New trends in China energy consumption

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Coal consumption: Outlook changed completely in a few short years

China coal use vs. IEA forecast (Dec 2014)

China coal imports vs. Peabody projection (2012)
China's implied coal consumption vs. IEA 450ppm scenario
(12-month sum)
Growth in electricity generation by source

Thermal power: -121 terawatt-hours (2015)
Hydropower: 47 terawatt-hours (2015), 57 terawatt-hours (2016H1)
Wind: 25 terawatt-hours (2015), 13 terawatt-hours (2016H1)
Solar: 11 terawatt-hours (2015), 4 terawatt-hours (2016H1)
Nuclear: 36 terawatt-hours (2015), 19 terawatt-hours (2016H1)
Demand: 28 terawatt-hours (2015), 27 terawatt-hours (2016H1)
What does consumption-driven growth mean for energy use?

Heavy industry sectors will have to adjust to lower levels of investment in real estate, industrial capacity and infrastructure, and to saturated export markets → industrial coal consumption will continue to fall.

Direct energy use intensity by sector

Calculated from China Energy Statistical Yearbook 2015
Lots of room to strengthen targets
Implications for air pollution: Industrial clusters still dominate emissions (SO2, 2014-2015 average)
Breakdown of China’s oil consumption by sector (2014)

- Oil refining: 11%
- Chemicals: 12%
- Construction materials: 4%
- Other industry: 11%
- Buildings: 3%
- Transport: Kerosene: 5%
- Transport: Diesel: 23%
- Transport: Gasoline: 10%
- Agriculture: 4%
- Construction: 7%
- Others: 10%

Legend
- Linked to overcapacity sectors
- Linked to consumer demand
- Oil use declines with energy system modernization
- Others

>50% of oil consumption tied to heavy industry,
<20% to passenger transport
煤电投资泡沫

- 发电总量，亿千瓦时
- 火电发电量，亿千瓦时
- 火电容量，万千瓦
- 利用小时（右纵轴）
合理的容量水平*

*基于5000小时利用率
2016上半年各省开工建设煤电项目
Key messages

• Coal is in structural decline
• Era of fast CO2 growth is over; timing of CO2 peak depends on success in clean energy growth and transitioning to economic “new normal”
• Economic restructuring is an enormous opportunity for climate, environment and improving living standards
• But: overcapacity and downscaling of the heavy industry complex present enormous institutional challenges
• Incredibly and unexpectedly fast progress in reducing emissions gives China a once-in-a-lifetime opportunity to play a key positive role in international climate policy
Thank you!