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CHINA ENERGY POLICY NEWSLETTER

China Energy Transformation Programme

1. China energy transition updates

Blue Book on Development of the New-type Power System released

In June 2023, the *Blue Book on Development of the New-Type Power System* jointly compiled by 11 research institutes and organized by the National Energy Administration (NEA) was released, aiming to provide an important reference for the power sector's transition in China.¹ The *Blue Book* expounds on the concept and characteristics of developing a new-type power system, formulates a three-step development path, and proposes critical tasks. The power system in China is facing major challenges such as power supply security, system regulation capability, and stable operation at peak loads. The institutional mechanism to adapt to the new-type power system also needs urgent improvement.²

The *Blue Book* points out that ensuring energy and power security is the basic premise of building a new-type power system, and its primary goal is meeting the power demand for high-quality economic and societal development. In the new-type power system, the supply and consumption of a high proportion of new energy is the main task, and the flexible coordination of source-grid-load-storage, intelligent and flexible grid, technology and mechanism innovation are essential components. Specifically, the new-type power system should have four primary features:

- The basic premise - Safe and efficient: Coal power is still the fundamental guarantee of power security; multiple power sources (utility-scale/distributed) and power grid forms (backbone transmission grid/distribution grid) will jointly support the power system to operate safely and steadily; a high coupling between the electricity market and the carbon market and the energy market will improve the operational efficiency of the power system.
- Core goals - Clean and low-carbon: Non-fossil energy becomes the main body of installed capacity and power generation; use low-carbon, zero-carbon and negative-carbon emission technologies to achieve carbon peaking and carbon neutrality in the power industry; electricity becomes the main body of end-use energy consumption, the scale of green power and green certificates transactions continues to expand.

¹ “新型电力系统发展蓝皮书,” National Energy Administration, June 2, 2023, accessed at http://www.nea.gov.cn/2023-06/02/c_1310724249.htm.

² “一图读懂《新型电力系统发展蓝皮书》,” National Energy Administration, 3 June 2023, accessed at https://m.thepaper.cn/baijiahao_23349553.

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- Necessary Support - Elasticity and flexibility: Multi-type, multi-time-scale flexible power sources, energy storage and flexible transmission technologies are widely used, and demand-side response capabilities continue to improve; improve the spot market, ancillary service market and capacity market, to reflect the market value of flexible resources.
- Inevitable Requirements - Smart Integration: All aspects of the power system are highly digitised, intelligent and internet based.

The three-step development path of the new-type power system

Phase I – Accelerated Transition Period (Current-2030)

- New energy becomes the main body of incremental power generation, and coal power is the fundamental guarantee for power supply security
 - ✓ The proportion of non-fossil energy consumption reaches 25%
 - ✓ Coal power installed capacity and power generation are still growing moderately, focusing on large wind power and solar PV bases, major load centres and essential nodes of power grids
 - ✓ conducts carbon reduction, heat supply and flexibility retrofit on coal power units, transitioning to be clean, efficient and flexible
 - ✓ Simultaneously development of utility-scale and distributed new energy power sources, and to transfer of related industries from eastern regions to the west
 - ✓ Improve the deployment potential of new energy by configuring flexible power supply, energy storage and intelligent power dispatch
- Expand the scale of *West-to-East Electricity Transmission* and strengthen the support of distributed smart grid
 - ✓ Focus on the inter-regional power transmission from large-scale wind power and solar PV bases in the western regions
 - ✓ The backbone power grid will maintain a pattern based on AC technology, with regional synchronous power grids as the main body
 - ✓ The distribution grid should be able to meet the requirements of a high proportion of distributed power supply and new load access
- Diversified end-use power consumption modes to improve the flexibility of the power system
 - ✓ Accelerate the electricity replacement of fuels in key energy-consuming fields such as industries, construction, and transportation, and increase the end-use electrification rate to 35%
 - ✓ Integrate scattered demand response resources, and the load response capacity reaches 5% of the peak load
- Multi-scenario and large-scale development of energy storage to meet the intraday regulation needs
 - ✓ The installed capacity of pumped storage exceeds 120 GW
 - ✓ Layout the combination of *new energy + energy storage* and independent energy storage system on the source-grid- and-load sides
 - ✓ Coexistence of compressed air energy storage, electrochemical energy storage, heat (cold) energy storage, thermal power steam pumped energy storage and other technical routes
- The national unified power market system to be basically taken shape

Phase II – Overall Formation Period (2030-2045)

- New energy is the main body of installed power generation capacity, and coal power accelerates low-carbon transition
 - ✓ To realise the low-carbon transition of coal power, relying on technologies such as coal-biomass coupled power generation and CCUS
 - ✓ The growth rate of hydropower slows down, and the installed capacity and application fields of nuclear power further expand
 - ✓ The development of large-scale clean energy bases has been completed, and the focus of new energy development shifts to enhancing power supply security and promoting local consumption

- Integrated development of the new-type power grids with a digital and intelligent transition
 - ✓ The scale of inter-provincial power flow enters the peak plateau, supporting the high proportion of new energy grid connections and consumption
 - ✓ Comprehensively realise the flexible development of the power grid
 - ✓ To improve power grid regulation and control capabilities to meet the needs of distributed power, energy storage and diversified loads using big data, 5G and other emerging technologies
- Electricity becomes the main body in end-use energy consumption
 - ✓ Power demand reaches the peak
 - ✓ In-depth promotion of electrification in the industrial field
 - ✓ New energy and hydrogen fuel cell vehicles replace the majority of traditional energy vehicles
 - ✓ Flexible resources such as virtual power plants, electric vehicles and interruptible loads participate in market transactions
- Breakthroughs in large-scale and long-time-scale energy storage technology to meet the regulation needs of day-long above
 - ✓ Focusing on energy storage technologies for 10 hours above, such as mechanical energy storage, heat energy storage and hydrogen energy
 - ✓ Meet the needs of power supply guarantee and large-scale new energy consumption

Phase III – Consolidation Period (2045-2060)

- New energy becomes the main body of power generation, and electricity and hydrogen energy become the main body of end-use energy consumption
 - ✓ Coal power is transformed into regulating emergency power supply, and the new generation of nuclear power technology is implemented on a large scale
 - ✓ Construct the mutual conversion system of electricity and various energy sources using power-to-hydrogen and power-to-fuel
 - ✓ Technologies such as energy storage, virtual synchronous machine, long-time-scale power prediction, and intelligent centralised control have become important supports
 - ✓ Power-to-hydrogen, and green electricity-based methane and ammonia production are widely promoted in transportation and industrial fields
 - ✓ Hydrogen energy has become an important supplement to clean electricity in the fields of metallurgy, chemical industry and heavy-duty transportation
- Breakthroughs in the new-type power transmission grid technology, along with deep coupling of the power and energy transmission
 - ✓ Large-scale development of low-frequency power transmission and superconducting DC, supporting the development needs of new energy in areas with weak grid infrastructures
 - ✓ Extensive coexistence of AC and DC backbone grids and smart distribution grids
 - ✓ An integrated power transmission-gas transmission pipeline is expected
- Highly flexible interaction between the user side and the power system
 - ✓ A large number of users both produce and consume power, becoming the main participant in the power balance
- Coordinated operation of multiple types of energy storage covering the full time-cycle
 - ✓ Integration of electricity storage, heat storage, gas storage and hydrogen storage facilities
 - ✓ Technical breakthroughs in capacity, cost and efficiency of long-time-scale energy storage facilities based on liquid hydrogen and liquid ammonia
 - ✓ Able to meet the needs of large-scale renewable energy regulation and storage, and support the power system to achieve cross-seasonal dynamic balance
- Realise the green transition and intelligent upgrade of the whole society

Source: National Energy Administration (NEA), June 2023

Green certificate realises full coverage of renewable energy power generation

In July 2023, the National Development and Reform Commission (NDRC), the Ministry of Finance (MoF) and the National Energy Administration (NEA) jointly issued a document announcing that the scope of issuance of green renewable energy power certificates (*green certificates*) will be expanded from onshore wind power and utility-scale solar PV to all renewable energy power generation projects, to achieve full coverage of green certificate issuance.³ The document clarifies that the green certificate 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 has laid the foundation for future renewable power projects to participate fairly in the power market and achieve a green premium.

From the perspective of power sources, the scope of green certificate 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. Among them, except part of the conventional hydropower projects⁴, all the green certificates issued to the on-grid electricity generated by other renewable energy power projects can be traded. In other words, the amount of self-consumed and off-grid renewable power generation is excluded. Currently, a tradable green certificate can only be sold once. This means that in the future, the transaction of renewable energy electricity will be carried out on a large scale in various forms, such as "electricity and certificate integrated transaction" (green power market) and "electricity and certificate separated transactions" (green certificate market) in parallel, which will help meet the differentiated needs of market players.⁵ For the trading mechanism and related policies of the green power market, please refer to the [CET website](#).

From the perspective of project types, subsidy-free renewable power projects and projects still enjoying the national feed-in tariff subsidy both can apply for green certificates. Subsidised projects can trade green certificates through bilateral negotiation and listing. If the price of the green certificate is lower than the subsidy amount, the government will pay the difference, and the subsidy amount still being the final income of the project; if the price of the green certificate is higher than the subsidy amount, the final income of the project is the green certificate price. Compared with subsidies, the income of green certificates is paid immediately, and the project may also obtain additional benefits (when the price of green certificates is higher than the subsidy amount). Subsidy-free projects can trade green certificates through bilateral negotiation, listing and centralised bidding, and the proceeds belong to the power generation enterprise or project owner.

In addition, the green certificate trading platform has expanded from the China Green Certificate Subscription Platform (managed by the China Renewable Energy Engineering Institute) to the Beijing power trading centre and Guangzhong power trading centre. It will further expand to other national-certified trading platforms in the future. The competition of trading platforms will promote the development of trading products, and the carbon market and financial institutions are also expected to participate. The document also explicitly mentions the promotion of international mutual recognition of green certificates. In principle, only the green certificates of China can be issued for renewable energy electricity in China. However, under the premise of not affecting China's achievement of Nationally Determined Contributions (NDC), the government encourages and actively promotes the connection between green consumption and emission reduction systems of international organisations and China's green certificates. This clarified one of the improvement directions for the green certificate mechanism and provided better expectations for the market.

³ "关于做好可再生能源绿色电力证书全覆盖工作促进可再生能源电力消费的通知, 发改能源〔2023〕1044号," National Development and Reform Commission, Ministry of Finance, National Energy Administration, 4 July 2023, accessed at https://www.ndrc.gov.cn/xxgk/zcfb/tz/202308/t20230803_1359092_ext.html.

⁴ The conventional hydropower projects were put into operation before 2023, and the non-market conventional hydropower projects were put into operation from January 1, 2023.

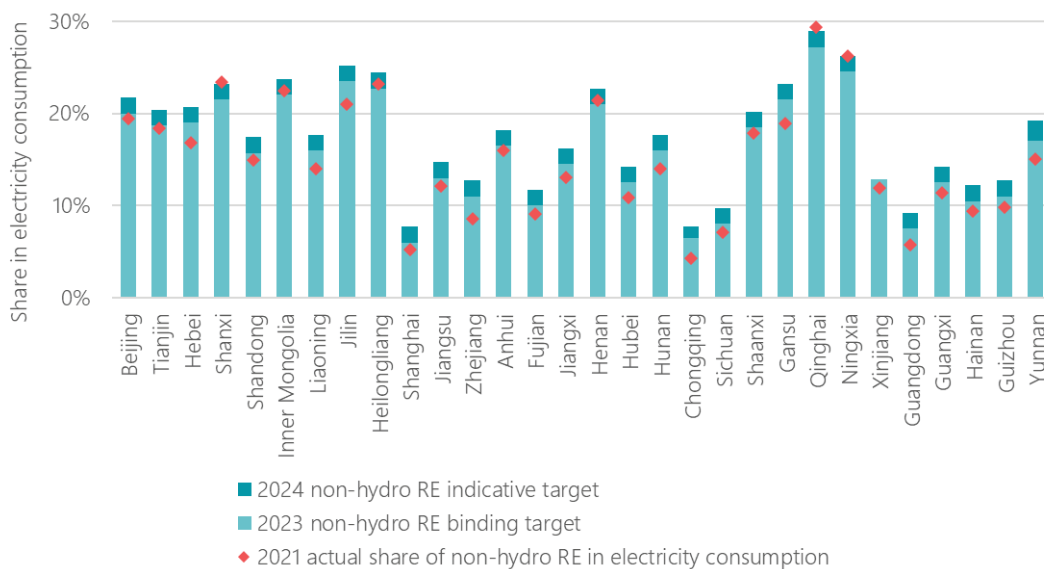
⁵ "关于做好可再生能源绿色电力证书全覆盖工作促进可再生能源电力消费的通知,发改能源〔2023〕1044号," National Development and Reform Commission, 4 July 2023, accessed at <https://mp.weixin.qq.com/s/hscDfE9IT7IOCxEwGY3A>.

The NEA released the renewable power consumption targets for 2023-2024

The NEA recently issued renewable power consumption targets for 2023 and 2024, that is, the proportion targets of renewable and non-hydro renewable energy in the annual electricity consumption of each province. The 2023 targets are binding targets, and all provinces will complete this year's assessment based on the targets, with the green certificate being used as the main proof. The 2024 targets are indicative targets, and each province should formulate the scale of new grid-connected wind power and solar PV capacity for next year based on these targets.⁶

Qinghai and Ningxia have the highest target values for non-hydro renewable power consumption, while their actual consumption in 2021 has already exceeded the expected target of 2024. From the perspective of target adjustments, most provinces' binding targets for 2023 were increased by 1.2% compared with 2022, while Yunnan was increased by 2%, and Xinjiang was decreased by 1.5%. Yunnan has the largest increase because its binding targets for 2022 did not increase compared with 2021. However, in 2022, the growth rates of wind power and solar PV power generation in Yunnan were much lower than the national average, and the growth of newly installed wind power capacity was also low, which means that it will be more difficult for Yunnan to complete the binding targets for 2022 and 2023.⁷ Therefore, the NEA adjusted the unfinished consumption proportion in 2022 to 2024-2025. The adjustment in Xinjiang's target is related to its local renewable power consumption capacity. The NEA has clarified that Xinjiang will not be assessed in 2023, and its expected consumption target for 2024 has yet to be released. This reserved a more extended transition period for Yunnan and Xinjiang.

2023-2024 non-hydro renewable power consumption targets and completion status in 2021



Source: NEA, accessed in July 2023

⁶ 关于2023年可再生能源电力消纳责任权重及有关事项的通知, 发改办能源〔2023〕569号, National Development and Reform Commission, National Energy Administration, 16 July 2023, accessed at https://www.ndrc.gov.cn/xwdt/tzgg/202308/t20230804_1359103.html.

⁷ "2023年的风电、光伏装机新增规模," National Development and Reform Commission, National Energy Administration, 7 August 2023, accessed at <https://mp.weixin.qq.com/s/WypsdDITdAjx9-eJx0Pg>.

China's first new energy base outbound UHV transmission project to start construction

The Ningxia-Hunan ± 800 kV UHV DC transmission project started construction in June 2023. This is China's first ultra-high voltage (UHV) transmission line, whose primary purpose is to export electricity from large wind and solar bases in the northwestern Gobi region. The proportion of new energy in annual electricity transmission is expected to reach more than 50%. The project has a rated transmission capacity of 8 GW and an on-grid power capacity of 17.6 GW, mainly wind power (4 GW), solar PV (9 GW) and supporting coal power (4.6 GW) in Ningxia. The total length of the line is 1,634 kilometres, passing through six provinces of Ningxia, Gansu, Shaanxi, Chongqing, Hubei and Hunan. It is planned to be put into operation by the end of 2025. After the completion of the project, Ningxia's external transmission capacity will increase by 57% to 22 GW, and the installed capacity of new energy power sources will exceed 50 GW, which will significantly alleviate the problems of Ningxia's local new energy grid connection and consumption. At the same time, the receiving end of Hunan Province faces the long-term risk of power shortage due to limited coal production capacity and unstable hydropower output. The project can deliver 36-40 TWh of electricity to Hunan every year, greatly improving Hunan's power supply capacity.⁸

The State Council approved three new nuclear power projects

At the end of July 2023, the State Council approved three nuclear power projects, each with two units, located in Shandong, Fujian and Liaoning respectively. This is the first time that China approved new nuclear power units this year. During the previous global energy crisis, some countries restarted or accelerated the development of nuclear power projects. In 2022, China approved ten nuclear power units, the most since 2009. According to statistics from the China Nuclear Energy Industry Association, as of April 2023, the total installed capacity of commercial nuclear power in China reached 56.9 GW (54 units), and the number of nuclear power units under construction reached 26.8 GW (24 units). The Chinese government again emphasised that safety is the lifeline of nuclear power development.⁹

China completes Asia's largest coal power CCUS project

In June 2023, China Energy Group put into operation a carbon dioxide capture utilisation and storage (CCUS) project at its coal power plant in Shandong Taizhou. Able to absorb 500,000 tons of carbon dioxide per year, it is currently the largest coal power CCUS equipment in Asia. It is fully designed, manufactured and installed in China. The carbon dioxide capture rate of this CCUS facility is greater than 90%, the purity is higher than 99.99%, and the captured carbon dioxide is stored in liquid form. At the same time, its carbon capture heat consumption is lower than 2.4 GJ/t-CO₂, and power consumption is lower than 90 kWh/t-CO₂, reaching the industry-leading level. The Taizhou coal power plant has signed carbon dioxide sales contracts with eight buyers, providing strong support for the sustainable operation of the project.¹⁰

⁸ "特别关注 | 新能源输送占比将超50%，我国首个“沙戈荒”风光电基地外送电特高压工程开工," National Development and Reform Commission, 13 June 2023, accessed at <https://mp.weixin.qq.com/s/AR-EJrO40XZeSvE0PcTsig>.

⁹ "核电建设加速，三大核电项目同时获核准," State Council, 31 July 2023, accessed at <https://baijiahao.baidu.com/s?id=1773017769990429597&wfr=spider&for=pc>.

¹⁰ "纪实：亚洲最大煤电CCUS项目投产," China Electric Power News, 2 June 2023, accessed at <https://news.bjx.com.cn/html/20230602/1310804.shtml>.

2. Review of power sector development in the first half of 2023

In the first half of 2023, due to the impact of high temperatures and other factors, the challenge of ensuring power supply has been increasing, and coal power has continued to play an essential supporting role. At the same time, China continued to accelerate the green energy transition, renewable energy maintained a sound development momentum, the proportion of installed renewable power generation capacity has historically exceeded that of coal power, and the construction of new-type energy storage facilities has been accelerating. Wind and solar PV power generation have increased rapidly, and the renewable power curtailment rate has remained within a reasonable range.

The challenge of ensuring the power supply has increased

In the first half of 2023, the electricity consumption of the whole society increased by 5% year-on-year, 2.1 percentage points higher than that of 2022 H1. Affected by the improvement of the agricultural economy and the recovery from the epidemic, the electricity consumption of the primary and tertiary industries rose significantly, with year-on-year growth rates of 12.1% and 9.9%, respectively. In summer, China has been experiencing continuous high temperatures, and the national daily dispatched power generation (30 TWh/+5.3% y-o-y) and the peak power load (1340 GW/+3.8% y-o-y) hit a record high.

Affected by less precipitation, hydropower generation in the year's first half fell by 22.9% year-on-year. To further ensure power supply security, coal and natural gas production and import continued to increase. The proportion of coal power generation remained at nearly 60%, and it was still the most important source of power supply, giving full play to the role of "ballast stone".

According to the forecast of the China Electricity Council (CEC), the growth rate of electricity consumption in the whole society in the second half of 2023 can reach 6%~7%. The government requires continuous strengthening of fuel supply, urges all types of power sources to be fully generated, and simultaneously strengthens inter-provincial power mutual aid to improve power security and supply capabilities.¹¹

References

¹¹ "2023年上半年全国电力供需形势分析预测报告," China Electricity Council, 31 July 2023, accessed at <https://cec.org.cn/detail/index.html?3-323217>; "国家能源局2023年三季度网上新闻发布会文字实录," National Energy Administration, 31 July 2023, accessed at http://www.nea.gov.cn/2023-07/31/c_1310734825.htm.

¹² "国家能源局发布2023年上半年光伏发电建设运行情," National Energy Administration, 27 July 2023, accessed at <https://www.cnpower.com.cn/news/71798.html>.

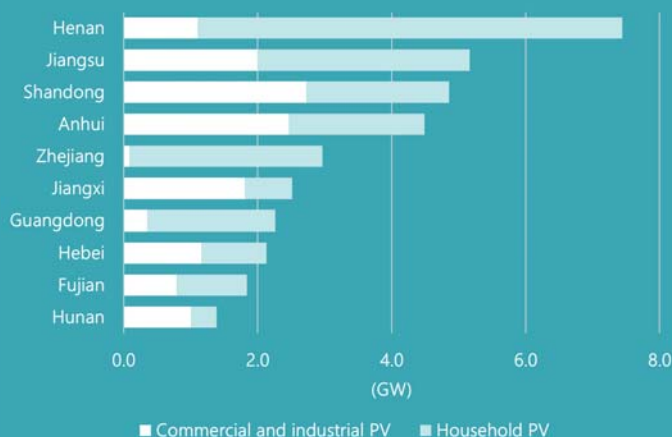
¹³ "2023年上半年全国电力供需形势分析预测报告," China Electricity Council, 31 July 2023, accessed at <https://cec.org.cn/detail/index.html?3-323217>; "国家能源局2023年三季度网上新闻发布会文字实录," National Energy Administration, 31 July 2023, accessed at http://www.nea.gov.cn/2023-07/31/c_1310734825.htm.

Solar PV leads the newly installed capacity

In the first half of 2023, China's newly installed power generation capacity was 140 GW, and power source investment increased by 53.8% year-on-year. The newly installed renewable power capacity was 109 GW, a year-on-year increase of 98.3%, accounting for 77% of the total newly installed capacity. By June 2023, China's total installed power generation capacity reached 2,707 GW, of which 48.8% was renewable power, surpassing coal power (42.1%) in history. The total installed capacity of wind power and solar PV reached 859 GW, which is expected to reach 960 GW by the end of the year, accounting for one-third of the total installed capacity.

- **The growth of wind power capacity nearly doubled.** The newly installed wind power capacity was 23 GW in 2023 H1, more than 10 GW compared to 2022 H1. Onshore wind power is absolutely dominant, and the "Three Norths" region accounting for 70.6%.
- **Utility-scale and distributed solar PV both experienced rapid growth.** The newly installed capacity of solar PV power generation was 78 GW, accounting for 55.6% of the total newly installed capacity. The newly added capacity of utility-scale PV and distributed solar PV increased by 234% and 108%, respectively, year-on-year. The cumulative installed capacity of distributed solar PV reached 41 GW, of which 21 GW were household solar PVs, and central and eastern provinces such as Henan, Jiangsu, Shandong, Anhui and Zhejiang saw the largest increase.¹²
- **New-type energy storage continued to expand quickly,** with a growth of 8.6 GW, equivalent to the total installed capacity over the years, and the lithium-ion battery played the absolute dominant role. North, northwest and central regions together accounted for 80% of China's total, of which the newly installed capacity in Shandong reached nearly 3 GW, and that of Hunan and Ningxia reached 2.6 GW and 2 GW, respectively.¹³

Top 10 provinces of newly installed distributed solar PV capacity in the first half of 2023



Source: PV-perspective, July 2023

Newly installed power generation capacity and total installed capacity in the first half of 2023 by fuel type

	Newly installed capacity	Total* installed capacity	Total* electricity generation
Total	141 GW (+72 GW y-o-y)	2707 GW (+10.8% y-o-y)	4168 TWh (+3.8% y-o-y)
Thermal power	26 GW	1357 GW (+3.8% y-o-y)	2946 TWh (+7.5% y-o-y)
Nuclear power	1.2 GW	57 GW (+2.2% y-o-y)	212 TWh (+6.5% y-o-y)
Hydropower	5.4 GW	419 GW (+4.5% y-o-y)	450 TWh (-22.9% y-o-y)
- General hydropower	2.1 GW	370 GW	
- Pumped storage	3.3 GW	49 GW	
Wind power	23 GW	389 GW (+13.7% y-o-y)	463 TWh (+20% y-o-y)
- Onshore wind power	22 GW	358 GW	
- Offshore wind power	1.1 GW	31 GW	
Solar PV	78 GW	470 GW (+39.8% y-o-y)	266 TWh (+30% y-o-y)
- Utility-scale solar PV	37 GW	272 GW	
- Distributed solar PV	41 GW	198 GW	
Biomass power	1.8 GW	43 GW (+9.2% y-o-y)	98 TWh (+10% y-o-y)
New-type energy storage	8.6GW/17.8 GWh	17 GW/36 GWh	
Share of non-fossil energy	77.6%	50.9%	35.7%
Share of renewable energy	76.7%	48.8%	30.6%

Note: *Total refers to power plants above designated scale, which is less than the sum of the capacity/generation by technology below; it does not include new-type energy storage. Source: National Energy Administration (NEA) and China Electricity Council (CEC), July 2023

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- ¹⁴ “2023年上半年全国电力供需形势分析预测报告,” China Electricity Council, 31 July 2023, accessed at <https://cec.org.cn/detail/index.html?3-323217>; “国家能源局2023年三季度网上新闻发布会文字实录,” National Energy Administration, 31 July 2023, accessed at http://www.nea.gov.cn/2023-07/31/c_1310734825.htm.
- ¹⁵ “2023年6月全国新能源并网消纳情况发布,” National New Energy Consumption Monitoring and Early Warning Center, 1 August 2023, accessed at https://www.sohu.com/a/708105602_703050.

Wind power and solar PV power generation are growing rapidly

The total power generation of power plants above the designated scale nationwide was 4,168 TWh, a year-on-year increase of 3.8%. Among them, thermal power and nuclear power generation increased by 7.5% and 6.5%, respectively. Renewable power generation was 1,277 TWh, accounting for round 30% of total power generation. Wind power, solar PV and biomass power generation increased by 20%, 30% and 10% respectively year-on-year.

The average utilisation hours of units above 6 MW was 1,733 hours, a year-on-year decrease of 44 hours, mainly affected by the insufficient output of hydropower (1239hr/-452hr y-o-y). The utilisation hours of coal and nuclear power increased, reaching 2,244 hours and 3,770 hours, respectively. The utilisation hour of wind power was 1,237 hours, an increase of 83 hours year-on-year; solar power generation was 658 hours, a year-on-year decrease of 32 hours. ¹⁴

From January to June 2023, the national average wind curtailment rate was 3.3%, of which Hebei, Gansu and Mongolia were higher than 5%; the national average solar curtailment rate was 1.8%, Qinghai and Tibet were higher than 5%.¹⁵

3. Policy monitoring

2023-07-19

https://www.samr.gov.cn/bzjss/tzgg/art/2023/art_8f81df3e20ed42a0997aa8c108e9f9a5.html

A national hydrogen standard system framework established

Notice on Issuing the Guidelines for the Construction of Hydrogen Energy Industry Standard System (2023 Edition)

This is China's first national standard system guide for the entire hydrogen energy industry chain, including five subsystems: foundation and safety, hydrogen production, hydrogen storage, hydrogen refuelling, and hydrogen energy application. The document proposes formulating basic common standards (e.g. terms) and general safety standards for hydrogen energy. At the technical level, the government requires the promotion of green electricity hydrogen production standards, clarifying the basic requirements for different forms of hydrogen storage and transportation, equipment standards and transportation security system standards, formulating hydrogen refuelling station equipment and operation safety management standards, as well as hydrogen application standards in transportation, energy storage and nuclear power industries. China plans to formulate and revise more than 30 hydrogen energy standards by 2025.

2023-06-08

https://www.gov.cn/zhengce/content/202306/content_6887167.htm

The State Council requires the construction of a high-quality charging infrastructure system

Guiding Opinions on Further Building a High-quality Charging Infrastructure System, State Council General Office Development [2023] No. 19

The government plans to basically establish a high-quality charging infrastructure system with extensive coverage, moderate scale, reasonable structure, and complete functions by 2030, which will strongly support the development of the new energy vehicle industry and effectively meet the charging demand. As a critical transportation-energy integration infrastructure, the government aims to build a charging network with urban planar, highway linear, and rural point-like layouts. The proportion of parking spaces with standardised charging conditions in large and medium-sized urban operating parking lots strive to exceed that of urban registered electric vehicles, and the coverage of charging services in rural areas shall be steadily increased.

2023-06-05

http://zfxgk.nea.gov.cn/2023-06/05/c_1310726993.htm

The NEA clarifies policies for wind power plant retrofit and decommissioning

Notice on Issuing the Administrative Measures for Wind Farm Transformation, Upgrading and Decommissioning, NEA Development of New Energy Regulations [2023] No. 45

After entering the 14th Five-Year Plan period, China's wind turbines which have reached 20 years of operation have grown exponentially. The total capacity is expected to reach 1.25 GW by 2025 and further increase to 45 GW by 2030. There is an urgent need to improve wind farm renovation and decommissioning policies. The NEA stipulates that wind farms which have reached 20 years of operation can continue to operate after meeting the operation security assessment. The government encourages wind farms that have been in operation for more than 15 years or have a single unit of less than 1.5 MW to carry out renovation and upgrading. For projects that still enjoy the national feed-in tariff subsidy, the government will continue to issue subsidies after the retrofit until the operation reaches 20 years (including the time of retrofit construction) or reaches the specified total power generation of the subsidy. The annual subsidy upper limit is 5% of the total subsidised electricity, and the excess part is paid according to the feed-in tariff policy of the year when the retrofit is approved (i.e. no national subsidy).