

Electricity Market and Renewable Energy Diffusion in China

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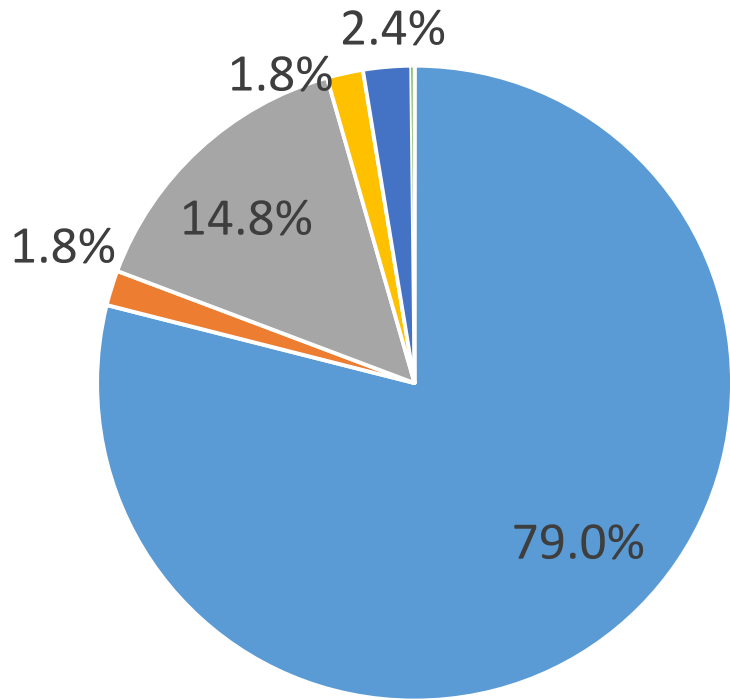
Flash Talk for EEPR Workshop

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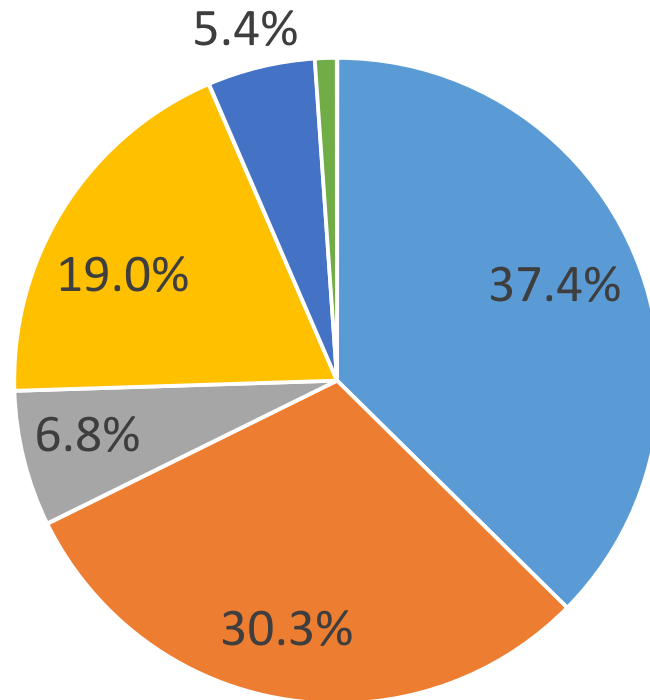
Electricity Generation by Fuel Types in China and US (2011)



China



US



- Coal
- Gas
- Hydro
- Nuclear
- Other non-hydro renewables
- other

Electricity Market Reforms in China

Before reform:

- No Market
- Centrally Planned

2nd Phase: Market-oriented restructuring

- Establish “State Power Corporation” (SPC) to replace administrative agency
- SPC’s subsidiaries operate transmission and generation in different provinces
- SDPC regulates the tariff

1986

1997

2002

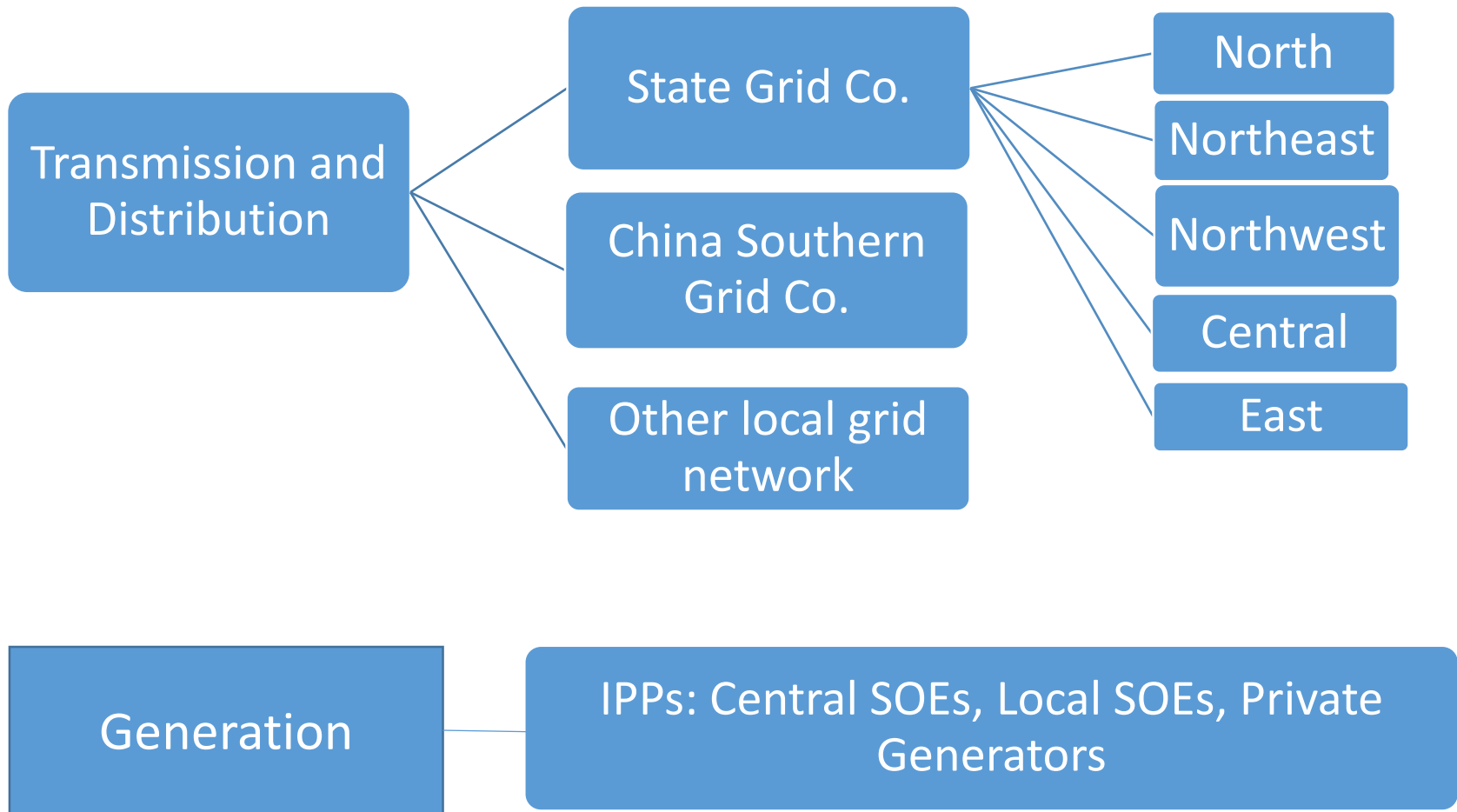
1st Phase: Gradually open generation sector

- local SOE and foreign investors can invest in generation
- Central government set the tariff

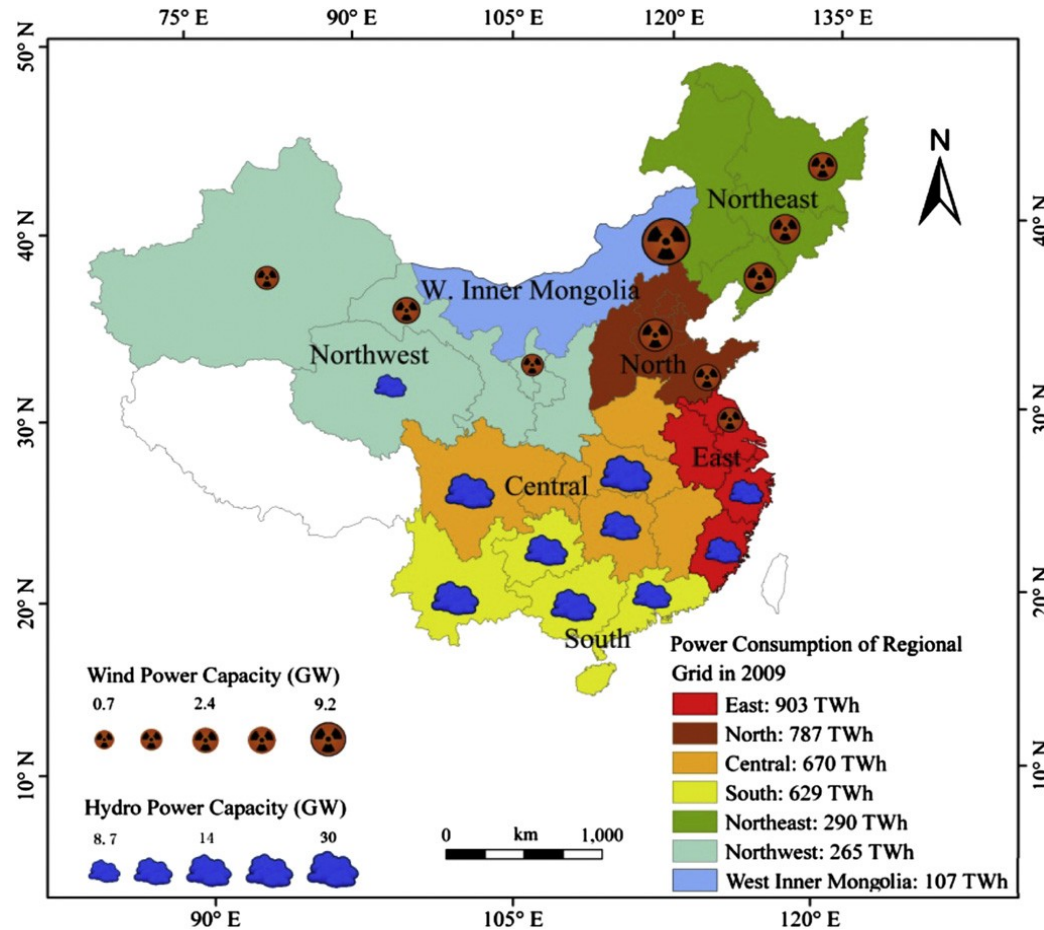
3rd Phase: Separation of transmission and distribution

- SPC is divided into 2 major transmission companies and 5 SOE power generation companies
- Tariff depends on bidding or negotiation

Current Electricity Market Structure



Mismatch between Energy Supply and Electricity Demand



Source: Yang, M., et al. 2012. Wind power generation in China: Understanding the mismatch between capacity and generation. *Renewable Energy*, 41.

Challenges to Connecting Renewable Energy to the Grid

- Inadequacy of transmission and distribution network
- Distributed generation does not get approval for connection

National Grid Plan for 2020



Source: State Grid Corporation of China