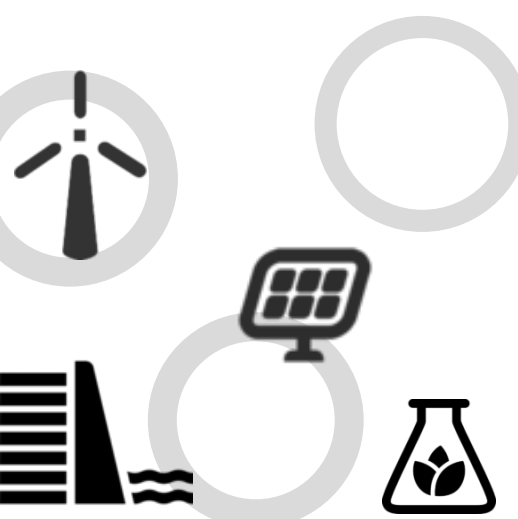




Energy Transition Pilot in the Jing-Jin-Ji Region

National Energy Administration
CHINA

January 2018





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**Collaborative Energy
Development Planning in
the Jing-Jin-Ji Region**

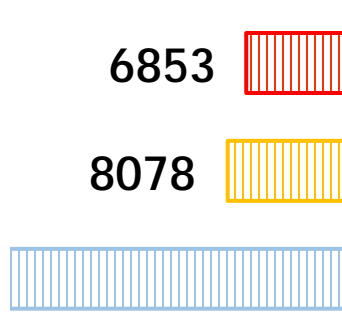
Integration of Beijing, Tianjin and Hebei Province (Jing-Jin-Ji)



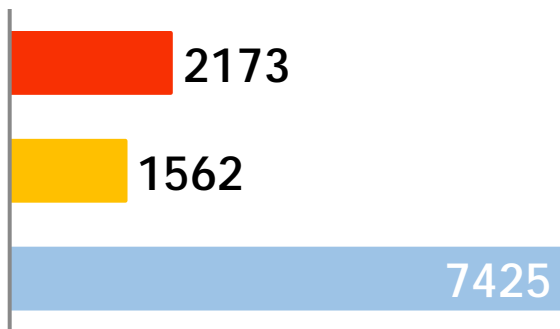
Area (million km²)



Energy consumption (10⁴ tce)



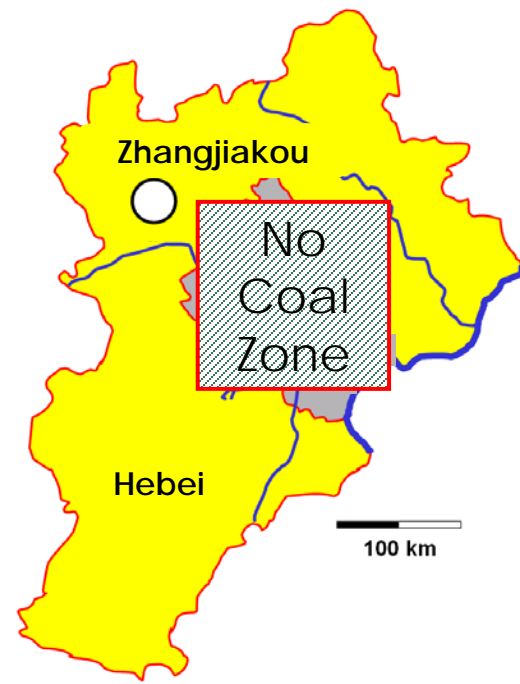
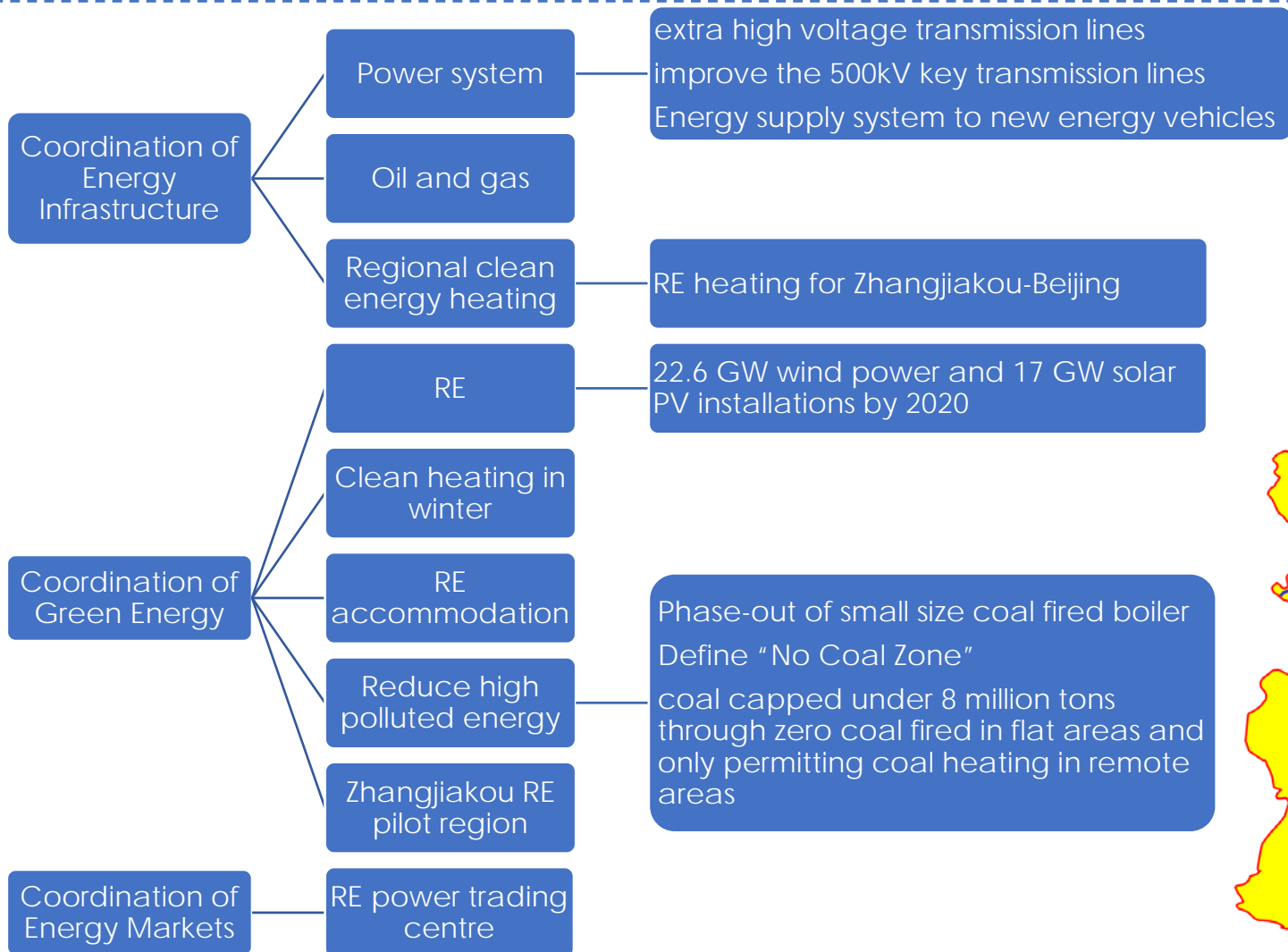
Population (10 thousand)



Collaborative Energy Development Planning in the Jing-Jin-Ji Region



the Collaborative Energy Development Planning in the Jing-Jin-Ji Region (2017-2020)
 issued by the Development and Reform Commissions of Beijing, Tianjin and Hebei Province



02

**RE Collaborative
Development in the
Jing-Jin-Ji Region**

RE Collaborative Development in the Jing-Jin-Ji Region



RE Power

- Wind Power Installations
 - Beijing 190MW
 - Tianjin 290MW
 - Hebei 11.8GW
- Solar PV Installations
 - Beijing 250MW
 - Tianjin 680MW
 - Hebei 8.68GW

RE Heating

- Heating area exceeds 60 million m² in Hebei province

RE Collaborative Development in the Jing-Jin-Ji Region



Geothermal deployment

- **Heating Area in Hebei province:** over 60 million m²
- In the Xiong'an New Area
 - **Heating Area in the whole New Area:** about 6.7 million m²
 - the whole urban area of Xiongxian County (about 4.5 million m²) is covered by geothermal energy heating
 - substitute for coal in a 700,000 m² heating area in the rural area of Xiongxian County
 - about 1.3 million m² in Rongcheng County



Note: the Xiong'an New Area includes the counties of Xiongxian, Rongcheng and Anxin and the surrounding areas

RE Collaborative Development in the Jing-Jin-Ji Region



the Flexible HVDC Project in Zhangjiakou North ($\pm 500\text{kV}$)
the highest voltage level and the largest transmission capacity in the world

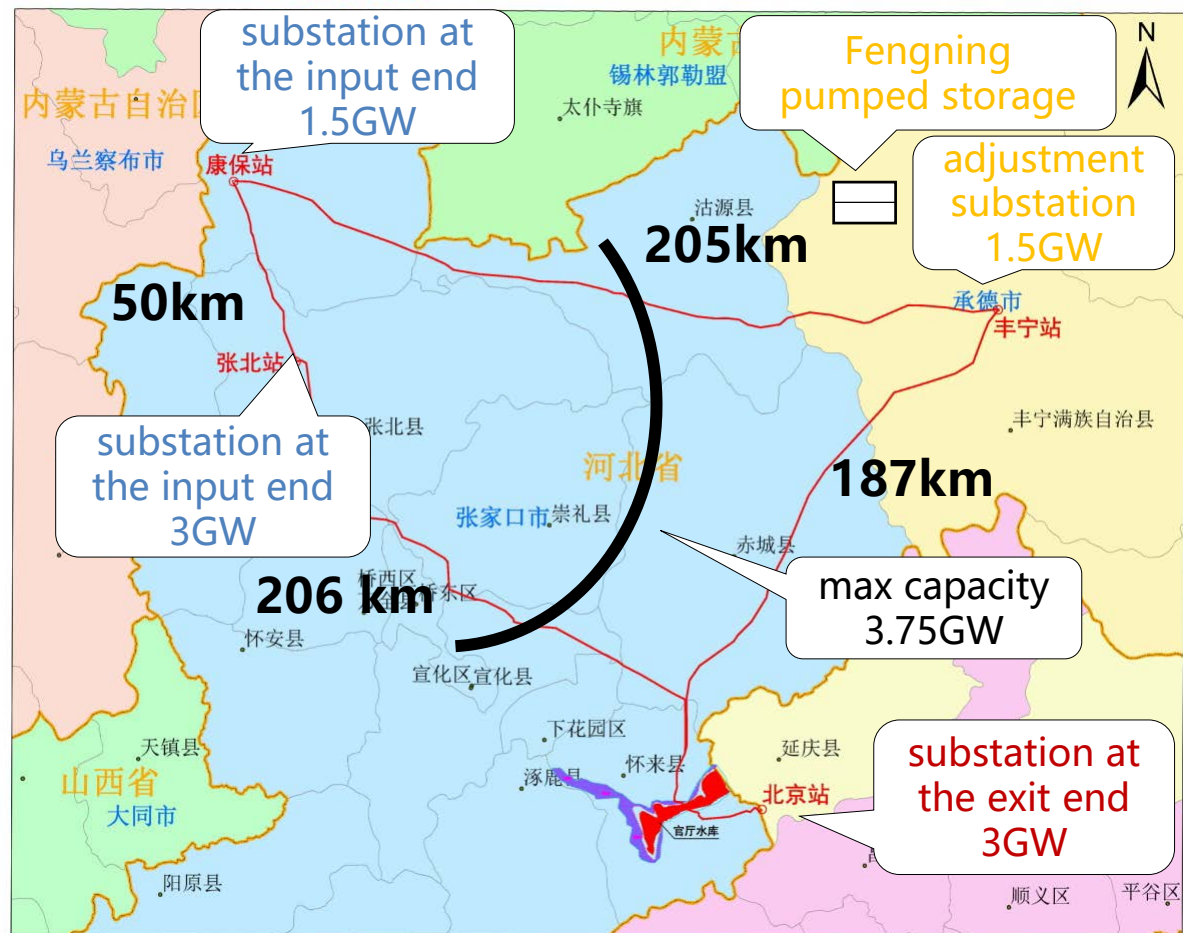
Project Progress

- started and planned to be completed in 2019

Transmission

Capacity

- 5.5GW of new energy (wind, Solar PV, etc.) in the first stage
- 7.6GW of new energy in 2022, when the Fengning pumped storage is put into service



03 Practice in Zhangjiakou RE Pilot Region

Practice in Zhangjiakou RE Pilot Region



Location

- 180km northwest to Beijing

Area

- 37000km² of the whole region and 6378 km² of the urban area

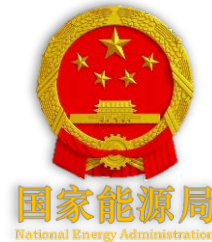
RE resource

- over 40 GW technical potential wind energy resources
- over 30 GW technical potential solar energy resources

Power Market

- load center of Beijing, Tianjin and Hebei province

Practice in Zhangjiakou RE Pilot Region



The first RE pilot region approved by the State Council

RE Consumption Share reaches 50%

- ✓ Wind: 20 GW
- ✓ Solar PV: 24 GW
- ✓ CSP: 6 GW

By 2030



By 2020

RE consumption share reaches 30%

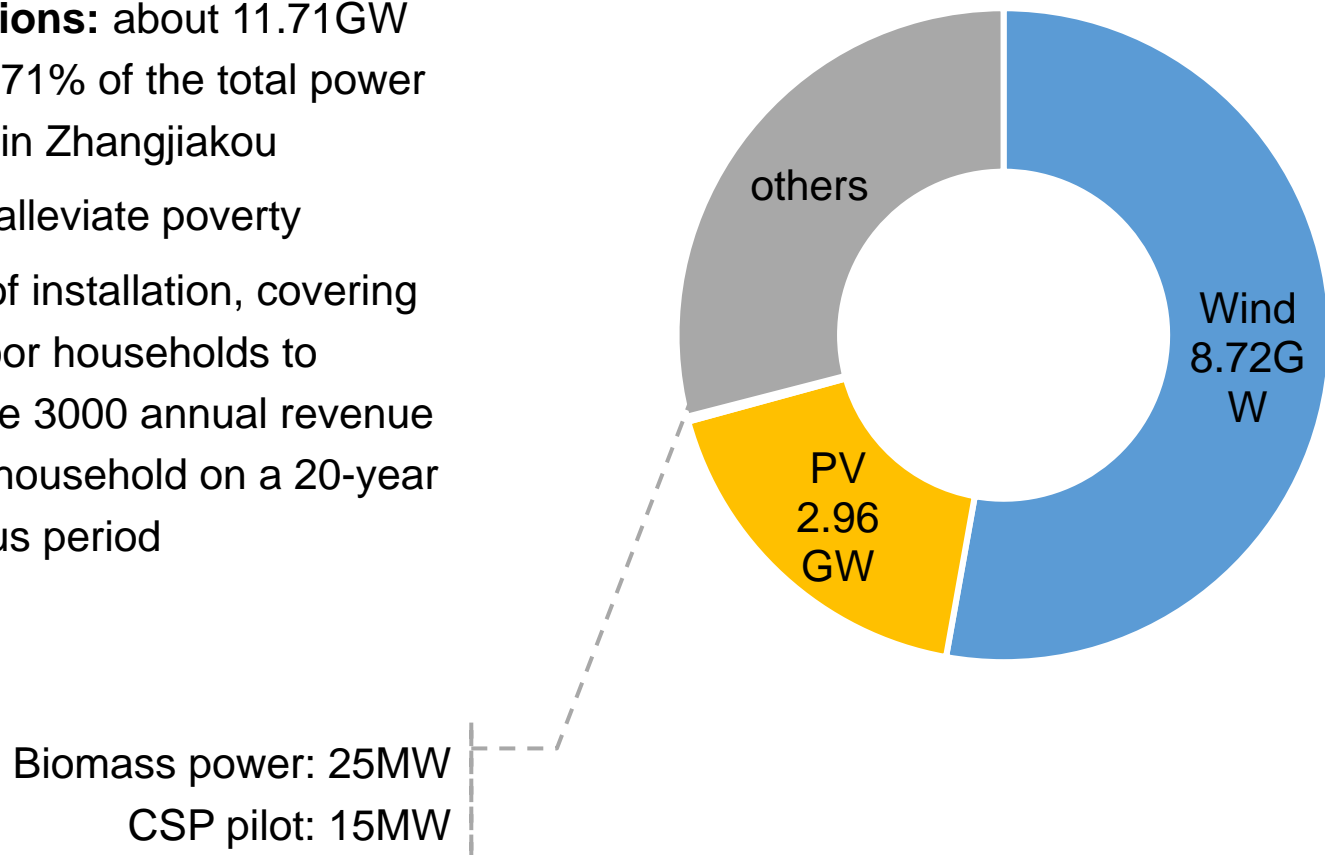
✓ Supplying: **55%** of electricity, **All** of municipal public transportation, **40%** of city residential energy consumption and **50%** of commercial and public building energy use

- ✓ Wind: 13 GW
- ✓ Solar PV: 6 GW
- ✓ CSP: 1 GW

Scaling up of RE development

- **RE installations:** about 11.71GW which takes 71% of the total power installations in Zhangjiakou
- Solar PV to alleviate poverty
 - 276MW of installation, covering 34495 poor households to realize the 3000 annual revenue for each household on a 20-year continuous period

Power installations in Zhangjiakou (2017)



Practice in Zhangjiakou RE Pilot Region



国家能源局
National Energy Administration

Scaling-up RE development— Zhangjiakou Wind Olympic Games Solar Corridor



Practice in Zhangjiakou RE Pilot Region



- **Clean energy heating supply**
- **Institutionalized coordination among four participating parts in RE heating**
 - **4 participating parts** : local government + power grid company + power generators + end users
 - **Preferential price**: valley power transmitting price in winter as 0.15 CNY/kWh
 - **Trading system**: *the new energy market trading rules for Jibei grid (Zhangjiakou)*
 - **Trading status**: 67.3GWh electricity supplied by 30 wind power producers was traded in the first three months, supplying 118 heating suppliers for a 2.9 million m² area
- **Heating area**
 - 3.85 million m² area supplied in 2016
 - 200 million square m² launched in 2017 and 1.8 million m² finished so far

Practice in Zhangjiakou RE Pilot Region



the Zhangbei National Wind and Solar Energy Storage and Transmission Demonstration Project

- the largest comprehensive project integrated with wind, solar PV, energy storage system and smart power transmission
- the first new energy project with virtual synchronous functions



Practice in Zhangjiakou RE Pilot Region



- **Green Transportation**

- Encouraging the development of new energy vehicles, and deploying charging stations, charging piles and hydrogen stations
- adopted in public transportation, taxi, tourism , commercial vehicles
- 1435 electric bus, 61 charging stations and 2850 charging piles in operation

- **Green Internet Data Centre**

- **Ali IDC:** 80000 sets of servers in operation in the first phase, consuming 320 TWh of electricity



云数据中心



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Thank You!

