

Power - China

Key takeaways from call with Oxford
Institute for Energy Studies

Industry Overview

Renewable energy may face higher curtailment

We hosted Mr. Anders Hove, from Oxford Institute for Energy Studies, to share his outlook for the Chinese power markets. Mr. Hove thinks officials may lower requirements on full utilization of wind and solar power, or even discourage construction of new wind and solar capacity, after incentives to build more coal capacity provided by Nov 2023 capacity tariff policy. Capacity tariff outside China tends to result in overinvestment. Provinces tend to prioritize local coal power dispatch for tax and self-sufficiency, which will require stronger central gov planning to keep curtailment in check.

China is on track to reach carbon neutrality

China is on track to carbon neutrality with renewable build-out, EV and clean heating. Wind and solar capacity is on track to hit 1700-2000 GW by 2030, ahead of the 1200GW target. Extrapolating provincial plans suggests > 2000GW by 2030, and could far exceed the 4500GW wind and solar needed under Tsinghua 2050 carbon neutrality scenario.

Green premium remains minimum; carbon price to pass on

Mr. Hove does not believe voluntary purchase of green certificates will lead to large trading volume. The trading volume of green power and green certificate has gone up in the US and EU, but green premium is very small. Mr. Hove expects carbon price should be passed on to power price, incentivize dispatch of gas plant and more efficient coal plant, and encourage low carbon investments.

Inter-provincial spot trading required for efficient market

Inter-provincial bilateral trading only accounts for 5% of total market power sales, vs. 14% for inter-provincial dedicated transmission, and 81% for intra-provincial trade. Spot market is crucial in encouraging flexible operations, reducing curtailment, signaling investment, and eventually reduce end-user bill. Strong provincial players requiring renewable energy to bear additional costs, and dispatching in-province generation for 'energy security' remain in evidence. Currently, China relies on administrative policies to encourage grid companies and provincial planners to absorb variable renewable energy.

Focus on energy security could distort efficiency

Among the trilemma of energy security, economic efficiency, and environmental sustainability, energy security is always on top, especially after 2019, and contributes to a burst of coal power construction. Coal additions are taking place in regions with ample coal capacity to meet peak and balance intermittent renewables. Mr. Hove thinks it is driven by provincial officials' decisions to lock in coal investments now, while coal plants are encouraged. He believes the coal overbuild will lead to 1) higher end-user energy bills, especially vs. alternatives such as inter-provincial power trading or demand response; 2) disincentivize new gas capacity and reduce dispatch of existing gas-fired power assets.

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