August 2025

CHINA ENERGY POLICY NEWSLETTER

China Energy Transformation Programme

1. China energy transition updates

China's largest hydropower project starts construction in Xizang (Tibet)

On July 19, 2025, the Chinese government announced the official start of the hydropower project in the lower reaches of the Yarlung Zangbo River in Xizang (Tibet), also known as the *Medog Hydropower Plant*. The project is located in Medog County, Nyingchi City, southeastern Xizang, with a total investment of about RMB 1.2 trillion. The project includes five cascade hydropower stations with a total installed capacity of 60 GW, equivalent to three Three Gorges Hydropower Plants, and is China's largest hydropower project in history. As shown in the figure below, the project utilises the natural drop of more than 2,200 meters in the Horseshoe Bend of the Yarlung Zangbo River to achieve cascade power generation through the "tunnel in the mountain + large impulse turbine" technology, and the water energy utilisation rate can reach over 85%. The power generation will be transmitted to East and Central China through ±800 kV ultra-high-voltage (UHV) lines, while taking into account local power demand.

The annual power generation is expected to reach 300 TWh after the project is fully operational, which can meet approximately 3% of the current national electricity demand, replace 90 million tonnes of standard coal, and reduce 300 million tonnes of carbon dioxide emissions annually. The project is expected to take 15 to 20 years to complete, with the first unit scheduled to be put into operation by 2035 and the project fully completed by 2045. It will also boost Xizang's cement, steel, and logistics industries, promote the construction of southern Xizang's transportation networks, and facilitate the transfer of industries such as electrolytic aluminium and polysilicon.[1]

[1] "李强出席雅鲁藏布江下游水电工程开工仪式并宣布工程开工," Xinhua News Agency, 19 July 2025, accessed at https://www.gov.cn/yaowen/liebiao/202507/content_7032776.htm; "世界级水电工程西藏开建，清洁能源战略迈入新阶段," cj.sina.com.cn, 21 July 2025, accessed at https://baijiahao.baidu.com/s?id=1838214667291143963&wfr=spider&for=pc; "雅鲁藏布江世纪工程墨脱水电站开工 ",baijiahao.baidu.com, 19 "July 2025, accessed at https://baijiahao.baidu.com/s?id=1838075972860146094&wfr=spider&for=pc.

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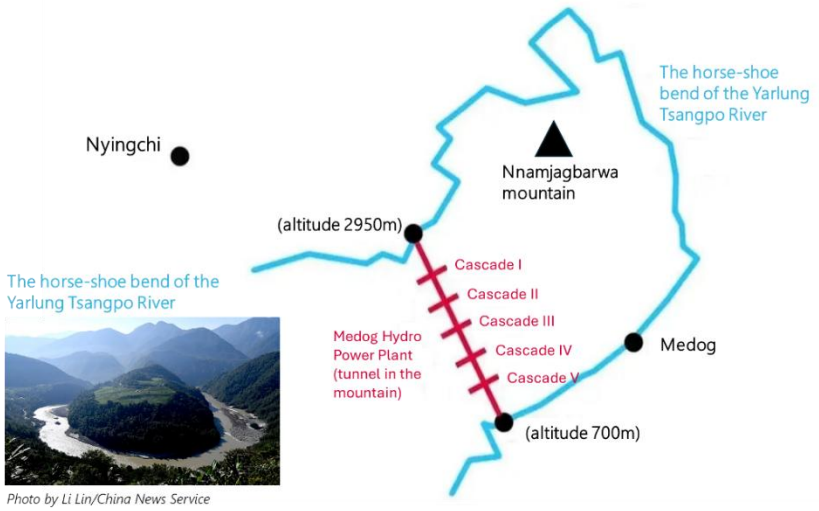
Sketch Map of Medog Hydropower Plant

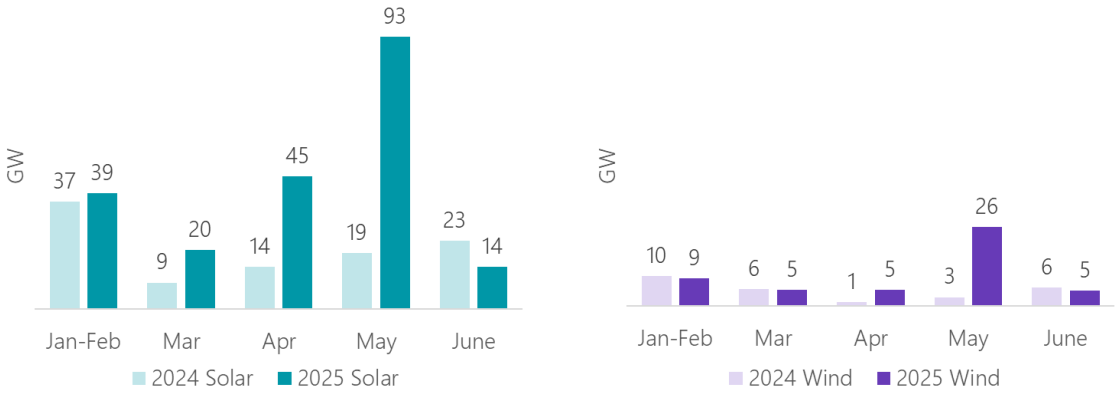


Source: Remade from Geographical Window's graph posted, July 2025

China added over 260 GW of wind and solar power capacity in 2025 H1

In January 2025, the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) jointly issued a policy requiring all power generation from existing and newly built wind power and solar PV projects be connected to the grid through participation in the power market latest since 2026. Moreover, newly built projects from June 2025 will no longer have guaranteed hours purchased by TSOs.[2] Therefore, from January to May 2025, there was a rush to install new wind power and solar PV projects. According to statistics from the NEA, in 2025 H1, the incremental solar PV capacity reached 212 GW, representing a 107% year-on-year increase; the incremental wind power capacity reached 51 GW, representing a 99% year-on-year increase. The newly installed wind power and solar PV capacity jointly accounted for 74% of their total capacity added in 2024. As of the end of June, the share of solar PV and wind power in the total installed capacity reached 30.2% (1,100 GW) and 15.7% (573 GW), respectively. The installation pace is expected to slow down significantly in 2025 H2.[3]

Newly added solar PV (left) and wind power (right) installed capacity by month in 2024 H1 and 2025 H1

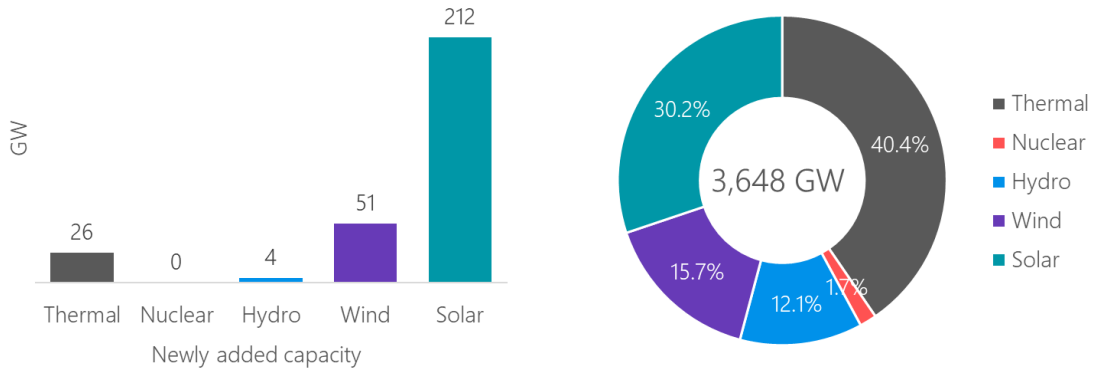


Source: National Energy Administration (NEA), accessed in July 2025

[2] "关于深化新能源上网电价市场化改革 促进新能源高质量发展的通知(发改价格〔2025〕136号)," National Development and Reform Commission, National Energy Administration, 9 February 2025, accessed at https://www.ndrc.gov.cn/xxgk/zcfb/tz/202502/t20250209_1396066.html.

[3] "国家能源局发布2025年1-6月份全国电力工业统计数据," National Energy Administration, 23 July 2025, accessed at https://www.cpnn.com.cn/news/nytt/202507/t20250723_1818441.html; "太阳能发电，装机突破11亿千瓦！," National Energy Administration, 23 July 2025, accessed at https://mp.weixin.qq.com/s/S0HlM6V7qK7Sks4umTy5sg.

Newly installed (and grid-connected) power generation capacity by technology in 2025 H1 (left) and total installed capacity structure (right)

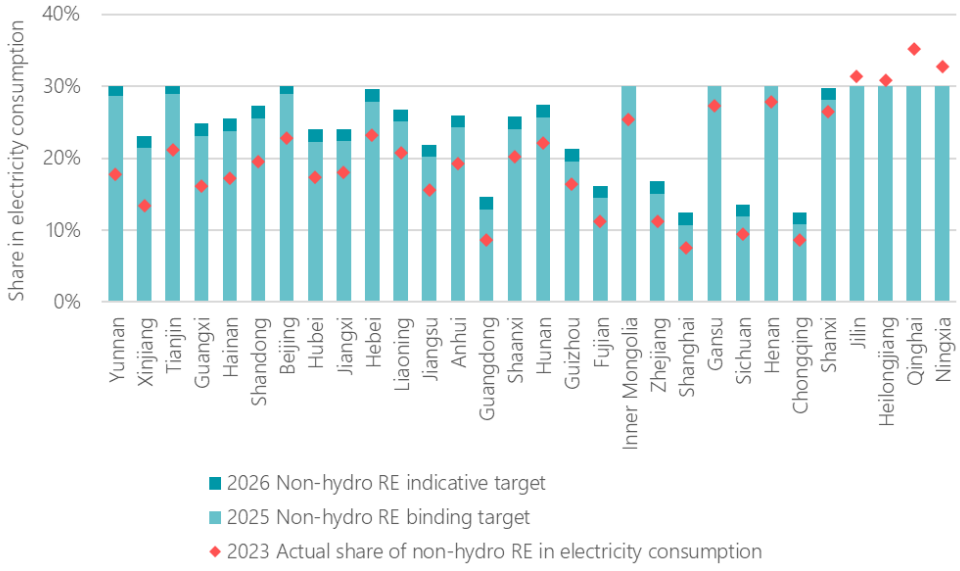


Source: NEA, July 2025

NDRC releases renewable power consumption targets for 2025-2026

The NDRC and the NEA jointly released the renewable power consumption targets for 2025 and 2026[4], that is, the proportion of renewable energy and non-hydro renewable energy in the annual electricity consumption of each province. 2025 is a binding target; the assessment is mainly based on the local physical electricity consumption and supplemented by the purchase of green certificates from other provinces. Unlike 2024, the uncompleted gap cannot be carried over to the next year, as 2025 marks the last year of the *14th Five-Year Plan* period (2021-2025). 2026 is an indicative target; each province will carry out project reserves accordingly. According to the document, the non-hydro renewable power consumption targets of each province in 2025 increased by an average of 3.7 percentage points (pp) compared with that in 2024, among which Yunnan and Xinjiang have the largest increases, reaching 10.6 pp and 7.9 pp, respectively, significantly build up the consumption pressure; Tianjin, Guangxi, Hainan, Shandong and Beijing all witness an increase by above 5 pp; Jilin, Heilongjiang, Qinghai and Ningxia's actual consumption in 2023 have exceeded 2024 targets, the 2025 targets remain.

Non-hydro renewable power consumption targets by province in 2025-2026 and actual completion in 2023



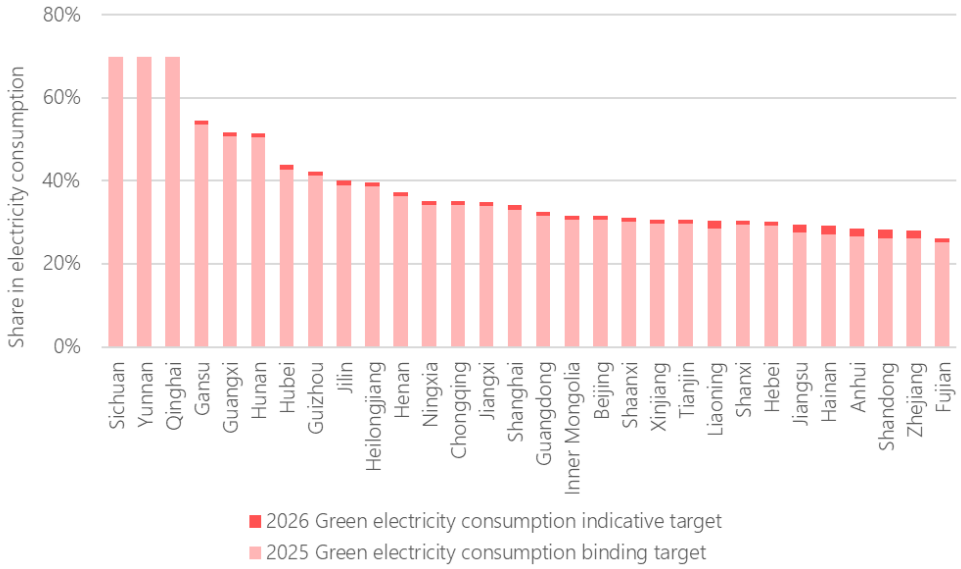
Source: NEA, July 2025

[4] "国家发展改革委办公厅 国家能源局综合司 关于2025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〔2025〕669号," National Development and Reform Commission, National Energy Administration, 1 July 2025, accessed at https://zfxxgk.ndrc.gov.cn/web/iteminfo.jsp?id=20526.

Green power consumption targets newly set in 2025 for the steel, polysilicon and cement industries

In 2024, the government released provincial green power consumption targets for the electrolytic aluminium industry for the first time. In 2025, the binding targets of each province increase by an average of 2.5 pp compared with 2024, among which Guangxi have the largest increase of 11.6 pp; no adjustment for Sichuan, Yunnan and Qinghai; Ningxia, Hubei and Chongqing to reduce by 0.1, 2.5 and 3.5 pp, respectively; the increase in other provinces remains between 0.5-6 pp. The indicative targets of each province in 2026 are further increased by 1-2 pp based on the binding targets in 2025. Besides, the government proposes green power consumption targets for the steel, polysilicon, and cement industries for the first time. The targets for the three industries in 2025-2026 are the same as those for the electrolytic aluminium industry in the same province. In 2025, the electrolytic aluminium industry will be assessed, while the other three industries will be monitored only, with actual consumption calculated based on green certificates. In 2025, Sichuan, Yunnan, and Qinghai have the highest target of 70%, while Fujian has the lowest target of 25.2%. In addition, the document clarifies that the green power consumption target for newly built data centres in national hub nodes is unified at 80%.

Green power consumption targets for electrolytic aluminium, steel, polysilicon, and cement industries by province in 2025-2026



Source: NEA, July 2025

China's first direct green power supply project in database centre puts into operation

The green transition of data centres is one of China's major strategies to implement the dual carbon goals. In July 2025, the Low-carbon Computing Power Base of the Centrin Data Platform (CDP) was put into operation in Ulanqab, Inner Mongolia. This is the first direct green power supply project to serve a data centre in China. The project has a total installed capacity of 300 MW, including a newly built 200 MW wind power project, a 100 MW solar PV project, a 45 MW/180 MWh energy storage system and a 220 kV step-up substation. These facilities form a comprehensive energy system that achieves a dynamic match between energy supply and computing power demand through an integrated operational platform, thereby realising point-to-point clean power supply to a data centre. The annual power generation is expected to reach 848 GWh, accounting for 38.7% of the data centre's yearly electricity consumption, equivalent to a reduction of 567,000 tons of carbon emissions.[5]

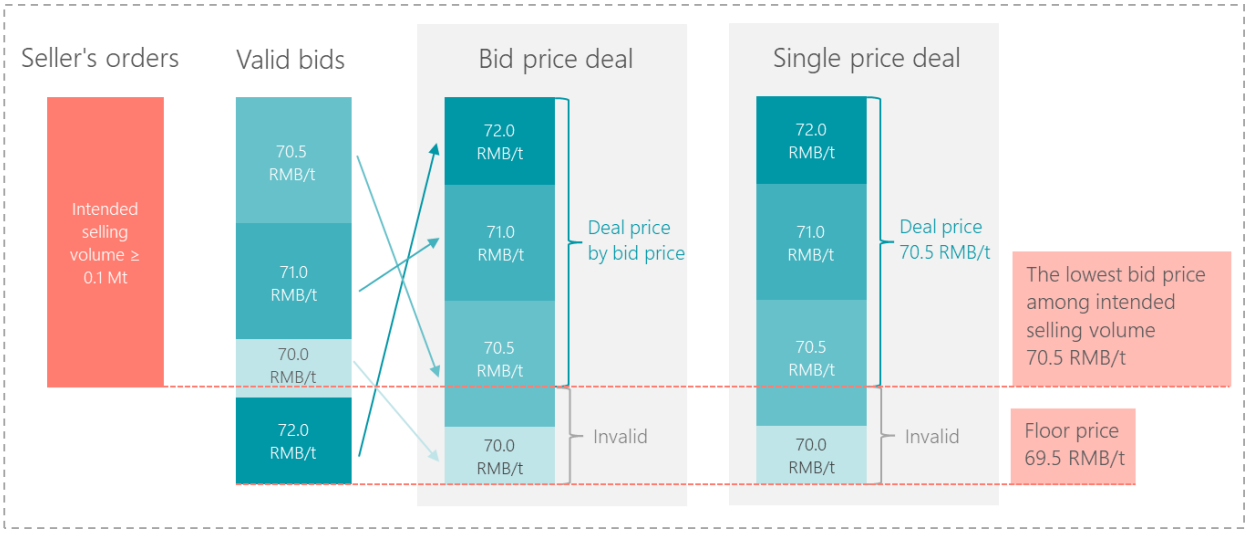
[5] "全国首个数据中心绿电直连源网荷储一体化项目在乌兰察布市投运," Wulanchabu .gov, 16 July 2025, accessed at https://www.wulanchabu.gov.cn/fzys/1850481.html.

China's national ETS introduces the one-way bidding method

One-way bidding is a mature and common transaction method in the Emissions Trading System (ETS). China's national ETS recently introduced this method. According to the regulation, a seller submits an order to the exchange platform, which includes the intended selling volume (≥100,000 tons/order) and a floor price, set at either the previous day's closing price or 10% below it. Within the designated bidding window, multiple buyers submit intended purchase volume and bid price, which cannot exceed 10% above the previous day's closing price. The exchange platform then ranks bids in descending order by price, and within the same price, by time priority, as shown in the figure below.

There are two pricing mechanisms, determined by the seller at the time of order submission: 1) Bid price deal: each buyer pays as bid; 2) Single price deal: all bid winners pay the lowest accepted bid price within the cleared volume. The seller chooses the pricing method based on the previous day's supply and demand conditions, as well as the closing price. When market liquidity is high, the bid price deal may yield higher returns. When market liquidity is low, the single price deal can help ensure a larger transaction volume while still meeting the price expectations. Compared to previously used agreement transfers, e.g. listed agreement, one-way bidding reduces matchmaking time costs and facilitates large-scale transactions. Meanwhile, when market demand is weak, buyers can obtain allowances at favourable prices, reducing compliance costs.[6]

Schematic diagram of the one-way bidding method in the China national ETS



Source: Remade from SinoCarbon's graph, July 2025 [7]

Gansu proposes the first new-type energy storage capacity price policy

Gansu is a high-share renewable energy province in northwest China. By May 2025, the share of wind and solar in provincial power generation capacity has reached 65%. As an important renewable energy base, Gansu's demand for flexible resources continues to grow. The provincial DRC recently solicited opinions on the *Capacity Price Mechanism on the Power Generation Side (Draft)* (CHN: 发电侧容量电价机制（草案）), which plans to implement a capacity price of 330 RMB/kW per year for both coal power units and grid-side new-type energy storage including batteries, compressed air, hydrogen and ammonia storage, and heat (cooling) storage for two years. The cost of capacity price is apportioned between local industrial and commercial electricity consumption, as well as electricity exports, by month. Previously, the government introduced a capacity price or a capacity compensation policy by technology directly. This is the first province to propose a unified capacity price for coal power and new-type energy storage based on the effective capacity providing flexibility, which is of great significance in promoting the development of "technical neutrality" flexible resources and power market rules.

[6] "全国碳市场交易机制"上新"," Chine Energy News, 14 July 2025, accessed at https://baijiahao.baidu.com/s?id=1837607945912875740&wfr=spider&for=pc; "7月16日！全国碳市场首场"单向竞价"上线交易," SinoCarbon, 11 July 2025, accessed at https://mp.weixin.qq.com/s/CTZCZyR29IosMAR-050YSg.

[7] "7月16日！全国碳市场首场"单向竞价"上线交易," SinoCarbon, 11 July 2025, accessed at https://mp.weixin.qq.com/s/CTZCZyR29IosMAR-050YSg.

2. Special column – power market reform

China has initially established a unified national power market system

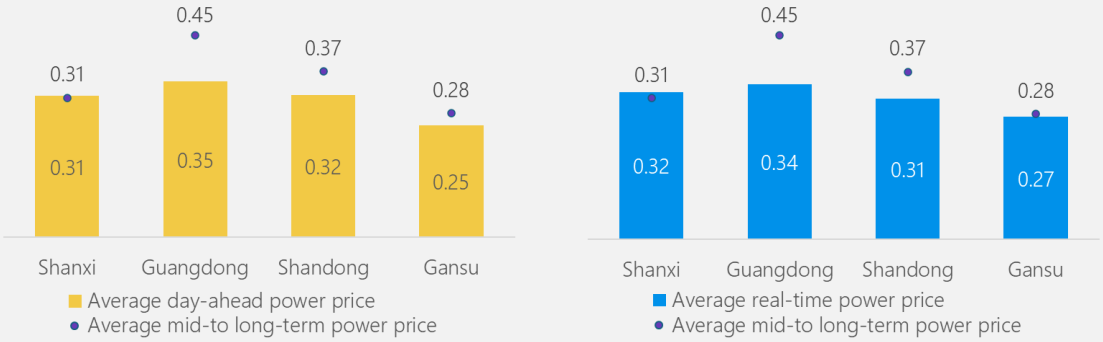
On June 28, 2025, the southern regional power market officially commenced continuous settlement trial operation, indicating that the five provinces of the China Southern Grid participated on the same platform with a unified trading methodology.[8] Furthermore, the NDRC passed the *Plan for Normalised Power Trading Mechanism Across Power Grid Operating Areas* (CHN: 跨电网经营区常态化电力交易机制方案) on July 1, 2025. It means that electricity users are free to participate in cross-grid[9] transactions, including medium- and long-term, spot, and green power tradings. The NDRC stated that by the end of 2025, State Grid and China Southern Grid should further unify market rules and transaction varieties to realise the normal opening of cross-grid transactions.[10] So far, China has initially established a unified national power market system according to the NDRC.[11]

Spot power price is in general lower than the medium and long-term price in 2024

In June 2025, the NEA released the *China Power Market Development Report 2024* (CHN: 2024年度中国电力市场发展报告). In 2024, 100% of China's coal power units, more than 50% of new energy units, and all industrial and commercial users have participated in the market. The national market-based electricity transaction accounted for 62.7% of the total electricity consumption. Inter-provincial and intra-provincial transactions increased by 19.8% and 5.4% year-on-year, respectively. The proportion of market-based transactions in the total new energy power generation reached 52.3%. Market participation continued to expand.

In terms of price, the average medium- and long-term price in 2024 was 0.231-0.505 RMB/kWh, 4.7% higher than the local coal power baseline price on average. Shanxi, Guangdong, Shandong and Gansu have launched the spot power market in 2024. Among them, the average day-ahead power prices and average real-time power prices in the latter three provinces were 9.8% to 22.7% and 2.6% to 24.1% lower than the local average medium- and long-term prices, respectively. The spot price is generally lower than the medium- and long-term price. The national ancillary service market reached a cost of RMB 40.25 billion, with peak-load shaving and frequency regulation accounting for 82% and 17%, respectively. The average apportioned cost on the power generation side was 0.0053 RMB/kWh, with wind and solar power accounting for 63% and coal power accounting for 24%; the average apportioned cost on the user side was 0.0008 RMB/kWh, all users shared for 2.8% of the total ancillary service cost in 2024.

Comparison of the average day-ahead power price, real-time power price and medium- and long-term price in the four provincial spot power markets in 2024



Source: NEA, June 2025

[8] "南方区域电力市场：正式转入！," China Energy News, 29 June 2025, accessed at https://baijiahao.baidu.com/s?id=1836192927595538005&wfr=spider&for=pc.

[9] Across the administrative regions of two major TSOs in China, i.e. the State Grid and China Southern Grid.

[10] "国家发展改革委 国家能源局关于跨电网经营区常态化电力交易机制方案的复函, 发改体改〔2025〕915号," National Development and Reform Commission, 11 July 2025, accessed at https://www.ndrc.gov.cn/xxgk/zcfb/tz/202507/t20250711_1399134_ext.html; "媒体报道 | 全国统一电力市场建设提速 国网南网实现跨区域交易," National Development and Reform Commission, 15 July 2025, accessed at https://m.thepaper.cn/newsDetail_forward_31183312.

[11] "国务院新闻办举行"高质量完成'十四五'规划"系列主题发布会 介绍"十四五"时期经济社会发展成就," State Council, 9 July 2025, accessed at https://www.gov.cn/lianbo/fabu/202507/content_7031379.htm.

NEA organises hydrogen energy pilots in the energy sector

The government will carry out hydrogen energy pilot projects and pilot regions in the energy sector. The pilot projects aim to promote the application of advanced hydrogen energy technologies and key equipment, while the pilot regions seek to enhance hydrogen sector coupling and coordination. The pilots are primarily divided into four technical directions: hydrogen production, hydrogen storage and transportation, hydrogen applications, and general support capabilities.[12]

Project types and technical requirements for hydrogen energy pilots in the energy sector

Hydrogen production	▪ Large-scale hydrogen production and integration: hydrogen production from renewable and nuclear power; integration with ammonia, methanol, aviation fuel, and petrochemical processes; electrolyser capacity ≥100 MW with load regulation capability between 50%–100% ▪ Off-grid hydrogen production: off-grid hydrogen generation in deep-sea and desert areas; electrolyser capacity ≥10 MW ▪ Low-carbon hydrogen development: fossil-based hydrogen production with carbon capture and storage (CCS), and large-scale high-purity hydrogen supply; hydrogen purification capacity ≥5,000 Nm^3/h
Hydrogen storage and transportation	▪ Large-scale, long-distance hydrogen transport: pilot projects for gaseous and liquid hydrogen transport via pipelines and tank trucks; single-unit hydrogen liquefaction capacity ≥5 tons/day, truck transport capacity ≥600 kg, pipeline length ≥100 km ▪ High-density hydrogen storage: pilot projects for high-pressure gaseous storage, liquid organic hydrogen carriers (LOHC), and solid-state metal hydrogen storage technologies; storage scale ≥20,000 Nm^3
Hydrogen application	▪ Green hydrogen substitution: green hydrogen substitution in oil refining and coal-to-oil/gas processes; substitution volume ≥1,000 tons/year ▪ Hydrogen and ammonia power supply: piloting of hydrogen/ammonia blending in coal and gas power plants, and hydrogen-fired gas turbines; coal-fired boiler capacity ≥300 MW with ≥10% hydrogen/ammonia blending, gas turbine project capacity ≥10 MW with ≥15% hydrogen/ammonia blending ▪ Long-duration hydrogen storage: power-to-hydrogen-to-power applications enabling multi-timescale storage and flexible power system operations; hydrogen storage capacity on the generation side ≥1 MW, with continuous full-power discharge duration ≥4 hours ▪ Integrated applications: combined heat and power (CHP) with fuel cells in buildings and industrial parks, distributed hydrogen energy systems in remote areas, hydrogen fuel cell backup power for data centres; installed fuel cell capacity ≥0.5 MW
Generic support capabilities	▪ Hydrogen validation and testing platforms: operational validation of key hydrogen equipment, formulation, and certification of industry standards ▪ Low-carbon hydrogen transition pilots: hydrogen-based zero-carbon energy systems in mining sites, ports, logistics hubs, and industrial parks; ≥80% of energy consumption in industry, building, and transport scenarios within a park to be from clean sources

Source: NEA, July 2025

[12] "国家能源局发布《关于组织开展能源领域氢能试点工作的通知, 国能综通科技（2025）91号," National Energy Administration, 10 June 2025, accessed at https://xxgk.jcgov.gov.cn/szfgzbm/jcsnyj/fdzdgknr_31618/fgwj_31628/202506/t20250612_2153937.shtml.

3. Policy monitoring

2025-06-30

https://www.gov.cn/zhengce/zhengceku/202507/content_7031090.htm

The application of national zero-carbon parks starts

Notice on the Construction of Zero-carbon Parks, NDRC Environment Resources [2025] No. 910

The government has launched the application for national zero-carbon parks. Supporting the matching of parks with surrounding non-fossil power sources, scientifically install energy storage and flexibility facilities, developing direct green power supply, encouraging participation in green certificates and green power transactions, and exploring hydrogen-power coupling; promoting the use of biomass, nuclear energy, CSP, geothermal and industrial waste heat in parks to achieve low-carbon heating. The NDRC will provide financial support to selected zero-carbon parks and encourage local governments and local banks to support them through funding, bonds, and medium- and long-term loans.

2025-06-27

https://www.cnca.gov.cn/zwxx/tz/2025/art/2025/art_5f71e08121e5476eb7561594fb518d85.html

SAMR releases the first batch of product carbon footprint certification catalogues

Notice on Issuing the Product Carbon Footprint Label Certification Pilot Certification Catalogue (First Batch), SAMR Certification Publishing [2025] No. 57

The State Administration for Market Regulation (SAMR) has published a list of 17 products and will release carbon footprint certification schemes for each of them. The products cover lithium batteries, solar PV products, steel, textiles, electronic appliances, tires, electrolytic aluminium, cement, and wood products. The release of this catalogue marks the gradual shift of China's product carbon labelling certification system from a policy framework to implementation.

2025-06-13

https://www.gov.cn/zhengce/zhengceku/202507/content_7030863.htm

The government releases a specific plan for high-power charging facilities

Notice on Promoting the Scientific Planning and Construction of High-Power Charging Facilities, NDRC General Office Energy [2025] No. 632

The government will popularise high-power charging facilities with a single-gun charging power of more than 250 kW. The transportation departments will retrofit charging facilities with a ≥40% utilisation rate during major holidays, and strive to have ≥100,000 high-power charging facilities nationwide by 2027. The document also requires moderately carrying out grid development and upgrade in advance to enhance the access capacity of distribution grids to high-power charging stations. Support to install solar PV and energy storage facilities and encourage charging operators to participate in power markets as demand-side response.