A DEEP DIVE

BEYOND CAPACITY: THE NEW IMPLEMENTATION GAPS IN CHINA'S 15TH FIVE-YEAR PLAN

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Key Insights

- **The object of planning is shifting from installed capacity to delivered performance.** The 15th Five-Year Plan (FYP) retains large capacity targets but adds indicators for firm renewable output, evening-peak contribution, regulation capability, demand response, and interregional transmission. The new implementation gap lies between building these capabilities and proving that they work together in real time.
- **Energy security is pushing technology choices in two directions at once.** Recent shocks have raised the value of electrification, renewables, storage, nuclear power, reserves, and diversified imports, but they also justify coal-fired backup and coal-based substitutes for oil and gas. The new implementation gap is the absence of clear rules separating time-limited security insurance from avoidable long-term fossil lock-in.
- **Provincial carbon targets appear to be moving toward differentiated, negotiated pathways.** Instead of receiving rigid mandates from the center, provinces may propose targets and pathways that reflect their industries, projects, and development stage. The new implementation gap is whether differentiated commitments can be verified and delivered, and whether less-resourced regions and firms receive enough support to comply.
- **Industrial emissions may fall for structural reasons even as electricity demand rises.** Lower steel and cement output can cut emissions without making production cleaner, while cooling, computing, electric transport, and industrial electrification add load. The implementation gap is that planning does not yet consistently separate activity-driven industrial decline, cleaner production per unit of output, and the emissions attributable to new electricity demand.

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Methodology

This brief compares three planning tracks across the 14th and 15th FYP periods: the national economic and social development outline, the national energy-system plan, and the renewable-energy plan. The analysis is supplemented by related climate-policy documents, official statistics, published research, and seven anonymized semi-structured expert interviews. An "implementation gap" refers to a disconnect between a new policy requirement and the institutional, technical, financial, or governance capacity needed to deliver it.

Country Context: Strong Momentum, Tighter Constraints

China's Five-Year Plan is a hierarchy of documents. The national outline sets broad priorities and headline targets; sector plans translate them into detailed goals; provincial plans shape implementation. Within these documents, a **binding** indicator creates a formal government obligation, while an **expected** indicator guides policy and investment but depends on multiple public and commercial actors. Neither label alone guarantees delivery.

China enters 2026–2030 from a high base. Renewable capacity reached roughly 2,340 GW by the end of 2025 – about 60 percent of total installed capacity – and renewable generation reached about 3,990 TWh, equal to 38.5 percent of total electricity consumption (National Energy Administration). The economy provides a more constrained backdrop: the International Monetary Fund (IMF) reported 5 percent real GDP growth in 2025 and projected 4.5 percent for 2026, alongside weak private demand, a prolonged property adjustment, trade uncertainty, and local fiscal pressure. These conditions do not demonstrate weaker climate commitment, but they raise the political weight of jobs, affordability, and fiscal cost (IMF).

Most existing analyses of the 15th FYP ask whether headline targets are ambitious enough, whether coal will keep growing, and whether clean-energy expansion will produce an absolute decline in emissions. This brief asks a different question: what has changed in the policy framework, what new implementation requirements do those changes create, and where are new gaps likely to emerge?

Findings

1. THE PLAN SHIFTS FROM BUILDING CAPACITY TO DELIVERING RELIABLE POWER

The 14th FYP already promoted a "new power system." The 15th FYP goes further: its dedicated energy plan is organized around building a "new energy system" that spans supply, security, grids, consumption, and markets. Capacity expansion continues as the renewable-energy plan sets binding 2030 targets of more than 2,800 GW of wind and solar capacity (over half of total installed capacity), with wind and solar expected to supply more than 4 trillion kWh a year, or about 30 percent of generation (14th FYP energy plan; 15th FYP energy-system plan; 15th FYP renewable-energy plan).

The most consequential additions, however, focus on measurable increases to what installed capacity can deliver. The renewable-energy plan targets an average **firm output** from wind and solar equal to 8 percent of their installed capacity, defined as the power that can be guaranteed at 95 percent confidence during supply-critical periods. It further requires wind and solar to supply more than 20 percent of electricity during summer and winter evening peaks and to add at least 300 GW of reliable renewable peaking capability. The energy-system plan raises West-to-East power transmission capacity from 340 GW to more than 420 GW, requires generation-and-storage regulation capability to grow by more than 40 percent, and lifts demand-response capability from 3 percent to more than 5 percent of maximum load.

These indicator changes are concentrated in the sector plans. The renewable-energy plan's formal indicator table expands from five expected indicators to 14 (12 expected and two binding) while the energy-system plan, whose 14th FYP predecessor assigned no formal attributes at all, now labels 12 indicators: three binding and nine expected (Figure 1).

The meaning of these changes matters more than the count. Many of the new indicators measure capabilities that no single institution can deliver: firm renewable output depends on generators, storage, grid operators, markets, and users acting together. Their expected status reflects a shift toward system outcomes that require coordination, and it raises new questions about responsibility, incentives, and how performance will be observed.

The new implementation gap is between building these capabilities and proving that they work together in real time. Storage may be commissioned but rarely dispatched; demand response may be contracted but unavailable during a peak; provincial contracts may limit a transmission line's actual use. Closing this gap depends less on another construction target than on clear responsibility, workable incentives, and evidence of delivered performance.

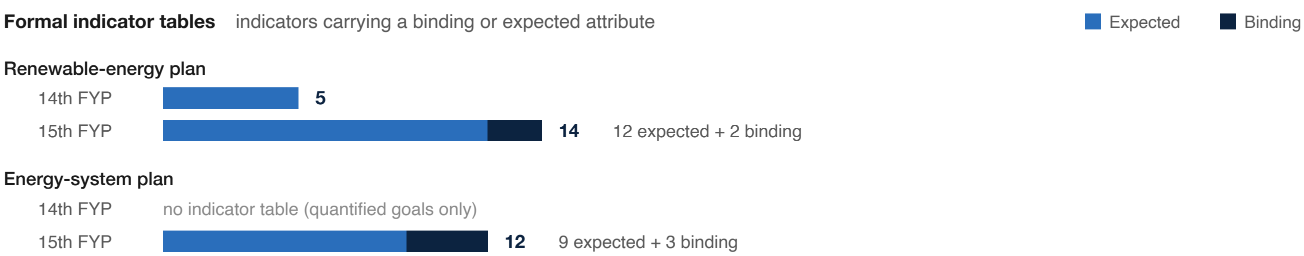
2. ENERGY SECURITY SUPPORTS CLEAN SUBSTITUTION AND FOSSIL BACKUP AT THE SAME TIME

The new energy-system plan makes secure and adequate supply, alongside economic feasibility, an explicit precondition for the transition. Its security portfolio includes domestic production, reserves, diversified imports, resilient grids, renewables, nuclear power, storage, and electrification. It also retains coal-production bases, coal reserves, oil and gas infrastructure, and strategic coal-to-liquids and coal-to-gas capacity.

Different shocks work through different channels. COVID-era disruption and trade tensions affected growth, exports, production, and investment. The Russia–Ukraine war and disruption around the Strait of Hormuz act more directly on fuel prices, import routes, inventories, and physical supply risk. These shocks amplified an existing security priority (Asia Society Policy Institute).

Figure 1: From capacity to system performance: what the 15th FYP sector plans newly measure

Formal indicator tables indicators carrying a binding or expected attribute



System-performance indicator (all expected)	14th FYP	15th FYP	Detail
Average firm output of wind and solar (with generation-side storage)	new	**8%**	of installed capacity; deliverable at 95% confidence in supply-critical periods
Wind and solar share of electricity during summer / winter evening peaks	new	**>20%**	of peak-hour electricity; about 10 points above the 2025 level
Reliable renewable peaking capability	new	**+300 GW**	or more, cumulative over 2026–2030
West-to-East power transmission capacity	no target	**>420 GW**	270 GW in 2020; 340 GW reached by 2025
Regulation capability of power sources and storage	new	**+40%**	or more; growth over 2026–2030
Demand-response capability	3–5%	**>5%**	of maximum load; >3% reached by 2025

Note: "New" means no counterpart indicator in the 14th FYP plans; "expected" indicators guide policy and investment, "binding" ones create formal government obligations.
Sources: NDRC and NEA, 14th and 15th Five-Year Plan energy-system and renewable-energy plans (2022; 2026).

The policy response can serve decarbonization and fossil investment simultaneously. Electrification reduces oil and gas exposure, while renewables, storage, and nuclear power strengthen domestic electricity supply. Yet the same security logic can justify coal-fired backup and coal-based substitutes for oil and gas. These assets insure against different risks over different time horizons.

The new implementation gap is the absence of clear boundaries around high-carbon security investments. Without a shared understanding of which risk an investment is meant to address, what lower-carbon alternatives exist, and how long the need is expected to last, short-term insurance can harden into long-lived fossil infrastructure.

3. DIFFERENTIATED PROVINCIAL PATHWAYS COULD REDUCE ONE-SIZE-FITS-ALL IMPLEMENTATION

Provinces are the gatekeepers between national goals and delivery: their resources, industries, fiscal positions, and power systems differ widely, and employment, investment, and reliability concerns shape local decisions (Columbia CGEP). The national framework has now provided a binding target of cutting carbon dioxide emissions per unit of GDP by 17 percent between 2025 and 2030, under the emerging system of dual control of carbon emissions.

Interview evidence suggests target-setting is becoming less mechanically top-down. Provinces may gain more room to propose carbon-intensity targets, annual trajectories, and decarbonization pathways that reflect their major projects, industrial structure, resource endowments, and development stage. The central government then aggregates local commitments, checks them against national goals, and negotiates adjustments or additional support where the total falls short. Five-year strategic goals stay fixed while annual paths flex with project timing and external shocks. Published policy supports a process that combines national direction with local conditions, but the full mechanism is not publicly documented.

Greater flexibility could reduce the abrupt power rationing, production shutdowns, and other campaign-style corrections seen near the end of past planning periods. But it also creates room for optimistic baselines, strategic under-commitment, and high-emissions projects framed as development needs. And capacity to comply is uneven: smaller firms and resource-dependent regions face higher financing costs, weaker technical services, and fewer alternative sources of employment and tax revenue.

The new implementation gap is whether differentiated local commitments can be verified and delivered. Flexibility requires credible data and effective oversight, and delivery depends on whether regions and firms have the financial and technical capacity to comply. The test is to preserve local flexibility without weakening national accountability.

4. INDUSTRIAL EMISSIONS MAY FALL AS ELECTRICITY DEMAND RISES

Two structural changes are underway at once. The first is the contraction of China's real-estate sector: housing sales, new construction starts, and property investment have fallen for several consecutive years, reducing demand for steel, cement, and building-material output. Because these sectors are large emitters, lower production pulls industrial emissions down. But this is a structural change, not necessarily decarbonization: production processes and emissions per tonne may change little.

Meanwhile, electricity demand keeps growing. Cooling, computing, electric vehicles, and industrial electrification add new load, but can cut economy-wide emissions when they displace less efficient direct fossil-fuel use. The emissions effect of new demand therefore depends on which sources supply the additional generation at the relevant hour and location.

AI illustrates the uncertainty. Its national share of electricity use remains small, but concentrated growth can strain local systems. One interviewee's research team estimates that AI- and data-related consumption could account for roughly 5 percent of national electricity use. In 2025, renewable generation grew by about

519 TWh while electricity consumption grew by about 516 TWh (Figure 2). Incremental renewable supply thus matched incremental demand for the first time, but this does not mean each additional unit of demand was served by renewables. The generation figure includes hydropower, wind, solar, and biomass, and supply and demand may occur in different provinces and at different hours ([2025 China Electricity Market Development Report; 2025 electricity consumption]).

Location adds another layer. Policy steers data centers, aluminum smelting, and some clean-technology manufacturing toward western renewable resources, but local industry, computing, other energy-intensive projects, and eastbound transmission compete for the same supply. Contracts, provincial reliability obligations, water and land constraints, and cost allocation matter as much as physical grid capacity.

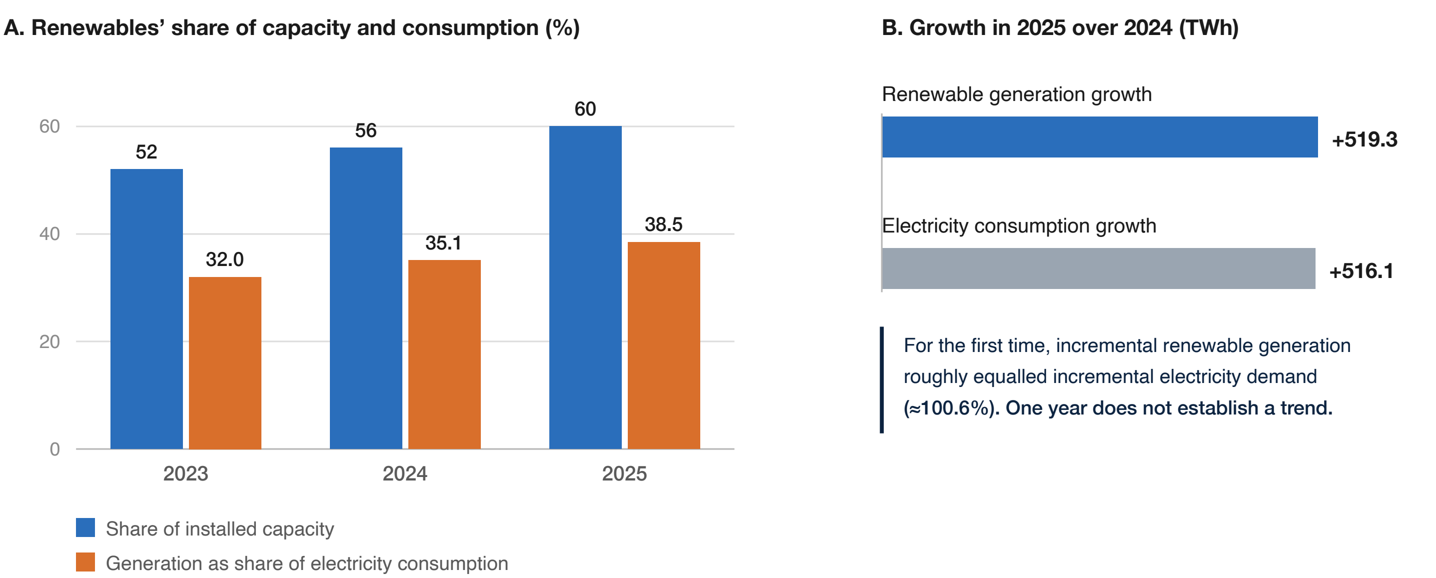
The new implementation gap is that planning does not yet consistently distinguish why emissions change. It should separate lower industrial output, cleaner production per unit of output, and the emissions attributable to new electricity demand – and then assess whether incremental clean generation matches new loads by sector, hour, and region. Otherwise, demand-led industrial decline may be mistaken for technological decarbonization, and rising electricity use may be wrongly treated as either inherently emissions-intensive or fully covered by renewables.

Recommendations

1. Make system performance observable. National energy authorities and grid companies could publish regular data on stressed-hour renewable contribution, storage dispatch, delivered demand response, and actual transmission utilization – not capacity alone. Visible performance data would reveal the coordination gap early.

2. Apply a necessity-and-duration test to high-carbon security investments. For major coal-power and coal-conversion projects, approval documents could identify the specific disruption being insured against, the lower-carbon alternatives considered, the expected duration of need, and a review date. The aim is to keep security insurance time-limited and reviewable.

Figure 2: Renewables' rising share and the 2025 growth match



Note: shares are renewable generation divided by electricity consumption; national annual totals mask provincial and hourly differences.
Sources: NEA annual renewable-energy and electricity-consumption releases (2024–2026).

3. Pair local flexibility with verification and support. Differentiated provincial pathways would be more credible if commitments disclosed baselines, major-project assumptions, and annual milestones under common accounting rules, matched by technical services, transition finance, and workforce support for smaller firms and less-resourced regions. A review in 2027–2028 could test whether the new approach is reducing abrupt enforcement without encouraging under-commitment.

4. Track structural decline and decarbonization separately. National and provincial reporting could distinguish industrial output, emissions per unit of output, and the emissions attributable to new electricity demand, and compare clean-generation growth with demand growth over multiple years and during periods of system stress. Without this separation, an emissions decline driven by the industrial slowdown could be mistaken for durable decarbonization.

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