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GREEN FINANCE PATHWAYS FOR THE CONSTRUCTION OF THE NEW WESTERN LAND-SEA CORRIDOR: FROM PRODUCT OVERLAY TO AN INSTITUTIONAL CLOSED LOOP

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Abstract: The green finance needs of the New Western Land-Sea Corridor exhibit pronounced scenario specificity: emission abatement centers on the gradual upgrading of existing high-carbon assets rather than incremental purely green projects; funding must be matched to long-lived assets such as shipbuilding and shoreline retrofitting; and environmental benefits must be accounted for and certified along cross-border transport chains. Building on a review of three strands of literature—corridor effects, financial supply, and the micro-level mechanisms of green finance—this paper constructs a coupled analytical framework of "funding supply–risk governance–industrial guidance" and, drawing on nine representative cases along the corridor and across borders, identifies four obstacles: the gradient fracture between green standards and transition finance; the maturity–risk mismatch between cross-border capital and corridor assets; data silos in carbon accounting infrastructure; and the structural weakness of local financial supply along the corridor. The study argues that the solution lies not in stacking green products but in building an institutional closed loop of "standard coordination–product adaptation–infrastructure support–cross-border circulation," underpinned by cross-regional institutional coordination. Further progress in corridor green finance hinges on whether carbon footprints can become the language of credit, whether digital bills of lading can carry green information, and whether transition finance can offer a verifiable way out for high-carbon segments.
Keywords: Green finance; New Western Land-Sea Corridor; Transition finance; Carbon accounting; Cross-border green capital

1 INTRODUCTION

The New Western Land-Sea Corridor connects the Silk Road Economic Belt in the north with the 21st Century Maritime Silk Road in the south. With Chongqing as its operating center and the ports of the Beibu Gulf in Guangxi as its gateway to the sea, it has formed a "13+2" joint construction pattern covering twelve provincial-level regions in western China as well as Hainan, Zhanjiang in Guangdong and Huaihua in Hunan [1], linking 583 ports in 127 countries and regions and carrying more than 1,300 categories of goods. In December 2025, the People's Bank of China and seven other departments jointly issued the Opinions on Financial Support for Accelerating the Construction of the New Western Land-Sea Corridor (hereinafter the Opinions) [2], which sets out 21 measures covering the improvement of the financial organization coordination system, the building of a high-quality funding circulation system, institutional reform and innovation, the construction of a digital financial service platform, the improvement of financial opening and cooperation, and deeper cross-provincial and cross-border financial regulatory coordination, listing green transition as one of the core directions of corridor finance.

The scale of funding required for corridor construction determines the weight of green finance. It is estimated that incremental aggregate social financing along the corridor will reach 7.5, 7.9 and 8.4 trillion Yuan in 2024–2026 respectively, of which new RMB loans will amount to 5, 5.3 and 5.6 trillion Yuan [3]. If investment on this scale follows the traditional path, it will conflict with the fragile ecological base and the coal-heavy energy structure along the corridor; if projects are screened simply against "purely green" criteria, however, the main battlefields of emission abatement—shipping, heavy trucks and port operations—will be excluded from financial support.

The question that arises is therefore not "whether there is enough money" but "whether money can be precisely allocated to the corridor's distinctive abatement scenarios and form a sustainable cross-border cycle." The corridor's abatement focus lies not in incremental green projects but in the low-carbon retrofitting of existing assets such as vessels, ports, multimodal transport equipment and logistics hubs; its capital demand is not short-term working capital but long-term funds matched to shipbuilding, shoreline upgrading and zero-carbon corridor construction; and its green benefits are not localized but must be accounted for, certified and traded along cross-border transport chains. Proceeding from this "scenario specificity," this paper examines the logic, obstacles and pathways of green finance in support of corridor construction.

2 LITERATURE REVIEW

2.1 Economic and Green Effects of the Corridor

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Considerable empirical evidence has accumulated on the corridor's macro effects. Zheng et al. used panel data for provinces along the corridor from 2003 to 2021 and a coupling coordination model to measure the coordinated development of two-way FDI, finding an inverted-U trajectory over the sample period, no α-convergence but absolute and conditional β-convergence faster than the national average, with economic development, energy consumption, government expenditure, marketization, industrial structure and infrastructure construction as significant influencing factors [4]. Xiang and Han used 2010–2025 data and a difference-in-differences approach to test the corridor's green trade effects, finding that the corridor significantly promoted green trade along its routes, with mechanisms manifesting as a resource-upgrading effect of "talent agglomeration–capital coordination–material consolidation" and a digital empowerment effect of "digital infrastructure enablement–digital finance penetration–digital government governance"; the pull of green imports was slightly stronger than the push of green exports, and industrial chain resilience, trade freedom and environmental regulation positively moderated the corridor effect [5]. Liu et al. examined two-way direct investment in the ten provincial-level regions along the corridor from both quantity and quality dimensions, noting that FDI totals were small with low growth, and that OFDI grew slowly while its gap with the eastern regions widened; the quality weaknesses were more pronounced—FDI showed obvious negative environmental effects, an insignificant contribution to industrial upgrading and limited technology spillovers, while OFDI suffered from a low overall level and insufficient government guidance [6].

2.2 Supply Estimation and Policy Instruments for Corridor Finance

Policy research on corridor finance has mainly followed two lines: "policy supply" and the "supply–demand gap." Liu's interpretation of the Opinions shows that policy focuses on the development main line of "corridor drives logistics, logistics drives trade, trade drives industry," emphasizes the two core functions of "financing" and "settlement," and seeks to remove cross-regional financing obstacles through integrated credit granting among financial institutions along the corridor, joint credit and syndicated loan mechanisms, and a "single point of access" joint service network linking domestic and overseas branches [7]. Wu et al. estimated the corridor's funding gap from the demand side and diagnosed three supply-side weaknesses: no headquarters of a national corporate bank along the corridor; few licenses and qualifications among local corporate banks (only one custodian for securities investment funds, only five lead underwriters of debt financing instruments for non-financial enterprises, and only one wealth management subsidiary already in operation); and asset scales and growth rates behind the national average [3]. Lin, taking the green finance research institute jointly established by the Agricultural Bank of China and the Shandong provincial government as an example, distilled a four-layer coordination mechanism of "strategy–institution–execution–capability" and three channels for translating research results—advisory recommendations, sources of practice and business engines—providing a referable model for the organizational form of government-bank collaboration [8].

2.3 Micro-Level Mechanisms of Green Finance

Whether green finance can truly change capital allocation depends on whether financial institutions incorporate environmental information into credit decisions. Xu et al., using matched data on listed firms' carbon emissions and green credit from 2001 to 2024, found that commercial banks incorporate corporate carbon emission levels into green credit standards through pre-loan approval and dynamic post-loan management: each one-standard-deviation rise in carbon emission intensity reduced a firm's green credit share by 0.48 percentage points on average and its green credit balance by about 14.13 million Yuan; allocation efficiency was higher for private firms, high-carbon firms, heavily polluting firms, more competitive industries and regions with stronger environmental regulation; and green credit also guided firms to increase environmental investment, eased financing constraints, and reduced banks' credit risk while improving profitability [9]. In addition, Ma, Wang and Zhang, Lu and Yan, and the systematic reviews of the Green Finance Committee of the China Society for Finance and Development laid the theoretical foundations of domestic green finance research from the perspectives of system building, operating mechanisms and the effects of reform and innovation pilot zones [10-13].

Although these three strands have advanced in parallel, three gaps remain. First, corridor studies measure macro effects with provincial panels, taking the "region" rather than the "financial institution" as the unit of analysis; there is no direct evidence on how corridor construction changes banks' credit behavior. Second, green finance studies mostly use national samples of listed firms and are not embedded in the corridor's specific setting of "cross-provincial, cross-border, logistics-structured" operations; whether their conclusions transfer to asset forms such as vessels, ports and multimodal transport remains to be tested. Third, judgments that "green finance can support the corridor" mostly remain at the level of policy recommendation, lacking mechanistic discussion of the boundary conditions under which instruments apply and of the circumstances in which they fail.

This paper seeks to advance on the third gap: taking scenario specificity as the analytical starting point, it uses practical cases along the corridor and across borders to test the applicability conditions of instrument innovation, and on this basis proposes a path design in the sense of an institutional closed loop.

3 THE COUPLING LOGIC BETWEEN GREEN FINANCE AND CORRIDOR CONSTRUCTION

3.1 Funding Supply Logic: Dual Matching of Scale and Maturity

Corridor infrastructure investment is large in scale, long in payback period and strongly external, and can hardly be supported by fiscal input and traditional credit alone. According to a review of key projects in the "13+2" provincial regions, there were about 16,800 key projects along the corridor in 2023, with planned total investment exceeding 25 trillion Yuan and annual planned investment exceeding 4.1 trillion Yuan; assuming that domestic loans account for roughly one fifth of infrastructure funding sources, the credit demand generated by key projects alone exceeded 820 billion Yuan that year [3]. The role of green finance lies not only in "increment" but also in "structure": green bonds [14], infrastructure REITs and green funds can convert long-maturity, low-liquidity corridor assets into tradable standardized shares, easing the capital circulation pressure of "build–sink–rebuild."

3.2 Risk Governance Logic: Internalization of Environmental Externalities

Projects along the corridor face strict environmental and social risk constraints. The environmental information disclosure, environmental risk assessment and green project certification standards embedded in the green finance system can push ecological and environmental requirements forward into investment and financing decisions [15]. The practice of the Equator Principles shows that the effectiveness of this mechanism comes from closed-loop management of "screening and categorization–risk assessment–independent monitoring–information disclosure" [16]. The evidence of Xu et al. further indicates that the mechanism does hold at the micro level: banks have incorporated carbon emission levels into credit standards, and green credit has positive effects on reducing loan risk and improving profitability [9]. For banks, green finance is therefore not merely a policy burden but an upgrade of their risk identification and pricing capabilities.

3.3 Industrial Guidance Logic: From Corridor Economy to Green Hub Economy

The corridor economy covers multimodal transport, port-adjacent industries, clean energy and international trade. Through differentiated pricing and resource allocation, green finance guides the development of new business forms such as logistics equipment electrification, shore power retrofitting and green shipping, upgrading the "corridor economy" toward a "green hub economy." Two conditions underpin this logic. First, coordination between financial instruments and other factors: the resource-upgrading and digital empowerment effects identified by Xiang and Han show that the guiding function of green finance does not operate in isolation but interacts with talent, capital, digital infrastructure and governance capacity, and the chain of "digital infrastructure–digital finance–digital government governance" points directly to data-based financial infrastructure [5]. Second, the green orientation must lead scale expansion: the convergence analysis of Zheng et al. shows β-convergence of two-way FDI coordination along the corridor that is faster than the national average, with infrastructure a significant influencing factor, yet coordination levels declined in the later sample period, indicating that improvements in physical connectivity do not automatically bring green-oriented institutional supply [4]; Liu et al. also note that the negative environmental effects of FDI in the corridor region are prominent [6]. Without green access and pricing mechanisms, expanding investment would very likely be accompanied by rising carbon emissions.

3.4 The Convergence of the Three Logics: An Institutional Closed Loop Rather than Product Overlay

Funding supply addresses "whether there is money," risk governance "whether to dare to invest," and industrial guidance "whether to invest accurately." Their intersection is precisely the weak link of corridor green finance: long-term funds need measurable abatement performance as a pricing basis, risk governance needs verifiable carbon data as an evaluation foundation, and industrial guidance needs cross-regionally mutually recognized standards as a screening premise. The key to corridor green finance, therefore, lies not in stacking up green products but in building interlocking institutional loops around "standards–products–data–cross-border flows."

As summarized in Figure 1, the three logics converge at the weak link of corridor green finance and point to an institutional closed loop rather than a product overlay.

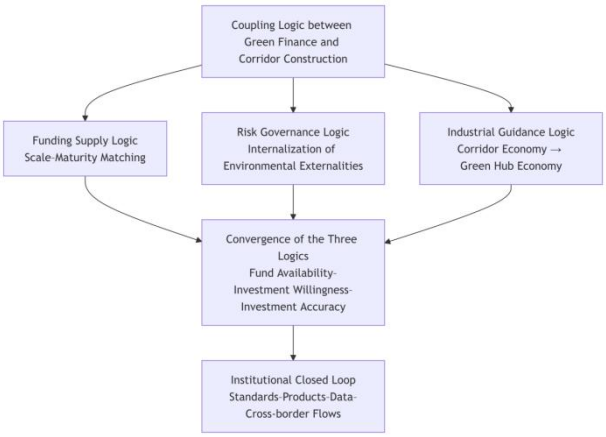


Figure 1 The Coupling Logic between Green Finance and Corridor Construction

4 PRACTICAL OBSTACLES TO GREEN FINANCE IN SUPPORT OF CORRIDOR CONSTRUCTION

4.1 The Gradient Fracture between Green Standards and Transition Finance

Current green finance standards are anchored to "purely green" projects, whereas the corridor's abatement battlefield is the gradual retrofitting of traditional high-carbon segments such as shipping, heavy trucks and port operations. An LNG-powered cargo vessel costs about 25 million Yuan, cuts carbon emissions by about 20% and emits almost no sulfur oxides or particulates, yet because it is "not purely green" it is difficult to cover adequately with traditional green credit. Wanzhou was the first in the country to issue a transition finance standard for the ship transport industry [17], driving the district's outstanding green transition loans to 22.9 billion Yuan with carbon reductions of more than 3 million tons, but such district-level standards have not yet been elevated into unified rules for the whole corridor, and provinces still differ in defining transition activities, disclosure requirements and incentive policies. This fracture in the standards gradient leaves many transition activities with real abatement effects in a "blind zone" of green finance, and makes it difficult for cross-border investors to form a consistent risk pricing of corridor green assets.

4.2 Maturity–Risk Mismatch between Cross-Border Capital Inflows and Corridor Asset Characteristics

The Opinions explicitly invites investors from Southeast Asia, Hong Kong Region and Macao Region to participate in corridor green low-carbon funds, zero-carbon parks and green bond investment [18], yet corridor green assets have three characteristics unfavorable to large-scale entry of cross-border capital: long maturity, as vessels, ports and corridors usually have economic lives of 15–30 years; fragmented cash flows, as logistics revenue fluctuates with trade cycles; and environmental benefits that are difficult to delineate, with abatement lacking unified accounting and certification standards. Capital from Hong Kong Region, Macao Region and Southeast Asia prefers liquid, standardized products with measurable environmental benefits, while most green projects along the corridor still rely on loans backed by the borrower's own credit, with low securitization rates. By the end of 2025, provincial regions along the corridor had issued 13 REITs raising more than 30 billion Yuan, but the underlying assets are concentrated in industrial parks, warehousing and logistics, and expressways; securitization paths for green shipping assets, multimodal carbon abatement assets and zero-carbon corridor environmental rights remain unopened. Cross-border green capital "wanting in but unable to enter" and corridor projects "wanting funding but unable to obtain it" continue to coexist.

4.3 Data Silos in Carbon Accounting Infrastructure and Obstacles to Converting Environmental Benefits into Finance

Cross-border pricing in green finance and the evaluation of transition performance both depend on verifiable carbon data. The corridor has started building a carbon tracking platform based on a GIS-LCA engine adapted to multimodal transport nodes, which is initially ready to go live, but the platform currently serves mainly monitoring and reporting and has not formed a closed loop with financial institutions' credit approval, interest rate pricing and post-loan management. Carbon accounting for multimodal transport is itself methodologically fragmented: emission factors and accounting boundaries differ across rail, water and road transport, and mutual recognition is lacking between the GLEC framework, ISO 14083 and domestic group standards, making cross-modal abatement volumes difficult to aggregate and verify, let alone use as trigger variables in financial contracts. When carbon data stays at the "display layer" rather than the "contract layer," green finance degenerates into labelling, and the "measurable, reportable and verifiable" requirements of transition finance cannot be met.

4.4 The Structural Weakness of Local Financial Supply along the Corridor

Cross-regional coordination is a capability problem, not only a matter of willingness. There is no headquarters of a national corporate bank along the corridor; service providers are mainly local corporate banks with relatively limited licenses and qualifications and weak comprehensive financial services; at the end of 2023, total banking assets along the corridor stood at 66.72 trillion Yuan, up 9.53% year on year, below the national growth rate of 9.9%, and per-province banking assets and per capita loans in the Yangtze River Delta were 4.66 and 2.35 times those along the corridor respectively [3]. This structure means that corridor banks can hardly organize cross-border syndication, ultra-long-term assets and complex structured products on their own, and that "cross-provincial credit integration" must rely on external institutional coordination rather than the natural evolution of local institutions.

5 INSTRUMENT INNOVATION IN CORRIDOR GREEN FINANCE: CASE EVIDENCE

5.1 Green Credit: From "Collateral-Based" to "Scenario-Based" Lending

The corridor's abatement battlefield is the gradual retrofitting of existing vessels and ports, and the core of credit innovation is to solve the traditional collateral blind spot of "vessels under construction with ambiguous ownership and difficult valuation."

Wanzhou has formed a fairly complete spectrum of transition finance credit. The Wanzhou sub-branch of Chongqing Rural Commercial Bank used an LNG new-energy vessel under construction as construction-in-progress collateral,

granting a 10 million Yuan credit line with a 10-year maturity and breaking the convention that "only completed vessels can be mortgaged"; on this basis, Chongqing launched its first "carbon-linked" transition finance business, tying continued credit conditions to enterprises' carbon abatement performance. By the end of November 2025, financial institutions in the city had granted about 200 million Yuan of loans to 24 Yangtze River ship transport companies, with unit energy consumption expected to fall by 30% [19].

Luzhou filled the policy gap in the mortgage of vessels under construction at the institutional level. The Luzhou branch of the People's Bank of China promoted the introduction of the Administrative Measures for Construction-in-Progress Mortgage Loans, clarifying the upper limit of the mortgage rate, valuation methods and post-loan management requirements, and, together with third-party institutions, built a dual-dimension evaluation model of "construction progress + market value," designing a scheme of "installment credit, drawdown on demand" that compressed the mortgage registration cycle from five working days to one day; the first transaction granted a 3.6 million Yuan credit line to the LNG vessel "Yuncheng 569" of Sichuan Jiazhen Logistics, with an initial drawdown of 1 million Yuan. The value of this practice lies not in the amount of the single transaction but in converting an asset previously "unmortgageable" into qualified collateral that can be registered, valued and disposed of.

In ports and multimodal transport, the Qinzhou sub-branch of Guangxi Beibu Gulf Bank granted a five-year, 3 million Yuan small and micro fixed-asset loan at an interest rate of 3.5% to the zero-carbon multimodal transit station project under the Qinzhou Port rail-road-water "unified bill" scheme, extending green credit to the underlying facilities of multimodal hubs. The Nanning branch of Industrial Bank approved a 65 million Yuan new-energy vessel mortgage credit line for Guangxi Xinggui Shipping, with an initial drawdown of 9.66 million Yuan used to purchase three LNG-powered river-to-sea direct vessels, and, by adding sci-tech innovation and technological upgrading relending and fiscal interest subsidies [19], significantly reduced enterprises' comprehensive financing costs; with the Pinglu Canal about to open to navigation, such products directly serve the low-carbon transition of the "Xijiang River–Canal–Beibu Gulf" river-sea transport loop.

The common feature of the three cases is the migration of credit logic: from "looking at the borrower's credit and real estate collateral" to "looking at scenario attributes and carbon abatement effects." When the mode of transport organization itself carries measurable abatement attributes, credit can bypass the constraints of traditional collateral and anchor directly on green logistics scenarios.

5.2 Green Securitization: Converting Fragmented Cash Flows into Tradable Shares

The cash flow characteristics of corridor green assets—long maturity and dispersed sources—are mismatched with the preferences of cross-border capital, and asset securitization is the key instrument for bridging this mismatch.

The green ABS backed by the bus fare revenue rights of Guiyang, issued by Southwest Securities (470 million Yuan, 3+2-year maturity) [20], uses bus fare revenue—a relatively dispersed but stable cash flow—as the underlying asset, links provincial regions along the corridor, and validates the feasibility of packaging cross-regional green revenue rights into securitized products. The E Fund Guangxi Beitou Expressway REIT (247.5 million Yuan raised) represents the infrastructure REITs direction: its underlying asset, the Nanning–Na'nan section of the G75 Lanhai Expressway, sits at a key corridor node linking Nanning, Qinzhou and Fangchenggang; it is the first public REIT of a local state-owned enterprise in southwest China and the first expressway public REIT focused on China–ASEAN connectivity, and is expected to leverage about 5.2 billion Yuan of new investment.

5.3 Cross-Border Green Finance: From "Importing Capital" to "Connecting Assets"

Cross-border cases show that corridor green finance is extending from pure overseas financing toward cross-border asset flows and standards alignment. The Guangxi branch of the Bank of Communications closed the first offshore cross-border syndicated loan for vessel leasing (nearly US$140 million) [2], earmarked for the operation of green high-end LNG ocean-going vessels, embedding overseas funds directly into the operation of corridor shipping assets through the offshore syndication structure. Green cross-border financing under the China–Singapore connectivity framework carries more of an institutional experiment: Yuanda Environmental Protection obtained a 30 million Yuan green cross-border loan; Hongguang Shipbuilding completed a US$100 million financial leasing project for ethane carriers; and the ESG investment promoted by the China–Singapore Green Finance Working Group has exceeded 10 billion Yuan. At the standards level, the Singapore branch of ICBC issued an M-CGT green bond, providing replicable issuance experience for corridor green assets adopting internationally recognized classification standards.

5.4 Carbon Finance Infrastructure: From Monitoring Tools to Contractual Foundations

The financialized application of carbon accounting is still at an early stage, but two openings deserve attention. The country's first "cross-compliance-period carbon allowance pledge + financing guarantee" business landed in Yongchuan, Chongqing: the enterprise obtained 2 million Yuan of financing with carbon assets pledged and additional guarantees, extending carbon allowances from a compliance instrument to a cross-cycle financing collateral. The corridor's carbon tracking platform has completed basic function development and several rounds of joint testing and is initially ready to go live; it is positioned not only as a monitoring tool responding to the EU carbon border adjustment mechanism but is also included in the list of major China–Singapore cooperation projects, carrying the institutional expectation of converting carbon data from the transport segment into a pricing basis for cross-border green trade. The Multilateral

Sustainable Finance Common Classification Catalogue (M-CGT), released and implemented in July 2025, covers 110 economic activities in eight key industries, providing a preliminary "common language" for the cross-border certification of corridor green projects.

5.5 The Transferability of International Experience and Its Limits

International practice offers three types of referable institutional paradigms. The Equator Principles, launched in 2003 by ten international banks, incorporated the World Bank and IFC environmental, health and safety guidelines into project finance decision processes; the fourth version (EP4), released in 2019 [16], further strengthened the weight of climate change and expanded the scope of applicable products, and its closed loop of "screening and categorization–risk assessment–independent monitoring–information disclosure" provides a mature paradigm for the environmental risk management of large cross-border infrastructure projects. The EU has formed a complete system with the Sustainable Finance Taxonomy as its cornerstone, the Sustainable Finance Disclosure Regulation and the Corporate Sustainability Reporting Directive as disclosure constraints, and the EU Green Bond Standard as the market norm [21], requiring that more than 85% of green bond proceeds be allocated to taxonomy-aligned activities; its logic of "taxonomy as foundation, disclosure-driven, regulator-backed credibility" has direct relevance for corridor standard building. Multilateral development banks and some emerging markets offer incentive-based experience: the World Bank and the Asian Development Bank leverage private capital with "concessional funds + technical assistance + risk sharing" [22]; Malaysia, drawing on its Islamic finance tradition, introduced the SRI Sukuk framework, lowering green financing thresholds through tax deductions on issuance costs and subsidies for external review fees; and Japan issued the Basic Guidelines on Climate Transition Finance to promote transition financing for high-carbon industries such as steel.

But the transfer of this experience has clear limits. All these mechanisms presuppose "verifiable project boundaries": projects have explicit investors, asset ownership and physical boundaries, so abatement can be aggregated, measured and pledged. The corridor's core green benefits, however, largely arise in "flow" segments—multimodal transport replacing road haulage, new-energy vessels replacing fuel-fired vessels, and intelligent scheduling reducing empty-running rates—and such abatement lacks project boundaries and collateral in the traditional sense. Transplanting international experience directly would create the dilemma of "sound standards, instruments that cannot land." This is the deeper reason for the coexistence of the standards fracture and the data silos described above.

5.6 Summary: The Chain from "Labelling" to "Pricing"

Overall, the evaluation standard of corridor green finance instruments is shifting: from "whether a project carries a green label" to "whether abatement performance can be measured, asset cash flows structured, and cross-border standards mutually recognized." Wanzhou's transition credit and Luzhou's collateral institutional innovation solved the "identification and collateral" problem; the Guiyang ABS and the Guangxi REITs solved the "revitalization and circulation" problem; the offshore syndication and the China–Singapore channel solved the "cross-border and standards" problem; and the carbon tracking platform and the carbon allowance pledge point to the ultimate contractual closed loop. This chain from "labelling" to "pricing" is the basic trajectory of corridor green finance moving from product overlay to institutional formation.

6 PATH CONSTRUCTION: FROM PRODUCT OVERLAY TO AN INSTITUTIONAL CLOSED LOOP

6.1 Standard Coordination: Gradient-Based Recognition with Transition Finance as the Pivot

The corridor should promote layered linkage between green finance standards and transition finance standards across the whole region, rather than a "one-size-fits-all" replacement of transition standards with green standards. Specifically, the experience of Wanzhou's ship transport transition finance standard should be elevated into a shipping transition catalogue mutually recognized by the "13+2" provincial regions, specifying technical thresholds and disclosure requirements for activities such as LNG power retrofitting, methanol dual-fuel conversion, shore power systems and energy efficiency monitoring; and, under the framework of the China–Singapore Green Finance Working Group, the M-CGT should be aligned with the corridor transition catalogue, so that an LNG vessel financed in Singapore and operated in the Beibu Gulf can obtain consistent cross-border recognition of its abatement performance. The essence of standard coordination is to grant corridor activities that are "not purely green but genuinely abating" financing eligibility comparable to purely green projects, thereby channeling financial resources partly from incremental projects to the retrofitting of existing high-carbon assets.

6.2 Product Adaptation: Instrument Portfolios Anchored in Cash-Flow Characteristics

The core constraint in designing corridor green finance products is not the lack of collateral but the mismatch between product maturity and asset life, and between repayment sources and cash flow curves. Existing practice offers replicable directions: the Wanzhou sub-branch of the Bank of China approved a 130 million Yuan credit line for ten LNG vessels using the vessel-under-construction mortgage model, extended loan maturities from five to eight years, and, with fiscal interest subsidies, expects to save about 3.7 million Yuan in financing costs. The significance of this model for wider

adoption is that it ties repayment schedules to vessel construction progress and operating cash flows rather than relying on traditional real estate collateral.

On this basis, product adaptation can be deepened in three directions. First, transition-performance-linked instruments: bind loan interest rates to actual improvements in the Energy Efficiency Existing Ship Index (EEXI) and the Carbon Intensity Indicator (CII), so that financing costs reflect transition performance rather than merely the borrower's credit. Second, securitization of corridor-specific assets: issue green ABS or REITs backed by freight revenue rights corresponding to multimodal "unified bill" documents, port shore-power charging rights and zero-carbon corridor carbon sink revenues, converting fragmented logistics cash flows into standardized shares that cross-border investors can hold. Third, cross-border green syndication and qualified foreign limited partner (QFLP) channels: relying on the China–Singapore "green corridor" mechanism, guide Singaporean and ASEAN financial institutions to participate in syndicated loans for vessel transition and zero-carbon park projects, and simplify, within pilot free trade zones, the access process for overseas green capital to participate in corridor green equity investment.

6.3 Infrastructure Support: Linking "Monitoring–Accounting–Pricing–Contracts" via the Carbon Tracking Platform

The key leap in carbon accounting infrastructure is the upgrade from a reporting tool to the infrastructure of financial contracts. The corridor's carbon tracking platform should be institutionally connected with financial institutions' credit systems: multimodal abatement volumes output by the platform, once verified by third parties, would directly serve as the trigger for transition loan interest subsidies, the basis for adjusting the coupons of carbon-linked bonds, and the data source for disclosing the environmental benefits of green credit. This requires solving the mutual recognition of accounting standards in parallel—unifying, within the corridor, the emission factors and accounting boundaries of rail-sea and road-rail intermodal transport, and mapping domestic group standards onto the GLEC framework, so that cross-border abatement volumes become aggregable and verifiable. The unified provincial green finance digital comprehensive service platform that Guangxi is building can form a division of labor with the corridor carbon tracking platform of "regional data aggregation–corridor scenario application" [23].

A companion measure is the greening of transport documents. Chongqing already has mature practice in rail-sea "unified bill" trade financing, with single transactions ranging from 5.9 to 20 million Yuan and direct data connection with the unified registration system for movable property financing. Next, fields for transport mode, energy type and carbon emissions can be embedded in digital bills of lading, so that the same document carries both the function of a document of title and that of a green benefit certificate; banks handling "unified bill" financing can apply differentiated pricing based on the green information contained in the document, thereby merging green finance and logistics finance from "two sets of processes" into "one set of infrastructure."

6.4 Cross-Border Circulation: Building "Standard Mutual Recognition–Capital Interflow–Product Interconnection" around the China–Singapore Working Group

The cross-border dimension should not be understood merely as "attracting foreign capital" but designed as a structurally complementary circulation between corridor green assets and capital from Southeast Asia, Hong Kong Region and Macao Region. Hong Kong Region and Macao Region have mature green bond markets and international capital operation experience, and Southeast Asia's net-zero goals have generated substantial green investment demand, complementing the corridor's supply of green assets. Operational levers can focus on three intersections: first, cross-border rating and mutual recognition of green bonds—rating agencies should be encouraged to provide cross-border rating services for corridor green bonds, reducing the certification costs for Southeast Asian investors; second, cooperation on the application of transition finance standards—the Opinions already provides for cooperation with Southeast Asia, Hong Kong Region and Macao Region in applying transition finance standards, and the shipping transition catalogue can serve as the first cross-border pilot; third, preparation for carbon market linkage—carbon data accumulated by the corridor's carbon tracking platform can underpin future cross-border carbon pricing and carbon credit mutual recognition, advancing the corridor from a "channel for green finance products" to a "channel for aligning carbon pricing rules."

6.5 Organizational Safeguards: Cross-Regional Institutional Coordination and Capacity Building

Whether the path can land depends on organizational carriers. In the short run, financial institutions along the corridor should be enriched, with appropriate support in business and market access for local corporate banks carrying major national strategies, encouraging them to optimize their business structures around cross-border trade, industrial chain investment and financing, and supply chain finance; in the medium run, differentiated competition among banks should be promoted—policy and development banks taking the leading role in medium- and long-term infrastructure investment, large commercial banks leveraging their overseas branches and comprehensive service advantages, and small and medium banks their "grassroots" advantage in serving small and micro enterprises—combining the network advantages of commercial finance with the funding advantages of policy finance through syndicated loans and "financing + guarantee + interest subsidy" arrangements; in the long run, cross-regional cross-border cooperation mechanisms should be established, focusing on project financing and information sharing through interbank credit, syndicated loans, on-lending and special loans, so as to form institutional arrangements for benefit sharing and risk allocation.

In terms of organizational form, the government–bank collaborative think tank mechanism deserves replication. The green finance research institute jointly established by the Agricultural Bank of China and the Shandong provincial government connects policy making with business implementation through four-layer coordination of "strategy–institution–execution–capability," and completes the translation of research results into policy documents, financial products and practical solutions through three channels: advisory recommendations, sources of practice and business engines [8]. On this basis, the corridor can establish a green finance collaboration platform covering the "13+2" provincial regions, undertaking standard development, joint project libraries, data aggregation and third-party verification, moving cross-provincial coordination from meeting mechanisms to standing institutions.

Figure 2 synthesizes the pathway design in Section 6 into a closed loop in which standards, products, data, cross-border circulation and organizational capacity reinforce one another.

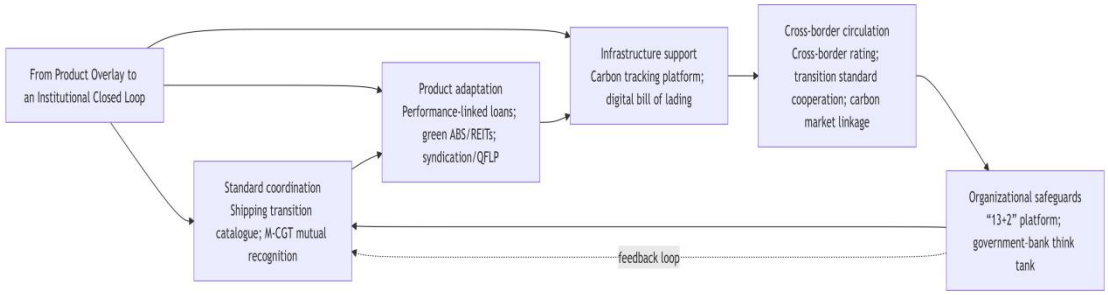


Figure 2 From Product Overlay to an Institutional Closed Loop in Corridor Green Finance

7 CONCLUSIONS AND POLICY IMPLICATIONS

Green finance in support of the New Western Land-Sea Corridor should not be simplified as adding green labels to existing corridor projects. The corridor's abatement structure determines that the core task of its green finance is to provide measurable, priceable and cross-border financial contract arrangements for the gradual transition of existing high-carbon assets. The analysis of this paper shows that corridor green finance faces four interrelated obstacles: the fracture in the standards gradient prevents transition activities from being identified; the maturity–risk mismatch hinders the formation of long-term capital; data silos keep environmental benefits out of pricing; and the weakness of institutional capacity leaves cross-regional coordination without a carrier. All four point to the same conclusion—the focus of path design should shift from product overlay to an institutional closed loop.

Three policy implications follow. First, transition finance standards should be placed on an equal institutional footing with green standards. Transition activities are the main body of corridor abatement; if purely green standards remain the sole entry point, green finance will systematically miss genuine abatement scenarios; district-level transition standards should be elevated as soon as possible into rules mutually recognized across the corridor, with cross-border mutual recognition piloted starting from shipping. Second, carbon accounting infrastructure should be pushed from a back-office reporting tool to front-office contract infrastructure. Only when carbon data enters credit approval, interest rate pricing and post-loan management can performance-linked products be supported; accounting standards across transport modes within the corridor should be unified first, with the "green transport document" as the concrete carrier of data implementation. Third, organizational capacity building should be treated as the premise of path implementation. The structural weakness of local financial supply determines that cross-provincial coordination cannot rely on willingness alone; standing mechanisms are needed in institutional access, syndication organization and think tank support.

The limitation of this paper is its reliance on case comparison, without econometric evidence on how corridor green finance affects banks' credit behavior. Future research can draw on credit data of local corporate banks along the corridor to test the causal effects of corridor construction on green credit scale, maturity structure and risk pricing, and further identify the marginal contributions of standard mutual recognition and carbon data infrastructure.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

REFERENCES

[1] National Development and Reform Commission. Implementation plan for promoting the high-quality development of the New Western Land-Sea Corridor during the 14th Five-Year Plan period. Beijing: NDRC, 2021.
[2] The People's Bank of China. The PBOC held a press conference on financial support for accelerating the construction of the New Western Land-Sea Corridor. The People's Bank of China, 2025.
[3] Wu Q Y, Hu Y, Tan B R. Bank support for the construction of the New Western Land-Sea Corridor. China Finance, 2024(12): 58-59.
[4] Zheng Q, Gao H, Hu M Q, et al. Coordinated development of two-way FDI in the New Western Land-Sea Corridor under the "dual carbon" goals: theoretical logic, empirical test and policy orientation. Ecological Economy, 2026, 42(11): 56-63.

[5] Xiang X H, Han Y. From “geographical corridor” to “green artery”: interpreting the green trade effects of the New Western Land-Sea Corridor. Journal of Shanghai University of Finance and Economics, 2026. https://link.cnki.net/urlid/31.1817.C.20261029.1447.002.
[6] Liu X, Zhou C, Yu Z H. Pathways for the high-quality development of two-way direct investment in the New Western Land-Sea Corridor under the orientation of new competitive advantages. Journal of Chongqing University (Social Science Edition), 2024, 30(5): 62-74.
[7] Liu H Z. Financial support for accelerating the construction of the New Western Land-Sea Corridor. China Finance, 2026(2): 48-49.
[8] Lin L. Building a green finance think tank through government–bank collaboration. China Finance, 2026(17): 8-10.
[9] Xu R, Han M H, Zhang H, et al. How commercial banks “lend to the best”: the impact and mechanism of corporate environmental performance on access to green credit. Nankai Business Review, 2026. https://link.cnki.net/urlid/12.1288.F.20261103.1712.002.
[10] Ma J. On building China’s green finance system. Finance Forum, 2015(5): 18-27.
[11] Wang Y, Zhang X. Mechanisms and policy recommendations for green finance in support of the Belt and Road Initiative. International Trade, 2019(10): 36-43.
[12] Lu J, Yan Y. The industrial green transformation effects of green finance reform and innovation pilot zones. China Industrial Economics, 2021(12): 117-135.
[13] Green Finance Committee of the China Society for Finance and Development. China green finance development report. Beijing: China Finance Publishing House, 2023.
[14] International Capital Market Association. Green Bond Principles. Paris: ICMA, 2021.
[15] The People’s Bank of China, National Financial Regulatory Administration, China Securities Regulatory Commission. Guiding opinions on further strengthening financial support for green and low-carbon development. The People’s Bank of China, National Financial Regulatory Administration, China Securities Regulatory Commission, 2024.
[16] Equator Principles Association. The Equator Principles (EP4). Equator Principles Association, 2020.
[17] Xinhuanet. First district-level transition finance standard introduced, providing a “Wanzhou solution” for the “retooling” of traditional industries. Xinhuanet, 2026.
[18] Beijing Business Today. Eight departments: introduce investors from Southeast Asia, Hong Kong Region and Macao Region to support green low-carbon funds and related construction. Beijing Business Today, 2025.
[19] China Water Transport Network. Relending helps shipping enterprises transition: the “thousand-mile light boat” sails green. China Water Transport Network, 2026.
[20] Southwest Securities. Southwest Securities’ 470-million-Yuan green ABS empowers the New Western Land-Sea Corridor strategy. Southwest Securities, 2026.
[21] European Commission. EU Taxonomy for Sustainable Activities; EU Green Bond Standard. European Commission, 2020-2023.
[22] Asian Development Bank. Green Bond Framework. Manila: ADB, 2021.
[23] Tang K Y. Digital green finance empowers the green and low-carbon transition of Guangxi. Contemporary Guangxi, 2026(11).