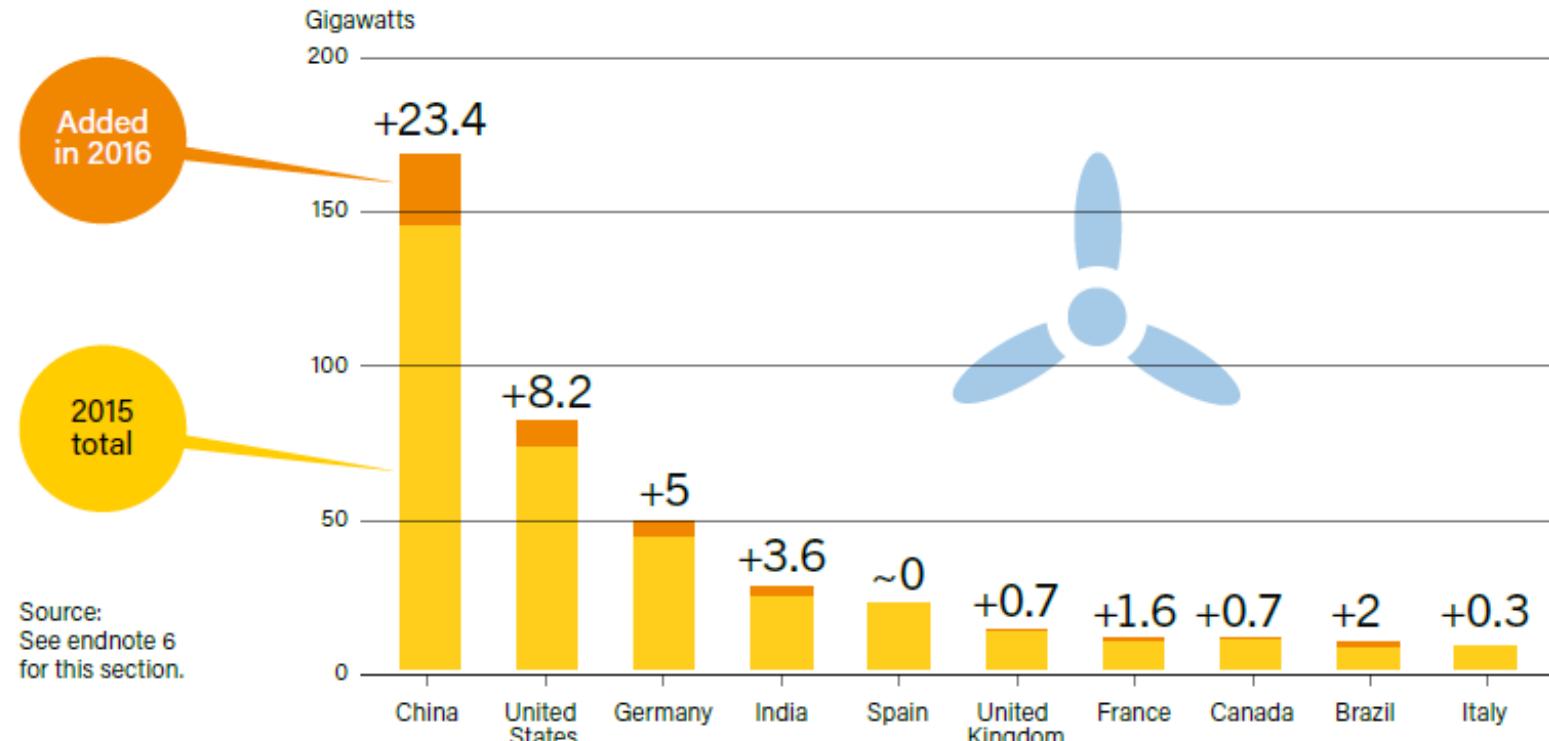
Figure 17. Solar PV Capacity and Additions, Top 10 Countries, 2016



CHINA ACCOUNTED FOR
46% OF NEW CAPACITY.



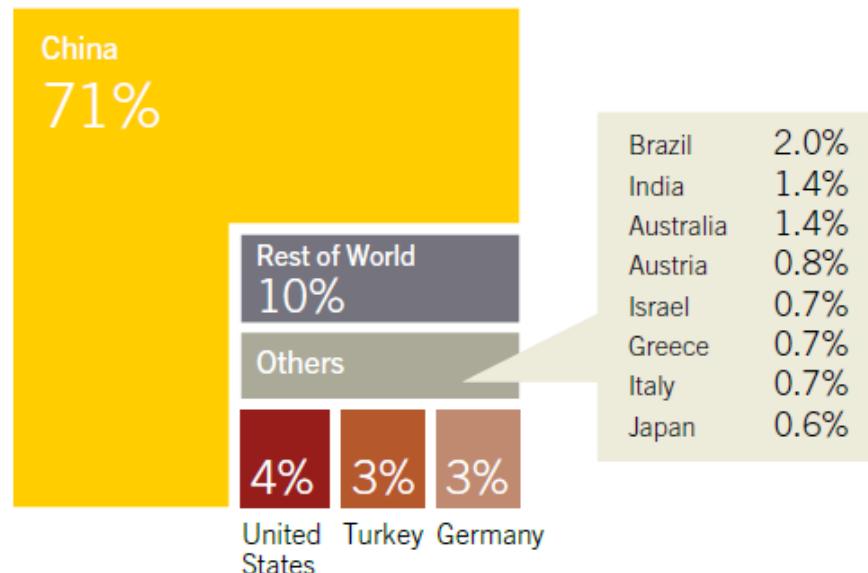
Figure 27. Wind Power Capacity and Additions, Top 10 Countries, 2016





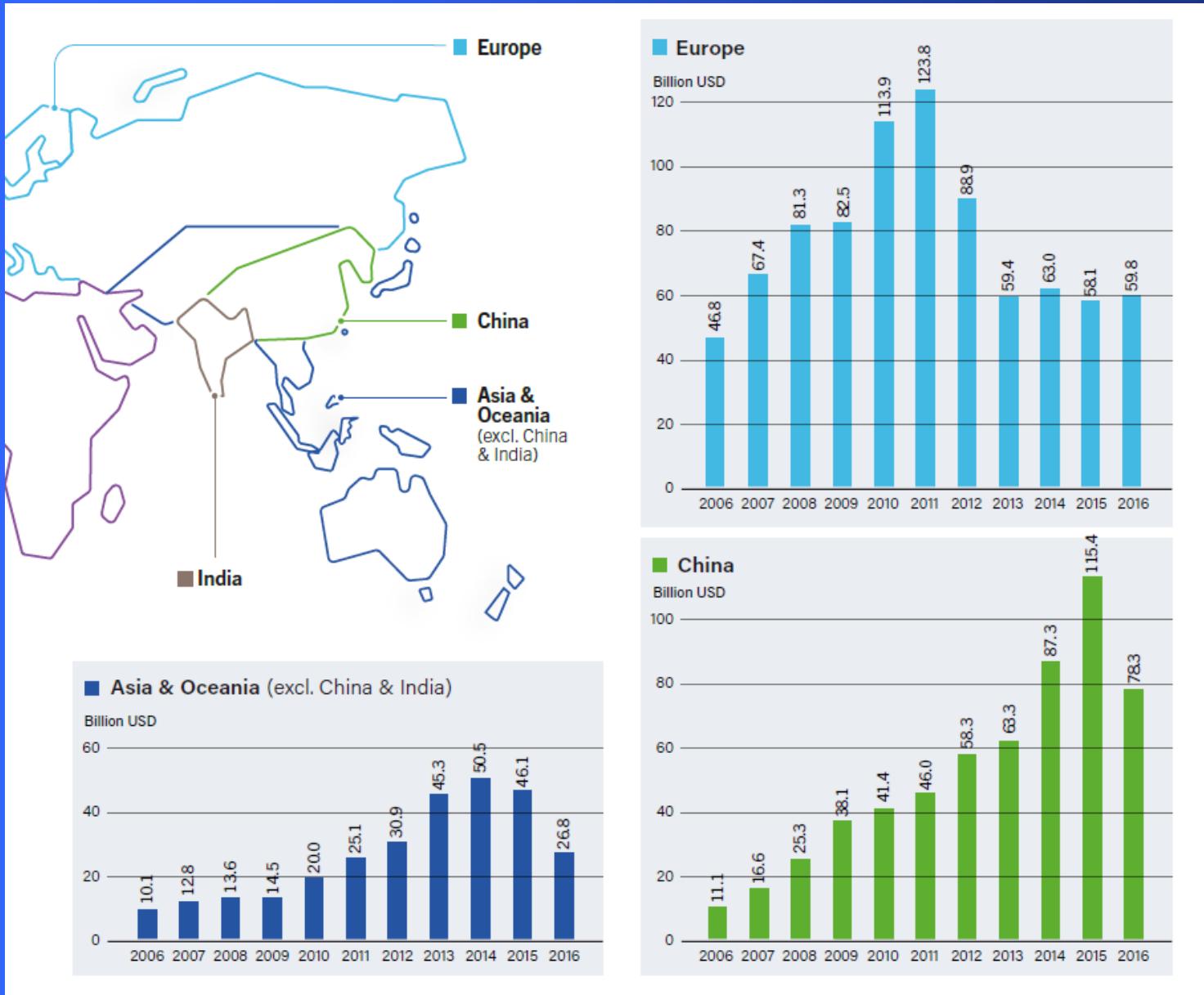
Solar district heating capacity **DOUBLED** in Denmark (in 2016).

Figure 23. Solar Water Heating Collectors Global Capacity in Operation,
Shares of Top 12 Countries and Rest of World, 2015



Note: Total does not add up to 100% due to rounding.

Source: IEA SHC. See endnote 3 for this section.





龙源振华

	1	2	3	4	5
POWER					
Renewable power (incl. hydro)	China	United States	Brazil	Germany	Canada
Renewable power (not incl. hydro)	China	United States	Germany	Japan	India
Renewable power capacity <i>per capita</i> (among top 20, not including hydro ³)	Denmark	Germany	Sweden	Spain	Portugal
💡 Biopower generation	United States	China	Germany	Brazil	Japan
🔥 Geothermal power capacity	United States	Philippines	Indonesia	Mexico	New Zealand
⚡ Hydropower capacity ⁴	China	Brazil	United States	Canada	Russian Federat.
⚡ Hydropower generation ⁴	China	Brazil	Canada	United States	Russian Federat.
☀️ CSP	Spain	United States	India	Morocco	South Africa
☀️ Solar PV capacity	China	Germany	Japan	United States	Italy
☀️ Solar PV capacity <i>per capita</i>	Germany	Italy	Belgium	Japan	Greece
风电容量	China	United States	Germany	India	Spain
风电容量 <i>per capita</i>	Denmark	Sweden	Germany	Ireland	Spain
HEAT					
☀️ Solar water heating collector capacity ⁵	China	United States	Germany	Turkey	Brazil
☀️ Solar water heating collector capacity <i>per capita</i> ⁵	Austria	Cyprus	Israel	Barbados	Greece
🔥 Geothermal heat capacity ⁶	China	Turkey	Japan	Iceland	India
🔥 Geothermal heat capacity <i>per capita</i> ⁶	Iceland	New Zealand	Hungary	Turkey	Japan

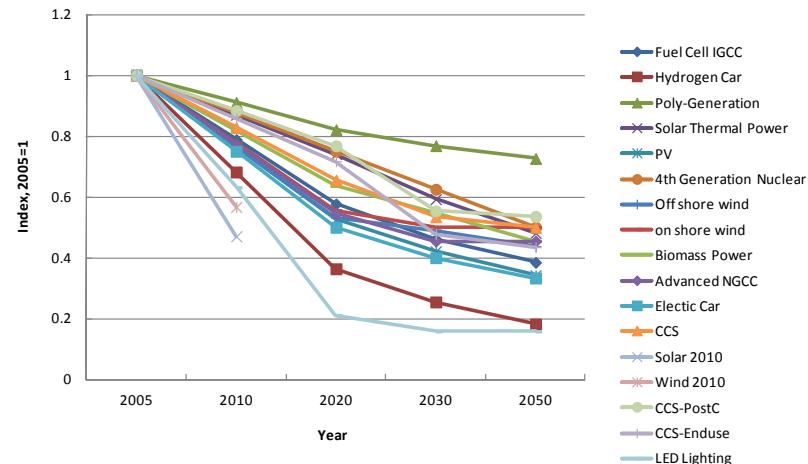
NASA images show stunning progress of China's vast 850 MW Longyangxia Solar Park

2013

2017



Technology learning curve



荣威E50的长/宽/高分别为3569/1551/1540mm，其定位为A00级紧凑型车。



Price: US\$38000

Subsidy: US\$15000(Shanghai), no need to apply number plate(cost US\$10000)

US\$18000(Beijing), no need to apply number plate(By Oct. 2012, 1.1 million people apply for 20000number plates per month),



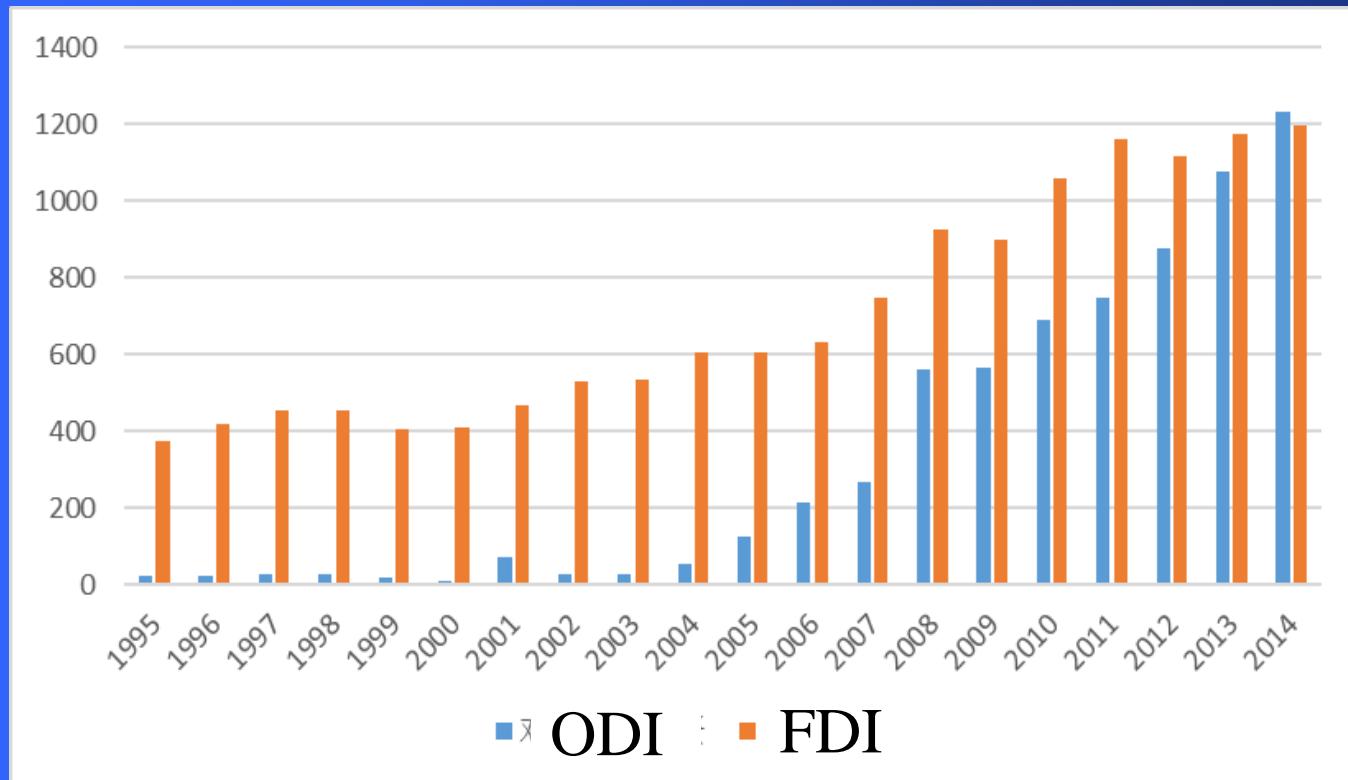
By 2020, Wind 200GW to 250GW, Solar 50WG

A 2 degree Asia: A good way to understand the global target



Scenario Analysis:
Japan
Korea
China
India
Thailand
Malaysia
Indonesia
Nepal
Vietnam
Cambodia
Laos
Philippine

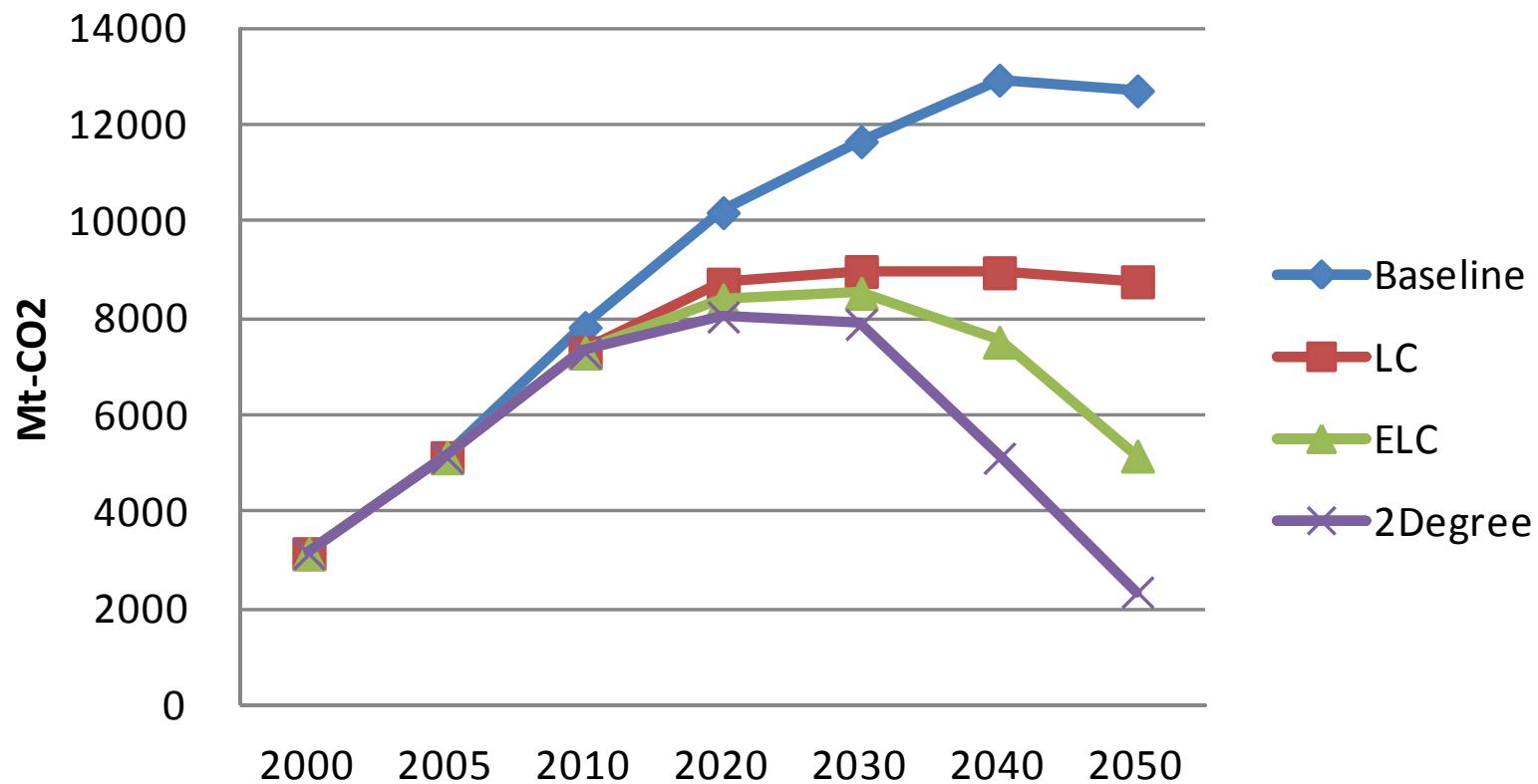
Low Carbon/Green Strategy for China's Oversea Investment



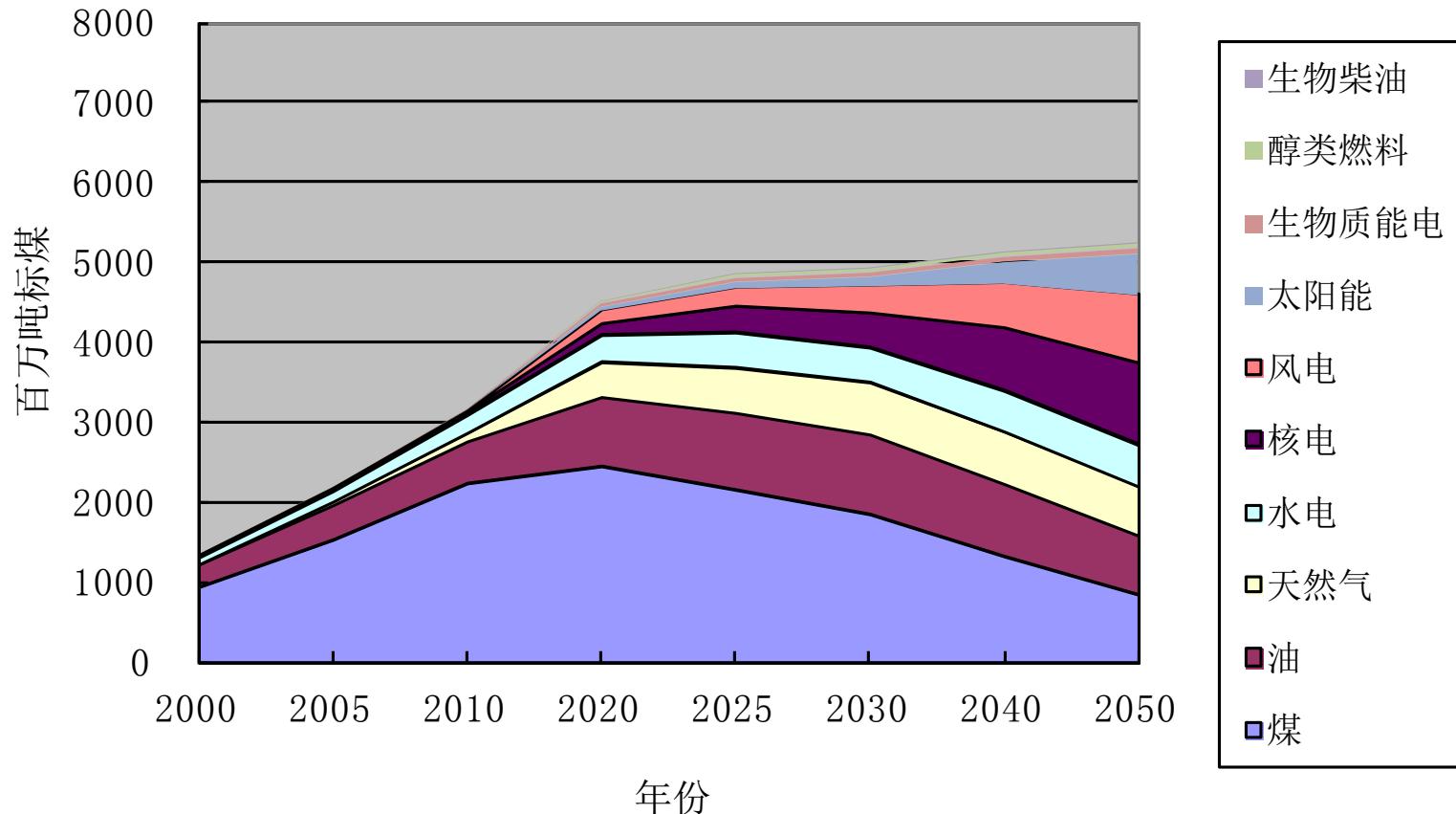
China's FDI and ODI, 1995-2014, US\$100million

Transformation: CO2 emission, a rapid change

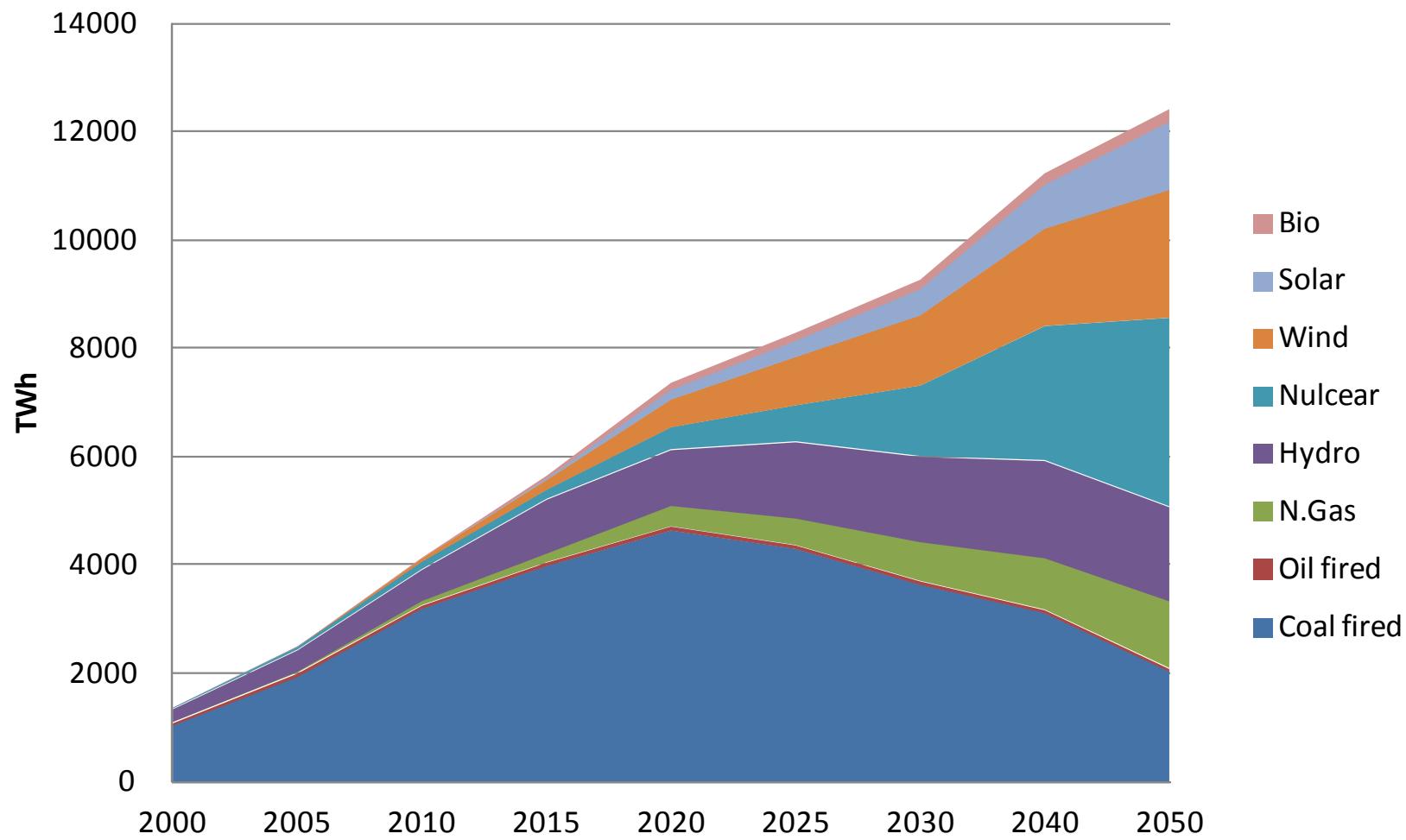
CO2 Emission in China



一次能源需求量：2度情景1

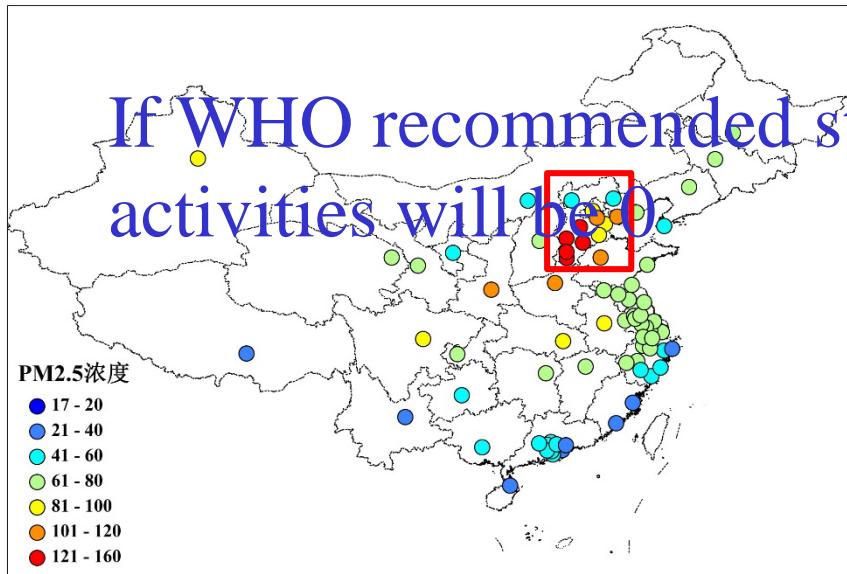


Power Generation, 2°C Scenario A

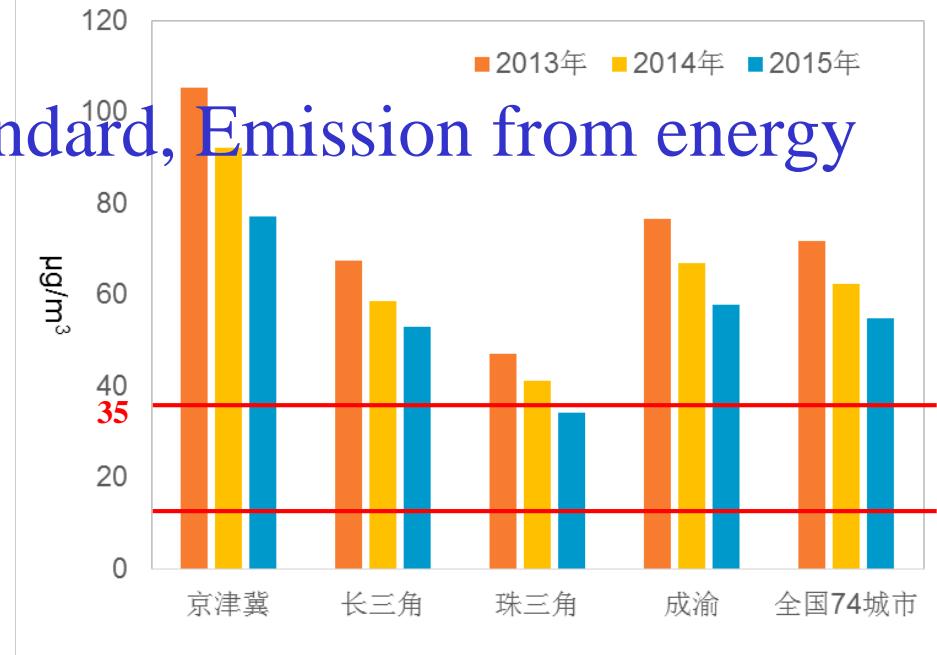


PM_{2.5} Concentration is much higher than standard

PM2.5 concentration of 74 cities in 2013



PM2.5 annual concentration from 2013-2015



- 2013年京津冀地区所有城市PM_{2.5}年均浓度均超标，区域内PM_{2.5}年平均浓度达106 $\mu\text{g}/\text{m}^3$ ，虽2014、2015年空气质量有所改善，但仍大幅超过国家空气质量二级标准。

CO2 Emission

