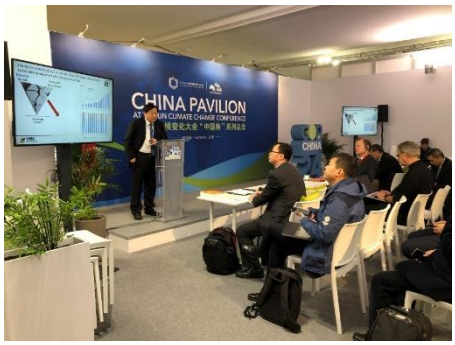
China Energy Policy Newsletter: January and February 2019

1. Recent project activities

CNREC launches CREO 2018 at COP24 in Poland

On 15 December 2018, the China National Renewable Energy Centre (CNREC) launched the "China Renewable Energy Outlook 2018" at the China pavilion of COP24 in Katowice, Poland. The director of CNREC, Mr. Wang Zhongying, spoke about the background of the report, the mid-to-long term development scenarios and pathways, as well as key conclusions.



By comparing the results of the Stated Policies scenario and the Below 2°C scenario, the analysis identifies the gap between the current policy environment and additional steps needed to achieve the Paris Agreement targets. The report suggests pathways for China's 2050 energy transition and renewable energy development, including a sharp reduction of coal and oil consumption in the primary energy consumption mix, and large-scale development of wind and solar power.

The report also estimates how the two major scenarios compare on key indicators such as GDP, GDP per capita, employment, and emissions of carbon dioxide and other air pollutants—showing that in general the Below 2° C scenario features improved economic growth and employment, in addition to lower emissions, versus the Stated Policy scenario. Because of the scale of wind and solar capacity growth needed before 2030 to achieve the Below 2° C scenario, Mr. Wang emphasized that the 14th Five-Year Plan should continue the trend of expanding of the annual installation of solar and wind energy.

Two scholars from CNREC, Dr. Liu Jian and Dr. Han Xue, introduced the details of research conclusions for both the energy consumption side and supply.

- In the Below 2°C scenario, three main factors drive change in China's future end-user energy demand: industrial economic restructuring, improved energy efficiency and the fuel switching from fossil to electricity in the industrial and transportation sectors. China's end-user energy demand in 2050 will be lower than in 2018, and while fossil fuel consumption will shrink dramatically, electricity consumption will more than double.
- Based on the results of Below 2°C scenario, total primary energy demand in China in 2050 will be significantly lower than what it is in 2017. Renewable energy will dominate in primary energy consumption, and coal will take a subordinate role. Because natural gas prices will remain relatively high compared to prices for wind and solar power, gas will play a limited role in China's long-term energy system. The share of non-fossil energy will reach 70%. Wind and solar will become the leading energy sources: wind will account for 26% of total energy and solar 16%.
- Power transmission will play a crucial role in effectively integrating renewable energy sources into the energy system.
- In 2050, China's energy system will be more dynamic and flexible than currently, and spot power markets will be an important mechanism to guarantee cost-effectiveness and a well-integrated system.
- In the future energy system with high shares of renewable energy, flexibility will become an essential resource. Electric vehicle and power storage technologies will provide large-scale and reliable flexibility to the energy system, while reducing environmental impacts.

2. China energy transition updates

China plans subsidy-free wind and solar pilots

On 7 January 2019, National Development and Reform Commission (NDRC) and National Energy Administration (NEA) jointly announced the plan to launch subsidy-free wind and solar pilots in regions with superior wind or solar resources and power consumption capability.[1] These pilots will not receive national government subsidies. The on-grid tariff of these pilots will be the same or lower than the local benchmark feed-in tariff from coal plants, which the government will support with incentive policies.[2] The capacity of these pilots will not be included in the annual renewable project construction quota of each province.

The policy defines three types of pilots: Local utility-scale wind and solar projects fully on the grid (Pilot I); utility-scale wind and solar bases integrated with inter-provincial or inter-regional power transmission lines, especially those with Ultra-High-Voltage (UHV) transmission lines (Pilot II); distributed wind and solar projects which participate in electricity trade markets, and whose electricity will be consumed locally (Pilot III). All pilots should conform to two preconditions. First, grid companies must fully purchase the power generated by pilots , but without reducing the operations of existing wind and solar power plants. Second, all pilots cannot be built in "red-alert" regions already with excess installed capacity of wind and solar.

1. Promoting diversified consuming plans

For Pilot I and Pilot II projects, provincial grid companies have the responsibility to invest and build supporting facilities to ensure timely grid access of newly built pilots.[3] In addition, grid companies should give grid-access priority to pilots, and ensure full uptake of their electricity output. In case of wind and solar curtailment, curtailed electricity can be traded with other regions via generation rights transfers, based on prices determined by the market. This policy aims to reduce curtailment and financially compensate pilots for any curtailment.[4] For Pilot II projects, the energy administrative department of exporting provinces should give priority to pilot projects in power dispatch, meanwhile the counterpart of importing provinces should collaborate with local grid companies to implement power consuming plans.[5] To mobilize the governments to promote power consumption, the Notice also bundles the energy saving target of each province with the consumption of pilots' power.

2. Avoiding unreasonable administrative fees

The government will support pilot projects to make land use applications and reduce related fees. For example, all the three types of pilots have priority to use state-owned idle lands and are exempt from land transaction fees. The policy states that local governments cannot require pilots procure local equipment or invest in local manufacturing. In addition, Pilot III projects will benefit from reduced transmission and distribution fees, and are exempt from policy-based cross-subsidies.[6] This should help such pilots compete in China's emerging bilateral electricity retail market for large industrial customers.[7]

3. Guaranteeing stable income

The policy sets long-term, 20-year feed-in tariff power purchase agreements for Pilot I and II projects. Such pilots are not required to participate in power markets. This will provide protection for the project's income, reduce financial risk and the difficulty of financing, and thus make it easier for regions with the ability to consume additional renewable energy to achieve competitive prices for wind and solar. The government will also allow all pilots to sell voluntary green certificates.[8] The policy also states that China Development Bank and the four major state-owned banks will launch credit funds and innovative financial products. The

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[1] "国家发展改革委 国家能源局关于积极推进风电、光伏发电无补贴平价上网有关工作的通知, 发改能源〔2019〕19号," National Development and Reform Commission and National Energy Administration, 7 January 2019, accessed at http://www.ndrc.gov.cn/zcfb/zcfbtz/201901/t20190109_925398.html.

[2] Projects that only receive local subsidies are still considered as subsidy-free pilots. In regions where subsidy free remains impossible, the government will continue to hold wind and solar auctions.

[3] All supporting power grid facilities except the booster station.

[4] Yang Ruixi, "权威解读 | 时璟丽：八大措施助力平价上网试点项目," China Reform Daily, 11 January 2019, accessed at http://www.gnlzy.com/shehui/2019/0113/88020.html.

[5] The on-grid tariff equals to the difference of the benchmark tariff of coal at receiving end minus the transmission fee.

[6] Pay only for the grid transmission and distribution fee of the voltage level involved in grid access and consumption, and exempt the transmission fee of the upper voltage level.

[7] Yang Ruixi, "权威解读 | 时璟丽：八大措施助力平价上网试点项目," China Reform Daily, 11 January 2019, accessed at http://www.gnlzy.com/shehui/2019/0113/88020.html.

[8] Yang Ruixi, "权威解读 | 时璟丽：八大措施助力平价上网试点项目," China Reform Daily, 11 January 2019, accessed at http://www.gnlzy.com/shehui/2019/0113/88020.html.

government encourages pilot developers to issue corporate securities to expand financing channels.

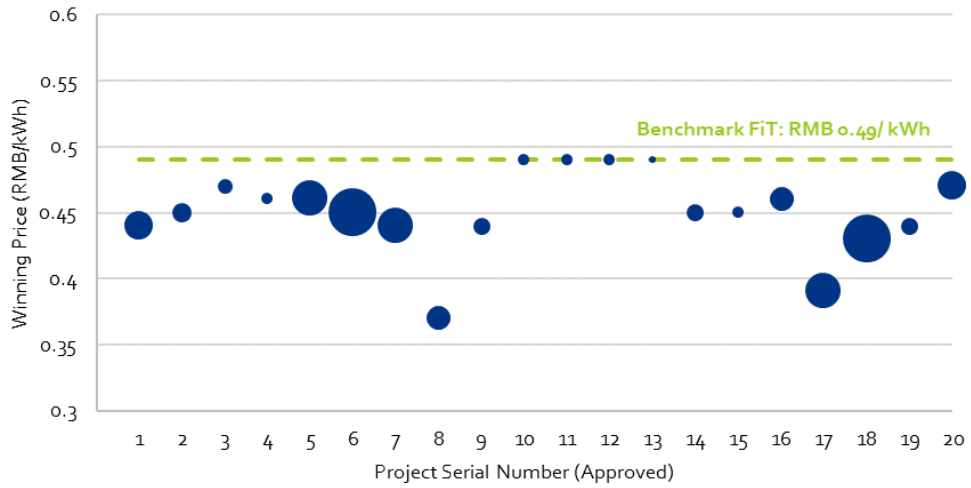
Assessment of CNREC on subsidy-free wind and solar pilots

Dr. Shi Jingli, researcher at the China National Renewable Energy Centre (CNREC) provided an analysis of the pilot policy in the China Reform Daily.[9] Shi notes that pilots can only be launched in areas with sufficient electricity demand and in regions not marked as overcapacity under the National Energy Administration's "red-alert" system. This means pilot project will not affect the auctions and Top-Runner projects. Although the forms of projects are different, they have common goals: to promote utilization of clean energy, to guide industrial technology development and to reduce power generation costs. By providing another tool to promote renewable energy and bring down costs, the pilot policy should help scale up wind and solar in the most cost-effective regions, and thereby accelerate the phase-out of subsidies. China anticipates wind and solar will generally no longer receive subsidies in the early part of the 14th Five-Year Plan period.

China's first batch of wind power auction results announced

In May 2018, the National Energy Administration (NEA) announced that feed-in tariffs would be set by competitive auctions for all onshore wind power projects. On 17 December, the Ningxia Development and Reform Commission (DRC) announced the bidding results for the first batch of onshore wind power auctions in China.[10] 32 projects bid into the auction representing a total capacity of 3.1 GW and the minimum on-grid tariff of RMB 0.35/kWh. 20 projects were accepted representing capacity of 1.9 GW, at an average price of RMB 0.45/kWh, 9.0% lower than the local benchmark feed-in tariff (for coal plants). As the auction results show, price was not the only factor in determining winning bids: For the 12 losing bids, eight provided bidding documents that didn't meet qualifications, three submitted project plans that would have violated land-use policies related to ecological red lines, and in other cases the developer was on the government's bad credit list.

Ningxia onshore wind power auction results

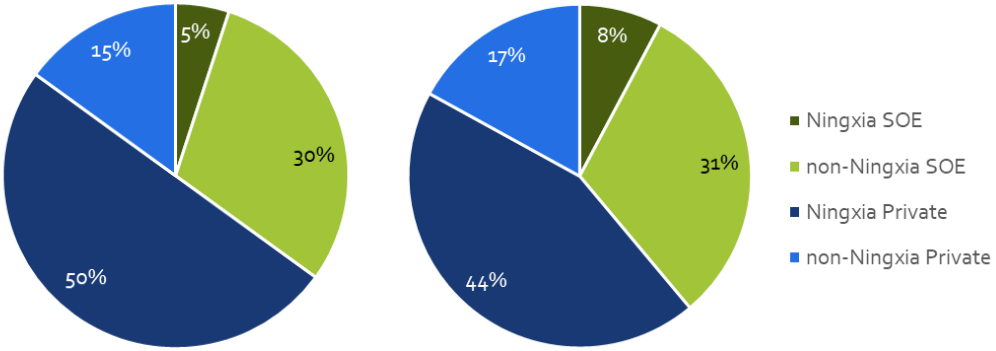


Note: Dots scaled by approved project size. Source: Ningxia DRC

[9] Yang Ruixi, "权威解读 | 时璟丽：八大措施助力平价上网试点项目," China Reform Daily, 11 January 2019, accessed at http://www.gnlzy.com/shehui/2019/0113/88020.html.

[10] "关于宁夏风电基地 2018 年度风电项目竞争配置评优结果的公示," Ningxia Development and Reform Commission, 17 December 2018, accessed at http://www.nxdrc.gov.cn/info/1013/20874.htm.

Number of auction-winning projects sorted by company type (left); capacity of auction-winning projects sorted by company type (right)



Note: "SOE" refers to state-owned enterprises. Source: Ningxia DRC

China's national ETS marks first anniversary

China's national ETS was officially launched on 19 December 2017. At the time, the schedule for establishing the ETS called for a preparation phase, followed by trial operation, and then official operation. The ETS currently remains in the preparation period; China has been making efforts on regulation system building, infrastructure construction, verification of historical emission data from major emissions entities, capacity building, and initiating carbon trading in the power generation industry. A national data reporting system has been established with industrial emissions data from 2016 and 2017. Although the design of the allocation system has yet to be published, an expert cited by Energy Observer speaking anonymously stated that policy makers plan to tighten carbon allowance allocation principles and put into place an allowance distribution mechanism using baselines.[11]

Professor Zhang Xiliang from Tsinghua University predicts the price of China's carbon emission trading will land between RMB 40-50 per tonne. Because of the complexity in China's energy governance, the national ETS may not achieve a relatively high price due to overlap with other policies like renewable energy targets and subsidies. Considering the pattern of development in European ETS and its price evolution as a reference, carbon prices in China's ETS could rise over time.[12]

State Grid opens UHV power transmission to private and other capital

On 25 December 2018, the State Grid Corporation of China announced the mixed ownership reform for Ultra-High-Voltage (UHV) transmission. New investors could include insurance companies, large-scale industrial funds, and investment platforms owned by local governments.[13] China expects to award approval for construction of nine UHV transmission lines from the end of 2018 to 2019, and the total investment for five of the UHV DC projects is expected to exceed RMB 100 billion. In addition, in June 2018, the National Development and Reform Commission (NDRC) issued the 2018 edition of the *Special Administrative Measures for Foreign Investment Access Negative List*, in theory removing restrictions that the construction and operation of the grid must be controlled by Chinese enterprises, although there have been no instances of foreign investment so far.[14]

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[11] Cai Yixuan, "COP24 速递 | 中国碳市场周岁,碳价预期如何?" Energy Observer, 18 December 2018, accessed at http://wemedia.ifeng.com/93708336/wemedia.shtml.
[12] Cai Yixuan, "COP24 速递 | 中国碳市场周岁,碳价预期如何?" Energy Observer, 18 December 2018, accessed at http://wemedia.ifeng.com/93708336/wemedia.shtml.
[13] "国家电网有限公司发布全面深化改革十大举措," State Grid Corporation of China , 25 December 2018, accessed at http://www.sgcc.com.cn/html/sgcc_main/col2017021449/2018-12/26/20181226082507061166678_1.shtml.
[14] "中华人民共和国国家发展和改革委员会中华人民共和国商务部令第 18 号《外商投资准入特别管理措施（负面清单）（2018 年版）》, 令 2018 年第 18 号," State Council, 13 June 2018, accessed at http://www.mofcom.gov.cn/article/b/f/201806/20180602760432.shtml.

3. Policy monitor

Air Pollution Prevention and Control Fund Renewed

2018-11-29

The Notice Regarding Publication of Management Method of Air Pollution Prevention and Control Fund, MoF Construction [2018] No.578

The Notice extends from 2017 to 2020 the duration of the special fund established by the central government from the state revenue to support local governments to carry out air pollution prevention tasks. The fund covers the Beijing, Tianjin, Hebei and surrounding regions, the Fen-Wei plains, and the Yangtze River Delta. The measures funded are: 1. Winter clean energy heating pilots in the Northern regions; 2. Key tasks under the Three-year Blue-Sky Protection Plan, such as comprehensive improvement of coal-fired boilers and industrial furnaces, volatile organic compound (VOCs) treatment, and pollution treatment for diesel trucks; 3. Disposal of hydrofluorocarbons.

http://www.hebhb.gov.cn/root8/auto454/201812/t20181203_68667.html

Securing clean heat during the 2018/2019 heating season

2018-11-23

The Notice Regarding Securing Clean Heat Supply during the 2018 and 2019 Heating Season, NEA Power [2018] No.77

The Notice emphasizes expanding the scale of renewable energy heating, continuing the process of heating fuel switching from coal to gas and coal to power, and promoting coal district heating. NEA encourages local governments to increase the building floor area covered by geothermal heating; to evaluate biomass resources and prioritize the development of biomass CHP, biomass boiler heating and distributed biomass briquette fuel heating; and to develop solar heating where suitable. The Notice also indicates the necessity of expanding the floor area covered by coal district heating, and encourages adoption of energy-saving CHP for heating.

http://zfxxgk.nea.gov.cn/auto84/201812/t20181214_3497.htm