



● JUNE 2024

CHINA ENERGY POLICY NEWSLETTER

China Energy Transformation Programme

1. China energy transition updates

MEE announces the timetable to establish a carbon footprint management system

China's energy transition policy orientation is shifting from dual control of energy consumption to dual control of carbon emissions, and the product carbon footprint management is an essential data basis for implementing carbon emissions dual-control targets. Product carbon footprint is a type of carbon emission accounting. It generally refers to the total carbon emissions a product generates throughout raw material processing, transportation, production, and sales. Carbon footprint is essential for measuring the green and low-carbon levels of production enterprises and products. In June 2024, 15 ministries and commissions, including the Ministry of Ecology and Environment (MEE) and the National Development and Reform Commission (NDRC), jointly issued the *Implementation Plan for Establishing a Carbon Footprint Management System* (CHN: 关于建立碳足迹管理体系的实施方案), proposing clear development goals and timetable to establish a carbon footprint management system.

By 2027, China will issue about 100 carbon footprint accounting rules and standards for key products and initially establish a carbon footprint factor database; by 2030, the number of issued standards will be increased to about 200, establishing the high-quality carbon footprint factor database, carbon footprint mark certification and grading management system, and gradually be aligned with international practices as well as participate in the formulation of international rules. The carbon footprint accounting rules and standards will give priority to 18 key fields, including electric power, coal, natural gas, fuel oil, steel, electrolytic aluminium, cement, fertiliser, hydrogen, lime, glass, ethylene, synthetic ammonia, calcium carbide, methanol, lithium batteries, new energy vehicles, solar PV and electronic appliances; the carbon footprint factor database will give priority to fundamental energy sources, bulk commodities and raw materials, semi-finished products, and transportation.¹

¹“关于印发《关于建立碳足迹管理体系的实施方案》的通知，环气候〔2024〕30号，” Ministry of Ecology and Environment, National Development and Reform Commission, et al., 4 June 2024, accessed at https://www.mee.gov.cn/xxgk2018/xxgk/xxgk03/202406/t20240604_1074986.html.

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



Danish Energy Agency



Norad

Norwegian Agency for Development Cooperation



CET
中国能源转型项目
CHINA ENERGY TRANSFORMATION PROGRAM



COLUMBIA | SIPA

Center on Global Energy Policy



中国宏观经济研究院
能源研究所
Energy Research Institute of Chinese
Academy of Macroeconomic Research

The State Council clarifies the deployment of energy conservation and carbon reduction work in 2024-2025

In the first three years of the 14th Five-Year Plan period (2021-2025), the energy intensity in China has decreased by 7.3% cumulatively. However, the reduction in energy intensity is still lagging behind the 2025 target, as the energy efficiency of more than 10% of production capacity in industries such as steel, non-ferrous metals, petrochemicals, chemicals, and building materials is still below the benchmark level. Against this background, the State Council issued the *Energy Conservation and Carbon Reduction Action Plan 2024-2025* (CHN: 2024-2025年节能降碳行动方案). It quantifies the energy conservation and carbon reduction targets for 2024 and 2025 and deploys specific actions around ten key industries, including energy, steel, nonferrous metals, building materials, construction, transportation, public institutions, and energy-using products.

In the energy sector, the *Action Plan* requires strict control of coal consumption and promotion of low-carbon retrofit of coal-fired power units, optimisation of oil and gas consumption structure, and improvement of renewable energy consumption capacity, with non-fossil energy accounting for 39% of power generation by the end of 2025 (35.8% in 2023). According to the interview of the Xinhua Finance (CHN: 新华财经), Lyu Wenbin, the Director General of the Energy Research Institute of the NDRC, said that the *Action Plan* incorporates energy-saving retrofit and non-fossil energy consumption into local energy-saving evaluation and assessment, promoting the awareness of local governments and enterprises to strengthen energy-saving and carbon reduction, and strongly supporting the implementation of carbon reduction tasks.²

Main energy conservation and carbon reduction targets for 2024 and 2025

	2021-2023 Actual	2024 Target	2025 Target	The 14th Five-Year Target (2021-2025)
Energy consumption per unit of GDP*	-7.3%	-2.5%	-	-13.5%
Carbon dioxide emissions per unit of GDP	-	-3.9%	-	-18%
Energy consumption per unit of added value of large-scale industries**	-	-3.5%	-	-13.5%
Non-fossil energy share in total primary energy consumption	~17.9%	~18.9%	~20%	~20%
Non-fossil power generation share	35.8%	-	39%	~39%

Notes: * The accounting of total primary energy consumption deduct incremental renewable and nuclear energy consumption compared to the previous year during the 14th Five-Year Plan period. ** Large-scale industries refer to industrial enterprises with an annual income of over 20 million RMB. Source: State Council and the National Development and Reform Commission (NDRC), May 2024

NDRC conducts energy efficiency diagnosis for major energy-consuming units

Currently, there are more than 20,000 units in China with an annual energy consumption of more than 5,000 tce (tons of standard coal equivalent), also known as major energy-consuming units, and their unit energy consumption and unit carbon emissions account for about 70% of the national total. In April 2024, the NDRC issued the *Notice on Deepening the Energy Efficiency Diagnosis of Key Energy-consuming Units* (CHN: 关于深入开展重点用能单位能效诊断的通知), requiring the implementation of energy efficiency diagnosis for major energy-consuming units, aiming to support the promotion of energy-saving and carbon-reduction retrofit and energy-using equipment renewal in key fields and industries. The policy document proposes that by the end of 2024, all regions will establish energy-saving management files for units with an annual energy consumption of 10,000 tce or more, and complete energy-saving supervision for more than 60% of the units; by the end of 2025, all regions will establish energy-saving management files for energy-consuming units with an annual energy consumption of 5,000 tce or more, and achieve energy-saving supervision for 100% of the units.

² “国务院关于印发《2024—2025年节能降碳行动方案》的通知,国发〔2024〕12号,” State Council, 23 May 2024, accessed at https://www.gov.cn/zhengce/zhengceku/202405/content_6954323.htm; “「新华解读」推动完成“十四五”节能降碳目标的重要部署 节能降碳行动方案出台,” Xinhua News Agency, 30 May 2024, accessed at <https://baijiahao.baidu.com/s?id=1800461526219415195&wfr=spider&for=pc>.



Key areas for filing include industry, building, transportation, and public institutions, benchmarking against mandatory national standards and industry standards for energy consumption limits, surveying the energy efficiency levels of the above-mentioned key areas and key industries such as steel, nonferrous metals, building materials, petrochemicals, chemicals and data centres, and identifying weak links and prominent problems in energy use. Focusing on major energy-consuming equipment such as existing boilers, motors, transformers, fans, pumps, air compressors, and heat exchangers, to survey their energy efficiency levels, and sort out the application potential of advanced energy-saving technologies. By the end of 2024, a list of energy-saving and carbon-reduction retrofit projects and energy-consuming equipment renewal projects will be established and updated every quarter based on the above data, and retrofit plans and deadlines will be formed. By the end of 2025, the project list will be continuously improved. The NDRC will dispatch and analyse energy-saving management files and project lists every quarter, and incorporate the relevant results into the evaluation and assessment of energy-saving responsibilities of provincial governments.³

Wind and solar power capacity in 2060 is proposed for the first time

In May 2024, the Minister of NEA, Zhang Jianhua, published an article and pointed out that, based on research and estimation, to achieve carbon neutrality by 2060, China will reach a wind power and solar PV installed capacity of more than 5,000 GW, about five times that of 2023 (i.e. 1050 GW). It is calculated that China's wind power and solar PV technical resources can be developed in a capacity of more than 10,000 GW and 45,000 GW, respectively, but the current developed amount accounts for only 4.4% and 1.3%. In the next few years, the total energy consumption in China will maintain an annual growth rate of about 2%. If half of this is met by wind power and solar PV, about 150 GW of wind power and solar PV installed capacity will be added each year. At present, the development of wind power and solar PV faces two significant problems: 1) The prominent contradiction between the large-scale development of wind power and solar PV and the lack of land (sea and space), requiring strengthening in policy coordination; 2) The insufficient consumption capacity of wind power and solar PV, needing further improvement of flexible capacity and transmission capacity. The article emphasises that energy storage and hydrogen energy can provide essential flexibility services. Among them, a new type of energy storage provides real-time regulation services (such as intra-day) for the power grid by shaving peaks and filling valleys; hydrogen is produced by electrolysis and can be stored for a long time, it provides long-term regulation services through hydrogen power generation when necessary.⁴

NEA proposes key tasks to promote renewable energy consumption

As of April 2024, total installed wind power and solar PV capacity exceeded 1,100 GW in China, a 38% year-on-year increase. The further acceleration of renewable energy development has led to a more substantial requirement for consumption capacity. The NEA has issued a document proposing four implementation paths to promote power consumption: grid planning and construction, flexibility improvement and grid-source coordination, grid dispatching and power market mechanism adjustment, and optimisation of wind and solar curtailment control targets.⁵

1. **Grid planning and construction:** Strengthen the planning of power transmission and distribution grids, promote the inclusion of new large-scale renewable energy bases into the planning, and improve the access of distributed new energy capacity; clarify the list of major supporting grid projects in 2024, including 33 projects to be commissioned and 37 projects under construction; optimise the grid connection process, and grid enterprises should take the initiative to provide services for grid connection and simplify the review process for new energy projects.
2. **Flexibility improvement and grid-source coordination:** Carry out a comprehensive assessment of local flexibility resources, formulate plans to improve regulation capacity according to local conditions; adjust the commissioning of

³ “国家发展改革委办公厅关于深入开展重点用能单位能效诊断的通知, 发改办环资〔2024〕395号,” National Development and Reform Commission, 30 April 2024, accessed at <https://zfxgk.ndrc.gov.cn/web/iteminfo.jsp?id=20382>; “国家发展改革委有关负责同志就《关于深入开展重点用能单位能效诊断的通知》答记者问,” National Development and Reform Commission, 19 May 2024, accessed at https://www.gov.cn/zhengce/202405/content_6952224.htm;

“一图读懂 | 国家发展改革委办公厅关于深入开展重点用能单位能效诊断的通知,” National Energy Administration, 16 May 2024, accessed at <https://baijiahao.baidu.com/s?id=1799208590466223142&wfr=spider&for=pc>.

⁴ “章建华: 深入学习贯彻习近平总书记重要讲话精神 以更大力度推动我国新能源高质量发展,” National Development and Reform Commission, 10 May 2024, accessed at <https://rmh.pdnews.cn/Pc/ArtInfoApi/article?id=41014833>.

⁵ “国家能源局关于做好新能源消纳工作保障新能源高质量发展的通知, 国能发电力〔2024〕44号,” National Energy Administration, 28 May 2024, accessed at https://zfxgk.nea.gov.cn/2024-05/28/c_1310777105.htm.



new energy projects according to the local grid construction situation; and strengthen the performance of grid-connected projects, such as improving the accuracy of output prediction.

3. **Grid dispatching and power market mechanism adjustment:** Further increase the proportion of cross-provincial renewable power transmission and strengthen inter-provincial mutual assistance; improve the dispatching and control capabilities of distribution grids, and fairly call on various types of flexibility resources; accelerate the formulation of a power market mechanism that adapts to new energy, and especially optimise inter-provincial transactions.
4. **Optimisation of wind and solar curtailment control targets:** Scientifically formulate wind and solar power curtailment control targets, appropriately adjust them from 5% to no more than 10% in areas with better resources, and carry out annual dynamic evaluation.

The national wind and solar curtailment control targets have been adjusted from 5% to 10%

In 2018, the government issued the *Clean Energy Consumption Action Plan (2018-2020)* (CHN: 清洁能源消纳行动计划 (2018—2020年)), which for the first time proposed a binding target of controlling the national average wind and solar curtailment rates to 5% by 2020. As the annual newly installed renewable power capacity continues to increase, some provinces and specific periods have seen prominent pressure on renewable power consumption. In 2023, the wind curtailment rates in western Inner Mongolia (6.8%) and Qinghai (5.8%) did not meet the binding target, and the solar curtailment rates in Tibet (22%) and Qinghai (8.6%) failed to meet the binding target. They are all provinces with a high proportion of renewable energy, and the local existing flexibility resources have been fully explored. A fixed 5% on wind and solar curtailment control targets would cause a large amount of investment in new flexibility facilities, which will be too expensive. At the same time, the long construction period of pumped hydro storage (5-7 years) and the short storage time (2-4 hours) of the new type of energy storage cannot perfectly meet the current regulation needs.

Therefore, the government allows the control target to be appropriately adjusted from 5% to 10% in areas with better renewable energy resources. The cost of wind power and solar PV has dropped by more than 40% and 80%, respectively, in the past 15 years, therefore the wind and solar curtailment rates of below 10% will still ensure the projects to obtain reasonable returns. This adjustment can also prevent the curtailments from greatly increasing in the short term. In addition, the *Document* also emphasizes the full use of power markets. European and American countries have a relatively complete power market system, so they mainly consume renewable energy through market-oriented methods instead of setting curtailment control targets. However, China's power market system is still under construction, it is necessary to guide the industry in orderly development by setting binding targets. In the future, with the continuous improvement of the power market construction, renewable energy will also gradually be consumed in a market-oriented manner.⁶

NDRC updates the basic rule for power market operation

In 2005, the former State Electricity Regulatory Commission first issued the *Basic Rules on Power Market Operation and Business* (CHN: 电力市场运营基本规则). In 2021, the government proposed to build a unified national power market system and required strengthening the unification of market basic system rules. In May 2024, the NDRC issued a new version of the *Basic Rules for the Operation of the Power Market* (CHN: 电力市场运行基本规则), marking the official implementation of the "1" in the "1+N" basic rules package of the national unified power market system. The revision of the *Basic Rules* fully considers the development situation of the new type of power system and strives to build an architecture that adapts to the high proportion of new energy access, reliable support from conventional power sources, and the development of new business entities. The *Basic Rules (2024 Edition)* have made several adjustments: 1) Renaming the document, transferring the focus from market strategic planning and implementation to market management; 2) Adjusting the description of market scope, operating institutions, and trading entities; 3) Improvements on the description of market members and market transaction types; 4) Completing the definition and transaction methods of electricity and ancillary service transactions; 5) Refining risk prevention and control, including intervention rules such as market suspension, termination and resumption.⁷

⁶ “政策解读 | 完善新能源利用率管理机制，支撑新能源高质量发展,” National Energy Administration, 4 June 2024, accessed at <https://baijiahao.baidu.com/s?id=1800913098311378830&wfr=spider&for=pc>.

⁷ “《电力市场运行基本规则》2024年第20号令,” National Development and Reform Commission, 14 May 2024, accessed at https://www.ndrc.gov.cn/xxgk/zcfb/fzggwl/202405/t20240510_1377245.html; “国家能源局有关负责人就《电力市场运行基本规则》答记者问,” National Energy Administration, 14 May 2024, accessed at https://www.ndrc.gov.cn/xxgk/jd/jd/202405/t20240513_1382914.html.



2. Policy monitoring

2024-05-28

https://www.gov.cn/zhengce/zhengceku/202406/content_6955282.htm

MoF provides subsidies for car trade-in

Notice on Issuing the Central Fiscal Pre-allocated Budget for Vehicle Trade-in Subsidies in 2024, MoF Construction [2024] No.129

In March 2024, the State Council issued the *Action Plan for Promoting Large-Scale Equipment Renewal and Consumer Goods Trade-in* (CHN: 推动大规模设备更新和消费品以旧换新行动方案), which proposed to carry out car trade-in across the country. In April, the Ministry of Finance (MoF) clarified that from April 26, 2024, to December 31, 2024, individuals who scrap fuel passenger cars (emission standards of National III and below), or new energy passenger cars purchased before April 30, 2018, will receive a subsidy of 10,000 RMB/vehicle for the purchase of new energy passenger cars, and a subsidy of 7,000 RMB/vehicle for the purchase of fuel passenger cars below 2.0 litres. In June, the MoF issued fiscal subsidies for car trade-in in 2024, with a total amount of 11.2 billion RMB, of which 6.44 billion RMB was assigned to central subsidy funds (41% in the east, 31% in the middle, and 28% in the west), and 4.76 billion RMB was assigned to local subsidy funds.

2024-05-24

https://zfxgk.nea.gov.cn/2024-05/24/c_1310777424.htm

NDRC to carry out a pilot survey of wind and solar resources

Notice on Conducting Pilot Survey of Wind and Solar PV Power Generation Resources, NEA Development of New Energy [2024] No.43

Understanding wind and solar resources is the basis for planning new projects and the layout of major projects. The government selects six provinces, including Hebei, Inner Mongolia, Shanghai, Zhejiang, Tibet, and Qinghai, to survey wind power and solar PV resources by county. It includes resources of onshore wind power, utility-scale solar PV, and rooftop PV. It can be expanded to CSP and offshore wind power, offshore solar PV, and ocean energy within the territorial waters in areas with certain conditions. Key tasks include: 1) Sorting out the development status of wind power and solar PV projects under construction, including land use; 2) Evaluating wind and solar resources and their temporal and spatial distribution based on existing meteorological, wind, and solar measurement data; 3) Clarifying the areas where wind and solar can be used by binding policies such as ecological red lines and basic farmland; 4) Evaluating the theoretical and technically exploitable wind power and solar PV capacity based on the above three research results.

2024-05-17

https://www.gov.cn/zhengce/zhengceku/202405/content_6953904.htm

NEA encourages solar PV projects to combine with desertification control

Notice on Orderly Promoting the Development and Construction of Solar PV Desertification Control Projects, NEA Comprehensive Notice on New Energy [2024] No.82

The government requires promoting desertification control and wind power and solar PV projects. The *Document* proposes that the site selection of solar PV-desertification control projects should give priority to the use of untreated desertified land based on meeting the conditions for the construction of solar PV plants, and comprehensively consider meteorological, water resources, geological, etc., to determine the site scope and construction scale. The desertification control projects and solar PV plants should be designed, constructed, and put into operation simultaneously. The ecological restoration should be completed before the commission of the solar PV plant. In addition, solar PV-desertification control projects are encouraged to be combined with ecological economy and landscape tourism, as long as the water resources carrying capacity allows.



Danish Energy Agency



Norad
Norwegian Agency for Development Cooperation



CET
中国能源转型项目
CHINA ENERGY TRANSFORMATION PROGRAM



COLUMBIA | SIPA
Center on Global Energy Policy



中国宏观经济研究院
能源研究所
Energy Research Institute of China
Academy of Macroeconomic Research