

Original Paper

Research on the Legal Positioning and Implementation Mechanism of China's Carbon Peaking and Carbon Neutrality Goals under the Paris Agreement

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Abstract

The proposal of China's "dual carbon" goals holds dual international legal implications within the framework of the Paris Agreement: it constitutes both a treaty-based performance of obligations and a unilateral legal act under international law. The Paris Agreement establishes a compliance mechanism centered on nationally determined contributions (NDCs), supplemented by a transparency framework and global stocktake. Its legal characteristics are facilitative, non-confrontational, and procedural. Within this institutional structure, the "dual carbon" goals, as China's NDC commitments, are subject to international review through the enhanced transparency framework and participate in collective effort assessment under the global stocktake mechanism. From the perspective of international treaty law, this paper analyzes the international legal positioning of the "dual carbon" goals, elucidates the legal structure of the Paris Agreement's compliance mechanism, and explores China's legal pathways for implementation, including the fulfillment of transparency obligations, participation mechanisms in the compliance committee, and the synergy between domestic and international law. The study argues that China should uphold the jurisprudential foundation of the principle of "common but differentiated responsibilities" and construct an integrated domestic and international compliance legal system by "internalizing" international rules into domestic legislation and "externalizing" domestic rule-of-law practices into the creation of international rules.

Keywords

Paris Agreement, dual carbon goals, nationally determined contributions, compliance mechanism, transparency framework

1. Introduction

In 2020, China explicitly set forth its strategic goals of “achieving carbon peak by 2030 and carbon neutrality by 2060” (hereinafter referred to as the “dual carbon” goals). This constitutes a major decision made by China based on its responsibility to promote the building of a community with a shared future for mankind and its inherent requirements for achieving sustainable development. As a Party to the Paris Agreement, the proposal and implementation of China’s “dual carbon” goals not only bear upon the nation’s overall economic and social development but also hold significant international legal implications within the global climate governance system.

The Paris Agreement is another landmark international legal instrument under the United Nations Framework Convention on Climate Change, following the Kyoto Protocol. It establishes a hybrid governance model centered on “Nationally Determined Contributions” (NDCs), complemented by a transparency framework and a global stocktake (You, M. Q., & Zhang, Y. W., 2025, pp. 106-116). Diverging from the “top-down” mandatory emission reduction model of the Kyoto Protocol, the Paris Agreement adopts an institutional design that combines “bottom-up” voluntary commitments with “top-down” procedural constraints. This institutional innovation not only respects the domestic autonomy of each country but also ensures the transparency and ambition of collective action through procedural obligations.

The year 2025 marks the tenth anniversary of the conclusion of the Paris Agreement. Practice over the past decade has demonstrated that the Agreement, through its “five major mechanisms”—namely, nationally determined contributions, the global stocktake, financial assistance, the technology mechanism, and the transparency framework—constitutes the most comprehensive institutional combination for climate governance in the contemporary era. However, against the backdrop of a lack of hard constraints and punitive mechanisms, global emission reduction efforts remain inadequate: in 2023, global carbon intensity decreased by only approximately 1.02%, far below the decarbonization rate of about 7% per annum required to meet the goals of the Paris Agreement. This practical dilemma underscores the urgency of conducting in-depth research on the compliance mechanism of the Paris Agreement and clarifying the legal obligations of its Parties.

This article will systematically analyze the international legal positioning of China’s “dual carbon” goals within the framework of the Paris Agreement from the perspective of international treaty law, elucidate the legal structure of the Paris Agreement’s compliance mechanism, and subsequently explore the legal pathways for China’s implementation of the Agreement, aiming to provide theoretical support for the construction of an integrated domestic and international compliance legal system.

2. The International Legal Positioning of the “Dual Carbon” Goals

2.1 *The Legal Nature of Nationally Determined Contributions*

Article 4, paragraph 2, of the Paris Agreement stipulates: “Each Party shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue

domestic mitigation measures, with the aim of achieving the objectives of such contributions.” This provision establishes the legal status of nationally determined contributions (NDCs) as the core implementation tool of the Paris Agreement. Examined from the perspective of international legal theory, NDCs possess a dual legal character. On one hand, they constitute treaty-based performance of obligations—Parties submit their contribution targets in accordance with the procedural provisions of the Paris Agreement, fulfilling their treaty obligations. On the other hand, they represent unilateral legal acts under international law—nations make legally significant commitments autonomously, and although such commitments are not treaties themselves, based on the principle of good faith performance, they generate a certain degree of legal binding force on the making state (Shao, L. L., 2024, pp. 106-123).

In essence, the NDCs under the Paris Agreement represent an institutional arrangement comprising legally binding procedural obligations and non-legally binding substantive targets (Lyu, Jiang, 2023, p. 274). Specifically, Parties bear the legal obligations to prepare, maintain, and successively communicate their NDCs, with subsequent contributions required to reflect “progression”; however, the specific content of the contribution targets and the means of achievement are determined autonomously by each Party. This institutional design ensures both the flexibility of national participation in governance and, through procedural obligations, safeguards the continuity of the governance process.

2.2 The Dual Legal Implications of the “Dual Carbon” Goals

Within the aforementioned legal framework, China’s “dual carbon” goals carry dual implications. First, they represent an upgrade and integration of its nationally determined contributions (NDCs). Prior to announcing the “dual carbon” goals in 2020, China had already submitted multiple NDC documents to the secretariat of the United Nations Framework Convention on Climate Change. In 2021, China updated its “Progress Report on Nationally Determined Contributions,” explicitly incorporating “carbon peak and carbon neutrality” into the overarching framework of its NDCs. The “dual carbon” goals do not replace China’s NDCs but rather constitute a systemic upgrade—expanding from relative emission reduction targets to absolute emission reduction targets, and extending from short-term action plans to medium- and long-term strategic visions.

Second, they embody the normative effect as a unilateral legal act. Following the announcement of the “dual carbon” goals, the Chinese government has translated them into concrete actions through domestic legislation, policy formulation, and institutional establishment. Examples include issuing the “Opinions on Completely, Accurately, and Comprehensively Implementing the New Development Philosophy to Achieve Carbon Peak and Carbon Neutrality,” launching the national carbon emissions trading market, and revising the “Energy Conservation Law.” These domestic rule-of-law practices demonstrate that the “dual carbon” goals have evolved from a political declaration into an action commitment with normative significance, constituting, at the international law level, an important basis for China’s performance of its obligations under the Paris Agreement.

3. The Legal Structure of the Paris Agreement's Compliance Mechanism

3.1 *The Paradigm Shift from Adversarial Compliance to Facilitative Compliance*

The compliance mechanism in international environmental law has undergone an evolutionary process from adversarial to facilitative approaches. Early multilateral environmental agreements often adopted a “sanction-punishment” model. For instance, the Montreal Protocol established non-compliance procedures authorizing its compliance committee to impose sanctions such as warnings and suspension of rights on defaulting parties. The Kyoto Protocol continued this approach, with its compliance mechanism including an enforcement branch that could impose punitive consequences on Annex I parties for non-compliance, such as doubling emission reduction commitments and suspending eligibility for emissions trading. The Paris Agreement, however, achieved a paradigm shift in compliance mechanisms. Article 15 of the Agreement stipulates: “A mechanism to facilitate implementation of and promote compliance with the provisions of this Agreement is hereby established. It shall consist of a committee that shall be expert-based and facilitative in nature and function in a manner that is transparent, non-adversarial and non-punitive.” This provision establishes three core characteristics of the compliance mechanism: facilitative, non-adversarial, and non-punitive (He, T. T., 2025, pp. 28-50, pp. 155-156). The underlying logic of this shift lies in the global, long-term, and highly uncertain nature of climate change issues. Relying solely on sanctions cannot effectively incentivize countries to undertake emission reduction actions; conversely, facilitative approaches such as capacity-building support, information sharing, and peer review are more conducive to building trust and enhancing the ambition of collective action.

3.2 *The Institutional Composition of the Compliance Mechanism*

The compliance mechanism of the Paris Agreement is not a single institutional arrangement but a system composed of the enhanced transparency framework, the global stocktake mechanism, and the Compliance Committee.

First, the enhanced transparency framework. Article 13 of the Paris Agreement establishes an “enhanced transparency framework,” requiring all parties to regularly report on greenhouse gas inventories and track progress in the implementation of their nationally determined contributions. Compared to the reporting systems under the Convention and its Kyoto Protocol, the enhanced transparency framework has two notable features: first, it breaks away from the strict dichotomy between developed and developing countries, with all parties assuming transparency obligations while granting appropriate flexibility to the least developed countries and small island developing states; second, it establishes technical expert review and multilateral review procedures, generating “peer pressure” through peer reviews to promote compliance.

Second, the global stocktake mechanism. Article 14 of the Paris Agreement creates the global stocktake mechanism, which aims to periodically assess collective progress toward achieving the purpose of the Agreement. The global stocktake is conducted every five years and covers mitigation, adaptation, financial support, technology development and transfer, capacity-building, and other aspects. In 2023,

the Dubai Climate Change Conference completed the first global stocktake and adopted the “UAE Consensus,” which includes the wording “transitioning away from fossil fuels in energy systems” in the mitigation section. As an “information regulation tool,” the global stocktake transforms scientific understanding into political consensus through mechanisms such as information collection, knowledge production, and collective learning, thereby encouraging countries to update and enhance their nationally determined contributions.

Third, the Implementation and Compliance Committee of the Paris Agreement. The Implementation and Compliance Committee, established under Article 15 of the Paris Agreement, is the core institution of the compliance mechanism. This committee is a permanent expert body with main functions including reviewing compliance information submitted by parties, addressing non-compliance situations, and providing recommendations and assistance. Unlike the Compliance Committee of the Kyoto Protocol, this committee does not have an enforcement branch, and its mandate is limited to facilitative measures, such as offering advice and assisting in accessing financial and technical support.

3.3 Procedural and Reflexive Features of the Compliance Mechanism

An overview of the compliance mechanism of the Paris Agreement reveals two core legal features. The first is procedurality. The Agreement primarily imposes procedural obligations on parties: submitting nationally determined contributions, continuously reporting compliance information, and participating in global stocktake reviews. This procedural design transforms the pursuit of substantive emission reduction outcomes into a guarantee of procedural compliance, respecting national sovereignty while ensuring the sustainability of the governance process. The second is reflexivity. In global environmental governance, “reflexivity” refers to the ability of a system to continuously adjust and enhance governance goals through information feedback and self-assessment. The global stocktake mechanism epitomizes this feature—it does not simply review whether parties have complied but assesses collective progress, identifies gaps and challenges, and guides the formulation of the next round of nationally determined contributions, forming a cycle of “action-assessment-improvement.”

4. China’s Path to Fulfilling Its “Dual Carbon” Goals under International Law

4.1 Implementation of Transparency Obligations and Capacity Building

Transparency obligations are the primary legal duties for China in achieving its “dual carbon” goals. Climate change, as a large-scale environmental issue characterized by uncertainty, long-term impacts, and harmfulness, makes climate governance a risk-laden decision-making process. Under Article 13 of the Paris Agreement and its implementing rules, parties must submit their first biennial transparency report by the end of 2024, including national greenhouse gas inventories, progress updates on nationally determined contributions, and information on climate finance supply and demand. China has already established a foundation for fulfilling transparency obligations. Since 2005, China’s carbon dioxide emissions per unit of GDP have cumulatively decreased by over 48%, achieving its intensity reduction commitment ahead of schedule. In terms of reporting system development, China has

established a national greenhouse gas inventory compilation mechanism and has successively submitted to the UNFCCC Secretariat the Initial National Communication on Climate Change of the People's Republic of China and biennial update reports. However, to meet the higher requirements of the enhanced transparency framework, China must strengthen capacity building in the following areas: improving the statistical and accounting system for greenhouse gas emissions by integrating indicators such as energy intensity, carbon intensity, and total carbon emissions into the “dual carbon” evaluation and assessment system; enhancing capacity training for grassroots law enforcement personnel to address inconsistencies and inadequacies in enforcement standards; and accelerating the development of energy efficiency standards for emerging industries like AI to fill standard gaps.

4.2 Participation in the Global Stocktake and Discourse Power Construction

The global stocktake is not only a critical component of the compliance mechanism but also an important platform for China to participate in the rule-making of global climate governance. The results of the first global stocktake reveal a systematic underestimation of China's contributions by international assessment systems—mainstream evaluations tend to focus more on superficial characteristics such as “large total emissions” and “high coal proportion,” while paying insufficient attention to China's structural contributions in controlling emission increments, promoting energy structure adjustments, and exporting green technologies and climate finance instruments. In response, China should enhance its strategic planning for participation in the global stocktake. First, improve information governance capabilities to ensure the completeness, consistency, and comparability of submitted data, providing a reliable foundation for the global stocktake. Second, strengthen the supply of knowledge on climate governance by translating domestic green transformation practices into shareable experiences and norms, such as the complete industrial chains and institutional systems developed in areas like wind power, photovoltaics, new energy vehicles, carbon markets, and green finance. Third, guide the shaping of value consensus through collective learning, enhancing China's discourse power on core issues such as the interpretation of the principle of “common but differentiated responsibilities” and equitable transition pathways.

4.3 Participation Mechanisms of the Compliance Committee

The establishment of the Implementation and Compliance Committee of the Paris Agreement provides parties with an institutionalized platform to address implementation difficulties and seek capacity support. As of 2025, the committee has issued multiple procedural rules and recommendations aimed at facilitating compliance.

China should actively engage in relevant work, focusing on the following aspects: first, nominating domestic experts to participate in the committee's work, contributing professional knowledge and practical experience; second, utilizing the committee platform to highlight the financial, technical, and capacity-building challenges faced by developing countries in implementation, thereby encouraging developed countries to fulfill their support obligations; and third, monitoring the committee's deliberations and decisions on compliance issues of other countries to anticipate trends in compliance

practices and adjust domestic implementation strategies accordingly.

4.4 Synergy between Domestic and International Law

The fundamental approach to achieving the “dual carbon” goals lies in “internalizing” international rules into domestic legislation while “externalizing” domestic legal practices into the creation of international norms, thereby constructing a synergistic legal system for compliance. To maximize economic efficiency and achieve win-win outcomes, emission reduction strategies should address air pollution and climate change in an integrated manner, adopting unified rather than separate scientific research and response strategies.

In terms of internalizing international rules, China has made significant progress. The formulation and revision of laws and regulations such as the Energy Conservation Law, the Renewable Energy Law, and the Circular Economy Promotion Law have provided a domestic legal foundation for implementing the “dual carbon” goals. Moving forward, China should accelerate the legislative process for a dedicated climate change law, clarifying the legal status, basic principles, institutional framework, and accountability mechanisms for achieving carbon peak and carbon neutrality. At the same time, it is essential to promote the integration of energy conservation review and carbon emission assessment systems, strengthening controls over high-energy-consumption and high-emission projects at the source.

In terms of externalizing domestic practices, China should take a more proactive role in shaping international climate rules. Over the past decade, China has accumulated extensive practical experience in green transformation, institutional innovation, and South-South cooperation. These experiences can be translated into international rules through various channels: proposing institutional design options in multilateral negotiations that reflect the principles of “Southern justice”; promoting replicable low-carbon transition models in bilateral and regional cooperation; and supporting capacity-building activities under the UN framework to help developing countries enhance their implementation capabilities.

5. Conclusion

The Paris Agreement establishes a new model of global climate governance centered on nationally determined contributions, supported by the transparency framework and the global stocktake, and safeguarded by a facilitative compliance mechanism. Within this framework, China’s “dual carbon” goals represent not only the fulfillment of treaty obligations but also constitute unilateral legal acts with normative significance. As a landmark legal instrument in global climate governance, the Paris Agreement has inaugurated a new governance model centered on nationally determined contributions, supported by the transparency framework and the global stocktake, and safeguarded by a facilitative compliance mechanism. The legal characteristics of this model lie in its procedural, reflexive, and facilitative nature—ensuring the continuity of the governance process through the fulfillment of procedural obligations, achieving the collective enhancement of governance goals via the information

feedback mechanism of the global stocktake, and providing capacity-building support through a non-adversarial compliance committee. This institutional design not only respects the sovereign right of each country to autonomously determine its emission reduction pathways based on national circumstances but also creates necessary implementation pressure through transparency requirements and peer review, striking a delicate balance between flexibility and binding force.

An in-depth examination of the compliance mechanism of the Paris Agreement reveals that its core legal features lie in its facilitative, procedural, and reflexive nature. These characteristics determine that China's path to fulfilling its "dual carbon" goals under international law should focus not only on emission reduction outcomes but also on the comprehensive implementation of procedural obligations, including transparency reporting, participation in the global stocktake, and cooperation with the Compliance Committee.

At the same time, China should consistently uphold the legal principle of "common but differentiated responsibilities" and strive to promote the construction of a more equitable and reasonable global climate governance system while fulfilling its international obligations. By "internalizing" international rules into domestic legislation and "externalizing" domestic legal practices into the creation of international norms, China can contribute Chinese wisdom and solutions to global climate governance within a synergistic legal framework that integrates domestic and international efforts.

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