



BRIDGING THE GAP BETWEEN CHINA'S CLIMATE AMBITION AND ACTION

Authors: Hengrui Liu and Zheng Cui



Highlights

- Implementation gaps remain one of the key challenges for China in achieving its climate targets.
- Despite strong climate governance and financial capacity, implementation gap analysis identifies four major sources of gaps: competing policy goals, limited institutional capacity, technology concentration, and weak data, communications, and information systems.
- Closing these gaps will require a systemic and coherent approach that balances development objectives with emissions reductions while ensuring incentive alignment across actors and sectors.

Background

In a new climate pledge announced at the September 2025 United Nations Climate Summit, Chinese President Xi Jinping committed to cutting the country's greenhouse gas emissions by 7%–10% from peak levels by 2035. The pledge outlines a series of sectoral and cross-cutting targets, including: achieving a 30% share of non-fossil fuels in total energy consumption; reaching 3,600 gigawatts of combined wind and solar power capacity; expanding the national emissions trading system; further promoting the deployment of electric vehicles; increasing forest stock volume to over 24 billion cubic meters; and building a climate-resilient and adaptive society (Table 1).

The new pledge reaffirms China's earlier commitment to peak greenhouse gas emissions before 2030, marking a critical milestone in the country's contribution to global climate action. According to the Climate Policy Lab's latest policy gap analysis on China's climate targets, both modeling results and expert surveys suggest that China's "1+N" policy framework is broadly sufficient for achieving the 2030 carbon peaking target, with significant

Table 1: China's Climate Targets

Target type	First NDC (2016)	Second NDC (2021)	Third NDC (2025)
Carbon Peaking and Carbon Neutrality	Peak “around 2030 and making efforts to peak earlier”	Peak “before 2030” and achieve carbon neutrality before 2060	Cut GHGs to 7-10% below peak levels by 2035
Carbon intensity	↓ by “60–65%” in 2030 from the 2005 level	↓ by “over 65%” in 2030 from the 2005 level	
Non-fossil share of primary energy consumption	↑ to “around 20%” by 2030	↑ to “around 25%” by 2030	↑ to 30% by 2035
Forest stock volume	↑ by 4.5 billion cubic meters in 2030 from the 2005 level	↑ by around 6 billion cubic meters in 2030 from the 2005 level	↑ by around 24 billion cubic meters in 2030 from the 2005 level
Installed capacity of wind and solar power		↑ to over 1,200 GW by 2030	↑ to over 3,600 GW by 2035

emission reductions expected to come from the decarbonization of the power sector and the expansion of the emissions trading system.¹ However, the analysis also highlights significant challenges to meeting the 2060 carbon neutrality goal. Among the most pressing is the policy implementation gap, defined as the discrepancy between the intended and actual outcomes that occur after policies are adopted.

To examine China's climate policy implementation gaps, we employ a qualitative research design that integrates climate policy inventory analysis, literature review, and semi-structured interviews.² More than 100 climate-related policy documents were collected and systematically analyzed. The authors independently scored each policy based

on their potential emissions reduction effects and distilled the results into 22 key policies (Table 2). A structured typology of implementation barriers was developed to categorize the main sources of implementation gaps (Appendix). In addition, ten semi-structured interviews were conducted between June and August 2025 with both Chinese and international experts in the fields of climate, energy, and technology. These interviews provided nuanced insights into policy-specific implementation gaps and offered empirical grounding for the analytical framework developed in this study.

Findings

An examination of China's existing “1+N” climate policy inventory reveals that the country's major mitigation efforts have primarily targeted the energy, buildings, industry, and transportation sectors. In contrast, areas such as agriculture, waste management, aviation and shipping, and climate adaptation have received comparatively less policy attention and exhibit lower policy intensity. Recent studies focusing on specific

1 Zhang, Fang, Kelly Sims Gallagher, Minshu Deng, Hengrui Liu, Robbie Orvis, and Xiaowei Xuan. “Assessing the Policy Gaps for Achieving China's Carbon Neutrality Target.” *Environmental Science & Technology* 59, no. 34 (2025): 18124-18133. <https://doi.org/10.1021/acs.est.4c12478>

2 As the policy outcomes have not yet materialized, conducting a quantitative analysis of the implementation gap is currently infeasible.

Table 2: Selected Policies for Implementation Gap Analysis – China

Sector	Policies
Buildings	Peaking Emissions in Rural and Urban Construction
Cross-cutting	Construction of Dual Control System for Carbon Emissions
	Establishment of Product Carbon Footprint Management System
	Green Consumption Promotion
	National Emissions Trading System
	National Strategy for Climate Change Adaptation
Energy	Coal Power Decarbonization / Promoting Clean and Efficient Development of Coal-Fired Power Generation
	Geothermal Energy Development
	Green Electricity Trading Development
	Medium- and Long-Term Development of the Hydrogen Energy Industry
	Nuclear Energy Development
	Pumped Hydro Storage Development Plan
Environment	Wind and Solar PV Power Development and Construction
	Nature-based Solutions
Finance & Investment	Climate Investment and Financing Project
	Development of Green Bonds
Industry	Energy-Saving and Carbon Reduction in Key Energy-Consuming Industries
	New Energy Storage Manufacturing Industry
	Regulation of Ozone-Depleting Substances and Hydrofluorocarbons
Innovation & Technology	Market-Oriented Green Technology Innovation System
	Science and Technology Support for Carbon Peaking and Carbon Neutrality
Transport	Battery Recycling for New Energy Vehicles

policy instruments, such as the national emissions trading system, have provided valuable insights into implementation challenges. However, a broader, cross-sectoral examination of China's climate policy implementation remains underdeveloped.

Mapping the available evidence and interview results against the Climate Policy Lab's typology of implementation gaps (Appendix), our analysis reveals several key characteristics of China's climate policy implementation gaps:

- China has demonstrated strong inter-departmental coordination and financial capacity, with relatively limited implementation gaps in these areas.
- The major implementation gaps are concentrated in the categories of *Political Economy and Interests* and *Technical and Legal Constraints*.
- The identified gaps tend to be cross-cutting, affecting multiple sectors and levels of governance.

Below we summarize the four most prevalent sources of climate policy implementation gaps.

COMPETING GOALS

A recurring theme is that multiple policy instruments pull in different directions, with implementation privileging near-term objectives such as price stability, energy security, and output growth over consistent decarbonization signals. Several interviewees characterized the Emissions Trading System (ETS) as institutionally present yet uneven in its influence on operations and investment when cost signals are low or cannot be passed through. Further discussion on electricity trading identified a push-pull in between market liberalization and ad hoc administrative measures, noting that when the latter dominate, signals for flexible resources and renewable integration weaken.

INSTITUTIONAL CAPACITY

Experts underscored the uneven delivery capacity (in terms of people, processes, verification, and project preparation) across regions and policy instruments. In green finance, interviewees highlighted varied interpretations of taxonomies, limited bandwidth for third-party verification, and thin pipelines for bankable projects beyond mature renewables. On market-oriented green innovation, experts praised strong upstream R&D but described a potential lack of cost-benefit assessment. Capacity gaps act as multipliers that dampen otherwise sound policy designs.

TECHNOLOGY CONCENTRATION

Experts emphasized the importance of developing a diversified portfolio of emissions-reduction technologies to avoid excessive concentration in a few established sectors. In practice, many local governments have adopted similar technology priorities, which, combined with intense domestic competition, have contributed to overcapacity in several clean-energy industries. Aligning financial and institutional resources with regional resource endowments, industrial bases, and technological capabilities could improve the efficiency of innovation support and encourage complementary rather than overlapping technology development. Significant technological gaps remain in several

emerging areas, including hydrogen, geothermal, and carbon capture, utilization, and storage (CCUS). Addressing these gaps would likely require a coordinated approach that strengthens research and development capacity, supports pilot and demonstration projects, and facilitates the development of enabling infrastructure.

DATA, COMMUNICATIONS, AND INFORMATION

Ensuring the accuracy, reliability, and comparability of climate data collected from multiple sources remains a persistent and systemic challenge. In many cases, data collection is fragmented across different government bodies and agencies, resulting in duplicated efforts, gaps, and inconsistencies that hinder coherent policy design. Interviewees highlighted that the absence of unified methodologies and reporting standards further complicates efforts to compare, integrate, and validate data across regions and domains. On the communications and information side, inadequate transparency and data-sharing channels exacerbate the problem.

Implications

China has made substantial progress in adopting climate policies and setting emission reduction targets over the past decade. Historical evidence indicates that China has often exceeded its stated climate commitments. However, both expert surveys and modeling results suggest that gaps in policy implementation remain a critical constraint to achieving the country's carbon neutrality goal. Four common sources of implementation gaps were identified and discussed, including competing goals, institutional capacity, technology concentration, and data, communications, and information. These challenges are systemic and interrelated, suggesting that piecemeal solutions are unlikely to be effective. Strengthening policy implementation will therefore require an integrated and coherent approach, enhanced institutional capacity, diversified technology portfolios, transparent data-sharing mechanisms, and better aligned stakeholder incentives. ●

Appendix

TYOLOGY OF IMPLEMENTATION GAPS

CATEGORIES	DEFINITION	EXAMPLES
Group 1: Governance and Institutional Capacity		
Vertical coordination (multilevel governance)	Alignment across national, regional, and local levels of government in climate policy objectives and implementation.	Misalignment in climate policy implementation, timeline, or targets between federal and state levels.
Horizontal coordination	Alignment among ministries and agencies at the same level of government in climate policy objectives and implementation.	Fragmented efforts and conflicting actions (e.g., competitions between ministries for resources).
International pressures/factors	International and external legal and financial/political dynamics that act as barriers.	Donor-driven conditionality (e.g., IMF or WB's conditions on aids that might restrict policy implementation); WTO rules on export subsidies.
Institutional capacity	Organizational structures, norms, rules, and human resources that enable policy delivery.	Limited expertise, bureaucratic inefficiencies, poor coordination, poor communications.
Group 2: Political Economy and Interests		
Political will	Commitment by political actors to support climate policy decisions and their outcomes.	Delay of policies due to vested interests in fossil fuels, partisan divides, changes in electoral cycles, lack of (or incoherent) incentives.
Competing goals	Tensions between climate objectives or other economic, political, or development objectives.	Trade-offs between emissions reduction and industrial expansion.
Stakeholder engagement/coordination	A systematic process of identifying and interacting with individuals, groups, or organizations that have a stake in a policy or project.	Public consultation held but stakeholder inputs are not integrated; local groups being excluded from decision-making.
Consumer behavior	Behavioral resistance or unintended reactions to climate policies.	Rebound effects from fuel-efficient cars leading to increased vehicle use.
Industry lobbying / resistance	Strategic actions by industries to delay, weaken, or reshape climate policies that challenge their interests.	Coal industry lobbying against early retirement of coal plants or carbon taxes.
Incentive misalignment	Conflicting incentives across climate and non-climate policies that undermine intended outcomes.	Subsidies for fossil fuels, or market-based incentives that contradict carbon pricing mechanisms.
Group 3: Financial Constraints		
Public investment/finance	Provision of public finance during each stage of policy implementation.	Unavailability of funds required for a project scheduled for implementation from 2015 to 2020 during the 2019–20 financial year due to a shock to the source of revenue that paid for the implementation of the policy.
Private investment/finance	Availability of and access to private finance that is required for the implementation of a policy.	Unavailability of sufficient private capital due to a poor estimation by the government of the level of risk that banks were willing to take on.

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TYPOLGY OF IMPLEMENTATION GAPS

Group 4: Technical and Legal Constraints

Technology	Availability and maturity of low-carbon technologies needed.	Mismatch between policy's technological needs and the existing technological infrastructure.
Data, communications, and information	Availability of flow of data and information, availability of information technology and monitoring systems, and the effectiveness of communication between actors.	Emissions data not being collected; lack of reporting to policymakers after the implementation of policies; lack of MRV systems.
Policy design	The initial phase of the policy process which includes identification of actors, instruments, setting of targets, allocation of responsibilities, and establishment of implementation frameworks.	Exclusion of relevant actors; ambiguous targets; unclear division of responsibilities among implementing agencies.
Legal mechanisms	Legal mechanisms available to address issues related to policy non-compliance, enforcement, or disputes.	Insufficient legal tools or mechanisms to enforce policy decisions or when the existing laws are not equipped to address compliance issues.
Human talent	Skilled personnel and institutional leadership to drive innovation and implementation.	Limitations in knowledge, skills, innovation or entrepreneurship in the general population.

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ABOUT THE AUTHORS:

Hengrui Liu is a Postdoctoral Scholar at the Climate Policy Lab at The Fletcher School, Tufts University.

Zheng Cui is a Junior Research Fellow at the Climate Policy Lab and PhD student at The Fletcher School, Tufts University.

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Climate Policy Lab is based in the Center for International Environment and Resource Policy (CIERP) at The Fletcher School, Tufts University

visit: climatepolicylab.org email: cpl@tufts.edu

