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CHINA ENERGY POLICY

NEWSLETTER

China Energy Transformation Programme

1. China energy transition updates

MEE releases the 2025 air pollution prevention and control action plan

In addition to reducing carbon emissions, the prevention and control of air pollution are also one of the long-term priorities of the Chinese government. In 2013 and 2018, the State Council issued the *Action Plan for Prevention and Control of Air Pollution* and the *Three-Year Action Plan to Fight Air Pollution*, respectively, and proposed to focus on the Beijing-Tianjin-Hebei region, the Yangtze River Delta, the Pearl River Delta, and the Fenwei Plain, and put forward emission reduction requirements for major air pollutants such as PM2.5, sulfur dioxide, nitrogen oxides, and ozone. In February 2021, the Ministry of Ecology and Environment (MEE) announced that the goals of the *Action Plans* had been achieved.

In November 2022, 15 departments including the MEE, jointly issued the *Action Plans for the Elimination of Heavily Polluted Weather, the Prevention and Control of Ozone Pollution, and the Control of Diesel Trucks*. The new *Action Plan* contain three action plans, respectively proposing control plans for heavily polluted weather (air pollution index >300), ozone pollution, and pollution from diesel trucks, which are the three key issues that need to be addressed in the 14th Five-Year Plan period to improve air quality.[1]

[1] "关于印发《深入打好重污染天气消除、臭氧污染防治和柴油货车污染治理攻坚战行动方案》的通知, 环大气〔2022〕68号," Ministry of Ecology and Environment et al, 10 November 2022, accessed at https://www.mee.gov.cn/xxgk2018/xxgk/xxgk03/202211/t20221116_1005042.html; "生态环境部大气环境司有关负责人就《深入打好重污染天气消除、臭氧污染防治和柴油货车污染治理攻坚战行动方案》答记者问，" Ministry of Ecology and Environment, 17 November 2022, accessed at https://baijiahao.baidu.com/s?id=1749751329802482901&wfr=spider&for=pc.

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Summary of the key targets of the three *Action Plans*

Name of Document	2025 Key Targets	Key Pollutants	Key Sectors	Key Regions
Action Plan for Elimination of Heavy Pollution Weather	▪ The proportion of days with heavy and above pollution (air pollution index >300) in the country to be less than 1% ▪ Zero days of heavy pollution in more than 70% of cities at the level of the prefecture and above ▪ Reduce the days of heavy pollution caused by human factors in key areas by more than 30%	PM2.5	▪ Industry ▪ Residential heating ▪ Diesel truck ▪ Straw burning	Beijing-Tianjin-Hebei and surrounding areas, Fenwei Plain, Northeast China, and urban agglomerations on the northern slope of Tianshan Mountain in Xinjiang
Action Plan for Ozone Pollution Prevention and Control	▪ The proportion of days with good air quality (air pollution index <100) across the country reached 87.5% ▪ The total emissions of VOCs and nitrogen oxides will be reduced by more than 10% respectively compared with 2020	PM2.5, VOCs, nitrogen oxides	▪ Substitution of raw and auxiliary materials containing VOCs ▪ VOCs treatment in industry and oil product storage, transportation, and sales ▪ Nitrogen oxide emission reduction from boilers, furnaces, and mobile sources	Beijing-Tianjin-Hebei and surrounding area, Yangtze River Delta, Fenwei Plain
Action Plan for Diesel Truck Pollution Control	▪ Diesel truck emissions inspection pass rate to exceed 90% nationwide ▪ National diesel truck NO_x emissions to drop by 12% ▪ The proportion of trucks with new energy and National VI emission standards to exceed 40% ▪ The proportion of railway freight volume to increase by 0.5 percentage points	Adjustment of transportation structure, clean fuel replacement of vehicles and ships, improvement of fuel quality (i.e. less nitrogen oxide emissions)	▪ Transportation channels for coking coal, coke, and ore ▪ Transportation channels for iron ore to harbours	Beijing-Tianjin-Hebei and surrounding areas, Yangtze River Delta, Fenwei Plain, central and cities of western Inner Mongolia

Source: Ministry of Ecology and Environment (MEE)

The government further clarifies the total energy consumption control regulations

In December 2021, the State Council made it clear in the *14th Five-Year Plan for Energy Conservation and Emission Reduction* that the incremental renewable energy power consumption during the 14th Five-Year Plan period will not be included in the assessment of total local energy consumption.[2] In November 2022, the National Development and Reform Commission (NDRC), the National Bureau of Statistics (NBS), and the National Energy Administration (NEA) jointly issued a document to define the scope of the application accurately. Currently, renewable energy mainly includes wind power, solar power, hydropower, biomass power, and geothermal power. Taking each region's 2020 renewable energy power consumption as the base, the annual increase in renewable energy power consumption during the 14th Five-Year Plan period compared with the previous year shall be deducted from the national and local energy consumption assessments.[3]

At the same time, the green certificate shall be used as the basic certificate for the identification of renewable energy power consumption. It implies that besides wind power and solar PV, other renewable energy power generators are also be able to receive green certificates, which is expected boost the green certificate market in the future. A green certificate can show the unique environmental identity of renewable power generation as it consists batches of information such as the name of the specific project and the power generation period.

Development of Green Certificate Mechanism

In July 2017, China launched a voluntary subscription system for green certificates, issuing a green certificate for every 1 MWh of wind power and solar PV power on-grid electricity. After the green certificate is subscribed, power generation projects will no longer be granted feed-in tariff subsidies by the central government. In 2019, as wind power and solar PV projects enter the subsidy-free era, parity projects can also obtain additional income by selling green certificates. In 2021, China launched the green certificate transaction under the mandatory renewable energy power consumption mechanism, that is, each province needs to have a certain proportion of renewable energy in its annual electricity consumption, and the responsible party can supplement to complete the consumption target by purchasing green certificates, which effectively stimulates the green certificate market transaction volume. In 2021, the transaction volume of green certificates for wind power and solar PV accounted for 57% and 43% respectively, and the transaction volume of parity projects accounted for 84%.[4]

Green certificate transaction volume and transaction price in 2021

	Transaction volume (No. of certificates)		Average Price (RMB/certificate)	
	Subsidised project	Parity project	Subsidised project	Parity project
Wind power	3,737	9,444	193.3	50.02
Solar PV	15	9,952	649.9	50.02

Source: www.greenenergy.org.cn

[2] "国务院关于印发"十四五"节能减排综合工作方案的通知, 国发〔2021〕33号," State Council, 28 December 2021, accessed at http://www.gov.cn/zhengce/content/2022-01/24/content_5670202.htm.

[3] "国家发展改革委 国家统计局 国家能源局关于进一步做好新增可再生能源消费不纳入能源消费总量控制有关工作的通知, 发改运行〔2022〕1258号" National Development and Reform Commission, National Bureau of Statistics, National Energy Administration, 16 November 2022, accessed at https://www.ndrc.gov.cn/xwdt/tzgg/202211/t20221116_1341324_ext.html.

[4] "INTERACTIONS BETWEEN CARBON MARKETS, GREEN CERTIFICATE TRADING AND GREEN POWER TRADING IN CHINA," Sino-German Cooperation on Biodiversity, Climate and Environment, 5 July 2022, accessed at https://climatecooperation.cn/climate/interactions-between-carbon-markets-green-certificate-trading-and-green-power-trading-in-china/.

2. Overview of the *Spot Power Market Rules (Draft)*

Since 2017, China has established 14 provincial spot power markets, 5 of which have entered the stage of long-term settlement trial operation (see the CET website for details). In July 2022, the southern regional power market was launched, which includes the first regional spot power market in China (see the August 2022 newsletter for details). According to the statistics of the China Electricity Council (CEC), from January to October this year, the transaction volume of power markets nationwide increased by 43.3% year-on-year, accounting for 60.1% of the total electricity consumption, of which more than 80% is medium and long-term transactions [5], which means the current spot trading volume of electricity is still very limited.

On November 25, the National Energy Administration (NEA) issued two important documents for the construction of the spot power market to solicit public opinion, *Basic Rules of the Spot Power Market (Draft for Comment)* (hereinafter referred to as the *Rules*) and *Supervising Measures of the Spot Power Market (Draft for Comment)* (hereinafter referred to as the *Supervising Measures*).[6] This may effectively increase the spot transaction volume, and at the same time, promote the construction of the spot power market from the pilot to the whole country. The *Rules* put forward the short-term, medium-term, and long-term construction plans of the spot power market, and clarified the composition, participants, price mechanism, settlement mechanism, and other rules of the spot power market. The *Supervising Measures* clarified that the NEA and its dispatched agencies, relevant departments of the State Council, and provincial governments and their relevant departments would implement the supervision of the spot power market.

It is noted that both documents apply to centralised provincial and regional spot power markets. The core concept of the centralised market is to deeply combine the economics of power trading with the security of the power grid, that is, the market-clearing price in the day-ahead market not only reflects the balance of supply and demand but also takes the constraints of grid congestion into concern. Therefore, the day-ahead price of the centralised spot power market is closer to the real-time market price.[7]

The construction steps of the spot power market are clear

According to the construction path of the spot power market proposed by the *Rules*, in the short term, the construction of provincial, inter-provincial and regional markets will be the key task. Adhering to the principle of a unified market and coordinated operation, the government will gradually promote the integration of the three types of markets. The *Rules* require strengthening the connection between the spot power market and the medium and long-term contracts, the ancillary service market, and the capacity compensation mechanism of being reserves. For example, the *Rules* requires that medium and long-term contracts in areas where the spot power market operates should adopt time-of-use electricity and time-of-use prices; if the spot power market meets the system's peak-shaving needs, no similar ancillary service products will be set up; to explore a market-oriented capacity compensation mechanism combined with actual needs. The *Rules* also emphasis the connection between the spot power market and the existing new energy guarantee policies, aiming to promote the smooth transition of new energy power generation from planned acquisitions to market-oriented competition.

In the medium and long term, the key tasks include promoting the transition of provincial and regional markets to a unified national power market system. The *Rules* require further improvement of the spot power market, medium and long-term contracts and ancillary service market. The **spot power market** focuses on expanding the scope of participation of emerging market entities such as energy storage and virtual power plants (VPP), and shortening the intraday and real-time trading units; the **medium and long-term contract transactions** to fully release power generation and consumption plans, and explore derivative transactions such as power futures and transmission rights; the **ancillary service market** mainly explores new types of products such as ramp-up services and promotes the sharing of ancillary service resources in a broader range.

Basic Rules of Spot Power Market

- **Market composition**: Generally, it includes the day-ahead, intraday, and real-time markets, and each region can choose the actual composition according to the real situation;
- **Market players**: In addition to power generation enterprises, power users, and power retailers, it also includes energy storage, distributed power generation, load aggregators, virtual power plants (VPPs), and new energy microgrids, which means that these emerging market players can independently participate in the power market transactions;
- **Price mechanism**: When the spot power market is cleared, the unified marginal price in the market is used as the system electricity price, distinguishing between nodes or price zones is not necessary;
- **Price limit mechanism**: The price upper limit and lower limit (i.e. first-level price limit) should be set for spot electricity and ancillary service transactions, and the second-level price limit (i.e. lower than the first-level price limit) can also be placed in the spot electricity transactions; when the market price exceeds the first-level limit price for a certain number of hours in a row, the second-level limit price settlement is adopted to stabilise the market price.

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5 "全国各电力交易中心完成市场交易电量43102.4亿千瓦,时" China Electricity Council, 28 November 2022, accessed at http://www.cnenergynews.cn/kuaixun/2022/11/30/detail_20221130128806.html.

6 "国家能源局综合司关于公开征求 《电力现货市场基本规则（征求意见稿）》《电力现货市场监管办法（征求意见稿）》意见的通知," National Energy Administration, 22 November 2022, accessed at http://www.nea.gov.cn/2022-11/25/c_1310679693.htm.

7 "电力现货市场选择集中式还是分散式？," shoudian.bjx.com.cn, 21 January 2022, accessed at https://m.bjx.com.cn/mnews/20220121/1200697.shtml.

3. Policy monitoring

2022-11-25

http://www.nea.gov.cn/2022-11/28/c_1310680384.htm

NEA optimises grid connection requirements for renewable energy power generation projects

Notice on Actively Promoting the Grid Connection of New Energy Power Generation Projects

According to the *14th Five-Year for Renewable Energy Development*, the target of wind power and solar PV power generation should be doubled between 2021 and 2025. From the first quarter to the third quarter of 2022, renewable energy power generation projects dominated by solar PV have accelerated in grid connection, and newly installed solar PV capacity has increased by more than 100% year-on-year. Grid connection of new projects are expected to be more concentrated in the fourth quarter. To ensure that renewable energy projects are connected to the grid promptly, the NEA recently made it clear that new energy power generation projects such as wind power and solar PV are allowed to be partly connected to the grid, that is, the completion of a full capacity construction is not a necessary condition for grid connection.

2022-11-10

https://www.miit.gov.cn/jgsj/ycls/gzdt/art/2022/art_757cb4282cac40a8b84ac80d76f947ef.html

The 2030 carbon peak implementation plan for the non-ferrous metal industry released

Notice on Issuing the Implementation Plan of Carbon Peak in Non-ferrous Metals Industry, MIIT Jointed Material Management [2022] No.153

The non-ferrous metal industry is one of the key fields of carbon emissions in China's industrial sector, and the goal is to achieve its carbon peaking before 2030. Although the current energy consumption/ pollutant emissions per unit of production have reached an advanced level internationally, reducing carbon emissions is still arduous due to factors such as large industrial scale, high thermal power consumption, and an imperfect circulation system. The smelting process accounts for 90% of the total carbon emissions of the non-ferrous metal industry. Therefore, the *Plan* firstly requires an in-depth optimisation of the smelting capacity scale, that is, insisting on the control of the total capacity of electrolytic aluminium, and preventing the disorderly expansion of copper, lead, zinc, alumina, and other projects, and raising the entry threshold for new construction, retrofit and expansion of projects. At the same time, the government will promote green and low-carbon technology innovation, and encourage electrolytic aluminium and other production enterprises to move to areas rich in renewable energy in an orderly manner, reducing carbon emission intensity from the source. By 2025, the industrial structure and energy structure of the non-ferrous metal industry will be significantly optimised, and the supply of recycled metals will account for more than 24%; by 2030, the proportion of electrolytic aluminium using renewable energy will reach more than 30%, and the industrial system of low-carbon and circular development will be basically established.[8]

[8] "《有色金属行业碳达峰实施方案》解读," Ministry of Industry and Information Technology, 15 November 2022, accessed at https://www.miit.gov.cn/jgsj/ycls/gzdt/art/2022/art_7b83e28670644bdb96c0f485bc0407e1.html.

2022-11-02

https://www.miit.gov.cn/zwgk/zcwj/wjfb/tz/art/2022/art_8f6d55dd58d64283937d7fb87e21b666.html

The 2030 carbon peak implementation plan for the building materials industry released

Notice on Issuing the Implementation Plan of Carbon Peak in the Building Materials Industry, MIIT Jointed Material Management [2022] No.149

As a key industry in energy consumption and carbon emissions, the building materials industry aims to achieve carbon peaking by 2030. The Ministry of Industry and Information Technology (MIIT) recently made it clear that during the 14th Five-Year Plan period, the structural adjustment of the building materials industry should make significant progress. The energy consumption intensity and carbon emission intensity of key products such as cement continue to decline, and the energy intensity level of cement clinker products to decrease by more than 3%. During the 15th Five-Year Plan period (2026-2030), the level of low-carbon raw materials and fuel substitution in the building materials industry shall be significantly improved, and an industrial system of green, low-carbon, and circular development is to be basically established. The five critical tasks include strengthening the total production capacity control, promoting the substitution of low-carbon raw materials, optimising the energy structure (i.e. increasing green energy consumption and improving energy utilisation efficiency), accelerating technological innovation, and promoting green manufacturing.