APRIL 2021

CHINA ENERGY POLICY
NEWSLETTER

Boosting Renewable Energy as Part of China's Energy Revolution

1. China energy transition updates

China will build a new power system with new energy as the mainstay

In March 2021, for the first time the Chinese government proposed to "*build a new power system with new energy as the mainstay*", replacing the previous statement of "*building a new power system that adapts to the development of a high proportion of renewable energy.*"[1] So far, there is no official definition of *new energy* in China. Based on previously released policies and plans, it is clear that the category include wind power, solar PV, modern biomass power, geothermal power, ocean energy, hydrogen energy and part of the energy storage technologies. Therefore, the current amendment of the *new power system* places wind power and solar PV as the future main power sources. Power generation enterprises, grid operators, and research institutions have all interpreted this statement. The following is a brief summary.[2]

> *"In the future, new energy will be connected to all levels of intelligent and flexible power grids on a large scope. With the support of flexible resources, the power system will give full play to multi-energy power supply and inter-regional power dispatch."*

Main measures include:

- Rapid increase in wind power and solar PV, as well as a parallel development of utility-scale and distributed projects;
- Fast development of energy storage and demand side response technologies, becoming important flexible resources in the power system;

[1] "习近平主持召开中央财经委员会第九次会议," the Chinese Government, 15 March 2021, accessed at **http://www.gov.cn/xinwen/2021-03/15/content_5593154.htm**.

[2] "中央首次提出构建以新能源为主体的新型电力系统，国家电网打算这样干," Eknower, 25 March 2021, accessed at **https://newenergy.in-en.com/html/newenergy-2403287.shtml**; Zhao Dongyuan," 解读｜"以新能源为主体的新型电力系统": 形态特征," Tsinghua University Energy Internet Research Institute, 1 March 2021, accessed at **https://baijiahao.baidu.com/s?id=1694480383154440034&wfr=spider&for=pc**; " 构建以新能源为主体的新型电力系统，意味着什么？" Origin Energy, 16 March 2021, accessed at **https://baijiahao.baidu.com/s?id=1694379446922828679&wfr=spider&for=pc**.

If you would like to subscribe to the newsletter, please send your full name, organization and title to ***china@ens.dk***

- Continued increase of end-user electrification rate, including common electric appliance such as EV, clean heating, rooftop solar PV and household energy storage;
- Building a highly flexible power grid, achieving long-distance power transmission, inter-regional connection, and interaction between the backbone grid and micro-grid;
- Improving intelligence of the power grid and further integration of information application technology, control technology and energy technology;
- Building a national power market and reasonable pricing.

Renewable energy to be fundamental in incremental energy consumption by 2025

Key words in the development of renewable energy during the *14th Five-Year Plan* period are **large-scale**, **high-proportion**, **high-quality**, and **market-oriented**. The National Energy Administration (NEA) will focus on improving consumption and storage capacity of new energy, and actively build a new power system with new energy as the mainstay.[3]

Large -scale Development	High proportion Development
The newly installed capacity of renewable power shall increase significantly, and the cumulative capacity of installed renewable power should account for more than 50% of the total installed power capacity by 2025;	Renewable energy will become the main body of incremental energy and power consumption. By 2025, renewable energy is expected to account for about 2/3 of the annual increase in electricity consumption and account for more than 50% of the increase in primary energy consumption;
Market-oriented Development	**High-quality Development**
Wind power and solar PV will be independent from financial subsidies, and lead to a market-oriented and competitive development;	High-level consumption, utilization and up scaling of renewable energy is to be realized in order to guarantee a reliable and stable power supply.

Solar PV will become the cheapest and the biggest power source in China

According to the China Renewable Energy Engineering Institute (CREEI), the *14th Five-Year Plan of Renewable Energy Development* is to be released in the first half of 2021, in which solar PV and wind power will be central elements. Particularly solar PV will become the power source with the lowest price and largest scale in China. In the coming five years, three major projects are: 1) large-scale renewable energy bases integrating hydropower, wind power and solar PV, and new energy bases in the Three-North Region; 2) *Solar PV+* projects according to local conditions, including PV-desertification control, PV-agriculture, PV-fishery, PV-animal husbandry, and PV-pharmacy; 3) fully release the potential of distributed energy resources.[4]

[3] "国家能源局可再生能源发布会全文实录 大规模发展、消纳、补贴、新型电力系统," China State Council Information Office, 30 March 2021, accessed at **https://news.solarbe.com/202103/30/336474.html**.

[4] Xie Hongwen, "十四五"可再生能源规划即将公布,重点关注八大领域三类项目," China Renewable Energy Engineering Institute , 22 March 2021, accessed at **https://www.ne21.com/news/show-158647.html**.

NDRC clarifies loan rules for renewable power projects

The government issued a policy to clarify the rules for granting loans to renewable power projects, aiming to alleviate the cash flow problems of project developers due to arrears of subsidies.[5] For projects that face short-term repayment pressure despite receiving loans already, banks can make loan extensions and renewals based on the results of cash flow calculations. As in September 2020, the government has issued a document clarifying the life-cycle utilization hours and year limits of subsidy for wind power, solar PV and biomass power projects, which measures the current and future project cash flow. This enables banks to provide context specific support when conducting risk assessments and determining loan conditions.

For projects that have been eligible for subsidies but have not yet applied for loans, project developers and banks can determine the amount, period and interest rate of loans through independent negotiation. The total amount of loans shall not exceed the total amount of subsidies. The loan-receiving enterprise shall open a special account in the bank, so that the power grid enterprise can directly allocate the subsidy funds to the bank. As the following step, relevant departments will assess the income obtained through green certificate transactions as payment methods for the loan interest. The part of revenue higher than the interest of the loan can be used as additional income of the enterprise. Moreover, the policy states that to ensure that subsidies are collected in full, local governments shall not arbitrarily reduce or exempt renewable energy surcharges.

[5] "关于引导加大金融支持力度 促进风电和光伏发电等行业健康有序发展的通知,发改运行〔2021〕266号," National Development and Reform Commission, 24 February 2021, accessed at **https://www.ndrc.gov.cn/xxgk/zcfb/tz/202103/t20210312_1269410.html**.

Outline of China's 14th Five-Year Plan for Economic and Social Development and the Long-term Objectives Through 2035

Key takeaways for energy sector

On 13 March 2021, the Chinese government published *The 14th Five-Year Plan for Economic and Social Development and the Long-term Objectives Through 2035* during the Two Sessions, namely the National People's Congress (NPC) and the Chinese People's Political Consultative Conference (CPPCC) National Committee.

Key binding targets for 2025

13.5%
Energy consumption/ GDP

18.0%
Carbon dioxide emission/ GDP

4.6 billion
Comprehensive energy production capacity (tce)

01
Energy security

- Enhance domestic resource-based energy supply capability, including coal, oil, gas, and power
- Expand oil and gas reserves and diversify import channels
- Gradually establish domestic energy resources trading center and pricing mechanism, process settlement in RMB

02
Fossil-fuel energy

- Centralize coal production in areas with high-quality resources and control production intensity rationally
- Reasonably control newly installed coal power capacity and speed of development
- Push forward coal power flexibility retrofit project and replacing coal with electricity program
- Orderly open oil and gas exploration market and accelerate deep sea, deep layer and unconventional oil and gas utilization
- Improve inter-regional coal transportation corridors, speed up backbone gas pipeline construction, and interconnection of oil and gas pipelines across the country

03
Non-fossil fuel energy

- Reliably develop coastwise nuclear power plants under the premise of safety insurance, the capacity under operation aims to reach 70 GW by 2025
- Facilitate construction of hydropower bases in south-west regions
- Strive to increase utility-scale and distributed wind power and solar PV capacity in parallel, especially to speed up distributed projects in central-east regions and orderly develop offshore wind power
- Increase waste incineration power plants in urban area and promote integration of biotechnology and IT technology
- Develop geothermal energy in regions with good resources

"To build a batch of multi-clean energy integrated bases during the 14th Five-Year Plan period, leading the share of non-fossil fuel in total energy consumption to reach around 20%."

04
New energy

- Accelerate the development of pumped-storage hydropower and scale up application of new-type energy storage technologies
- Breakthrough the key techniques of battery, drive motor and dynamical system in new energy vehicle sector, and speed up R&D of key components such as smart terminal, technical platform and hardware and software systems
- Actively push forward the deployment of EV parking lot and charging pole in urban area
- Increase the number of electric city bus and logistic vehicle in urban area

05
Institutional reform

- Allow all manufacturing enterprises to participate in market oriented electricity transactions
- Liberalize the competitive businesses in energy sector and strengthen supervision of natural monopoly businesses

"Facilitate resource-based economic transition demonstrative program and energy revolution pilot in Shanxi province."

06
Power grid

- Increase utilization rates of Ultra-high-voltage (UHV) power transmission lines
- Accelerate intelligent retrofit for grids and construction of smart micro-grids in order to improve power dispatch and interconnection capability, as well as clean energy consumption and storage capacity
- Continuously upgrade and retrofit rural grids, enhance power transmission and distribution in remote area

"Improve the dual control mechanism for total energy consumption and energy use intensity with key target of fossil fuel consumption control."

07
Carbon emission

- Formulate an action plan for peaking carbon emissions nationally by 2030
- Encourage provinces under feasible conditions to peak carbon emissions prior 2030 by taking carbon intensity control as primary measure and total carbon emission control as complement measure
- Facilitate market trading of carbon emission rights
- Implement major low-carbon demonstrative projects such as Carbon Capture, Utilization and Storage (CCUS)

3. Policy monitoring

2021-03-17

http://zfxxgk.nea.gov.cn/2021-03/17/c_139829878.htm

NEA will carry out clean energy supervision

Notice on Issuing the Work Plan for Comprehensive Supervision of Clean Energy Consumption, NEA Supervision [2021] No. 28

The supervision process aims to promote the efficient utilization of clean energy. Target groups are: local government authorities, power grid enterprises, power dispatch agencies, power trading agencies, and power generation enterprises. The supervision focuses on:

1. Wind and solar curtailments and completion of clean energy consumption targets;
2. The completion of renewable power consumption targets, including green certificate transactions;
3. Whether TSOs have completed the calculation of local clean energy consumption capacity regularly and arrange grid connection by project accordingly;
4. Whether prior dispatch of clean energy power plants has been implemented and the purchase of full load hours is guaranteed;
5. Inter-provincial transactions of clean energy, including charge of transmission & distribution prices;
6. The participation of clean energy in ancillary service markets.