MARCH 2021

CHINA ENERGY POLICY
NEWSLETTER

Boosting Renewable Energy as Part of China's Energy Revolution

1. Project activities

Launch of the China Renewable Energy Outlook 2020 in Beijing

On 28 January 2021, the Energy Research Institute of the National Development and Reform Commission (ERI of NDRC) together with the Danish Energy Agency (DEA) and other international partners presented the main results of the *China Renewable Energy Outlook 2020* (CREO 2020). The event was hosted by the Danish embassy in Beijing and co-organized by several other parties including the International Energy Agency (IEA), which launched its IEA Renewable Energy Market Report. CREO 2020 outlines a detailed path for China to achieve the Paris Agreement targets and thereby support the ambitious Chinese climate goal of carbon neutrality in 2060. The outlook shows that China is in a position where it can create the foundation for its energy revolution.

"Key results show the importance of a fast development of wind and solar power to achieve China's targets of the Paris Agreement. In 2020, China added a record of 120 GW wind and solar power capacity. A development that shows it is realistic to reach the 1,200 GW target even before the estimated target in 2030."

The CREO is the flagship of the Sino-Danish cooperation on energy transition and serves as highly valued input for Chinese national energy policy, taking the temperature on China's green energy transformation. Its main purpose is to provide a long-term scenario view of the future Chinese energy system, and develop policy recommendations for cost-effective initiatives that could be implemented to reach the below 2-degree target in the Paris Agreement. From 2021, the CREO will be become a broader *China Energy Outlook*, which will include analyses of the entire Chinese energy sector. The new outlook will also focus on the provincial development towards a green and carbon neutral energy system including a shift from a coal to renewables.

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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

Webinar: Hainan Clean Energy Island – Power sector transformation pathways

Following the launch of the DEA's report *Hainan Clean Energy Island-Power sector transformation pathways*, the DEA arranged a closed-door online webinar on 1 February 2021. Twenty Chinese and Danish experts were invited to attend the event, including the Royal Danish Embassy in Beijing, the Royal Danish Consulate General in Guangdong and China National Renewable Energy Centre. The study shows that there is great potential for phasing out the current 38 percent coal supply for the Hainan province. Deployment of wind and solar is the lowest cost path for achieving Hainan's ambitious clean energy targets. Towards 2030, Hainan should reduce energy exports and increase generation from renewable sources, resulting in complete removal of coal from the electricity generation mix.

"Wind and solar power can cover 44 percent of Hainan's electricity generation mix and phase out coal by 2030. The pathway would only have a 2 percent higher annual cost compared to the business-as-usual scenario. Such a shift would reduce the annual CO2 emissions in the power sector from 7.0 million tons to 1.3 million tons."

The study is a good case of provincial energy modelling, indicating how the power sector of Hainan can transition and contribute towards the Clean Energy Island (CEI) policy target. Moreover, the report reveals that Hainan's CEI policy could have a genuine impact on the broader energy system, where coordination of policy and market design with neighboring provinces is a key. You can download bot the full **English** and **Chinese** report on DEA's website.

2. China energy transition updates

NEA formulates annual renewable power consumption target for 2021-2030

In February 2021, the National Energy Administration (NEA) issued the proposed strategy and targets for the renewable power consumption from 2021 to 2030, and has been soliciting opinions in specific groups.[1] The government will continue to set mandatory consumption targets and incentive targets for renewable power and non-hydro renewable power. The general idea is to rise the consumption targets for each province year by year, and gradually reduce the difference in the proportion of consumption among provinces in the next ten years, to realize the goal that all provinces will bear the responsibility for the development and consumption of renewable power fairly by 2030. In addition, the NEA will release the targets for 2021 and the indicative targets for 2022-2030 at one time, and carry out rolling adjustments to achieve the predictability and continuity of the policy.

The 2021 renewable power and non-hydro renewable power consumption targets are based on the boundary conditions such as non-fossil energy accounts for 16.6% of primary energy consumption[2], as well as considering the electricity demand growth, renewable energy resources, grid connection conditions, local power consumption and inter-provincial transmission capacity by province. The annual target of 2022-2030 is based on the boundary conditions such as the proportion of non-fossil energy reaches 26.0%.[3] For the renewable power consumption target, the government requires that by 2030, renewable energy will have a share of 40% of the total electricity consumption in each province. The difference between the actual value in 2021 and the 2030 target will be evenly distributed within the next nine years. Regarding the non-hydro renewable power consumption targets, the government requires that the national share in 2030 should reach 25.9% of the total electricity consumption, that is, the average annual growth rate of 2022-2030 needs to reach 1.47 percentage points. Hence, each province should increase its consumption rate by 1.47 percentage points each year during these nine years.

[1] "能源局征求2021年可再生能源电力消纳责任权重和2022—2030年预期目标建议," National Energy Administration, 5 February 2021, accessed at **http://news.bjx.com.cn/html/20210210/1135968.shtml**.

[2] Other boundary conditions include that by 2021, the total primary energy consumption would reach 5.21 billion tce and the total power consumption would reach 8,000 TWh.

[3] Other boundary conditions include that by 2030, the total primary energy consumption reaches 6 billion tce, and the total power consumption reaches 11,000 TWh.

NEA proposes 2021 wind power and solar PV development plan

NEA issued a draft plan for soliciting opinions on wind power and solar PV development in 2021.[4] In 2021, wind power and solar PV power aims to account for about 11% of the total electricity consumption. The provincial energy authorities should determine the newly approved installed capacity and grid-connected capacity according to the non-hydro renewable power consumption target issued by NEA. The government will establish a mechanism for guaranteed grid connection capacity and market-based grid connection capacity, and grid companies are responsible for the implementation.

Guaranteed capacity refers to the newly-added grid-connected capacity required to complete the provincial consumption target. Project developers can obtain guaranteed capacity quota by either participating feed-in tariff bidding for new projects, or voluntarily reducing determined subsidies for existing projects in order to increase the new quota. The capacity determined in the last way should not be less than 1/3 of the total guaranteed capacity. At the same time, the guaranteed capacity can be transferred from the electricity receiving province to the suppling province through inter-provincial power transmission. The market-oriented capacity refers to projects that exceed the guaranteed capacity, yet the developers still want the project to be connected to the grid. These projects should be connected to the grid under the premise of sufficient dispatchable power sources and loads. The government also requires to facilitate distributed wind power and solar PV equally with utility-scale projects, especially implementing the physical operation of distributed renewable power market. In addition, household solar PV projects will still receive subsidies in 2021, and will not occupy the guaranteed capacity quota.

NEA does not implement ecological and environmental protection requests strictly

In January 2021, the feedback on the inspection of NEA was published.[5] The central environmental inspection team points out that NEA has reduced the requirements for ecological and environmental protection when formulating and amending the *Energy Law*, the *Coal Law* and the *Electric Power Law* at the level of policy design, and has failed to integrate ecological and environmental protection with energy development at the level of policy implementation. Currently the installed capacity of coal power in the key areas for air pollution prevention and control in Eastern China[6] is still increasing. In violation of regulations, newly built captive coal power plants appeared in these regions, leading to the failure of achieving coal control targets and resulting in a significant increase in air pollutants in some provinces. Some officials ascribe the problem to the misconduct of other departments.

Besides, there are missing or delayed environmental impact assessment (EIA) in the approval of coal mines, which results in damages to the ecological environment caused by specific coal mines. NEA did not check strictly in the regulatory process as well, so that the actual production capacity of some coal mines exceeded more than 30% of the production capacity approved in the EIA. Insiders believe that the inspection results will have several impacts on energy sectoral development during the 14th Five-Year Plan period.[7]

1. Environmental protection is as important as energy security, while the former will be with more stringent requirements;
2. Increase Ultra-high-voltage transmission channels, especially rise the proportion of non-coal energy;
3. Speed up the development of renewable energy;
4. A large number of coal power plants that have been approved but not yet started will be canceled;
5. Captive coal power plants will be cleaned up on a large scale.

The environmental inspector requires NEA to report the rectification plan to the Party's Central Committee and to the State Council within 30 working days, and to disclose the implementation status to the public.

[4] "国家能源局就2021年风电、光伏发电开发建设事项征求意见," National Energy Administration, 3 March 2021, accessed at **http://guangfu.bjx.com.cn/news/20210303/1139233.shtml**.

[5] "中央第六生态环境保护督察组向国家能源局反馈督察情况," National Energy Administration, 29 January 2021, accessed at **http://www.nea.gov.cn/2021-01/29/c_139707466.htm**.

[6] Beijing-Tianjin-Hebei and surrounding areas, Yangtze River Delta and Fenwei Plain.

[7] "中央对国家能源局这份督查报告，已讲清"十四五"能源应如何发展," Eknower, 30 January 2021, accessed at **https://www.sohu.com/a/447736309_314909**.

3. Overview of the *2021 Government Work Report* with focus of energy

On 4 March 2021, the Fourth Session of the Thirteenth National People's Congress was held in Beijing. Premier Li Keqiang of the State Council read out the *2021 Government Work Report*, clarifying the main goals of the *14th Five-Year Plan* and the main tasks for 2021.[8] During the 14th Five-Year Plan period, the government aims to implement the 2030 Nationally Determined Contribution (NDC) targets and to promote high-quality economic development and high-level ecological environmental protection coordinately. Energy intensity (energy consumption/RMB 10,000 GDP) and carbon intensity (CO_2/RMB 10,000 GDP) are to be reduced by 13.5% and 18% respectively (the 13th Five-Year Plan targets were -15% and -18% respectively), the forest coverage rate aims to reach 24.1%, and polluted weather should be basically eliminated.

Key targets and tasks in energy, power and environmental protection sectors in 2021

GDP grows by above 6%

energy intensity reduces by 3%

Formulate an action plan for peaking carbon emissions by 2030

- Optimize energy structure; promote efficient use of coal with low emission, strive to develop new energy, and actively and orderly develop nuclear power under the premise of safety insurance;
- Allow all manufacturing enterprises to participate in market-oriented electricity transactions, and continue to promote the reduction of general industrial and commercial electricity prices;
- Increase parking lots, charging piles, battery swapping station facilities, as well as to speed up the construction of power battery recycling system.

- Accelerate the construction of a national energy-using rights and carbon emissions trading markets, and improve the dual control system for total energy consumption and energy use intensity;
- Implement special financial support policies for green and low-carbon development, and set up carbon emission reduction support tools;
- Expand the scope of the preferential income tax catalog for environmental friendly, energy saving and water saving enterprises, and promote the R&D and application of new-type energy saving and environmental protection technologies, equipment and products;
- Continue to increase efforts to improve the ecological environment, and the clean heating rate in the northern region should reach 70%;

[8] "2021年政府工作报告（全文）," the Chinese government, 5 March 2021, accessed at http://www.china-cer.com.cn/guwen/2021021911402.html; "最全！一图读懂2021年《政府工作报告》," Chinese government, 5 March 2021, accessed at http://www.gov.cn/xinwen/2021-03/05/content_5590441.htm.

4. Policy monitoring

2021-02-25
https://www.ndrc.gov.cn/xxgk/zcfb/ghxwj/202103/t20210305_1269046.html

NDRC issues guidance on developing Power Generation-Grid-Load-Storage projects

Guiding Opinions on Promoting the Integration of Power Generation-Grid-Load-Storage and the Development of Multi-energy Complementarity, NDRC Energy [2021] No. 280

According to the local resources, all provinces can develop wind-PV-storage, wind-PV-hydro (storage) or wind-PV-thermal (storage) integration projects. The government requires active exploration of specific models at the three levels. Regional-level projects should rely on market-oriented trading systems including medium and long-term contracts, spot markets, and ancillary services; municipal-level projects should focus on the integration of clean power supply, heating, and flexible load on the basis of ensuring power supply; industrial park/residential area-level projects should improve on-site power balance capabilities by using distributed power sources, electric vehicles, residential energy storage, and combining infrastructure such as microgrids and incremental power distribution grids.

2021-02-02
http://www.gov.cn/zhengce/content/2021-02/22/content_5588274.htm

The States Councils issues guidance on green and low-carbon circular economic development

Guiding Opinions on Accelerating the Establishment and Improvement of a Green and Low-Carbon Circular Development Economic System, State Council Development [2021] No. 4

Clean energy is one of the key fields to facilitate green and low-carbon circular development of China's economic system. The *Opinions* emphasized that China will increase the proportion of renewable energy utilization and accelerate large-scale energy storage technology R&D and promotion. The government will further liberalize the competitive businesses of energy-saving and environmentally-friendly in the petroleum, chemical, electricity, and natural gas fields, and encourage the construction of integrated energy projects in which multiple energy sources such as power, heat, cold energy, and gas are synergistic. Port and airport services, urban logistics, postal express and other fields should give priority to the use of new energy or clean energy vehicles, and strengthen the construction of supporting infrastructure such as electricity charging, battery swapping, and hydrogen refueling.

2021-01-27
http://zfxxgk.nea.gov.cn/2021-01/27/c_139728132.htm

NEA clearly supports renewable energy heating

Notice on the Renewable Energy Heating Work According to Local Conditions, NEA RE [2021] No. 3

The government will support biomass heating especially CHP projects, geothermal heating, solar PV and wind power heating, and calls on local governments to actively support these projects. The *Notice* requires all localities to clarify development targets for renewable energy heating and to regard it as an important part of regional energy planning. Renewable energy heating should also be integrated with the urban developing plan and incorporated into the overall heating network design. In the future, renewable energy heating is also going to become one of the important ways of heating in rural areas, thus should be included in rural strategic planning. In addition, the government requires that when setting heating prices, local governments should take into consideration the factors such as the heat supply costs and the affordability of residents.