



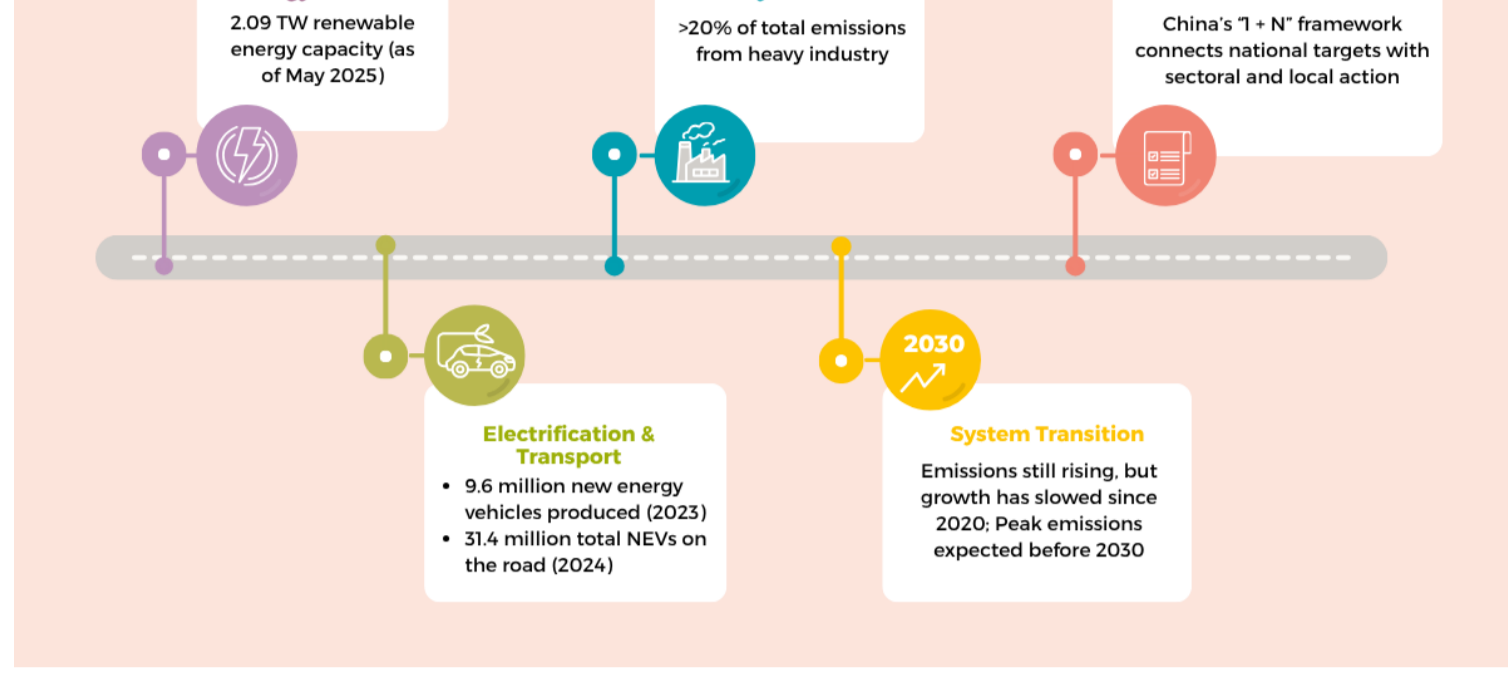
Deep Decarbonization Pathways

DDP Insights

An analysis of China's national climate action

This year, our newsletter returns as **DDP Insights** (formerly *NDC Insights*), shifting focus from climate commitments to how countries are delivering the transition in practice. We begin with China.

Decarbonization in China : progress and pressure points



National climate action in China since the signature of the Paris Agreement shows how a low-carbon transition can move from policy ambition to system-wide implementation.

Over the past decade, China has shifted from pilot projects to a transition aligned with its dual-carbon goals: peaking emissions before 2030 and reaching carbon neutrality before 2060. This shift is already visible in the scale of deployment, particularly in the power sector, where renewable capacity reached 2.09 TW by May 2025, accounting for over half of installed capacity.

At the same time, electrification is accelerating across sectors. In transport, the rapid expansion of new energy vehicles — with 9.6 million produced in 2023 and 31.4 million in circulation by 2024 — reflects how quickly clean technologies can scale when supported by industrial policy and infrastructure.

The DDP analysis shows that China has “unlocked” several key pillars of its transition — including renewable energy, electric mobility, carbon markets, and methane governance — moving from fragmented initiatives to coordinated, system-level change.

But this progress is unfolding alongside persistent structural challenges:

- Coal still accounted for 53.2% of energy consumption in 2024, reflecting its ongoing role in ensuring energy security and system stability.
- At the same time, emissions from heavy industry remain difficult to reduce, with energy-intensive sectors accounting for a significant share of total emissions and facing constraints linked to long-lived assets and technology readiness.
- The report also highlights a growing gap on the demand side, where limited price signals and weak consumer incentives continue to constrain efficiency and flexibility gains.

What this tells us

The next phase of the transition will depend on how effectively different parts of the system evolve together: from accelerating clean power and electrification, to managing coal phase-down and enabling deeper changes in industry and consumption.

Accelerating clean power and electrification will be critical, but their impact depends on parallel progress — managing a gradual coal phase-down, strengthening grid and storage infrastructure, and enabling deeper changes in industry and consumption patterns. Delays or bottlenecks in one part of the system can slow progress across others.

As emissions growth slows and an expected peak approaches before 2030, the challenge is no longer whether the transition is underway, but how it can be sustained and deepened across the entire economy.

Ten Years After Paris: Transition Outlook CHINA

Emissions trajectory since Paris Agreement

Emissions have continued to rise, with growth slowing after 2020, while renewables exceeded 1.2 TW of capacity by 2024, supporting an expected pre-2030 emissions peak.

Progress
Rapid structural change in the power system
China has shifted from pilot projects and policy experimentation to a system-wide low-carbon transition aligned with its dual-carbon goals — peak emissions before 2030 and carbon neutrality before 2060. Renewable energy deployment has expanded sharply, reaching 2.09 TW by May 2025, now accounting for over half of installed power capacity.

Nationwide electrification momentum in transport
The new energy vehicle ecosystem has scaled rapidly, with 9.6 million new energy vehicles produced in 2023 and 31.4 million vehicles in stock by 2024, supported by dense charging and battery-swap networks.

Methane emission control & institutionalization of governance
China has built a policy and technical pathway for the measurement, reporting and verification (MRV) of methane, positioning it as a near-term, high-impact lever to structurally reduce these emissions.

Enablers
A coherent governance architecture
China's '1 + N' framework connects national targets with sectoral and provincial plans, reinforced through Five-Year Plans that provide implementation cycles and interim targets and improved cross-ministerial coordination. Moreover, tracking indicators aligned with the NDC have been established.

Industrial capability as climate driver
Strategic investment in solar, wind, battery and electrification technologies has reduced costs and enabled scale, making renewables and NEVs economic engines as well as climate enablers. "New quality productivity"

Institutional mechanisms that sustain delivery
The national ETS, informed by provincial pilots, now operates as a multi-sector market mechanism, that apportions reduction responsibility, internalizes carbon costs and reduces system-wide abatement costs.

Main Transformations Needed in Key Sectors

Electricity
A managed coal phase-out alongside grid modernization, storage development and cross-regional transmission reforms to support rising renewable penetration.

Transport
Continued new energy vehicles (NEVs) uptake supported by charging networks and supply-chain maturity, while addressing rising mobility demand across regions.

Buildings
Stronger pricing signals, flexibility measures and consumer participation to complement supply-side progress.

Industry
Deeper emission cuts in steel, cement and chemicals through technology innovation, electrification, low-carbon fuels and emerging carbon capture solutions.

Barriers
Coal dependence remains systemic
Coal still accounted for 53.2% of energy consumption in 2024, and ~47.5 GW of coal power capacity was added that year — reinforcing structural lock-in even as renewables scale.

Demand-side mitigation lags
Limited price signals, uneven consumer uptake and weak flexibility tools mean behavioral and efficiency gains remain underused.

Hard-to-abate sectors require deeper solutions
Decarbonizing steel, cement and chemicals is constrained by long-lived assets, high capital costs and technology readiness gaps. While methane governance is emerging, implementation remains uneven, highlighting the need for institutional follow-through.

Check the full China chapter from the DDP 2025 Report

- ➡ [Read the full China chapter](#)
- ➡ [Download the China one-pager](#)

About DDP Insights

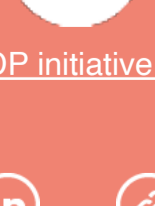
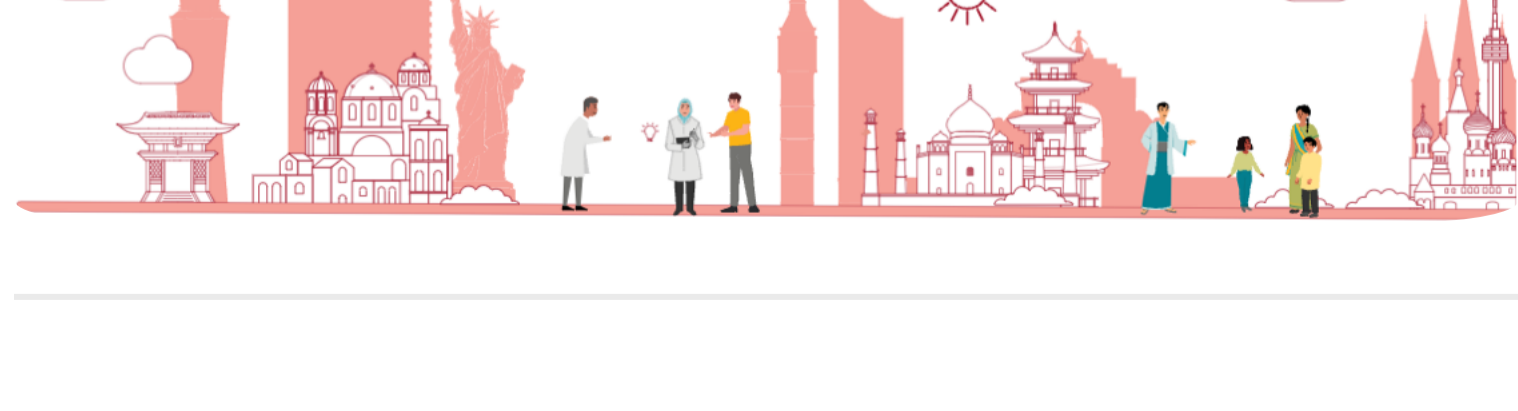
Ten years from the Paris Agreement, the focus of climate action is shifting. Last year, you registered for the NDC Insights series, which explored what countries' climate commitments tell us about progress toward global goals, and where gaps remain. But as this new phase begins, the central question is no longer only what countries have pledged, but how those pledges translate into real transformations across their economies.

The DDP 2025 report, "*A Decade of National Climate Action: Stocktake and the Road Ahead*", takes this analysis further. Drawing on national climate action developed by in-country experts, it looks beyond targets to examine how emissions reductions unfold across power systems, industry, transport, and land use since the signature of the Paris Agreement — and what it takes to align climate ambition with development priorities over time.

In this new series, *DDP Insights*, we build on last year's analysis by focusing on one country at a time. Each edition explores what national climate actions reveal about the next phase of implementation: not just setting targets, but delivering structural change.

This series will highlight key findings from the full country chapter, alongside a one-pager — a concise synthesis of the analysis, designed to capture the main transformations, enablers, and challenges at a glance.

DDP Insights builds on the work of the Deep Decarbonization Pathways (DDP) Initiative, drawing on country-driven analysis to explore how national climate goals translate into real-world transformation.



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