ILO brief

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Funded by the European Union

December 2025

Good practices using social protection to promote a just transition in China (2): Leveraging social security to support steel industry transformation and upgrading

2

Context

Global climate change is already adversely impacting natural and human systems, contributing to rising temperatures, more frequent and extreme weather events, shifts in water availability, all of which is posing serious threats to both the environment and socioeconomic stability. Addressing climate change and reducing emissions is urgent and will require deep transformations of current economic systems, which can lead to temporary disruptions. In response, the concept of a "just transition" has gained international recognition as a key strategy to balance environmental protection with social and economic development. A just transition is a policy and operational framework designed to move to sustainable economies and societies, while prioritizing decent jobs, the eradication of poverty, the enjoyment of the human right to social protection and thriving and resilient communities.[1]

The Chinese government attaches great importance to climate change and has made addressing it a strategic priority for achieving sustainable development. The government has committed to peaking carbon emissions by 2030 and achieving carbon neutrality by 2060.[2] [3] Through policies that optimize energy structures and improve resource efficiency, China is accelerating its transition to a green, low-carbon economy across all sectors.

The emissions from the steel industry account for approximately 15% of China's total carbon emissions.[4] As a high-energy-consuming and high-emission sector, the steel industry plays a critical role in achieving China's dual carbon goals. In recent years, China has actively promoted low-carbon and intelligent transformation of the industry through capacity replacement, technological upgrades, and green manufacturing.

However, this transition poses risks of structural unemployment, especially in traditional steel-producing regions such as Central-Southern Liaoning province and the North China region. Ensuring the resettlement of affected workers, while protecting their incomes, livelihoods and reemployment, has become a key concern.

To address these challenges, the Chinese government has introduced a range of measures, including social security policies integrated with active labour market policies, to mitigate the social impacts of industrial transformation. This study explores the social security policies and coordination mechanisms during the industrial transformation and upgrading process in the steel sector, reviewing policy implementation outcomes and drawing lessons from China's experience. It aims to contribute to global discussions on climate governance and just transition policy measures by offering insights from China's integrated approach.

1 ILO and AFD, Social Protection for a Just Transition: A Global Strategy for Increasing Ambition in Climate Action, 2019, https://www.social-protection.org/gimi/Media.action?id=17140

2 "China headed towards carbon neutrality by 2060; President Xi Jinping vows to halt new coal plants abroad", 2021, https://news.un.org/en/story/2021/09/1100642

3 "Proposal of the Central Committee of the Communist Party of China on formulating the 15th Five-Year Plan for National Economic and Social Development", 2025, https://www.gov.cn/zhengce/202510/content_7046050.htm

4 "Striving to achieve near-zero carbon emissions in the steel industry", 2025, http://finance.people.com.cn/n1/2025/1028/c1004-40590694.html

Upgrading and transformation of the steel industry

As a key pillar of the national economy, the steel industry, often called the "bread and butter industry", plays an essential role in supporting industrialization, infrastructure development, and equipment manufacturing. As the world's largest steel producer, China maintained its leading position for the 29th consecutive year in 2024, with crude steel output reaching 1.005 billion tons, accounting for 53.3% of global production[5].

Over the past years, China has begun to optimize its supply structure and other long-standing challenges in the steel industry, such as overcapacity[6], high energy consumption, and severe environmental pollution. These issues, coupled with declining economic returns, make transformation and structural adjustment increasingly urgent. In the context of the "dual carbon" goals, accelerating the shift toward greener, smarter, and higher-value operations is essential for the industry's sustainable development.

To optimize industrial structure, improve environmental standards, and address overcapacity, the Chinese government has implemented a series of policy measures since 2003. These include promoting mergers and acquisitions, encouraging capacity replacement, including several cross-regional relocation and restructuring cases. As a result, the steel sector has seen notable improvements in efficiency, reduced environmental impact, and a more rationalized industrial structure. By 2023, capacity utilization exceeded 80%, pollutant emissions dropped by 60%,[7] and emission performance reached internationally leading levels.

As the steel industry deepens its green and low-carbon transition, new challenges have emerged in protecting workers' rights, with some steelworkers facing difficulties in re-employment. To ensure a just transition, it is essential to establish effective worker resettlement mechanisms, strengthen vocational training, and enhance the social security system to safeguard workers' livelihoods, incomes and rights.

▶ Table 1. Guiding documents for steel industry transformation and upgrading

Since 2003, China's national authorities have issued a series of policy documents to guide the transformation of the steel industry. These policies aim to shift the sector from extensive, scale-driven growth toward high-quality, efficient, and sustainable development. Over time, the approach has evolved from administrative controls and quantitative targets to a more comprehensive framework that integrates market mechanisms, regulations, environmental standards, and social policies. This multifaceted strategy supports the steel industry's transition to innovation-led, green, low-carbon, and high-quality development.

Year	Policy name	Issuing authority
2003	Opinions on Regulating Unplanned Investment in the Steel Industry	National Development and Reform Commission (NDRC) and 4 other departments
2005	Steel Industry Development Policy	NDRC
2010	Notice on Further Strengthening the Work of Eliminating Outdated Production Capacity	State Council
2011	Twelfth Five-Year Development Plan for the Iron and Steel Industry	Ministry of Industry and Information Technology (MIIT)

5 World Steel in Figures 2025, 2025, https://worldsteel.org/data/world-steel-in-figures/world-steel-in-figures-2025/
6 Overcapacity occurs when an industry or company's production capacity exceeds the level of demand that can be met at prices covering production costs.
7 The ultra-low emission transformation in the steel industry has achieved remarkable results, 2025, http://www.xinhuanet.com/energy/20240724/78b9205ab9bd47f6bff14d026cd9b023/c.html

2013	Guiding Opinions on Resolving the Conflicts of Serious Overcapacity	State Council
2014	Notice on Unemployment Insurance Support for Enterprises to Stabilize Jobs	Ministry of Human Resources and Social Security (MOHRSS) and 3 other departments
2016	Opinion on Resolving Excess Capacity and Achieving Sustainable Development in the Steel Industry	State Council
2016	Opinions on Proper Employee Resettlement During Capacity Reduction in Steel and Coal Industries	MOHRSS and 6 other departments
2018	Three-Year Action Plan for the Blue-Sky Defense Campaign	State Council
2022	Guiding Opinions on Promoting High-Quality Development of the Steel Industry	MIIT and 2 other departments
2025	Standardized Conditions for the Iron and Steel Industry (2025 Edition)	MIIT

▶ Social security policies and practices in the transformation of the steel industry

China's vast geography and diverse resource endowments have led to an uneven spatial distribution of the steel industry. Regional disparities in natural resources, economic development, and social conditions have resulted in varied industrial structures and transformation paths across the country.

In this context, as an important practice in China's steel industry restructuring and upgrading, the sector began exploring overall relocation in the early 2000s to promote industrial structure optimization and transformation. Several large steel enterprises took the lead in launching comprehensive relocation plans, shifting their production bases from central urban areas to new sites and establishing modern, green steel[8] facilities built to international standards. This strategic move not only marked a significant step in industrial upgrading but also highlighted the importance of integrating social considerations, particularly worker resettlement and social security, into the transformation process.

During the transformation, the steel enterprises involved faced the complex challenge of relocating and resettling tens of thousands of employees while ensuring their social security. To manage this, they developed innovative multi-stakeholder governance mechanisms featuring government leadership, corporate responsibility, trade union engagement, and support from social organizations. This collaborative approach supported the development of comprehensive resettlement arrangements that combined institutional safeguards, policy support, and social assistance to protect workers' rights and livelihoods.

Role of the government: strengthening institutional safeguards

To support transformation and relocation of steel enterprises, national and local governments, along with relevant agencies, established a multi-tiered policy framework. This support

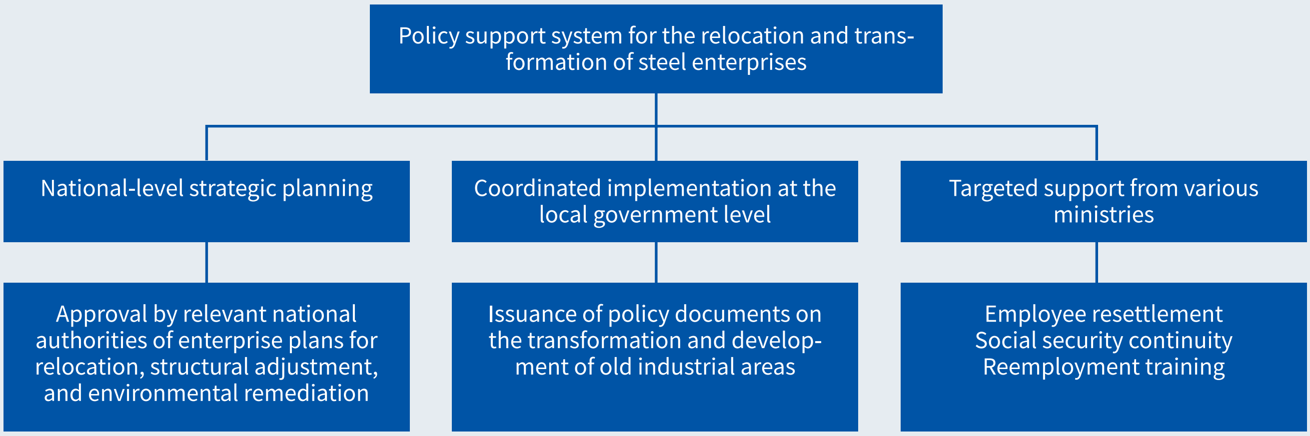
8 Green steel refers to steel produced using advanced technologies and equipment that improve resource efficiency, minimize environmental impact, and significantly reduce energy consumption and carbon emissions. It also emphasizes the recycling and reuse of waste materials to maximize resource utilization.

ensured smooth employee resettlement and the continuity of social security benefits during inter-provincial transitions.

At the organizational level, central and local authorities set up coordinated leadership mechanisms to oversee employee resettlement and social security. Both the State Council and the municipal government of the originating city formed relocation coordination groups to address major cross-regional and cross-departmental challenges. These groups guided, monitored, and facilitated the implementation of key decisions and policies.

Financially, central and local governments provided strong support to steel enterprises through various channels, including special funds, tax incentives, bond interest subsidies, and tax rebates. Under central government guidance, local authorities also established dedicated task forces to align policies, coordinate efforts, and verify data, ensuring effective service delivery and policy execution.

▶ **Figure 1. Policy support for the relocation and transformation of steel enterprises**



Role of the enterprise: strengthening primary responsibility

Throughout the relocation and transformation process, steel enterprises actively fulfilled their primary responsibility, taking a leading role in coordinating employee resettlement and ensuring the smooth transition of social security benefits.

Baseline survey

During the preparatory phase, steel enterprises conducted comprehensive baseline surveys using multi-dimensional methods to ensure full coverage of all employees. They collected and cross verified key data, including basic personal information, skill levels, training intentions, resettlement preferences, and family circumstances.

By fully leveraging modern information technologies, enterprises established dynamic employee information databases that enabled regular updates and real-time tracking of basic information and resettlement intentions, significantly improving data accuracy and timeliness. This information provided strong analytical support for designing targeted resettlement plans and personalized assistance measures.

Inclusive resettlement plans

Based on thorough analysis and broad consultations, enterprises followed democratic procedures to formulate resettlement options, including internal transfers, relocation to new sites, entrepreneurship support, independent job seeking, internal retirement[9], and early retirement.

Transparency and participation served as guiding principles throughout the process. Enterprises gathered employee input through consultation meetings, workers' congresses, and other channels to refine the plans, ensuring they were well-informed and widely supported.

9 Internal retirement is a transitional measure implemented by state-owned enterprises for redundant employees who are within five years of the statutory retirement age. This policy allows employees to leave their positions while retaining their employment relationship, during which the enterprise provides a monthly living allowance and continues paying social insurance contributions until their statutory retirement.

▶ Table 2. Employee resettlement plans

Steel enterprises adopted multi-channel resettlement plans designed to accommodate the diverse needs and preferences of their workforces.

No.	Resettlement option	Main target group	Specific approach
1	Internal job transfer	Employees from discontinued production lines	Transfer to non-steel positions based on skills and preferences
		Managers, technical staff	Assign to newly established management or research and development (R&D) departments
		Workers skilled in equipment repair/ dismantling	Form specialized teams for equipment dismantling, maintenance, and storage
		Experienced technical/operations staff	Set up technical advisory groups to offer technical consulting and service support to external clients
2	Relocation	Skilled workers and managers willing to relocate	Relocate to new steel production bases
3	Placement in new sectors	Managers, one spouse in a dual-income household (both spouses were employed), and employees with minor work-related injuries	Place in newly developed sectors such as land development, high-end equipment manufacturing, and modern logistics
4	Early retirement	Employees meeting statutory special-work retirement age or early-retirement criteria	Process early retirement according to national and local regulations
5	Internal retirement	Older employees within five years of statutory retirement or unable to transfer due to health conditions	Upon request and agreement, the enterprise provides a monthly living allowance and continues social security contributions until statutory retirement
6	Voluntary contract termination	Employees opting to leave voluntarily	Terminate labour contract on a voluntary and negotiated basis with statutory severance compensation
7	Entrepreneurship support	Employees choosing contract termination or wishing to start a business	Provide entrepreneurship training, policy guidance, small-loan referrals, and job fairs for re-employment
8	Public-welfare positions	Employees facing employment difficulties and unable to re-enter the labour market	Work with local governments to offer community service, public facility maintenance, and other public-welfare jobs

Social security measures

To address obstacles in transferring and aligning social security benefits during cross-regional relocation, arising from differences in regional policies, steel enterprises strengthened coordination with human resources, taxation, and medical insurance authorities. Focusing on issues of greatest concern to employees, they worked to resolve key challenges such as cross-regional social security record transfers, unemployment insurance benefit alignment, calculation of service years, and continuation of medical insurance. Through improved coordination mechanisms, enterprises ensured uninterrupted coverage and stable benefits during employee mobility, supporting a smooth relocation process.

Dispute resolution

Steel enterprises strengthened risk management by establishing multi-level mechanisms to address employee concerns promptly. For complex issues, such as compensation alignment, placement of employees with work injuries or occupational diseases, and support for workers with special difficulties, they conducted individualized negotiations in accordance with legal requirements. Early communication and clear policy explanations improved employees' understanding and acceptance of relocation arrangements, reduced disputes, and helped ensure orderly resettlement.

Role of the trade union: active participation in consultations

During the relocation and transformation processes, the trade union played a key role in supporting employee resettlement by building communication platforms and strengthening rights protection mechanisms.

- *Policy communication and psychological support*. The union conducted policy briefings to clearly explain the relocation plan and career paths. It also partnered with professional institutions to provide psychological counselling, easing employee anxiety and improving acceptance of the transition.
- *Participation in resettlement negotiations*. Before finalizing the plan, the union gathered employee feedback to ensure its feasibility. During implementation, it supervised the process, formed a task force to resolve individual cases, and upheld fairness and transparency.
- *Support for vulnerable groups*. A hardship registry was created to identify employees in need, enabling timely assistance through targeted programs and emergency aid.
- *Feedback mechanisms*. To ensure transparency and responsiveness, the union established suggestion boxes, service hotlines, and regularly published bulletins to address employee concerns.

Role of industry associations and service organizations: coordinated support and services

During the relocation process, industry associations and service organizations played a key role in bridging government, enterprises, and employees, contributing to effective service coordination.

- *Policy research and communication*. Industry associations conducted policy evaluations and produced thematic reports. They organized briefings to help employees and the public understand policies, enhancing social recognition and support.
- *Professional guidance and collaboration*. Vocational training institutions supported skill development and job transitions, while legal service providers offered consultations to protect employees' rights.
- *Sharing good practices*. Industry associations documented and promoted successful approaches through seminars and experience sharing events, offering valuable references for industrial transformation in other regions.

▶ Outcomes of policy implementation

Employee resettlement outcomes

Employee resettlement

Steel enterprises applied a principle of tailored, category-based resettlement, developing a range of channels suited to employees' ages, skills, and job preferences. Using approaches such as internal transfers, relocation, and early or internal retirement, they sought to match employee arrangements with transformation needs. Through rigorous, full-process management and responsive services, they facilitated the orderly resettlement of tens of thousands of employees, helping to safeguard rights and support stable enterprise relocation.

Social security

During relocation, steel enterprises emphasized protecting employees' rights and maintaining full social insurance coverage. To address cross-regional policy differences, they adopted dedicated and streamlined procedures to support the transfer of social security records and the continuity of benefits. Financial subsidies, employment support, and tiered social assistance helped ease livelihood pressures for employees in difficulty. These measures supported the orderly implementation of relocation and resettlement.

An interior view of a steel plant in China, 2017© Shutterstock

Vocational skills training

Steel enterprises worked with human resources and social security departments, as well as vocational institutions, to deliver targeted training programmes aligned with industrial upgrading and technological innovation. These programmes, covering skill enhancement and career transition, helped employees acquire the capabilities needed for roles such as intelligent steelmaking operations and quality inspection. Many employees who gained new skills moved into emerging business areas, while others transitioned into fields such as urban services and public administration, achieving positive career transitions.

Industrial transformation and upgrading outcomes

Industrial upgrading toward high-value development

Steel enterprises used relocation to shift from low-value, homogeneous production toward more differentiated and higher-value products. Increased R&D and process innovation supported the development of higher value-added products, while some enterprises expanded into emerging fields such as intelligent equipment manufacturing.

Energy conservation and emission reduction advancing the green transition

Enterprises adopted technologies for energy efficiency, ultra-low emissions, and resource recycling. Improved control of organized and fugitive emissions and cleaner transport practices advanced full-process ultra-low-emission upgrades, contributing to lower-carbon development.

Environmental restoration moving toward ecological regeneration

Relocating enterprises prioritized mine rehabilitation and plant-area environmental improvement, investing in key soil, water, and air-quality projects. Large-scale land reclamation, greening, and biodiversity measures transformed former mining areas into ecological green spaces.

A cultural heritage park built on the site of a former steel plant in China, 2024© Shutterstock

Lessons learned

- **Align industrial transformation with social protection through integrated planning.** Effective transformation requires a holistic approach that synchronizes industrial upgrading with social security measures. From the outset, it is essential to design strategies that incorporate employee resettlement and social protection mechanisms. Clear responsibilities, reliable funding, and actionable policies are critical to ensuring smooth transitions and avoiding reactive, post-facto remedies.
- **Prioritize people-centered, tailored support for workforce transitions.** Recognizing the diverse backgrounds and needs of employees is vital. Flexible resettlement systems, offering options such as internal transfers, early retirement, entrepreneurship and flexible employment can uphold worker dignity and support career development. Beyond protecting basic rights, empowering workers through skills training and capacity building enables proactive career growth.
- **Leverage multi-stakeholder collaboration for effective governance.** Transformation efforts benefit significantly from coordinated actions among governments, enterprises, trade unions, industry associations and service organizations. When each actor contributes through policy support, operational leadership, rights protection, and technical expertise, a robust, multi-level governance framework emerges. Such collaboration enhances implementation efficiency and builds trust among affected workers.
- **Foster institutional innovation to meet evolving transformation needs.** Developing adaptive systems, such as mechanisms for the portability of social security benefits across regions and provinces, reemployment service platforms, and employee feedback channels, can enhance the adaptability of social protection frameworks. These innovations not only safeguard workers' rights and improve public service delivery but also provide replicable models and institutional foundations for future industrial transitions.

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This brief was developed by the China Enterprise Confederation (CEC) with support from the International Labour Office (ILO), as part of the EU-China project "Improving China's Institutional Capacity towards Universal Social Protection (Phase 2)", funded by the European Union. The contents of this brief are solely the responsibility of the authors and do not necessarily reflect the views of the ILO or the European Union.

Funded by the European Union

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