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# CHINA ENERGY POLICY NEWSLETTER

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Boosting Renewable Energy as Part of China's Energy Revolution

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## 1. China energy transition updates

### The 14th Five-Year Plan for energy system development released

On March 22, 2022, the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) jointly issued the *14th Five-Year Plan for Modern Energy System Development*, which clarified the key tasks for the development of China's energy sector from 2021 to 2025. It contains three key points: 1) To strengthen the security and stability of energy supply, and puts forward quantitative requirements for annual energy production capacity including oil and gas; 2) To promote the green and low-carbon transition of energy production and consumption, and the proportion of non-fossil energy in total primary energy consumption should reach 20% in 2025 and above 25% in 2030; 3) To improve the modernization level of the industrial chain, the investment in energy research and development will increase by more than 7% annually during the 14th Five-Year Plan period, aiming to accelerate the digitalization and intelligent upgrading of the industry to greatly improve the efficiency of the energy system.

In terms of marketization, the *Plan* clarifies that a power trading and dispatch mechanism which conducive to non-fossil power consumption should be formed to promote its participation in power markets; continue to carry out green power trading to highlight the environmental premium of new energy; guide the energy storage and demand-side resources to participate in power markets to improve system flexibility; explore non-fossil power sources to carry out inter-provincial point-to-point transactions to expand regional power system flexibility; clarify the price and market rules of the distributed power market to deal with the current development bottlenecks.<sup>1</sup>

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<sup>1</sup> “国家发展改革委 国家能源局关于印发《“十四五”现代能源体系规划》的通知,发改能源〔2022〕210号,” National Development and Reform Commission, National Energy Administration, 29 January 2022, accessed at [http://zfxgk.nea.gov.cn/2022-01/29/c\\_1310524241.htm](http://zfxgk.nea.gov.cn/2022-01/29/c_1310524241.htm).

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## The main development targets in the energy sector in 2025 and their completion in 2020

	Indicator	2025 Targets	2020 Completion
Carbon Emission	CO <sub>2</sub> /GDP	-18% (Compared with 2020)	-18.8% (Compared with 2015)
Energy Consumption	The share of non-fossil energy in total primary energy consumption	~20%	15.9%
	Energy consumption /GDP	-13.5% (Compared with 2020)	-14.5% (Compared with 2015)
	The share of electricity in total final energy consumption	~30%	~27%
	Electricity consumption per capita	~1000 kWh	~780 kWh
Energy Production	Total primary energy production	4.6 billion tce	4.1 billion tce
	Crude oil production	200 million tons	195 million tons
	Natural gas production	More than 230 billion cubic meters	193 billion cubic meters
	Oil and gas pipeline network scale	~ 210,000 kilometers	175,000 kilometers
Power Generation	The share of non-fossil fuel power generation	~39% <i>*Proposed for the first time</i>	33.8%
	The total installed power generation capacity	~3,000 GW	2,201 GW
	Phase out backward coal power capacity (including retired units)	30 GW (compared with 2020)	Above 20 GW (compared with 2015)
	Conventional installed hydropower capacity	~380 GW	336 GW
	Total installed nuclear power capacity	~70 GW	50 GW
Flexible Power Supply	The share of flexible power supply	~24%	-
	The cumulative capacity of coal power flexibility retrofit	Above 200 GW	58 GW (2019)
	Total installed pumped-hydro storage capacity	Above 62 GW	31 GW
	The total capacity of pumped-hydro storage under construction	~60 GW	-
	Demand-side response capacity	3%~5% of maximum power load	-
Grid	Transmission capacity of existing channels	+40 GW (Compared with 2020)	-
	New inter-provincial transmission channels under construction	Above 60 GW	-
	Average utilization hours of inter-provincial transmission channels	Over 4500 hours	-
	The proportion of renewable energy capacity in new transmission channels	No less than 50%	-
New energy vehicle	Share in new car sales	~20%	-

Source: National Development and Reform Commission (NDRC) and National Energy Administration (NEA), January 2022

## The 2035 roadmap for hydrogen industrial development is clear

On March 23, 2022, the NDRC and the NEA jointly issued the *Medium- and Long-term Development Plan for Hydrogen Energy Industry (2021-2035)*, which put forward the strategic positioning of hydrogen energy in the future, as well as the industrial development targets for 2025, 2030 and 2035. The hydrogen energy industry will be an important part of China's energy system, an important carrier for end-use side to achieve green and low-carbon transition, and a key developing direction of national strategic emerging industries. Its development will focus on three aspects: safety, greenness, and technological breakthroughs.

By adhering to the principle of "safety first", the government requires to strengthen the risk prevention and control of the entire industry chain of hydrogen energy production, storage, transportation, filling, and application. Besides, the development of hydrogen energy should be based on the premise of not adding new carbon emissions. At present, 80% of China's annual hydrogen production comes from coal and natural gas, and nearly 20% comes from industrial by-products. While in the future, hydrogen production from renewable energy (i.e. green hydrogen) will be the focus of its development. By 2025, the incremental hydrogen energy consumption should mainly be green hydrogen; by 2030, green hydrogen should be widely used; by 2035, the proportion of green hydrogen in total final energy consumption aims to increase significantly. Breakthroughs in core technologies are also the key. At present, China's hydrogen energy industry has obvious shortcomings in terms of technical level and infrastructure. Therefore, the pace of its development should not be too fast, and multi-dimensional factors such as industrial foundation, resource conditions, cost, and market space must be considered.

Key development targets for 2025-2035 include<sup>2</sup>:

- **2025** – Preliminarily establish a hydrogen power supply system based on nearby utilization of green hydrogen and industrial by-product hydrogen, green hydrogen production to reach 100,000-200,000 tons per year, and ownership of hydrogen fuel cell vehicles to be about 50,000
- **2030** – Form a relatively complete clean energy based hydrogen production and application system and technology innovation system
- **2035** – Build a multi-functional hydrogen power application system covering transportation, energy storage, industry, and other fields

## NEA sets key tasks in the energy sector in 2022

On March 29, 2022, the NEA issued the *Guiding Opinions on Energy Sector Tasks in 2022*, which proposed a series of key targets and measures for security of supply, structural reform, and efficiency improvement.<sup>3</sup>

- **Enhancing energy supply capability** - the total primary energy production to reach about 4.41 billion tce, crude oil production to reach 200 million tons, natural gas production to reach 214 billion cubic meters; the total installed power capacity aims to achieve 2,600 GW, and power generation to reach about 9,070 TWh; newly added power generation capacity for peak load periods to be above 80 GW, and the power transmission capacity of *West-to-East Power Transmission* to reach about 290 GW
- **Steadily promote the structural transformation** - the proportion of non-fossil energy in total primary energy consumption to increase to about 17.3%, and the proportion of coal will steadily decline; wind power and solar PV is expected to account for about 12.2% of the total electricity consumption; power substitution program may increase the annual electricity consumption by about 180 TWh

<sup>2</sup> “《氢能产业发展中长期规划（2021-2035年）》,” National Energy Administration, 23 March 2022, accessed at [http://zfxgk.nea.gov.cn/2022-03/23/c\\_1310525630.htm](http://zfxgk.nea.gov.cn/2022-03/23/c_1310525630.htm); “一图读懂 | 氢能产业发展中长期规划（2021-2035年）,” National Energy Administration, 23 March 2022, accessed at [http://www.nea.gov.cn/2022-03/23/c\\_1310525887.htm](http://www.nea.gov.cn/2022-03/23/c_1310525887.htm); “国家发改委专题介绍“氢能中长期规划”,” National Development and Reform Commission, 23 March 2022, accessed at <https://baijiahao.baidu.com/s?id=1728137366208262498&wfr=spider&for=pc>.

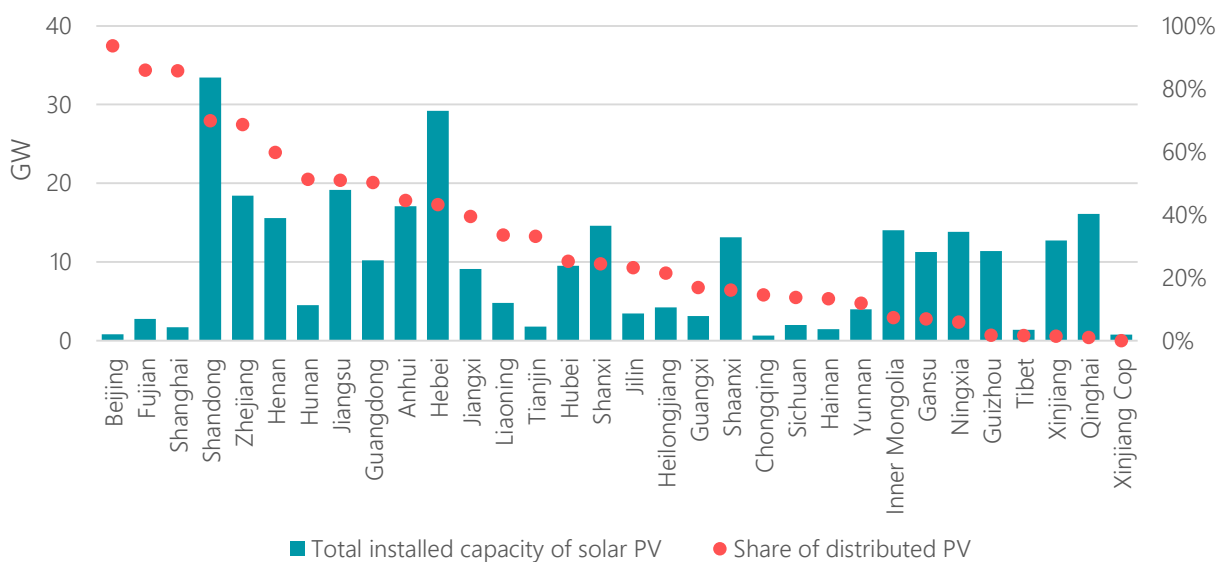
<sup>3</sup> “国家能源局关于印发《2022年能源工作指导意见》的通知, 国能发规划〔2022〕31号,” National Energy Administration, 17 March 2022, accessed at [http://zfxgk.nea.gov.cn/2022-03/17/c\\_1310534134.htm](http://zfxgk.nea.gov.cn/2022-03/17/c_1310534134.htm).

- **Efforts to improve energy efficiency** - the energy intensity target will be considered in the 14th Five-Year Plan period with appropriate flexibility; the utilization efficiency of wind power and solar PV power generation aims to continue to maintain a reasonable level, and the average utilization hours of cross-regional transmission channels will also be within a reasonable range

## Wind power and solar PV development continued to shift to the southeast in 2021

In 2021, the cumulative installed capacity of wind power reached 328 GW, of which the proportion of central and eastern regions in newly installed capacity and cumulative installed capacity both increased, mainly referring to offshore wind power projects. The layout of wind power projects has been further optimized nationwide. The cumulative installed capacity of solar PV reached 306 GW and the proportion of newly installed capacity of distributed solar PV exceeded 50% for the first time, among which the expansion of household PVs was the most rapid, with a year-on-year increase of 113.8%. In 2021, the cumulative installed capacity of household PV reached 42 GW, accounting for 38.7% of the total installed capacity of distributed solar PV.<sup>4</sup> In terms of different regions, Shandong and Hebei have the most installed solar PV capacity, with the share of distributed projects reaching 69.8% and 43.2% respectively, both higher than the national average of 35.1%.<sup>5</sup>

The total installed capacity of solar PV and share of distributed PV by province



Source: NEA, March 2022

## The wind and solar curtailment have been effectively controlled in 2021

In 2021, the national average wind curtailment rate was 3.1% and the solar curtailment rate was 1.8%, both lower than the control target of 5%. Regionally, although Xinjiang and Tibet still saw some wind and solar consumption problems respectively, and Inner Mongolia showed a slightly increase in both wind and solar curtailment rates, the overall renewable power consumption conditions have been improved in these provinces mainly due to the tight power supply and high coal cost in the second of 2021. The only exceptional province is Qinghai whose curtailment issues became severe in 2021. This is because the operating conditions of the Qinghai- to-Henan inter-regional power transmission line no longer meet the power export requirements after a large number of local new wind power and solar PV projects connected to the grid at the end of 2020.<sup>6</sup>

<sup>4</sup> "2021年四季度全国新能源电力消纳评估分析," New Energy Consumption Monitoring and Warning Centre, 14 March 2022, accessed at <https://www.163.com/dy/article/H2EURJH30511CVT1.html>.

<sup>5</sup> "2021年光伏发电建设运行情况," National Energy Administration, 9 March 2022, accessed at [http://www.nea.gov.cn/2022-03/09/c\\_1310508114.htm](http://www.nea.gov.cn/2022-03/09/c_1310508114.htm).

<sup>6</sup> "2021年四季度全国新能源电力消纳评估分析," New Energy Consumption Monitoring and Warning Centre, 14 March 2022, accessed at <https://www.163.com/dy/article/H2EURJH30511CVT1.html>.

## Wind and solar curtailment rates by the province in 2021

Region	Province	Wind curtailment	Solar curtailment	Region	Province	Wind curtailment	Solar curtailment
North	West Inner Mongolia	8.9%	3.5%	Tibet		-	19.8%
	East Inner Mongolia	2.4%	0.6%	Central	Henan	1.7%	0.1%
	Shanxi	2.5%	0.9%		Hubei	-	-
	Hebei	4.6%	1.8%		Hunan	1.0%	-
	Tianjin	-	-		Chongqing	-	-
	Beijing	-	-		Jiangxi	0.1%	-
	Shandong	1.5%	0.9%		Sichuan	-	-
Northwest	Xinjiang	7.3%	1.7%	East	Jiangsu	-	-
	Shaanxi	2.3%	2.0%		Anhui	-	-
	Ningxia	2.4%	2.5%		Zhejiang	-	-
	Gansu	4.1%	1.5%		Fujian	-	-
	Qinghai	10.7%	13.8%		Shanghai	-	-
Northeast	Liaoning	2.0%	0.4%	South	Guangdong	-	-
	Heilongjiang	1.9%	0.4%		Guangxi	-	-
	Jilin	2.9%	1.1%		Hainan	-	-
					Guizhou	0.5%	0.4%
					Yunnan	0.1%	0.2%

Source: New Energy Consumption Monitoring and Warning Centre (NECMWC), March 2022

## CMA released the first short-term forecast product for wind and solar power

Accurate weather forecasting is one of the key elements to improve the utilization rate of wind and solar resources. The products issued by the China Meteorological Administration (CMA) this time cover the high-precision meteorological elements that wind power and solar PV power generation forecasts require, including temperature and humidity at 70 meters and 100 meters, as well as indicators such as short-wave radiation, ground pressure, and precipitation. The product covers the entire land area of China, with a forecast frequency of once a day, a temporal resolution of 15 minutes, and a spatial resolution of 9 kilometers. The product has been piloted in Jilin from 2021, and will undertake business such as single-station, regional, and medium and long-term power generation forecasting in Jilin during the 14th Five-Year Plan period. This product will provide core technical support for the future development of national and provincial wind and solar forecasting services in China.<sup>7</sup>

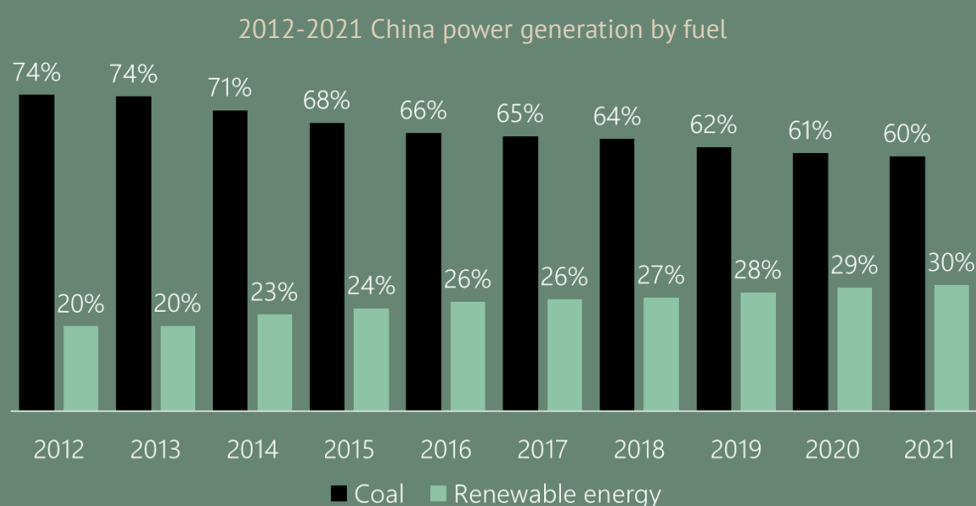
<sup>7</sup> "中国气象局首次下发风能太阳能短期预报产品," China Meteorological Administration, 16 March 2022, accessed at <https://baijiahao.baidu.com/s?id=1727384951595751549&wfr=spider&for=pc>.

## 2. Coal policy revolution - Improving the linkage mechanism of China's coal price, coal power price and end-use electricity price

In 2021, China's power industry has witnessed many challenges such as tight supply, short-term power rationing, and loss in the coal power industry. In particular, more than 20 provinces have adopted measures for orderly consumption of electricity from September to October, and some areas have experienced short-term power supply restrictions (for cause analysis, please refer to the October 2021 newsletter). In the context of the 30-60 carbon peaking and carbon neutrality targets, these events once again show us the role of coal power in ensuring power supply in China and also put forward practical problems such as soaring coal prices and imperfect cost transmission mechanisms that lead to the loss of coal power enterprises. To this end, the National Development and Reform Commission (NDRC) issued Document No. 1439<sup>8</sup> and Document No. 303<sup>9</sup> in October 2021 and February 2022 respectively. These two policy documents aim to make coal power enterprises assume social responsibilities and complete supply guarantees while solving the problem of cost transmission to alleviate operational pressure.



*Coal power is still the main source of power supply in China, whose proportion in power generation is decreasing year by year, yet reach 60.0% in 2021.*



Source: China Electricity Council (CEC) and National Energy Administration (NEA), accessed in March 2022

### 01 | Problem: Power supply security vs. operating loss

To cope with the dilemma of tight power supply during last winter, the government required state-owned coal-fired power enterprises to increase the number of operating units and overall power output during peak-load periods. The coal power companies headed by the five major power generation groups<sup>10</sup> responded immediately, and the power rationing problem was resolved within two months. In 2021, the coal power utilization hours nationwide reached 4,568 hours, a year-on-year increase of 263 hours.<sup>11</sup> However, coal power enterprises have paid a huge economic price for this, 15 of the 20 listed coal power enterprises had a net loss in 2021, with a total loss of RMB 32~50 billion. Among the big-five groups, Huaneng Group had the largest amount of loss of RMB 9.8~11.7 billion; Datang Group had the largest proportion of loss of 400%-450%.

This is mainly due to the sharp rise in coal prices in the second half of last year. The coal price (when going into the furnace) reached nearly 1,000 RMB/tce, an increase of about 50% year-on-year, and the procurement cost of coal power enterprises across the country increased by about RMB 600 billion. However, the coal power feed-in tariffs (FiTs) have not been raised synchronously, which has led to a serious inversion between the cost of fuel and the cost of power generation and heating.<sup>12</sup> At the same time, the NDRC has made it clear that during the 14th Five-Year Plan period, coal power units will continue to be retrofitted for energy-saving, flexible operation, and heat supply, thus coal power enterprises are facing greater operational pressure.<sup>13</sup>

### 02 | Solution 1: Enhance coal cost transmission

The issuing of Document No. 1439 (2021) and Document No. 303 (2022) released a clear policy signal, teasing out a clear and reasonable cost transmission mechanism. Document No. 303 (2022) aims to strengthen the transmission of coal costs to the coal power FiTs, and Document No. 1439 (2021) aims to further transmit this cost to end-users and achieve the linkage between the three prices.



## Coal price vs. coal power FiTs *(Document No. 303 (2022) – effective from May 1, 2022)*

- a) Currently, China's medium- and long-term coal price adopts the pricing mechanism of "base price + floating price", the government will raise the base price (5500 kcal thermal coal) from 535 RMB/ton to 675 RMB/ton, an increase of 26%; the floating price range will be adjusted from 470-600 RMB/ton to 570-770 RMB/ton, an increase of 21%-28%. The government also stipulates a reasonable range for medium- and long-term coal prices (when mining up) in the four major coal-producing areas, giving the market clearer and more stable price expectations.
- b) The government encourages the establishment of terms linked to the medium- and long-term coal price in medium- and long-term coal power FiTs. At present, China's coal price and coal power FiTs are both range prices, which means that **the price elasticity of coal power can be increased by employing range-and-range price linkage**, and coal power enterprises can better transmit fuel costs and ensure profits.
- c) Further enhance the government's dispatchable coal reserves, improve the reserve adjustment mechanism, and stabilize the balance of supply and demand.
- d) Formulate an intervention system for coal price and coal power FiTs; when coal price and coal power FiTs are within a reasonable range, improper intervention is strictly prohibited, with a special strengthening in the anti-monopoly supervision of the spot market; when the price exceeds a reasonable range, the government will guide them to return according to the *Price Law*.

In March 2022, the NDRC issued a document reaffirming the importance of signing medium- and long-term coal contracts, requiring that the number of medium- and long-term contracts signed by coal enterprises this year should cover more than 80% of their coal resources, and the medium and long-term contracts should achieve full coverage of the annual coal use of power generation and heating enterprises, aiming **to ensure the supply of coal for power generation and heating**.<sup>14</sup>

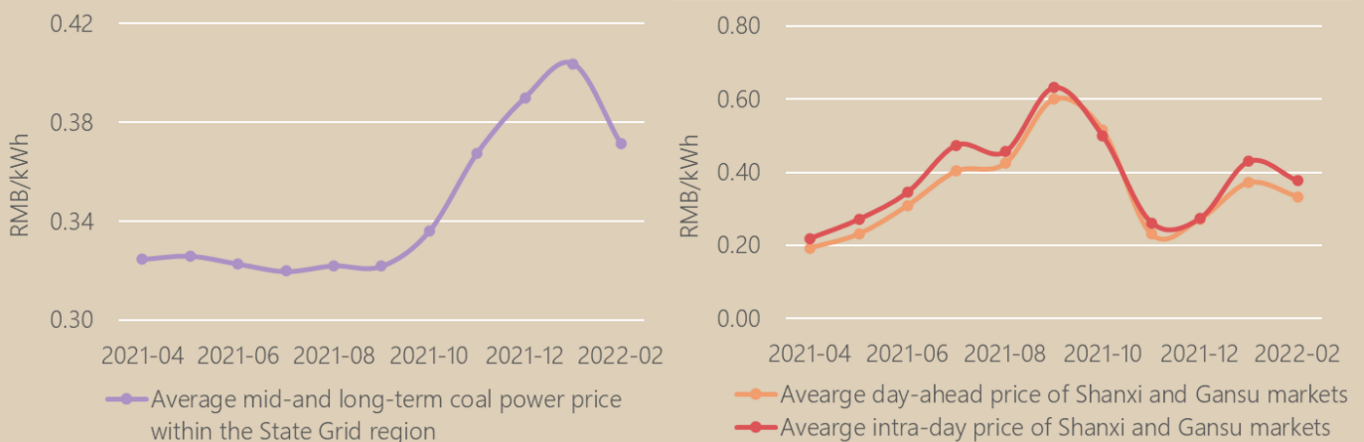
## Coal power FiTs vs. end-use electricity prices *(Document No. 1439 (2021) – effective since October 15, 2021)*

- a) Full amount of coal power generation is priced through market-based transactions, while the current ratio is 70%.
- b) All industrial and commercial users above 10kV must participate in market-based transactions, currently 44%.
- c) Currently, the coal power FiTs in China are formed within the specified range of "base price + floating price", and the present base price by province is 0.25~0.45 RMB/tce<sup>15</sup>; the floating price is adjusted from +10%/-15% to +20% /-20%, no upper limit for energy-intensive enterprises, and no upper and lower limit for spot market transaction prices.
- d) To protect people's livelihood, agricultural and residential electricity prices are still determined by the NDRC and local DRCs.



*After the adjustment of the pricing mechanism, the mid-and long-term coal power price has reached the expectation of rising by 20%, and the price transmission from coal fuel to coal power has been initially achieved. The spot power market prices rise first and then fall, which reflects the dynamic change in the cost of coal power generation.*

The mid-and long-term coal power price and spot power market prices from April 2021 to February 2022



## Solution 2: Improve the coal pricing mechanism

After clarifying the coal cost transmission mechanism, the rationality and flexibility of the source price, that is, the coal pricing mechanism, becomes more important. In December 2021, the NDRC proposed to further optimize the coal price calculation method in the *Work Plan for Signing and Performance of Medium and Long-term Coal Contracts in 2022 (draft for comments)*.<sup>16</sup> Under the coal pricing mechanism of "base price + floating price", the reference index for the calculation of floating price is expected to increase from three<sup>17</sup> to four, adding the comprehensive price index of the National Coal Exchange. The last monthly price of the four indices will be selected to determine the reference index with a weight of 25% each. When the reference index increases or decreases 1 RMB/tce compared to the base price, the floating price in the next month will fluctuate by 0.5 RMB/tce accordingly, which means that **the medium- and long-term coal price fluctuations are more gentle than market fluctuations**.

## 03 | Next step: policy implementation

The government has announced that no new coal power projects purely for power generation will be built in China in the future<sup>18</sup>, but it has also made it clear that the exit of conventional energy sources must be based on safe and reliable new energy alternatives<sup>19</sup>. This means that **coal power will experience an increase in installed capacity but a decrease in the proportion of power generation during the 14th Five-Year Plan period, and its role will gradually transform from a fundamental power source to a power system flexibility provider**. Thus, the ensuring of profitability will be an important issue for coal power enterprises. The above policy documents have put forward the development direction and principles of the future coal and coal power pricing mechanism, while how to design and implement the specific mechanism will be the key to achieving the policy targets. For example, the coal- and coal power range-and-range price linkage plan, the government's price intervention toolbox, and strengthening corporate capacity building and cultivating financial derivatives to hedge the risk of price fluctuations.

## References

- <sup>8</sup> The Notice on Further Deepening the Marketization Reform of Coal Power Feed-in Tariff Mechanism, NDRC Pricing Regulation [2021] No. 1455. "国家发展改革委关于进一步深化燃煤发电上网电价市场化改革的通知, 发改价格〔2021〕1439号," National Development and Reform Commission, 11 October 2021, accessed at [https://www.ndrc.gov.cn/xxgk/zcfb/tz/202110/t20211012\\_1299461.html?code=&state=123](https://www.ndrc.gov.cn/xxgk/zcfb/tz/202110/t20211012_1299461.html?code=&state=123).
- <sup>9</sup> The Notice on Further Improving the Coal Market Price Formation Mechanism, NDRC Pricing [2022] No. 303. "国家发展改革委关于进一步完善煤炭市场价格形成机制的通知, 发改价格〔2022〕303号," National Development and Reform Commission, 24 February 2022, accessed at [https://www.ndrc.gov.cn/xxgk/zcfb/tz/202202/t20220225\\_1317003\\_ext.html](https://www.ndrc.gov.cn/xxgk/zcfb/tz/202202/t20220225_1317003_ext.html).
- <sup>10</sup> China Huaneng Group Co., Ltd, State Power Investment Corporation Limited, China Datang Corporation Ltd, China Energy Investment Corporation, China Huadian Corporation LTD.
- <sup>11</sup> "中电联发布《2021-2022年度全国电力供需形势分析预测报告》," China Electricity Council, 27 January 2022, accessed at <https://cec.org.cn/detail/index.html?3-306171>.
- <sup>12</sup> "五大电力上市公司去年或亏损400亿," eastmoney.com, 29 January 2022, accessed at <https://baijiahao.baidu.com/s?id=1723291553871664908&wfr=spider&for=pc>.
- <sup>13</sup> "国家发展改革委 国家能源局关于开展全国煤电机组改造升级的通知, 发改运行〔2021〕1519号," National Development and Reform Commission, National Energy Administration, 29 October 2021, accessed at [https://www.ndrc.gov.cn/xxgk/zcfb/tz/202111/t20211103\\_1302856.html?code=&state=123](https://www.ndrc.gov.cn/xxgk/zcfb/tz/202111/t20211103_1302856.html?code=&state=123).
- <sup>14</sup> "国家发展改革委部署开展煤炭中长期合同签订履约专项核查," National Development and Reform Commission, 18 March 2022, accessed at [https://www.ndrc.gov.cn/fggz/202203/t20220318\\_1319503.html?code=&state=123](https://www.ndrc.gov.cn/fggz/202203/t20220318_1319503.html?code=&state=123).
- <sup>15</sup> The price is determined based on the original base price of coal at 535 RMB/ton.
- <sup>16</sup> "2022年煤炭中长期合同签订履约工作方案(征求意见稿)," National Development and Reform Commission, 3 December 2021, accessed at <http://www.fert.cn/news/2021/12/09/4640854974.shtml>.
- <sup>17</sup> Bohai-Rim Steam-Coal Price Index, CCTD Qinhuangdao Port Coal Index, and China Coastal Electricity Coal Index.
- <sup>18</sup> "国家能源局:原则上不再新建单纯以发电为目的的煤电项目," National Energy Administration, 28 February 2022, accessed at <https://news.bjx.com.cn/html/20220228/1206838.shtml>.
- <sup>19</sup> "中央经济工作会议在北京举行," People's Daily, 11 December 2021, accessed at <https://baijiahao.baidu.com/s?id=1718796452871970577&wfr=spider&for=pc>.



### 3. Policy monitoring

2022-03-16

[https://www.ndrc.gov.cn/xxgk/zcfb/tz/202203/t20220328\\_1320629.html?code=&state=123](https://www.ndrc.gov.cn/xxgk/zcfb/tz/202203/t20220328_1320629.html?code=&state=123)

#### NDRC released a new development proposal on the Belt and Road Initiative

*Opinions on Promoting the Green Development of the Belt and Road Initiative, NDRC Opening-up [2022] No.408*

China will completely stop the construction of new coal power projects overseas, and the projects under construction will be continue with cautious considerations. The government encourages coal power projects in operation to improve operational efficiency and reduce emissions by adopting high-efficiency desulfurization, denitration, dedusting, and CCUS technologies. The development of wind power and solar PV projects will be the main focus in the future, and China will carry out joint research and training on high-efficiency and low-cost renewable power generation, advanced nuclear power, smart grid, hydrogen energy, and CCUS with the Belt and Road countries.

2022-03-04

<https://www.chplaza.net/article-8448-1.html>

#### NDRC requires to increase electrification rates in key sections

*Opinions on Further Promoting the Electricity Substitution Program, NDRC Energy [2022] No.353*

By 2025, the proportion of electricity aims to account for 30% of the total final energy consumption in China. To this end, the government requires the use of electric furnace to replace fossil fuel furnace in energy-intensive industries, and the construction of green microgrids based on wind and solar power, energy storage, and heat pumps; priority to use of new energy vehicles in the field of public transportation, and expand the demonstrative application of green shipping; encourage the electrification of public buildings and the use of electric heating equipment in areas that cannot be covered by district heating system; to popularize electric irrigation and to improve the substitution of electricity for planting, animal husbandry, and aquaculture in rural areas. The government also requires to improve the electricity price mechanism, such as guiding electricity replacement projects with energy storage characteristics to participate in peak shaving, and optimizing the time-of-use electricity price policy for clean heating.

2022-03-02

<https://chuneng.bjx.com.cn/news/20220310/1209161.shtml>

#### NEA conducts planning study for renewable energy development in river basins

*Notice on Matters of the Research Work on the Integrated Planning of Renewable Energy in Major River Basins Across the Country*

The government plans to carry out integrated development of renewable energy in seven major river basins. This refers to the reasonable construction of a certain scale of new energy power generation projects mainly based on wind power and solar PV, relying on the hydropower resources, hydropower regulation capacity, and thermal power regulation capacity with the river basins as the boundary. In the next step, the government will carry out relevant planning and research, with the focus of the seven major river basins that possess technically developable hydropower resources of above 2 GW. These areas already have a good foundation for hydropower and thermal power development, can build pumped-hydro storage plants and are with better wind and solar power resources.

2022-03-01

[http://www.gov.cn/zhengce/zhengceku/2022-03/12/content\\_5678698.htm](http://www.gov.cn/zhengce/zhengceku/2022-03/12/content_5678698.htm)

## MoHURD promotes the application of BIPV

*Notice on Issuing the 14th Five-Year Plan for Energy Saving of Buildings and Green Building Development, MoHURD Standard [2022] No.24*

During the 14th Five-Year Plan period, the national target is to add more than 50 GW of Building Integrated PV (BIPV). Coordinate the building application of solar PV and solar thermal systems based on solar energy resources, building conditions, and energy demand. Carry out regional distributed solar PV demonstrations with intelligent solar PV system as the core and energy storage and building power demand response as the carrier. Encourage the government to invest in public welfare buildings to strengthen the application of solar PV; promote solar thermal technology in public buildings with stable hot water demand; promote passive solar houses in rural areas.

### Main indicative targets of the 14th Five-Year Plan period

Major Indicators	2025
Area of energy-saving renovation for existing buildings (million square meters)	350
Construction area of ultra-low energy consumption and near-zero energy consumption building (million square meters)	50
The proportion of prefabricated buildings in new urban buildings	30%
Newly added installed capacity of BIPV (GW)	50
Newly added building application area of geothermal energy (million square meters)	100
The replacement rate of renewable energy substitution in urban buildings	8%
The proportion of electricity consumption in building energy consumption	55%