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SHARING THE RESPONSIBILITY

Steelmakers' Critical Role in Delivering on China's 2035 National Determined Contributions

I China's NDC 3.0 and the Low-Carbon Transition of Chinese Steel Companies

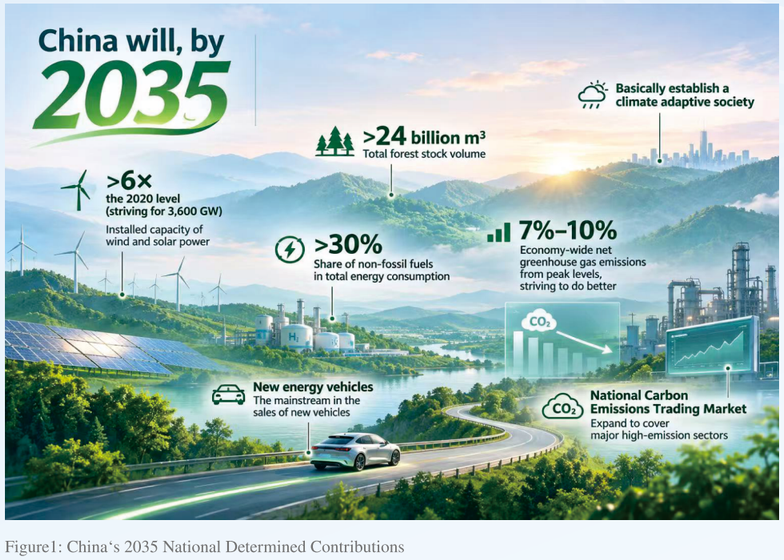


Figure1: China's 2035 National Determined Contributions

In November 2025, China submitted its third NDC report—Nationally Determined Contribution Report for 2035, which announced: China will, by 2035, reduce economy—wide net greenhouse gas emissions by 7 percent to 10 percent from peak levels, striving to do better; increase the share of non-fossil fuels in total energy consumption to over 30 percent; expand the installed capacity of wind and solar power to over six times the 2020 levels, striving to bring the total to 3,600 gigawatts; scale up the total forest stock volume to over 24 billion cubic meters; make new energy vehicles the mainstream in the sales of new vehicles; expand the National Carbon Emissions Trading Market to cover major high-emission sectors; and basically establish a climate adaptive society.

As the second largest carbon emitting industry in China, the steel industry contributes to approximately 15% of the country's total carbon emissions[1] and accounts for 11% of national energy consumption[2]. With the expansion of renewable energy and power grid development, emissions control in the power sector has achieved notable results; industrial emissions are emerging as the priority for the next stage of work. Therefore, how the steel industry responds to this new policy and advances its decarbonization process is critical to the achievement of NDC 3.0. Moreover, with this stringent interim timeline of 2035 between carbon peaking and carbon neutrality, steel companies need to define their primary technology pathways within a short period in order to seize advantages under pressing carbon constraints and emerging low-carbon markets. These mechanisms made the low-carbon transition of steel companies not merely a response to policy requirements but a strategic choice for building long-term competitiveness.

1. McKinsey & Company. n.d. [China accelerates toward carbon neutrality—Steel sector: Carbon emission reduction in the steel industry]. McKinsey China. https://www.mckinsey.com.cn/中国加速迈向碳中和钢铁篇：钢铁行业碳减排/.
2. China Energy News. 2020. [The high-carbon 'curse' of the steel industry urgently needs to be broken]. https://paper.people.com.cn/zgnybwap/html/2020-12/07/content_2022561.htm

II A Comprehensive Framework to Evaluate the Transition Progress of Chinese Steel Companies: Purposes and Approaches

Many Chinese steel companies have already made significant investments in low-carbon transition, including transitioning to the short-process route (scrap-EAF or DRI-EAF), improving pellet and scrap utilization and energy efficiency within the traditional long-process route (BF-BOF), and strengthening carbon asset management. However, there remains a critical gap between the macro-level targets within NDC 3.0 and a unified operational framework that steel companies can refer to, making it necessary to develop an evaluation system to assess the extent to which steel companies have responded to the targets and how far they remain from achieving the commitments.

To fulfill this gap, a coalition of Chinese NGOs have established a comprehensive framework that includes both ex-post review and ex-ante assessment to evaluate the overall transition progress of Chinese steel companies. We seek to deepen their understanding of NDC 3.0 and encourage sustainable and long-term competition among them. While acknowledging the fact that BF-BOF route still accounts for 90% of China's steelmaking capacity[3], the framework goes beyond technical assessment. Although transforming production routes is crucial for steel decarbonization, this project team endeavors to balance the feasibility of different transition pathways while fully considering the current challenges Chinese steel companies face in their decarbonization efforts. Through a gradual and pragmatic approach, the project seeks to foster a long-term, competitive environment that encourages green transformation across the industry.

The framework is built on four guiding principles – policy alignment, data feasibility, sector adaptability, and collaborative calibration – and composed of 5 key levers – decarbonization targets and plans, technological pathways, carbon emission performance, information disclosure, and corporate governance and enabling systems. In each dimension, it breaks down into measurable indicators that correspond to specific NDC 3.0 requirements, and with defined scoring criteria and weights. Only publicly disclosed data will be considered during the evaluation process, including annual reports, sustainability reports, official press releases, as well as other environmental filings of the companies. The assessment time frame varies according to characteristics of each indicator: some will be traced from 2021 to the year before the assessment; some will only consider performance in the previous year.



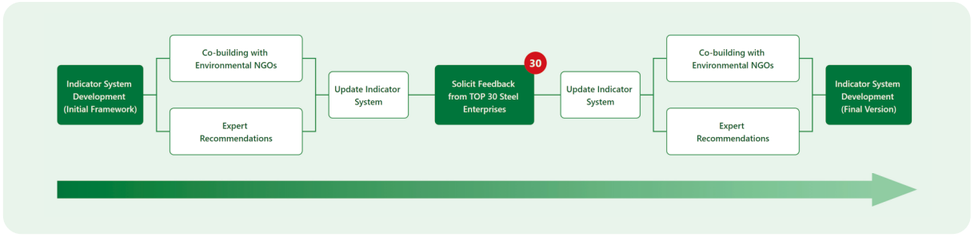
Figure2: Layout of key equipment in a steelworks. Source: Green Action from Hebei

3. People's Daily. 2024. [Short-process steelmaking has great potential for energy saving and carbon reduction]. https://www.gov.cn/yaowen/liebiao/202408/content_6966883.htm

III Detailed Explanation of the Evaluation Framework

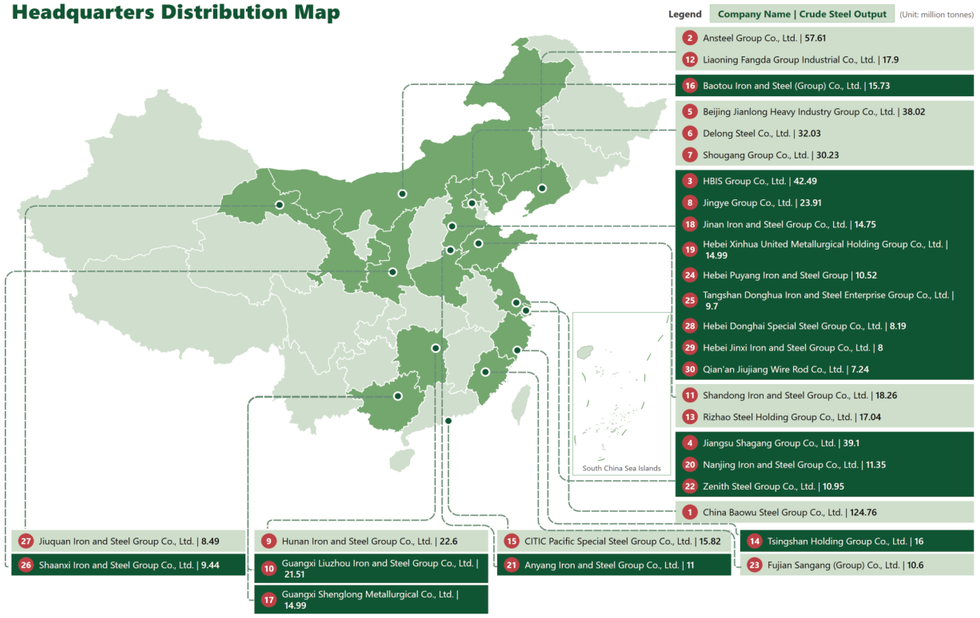
Primary Indicator	Secondary Indicator	Criteria	Score
A Corporate Strategic Objectives (12 points)	**A1** Target Year for Carbon Peaking	Alignment between the company's targets and the policy targets for carbon peaking by 2030, carbon neutrality by 2060, and a non-fossil energy share of over 30% by 2035.	2
	A2 Target Year for Carbon Neutrality		2
	A3 Target of Non-Fossil Energy Share in Total Energy Consumption		2
	A4 Low-Carbon Transition Plan	Alignment between the company's transition plan and the six major transition pathways proposed in the China Iron and Steel Association (CISA)'s *Transition Technology Roadmap.*	6
B Process Greening and Technological Innovation (25 points)	**B1** Low-Carbon Transformation of Raw Material Structure	Whether the company has applied a high proportion of pellets or a high proportion of scrap in the steelmaking process.	2
	B2 Share of Renewable Electricity in Total Electricity Consumption	Alignment between the company's share of renewable electricity – either through self-generation or purchasing from the outside – and the minimum policy target in *Notice on the 2025 Renewable Energy Power Consumption Responsibility Weight and Related Matters.*	2
	B3 Share of Electric Arc Furnace (EAF) Capacity	Alignment between the company's EAF capacity and the policy target set in the *Implementation Plan for Carbon Peaking in the Industrial Sector.*	10
	B4 Application of Green Innovative Technologies	Whether the company has conducted R&D and application in hydrogen metallurgy and CCUS or has been recognized as a Smart Factory at the national level.	8
	B5 Green Transformation across the Product and Service Chain	Whether the company has imposed emission requirements on suppliers, and whether it has carried out "green steel" product certification, branding, and market development	3
C Decarbonization Performance (35 points)	**C1** Change in Total Carbon Emission	The extent to which the company's carbon emission has decreased at the corporate level compared with the previous year.	10
	C2 Carbon Emission Intensity per Ton of Steel	Alignment of the company's absolute carbon emission intensity per ton of steel at the corporate level with the industry average, advanced, and benchmark values.	10
	C3 Change in Carbon Emission Intensity per Ton of Steel	The extent to which the company's carbon emission intensity per ton of steel at the corporate level has decreased compared with previous years.	10
	C4 Share of Non-Fossil Energy	Whether the company has achieved the policy target of over 30% non-fossil energy consumption share.	5
D Disclosure and Transparency (12 points)	**D1** Disclosure of Scope 1 and Scope 2 Emissions	Whether the company has fully disclosed Scope 1 and Scope 2 carbon emissions data, ideally accompanying with a third-party verification statement.	4
	D2 Quality of Carbon Information Disclosure	Whether the company has explicitly stated its carbon accounting methodology and system boundary and introduced third-party certification.	4
	D3 Disclosure of Product Carbon Footprint	Whether the company has published product-level carbon footprint declarations, established carbon management system, and enabled carbon data sharing.	4
E Enabling System and Comprehensive Impacts (16 points)	**E1** Decarbonization Governance Structure	Whether the company has undertaken institutional development in low-carbon governance.	3
	E2 Financing for Low-Carbon Transition	Whether the company has obtained low-carbon financing support through market-based instruments such as green finance and transition finance	4
	E3 Standard-setting in Low-Carbon Transition	To what extent the company has participated in the development of authoritative and influential low-carbon technology, product, or energy-efficiency standards.	4
	E4 Compliance and Accountability Record	Whether the company has received a public administrative penalty or public notice for violating core national or local climate-governance policies.	2
	E5 Just Transition Practice	Whether the company has taken measures to protect the rights and interests of employees and communities affected by the transition process.	3

IV Collaborative Calibration of the Evaluation Framework



This framework was developed through a participatory approach involving 8 NGO partners dedicated to industrial decarbonization in China, 30 Chinese steel companies with top production output in 2025, and 4 industry experts. It consists of three stages of calibration. In the first stage, the team established a basic indicator system through policy interpretation, expert consultation, and partner deliberation. In the second stage, all NGO partners conducted in-depth interviews or questionnaire surveys with each of the target companies, collecting feedback on the applicability and data availability of the indicators. In the third stage, the team revised the system according to the feedback from companies, experts, and partners and assigned weights to each indicator based on its decarbonization contribution and practical feasibility. This iterative process grounds the framework in policy-oriented evaluations while mobilizing the participation of industrial stakeholders, making it not a top-down mandate but a shared reference for sector-wide transition progress.

2025 China Top 30 Steel Groups by Crude Steel Output — Headquarters Distribution Map



V Evaluation Targets, Limitations, and Future Plans

The evaluation targets of this project are China's top 30 steel corporations according to their crude steel production published by the World Steel Association in the previous year of assessment, because these steel corporations not only contribute to more than two-thirds of the national crude steel output but also possess strong technology investment capacity, robust data infrastructure, and significant market and policy influence. Evaluating these corporations can reflect the overall landscape of the industry and serve as a potential reference point to the sector's leading transition.

Although the team strives to balance scientific rigorousness and practical feasibility in this indicator system, it has limitations due to data availability constraints and the incompatibility of a single plant's performance to the whole companies and corporations under certain indicators. In addition, several policy targets in NDC 3.0 have not been incorporated into this indicator system – such as the reduction of all categories of GHG emissions and the operational status of the carbon emissons trading market of the steel industry – due to the currently underdeveloped emission accounting and trading system. Furthermore, significant lifecycle emissions, including upstream carbon emissions and methane emissions from metallurgical coal mining and coke production, remain outside the scope of this indicator system. At the current stage, the system focuses exclusively on carbon emissions from steel production, with upstream emissions to be considered in future assessments. Besides, considering the heterogeneousness of resource endowments across different companies, the weighting scheme attempts to remain neutral regarding the contribution of different green and innovative technologies, making the role of advanced technologies not specifically highlighted in the indicator system. Lastly, some very localized and distinctive transition pathways of steel companies have not been involved in the indicator system because they are not linked to NDC 3.0 directly.

This indicator system is currently at the methodology stage. In 2027, the team will use this framework to conduct a formal evaluation of the top 30 Chinese companies. The system will be adjusted every 2-3 years with the latest policy, technology, and industrial practice. It aims to show steel companies where they and their peers stand in their transition progress and how far they remain from becoming a progressive, competitive, and constructive contributor for China to achieve its NDC 3.0 commitment by 2035.



Figure3: The steelworks is situated at the foot of the mountain.
Source: Green Action from Hebei