MAY 2021

CHINA ENERGY POLICY
NEWSLETTER

Boosting Renewable Energy as Part of China's Energy Revolution

1. China energy transition updates

NEA issues the *2021 Energy Work Plan*

On 19 April, 2021, the National Energy Administration (NEA) issued the *2021 Energy Work Plan*[1], which presents quantitative and qualitative targets for overall transition, supply security, high-quality and efficient development, technological innovation and institutional reform in the Chinese energy sector in 2021. Main targets are:

- The total primary energy production should be around 4.2 billion tons of standard coal, and the production of oil and natural gas should be app. 19,600 million tons and 202.5 billion cubic meters respectively;
- The proportion of coal in primary energy consumption should be lowered to less than 56%, the proportion of electricity in the final energy consumption should reach app. 28%, and to achieve a 3% drop in energy consumption per unit of GDP;
- Increase the level of coal reserves, deploy coal power required to serve residential energy consumption reasonably, and orderly promote the construction and commissioning of coal power projects bundled with ultra-high voltage (UHV) power transmission channels;
- Strictly control new coal power installations in Eastern China and key areas for air pollution prevention, including shutting down outdated small coal power CHP projects;
- Strengthen the capabilities of emergency power peak shaving, including flexibility retrofit of coal power, a new round of medium and long-term planning for pumped storage, and demonstration projects of energy storage;
- The cumulative installed capacity of non-fossil power generation should reach app. 1,100 GW, while wind power and solar PV aims to account for 11% of the country's electricity consumption;
- The average utilization hour of inter-regional transmission channels should be increased to about 4,100 hours, and to increase the proportion of clean energy in the Central and Eastern regions' power import;

[1] "国家能源局关于印发《2021年能源工作指导意见》的通知," State Council, 19 April 2021, accessed at **http://www.gov.cn/zhengce/zhengceku/2021-04/22/content_5601529.htm**.

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- The clean heating rate in Northern China should reach 70%, as well as encourage the development of market based clean heating in Southern China;
- Expand the coverage of spot power markets and actively promote distributed renewable power markets;
- Effectively promote independently developed core energy technologies, equipment and products, and establish an innovation platform in line with new business models.

China is going to increase coal reserve by 60 million tons in 2021

The National Development and Reform Commission (NDRC) requires a dispatchable coal reserve capacity of minimum 120 million tons to be formed nationwide in 2021, it will be achieved through: 1) A central government purchased 60 million tons reserve, 2) A 60 million tons reserve through local governments - twice the value of 2020. The central government will provide fiscal subsidies for relevant project construction. Importantly, the NDRC sets up differentiated coal storage standards based on seasons: the off-season coal reserve in power plants should guarantee a minimum of 20 days demand, whereas coal reserve in peak-season should be able to support a minimum of 15 days of demand. Compared with 2020 requirements, where power plants should normally store coal for 15 days of demand, this new requirement takes the regional and seasonal differences into account.[2]

Provincial increase of coal reserve capacity in 2021 (unit: 10,000 tons)

Region	Province	Incremental coal reserve capacity	Region	Province	Incremental coal reserve capacity
North	Inner Mongolia	300	Central	Henan	200
	Shanxi	300		Hubei	300
	Hebei	200		Hunan	300
	Tianjin	100		Chongqing	200
	Beijing	N/A		Jiangxi	300
	Shandong	300		Sichuan	200
Northwest	Xinjiang	150	East	Jiangsu	200
	Shaanxi	300		Anhui	200
	Ningxia	100		Zhejiang	150
	Gansu	100		Fujian	300
	Qinghai	100		Shanghai	100
Northeast	Liaoning	300	South	Guangdong	200
	Heilongjiang	300		Guangxi	200
	Jilin	300		Hainan	N/A
				Guizhou	150
				Yunnan	150

Source: National Development and Reform Commission (NDRC), April 2021

[2] "国家发改委下发关于做好2021年煤炭储备能力建设工作的通知，发改电〔2021〕108号," National Development and Reform Commission, 12 April 2021, accessed at https://www.sohu.com/a/462394668_120054680; "国家发展改革委 国家能源局 关于做好2020年能源安全保障工作的指导意见，发改运行〔2020〕900号," National Development and Reform Commission and National Energy Administration, 12 June 2020, accessed at https://www.ndrc.gov.cn/xxgk/zcfb/tz/202006/t20200618_1231501.html.

NDRC has initially determined the feed-in tariff subsidies for wind power and PV in 2021

The feed-in tariff policy is currently in the stage of soliciting opinions. Starting from 2021, the central financial subsidies will no longer support onshore wind power, utility-scale solar PV and distributed industrial and commercial solar PV projects. New projects need to obtain a feed-in tariff no higher than the guiding price through tendering, and the guiding price is determined by the provincial coal power baseline tariff[3] and the average power market price in 2020. In addition, only the power generation within guaranteed hours determined by NEA can receive the awarded feed-in tariff, the exceeded output will directly participate in the power market. Household solar PV and concentrating solar power (CSP) projects can still receive feed-in tariff subsidies. The household solar PV subsidy standard is RMB 0.03/kWh in 2021, and will no longer be granted from 2022. As for the CSP pilot projects organized by the NEA, the feed-in tariff for projects with full capacity connected to the grid by 2020 is RMB 1.1/kWh, and for those connected to the grid in 2021 is RMB 1.05/kWh. No more subsidies will be granted to grid-connected projects starting from 2022.[4]

New energy projects encouraged to adopt long-term contracts in spot power markets

The NDRC encourages new energy projects to sign minimum 20-year long-term contracts with power companies and determine a power price through negotiations. *Notably, the NDRC describes the contract as Contracts-for-Difference (CfD) (CHN:差价合约) in the policy document, however the principle is different. It is more closely to the form of a long-term power purchase agreement (PPA).* In parallel, the government aims to guide new energy projects to participate market-based transactions with 10% of their total power generation within a certain period. The amount of power output will be excluded from the guaranteed hours that are able to receive the awarded feed-in tariffs through tenders. Regions with high-renewable penetration should expand ancillary service products such as ramp-up service.

Moreover, the NDRC requires provincial spot power markets to formulate the *Settlement Plan for Trial Operation in 2021*, aiming to achieve a non-stop settlement for the trial operation by the year-end 2021, and to provide a single of stable operation for market participants. In addition, the NDRC proposes the second batch of provincial-level spot power markets, including five provinces and cities, i.e. Liaoning, Jiangsu, Anhui, Henan, and Shanghai. It will also explore the conditions to construct regional power markets in the Beijing-Tianjin-Hebei region, Yangtze River Delta and the Southern region.[5]

Shandong launches the country's first large-scale hydrogen energy demonstration project

The Chinese government will carry out industrial incubation programs for hydrogen energy development during the 14th Five-Year-Plan period. On 16 April, 2021, Shandong Province announced to launch the technological demonstration project named *Hydrogen into Homes*. This project is China's first large-scale hydrogen energy promotion and application demonstration project jointly led by the Ministry of Science and Technology (MoST) and the Shandong Provincial Government.

Four cities – Jinan, Qingdao, Weifang, and Zibo – are selected to carry out demonstration projects such as hydrogen production from industrial by-products and renewable power generation, pipeline hydrogen transportation, fuel cell vehicles, and data monitoring of hydrogen energy industry chain. Hydrogen energy utilization will be introduced into multiple scenarios such as industrial parks, community buildings, road transport, ports, and highways. Between 2021 and 2025, Shandong aims to build a highway with hydrogen refueling stations, two hydrogen energy ports, three science bases, four hydrogen energy industrial parks, and five hydrogen energy communities. The National Fuel Cell Technology Innovation Center was also established in Shandong on the same day.[6]

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[3] The on-grid tariff for coal power is in the form of "baseline tariff + floating tariff", the baseline tariff is determined by the the national and local DRCs, and the floating tariff is a market-based fluctuation range (-15% to +10%) determined by the buyers and sellers through negotiation or biddings.

[4] "关于2021年新能源上网电价政策有关事项的通知（征求意见稿）," National Development and Reform Commission, 8 April 2021, accessed at **https://baijiahao.baidu.com/s?id=1696468342449755080&wfr=spider&for=pc**.

[5] "国家发展改革委办公厅 国家能源局综合司关于进一步做好电力现货市场建设试点工作的通知，发改办体改[2021]339号," National Development and Reform Commission and National Energy Administration, 26 April 2021, accessed at **https://finance.sina.com.cn/esg/ep/2021-05-08/doc-ikmxzfmm1265202.shtml**.

[6] "全国首个氢能大规模推广应用示范项目落户山东," Dazhong Daily Newspaper, 18 April 2021, accessed at **https://baijiahao.baidu.com/s?id=1697328231370509926&wfr=spider&for=pc**; "'氢进万家'科技示范工程启动," Ministry of Science and Technology, 28 April 2021, accessed at **http://field.10jqka.com.cn/20210428/c628936141.shtml**.

2. Progress in China's efforts to address climate change

Since China announced the targets of a carbon peak in 2030 and carbon neutrality in 2060 in September 2020, the central government and energy administrative departments have held a series of public meetings to deploy specific action plans. Issues such as ecological civilization, energy conservation and environmental protection have also been reiterated in addition to the development of renewable energy. For example, the central government emphasizes that the 14th Five-Year Plan period is a critical period for the promotion of a comprehensive green transition for the economy and society, and carbon reduction is a key strategic direction for the construction of an ecological civilization.[7] The government will strictly control the growth of coal consumption during the 14th Five-Year Plan period and subsequently reduce incremental coal consumption during the 15th Five-Year Plan period gradually.[8] Furthermore, the NDRC aims to limit the development of energy-intensive and high-emission industries.[9]

On 21 April, 2021, the Information Office of the State Council gave a news briefing on how the government plans to handle climate change. In the briefing the Department of Climate Change of the Ministry of Ecology and Environment (MEE) responded to public concerns, including:[10]

Q1 Will the *2030 Action Plan for CO_2 Peaking* take the total CO_2 emission control into consideration?

Answers: China will implement a mechanism with carbon intensity control as the mainstay and total carbon emission control as a supplement. At present, CO2 emissions in China are still in the growth stage, and the carbon intensity control can better balance economic and social development and emission reduction, as well as reflecting the efforts of emission reduction work in different regions. Therefore, the control over carbon intensity remain China's main control method before carbon emissions peak. Nevertheless, the government will consider how to better combine intensity control with total capacity control in the next step. For example, the currently promoted national carbon market can effectively play its role in total emissions control for high-emission industries.

Q2 In China's climate change policies, which industries will be prioritized for renovation, such as coal power, steel, or new energy vehicles?

Answers: China is going to focus on adjusting its industrial structure and eliminating high-emissions and low-efficiency production capacity. First, the role of coal power has been shifted from the main power source to a flexible power source to guarantee energy security. For China, keeping a certain amount of coal power is not only ensuring a basic living standard, but also providing a certain level of power grid security. This is to assist in the rapid development of renewable energy before the power grid reliability and energy storage technology has reached a certain level. Yet China will no longer develop coal power on a large scale, and new coal power plants will not always operate under full load, and their CO2emissions will be significantly reduced. In addition, the steel and metallurgical industries are considering the further use of new technologies to improve resource utilization efficiency and reduce CO2 and pollutant emissions. New energy vehicles will also maintain its sustained and rapid development momentum.

Q3 What is the importance and progress of China's climate change legislation?

Answers: In China, it is necessary to have a law for the climate change to facilitate the achievement of the 30-60 carbon targets. Therefore, the central government hopes to formulate a comprehensive and specialized legal instrument. Laws on renewable energy, pollution control, forestry, agriculture, and land in China's current legal system are also related to climate change, the government will also take the factors of climate change into account when further revising these laws.

Q4 How is China going to carry out the control over non-CO_2 greenhouse gas emission?

Answers: China will gradually extend the control of HFCs to control of all non-CO2greenhouse gases (GHG) including methane and nitrous oxide. This is also an important issue of the 14th Five-Year Plan. China has already carried out specific tasks such as reducing the use of agricultural fertilizers, promoting garbage classification, and building biogas facilities in rural areas. Next, China will further improve its emission monitoring, reporting, and evaluation system, increase the frequency of updating the emission inventory compilation to better follow up on the conditions and trends of emissions.

Development goals proposed in various energy related fields in the context of carbon neutrality as of April 2021

Overall	▪ Strive to achieve carbon peak by 2030 and achieve carbon neutrality by 2060 ▪ CO_2 emissions per unit of GDP in 2030 will be more than 65% lower than in 2005	[11] [12]
Energy	▪ By 2030, non-fossil energy in primary energy consumption to app. 25% ▪ Strictly control the growth of coal consumption during the 14th Five-Year Plan period and gradually decrease during the 15th Five-Year-Plan period	[12] [8]
Power	▪ By 2025, wind power and photovoltaic power generation accounts for about 16.5% of total electricity consumption* ▪ The operating nuclear power capacity to reach 70 GW in 2025 ▪ By 2030, the total installed capacity of wind power and photovoltaics will reach 1200 GW or more	[13] [14] [12]
Industry	▪ The steel industry carbon emissions peak in 2025, and decrease by 30% from the peak by 2023* ▪ The cement industry to achieve carbon peak by 2023*	[15] [16]
Transportation	▪ In 2025, the sales of new-energy vehicles to reach about 20% of the total sales of new cars ▪ New energy vehicles account for about 40% of total sales of new cars in 2030, and reach more than 50% in 2035* ▪ There will be 100,000 hydrogen vehicles in 2025, and about 1 million in 2030*	[17] [18] [18]
Building	▪ The building materials industry aims to achieve the carbon peak by 2025* ▪ In 2022, green buildings should account for 70% of new urban buildings	[16] [19]
Agriculture and Forestry	▪ In 2030, the amount of forest reserve should increase by 6 billion cubic meters compared to 2005 ▪ In 2025, the national forest coverage rate should reach 24.1%, and the forest reserve should reach 19 billion cubic meters; the grassland comprehensive vegetation coverage should reach 57%, the wetland protection rate should reach 55%, and 60% of the controllable desertified land should be treated*	[12] [20]
Non-CO_2	▪ Accept the "Montreal Protocol" Kigali Amendment to strengthen the control of non-carbon dioxide greenhouse gas emissions	[8]

*Note: Those marked with * are not officially issued by the government yet. They come from plans and policies being formulated by the government, technical roadmaps formulated by the government, and proposals put forward by social groups that are supervised and managed by government departments.*

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[8] "习近平在"领导人气候峰会"上的讲话（全文）," Xinhuanet, 22 April 2021, accessed at http://www.xinhuanet.com/politics/leaders/2021-04/22/c_1127363132.htm.

[9] "国家发展改革委环资司召开电视电话会议 部署落实坚决遏制"两高"项目盲目发展工作," Department of Environment and Resources of the National Development and Reform Commission, 30 April 2021, accessed at https://www.ndrc.gov.cn/fzggw/jgsj/hzs/sjdt/202104/t20210430_1279102_ext.html.

[10] "国新办举行中国应对气候变化工作进展情况吹风会," Information Office of the State Council, 27 April 2021, accessed at http://www.scio.gov.cn/xwfbh/xwbfbh/wqfbh/44687/45405/wz45407/Document/1702984/1702984.htm.

[11] "习近平在第七十五届联合国大会一般性辩论上发表重要讲话," Xinhua Net, 22 September 2020, accessed at http://www.gov.cn/xinwen/2020-09/22/content_5546168.htm.

[12] "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.

[13] "关于对《关于2021年风电、光伏发电开发建设有关事项的通知（征求意见稿）》公开征求意见的公告," National Energy Administration, 19 April 2021, accessed at http://www.nea.gov.cn/2021-04/19/c_139890241.htm.

[14] "中华人民共和国国民经济和社会发展第十四个五年规划和2035年远景目标纲要," State Council, 12 March 2021, accessed at http://www.gov.cn/xinwen/2021-03/13/content_5592681.htm.

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[16] "推进建筑材料行业碳达峰、碳中和行动倡议书," China Building Material Federation, 16 January 2021, accessed at http://www.cnggg.cn/news/shownews.php?lang=cn&id=229.

[17] "关于印发新能源汽车产业发展规划（2021—2035年）的通知, 国办发[2020]39号," State Council, 20 October 2020, accessed at http://www.gov.cn/zhengce/content/2020-11/02/content_5556716.htm.

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[19] "关于印发绿色建筑创建行动方案的通知, 建标[2020]65号," Ministry of Housing and Urban-Rural Development, National Development and Reform Commission, Ministry of Education, Ministry of Industry and information Technology, People's Bank of China, National Government Office Administration, Banking and Insurance Regulatory Commission, 15 July 2020, accessed at http://www.mohurd.gov.cn/wjfb/202007/t20200724_246492.html.

[20] "国家林草局：力争2025年全国森林覆盖率达到24.1%," National Forest and Grassland Administration, 17 December 2020, accessed at https://www.sohu.com/na/438793468_116237.

4. Policy monitoring

2021-04-30
https://www.ndrc.gov.cn/xxgk/zcfb/tz/202105/t20210507_1279341.html

NDRC unifies the pumped storage power price to interact with power markets

Suggestions to Further Improve the Formulation of Pumped-Storage Pricing Mechanism, NDRC Pricing [2021] No. 633

Since 2023, all pumped storage plants will adopt two-part pricing mechanism including capacity price and power price. The NDRC will determine the capacity price reflecting the value of providing ancillary services, whereas the cost of capacity price will be returned through charging power transmission and distribution (T&D) tariffs. Power price will include pumping price and on-grid tariff, showing the value of providing peak load shaving services, which will be determined through competitive methods. In spot power market regions, the power price will be determined through market transactions. For the rest of the regions, the pumping price will be 75% of local coal power baseline tariff or determined through tenders; while the on-grid tariff will be the local coal power baseline tariff.

2021-04-25
https://www.163.com/dy/article/G8K96T9G0511CVT1.html

NEA quantifies the requirements for the power generation-grid-load-storage integrated project

Notice on Submitting the Work Plan for Power Generation-Grid-Load-Storage Integrated Project and Multi-energy Integrated Project During the 14th Five-Year Plan Period

In February 2021, NEA issued a document encouraging the development of power generation-grid-load-storage integrated projects as well as multi-energy integrated projects at provincial, municipal and industrial park levels (cf. newsletter of **March 2021**). Now NEA has clarified the standard for key projects to be supported: power generation-grid-load-storage integrated projects should achieve a new energy consumption of minimum 200 GWh per year, and a new energy electricity consumption of min. 50% of total consumption; the multi-energy integrated project should achieve a new energy consumption of no less than 2 TWh per year. The provincial energy authority should formulate a specific work plan and submit it to the NEA by the end of May.

2021-04-21
http://www.chinaiol.com/News/Content/202104/21_28297.html

The MoF adds on 20 cities to carry out clean heating renovation

Announcement of the Results of the Competitive Appraisal of the Winter Clean Heating Project in the Northern China in 2021

The central government has identified 20 cities for clean heating renovation in 2021 through competitive bidding. The MoF will provide financial incentives for three consecutive years, including RMB 700 million per year for provincial capital cities and RMB 300 million per year for prefecture-level cities. The renovation includes: the replacement of coal with natural gas and electricity, and district heating projects by geothermal energy, biomass energy, solar energy, industrial exhaust heat, and coal that meet ultra-low emission standards. The total number of supported cities reaches 63, plus the cities included in the subsidy from 2017 to 2019.

2021-04-21
http://www.nea.gov.cn/2021-04/21/c_139896047.htm

The NDRC solicit opinions on energy storage development goals for 2030

Announcement on Public Consultation on Guidance on Accelerating the Development of New Energy Storage (Draft for Comments)

The policy is currently in the stage of soliciting opinions. The government will formulate a development plan for new-type energy storage technologies, clarifying the 14th Five-Year and medium and long-term goals and critical tasks. New-type energy storage refers to energy storage technologies other than pumped storage. By 2025, the new-type energy storage will to upgrade from initial commercialization to scaled-up development, aiming for the cumulative installed capacity to reach more than 30 GW, and for reaching breakthroughs in reducing costs, increasing reliability, and extending equipment life. It is necessary to establish a capacity price mechanism for energy storage stations on the grid side, and to promote the participation of energy storage facilities in the power market. At the same time, the NDRC will research to incorporate energy storage costs into the power transmission and distribution (T&D) pricing mechanism and continue to improve the peak-to-valley price mechanism to create more opportunities for user-side energy storage applications.

2021-04-14
http://www.nea.gov.cn/2021-04/14/c_139880250.htm

NEA will promote the use of geothermal energy

Announcement on Public Consultation of Opinions on Promoting the Development and Utilization of Geothermal Energy (Draft for Comments)

NEA clarifies that by 2025, the nationwide geothermal heating and cooling area will increase by 50% compared to 2020, and a batch of power generation demonstration projects will be built in areas with good resource conditions. At the same time, the national data and monitoring system as well as the local management process for geothermal energy development and utilization will be completed. By 2035, the area of geothermal heating and cooling will double that of 2025. Essential tasks include developing resource exploration, power generation demonstration projects, heating and cooling utilization modes for different geothermal resource grades, and "geothermal energy +" projects that integrate tourism, planting, and industry.

2021-04-02
http://www.gov.cn/zhengce/zhengceku/2021-04/22/content_5601284.htm

The government updates the scope of green bond support projects

Notice on Issuing the Catalogue of Green Bond Supported Projects (2021 Edition), PBC Development [2021] No.96

The government has updated the *Catalogue of Projects Supported by Green Bonds* released in 2015, redefining the scope of projects that can be supported. Green agriculture, green buildings, sustainable buildings, water resources conservation, and unconventional water use have been added to the field categories; support for green equipment manufacturing has been extended from the production side to related trade activities. To strengthen carbon reduction constraints and in line with international standards, coal and other low-emission fossil energy utilization projects have been removed, whereas carbon dioxide capture, utilization and storage, and clean heating projects in rural areas were added.