



Factsheets Series on China Energy Transition Updates

RENEWABLES CONTINUE TO GROW RAPIDLY

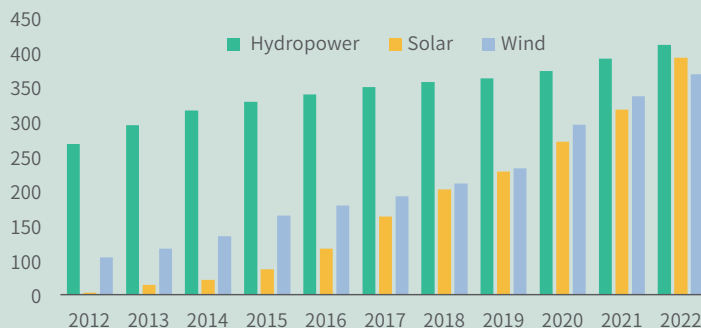
Solar and wind are the fastest growing renewables in China in 2022.

Both installed capacity and annual generation for renewables have grown significantly last year. The National Development and Reform Commission (NDRC) reported on 11th June 2023 that non-fossil fuel power sources account for 50.9% of the country's total in-stalled capacity,¹ surpassing the installed fossil energy generation capacity for the first time in history.

Hydro power still remained to be the largest renewable power source in China in 2022 but has been taken over by solar since then. The growth rate of wind and solar were 11% and 28% respectively, surpassing the growth of hydropower in 2022. With a combined solar and wind installed capacity of 836.5 GW by end of May 2023 and by maintaining these high growth rates,² the country will probably achieve its 2030 target of 1200 GW installed solar and wind power capacity already 5 years earlier. Compared with wind and solar, the potential of hydropower resources in China has almost been fully exploited.



Hydro power remained to be the largest renewable power source in China; solar and wind are catching up



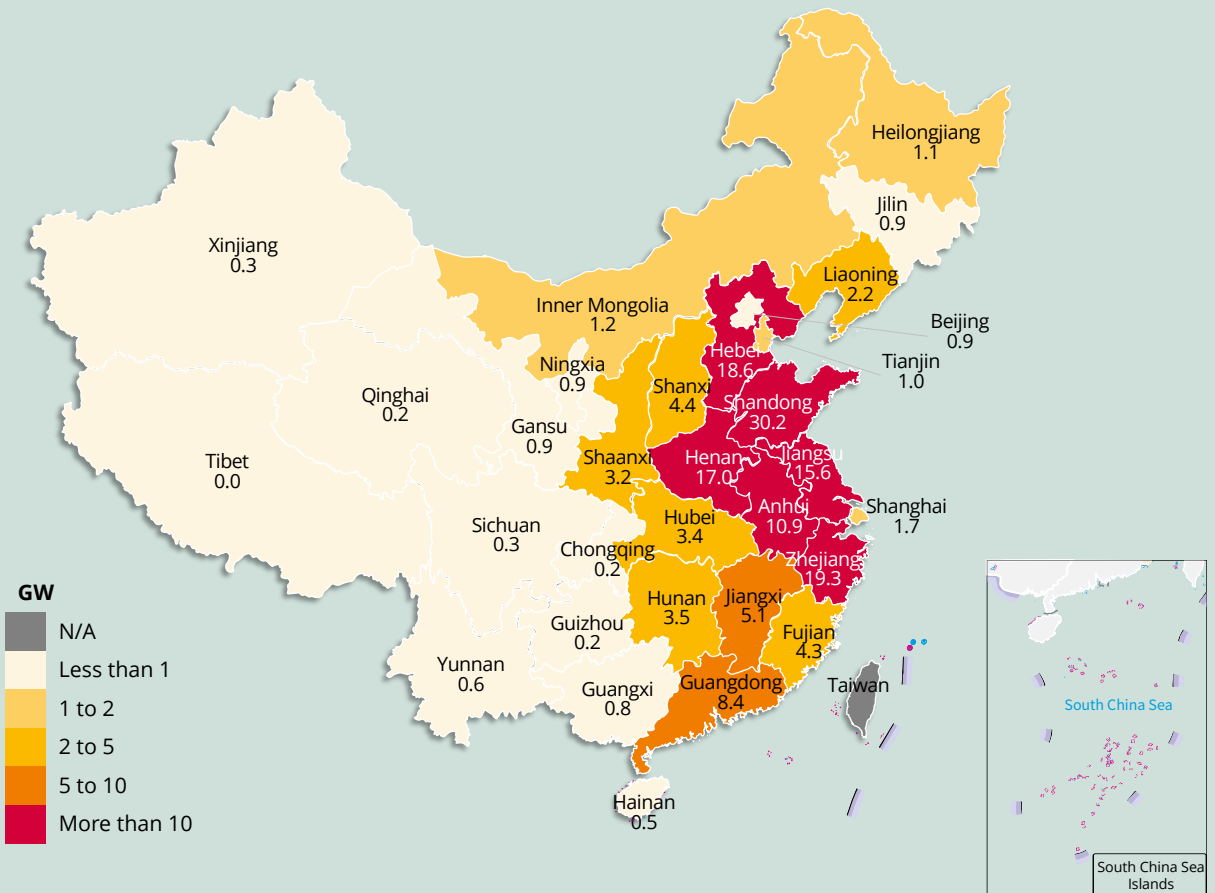
Source: China Electricity Council, April 2023

Distributed solar and offshore wind installation also increased steadily over the past few years, especially in coastal regions. The high power demand and high

population density are the main reasons for the deployment of distributed solar and offshore wind in coastal provinces.



Distributed solar installation also increased steadily over the past few years, especially in coastal regions



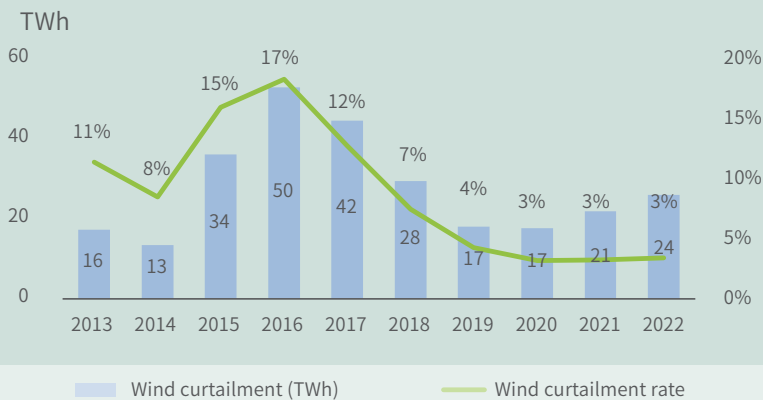
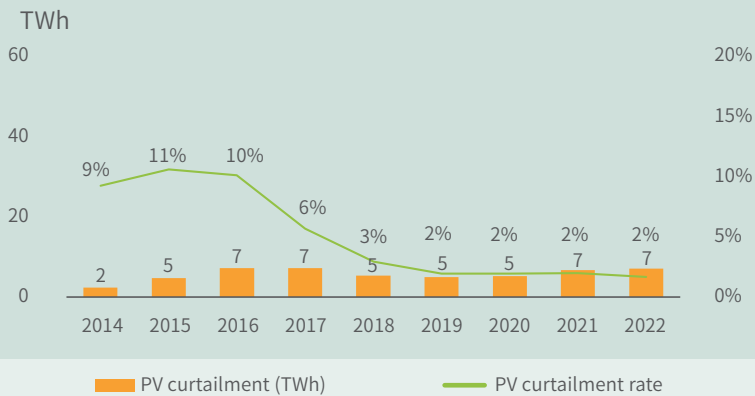
Source: National Energy Administration, 2023

Wind and solar curtailment remained low in 2022. However, there were regional imbalances, the curtailment rate of the north-western renewable-rich regions were relatively higher than other regions.

The curtailment was 7.2% for wind and 9.3% for solar in Qinghai province for the first 11 months in 2022,³ which were higher than the national average (2% for solar and 3% for wind).



Wind (right) and solar (left) curtailment remained low in 2022



Source: National Energy Administration

China plans to issue bonds to cover feed-in tariff deficit.

The renewable energy feed-in tariff payment obligations were expanding faster in recent years than the collection of renewable energy surcharges (which is RMB 0.51/kWh) re-sulted in the renewable energy fund deficit. By the end of 2021, the deficit was around RMB 400 billion.⁴

To resolve long-standing deficits in the fund used

to pay feed-in tariffs for renewable energy, China established two settlement companies in Beijing and Guangzhou planning to finance the fund through issuing bonds. However, bonds will only partially cover the accumulated deficit, and the government will have to issue more bonds to cover the still-growing shortfall. Qin Haiyan, secretary general of the Chinese Wind Energy Association

(CWEA), believes the repayments of all bonds can be completed by 2041.⁵

References

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- 3 Liu Bin, “是时候考虑调整弃风弃光率考核了”, Energy Observer, 5 January 2023, at https://mp.weixin.qq.com/s/OKANb-XAzmge1wgk_qe-Tw.
- 4 Liu Bin, “可再生能源欠补解决方案确定.” Energy Observer, 17 August 2022, at https://mp.weixin.qq.com/s/lVdtWP53jVvOphNz-k_WMA.
- 5 “可再生能源欠补问题有望得到解决 将由两大电网公司牵头发债融资”, Securities Times, 17 August 2022, at <https://baijiahao.baidu.com/s?id=1741410778017061546&wfr=spider&for=pc>.

About us

The Sino-German Energy Transition Project, as a component of the Sino-German Energy Partnership, commissioned by the German Federal Ministry of Economy and Climate Protection (BMWK) and supported by the National Energy Administration of China (NEA), focuses on sharing German experiences with the energy transition and providing advice to the Chinese government and associated energy policy think tanks. In addition, valuable input from the Chinese partners will refine German practices and offer a different perspective on current and future approaches. To carry out the project, The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the German Energy Agency (dena) and Agora Energiewende collaborate with the China Electric Power Planning and Engineering Institute (EPPEI), China Southern Power Grid (CSG), and the Institute for Applied Ecology at the Chinese Academy of Sciences (IAE).

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