

China's Power Transition in Next Five Years towards the 15th FYP:

Renewable Momentum and Coal Shifts

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China has entered the final stage of the 14th Five-Year Plan (FYP),¹ a pivotal period for building the New Power System.² Its power sector can peak emissions as early as 2025. In Q1–Q3 2025, wind and solar generated 1730 terawatt hours (TWh) of electricity, a 28.3 percent year-on-year increase, and supplied 22 percent of national power consumption. Their additional output—382.2 TWh year-on-year—surpassed total growth in electricity consumption of 358.1 TWh, indicating that renewables are beginning to cover incremental demand. Solar has been the main engine of this expansion, reaching 916.3 TWh over the same period, a 44.1 percent increase. Total renewable generation reached 2890 TWh, accounting for approximately 40 percent of all power.³

Document No. 136 introduced critical market-oriented reforms in 2025,⁴ restructuring the growth model of China's wind and solar sectors and marking a transition away from their previous explosive expansion. Additional policies on advanced coal-power upgrading,⁵ large-scale deployment of energy storage,⁶ improved renewable integration,⁷ and integrated renewable development,⁸ alongside forthcoming minimum renewable-consumption targets,⁹ form an integrated institutional framework to speed the comprehensive build-out of China's New Power System. Building on this foundation, China's updated Nationally Determined Contribution (NDC) set a 2035 goal for wind and solar capacity to strive to reach 3,600 GW, further underscoring renewables' key role during the 15th FYP and beyond.

This Greenpeace East Asia briefing assesses the achievements and challenges of China's energy transition during the 14th FYP period. Leveraging the latest data, including coal permitting up to Q3 2025 and capacity up to H1 2025, the report synthesizes regional analysis and local case studies to provide evidence-based guidance for designing the 15th FYP and accelerating dual-carbon and New Power System objectives.

Main Findings

- During the 14th FYP, China's clean-power transition advanced markedly, with **solar capacity far outpacing plans**. In H1 2025, incremental wind and solar generation exceeded national demand growth, **putting a power-sector carbon peak within reach**.
 - After the release of Document No. 136, the solar industry saw a brief installation surge (April–May 2025) before **new additions fell sharply from June to September, signaling a potential slowdown**.
 - This uncertainty in solar expansion, combined with **continued growth in coal capacity during the 14th FYP**, poses **new structural challenges** for accelerating power-system transformation under the 15th FYP.
- Coal-power permitting has **turned downward in the latter 14th FYP**. Permitted capacity has declined year by year; **41.77 GW was permitted in the first three quarters of 2025**, signaling a new phase of further sectoral transformation.
- The **westward shift in project permitting deepened during Q1–Q3 2025**. In the east, only Jiangsu and Henan rebounded versus 2024 and ranked among the national top three, while most other

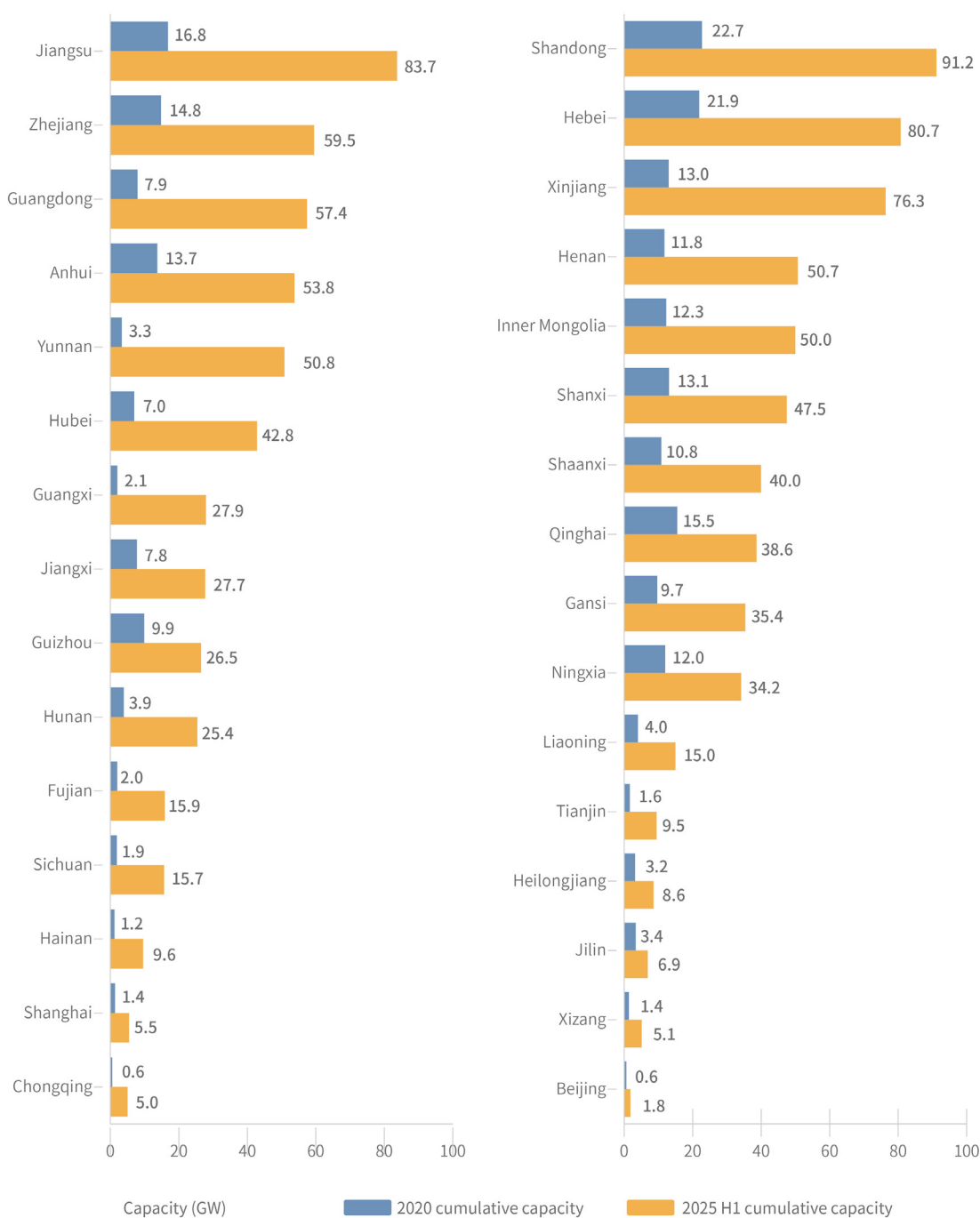
provinces continued to decline. Northwestern provinces (e.g., Xinjiang, Inner Mongolia) with rich wind/solar/coal resources stayed elevated; southwestern provinces (e.g., Guizhou, Sichuan) also increased.

- In recent permitted projects, “ensuring power supply” remains the dominant objective. Newly permitted non-CHP (combined heat and power) projects have an average annual utilization hours exceeding 4,800 hours, which may reflect continued investor optimism, thereby **increasing the risk of structural redundancy and eventual asset stranding**.
- Policy tailwinds indicate **explosive growth of energy storage during the 15th FYP**. As technology matures and profitability improves, **“wind/solar + energy storage” is poised to accelerate the substitution of coal plants** for system regulation and peak-load shaving.

Capacity Dynamics: Renewables and Coal During the 14th FYP

The 14th FYP has delivered an unprecedented expansion of renewable capacity. By September 2025, China’s installed power capacity reached 3,720 GW, with renewables accounting for 59.1 percent.¹⁰ In early 2025, combined wind and solar capacity surpassed coal for the first time, marking a new phase in China’s power-system transition.¹¹ From 2021 to July 2025, wind and solar made up roughly 80 percent of all new capacity additions.¹² By mid-2025, every province had at least doubled its solar capacity relative to end-2020, while Guangxi and Yunnan grew more than tenfold, underscoring the scale of the clean-energy build-out.

2020 vs 2025 H1 Solar Capacity by Province



Data Source: National Energy Administration © GREENPEACE 绿色和平

Solar build-out has run well ahead of most provinces' 14th FYP targets. 29 of the 31 provinces set explicit PV goals; by 2025 H1, 22 had already met or exceeded them.¹³ Henan, Chongqing, Jiangsu, and Zhejiang surpassed 300% of their planned capacity, and Fujian exceeded 400%. This overachievement has accelerated the energy-mix transition and established a strong foundation for a renewables-dominated power system.

14th FYP Solar Capacity Increase Targets and Completion Progress by Province

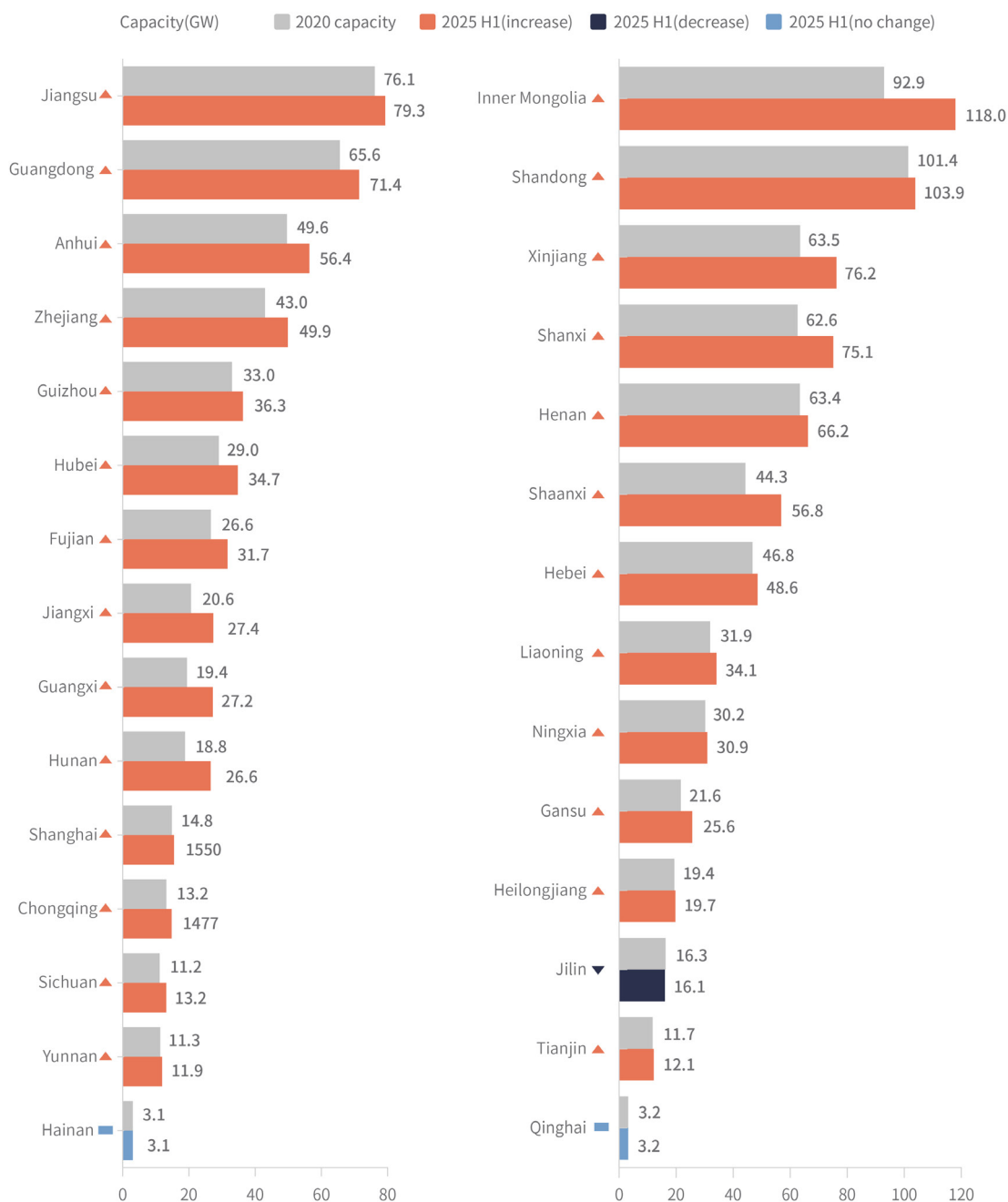
Province	14th FYP Solar Additions Target (GW)	Solar Capacity Added by H1 2025 (GW)	Completion (%)
Fujian	3	13.9	462.6
Henan	10	38.9	389.3
Chongqing	1.2	4.5	371
Jiangsu	18.2	66.9	368.3
Zhejiang	12.8	44.7	348.3
Anhui	14.3	40.1	280.1
Guangdong	20	49.5	247.4
Hubei	15	35.9	239
Hunan	9.1	21.5	236.4
Hainan	4	8.4	209
Guangxi	12.9	25.9	199.8
Shandong	34.3	68.5	199.7
Tianjin	4	7.8	198
Hebei	32.1	58.8	183.3
Liaoning	6	11	182.6
Shanghai	2.7	4.1	151.4
Sichuan	10	13.8	137.9
Jiangxi	16	19.9	124.6
Inner Mongolia	32.7	37.7	115.2
Heilongjiang	5	5.4	108.2
Ningxia	20.5	22.2	108.1
Shaanxi	27.2	29.1	107.2
Shanxi	36.9	34.4	93.2
Guizhou	20.4	16.6	81.2
Gansu	32	25.7	80.2
Qinghai	30	23.2	77.2
Jilin	4.6	3.5	76.2
Beijing	1.9	1.2	63.1
Xizang	8.6	3.8	43.5
Provinces Without Clear Solar Targets			
Xinjiang	14th FYP Clean Energy Target: Renewable capacity to reach 82.4 GW		Progress by H1 2025: Solar capacity reached 76.3 GW
Yunnan	14th FYP Clean Energy Target: 50 GW of new wind + solar capacity		Progress by H1 2025: Solar additions alone reached 47.5 GW

Data Source: Provincial 14th FYP new photovoltaic installation targets were compiled based on official documents, Cumulative installed capacity data for the end of 2020 and 2025 are sourced from official statistics published by the National Energy Administration © GREENPEACE 绿色和平

However, coal capacity continued to expand despite the renewable surge. Global Energy Monitor (GEM) data¹⁴ shows that from 2020 to June 2025, Jilin was the only province to register a decline in coal-fired capacity; all others increased or held steady. As of June 2025, the top five provinces by coal capacity were Inner Mongolia (118 GW), Shandong (104 GW), Jiangsu (79.3 GW), Xinjiang (76.2 GW), and Shanxi

(75.1 GW). The 14th FYP saw significant capacity growth: Inner Mongolia, Xinjiang, Shanxi, Shaanxi, and Jiangxi grew by over 20% compared to the 2020 baseline, while Guangxi and Hunan demonstrated accelerated growth exceeding 40%. It's also noteworthy that some provinces have revised their coal policies over this period. For example, Sichuan's initial power development plan committed to halting new coal projects during the 14th FYP¹⁵; however, its 2023 midterm adjustment removed that pledge, replacing it with an emphasis on strengthening coal's role in peak-load support.¹⁶

2020 vs 2025H1 Coal Capacity by Province



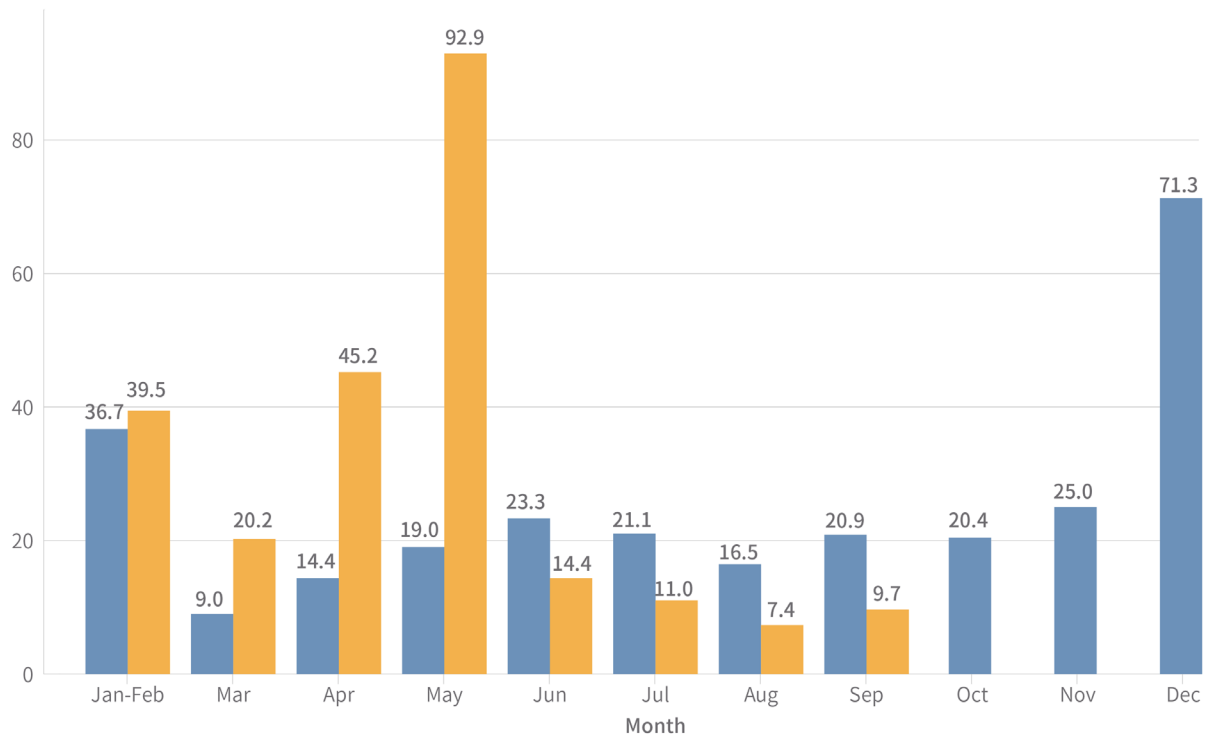
Data Source: Global Coal Plant Tracker by Global Energy Monitor. Provinces without capacity recorded in the database are not shown in this figure. © GREENPEACE 绿色和平

In early 2025, Document No. 136 shifted new-project pricing from benchmark-linked feed-in tariffs (FITs) to a hybrid, market-based regime—quota-linked auctions for a limited volume and market trading for the remainder (effective 1 June 2025). April to May saw a pre-cutoff installation surge; thereafter, year-on-year solar additions fell sharply from June through September.

China's Monthly New Solar Capacity Addition (2024–2025)

Newly Installed Solar Capacity (GW)

■ 2024 ■ 2025



Data Source: National Energy Administration © GREENPEACE 绿色和平

Taken together, with the rapid renewable expansion during the 14th FYP, China's power sector can peak carbon emissions as early as 2025.¹⁷ Yet, further decarbonization will require sustained, high-speed renewable deployment alongside clean flexible resources. Under the new market-based framework, the sharp drop in solar additions from June to September 2025 signals a potential slowdown. Combined with continued growth in coal capacity, this creates structural headwinds for power-sector transition in the 15th FYP. Maintaining momentum on renewable build-out and accelerating wind-and-solar substitution will be critical to keeping China's decarbonization pathway on track.

Coal Permitting: Signs of Shift in 2024–2025

Coal Capacity Permitted During the 14th FYP



Data Sources: Data are sourced from official public channels, including the NDRC, the online approval and supervision platform for investment projects, and environmental assessment reports from ecological and environmental departments, among others. Data is current as of October 12, 2025. Figures for coal capacity permitted in the earlier 14th FYP have been updated to reflect ongoing data tracking and verification. © GREENPEACE 绿色和平

Greenpeace East Asia's latest data indicate that by Q3 2025,¹⁸ nearly 340 GW of new coal plants had been permitted during the 14th FYP—more than twice the total permitted in the 13th FYP. After the 2022–2023 surge linked to short-term peak-load shortages, coal-plant permitting fell in 2024 and continued to ease in 2025. In the first three quarters of 2025, 41.8 GW was permitted nationwide; if current pace continues, 2025 would rank second-lowest for the 2021–2025 period and mark a second consecutive year of decline. Taken together, the 2024–2025 period likely marks a structural inflection point in China's coal-permitting cycle.

Decline in non-CHP projects; dominance of large units

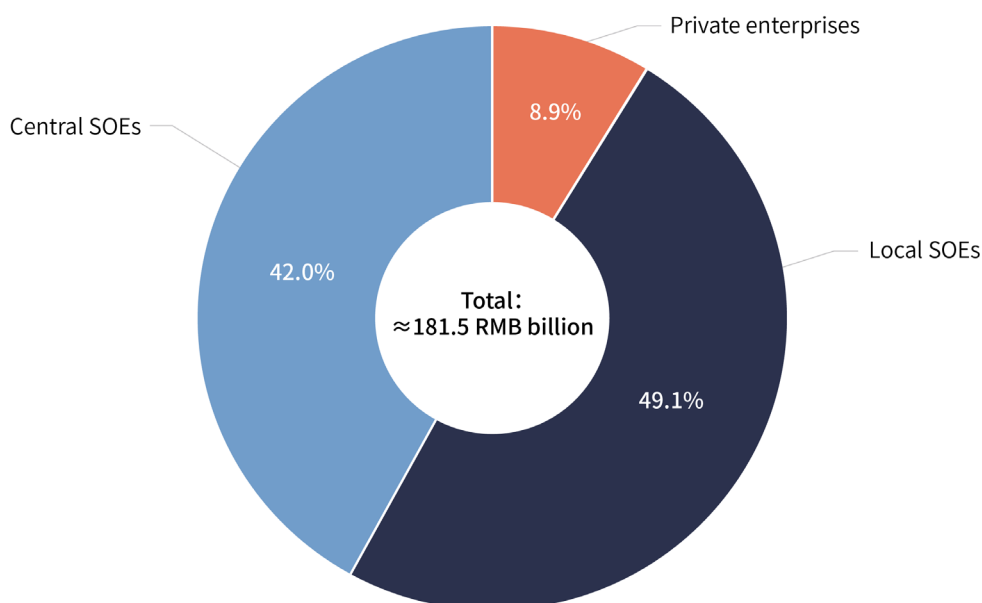
While CHP project counts have stayed relatively stable annually, non-CHP coal projects have fallen sharply—from 40–50 permits per year at the 2022–2023 peak, to 23 in 2024, and 16 in Q1–Q3 2025. Within this group, large-scale units (≥ 660 MW) still dominate, accounting for over 90% of newly permitted units—indicating that large-scale development remains the core development model for non-CHP coal power.

Central and local SOEs dominate new permitting

Total investment in coal projects permitted in Q1–Q3 2025 is estimated at RMB 171.5–181.5 billion,¹⁹ with a state-capital-heavy structure: central SOEs and local SOEs account for roughly 40% and 45%,

respectively, while private investment remains below 10%. This points to a coal power investment landscape that is highly concentrated in state capital.

Investment in Newly Permitted Projects: Q1–Q3 2025²⁰



Data source: The investment totals in this briefing (covering 40 projects) draw on two sources: 1) figures from official documents, covering 36 projects (about RMB 171.5 billion); and 2) estimates based on non-official information for 4 projects (about RMB 10 billion). Information on project investors is sourced from Aiqicha. © GREENPEACE 绿色和平

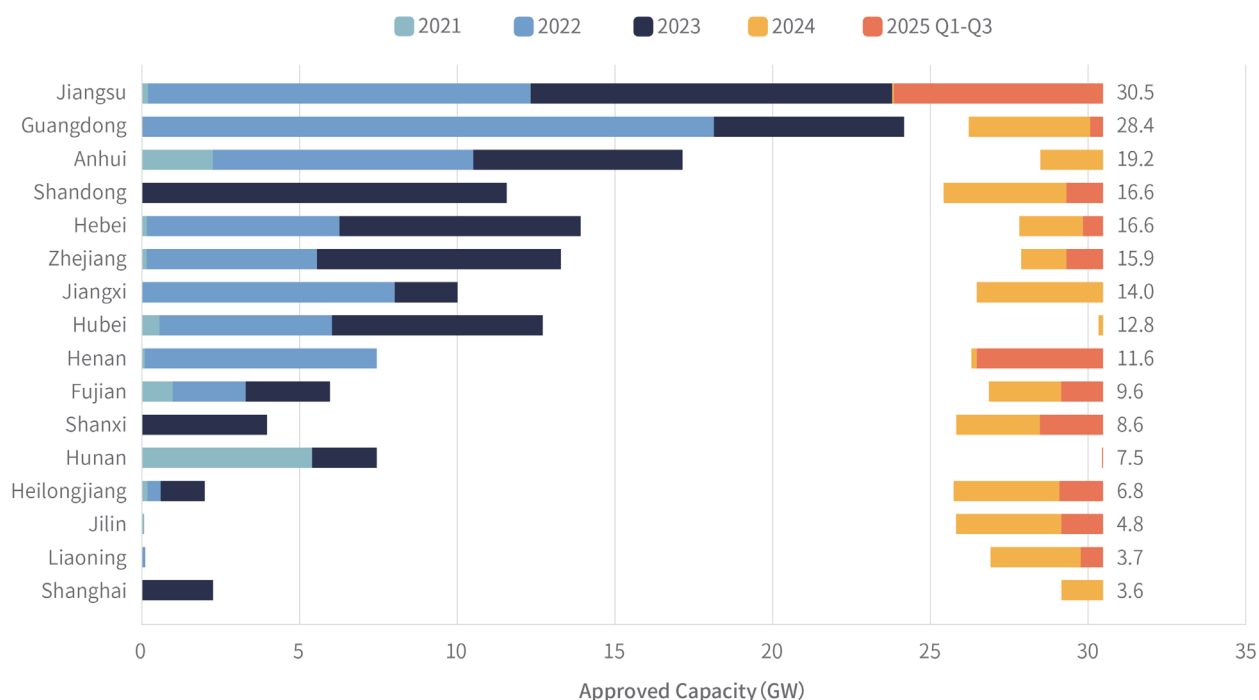
Eastern permitting decline; rebound in Jiangsu and Henan

In eastern China, Jiangsu (6.64 GW) and Henan (4.02 GW) rebounded after low 2024 volumes, ranking first and third nationwide for permitted capacity in 2025 Q1–Q3. By contrast, other major power-demand and generation provinces—Shandong, Guangdong, Anhui—have continued to decline from their 2023 peaks; Guangdong permitted only 0.42 GW in 2025, its second-lowest level of the 14th FYP (after 2021, when none were permitted).

Continued westward shift of coal permitting

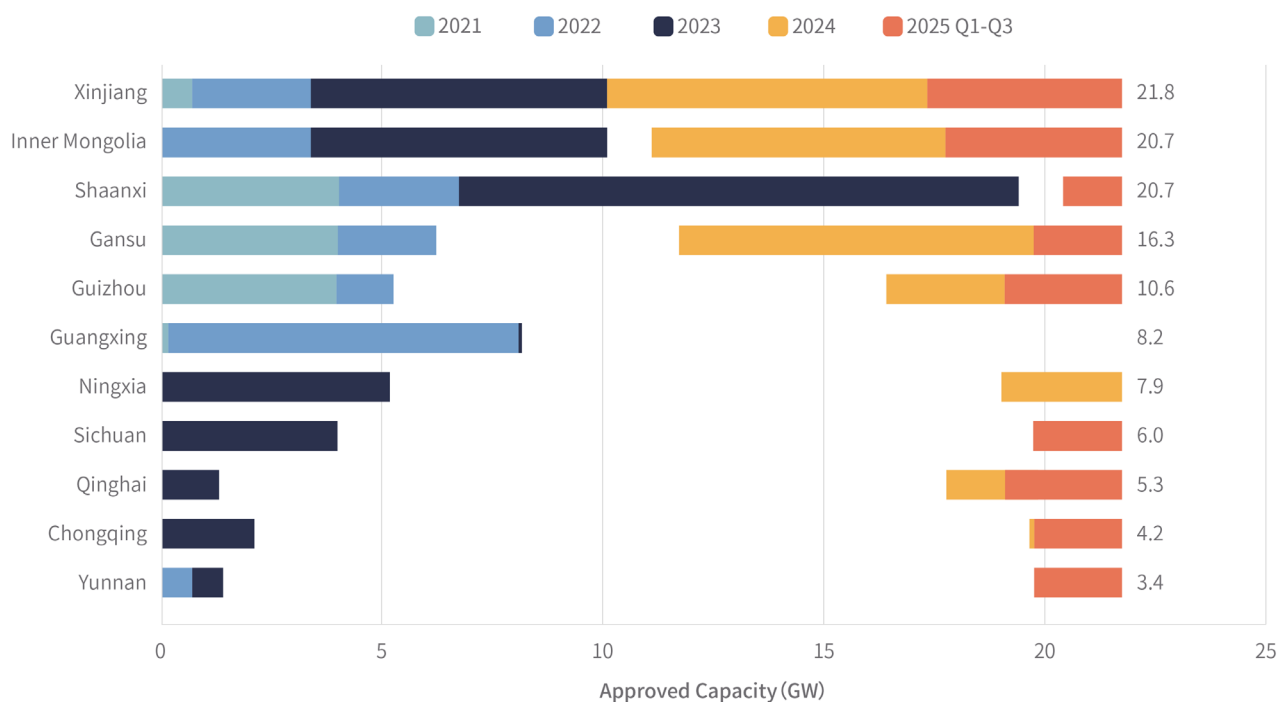
Since 2024, coal permitting has moved west. The western provinces' share of nationwide permits rose from roughly one-third in 2021–2023 to 48% in 2024, and to more than 50% in Q1–Q3 2025. New projects are increasingly concentrated in the northwest, where coal and renewable resources co-locate. From 2024 through Q3 2025, the top three provinces by permitted capacity were Xinjiang (11.65 GW), Inner Mongolia (10.64 GW), and Gansu (10.02 GW). By contrast, in 2021–2023 only Shaanxi from the west ranked in the top three—underscoring how pronounced the shift has become. A regional countertrend is visible in the southwest: Guizhou, Sichuan, and Chongqing posted their highest 14th FYP levels in 2025 Q1–Q3. Although their totals remain modest, each exceeded 2022–2023 levels, marking localized upticks in coal project activity against the national downtrend.

Coal Capacity Permitted in Eastern Provinces During the 14th FYP



Data Sources: Data are sourced from official public channels, including the NDRC, the online approval and supervision platform for investment projects, and environmental assessment reports from ecological and environmental departments, among others. Data is current as of October 12, 2025. © GREENPEACE 绿色和平

Coal Capacity Permitted in Western Provinces During the 14th FYP



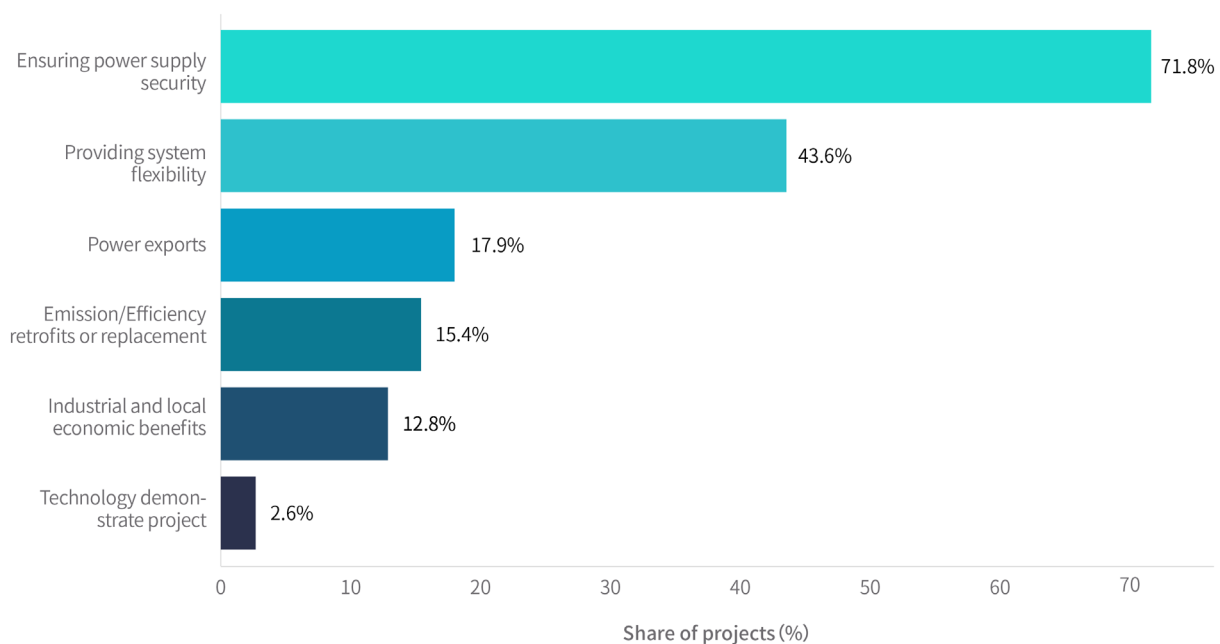
Data Sources: Data are sourced from official public channels, including the NDRC, the online approval and supervision platform for investment projects, and environmental assessment reports from ecological and environmental departments, among others. Data is current as of October 12, 2025. © GREENPEACE 绿色和平

Coal Redundancy and the Scaling of Energy Storage during the 15th FYP

Future risks of new coal power

Looking toward the close of the 14th FYP, the intensive wave of coal permitting risks creating structural redundancy as new units come online, complicating the energy transition and adding system-wide economic pressure.

Share of Rationales Cited for Permitted Non-CHP Projects (2024–2025 Q3) (Multiple rationales permitted per project)²¹



Data Source: Project permitting rationales were identified by collecting and compiling public documents such as permitting announcements, EIA reports, and corporate news. Project team members independently classified the final project functions and categories, which were then finalized through internal consensus and comparative verification. © GREENPEACE 绿色和平

Greenpeace East Asia’s review of 39 non-CHP projects permitted in 2024–2025 finds that “ensuring power supply security” remains the primary rationale, cited in over 70 percent of cases. “Providing system flexibility” ranks second, cited in more than 40 percent of projects. Other justifications—including power exports, efficiency/emission retrofitting or replacement, and local industrial or economic promotion—also appeared in several permits.

Further analysis shows that more than half of the 39 projects cite multiple construction purposes. Of the 17 that explicitly mention “providing system flexibility,” 15 (nearly 90 percent) list both “ensuring power supply security” and “providing system flexibility,” indicating a hybrid functional positioning for newly permitted coal units.²² Additionally, Greenpeace East Asia’s review of environmental impact assessment (EIA) reports obtained planned annual utilization hours for 26 of the 39 projects. Only three projects reported values below 4,500 hours; the average exceeded 4,800 hours, and nearly half

projected operation above 5,000 hours. This elevated planning level—paired with frequent “ensuring power supply” rationales in permitting documents—indicates that many developers still expect coal units to run as high-utilization baseload plants, a mindset not yet aligned with an evolving power system.

From the standpoint of long-term decarbonization and asset performance, nevertheless, these expectations face structural constraints. The recent rebound in coal-power profitability has been driven primarily by falling fuel prices,²³ but coal prices have already returned to a reasonable range, leaving limited room for further declines.²⁴ According to a joint study *Toward the 15th Five-Year Plan: The Future of Coal Power—Transition Pathways and Diversified Mechanisms* (Greenpeace East Asia, North China Electric Power University [Baoding], Shanghai Institutes for International Studies, September 2025), China’s coal generation is approaching its peak and will soon enter a decline phase.²⁵ As renewable capacity continues to expand and system flexibility improves, average coal-unit operating hours will follow a long-term downward trajectory. In this context, investors should approach current high-utilization assumptions with caution and carefully evaluate the economic viability and stranded-asset risks of new coal projects during the 15th FYP and beyond.

At a deeper level, high-renewables systems exhibit a pronounced “duck curve,” requiring stronger midday down-ramping to integrate solar generation.²⁶ Coal units’ minimum stable load, typically 20–30 percent, can cover peaks but limits deep turndown for renewable integration. If large coal additions continue during the 15th FYP, the higher aggregate minimum output will raise the system’s minimum load and constrain renewable integration. This would hinder coal’s functional transition and slow its support for large-scale development of wind and solar, ultimately affecting the evolution of the New Power System.

Large-Scale Energy Storage Development in the 15th FYP

Looking ahead to the 15th FYP, plans to further develop the New Power System, raise the renewable share, and scale up energy storage will make energy storage increasingly integral to wind and solar development.²⁷ The emerging “wind/solar + energy storage” model will strengthen system stability and flexibility—taking on flexible regulation and peak-shaving duties in the near term and, over time, progressively reducing the system’s reliance on coal for balancing. As capacity pricing and ancillary-service markets for energy storage mature, its role will broaden through the medium- and long-term, positioning energy storage as a key pillar of a cleaner, more flexible power system.

As of September 2025, China’s installed energy storage capacity exceeded 100 GW.²⁸ Inner Mongolia and Xinjiang each topped 10 GW; Shandong, Jiangsu, and Ningxia surpassed 5 GW; another 13 provinces exceeded 2 GW.²⁹ Major energy provinces—Shandong, Jiangsu, Guangdong—have already met their 14th FYP energy storage capacity targets ahead of schedule,³⁰ reflecting concurrent demand for energy storage in both renewable-rich regions and load centers.

Provinces leading in energy-storage build-out broadly overlap with those that have seen the highest levels of wind-and-solar development as well as coal-power permitting in recent years. Over the 15th FYP, coordinated scale-up of energy storage, wind, and solar in these regions is expected to

take over multiple functions traditionally provided by coal. For supply security, “distributed solar + energy storage” has emerged as one of the most cost-effective options for meeting peak-load growth,³¹ showing strong economic competitiveness. On system flexibility, energy storage provides millisecond-level response, bidirectional regulation, and modular deployment—supporting frequency regulation, inertia, and reserves. As virtual power plants and related technologies mature, distributed storage and other flexible resources will be increasingly aggregated, strengthening system scalability and dispatchability. By contrast, large 1-GW coal units face high minimum-load requirements, slow ramp rates, and long start-up times—constraints that exacerbate flexibility shortfalls at low load and raise coal consumption and carbon intensity, undermining both economic and environmental performance.

With the rollout of the Action Plan for Large-Scale Deployment of New Energy Storage (2025–2027), the energy storage sector is set to enter a new phase of scaling during the 15th FYP.³² By 2027, China’s energy storage capacity is expected to reach 180 GW, providing critical flexibility infrastructure for the New Power System. The “wind/solar + energy storage” model will be rapidly scaled and further developed within the New Power System, progressively achieving deep functional substitution for coal power.

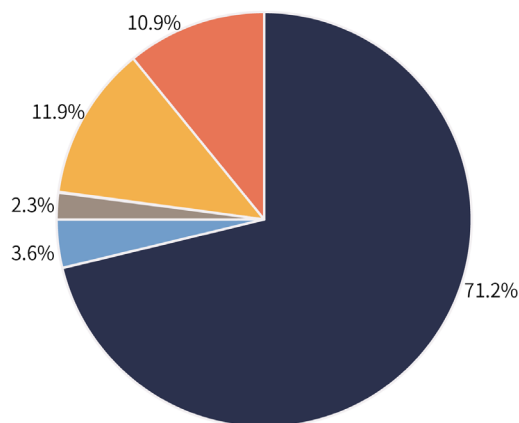
Jiangsu’s Transition Snapshot

As China’s fastest-growing load center in 2024,³³ Jiangsu is a representative case for eastern provinces with sustained demand growth and power-mix optimization needs. By the end of Q3 2025, Jiangsu’s PV capacity reached 86.12 GW (36.40% of total capacity)—second nationwide—far above its 14th FYP target and, in Q1 2025, surpassing coal for the first time. Wind capacity stood at 23.56 GW. The wind + solar share rose from 22.8% in 2020 to 46.4%, signaling a marked structural shift. In parallel, energy storage capacity reached 6.20 GW, already beyond planning targets—evidence that Jiangsu has entered a new phase of high-renewables penetration.³⁴

Jiangsu's Energy Mix Comparison: Dec. 2020 vs. Sep. 2025

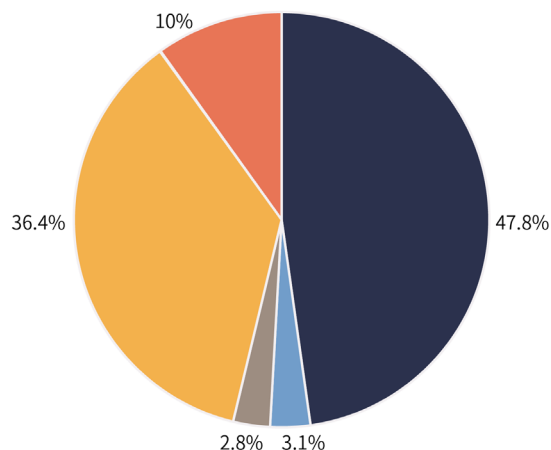
■ Thermal ■ Wind ■ Nuclear ■ Hydro+Biomass ■ Solar

Jiangsu Energy Mix (December 2020)



Total Installed: 141.5 GW

Jiangsu Energy Mix (September 2025)

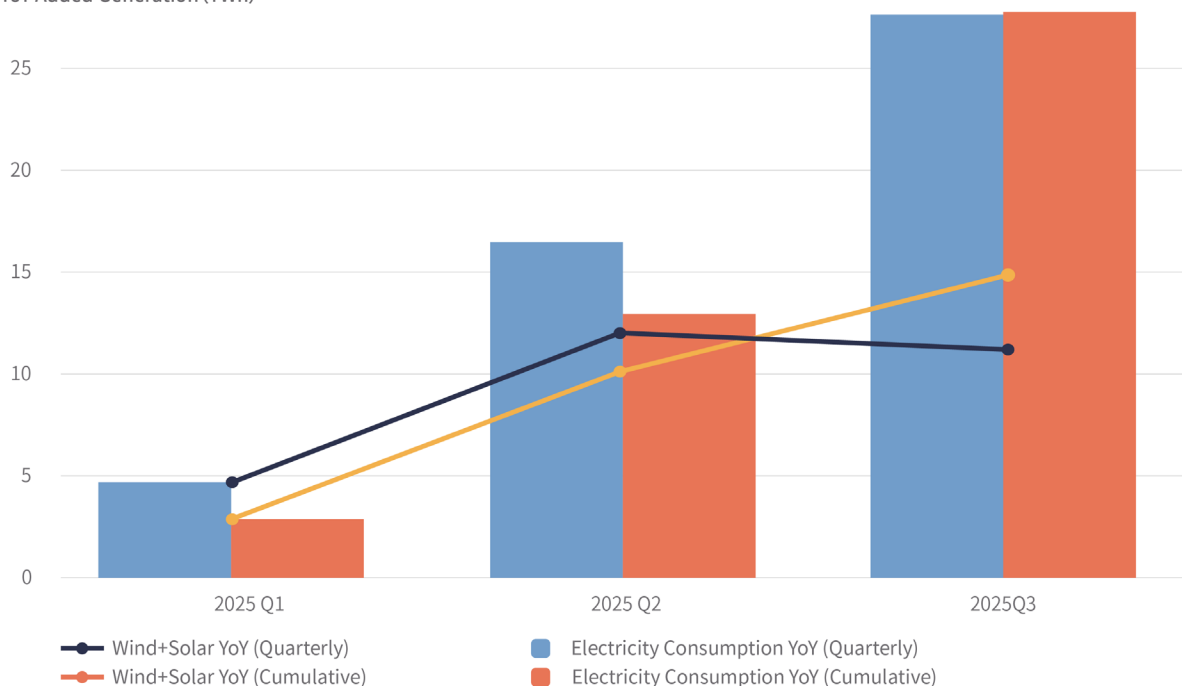


Total Installed: 236.6 GW

Data Sources: 2020 data is derived from the China Electricity Council (CEC) and the Jiangsu Province 14th FYP. 2025 data is sourced from the Jiangsu Electric Power Industry Association and collected/estimated by Greenpeace based on other publicly available official information; therefore, some discrepancies with actual installed capacity data may exist. © GREENPEACE 绿色和平

Comparison of Year-on-Year Growth in Wind and Solar Generation vs. Electricity Consumption in Jiangsu Province (Quarterly)

YoY Added Generation (TWh)



Data Source: Jiangsu Electric Power Industry Association industry data. © GREENPEACE 绿色和平

Wind and solar's share in Jiangsu's generation mix rose from 10–15% in 2023 to about 20–25% in 2025. In H1 2025, the increase in wind and solar output (16.53 TWh) exceeded the province's growth in electricity consumption (13 TWh), indicating that they have begun to meet incremental electricity demand. Although prolonged heat in Q3 led to a sharp load surge and heightened short-term balancing pressure, preventing wind and solar from fully offsetting demand growth that quarter, the supply-demand gap narrowed markedly compared to prior years. Overall, in Q1–Q3 2025, the increase in wind and solar generation (27.72 TWh) was nearly equal to the increase in total consumption (27.86 TWh). With coordinated support from energy storage, grid dispatch, and market mechanisms, Jiangsu's wind and solar are on track to consistently cover incremental demand, laying the groundwork for wind-and-solar substitution across the province's grid.³⁵

As a major high-load province, Jiangsu has made clear progress in restructuring its energy mix. Leveraging its substantial wind-and-solar potential, Jiangsu can build on accelerating decarbonization momentum by driving the deep expansion of the “distributed wind/solar + energy storage” model and establishing clear mechanisms for coal-capacity caps and operational adjustment. Doing so will enable wind and solar to reliably meet incremental electricity demand and provide substantive support for accelerating power-sector decarbonization during the 15th FYP period.

Policy Recommendations

To secure a low-carbon, reliable, and cost-effective power system during the 15th FYP, we recommend the following actions.

1) Issue a top-level framework for power-sector transformation for 15th FYP.

- Set forward-looking targets to accelerate clean-power substitution for coal.
- Raise 2030 wind, solar, and energy storage targets—and associated investment intensity—so wind and solar growth fully covers incremental electricity demand, enabling a secure, efficient, and reliable transition.

2) Integrate coal planning into unified system planning.

- Plan coal alongside wind, solar, and energy storage in a single, coordinated blueprint.
- Update coal-power risk warning and planning mechanisms; publish a timetable to cap coal generation and ensure an orderly transition.
- Require provinces and SOEs to assess potential stranded-asset and economic risks for new coal projects given expected generation peak and declining utilization, and to treat these assessments as a core criterion in project permitting and investment decisions.

3) Shift provincial energy strategies toward renewables and flexible resources.

- In high-generation and/or high-load provinces with large coal and wind-and-solar fleets, scale up investment in wind, solar, and flexible resources during the 15th FYP, moving decisively away from new coal.
- Prioritize distributed renewables, advanced energy storage, and demand response, backed by improved policies and market rules.
- Use these measures to lift the wind-and-solar share of generation and enable structural substitution of existing coal capacity—delivering energy security at lower carbon, higher efficiency, and competitive cost, while creating jobs and regional green-growth opportunities.

4) Promote energy storage deployment and strengthen market mechanisms.

- Finalize implementation rules for capacity-based tariffs for energy storage, including compensation standards, eligibility, and payment mechanisms, to establish stable revenue expectations. Enable energy storage participation in energy and ancillary-service markets, allowing hybrid revenue stacks (capacity payments + market returns) to improve project bankability.
- Deploy energy storage at scale in end-user green power, zero-carbon industrial parks, and other applications.
- Strengthen operational coordination between wind, solar, and energy storage via clear co-location ratios, optimized dispatch, and diversified business models—integrating energy storage with wind-and-solar generation, grid operations, demand management, and virtual power plants to enhance wind-and-solar integration and system resilience.

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- The data used in this briefing was collected up until early October 2025. Subsequent data updates or revisions will not be reflected in this analysis. Greenpeace East Asia provides no warranty regarding the timeliness, accuracy, or completeness of the data contained within this briefing.
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Notes and Reference

- [1] FYP stands for Five-Year Plan. It is a series of social and economic development initiatives in China. Each FYP outlines the central government's priorities, national goals, and key policy directions for the ensuing five-year period. For example, the 14th FYP covers the years 2021 through 2025 and the 15th FYP covers the years 2026 through 2030.
- [2] The New Power System is China's strategic concept for decarbonizing its electricity sector to meet its 2060 carbon neutrality goal. It shifts the energy structure from coal dominance to renewable energy as the primary source, supported by large-scale energy storage and smart grid technologies. This system aims to enable flexible supply while integrating demand-side management for stability.
- [3] National Energy Administration. (2025, October 31). 国家能源局2025年第四季度新闻发布会文字实录 [Transcript of the National Energy Administration's Q4 2025 press conference]. <https://www.nea.gov.cn/20251031/7b6f39feb2d24ecb91783e282ed64f75/c.html>
- [4] Xinhua. (2025, February 10). China accelerates reform of renewable power pricing to promote sustainable development. https://english.www.gov.cn/news/202502/10/content_WS67a9afb2c6d-0868f4e8ef893.html
- [5] National Development and Reform Commission & National Energy Administration. (2025, April 14). 新一代煤电升级专项行动实施方案（2025–2027年） [Special Action Plan for Upgrading the New Generation of Coal Power (2025–2027)]. <https://www.ndrc.gov.cn/xxgk/zcfb/tz/202504/P020250414408263597120.pdf>
- [6] Xinhua News Agency. (2025, September 12). China unveils three-year action plan to boost new-type energy storage. https://english.www.gov.cn/news/202509/12/content_WS68c3ccbec6d00fa19f7a263f.html
- [7] National Development and Reform Commission & National Energy Administration. (2025, October 29). 关于促进新能源消纳和调控的指导意见（发改能源〔2025〕1360号） [Guiding opinions on promoting new energy consumption and regulation]. https://www.ndrc.gov.cn/xxgk/zcfb/tz/202511/t20251110_1401469.html
- [8] National Energy Administration. (2025, October 31). 国家能源局关于促进新能源集成融合发展的指导意见（国能发新能〔2025〕93号） [Guiding opinions on promoting integrated and coordinated development of new energy]. <https://www.nea.gov.cn/20251112/79210278a3184efea9ccf2d546fdf1b7/c.html>
- [9] National Energy Administration. (2025, May 23). 国家能源局关于组织开展新型电力系统建设第一批试点工作的通知（国能发电力〔2025〕53号） [Notice of the National Energy Administration on organising the first batch of pilot projects for new-type power system construction]. <https://www.nea.gov.cn/20250604/54a7b76e53ca4ec0bfab0a187cf7ddf7/c.html>
- [10] National Energy Administration. (2025, April 25). 我国风光装机历史性超过火电 风电光伏装机超过火电将成为常态 [China's wind and solar installed capacity surpasses coal for the first time; wind and PV surpassing coal to become the new normal]. <https://www.nea.gov.cn/20250425/148efd-0ca61148148d285edd438912df/c.html>
- [11] National Energy Administration. (2025, April 25). 我国风光装机历史性超过火电 风电光伏装机超过火电将成为常态 [China's wind and solar installed capacity surpasses coal for the first time; wind and PV surpassing coal to become the new normal]. <https://www.nea.gov.cn/20250425/148efd-0ca61148148d285edd438912df/c.html>

[12] State Council Information Office. (2025, August 26). 高质量完成“十四五”规划系列主题新闻发布会 | 介绍“十四五”时期能源高质量发展成就 [Press conference series on high-quality completion of the 14th Five-Year Plan: Introducing achievements in high-quality energy development during the 14th FYP]. <https://www.nea.gov.cn/20250826/81a62ca2aedb4f18ac107efd85c4b650/c.html>

[13] Data compiled by Greenpeace East Asia based on provincial-level official documents and other publicly available information. Sources include, but are not limited to, provincial 14th FYP, new energy special plans, and carbon peak action plans.

[14] Provincial coal capacity data in this briefing are drawn from the Global Coal Plant Tracker (GCPT, <https://globalenergymonitor.org/projects/global-coal-plant-tracker/>) maintained by Global Energy Monitor (GEM). The dataset covers coal-fired units of 30 MW and above and is current as of July 2025. In the absence of official, consistent, and comparable provincial statistics on installed coal power capacity, the GEM database offers a useful proxy for tracking regional coal power trends. As an independent research source, its figures may differ from official statistics, but GEM's data are widely used in international energy research and provide robust reference points for trend analysis.

[15] Sichuan Provincial Development and Reform Commission, & Sichuan Provincial Energy Administration. (2022, May 26). 四川省“十四五”电力发展规划 [Sichuan Province 14th Five-Year Electricity Development Plan]. <https://fgw.sc.gov.cn/sfgw/c106096/2022/5/26/2d856d99f07c40b1a945c900731a7a85/files/%E5%9B%9B%E5%B7%9D%E7%9C%81%E2%80%9C%E5%8D%81%E5%9B%9B%E4%BA%94%E2%80%9D%E7%94%B5%E5%8A%9B%E5%8F%91%E5%B1%95%E8%A7%84%E5%88%92.pdf>

[16] Derived by Greenpeace East Asia based on information from publicly disclosed Environmental Impact Assessment (EIA) reports for the projects.

[17] Greenpeace East Asia Beijing Office, North China Electric Power University (Baoding), & Shanghai Institutes for International Studies. (2025). 迈向“十五五”煤电何去何从：转型路径与多元机制研究 [Toward the 15th Five-Year Plan: The Future of Coal Power—Transition Pathways and Diversified Mechanisms]. <https://www.greenpeace.org.cn/wp-content/uploads/2025/09/《迈向十五五煤电何去何从：转型路径与多元机制研究》-1.pdf>

[18] Permitting data in this briefing are drawn from official public sources, including the NDRC, the online investment-project approval and supervision platform, and environmental impact assessment reports issued by ecological and environmental authorities. Data are current as of 12 October 2025. Figures for coal capacity approved earlier in the 14th FYP have been updated to reflect ongoing data tracking and verification.

[19] For the 40 projects permitted in 2025, Greenpeace East Asia compiled the total investment figure based on publicly available information. Data for 36 projects (about RMB 171.5 billion in total investment) come from official documents such as approval notices, environmental impact assessment reports, and corporate disclosures. Investment figures for the remaining 4 projects (about RMB 10 billion) are estimates derived from non-official sources.

[20] The total investment shown in the chart incorporates the estimated figures noted above. Information on project owners (investment entities) is sourced from Aiqicha.

[21] This analysis excludes combined heat and power (CHP) projects, whose construction decisions are primarily driven by regional heating-load needs and are less related to coal power's functional transition (e.g. toward flexibility services). Determinations of project permitting rationales are based on collecting and reviewing public documents such as notices from local Development and Reform Commissions, environmental impact assessment reports, and corporate announcements. Final classifications of project functions and categories were manually coded by the research team and validated through cross-checking and consensus.

- [22] “Ensuring power supply” refers to projects built to address supply-demand gaps, capacity shortfalls, and related reliability needs. “Providing flexibility” refers to coal units designed to provide system regulation and stability services—such as flexible ramping—to support renewable integration and grid reliability.
- [23] Liu, Y. (2025, May 22). 营收普降但盈利普增，煤电行业迎来历史性“新拐点” [Revenues fall across the sector but profits rise: A historic new turning point for the coal power industry]. 华夏能源网. <https://mp.weixin.qq.com/s/EaZpA0nD08dsSkdC2XjmRA>
- [24] Gong, H. (2025, August 28). 国内煤价无深跌可能 [Domestic coal prices unlikely to see a deep decline]. 鄂尔多斯煤炭网. <https://mp.weixin.qq.com/s/VsnmOS7ymcvReWCVf9wMTA>
- [25] California Independent System Operator. (2016). What the Duck Curve Tells Us About Managing a Green Grid. https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf
- [26] Greenpeace East Asia Beijing Office, North China Electric Power University (Baoding), & Shanghai Institutes for International Studies. (2025). 迈向“十五五”煤电何去何从：转型路径与多元机制研究 [Toward the 15th Five-Year Plan: The Future of Coal Power—Transition Pathways and Diversified Mechanisms]. <https://www.greenpeace.org.cn/wp-content/uploads/2025/09/《迈向十五五煤电何去何从：转型路径与多元机制研究》-1.pdf>
- [27] Central Committee of the Communist Party of China. (2025, October 28). 《中共中央关于制定国民经济和社会发展第十五个五年规划的建议》 [Recommendations of the CPC Central Committee on formulating the 15th Five-Year Plan for national economic and social development]. https://www.gov.cn/zhengce/202510/content_7046050.htm
- [28] Xinhua News Agency. (2025, November 5). 国家能源局：截至9月底我国新型储能装机规模超1亿千瓦 [NEA: China's new-type energy storage installations exceed 100 GW as of end-September]. https://www.gov.cn/lianbo/bumen/202511/content_7047224.htm
- [29] National Energy Administration. (2025, July 31). 边广琦：江苏、山东、云南发挥了重要的顶峰保供作用 [Bian Guangqi: Jiangsu, Shandong, and Yunnan played a critical role in peak-load capacity and supply security]. <https://www.nea.gov.cn/20250731/f473f643467f4053a227f59571103536/c.html>
- [30] Compiled by Greenpeace East Asia based on statistics gathered from various provincial official public documents and publicly available information. Information sources include, but are not limited to, provincial 14th FYP, new energy plans, and energy storage plans.
- [31] Jiang, L., & Kahrl, F. (2024, May 9). Guest post: Solar plus batteries ‘cheaper than new coal’ for meeting China’s rising demand. Carbon Brief. <https://www.carbonbrief.org/guest-post-solar-plus-batteries-cheaper-than-new-coal-for-meeting-chinas-rising-demand/>
- [32] 国家发展改革委 & 国家能源局. (2025, September 12). 关于印发《新型储能规模化建设专项行动方案(2025–2027年)》的通知 [Notice on issuing the Special Action Plan for Large-Scale Construction of New-Type Energy Storage (2025–2027)]. https://www.ndrc.gov.cn/xxgk/zcfb/tz/202509/t20250912_1400425.html
- [33] Xinhua Daily. (2025, March 26). 去年全社会用电量增长8.35%，超六成用在第二产业 电力大数据折射江苏“经济脉动” [Total electricity consumption grew 8.35% last year, with over 60% used in the secondary sector: Power-sector big data reflects Jiangsu’s “economic pulse”]. Jiangsu Provincial People’s Government. https://www.jiangsu.gov.cn/art/2025/3/26/art_60085_11525255.html
- [34] Compiled by Greenpeace East Asia based on industry data from the Jiangsu Provincial Electric Power Industry Association.
- [35] Compiled by Greenpeace East Asia based on industry data from the Jiangsu Provincial Electric Power Industry Association.



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