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ADB-PRC Regional Knowledge Sharing Initiative



Experiences of Clean Energy Development in China

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**ASIA
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FORUM 2025**

Empowering the Future: Clean Energy
Innovations, Regional Cooperation and
Integration, and Financing Solutions

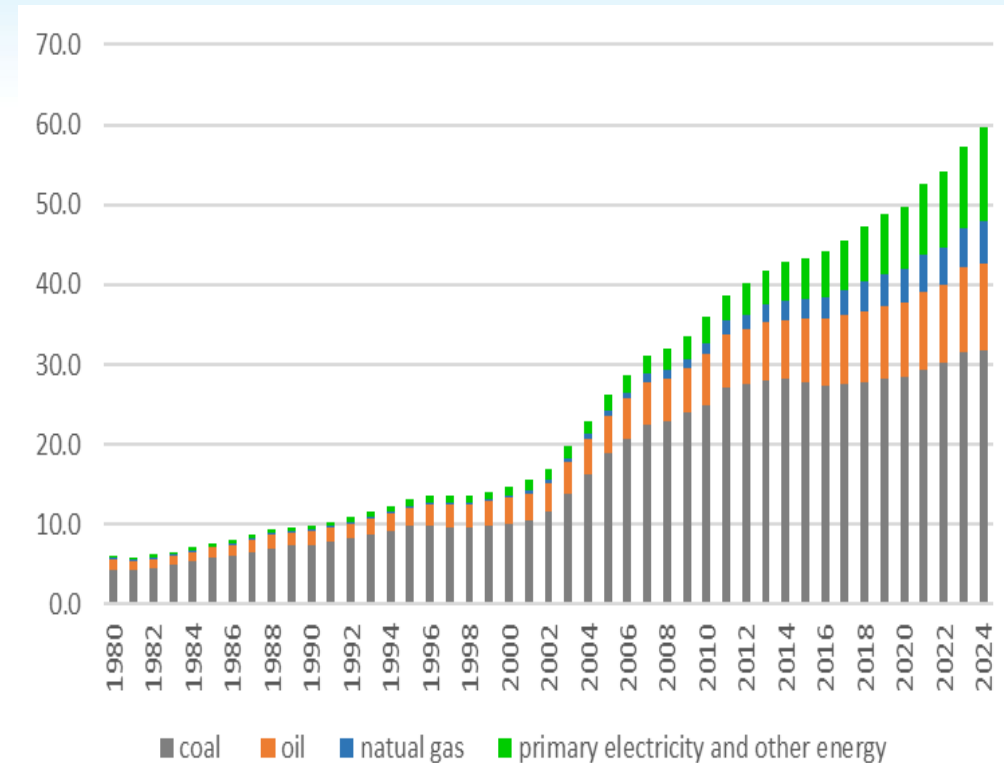
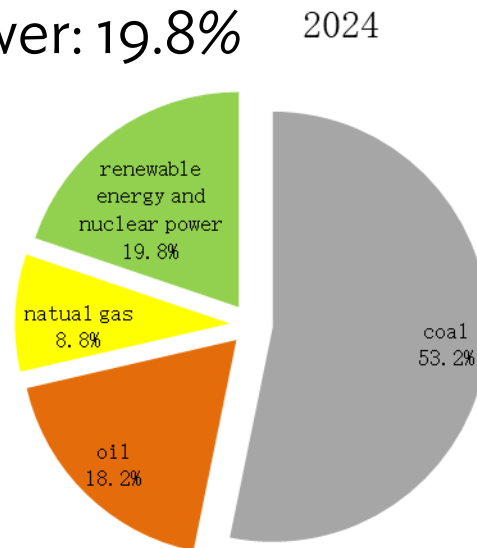


Content

- Development of Clean Energy in China
- What did the enterprises do in China?
- What did the local government do in China?
- What did the central government do?
- Hints to other developing countries

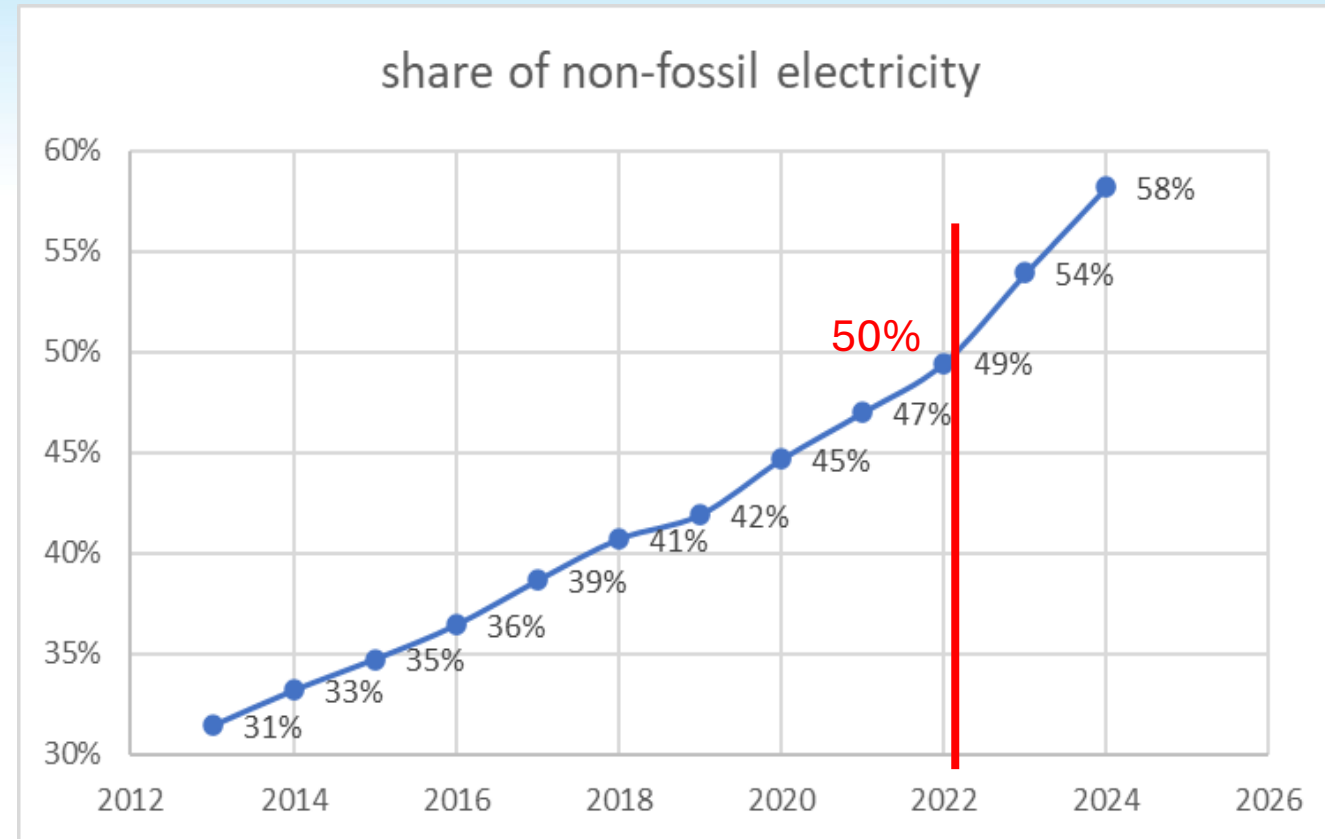
Development of Clean Energy in China

- Dominated by fossil fuel → Green Transition
- Energy mix in year 2024
 - Clean energy: 28.6%
 - Renewable & nuclear power: 19.8%
 - Natural gas: 8.8%
 - Oil: 18.2%
 - Coal: 53.2%



Development of Clean Energy in China

- Mix of installed capacity of clean electricity
 - Share of installed capacity of non-fossil electricity (i.e., renewable energy and nuclear power)
 - 2013: 31% → 2023 over 50% → 2024: 58%



Development of Clean Energy in China

1. Wind, solar & biomass

- Installed capacity

- Target:

- Wind + solar **1200GW** by 2030

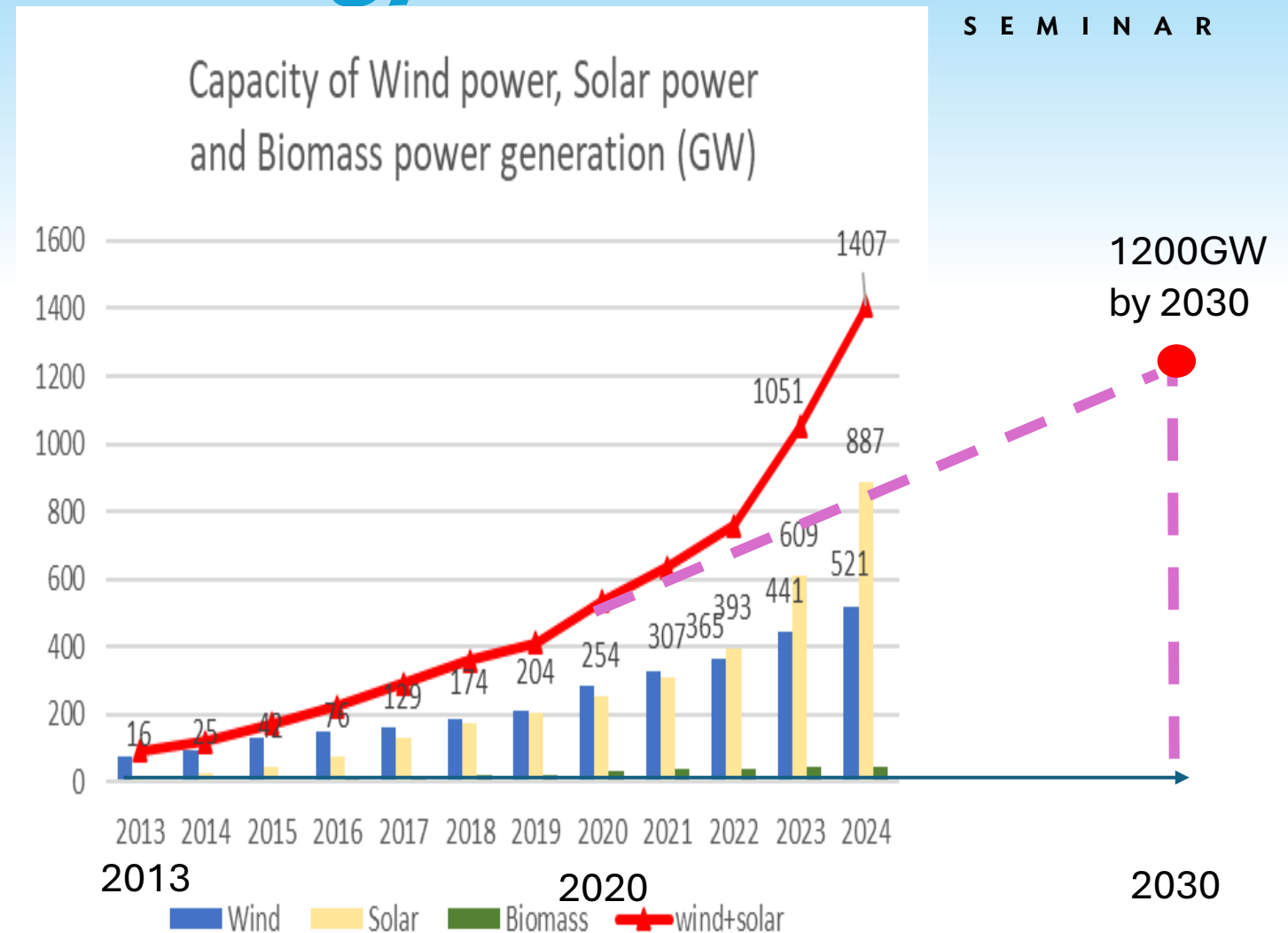
- Actual:

- ✓ **Wind + solar 1400 GW**, by 2024, 6 Year ahead

- ✓ Wind: 77 → 521 GW

- ✓ Solar: 16 → 887 GW

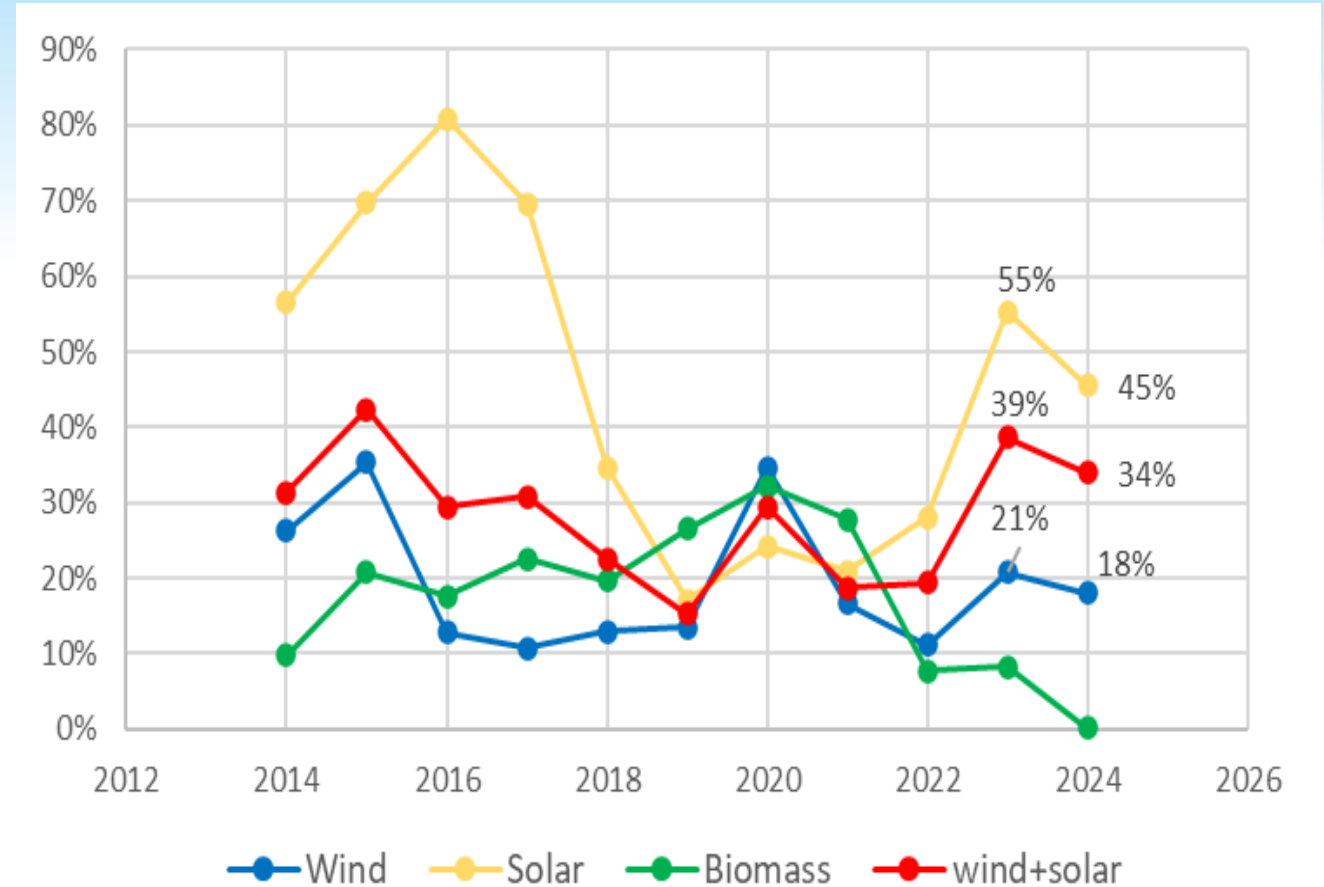
- ✓ Biomass: 8 → 44 GW



Development of Clean Energy in China

1. Wind, solar & biomass

- Average growth rate from 2013-2024
 - Wind Power: 19.0%
 - Solar Power: 44.1%
 - Biomass power generation: 17.2%
 - Summary of wind + solar: 28.1%



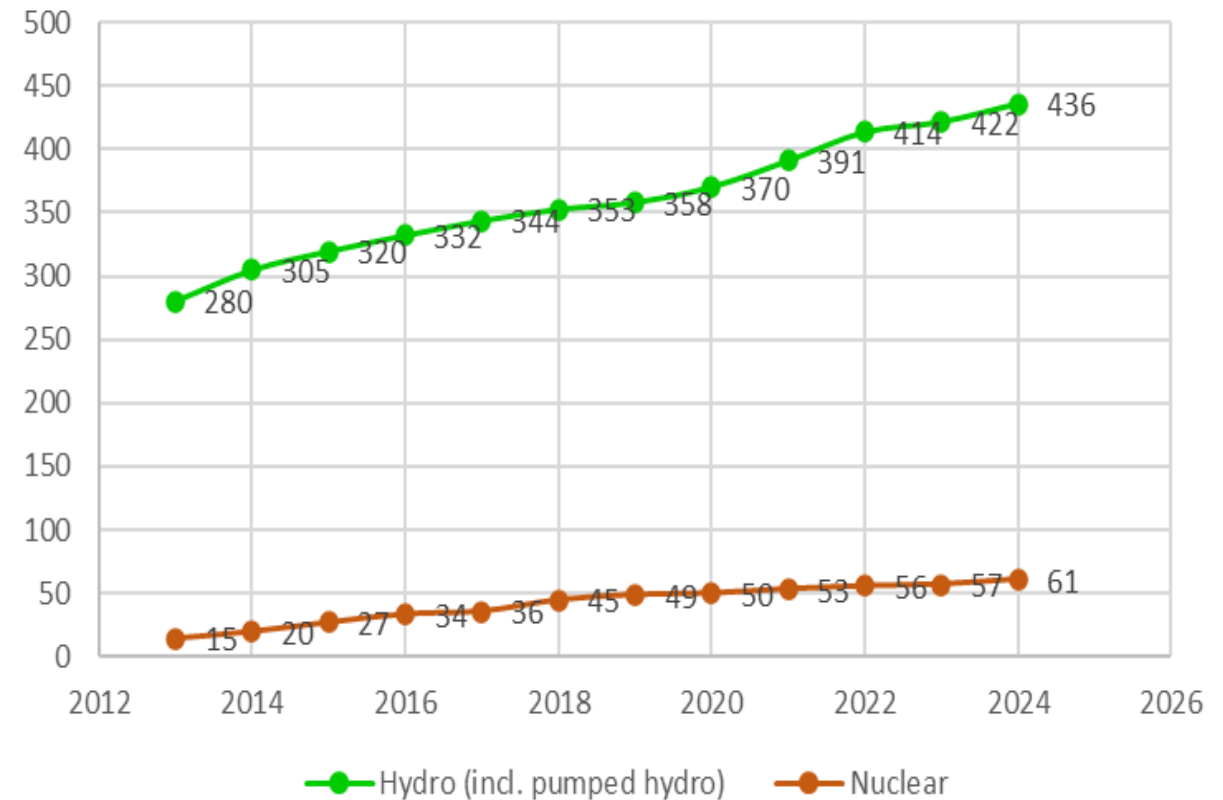
Development of Clean Energy in China

2. Hydro power and nuclear power

- Installed capacity

- ✓ Hydro power: 280 → 436 GW

- ✓ Nuclear power: 15 → 61 GW



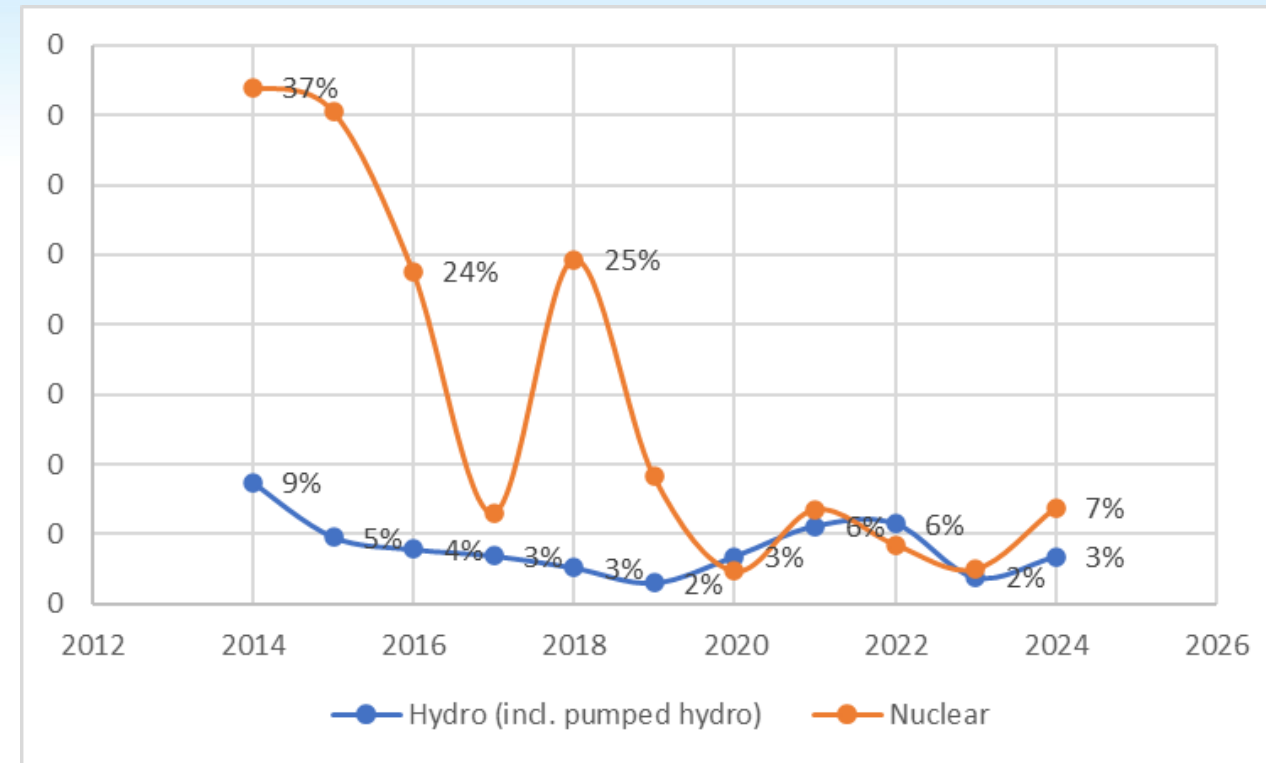
Development of Clean Energy in China

2. Hydro power and nuclear power

- Average growth rate from 2013-2024

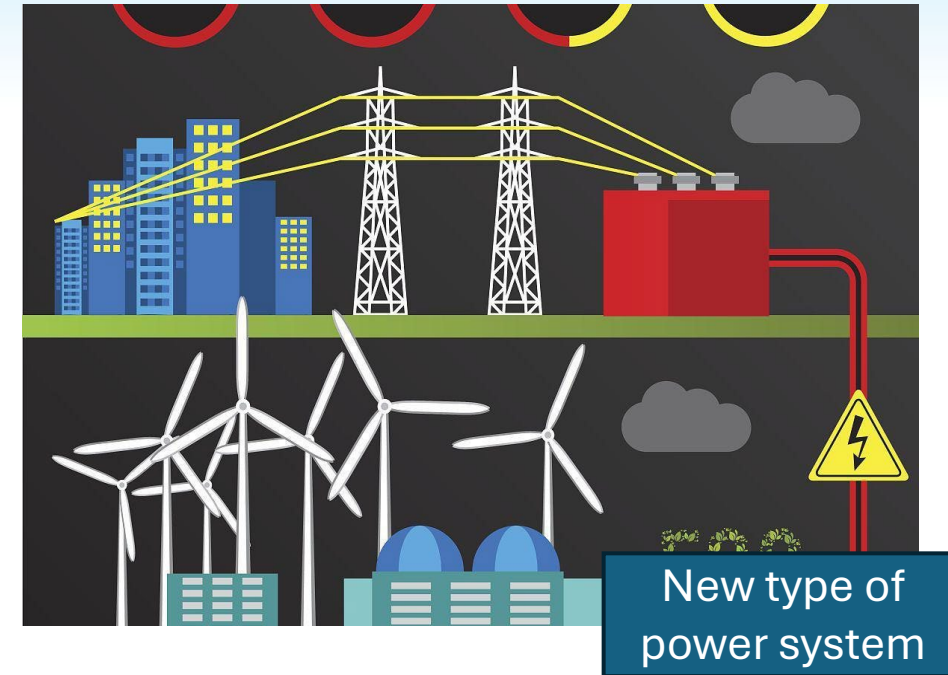
- ✓ Hydro power: 4.1 %

- ✓ Nuclear power: 13.8 %



What did enterprises do in China?

- Supplied and used by enterprises
 - Power Generation
 - Hydro power stations: State Owned Enterprises (SOE) + local private companies
 - Nuclear power stations: only SOEs
 - Wind Power stations: private companies + SOE
 - Solar Power stations: private companies + SOE
 - Power Transmission and dispatch
 - Mainly in China: State Grid Corporation
 - Southern provinces in China: Southern Power Grid Company
 - Other grid companies
 - Users
 - Key energy users: buy “green electricity certificate” to reduce CO₂ emission



What did enterprises do in China?

- **Financed** by different sources
 - SOE's investment
 - private companies' investment
 - **Government support**: subsidies etc.
 - **Green finance** in China
 - **Venture Capital(VC)** investors
 - **Private Equity (PC)** investors
 - **Green Stock** from stock market
 - **Green Loan** from banks in China
 - **Green Bond** from bond market
 - **Green Insurance** from insurance companies



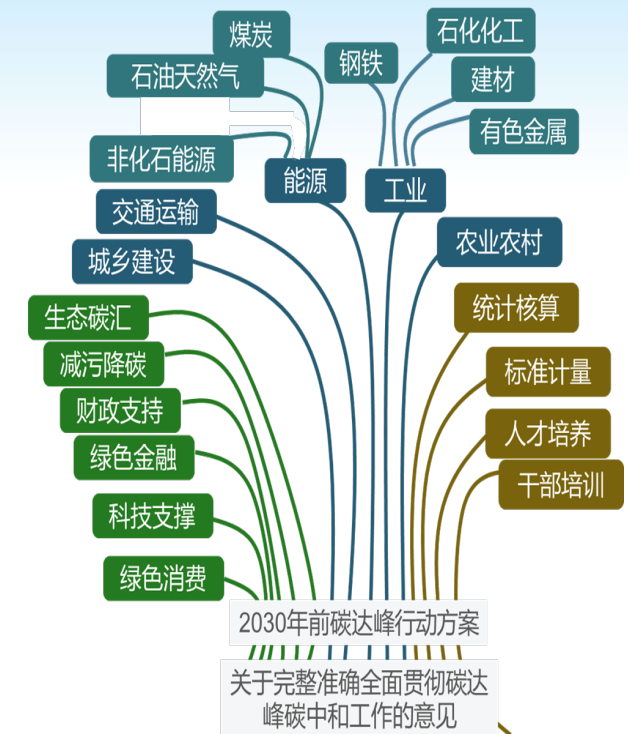
What did Local Government Do?

- **Infrastructure service**
 - Land use: to avoid “Ecological Conservation Redline”
 - Power grid infrastructures
 - Road infrastructures
 - Water infrastructures
 - Information network infrastructures
- **Provincial/ City/County level government:**
 - Five-year Planning(FYP)
 - Annual task list
 - Policies of clean energy development: price policy etc.
- **Local favorable policies**
 - Subsidies
 - Tax exemption etc.



What did National Government level Do?

- **National Laws, People's Congress**
 - Renewable Energy Law
 - Energy Law
 - Energy Conservation Law
- **National Strategies——CPC Party, State Council, National People's Congress**
 - Long term vision: Ecological Civilization, Green Development, Carbon Peaking and Carbon Neutrality Guidance
 - Mid term vision: Action Plans of Carbon Peaking before year 2030 1+n(sectoral)+x (supportive)
 - Five-year Planning: 14th FYP(2021-2025), 15th FYP(2025-2026)
- **National Policies——department of State Council**
 - Economic policies: new quality productivity etc.
 - Energy policies: project ratification procedure etc.
 - Climate policies: domestic: double control of carbon; international: green belt and road, south-south cooperation etc.
 - Technology R&D: technology innovation
- **National Standards ——department of State Council**
 - e.g., Standard for solar power: solar power generation standard, on-grid standard, utilization standard etc.



1. **Systematic design:** government + enterprises, suppliers, transmissions and users
 2. **Synergy of different companies**
 - Private companies: activated by planning and supported by law
 - SOE: important backbone, especially in long-term projects (hydro power& nuclear power)
 - Grid company: support energy transition
 - Involvement of different types of financial companies
 3. **Synergy of different level of governments**
 - Local government: infrastructure support, favorable policies
 - Central government: strategies, plannings, policies, standard
 - Congress: national laws, provincial laws etc.
- **Stable vision + Stable market expectation + synergy of all stakeholders**





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S E M I N A R



Thank you!



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