

China Energy Policy Newsletter: November 2019

1. Project activities

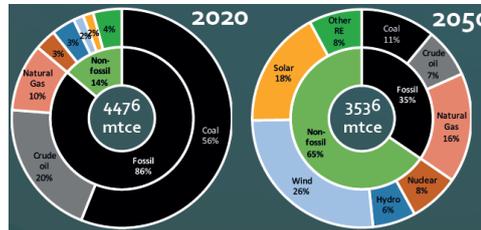
CNREC presents main results from CREO 2019

On 23 October 2019, the China National Renewable Energy Centre (CNREC) co-hosted a joint report launch workshop with the the Danish Energy Agency (DEA) and the International Energy Agency (IEA) at the China Wind Power Conference in Beijing. Mr. Zhao Yongqiang, Deputy Director of CNREC, presented the main results of China Renewable Energy Outlook 2019 (CREO 2019) at the conference. The workshop also launched two research reports: the Distributed Wind and PV in Denmark and Germany delivered by DEA and German Energy Agency (dena), and the IEA's Renewables 2019 – Analysis and forecast to 2024. Government officials from China National Energy Administration (NEA) and Ministry of Natural Resources (MNR) participated in the launch event.



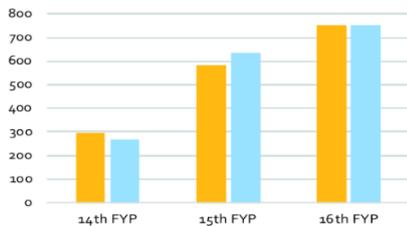
From left to right: Wang Zhongying (CNREC), Zhao Yongqiang (CNREC), Chen Yongsheng (NEA) and Anders Hove (GIZ). Source: Wind Expo.

CREO 2019 provides a forecast of China's primary energy consumption and carbon emissions under a 2050 Below 2 °C Scenario. The fossil fuel share of China's total energy consumption will decline from 90% in 2018 to 35% in 2050, and the power sector will achieve a 91% non-fossil share.¹ To achieve the 2 °C goal of the Paris Agreement, China's energy-related CO₂ emissions will fall from 9.5 Gt in 2018 to 2.5 Gt in 2050. CO₂ emission per capita will fall by three-fourths from 2018 to 2050.



China fuel mix in 2020 and 2050. Source: CNREC.

Achieving these ambitious goals will depend on three main factors: energy efficiency improvements, electrification, and renewable electricity supply. Energy efficiency improvement is essential to reducing total energy demand and ensuring timely reduction in fossil energy production. Electrification is also an important means to both reduce primary energy consumption and displace fossil fuels. CREO 2019 predicts that in 2050 the electrification rate will increase from 28% in 2018 to 51% in industry, from 30% to 58% in the buildings sector and from 2% to 39% in transport sector.



Total new wind and solar capacity additions (GW) during 2020-2035. Source: CNREC.

To ensure that green power supply is at the core of the energy system, the 14th – 16th Five-Year Plan periods are critical. By the end of 14th FYP in 2025, CREO anticipates China's wind installed capacity will pass 500 GW while solar should reach 530 GW. By the end of 16th FYP in 2035, the annual installations of wind and solar capacity should peak around 150 GW per year. The result is a revolution in clean electricity supply.

¹ This ratio is calculated using the calorific value calculation method and includes non-commercial renewable energy sources. The same method also applies to the following data.

To increase supply of electricity from renewable energy, it is also essential to enhance the grid's ability to absorb variable renewables, and this requires more flexible power plants and a more dynamic electricity system. China's electricity market should be able to mobilize existing flexibility through efficient price signals and market services; and guide investments in new sources of flexibility through the market design. The report anticipates that Chinese policy-makers will gradually expand the scale of provincial spot market pilots, and establish a unified national market by 2035.

Transitioning to a clean, low-carbon, safe, and efficient energy system in China will entail special effort in continuing to expand renewables, controlling coal consumption, improving energy efficiency in all sectors, establishing and refining power markets, establishing a more flexible power system, and creating an efficient carbon emissions trading system (ETS).

DEA and dena presents experience of distributed energy planning

In order for China to see how other countries achieved the optimal policies for both food and energy production, DEA and dena co-launched their report on *Distributed Wind and PV in Denmark and Germany* at the conference. Denmark has successfully combined agriculture and wind, and has an average of 150 kW of installed wind capacity per km² of agricultural land. This enables wind power to cover 41% of Danish annual electricity consumption. In the report, DEA introduced specifics of Danish practice and experience with wind resources mapping, wind turbine siting, the environment impact assessment process, grid connection and integration, the approval process, and public acceptance.

In Germany, the cumulative capacity of onshore wind in 2018 reached 53 GW and made up 14.3% of total electricity generated, while the cumulative capacity of PV in 2018 reached 45.4 GW and accounted for 7.2% of total electricity generated. Dena introduced German procedures for planning and siting, including aspects of spatial planning, legal frameworks and approval processes, and elements of public participation and acceptance.

The report also provides recommendations to China based on de-risking through transparency and a long-term perspective, effective use of the Chinese wind resources, and increased public acceptance and participation. Please download the full report [here](#). Yan Qin, deputy director general of Department of Territorial and Spatical Use Control, MNR, also gave comments about the current land use policy in China for distributed energy.



From left to right: Carolin Schenuit (DENA), Pablo Hevia-Koch (DEA), and Yan Qin (MNR). Source: Wind Expo.

IEA presents the global developing trend of distributed PV from 2020 to 2024

IEA also launched a report on Renewable Energy Market 2019 with focus on distributed generation. IEA expects to add 300 GW of wind and 700 GW of PV power generation capacity from 2020 to 2024 globally, especially the incremental distributed PV will be doubled which equivalent to the total added wind. As early as 2021, 50% of newly built distributed PV will be in China. IEA expects the industrial and commercial sectors to be the new growth point (75%) for incremental distributed PV due to declining capital costs. By 2024, the levelised cost of energy (LCOE) of commercial and household PV projects will further drop by 15% to 30% compared to 2019, thus the gap between distributed PV and retail electricity prices is declining. Based on the conservative estimation of IEA, the world's available roof-top area has 9,000 GW of technical potential for distributed PV, and only 6% would have been exploited by 2024. This is because distributed PV faces a few challenges. For instance, more electricity self-consumption will reduce the revenue of distribution grid operators (DSOs) while the grid cost remains. Policy uncertainty is also a long-standing risk. "If we can overcome these challenges, the installed capacity could be further increased by 26%," said by Heymi Bahar, the senior analyst of IEA. Please download the full report [here](#).



From left to right: Heymi Bahar (IEA) and Qin Haiyan (CWEA). Source: Wind Expo.

2. China energy transition updates

Speech by Premier emphasizes energy security

On 11 October 2019, China Premier Li Keqiang hosted a meeting of the National Energy Commission.² The Premier Li's remarks emphasized that energy security is China's long-term strategy and task, and that China central government aims to diversify energy supplies. Given the country's abundant raw coal resources, China will accelerate construction of coal transportation and power transmission lines. China also expects to increase oil and gas exploration and production. The government encourages social capital of private sector—defined as private and state-owned enterprise investment—to invest in fields of oil and gas exploitation and pipeline, LNG receiving station, flexible gas power plants, distributed power grid and electricity retailing business. It has also removed restrictions on foreign investment in some of these fields.

Earlier in September, a new coal transportation railway, the Haoji rail line, started to operate in China. It originates in Inner Mongolia at its northern end and connects to Jiangxi in the south. The Haoji line is the longest dedicated coal railway in the world, and can transport 200 million tonnes of coal per year.³ Meanwhile, the Tarim oilfield in Xinjiang has added 93 new oil wells and gas wells in the first ten months of 2019, increasing raw oil production by 50% and natural gas production by 256%. The Tarim field is the third largest oil and gas field in China with a sixth of national natural gas production.⁴ In addition, PetroChina announced the discovery of a billion-tonne oil field in Inner Mongolia and a shale gas field in Sichuan in 2019.⁵

China will allow coal power prices to fluctuate within a price band

In September 2019, the State Council announced that China's coal power prices will shift from fully government regulated to partially market based, though they will remain capped. In October, the guidance for the reform officially published.⁶ The guidance clarified that power generators, electricity retailers and large electricity users will determine the proportion of floating tariff through negotiation or bidding. The floating tariff can rise by a maximum of 10% (after 2021) at most and the downside shall not exceed 15%. To prevent price increases for industrial and commercial customers, tariffs are allowed to increase only after 2021—so for now, only the downside price adjustment will be permitted.

The notice also clarifies the mechanism of subsidizing renewable energy power generation. The portion of the on-grid tariff within the local benchmark coal power price shall be settled by the local provincial power grid, and the portion that is higher shall apply for subsidies from the National Renewable Energy Dedicated Development Fund. Dr. Shi from CNREC analysed that, according to the notice, the on-grid tariff and subsidies remained unchanged for renewable power generation projects that connected to the grid by 2020. But for projects build after 2021, whether the on-grid tariff and subsidies will be adjusted according to the floating price remains unclear and depends on the future adjustment of tariff and subsidy policies.

²“李克强主持召开国家能源委员会会议,” Central Government of the People's Republic of China, 11 October 2019, accessed at http://www.gov.cn/guowuyuan/2019-10/11/content_5438589.htm.

³“刚刚,浩吉(原蒙华)铁路正式开通,世界最长运煤专线投入运营,” China Energy News, 28 September 2019, accessed at http://www.sohu.com/a/343989028_468637.

⁴“塔里木油田高效建产 93 口新井增油增气,” China National Petroleum News, 14 October 2019, accessed at <http://news.cnpc.com.cn/system/2019/10/14/001747578.shtml>.

⁵“我国又发现一个 10 亿吨级大油田,” China Daily, 29 September 2019, accessed at <http://finance.ifeng.com/c/7qMi6pYBLSK>.

⁶“国家发展和改革委员会关于深化燃煤发电上网电价形成机制改革的指导意见,发改价格规(2019)1658号,” National Development and Reform Commission, 21 October 2019, accessed at http://www.ndrc.gov.cn/fzgggz/jggl/zcfg/201910/t20191024_1182062.html.

NEA settling longer-term wind power policy after subsidy phased out

The National Energy Commission requires to promote utilization of renewable energy such as hydro, wind and solar power, to increase clean energy consumption. The Deputy Director of New Energy and Renewable Energy Department of NEA, Li Chuangjun, subsequently presented at the International Wind Power Conference that China's wind power is still maintaining a steady development trend in 2019. After 2021, the onshore wind power will be price competitive with coal. After all subsidies are phased out, wind power needs to rely on the better implementation of policies.

The central government will continue to promote clean energy, and appeals to local government departments and power grid companies for their cooperation on the following aspects: First, the government will develop a more robust tendering mechanism for distributed generation. Second, grid companies should improve service to support the construction of grid connections and promote renewable construction. Third, local government should actively follow the mandatory renewable consumption target, and improve its monitoring mechanism for implementation of the policy of mandatory purchase of minimum amount of renewable electricity by grid companies. Fourth, the soft cost of wind power should be further decreased.

MoF proposes three solutions to solve renewable power subsidy payment delay

MoF issued its official reply to concerns expressed on renewable power subsidy payment delays by a deputy at the 13th People's Congress, providing three solutions: First, the government plans to shift the right of determining qualified subsidized renewable projects from the ministry to local grid companies to simplify and speed up subsidy issuance. Second, the industry should diversify its income by participating in green certificate trading and other market trading. Third, the ministry will improve the effectiveness of renewable surcharge collection for the Renewable Energy Dedicated Development Fund. NDRC will not approve further surcharge increases for now. Therefore, the local government cannot exempt or delay the surcharge that should be paid from self-consumption of electricity of captive power plants and direct trading electricity of big consumers.



NDRC promotes coal mining and coal power joint ventures business

Enhancing Policy Support for Coal and Electricity Joint Ventures, NDRC [2019] No.1556

The notice requires the newly planned coal mine and coal power plants to prioritize joint venture of coal mines and coal power plants, especially to encourage large coal enterprises and power enterprises to participate. The new business models include merge of enterprises, the cross ownership and the reorganization of coal enterprises and power enterprises. The government will prioritize joint venture business in the central and eastern regions and for clean heating projects in the northern regions. The joint venture enterprises are encouraged to participate in all kinds of electricity market transactions including cross-regional transactions and spot market transactions.

2019/09/25

<http://news.bjx.com.cn/html/20191008/1011132.shtml>

Establishment of intelligent PV demonstration projects

Notice on Establishing Intelligent PV Demonstration Pilots, MIIT [2019] No.200

The government will establish intelligent PV demonstration projects in industrial zones, buildings, transports, agricultural/ rural areas, utility-scale PV projects, and poverty-alleviation PV projects. The projects should adopt at least three types of intelligent PV products manufactured according to the Standard Conditions of the PV Manufacturing Industry. The installed capacity for a single utility-scale PV project should be over 10 MW, while for distributed PV project it should be over 0.1 MW. Each province, autonomous region and municipality can recommend no more than eight demonstration projects, while Xinjiang corps and other cities specially listed in the plan can recommend no more than five demonstration projects.

2019/09/20

<http://www.miit.gov.cn/n1146295/n1652858/n1652930/n3757021/c7429391/content.html>