



MERICS

Mercator Institute for China Studies

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Features of China's Energy Transition

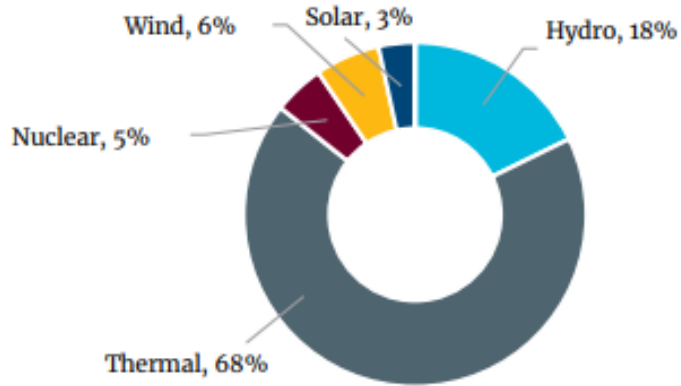
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Dr. Nis Grünberg

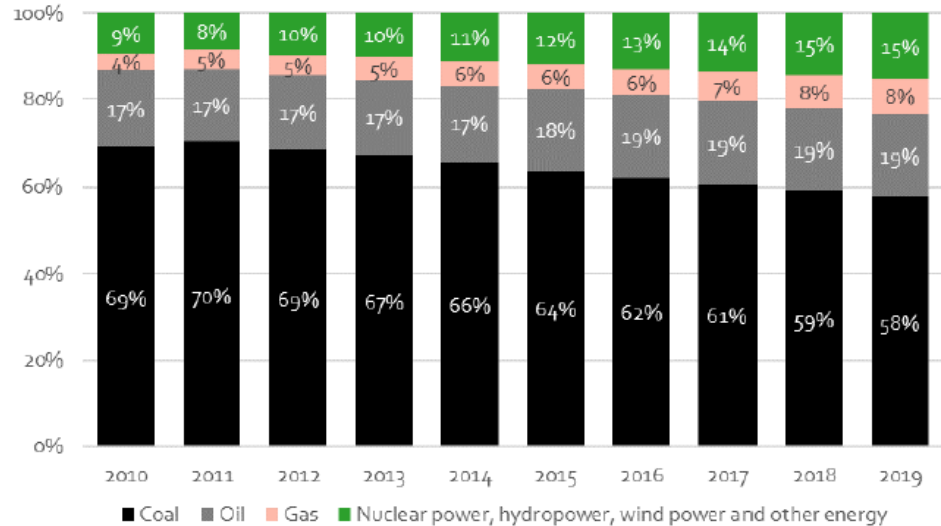
Current structure of China's energy system

Coal is king, but RE grows fast

China's power sector



Primary energy consumption mix



Source: Chinaenergyportal.com

Source: CETO 2022

China relies on national development plans

5-year plans remain the authoritative policies for energy targets and foci

The 14th 5-year plan 2021-2025 (Also sets China's NDC):

- Non-fossil share of energy mix 25%
- Lower carbon intensity by >65% against 2005 baseline
- 6 bn. forest stock increase
- >1200 GW wind/solar by 2030
- Non-fossil share of energy by 2060 >80%

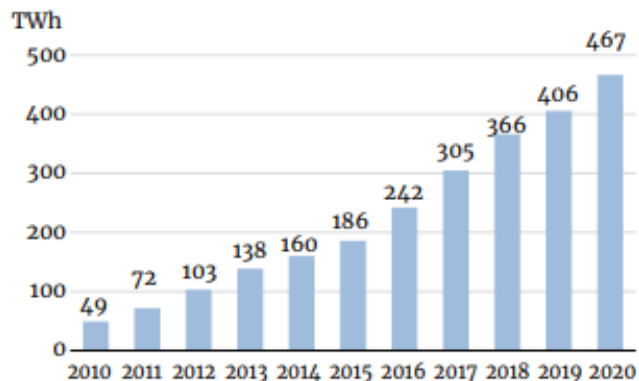
The 14th 5-year plan for RE targets for 2025:

- 20% non-fossil share of consumption
- 50% share in increase of consumption
- RE electricity at 3300 TWh (currently around 2700)
- Double wind and solar capacity (means 100GW annual addition)
 - China is ahead of schedule on solar/wind:

Wind power

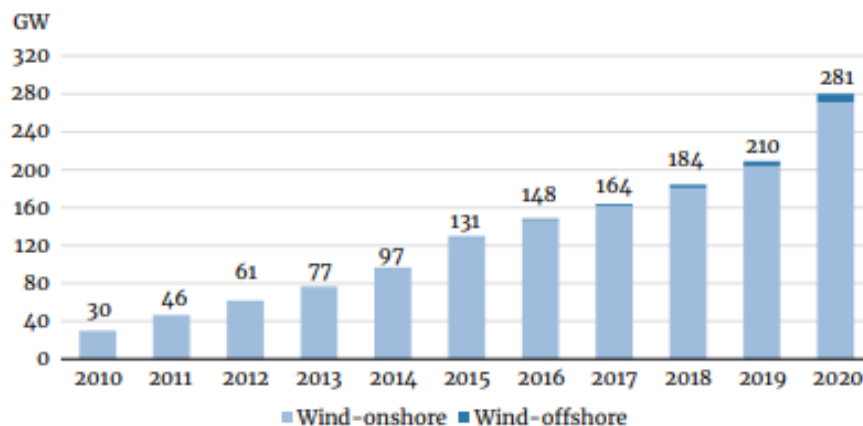


Capacity growth



Source: National Bureau of Statistics, China Renewable Energy Monitoring Centre, 2021

Installed Capacity

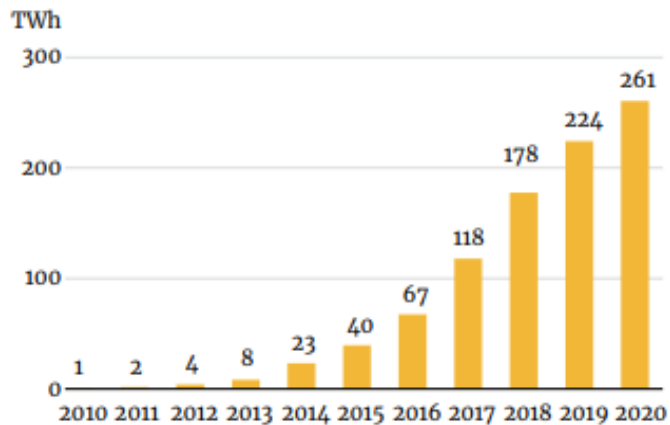


Source: Energiepartnerschaft 2021

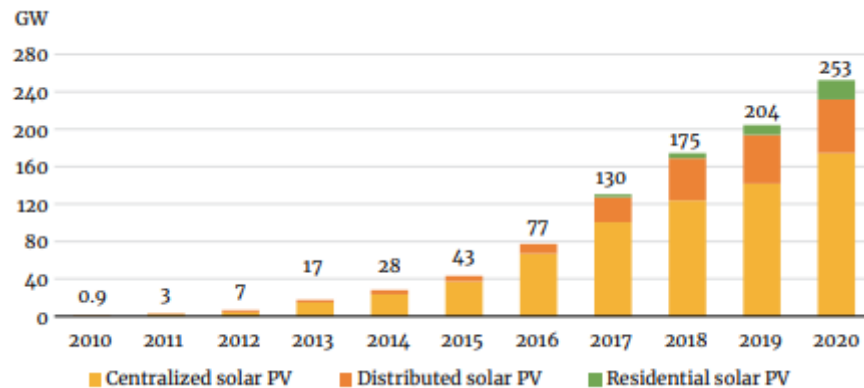
Solar power



Capacity growth



Installed Capacity



Source: Energiepartnerschaft 2021

Drivers and inhibitors of the energy transition

Long-term decarbonization and adaptation vs. present stability and control

Drivers:

**Xi Jinping personally
backs Peak Carbon 2030**

- Decarbonization is now a key feature in energy policy
- Sector plans for meeting peak carbon by 2030 are currently issued (the “1+N framework”)
- The trend for the share of fossil goes down, albeit “in an orderly fashion” emphasizing stability
- China launched a national emission trade scheme last year (currently only covering the power sector)
- Green tech and new energy innovation are outlined as key priorities for future growth, industrial policy mobilizes enormous resources towards green energy development, climate *adaptation* regarded key for regime survival

Inhibitors:

**Concerns about energy
security and socio-
economic disruption**

- Facing a downturn, China’s leadership is afraid to risk jobs in fossil-fuel heavy industries
- Energy shortages are triggering a “coal-as-bedrock” reaction, carbon heavy supply-side investments
- Energy security (meaning self-sufficiency) is a central goal. Mid-term this means fossil fuels, long-term a RE-based system
 - China has coal in abundance, has rich wind/solar/hydro resources, but is net importer of gas and oil
- Infrastructure: Grid capacity, transmission and UHV, storage etc. still need to be established
- Institutions: Power markets, inter-provincial integration, pricing mechanisms etc. still favor fossil fuel