JANUARY 2021

CHINA ENERGY POLICY NEWSLETTER

Boosting Renewable Energy as Part of China's Energy Revolution

1. China energy transition updates

China clarifies 2030 goals for wind power and solar PV development

On 12 December 2020, President Xi Jinping announced new measures for China's Nationally Determined Contributions (NDC). Compared with the measures announced in 2009, China takes the quantitative targets for renewable energy in to consideration for the first time. By 2030, the installed capacity of wind and solar power aims to reach over 1,200 GW, reflecting the support for implementing the share target of non-fossil energy.[1] By the end of the third quarter of 2020, the total installed capacity of wind and solar power generation nationwide reached 446 GW. To complete the 2030 target, China's newly installed wind power and solar PV capacity needs to reach 72 GW per year during the 14th Five-Year and the 15th Five-Year periods, compared to the average annual newly installed capacity during the 13th Five-Year period was 62.6 GW.[2]

2020 Goals	2030 Goals
• Carbon dioxide emissions per RMB 10,000 of GDP should drop by 40%-45% compared to 2005	• Carbon dioxide emissions per RMB 10,000 of GDP should drop by more than 65% compared to 2005
• Non-fossil energy should account for about 15% of primary energy consumption	• Non-fossil energy should account for about 25% of primary energy consumption
• The forest area should increase by 40 million hectares compared to 2005, and the forest stock should increase by 1.3 billion cubic meters	• Forest stock should increase by 6 billion cubic meters compared to 2005
	• **The total installed capacity of wind power and solar PV should exceed 1,200 GW**

Source: The Chinese central government, access in January 2021 Solar PV development prospects during the 14th Five-Year period

[1] "习近平宣布中国国家自主贡献新举措," Xinhua Net, 12 December 2020, accessed at **http://www.xinhuanet.com/politics/leaders/2020-12/12/c_1126853607.htm**.

[2] "产业风向｜未来十年我国风电、光伏每年新增装机将不低于7200万千瓦," Economic Information Daily, accessed at **https://new.qq.com/rain/a/20201214a0ds8f00**.

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Danish Energy Agency

可再生能源推动能源革命研究
Boosting Renewable Energy
As part of China's energy revolution

国家发展和改革委员会
能源研究所
Energy Research institute, NDRC, P.R.C

Solar PV development prospects during the 14th Five-Year period

It is estimated that the total installed capacity of solar PV in 2020 will reach 250 GW (45 GW in 2020), surpassing wind power to become the third largest power source after coal power and hydropower in China. Most regions will become subsidy-free available. According to the forecast of the China Photovoltaic Industry Association (CPIA), the average annual newly installed capacity of solar PV will reach 70 GW to 90 GW during the 14th Five-Year period.[3] The National Energy Administration (NEA) emphasized that solar PV development will shift from subsidy-driven to technological innovation-driven in the coming five years. Technological progress will promote continuous cost reduction, and will reduce overall energy consumption cost by combining other techniques such as energy storage and hydrogen energy technologies. For instance, to build large-scale solar PV powered hydrogen production projects in the western regions with rich solar irradiance and land resources.[4]

The government will continue to improve supporting policies in parallel. At present, it is still difficult for solar PV to compete with thermal power when participating in power markets. Therefore, during the 14th Five-Year period, all stakeholders in the renewable energy sector must jointly carry out relevant research programs.[5] From the industry's perspective, with the signing of the *China-Europe Comprehensive Agreement on Investment*, Chinese PV manufacturers will benefit from it as Europe is currently China's largest export market for solar PV modules. In the first half of 2020, the total market share of the Netherlands, Spain and Germany exceeded 30%.[6]

Short-term power shortage in the south China

In December 2020, the average temperature in Northwest, Inner Mongolia, Southwest and East of China was 2℃ lower than normal in the same period of the year.[7] Therefore, 20 provinces in China increased their electricity consumption by more than 10% in the first half of December, and the country's highest peak load of a winter day exceeded the summer peak, which is rare in history.[8] Since the central and southeast regions are not within the district heating area, some provinces, such as Hunan, Zhejiang and Jiangxi, had short-term power shortage problem.

For example, the power gap in Hunan reached 4 GW, accounting for 7.8% of the power supply capacity in 2019. On the power supply side, the inter-provincial Ultra-high-voltage (UHV) transmission line from Jiuquan, Gansu to Hunan has been operating at full capacity; the local coal power installed capacity has only increased by 1 GW in the past five years (from 22 GW to 23 GW), while the average annual electricity consumption has increased by more than 7%. From the load side, in addition to temperature, the increase in factory production at the end of the year is also accountable for the power shortage. Therefore, the local government restricts the electricity usage of industrial users, highway lighting, and government office buildings, and calls on residents to avoid using high-power-consuming equipment during peak load periods.[9]

In response to the power shortage in the South, the National Development and Reform Commission (NDRC) has proposed four main measures, including improving inter-provincial power transmission flexibility, maintaining stable operation of power generation units, ensuring coal supply, and strengthening the ability to respond to natural disasters under low temperatures.[10] By the end of December 2020, power supply across the country has returned to normal.

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[3] "产业风向｜未来十年我国风电、光伏每年新增装机将不低于7200万千瓦," Economic Information Daily, accessed at **https://new.qq.com/rain/a/20201214a0ds8f00**.

[4] "权威声音 | 国家能源局任育之："十四五"期间，国家能源局将推动一批示范项目促进光伏加储能、光伏制氢等新产业新业态的成熟," National Energy Administration, 10 December 2020, accessed at **https://www.sohu.com/a/437605415_120051337**.

[5] "权威声音 | 国家能源局任育之："十四五"期间，国家能源局将推动一批示范项目促进光伏加储能、光伏制氢等新产业新业态的成熟," National Energy Administration, 10 December 2020, accessed at **https://www.sohu.com/a/437605415_120051337**.

[6] "中欧投资协定达成 国内新能源企业或将受益," Caixin, 1 January 2021, accessed at **http://www.caixin.com/2021-01-01/101645829.html**.

[7] "都说全球变暖，为何今冬这么冷？|专访国家气候中心主任宋连春," China Meteorological Administration, 6 January 2021, accessed at **https://www.thepaper.cn/newsDetail_forward_10683212**.

[8] "发改委：20个省级电网用电两位数增长 15个省级电网负荷累计137次创新高," National Development and Reform Commission, 29 December 2020, accessed at **http://ex.bjx.com.cn/html/20201229/37401.shtml**.

[9] "BNEF市场追踪｜经济回暖、初冬骤寒：罕见"电荒"席卷湖南," Bloomberg New Energy Finance, 21 December 2020, accessed at **https://mp.weixin.qq.com/s/JWdRjF6tWOBgY1Citph3rw**.

[10] "国家能源局：多措并举应对南方部分地区电力供应偏紧," National Energy Administration, 18 December 2020, accessed at **http://www.gov.cn/xinwen/2020-12/18/content_5570467.htm**.

The national ETS starts the first compliance period

On 31 December 2020, the Ministry of Ecological Environment (MEE) issued the *Measures for the Administration of Carbon Emission Trading (Trial)* (CHN:《碳排放权交易管理办法（试行）》), remarking the official start of the first compliance period of the national ETS (until December 31, 2021). According to the documents released at the same time, the final version of the *2019-2020 National Carbon Emission Trading Allowance Setting and Distribution Implementation Plan (Power Generation Industry)* (CHN: 《2019-2020年全国碳排放权交易配额总量设定与分配实施方案（发电行业）》)and the *List of Key Emission Units Included in the 2019-2020 National Carbon Emission Trading Allowance Management* (CHN:《纳入2019-2020年全国碳排放权交易配额管理的重点排放单位名单》), a total of 2,225 emission units in the power generation industry have been included in the national ETS, and the provincial ecological and environmental administrative departments need to complete the pre-allocation plan before 29 January 2021.[11] The allocation of majority allowances should be free, and provinces can introduce paid carbon allowances as appropriate. Emissions units can offset the compliance of their carbon allowances through Chinese Certified Emission Reductions (CCER), and the offset shall not exceed 5% of the annual allowances.[12]

This means that emission reduction projects can sell their amount of carbon dioxide emission reductions equivalent in the national ETS. According to estimates, wind power and solar PV projects are expected to obtain revenues of RMB 0.013/kWh to RMB 0.074/kWh through CCER transactions. In addition, carbon prices also have the potential to rise. According to the forecast of the *China Carbon Price Survey 2020*, China's average carbon price is expected to rise from RMB 49/t CO_2e in 2020 to RMB 93/t CO_2e in 2030, and exceed RMB 167/t CO_2e by 2050. In the next step, the MEE will gradually expand the covered entities of ETS across the country, including steel, cement, chemical, electrolytic aluminum, paper industries as soon as possible.[13]

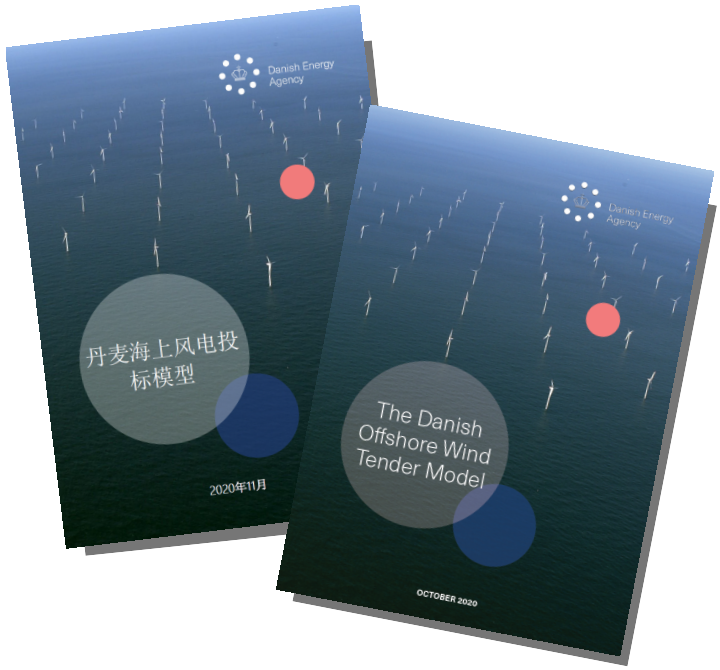
[11] "关于印发《2019-2020年全国碳排放权交易配额总量设定与分配实施方案（发电行业）》《纳入2019-2020年全国碳排放权交易配额管理的重点排放单位名单》并做好发电行业配额预分配工作的通知, 国环规气候〔2020〕3号," Ministry of Ecological Environment, 30 December 2020, accessed at **http://mee.gov.cn/xxgk2018/xxgk/xxgk03/202012/t20201230_815546.html**.

[12] "碳排放权交易管理办法（试行）, 生态环境部令 第19号," Ministry of Ecological Environment, 31 December 2020, accessed at **http://www.gov.cn/zhengce/zhengceku/2021-01/06/content_5577360.htm**.

[13] "中国碳市场首个履约周期正式启动," Ministry of Ecological Environment, 6 January 2021, accessed at **http://news.cnstock.com/industry,rdjj-202101-4640783.htm**.

2. DEA's New Publication: The Danish Offshore Wind Tender Model

The Danish tender model for offshore wind is a major success story with a huge international interest. The Danish Energy Agency's (DEA) role as a one-stop-shop to offshore wind development ensures transparency and de-risking that reduces the costs for green electricity. Now DEA has gathered the most crucial aspects of the Danish offshore wind tender model in a brand new publication. How the tender process has developed over the years is explained. Read it to learn more on the Danish approach pushing the green transition with offshore wind as the back-bone. You could download both the full English and Chinese report on DEA's website.



Background

Denmark is taking offshore wind development to the next level by initiating planning for two energy islands to be established by 2030. This is a paradigm shift from planning individual offshore wind farms to expand offshore wind capacity and connect them via energy islands. Adding the pipeline of new offshore wind projects to the current installed capacity, Denmark will have around 9 GW in operation by 2030. Today, Denmark has app. 1.7 GW offshore wind supplying app. 18% of our electricity consumption.

The offshore wind development will ensure that Denmark can electrify more parts of society in the coming years and at the same time contribute to ensuring that all Danish households and companies are covered by green electricity. This will facilitate a green transition of the Danish society and assist in meeting the Danish climate target of 70% reduction in greenhouse gas emissions by 2030, compared to 1990. The target is supported by a strong political commitment including also the aim to be climate neutral by 2050, while maintaining security of electricity supply.

Main conclusion

The current Danish model for tendering offshore wind farms is the result of many years of experience in planning and completing large-scale wind farm tenders. The strength of this model lies in elements which ensure low execution risk in Danish offshore wind projects including long-term, stable and broad political commitment to offshore wind. A range of de-risking measures are made in relation to the ongoing tender proceses for offshore wind projects. Key de-risking measures include:

- Preliminary investigations to de-risk the site development including; wind resources, geophysical and geotechnical analyses of the seabed as well as MetOcean data collection.
- Additional assessments with focus on bird surveys, safety of navigation, radio links and radar, fisheries, marine archaeology, noise, and cumulative impacts etc.
- An initial technical dialogue on the scope and depth of the planned site investigations will enable tenderers to influence the outcome of the investigations, thereby lowering commercial risks.

- A market dialogue with potential tenderers and investors concerning the preliminary tender conditions will optimize their bid, benefitting the bidder as well as the DEA.
- Draft tender material including draft licenses from the DEA ensuring early transparency on license conditions.
- The negotiated tender approach following the first bid round will allow the bidders to optimise even further.
- Full flexibility to design the wind farm, including offshore substation(s) and export cable(s), as well as to choose an individual park layout within the awarded site.
- Priority access to the grid provides assurance to connected generators of renewable power that they will be able to sell and transmit their power in accordance with connection rules at all times.
- An efficient and transparent electricity market where market data is made easily available by the Danish TSO.
- A price premium will be payed from the Danish State for a 20-year period based on the principals of a Contract for Difference (CfD). The purpose is to provide investors with a high degree of security for their investment while reducing state aid costs. Payment ceilings divide the risk of unforeseen high or low electricity prices between the parties.

The Quality Offshore Wind project

Denmark and China has a government-to-government cooperation, with the objective of sharing experiences gained over 30 years of offshore wind developments in Denmark with the Chinese government enabling it to achieve its long term offshore wind ambitions. The collaboration presents an opportunity to influence the further development of China's offshore wind sector, to demonstrate best practice technical and regulatory solutions as well as position the Danish supply chain in the Chinese market.

The basis for the offshore wind program is the mutual trust created by 15 years of successful cooperation between Denmark and China in green energy, with the National Energy Administration of China (NEA) as the primary Chinese partner. The main objective of the Strategic Sector Cooperation (SSC) Quality Offshore Wind is to assist Chinese government agencies and other relevant stakeholders in developing relevant strategies, policies and solutions to improve their roll-out of offshore wind energy and to achieve the government´s long-term objectives for the technology. The project runs until end 2021.

Contact and further information

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3. Policy monitoring

2020-12-27

https://www.ndrc.gov.cn/xxgk/zcfb/fzggwl/202012/t20201228_1260594.html

China to welcome foreign investment into the field of NEVs

Catalogue of Industries Encouraging Foreign Investment (2020 Edition), MoC and NDRC Decree No. 38

The 2020 edition will become effective on 27 January 2021. The opening of new energy power generation equipment and key equipment manufacturing, as well as the construction and operation of new energy power stations to foreign investment remains unchanged. Compared with the 2019 edition, the government will open up the field of new energy vehicles (NEVs), including fuel cells and hybrid fuel engines, as well as the research and development (R&D), and manufacturing of key components for NEVs at the national level. At the provincial level, Hubei Province has opened up the development and application of NEV charging equipment technology; Hunan Province has opened up NEV design, R&D and component manufacturing; Hainan Province has opened up NEV operating lease and maintenance services.

2020-12-15

http://www.nea.gov.cn/2020-12/15/c_139591533.htm

NEA announces the first batch of technological innovation energy storage demonstration projects

The First Batch of Pilot Demonstration Projects for Technological Innovation (Energy Storage) officially Released

NEA selected a total of eight projects as the first batch of demonstration projects. The types of technologies include electrochemical energy storage, physical energy and heat storage, and the application scenarios comprehensively cover the power generation side, grid side, and load side. Specific projects include wind power and solar PV integrated energy storage plants, microgrids containing energy storage facilities, battery storage power stations, and thermal power plants integrated energy storage systems to serve as frequency reserve in the ancillary service market.

2020-12-05

https://www.ndrc.gov.cn/xwdt/tzgg/202012/t20201207_1252390.html

NDRC requests to increase the proportion of long-term coal contracts

Notice on Doing Well in the Signing and Implementation of Medium and Long-term Coal Contracts in 2021, NDRC Operation [2020] No. 902

In 2021, China will continue to implement the coal price mechanism of "benchmark tariff + floating tariff" and further increase the proportion of medium- and long-term coal contracts. The proportion of medium and long-term contracts signed by large-scale coal enterprises should reach more than 80% of their own coal resources, and the proportion of contracts signed for new production capacity since 2019 should reach more than 90%. The signing ratio of large-scale power enterprises should reach 75% of the annual coal consumption. In power plants that use imported coal, 80% of domestic coal consumption should be signed in medium- and long-term contracts. Meanwhile, the government encourages the signing of three to five years' contracts with a clear pricing mechanism. In principle, the number of three-to five-year contracts signed by large-scale enterprises shall not be less than 30% of the total annual medium-and long-term contracts.