MAY 2024

CHINA ENERGY POLICY

NEWSLETTER

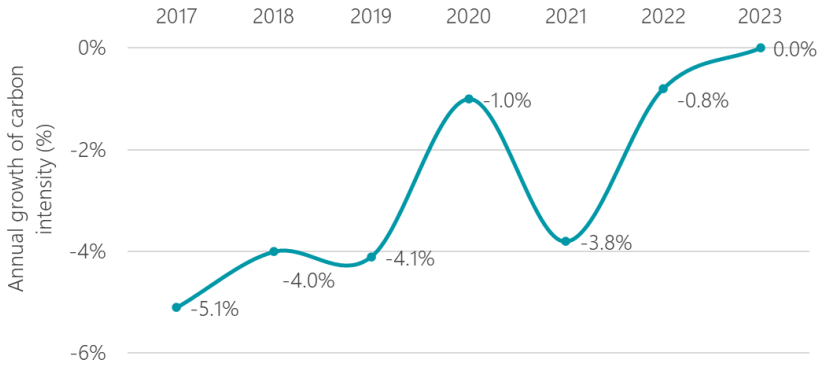
China Energy Transformation Programme

1. China energy transition updates

MEE proposes a 2024 carbon intensity reduction target

The Ministry of Ecology and Environment (MEE) recently announced that China's carbon dioxide emissions per unit of GDP (carbon intensity) are expected to fall by about 3.9% in 2024. As of the end of 2023, China's ecological and environmental quality improvement has made good progress during the *14th Five-Year* Plan period (2021-2025), and air quality has maintained a long-term trend of improvement. However, high energy consumption and high emissions are still prominent, reflected in the energy structure dominated by coal and freight transportation dominated by fuel vehicles. Since the beginning of the *14th Five-Year* Plan, the growth rate of energy consumption and carbon dioxide emissions has been significantly faster than that of the *13th Five-Year* Plan period (2016-2020), and the task of ecological and environmental protection remains arduous.[1]

2017-2023 Decline of carbon dioxide per unit GDP in China



Source: National Bureau of Statistics (NBS), accessed in May 2024

[1] "2023年全国生态环境质量稳中改善," State Council, 23 April 2024, accessed at https://www.gov.cn/yaowen/liebiao/202404/content_6947107.htm.

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2021 carbon dioxide emission factors of the power sector released

The carbon dioxide emission factor is an essential parameter for calculating the power industry's carbon emissions. In April 2024, the MEE and the National Bureau of Statistics (NBS) jointly released the national average power CO_2 emission factors for 2021 in three statistical calibres (see the table below), of which the average CO_2 emission factors for all power generation technologies include data for national power grids, regional power grids, and provincial power grids. The regional and provincial data are the first updates since 2012 and 2018, respectively, and can more accurately reflect the advantages of power generation in areas rich in renewable energy. In addition, the government also published the calculation instructions for power CO_2 emission factors for the first time, clarifying the calculation methods and essential data to make the results internationally comparable. In the next step, the MEE will jointly establish a regular release mechanism for power CO_2 emission factors with the NBS and plans to release relevant data for 2022 in 2024. Power carbon footprint factor data will be released with mature conditions to implement further the government's requirement to accelerate the establishment of a carbon emissions statistical accounting system.[2]

National average CO_2 emission factors for power generation in 2021

Statistical caliber I	Electricity generated by all power generation technologies*	0.5568 kgCO2/kWh
Statistical caliber II	Electricity generated by all power generation technologies (excl. market-traded non-fossil energy electricity)	0.5942 kgCO2/kWh
Statistical caliber III	Fossil energy power generation (i.e. biomass power generation is deducted from thermal power)	0.8426 kgCO2/kWh

Note: * Thermal power (including biomass), nuclear power, hydropower, wind power, solar PV, etc.

Development of the coal industry in 2023

In 2023, China's raw coal production and import volume hit record highs, and coal stocks of national-level dispatchable coal power plants across the country remained at a record high. Coal still plays a vital role in ensuring China's energy supply, especially in response to extreme weather and sudden disasters. Although coal production is still increasing, the coal production structure continues to be optimised, with significant efficiency improvement and carbon reduction effects in the coal industry. First, the number of coal mines has declined. Raw coal production has further concentrated in resource-rich areas, with Shanxi, Shaanxi, Inner Mongolia, and Xinjiang accounting for more than 80% of raw coal production. Second, the proportion of efficient and intelligent large-scale coal mines has increased. In 2023, the overall energy consumption per ton of raw coal production decreased by 7.2 percentage points year-on-year, and the overall power consumption per ton of raw coal production increased by 4.5 percentage points year-on-year. Third, the green transformation of coal power continues to deepen, with a total of 1,030 GW of ultra-low emission retrofit completed, accounting for 88.4% of the active units. In 2023, coal consumption per kilowatt hour of thermal power generation decreased by 0.2%.

The coal market price mechanism has been continuously improved, and the medium and long-term contract system and the pricing mechanism of "baseline tariff + floating tariff" have laid the foundation for the smooth operation of the coal market. In 2023, the average price of medium and long-term thermal coal contracts (Qinhuangdao 5,500 kcal) was 714 RMB/ton, a year-on-year decrease of 8 RMB/ton. Superimposed on the decline in international coal prices, the spot price of thermal coal (Bohai Rim ports 5,500 kcal) fell sharply, with the average price falling by 324 RMB/ton year-on-year to 971 RMB/ton.[3]

[2] "生态环境部、国家统计局关于发布2021年电力二氧化碳排放因子的公告," Ministry of Ecology and Environment, National Bureau of Statistics, 12 April 2024, accessed at https://www.mee.gov.cn/xxgk2018/xxgk/xxgk01/202404/t20240412_1070565.html; "生态环境部应对气候变化司负责人就《关于发布2021年电力二氧化碳排放因子的公告》有关问题答记者问," Ministry of Ecology and Environment, 13 April 2024, accessed at https://www.mee.gov.cn/ywdt/zbft/202404/t20240413_1070575.shtml; "电力排放因子体系更新：惊喜与挑战," Caijing Magazine, 7 May 2024, accessed at https://mp.weixin.qq.com/s/DJ86GS1OehM32_Ano7KckQ.

[3] "全国煤矿约4300处！《2023煤炭行业发展年度报告》发布," China National Coal Association, 28 March 2024, accessed at https://baijiahao.baidu.com/s?id=1794773835964096519&wfr=spider&for=pc.

Solicitation of comments on the draft *Energy Law*

The *Energy Law* is the first fundamental and overarching legislation in China's energy field. It is also one of the critical law revision tasks of the central government in 2024. The National Energy Administration (NEA) issued the *Energy Law (Draft for Comments)* in 2007 and 2020. In April 2024, the National People's Congress reviewed and published the *Energy Law (Draft)* for the first time, soliciting opinions from the whole society. The draft policy clarifies the priority of the development of renewable energy, and stipulates six aspects of the energy development and utilisation system[4]:

1. Prioritise the development of renewable energy, rationally develop and cleanly and efficiently utilise fossil energy, and orderly promote non-fossil energy to replace fossil energy and low-carbon energy to replace carbon-intensive energy.
2. Clarify the basic policy orientation for developing and utilising renewable energy, hydropower, nuclear power, coal, oil, and natural gas resources.
3. Improve the cleanliness, efficiency, and intelligence of end-use energy consumption, and establish a green energy consumption promotion mechanism.
4. Power supply enterprises such as electricity, gas, and heat should ensure that users receive safe, continuous, and reliable services.
5. Strengthen the construction and protection of energy infrastructure, especially the coordination of cross-provincial energy infrastructure construction.
6. Coordinate the construction of urban and rural energy infrastructure and public service systems, and prioritise ensuring energy use for rural life and agricultural production.

The government encourages distributed wind power in rural areas

The National Development and Reform Commission (NDRC), the NEA, and the Ministry of Agriculture and Rural Affairs (MoARA) jointly announced the launch of the *Yufeng Action*, which is to organise the development of distributed wind power projects in rural areas. The policy clarifies that during the *14th Five-Year* Plan period, wind power projects will be developed on a "village" basis in rural areas of qualified counties (cities, districts, banners). Each administrative village's total installed wind power capacity shall be at most 20 MW, mainly provided for nearby consumption. Village collectives and investment enterprises should jointly invest and build wind power projects and share profits so that wind power development benefits villagers. The document stipulates that wind power project development should utilise scattered, idle, non-cultivated land in rural areas and shall not occupy permanent basic farmland. The feed-in tariff is based on the new energy feed-in tariff in the year of grid connection to ensure stable and reasonable income for the project. Participation in market-based transactions is also encouraged, and the cost of ancillary services does not need to be shared for trading electricity.[5]

With the gradual maturity of low wind speed power generation technology, wind power development in the central and southeastern regions has become increasingly feasible and economical. The Chinese Wind Energy Association says that more than 3,000 GW of resources are currently available for development. Suppose 20 MW wind turbines are installed in a thousand villages every year; in that case, the country can add 20 GW of new wind power installed capacity every year, stimulating new investment of 100 billion RMB. At the same time, integrating distributed wind power, solar PV, and biomass power generation resources in rural areas will help to optimise the rural energy consumption structure and form demand-side response resources. Innovative wind power investment and income models will create jobs and income in rural areas.[6]

[4] "能源法（草案）征求意见," National People's Congress, 26 April 2024, accessed at http://www.npc.gov.cn/flcaw/userIndex.html?lid=ff8081818e750bc6018f18554c302a35; "十四届全国人大常委会第九次会议审议多部法律草案和报告," People's Daily, 25 April 2024, accessed at http://cpc.people.com.cn/n1/2024/0425/c64387-40223340.html.

[5] "国家发展改革委 国家能源局 农业农村部关于组织开展"千乡万村驭风行动"的通知, 发改能源〔2024〕378号," National Development and Reform Commission, 1 April 2024, accessed at https://www.ndrc.gov.cn/xwdt/tzgg/202404/t20240401_1365398_ext.html.

[6] "千乡万村来驭风 "风电下乡"释放能源低碳转型新动能," People's Daily, 9 April 2024, accessed at https://baijiahao.baidu.com/s?id=1795817519448885896&wfr=spider&for=pc; "《关于组织开展"千乡万村驭风行动"的通知》政策解读," National Energy Administration, 1 April 2024, accessed at https://baijiahao.baidu.com/s?id=1795137051660369043&wfr=spider&for=pc.

NEA plans to improve green certificate issuance and trading rules

In July 2023, the government issued a policy that clarifies the scope of issuance of green electricity certificates (GEC) will be expanded from onshore wind power and utility-scale solar PV to all renewable power projects, to achieve full coverage of GEC issuance. From the perspective of power sources, the scope of GEC issuance includes wind power (including distributed wind power and offshore wind power), solar power (including distributed solar PV and CSP), conventional hydropower, biomass power, geothermal power, and ocean energy power generation. The policy also regulates that the GEC is the only proof of the environmental premium of renewable energy electricity and the only certification for identifying the production and consumption of green electricity. This means that the issuance, trading, and write-off of GECs need clear rules and regulations so that it can genuinely and effectively promote the development of renewable power projects and renewable power consumption.

In April 2024, the NEA issued the *Rules for the Issuance and Trading of Renewable Energy Green Electricity Certificates (Draft for Comments)*. The documentation makes it clear[7]:

1. Issuance: GECs are issued by the NEA every month for the electricity generated by renewable power projects, which is, in principle, based on data provided by power grid enterprises and power exchange centres, and is checked with data provided by power generation enterprises or project owners;
2. Transaction: GECs are issued to all qualified renewable power projects and can be traded once, but the GECs obtained for self-consumption and conventional hydropower generation put into operation before 2023 cannot be traded;
3. Write-off: GECs are valid for two years, starting from the month of power generation. GECs that have exceeded the validity period or have obtained green power consumption certification should be written off.
4. Market interference: Local government departments cannot directly or indirectly interfere with GEC transaction prices, force purchase tasks, or restrict trading areas.
5. Information disclosure: GEC issuance and transaction reports shall be prepared monthly. The NEA and the green certificate trading platform will regularly disclose green certificate transaction information, including issuance volume, transaction volume, average transaction price, etc.

The biggest highlight of the *Rules (Draft)* is that it clarifies the two-year validity period and expired write-off mechanism for the GEC. This will effectively avoid a redundant supply of GECs and enhance the liquidity of transactions. A precise inventory of GECs will also help buyers and sellers determine transaction prices. In addition, the document also contains anti-market interference clauses and information management and disclosure clauses, which are conducive to the actual implementation of market-based transactions of GECs and the transparency and traceability management of transaction data. It lays a good foundation for the future connection between the GEC market and the carbon market and international mutual recognition.

[7] "国家能源局综合司关于公开征求《可再生能源绿色电力证书核发和交易规则（征求意见稿）》意见的通知," National Energy Administration, 26 April 2024, accessed at http://zfxxgk.nea.gov.cn/2024-04/26/c_1212357073.htm.

NDRC updates power market supervision measures

The NDRC promulgated the *Measures for Supervision of Power Market* (CHN: 电力市场监管办法) for the first time in 2005. With the continuous deepening of the power system reform, the power market transactions have gradually shifted from being dominated by a single electric energy transaction to the coexistence of electric energy transactions, ancillary service transactions, and capacity transactions. New types of energy storage, virtual power plants, aggregators, and other emerging entities have entered the market. Therefore, the power market's regulatory objects, content, and measures need to be further improved. In May 2024, the NDRC promulgated the *Measures for Supervision of Power Market (2024 Edition)*. The *Measures (2024 Edition*) mainly revised several contents[8]:

1. Regulatory agencies: it is clarified that the NEA and its local regulatory authorities are responsible for supervising the national and local power markets, respectively.
2. Supervision objects: including power trading entities, power market operating institutions, and power grid enterprises; among the power trading entities, based on power generation enterprises and power grid enterprises, power selling enterprises, energy storage, virtual power plants, and load aggregators are added; among the power market operating institutions, power exchange centres are added to the dispatching centres.
3. Supervision content: direct power trading contracts and agency power purchase contracts signed by trading entities.

The country's first electric heavy truck virtual power plant launched

The battery of electric heavy trucks, with the characteristics of large energy storage capacity and high charging power, is a high-quality energy storage resource. At the end of 2023, the government launched electrification pilots for public vehicles in 15 cities. Among them, Tangshan, Hebei Province, is the only heavy truck electrification pilot city, where electric heavy trucks are mainly used for port logistics and mine transportation. At present, the number of electric heavy trucks in Tangshan has exceeded 10,000, and more than 300 charging and swapping stations have been built. Jibei (Northern Hebei) Power Grid integrated the battery resources of 11 heavy truck charging stations into a virtual power plant, forming a maximum regulation capacity of 22.3 MW. In April 2024, the virtual power plant participated in the peak and valley regulation of the power grid for the first time, regulating more than 500 MWh of electricity. Electric heavy-duty trucks can save up to 0.75 RMB/kWh in electricity bills by charging during off-peak hours, significantly reducing operating costs. In the next step, Jibei Power Grid plans to improve the market mechanism further while expanding the scale of virtual power plants, and strive to allow electric heavy trucks to charge green electricity by participating in green power market pilots.[9]

[8] "中华人民共和国国家发展和改革委员会令, 第18号," National Development and Reform Commission, 12 April 2024, accessed at https://www.ndrc.gov.cn/xxgk/zcfb/fzggwl/202405/t20240506_1366319.html; "国家能源局有关负责同志就《电力市场监管办法》答记者问," National Development and Reform Commission, 8 May 2024, accessed at https://www.ndrc.gov.cn/xxgk/jd/jd/202405/t20240508_1370683.html.

[9] "我国首个电动重卡型虚拟电厂建成," State Grid, 7 April 2024, accessed at https://baijiahao.baidu.com/s?id=1795637528963974658&wfr=spider&for=pc.

2. Policy monitoring

2024-04-20

https://www.gov.cn/zhengce/zhengceku/202404/content_6947537.htm

The government encourages the introduction of green insurance products

Guidance on Promoting the High-quality Development of Green Insurance, NFRA Regulation [2024] No.5

The government requires to initially establish a green insurance service system by 2027 and to improve and complete it by 2030. The key coverage areas of green insurance include 1) production, construction, and operation of solar PV, wind power, hydropower, and nuclear power industries, and exploring insurance innovation in the fields of new type energy storage, hydrogen energy, and biomass energy; 2) renewable energy substitution in buildings and rooftop solar PV, renewable energy equipment, rural power grids; 3) new energy vehicles, green transportation infrastructure.

2024-04-19

http://zfxxgk.nea.gov.cn/2024-04/19/c_1310771805.htm

NEA is formulating green power trading rules

Notice on Public Solicitation of Opinions on the Basic Rules for Medium and Long-term Electricity Transactions—Special Chapter on Green Electricity Transactions

State Grid, China Southern Power Grid, and West Inner Mongolia Power Grid have all established green power trading pilots, achieving medium and long-term green power trading coverage across the entire grid. In April 2024, the NEA promulgated the *Basic Rules for Medium and Long-term Power Transactions—Special Chapter on Green Power Transactions (Draft for Comments)* (CHN: 电力中长期交易基本规则—绿色电力交易专章), aiming to form unified national green power trading regulations. This document clarifies that in the early stage of the green power market, only wind power and solar PV power projects will participate in the sale of electricity; the contracts are intra-provincial and inter-provincial medium and long-term contracts, and the price shall be subject to bilateral negotiation (no price limit), listing, and centralised bidding (price limit possible); the electricity price and environmental premium in green power prices should be settled separately to avoid double counting.

2024-04-02

https://www.gov.cn/zhengce/zhengceku/202404/content_6944907.htm

NDRC establishes emergency coal reserve mechanism

Implementation Opinions on Establishing a Coal Production Capacity Reserve System, NDRC Energy Regulations [2024] No. 413

This document calls for striving to form a dispatchable coal production capacity reserve of about 300 million tons/year by 2030. Reserve capacity refers to moderate-scale production capacity reserved for peak shaving based on conventional production capacity, and is only released in emergencies. The reserve capacity is 20%, 25%, or 30% of the coal mine's designed capacity. China's energy consumption still maintains rapid growth. The establishment of a coal reserve capacity mechanism can achieve a "flexible increase in production" under extreme circumstances, such as violent fluctuations in the international energy market and severe weather, playing a backstop role in energy security; it also ensures that coal power can better play its regulatory role and support the high-quality development of new energy.

2024-04-02

http://zfxxgk.nea.gov.cn/2024-04/02/c_1310771072.htm

NEA refines new energy storage grid connection and dispatch regulations

Notice on Promoting Grid Connection and Dispatch Application of New Type Energy Storage, NEA Development of Technology Regulations [2024] No. 26

New type energy storage is facing the problem of large-scale construction but a low utilisation rate. This policy puts forward specific requirements for grid connection, dispatching methods, and operation management of new types of energy storage, aiming to standardise grid connection and promote efficient dispatch. For example, performance and grid-related tests are required before the grid connection to ensure that it meets national and industry technical standards; power dispatching agencies should scientifically determine dispatch methods of new type energy storage and fairly allocate regulatory resources; new type energy storage facilities report its operation information promptly, the electricity dispatching agency should regularly push the relate call status to the national big data platform.

2024-03-30

https://www.gov.cn/zhengce/zhengceku/202404/content_6945545.htm

The first batch of low-carbon advanced technology demonstration projects released

Notice on Issuing the List of Advanced Green and Low-Carbon Technology Demonstration Projects (First Batch), NDRC General Office Environment Resource [2024] No.272

In August 2023, the NDRC took the lead in announcing the selection of green and low-carbon advanced technology demonstration projects. In March 2024, the first batch of demonstration projects were released, including 22 source carbon sequestration projects, 19 process carbon sequestration projects, and 6 terminal carbon sequestration projects. Among them, 12 projects involve new types of energy storage and hydrogen energy fields, including gravity energy storage, compressed air energy storage, wind-hydrogen-ammonia integration, liquid hydrogen, and other emerging technologies. Terminal carbon sequestration projects are mainly carbon capture, utilisation, and storage (CCUS) projects.

2024-03-27

https://www.gov.cn/zhengce/zhengceku/202403/content_6942115.htm

MIIT releases 2030 aviation sector electrification plan

Notice on the Issuing the Implementation Plan for Innovative Application of General Aviation Equipment (2024-2030), MIIT United Heavy Equipment [2024] No. 52

Aviation electrification will be the main direction in the future, taking into account hybrid power, hydrogen power, and sustainable fuel technology routes. To this end, the government requires accelerating technological breakthroughs and upgrades in aviation power and deepening research on high-efficiency energy storage technology. The document clarifies that it is necessary to accelerate the deployment of new energy power technology and equipment, promote the mass production of 400Wh/kg aviation lithium battery products, and achieve application verification of 500Wh/kg battery products. By 2027, to realise the commercial application of unmanned, electric, and intelligent aviation equipment in urban air transport, logistics distribution, and emergency rescue.

2024-03-17

https://zfxxgk.ndrc.gov.cn/wap/iteminfo.jsp?id=20368

The government clarifies the special investment regulations for energy conservation and carbon reduction

Notice on Issuing the Special Management Measures for Central Budgetary Investments in Energy Saving and Carbon Reduction

The special energy conservation and carbon reduction investment under the central fiscal budget will focus on supporting three types of projects: advanced technology demonstration and application projects by dual-carbon targets (e.g. renewable energy substitution, large-scale CCUS), energy conservation and carbon reduction projects in key industries and fields (e.g. energy-saving retrofit in industry and heating sectors) and circular economy carbon reduction projects (e.g. recycling of decommissioned wind power and solar PV equipment). The support funds shall not exceed 30%, 20% and 15% of the total project investment, respectively. In principle, the support funds for a single project shall be at most 100 million RMB. State agencies will allocate special funds directly to projects.

2024-03-07

https://www.gov.cn/zhengce/zhengceku/202403/content_6939233.htm

The State Council promotes large-scale energy equipment upgrades

Notice on the Issuing the Action Plan for Promoting Large-Scale Equipment Updates and Trade-in of Consumer Goods, State Council Development [2024] No.7

The government requires that by 2027, the scale of equipment investment in key areas to increase by more than 25% compared with 2023, and the energy efficiency of major energy-consuming equipment shall reach the energy-saving level basically. Specific actions include: 1) Carry out the updating and retrofit of production equipment, energy-consuming equipment, and power transmission and distribution equipment, with carbon reduction, ultra-low emissions, and digitalisation as the key directions; 2) Accelerate the updating of buildings, water-heat-gas municipal infrastructure equipment, and promote the updating of sewage and garbage treatment equipment; 3) Promote the electrification and battery replacement of urban buses, strengthen electric and hydrogen energy equipment in the aviation field, and support the development of new energy-powered ships.