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Completing the Institutional Framework for Green Economic Development in Vietnam in the Context of International Economic Integration

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Abstract
Vietnam's green transition has entered a more demanding phase. The policy question is no longer whether green growth should be pursued, but whether the country's institutional architecture can translate international commitments into investable projects, credible carbon data, competitive exports, and locally enforceable rules. This article examines the institutional framework for green economic development in Vietnam in the context of deep international economic integration. It combines a structured review of legislation and policy instruments with descriptive analysis of a ten-year dataset covering 2015–2024. The empirical evidence shows a mixed transition. Real GDP growth averaged 6.15% per year, while electricity generation rose from 161.93 TWh to 303.58 TWh. Solar and wind generation expanded from only 0.13 TWh to 38.61 TWh. Yet coal-fired generation increased from 56.47 TWh to 152.77 TWh, coal's share of electricity reached 50.32% in 2024, and territorial fossil-fuel and industrial CO_2 emissions rose from 213.39 Mt to 370.93 Mt. The country has also established important building blocks, including the 2021–2030 Green Growth Strategy, the climate-change strategy to 2050, the carbon-market development scheme, the 2025 green taxonomy, and amendments to the greenhouse-gas regulatory regime. However, the institutional system remains fragmented across planning, finance, energy, trade, environmental data, and subnational implementation. The article argues that the next stage of reform should be organized around five linked tasks: a unified green-transition governance mechanism; interoperable measurement, reporting, and verification infrastructure; taxonomy-aligned finance; electricity-market and grid reforms; and export-oriented support for firms facing carbon and traceability requirements. The proposed 2026–2030 roadmap treats green institutions not as a compliance layer added to the existing growth model, but as core economic infrastructure for sustaining competitiveness under a more carbon-constrained international trading system.

Keywords: Carbon Market, Green Economy, Institutional Framework, International Economic Integration, Vietnam

1. Introduction

Vietnam's development record is inseparable from international economic integration. Over three decades, a combination of trade liberalization, foreign direct investment, industrial upgrading, and domestic institutional reform has transformed the country into an important manufacturing and export platform in Asia. That model remains a source of resilience and opportunity. At the same time, it is now exposed to a new class of constraints. Climate risks are intensifying; electricity demand continues to rise; multinational buyers are tightening environmental requirements; and major markets are moving from voluntary sustainability commitments toward rules that require measurable evidence. In this setting, green economic development is not a peripheral environmental agenda. It is increasingly part of the operating system of trade, investment, infrastructure, industrial policy, and financial regulation.

The practical challenge is substantial. Vietnam has committed to achieving net-zero greenhouse-gas emissions by 2050 and has strengthened its Nationally Determined Contribution (NDC). The updated 2022 NDC sets an unconditional emissions-reduction target of 15.8% by 2030 relative to the business-as-usual scenario and a conditional target of 43.5% with international support (Department of Climate Change, 2022) [2]. The country has also adopted a national green growth strategy, a national climate-change strategy, a green-growth action plan, a carbon-market development scheme, an official green taxonomy, and an adjusted national power development plan. These measures demonstrate a significant shift from high-level commitments toward a denser policy architecture.

Nevertheless, institutional density should not be confused with institutional effectiveness. Rules may exist without being sufficiently synchronized. A taxonomy may classify activities without yet being embedded across banking supervision, public investment, corporate reporting, procurement, and bond issuance. A carbon market may be designed at the national level while firms continue to lack reliable facility-level emissions data. Renewable-energy capacity may expand rapidly while grid constraints, curtailment risks, permitting bottlenecks, and bankability problems weaken the investment pipeline. Local authorities may carry responsibility for climate-resilient planning while lacking integrated datasets, specialized personnel, or stable financing arrangements. These are not isolated technical deficiencies. They are signs of an incomplete institutional transition.

The pressure to resolve such deficiencies has increased because climate policy is becoming a condition of market access. The European Union's Carbon Border Adjustment Mechanism (CBAM) entered its definitive phase on 1 January 2026. It requires importers of covered goods to meet carbon-related obligations supported by embedded-emissions data. For Vietnamese producers, especially in carbon-intensive industries and supply chains connected to the European market, the relevant question is not merely whether national emissions decline in aggregate. The immediate question is whether firms can measure, document, verify, and reduce the emissions embodied in specific products. Similar pressures arise from supply-chain due diligence, sustainability disclosure, product standards, green procurement, and traceability requirements. International integration therefore operates simultaneously as an opportunity for green upgrading and as a discipline imposed on weak institutional arrangements.

The macroeconomic context heightens the importance of the problem. Vietnam's trade-to-GDP ratio is close to 170%, making its growth model unusually sensitive to changes in external demand, regulatory standards, and global investment patterns (World Bank, 2026a) [29]. In 2024, real GDP growth recovered to approximately 7.0%, while gross domestic product reached roughly USD 476 billion according to the World Bank's country data. This scale of economic activity creates fiscal and technological capacity, but it also increases demand for energy, materials, transport, land, and urban infrastructure. The tension is visible in the electricity system: solar and wind generation grew rapidly over the last decade, yet coal-fired generation increased even faster in absolute terms. The resulting emissions trajectory does not invalidate Vietnam's transition commitments. It does, however, show that the next phase cannot rely on target setting alone.

Climate exposure adds a second layer of urgency. The World Bank's Country Climate and Development Report estimated that climate impacts cost Vietnam around USD 10 billion, or 3.2% of GDP, in 2020. Without adequate adaptation and mitigation, annual economic losses could reach 12–14.5% of GDP by 2050, while a climate-resilient and net-zero pathway would require additional investment of about USD 368 billion through 2040 (World Bank, 2022) [28]. These estimates should not be read as precise forecasts. Their policy value lies in the order of magnitude: delayed action has material consequences for public finance, infrastructure, household welfare, and the competitiveness of productive sectors.

Against this background, this article addresses three research questions. First, what does the 2015–2024 evidence reveal about the relationship between economic growth, electricity-system change, and emissions in Vietnam? Second, how has the country's institutional framework for green economic development evolved, especially as international economic integration has become more carbon-sensitive? Third, which institutional reforms should be prioritized during 2026–2030 to close the gap between policy ambition and implementation capacity?

The contribution of the article is twofold. Empirically, it assembles a transparent ten-year dashboard that links macroeconomic performance to power-sector and emissions indicators. Analytically, it treats green institutions as a system rather than as a list of documents. The argument is that Vietnam now possesses most of the essential components of a green-transition framework, but the components are not yet fully interoperable. The central task for the next reform cycle is institutional completion: connecting classifications, data standards, planning rules, financial incentives, market mechanisms, and accountability arrangements so that the green transition becomes operational at the level of projects, firms, value chains, and local governments.

2. Conceptual and Analytical Framework

2.1 Institutions, green structural transformation, and policy credibility

Institutional analysis begins from a simple premise: markets operate within rules. North (1990) [20] defined institutions as the formal and informal constraints that shape human interaction. For green economic development, the relevant constraints include environmental laws, technical standards, reporting protocols, planning procedures, electricity-market rules, fiscal incentives, banking practices, and enforcement arrangements. These rules influence which investments become financially viable, which technologies diffuse, which risks are recognized by lenders, and whether firms treat environmental performance as a compliance burden or as a source of competitiveness.

Green transformation is institutionally demanding because it involves several market failures at once. Greenhouse-gas emissions are a negative externality; climate resilience has public-good characteristics; innovation generates knowledge spillovers; infrastructure networks create coordination problems; and information asymmetry complicates the valuation of green projects. A carbon price can help, but no single instrument can resolve all these failures. Rodrik (2014) [26] argues that green industrial policy is justified when public action addresses coordination and learning externalities while remaining disciplined by transparency and evaluation. Porter and van der Linde (1995) [25] similarly emphasize that well-designed environmental regulation can induce innovation and improve resource productivity. The key qualification is "well-designed": unclear, inconsistent, or weakly enforced regulation can raise transaction costs without inducing productive upgrading.

The Vietnamese case illustrates why policy credibility matters. Investors in renewable energy, energy efficiency, industrial decarbonization, climate-resilient infrastructure, and low-carbon agriculture make decisions over long time horizons. They need predictable rules for grid connection, electricity purchasing, land use, licensing, emissions accounting, access to finance, and dispute resolution. If rules

change frequently or responsibilities overlap, firms price in uncertainty. The result is not only lower investment. It may also be a distorted investment pattern in which projects that are easier to authorize crowd out projects with greater system value.

A credible framework therefore requires more than policy announcements. It requires institutional complementarities. Green taxonomies must connect with credit allocation and disclosure. Carbon-market rules must connect with emissions inventories and independent verification. Power-development planning must connect generation investment to grid expansion, storage, demand management, and electricity-market design. Trade policy must connect exporters to product-level data, certification, and technology upgrading. Local climate plans must connect to budgets and measurable outcomes. Institutional completion is the process of building these connections.

2.2 International integration as opportunity and external discipline

International economic integration changes the incentives facing domestic institutions. In an earlier phase of globalization, tariffs, logistics, labor costs, and investment facilitation were dominant concerns. These remain important, but carbon performance and environmental traceability increasingly shape market access. CBAM is the most visible example. It converts embedded emissions from an environmental indicator into a trade-relevant variable. The effect extends beyond the directly covered sectors because major firms transmit reporting obligations through supply chains. Exporters that cannot provide credible data face higher transaction costs, less favorable procurement decisions, or reduced access to premium markets.

Integration also creates opportunities. Foreign direct investment can support the diffusion of cleaner technology, management practices, and supply-chain standards. Trade agreements can reinforce environmental governance. International climate finance can reduce the cost of capital for infrastructure and industrial upgrading. The Just Energy Transition Partnership (JETP) with Vietnam was announced as a long-term partnership, with at least EUR 15.5 billion in public and private finance expected to be mobilized over three to five years. The value of such a partnership depends on the quality of the project pipeline, the clarity of domestic rules, and the ability to convert strategic commitments into bankable investments.

A useful way to understand international integration is as an external discipline that tests the operability of domestic rules. A firm exporting steel, aluminum, cement-related products, or fertilizers into a carbon-sensitive market needs auditable data. A bank financing industrial retrofits needs a recognized classification system and a method for assessing environmental risk. A provincial authority approving an industrial park needs information on energy supply, emissions, water use, waste flows, and climate exposure. An electricity buyer entering into a direct purchasing arrangement needs contractual certainty and a functioning market framework. If any link is missing, the institutional chain weakens.

2.3 A system-based analytical framework

This article evaluates Vietnam's institutional framework through six interdependent functions. The first is strategic direction: whether targets, plans, and sector priorities are sufficiently coherent. The second is classification: whether green and transition activities can be identified consistently. The third is measurement, reporting, and verification (MRV): whether data are reliable, interoperable, and usable by regulators, investors, and trading partners. The fourth is incentive alignment: whether finance, fiscal tools, procurement, and market rules reward measurable improvements. The fifth is implementation capacity: whether ministries, provinces, firms, banks, and verification bodies can apply the rules in practice. The sixth is accountability: whether progress is monitored through indicators that reveal delays, trade-offs, and corrective actions.

These functions are mutually reinforcing. Classification without data invites greenwashing. Data without incentives become an administrative burden. Incentives without implementation capacity produce uneven outcomes. Targets without accountability encourage formal compliance rather than structural change. A sound reform agenda must therefore be sequenced, but it cannot be fragmented. The relevant policy unit is the system.

A further distinction is necessary between adoption, implementation, and effects. Adoption refers to the formal issuance of a strategy, law, decree, taxonomy, plan, or technical rule. Implementation refers to the organizational routines, budgets, digital systems, personnel, and enforcement practices that make the instrument usable. Effects refer to observable changes in investment, production, resilience, emissions, and competitiveness. The three stages should not be collapsed. A formally adopted instrument may still have limited effects because the implementation chain is incomplete. Conversely, a pilot program may generate useful effects before it is scaled into a national rule. Throughout the article, institutional progress is assessed against this three-stage logic.

This distinction also helps avoid an overly legalistic interpretation of reform. Legal instruments are indispensable, but firms and investors experience the institutional environment through procedures: how long approvals take, whether data requirements are clear, whether contracts are bankable, whether verifiers are available, whether agencies interpret criteria consistently, and whether local authorities possess the capability to implement national policy. Green institutional quality is therefore partly visible in statutes and partly visible in transaction costs.

3. Research Design, Data, and Limitations

This study uses a mixed documentary and descriptive-empirical approach. Its purpose is not to estimate a causal model of the determinants of green growth. The available annual series are too short, the transition is affected by major structural breaks, and the causal pathways run through sector-specific institutions that cannot be captured adequately by a single aggregate regression. Instead, the analysis combines ten-year trend evidence with an institutional review in order to identify where implementation capacity has not kept pace with strategic ambition.

The empirical window is 2015–2024. This period is long enough to capture three relevant changes: the acceleration of Vietnam's manufacturing and electricity demand; the rapid deployment of solar and wind power; and the post-COP26 shift toward more explicit net-zero and carbon-market commitments. Real GDP growth data are drawn from World

Bank sources and reported to one decimal place for comparability. Electricity generation, generation by source, generation shares, and power-sector carbon intensity are extracted from the Our World in Data energy database, whose electricity data draw on Ember and other documented sources. Territorial fossil-fuel and industrial CO_2 emissions and per-capita emissions are taken from the Our World in Data CO_2 dataset, based on the Global Carbon Budget. These series are used as consistent descriptive measures; they should not be conflated with the broader greenhouse-gas inventory used for NDC accounting.

The documentary review covers laws, decrees, prime-ministerial decisions, official strategy documents, international commitments, and selected reports issued or available by 3 June 2026. Particular attention is paid to the Law on Environmental Protection 2020; the National Green Growth Strategy for 2021–2030 with a vision to 2050; the National Action Plan on Green Growth; the National Climate Change Strategy to 2050; Decree No. 06/2022/ND-CP and its subsequent amendments; the carbon-market development scheme approved under Decision No. 232/QD-TTg; the green taxonomy issued under Decision No. 21/2025/QD-TTg; the adjusted Power Development Plan VIII; Vietnam's updated NDC; and the EU CBAM framework. The review is interpretive but structured around the six institutional functions set out above.

The analysis has three limitations. First, the electricity and CO_2 indicators are national aggregates and do not reveal regional disparities, firm-level productivity, or product-level embedded emissions. Second, annual data can identify direction and turning points but cannot establish causal attribution. Third, the institutional landscape is evolving quickly. The article therefore treats regulatory status as a dated snapshot and distinguishes between adopted instruments and implementation outcomes. These limitations do not reduce the usefulness of the evidence. They reinforce the argument that Vietnam needs a stronger data architecture capable of connecting national targets to sectoral, local, and product-level decisions.

Table 1: Data Sources and Analytical Uses

Indicator group	Period	Unit	Primary source	Analytical use
Real GDP growth	2015–2024	Annual %	World Bank country indicators and selected indicators	Macroeconomic context and growth volatility
Electricity generation and mix	2015–2024	TWh; %	Our World in Data Energy Data; electricity series based on Ember and documented upstream sources	Power-system scale, source composition, transition quality
Power-sector carbon intensity	2015–2024	gCO_2/kWh	Our World in Data Energy Data	Whether clean-power expansion reduces actual system carbon intensity
Territorial fossil-fuel and industrial CO_2	2015–2024	Mt; tonnes/person	Our World in Data CO_2 Data based on the Global Carbon Budget	National emissions trajectory; not a substitute for NDC inventory accounting
Green credit	2017; Q1 2025	VND trillion; %	State Bank of Vietnam figures reported by Government News and banking-sector sources	Financial intermediation and taxonomy relevance
Institutional instruments	2020–2026	Legal and policy documents	Government of Vietnam, UNFCCC, European Commission, World Bank	Institutional sequencing, external pressure, and implementation gaps

Note: The empirical dashboard uses rounded values for readability. Territorial fossil-fuel and industrial CO_2 emissions are not identical to the broader greenhouse-gas inventory used for NDC reporting.

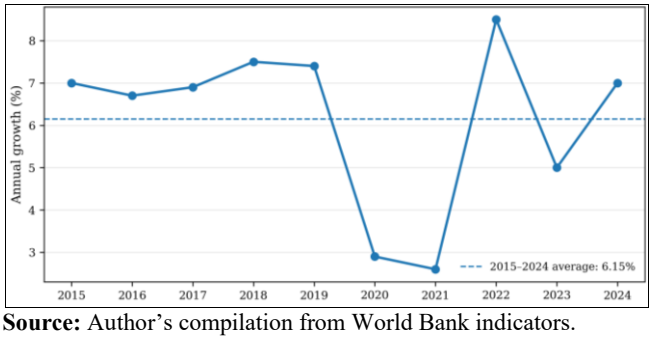
4. Vietnam's Green Transition in a Decade of Deep Integration: Empirical Evidence

4.1 Growth, openness, and the changing constraint set

Vietnam entered the green-transition decade with a growth model characterized by high investment, expanding manufacturing, and deep external integration. Between 2015 and 2024, real GDP growth averaged 6.15% per year. The COVID-19 shock reduced growth to 2.9% in 2020 and 2.6% in 2021, but the recovery was rapid: growth reached 8.5% in 2022 and approximately 7.0% in 2024. This performance is notable because it reflects both resilience and scale. Each additional percentage point of growth now carries larger implications for electricity demand, logistics, industrial land, materials consumption, and emissions than it did a decade ago.

The external orientation of the economy amplifies these implications. Vietnam's trade-to-GDP ratio is close to 170%, and merchandise trade is deeply embedded in regional and global value chains. Such openness allows the country to benefit from shifts in investment and supply-chain diversification. However, it also increases exposure to standards set elsewhere. Environmental rules adopted by large markets can affect domestic production decisions even before they are fully reflected in Vietnamese law. For export-oriented firms, the effective regulatory environment increasingly consists of both national rules and the requirements imposed by buyers, investors, financial institutions, and customs authorities in destination markets.

Fig 1 shows that the growth trajectory has not been smooth, but the decade as a whole remains one of rapid expansion. The policy challenge is to avoid treating green reform as a brake applied after growth has occurred. When electricity demand, industrial capacity, and urban infrastructure are expanding quickly, the carbon intensity of new investment matters more than the retrofitting of existing assets alone. Institutional decisions made during the next few years will shape the capital stock for decades.



Source: Author's compilation from World Bank indicators.

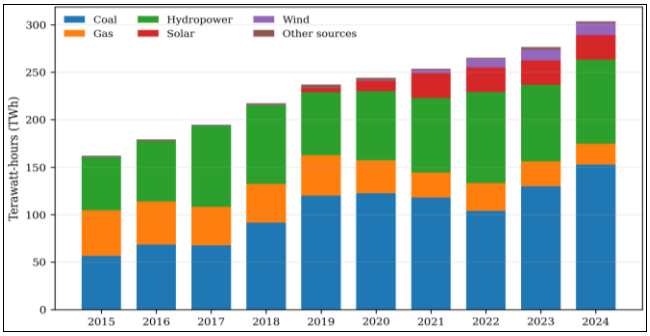
Fig 1: Real GDP growth in Vietnam, 2015–2024

4.2 Electricity: Rapid diversification without a completed transition

The electricity system offers the clearest quantitative view of the institutional challenge. Electricity generation rose from 161.93 TWh in 2015 to 303.58 TWh in 2024, an increase of 87.48%. Renewable generation, including hydropower, increased from 56.32 TWh to 128.36 TWh. The most striking change was the expansion of solar and wind generation, which rose from only 0.13 TWh in 2015 to 38.61 TWh in 2024. This is a major achievement. It indicates that Vietnam can mobilize capital and deploy technology rapidly when incentives are strong and administrative pathways are sufficiently clear.

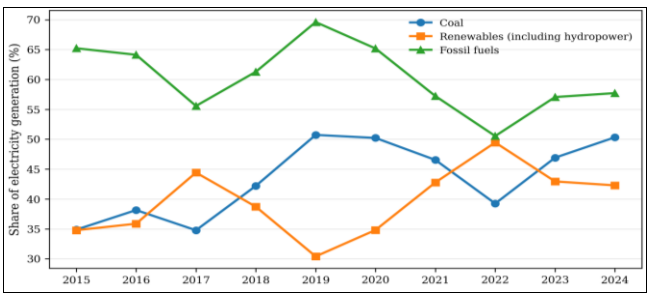
However, the same data reveal the limits of a capacity-centered interpretation of energy transition. Coal-fired generation increased from 56.47 TWh to 152.77 TWh, or 170.53%, over the same period. Coal's share of electricity generation rose from 34.87% to 50.32%. Renewable electricity reached a decade-high share of 49.46% in 2022, then declined to 42.28% in 2024. Power-sector carbon intensity fell to 415.41 gCO_2/kWh in 2022 but returned to 484.32 gCO_2/kWh in 2024, almost the same as the 2015 level of 483.73 gCO_2/kWh.

This is not a simple story of policy failure. Electricity demand grew quickly, hydropower output varied, and a reliable power system must respond to changing demand and resource conditions. The more important conclusion is institutional: renewable generation cannot be treated as an isolated investment category. Its system value depends on grid investment, dispatch rules, storage, demand-side flexibility, bankable power-purchasing arrangements, and coordination between central planning and project-level implementation. The rebound of coal generation after 2022 shows why installed capacity and actual generation should be monitored separately.



Source: Author's calculation from Our World in Data Energy Data; electricity series draw on Ember and documented upstream sources.

Fig 2: Electricity generation by source in Vietnam, 2015–2024



Source: Author's calculation from Our World in Data Energy Data.

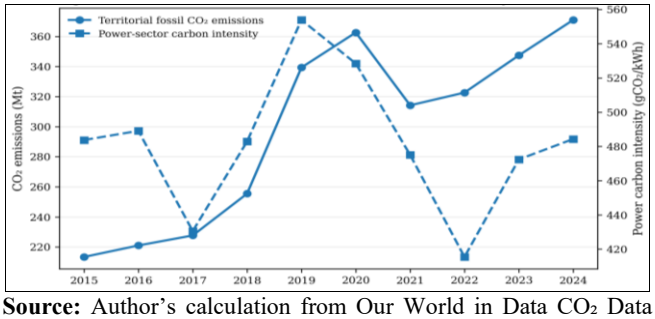
Fig 3: Selected shares in Vietnam's electricity mix, 2015–2024

The data also reveal a transition-quality problem. Solar and wind generation expanded dramatically, but the electricity system did not reduce dependence on coal in a sustained manner. A narrow assessment might celebrate renewable capacity additions. A system assessment asks whether the network, market design, and investment sequence allow clean electricity to displace high-emission generation reliably. This distinction is central to institutional reform. The next stage requires a shift from project approval to system optimization.

4.3 Emissions: economic expansion has not yet been decoupled from carbon growth

Territorial fossil-fuel and industrial CO_2 emissions increased from 213.39 Mt in 2015 to 370.93 Mt in 2024, an increase of 73.83%. Per-capita emissions rose from 2.30 to 3.67 tonnes over the same period. The power sector is not the only driver. Industry, construction materials, transport, and urbanization all contribute. Nonetheless, the emissions trend is consistent with the electricity evidence: Vietnam has made progress in adding low-carbon assets, but it has not yet achieved a durable decoupling of economic expansion from carbon growth.

The distinction between absolute emissions, emissions intensity, and product-level embedded emissions matters. National emissions may continue to rise during a development transition even as specific industries improve. Conversely, a reduction in national emissions intensity does not guarantee that an exporter can provide verified data for a particular shipment. Domestic climate policy and trade competitiveness therefore require a layered MRV system: national inventories for international commitments, facility-level reporting for regulation and carbon-market participation, and product-level calculations for carbon-sensitive trade.



Source: Author's calculation from Our World in Data CO_2 Data and Our World in Data Energy Data. Territorial CO_2 excludes land-use change and is distinct from the full greenhouse-gas inventory.

Fig 4: Territorial fossil-fuel and industrial CO_2 emissions and power-sector carbon intensity, 2015–2024

4.4 Climate resilience and the economic value of implementation

Mitigation tends to attract more attention because it is connected to energy systems and carbon markets. Yet adaptation is equally important for Vietnam. The World Bank's climate assessment identifies significant exposure across coastal areas, major cities, agriculture, and the Mekong Delta. Climate impacts were estimated at approximately USD 10 billion, or 3.2% of GDP, in 2020. Without adequate action, annual losses could reach 12–14.5% of GDP by 2050. These estimates imply that adaptation should not be treated as a residual social-policy

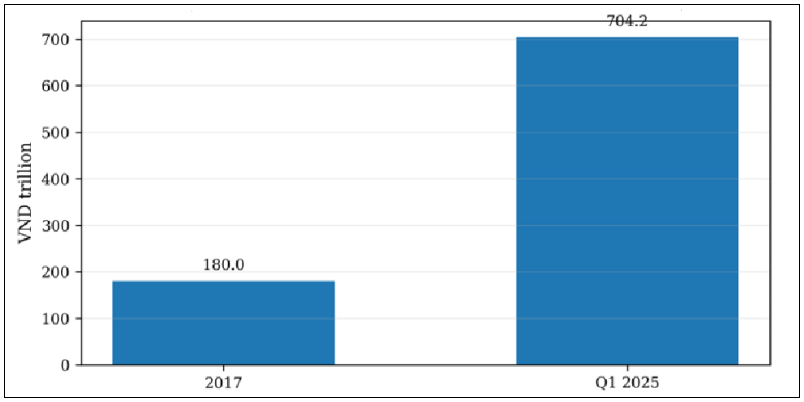
category. It is an investment and productivity agenda.

Practical evidence supports this interpretation. The World Bank reports that the Vietnam Sustainable Agriculture Transformation Project, implemented during 2015–2023, supported low-emission rice cultivation across approximately 182,000 hectares, increased farmer profits by 30%, and reduced annual emissions by about 1.5 million tonnes of CO_2 equivalent. This example is important because it demonstrates that green transition is not synonymous with higher costs. When institutions connect knowledge, finance, technology, and market incentives, emissions reduction can coincide with productivity gains.

4.5 Green finance: expansion with a classification and pipeline constraint

Green credit has expanded materially. According to figures reported from the State Bank of Vietnam, outstanding green credit increased from approximately VND 180 trillion in 2017 to more than VND 704.244 trillion by the end of March 2025. Fifty-eight credit institutions had green outstanding loans, and the total represented 4.3% of economy-wide credit. Green-credit balances grew by more than 21.2% annually on average during 2017–2024. Renewable and clean energy accounted for more than 37%, while green agriculture accounted for more than 29%.

The growth is significant, but its interpretation requires care. A 4.3% share is not yet commensurate with the scale of transition investment required. Credit concentration in a limited number of recognizable sectors suggests that banks have found it easier to finance projects with established categories than to evaluate transition activities across manufacturing, construction, logistics, and small and medium-sized enterprises. The 2025 green taxonomy is therefore a necessary institutional advance. Its effectiveness will depend on whether it is operationalized through supervisory guidance, disclosure templates, verification practice, and project-preparation support.



Source: State Bank of Vietnam figures reported by Government News (2025) and related banking-sector sources.

Fig 5: Outstanding green credit in Vietnam: 2017 and Q1 2025

Table 2: Ten-Year Empirical Dashboard for Vietnam's Green Transition, 2015–2024

Year	GDP growth (%)	Electricity generation (TWh)	Coal generation (TWh)	Coal share (%)	Renewable generation (TWh)	Renewable share (%)	Solar + wind (TWh)	Power carbon intensity (gCO_2/kWh)	Territorial CO_2 (Mt)	CO_2 per capita (t)
2015	7.0	161.93	56.47	34.87	56.32	34.78	0.13	483.73	213.39	2.299
2016	6.7	179.17	68.35	38.15	64.27	35.87	0.21	489.09	221.03	2.351
2017	6.9	194.72	67.71	34.77	86.51	44.43	0.36	430.52	227.69	2.392
2018	7.5	217.18	91.65	42.20	84.08	38.71	0.51	482.87	255.47	2.655
2019	7.4	236.89	120.16	50.72	72.01	30.40	5.54	553.89	339.31	3.492
2020	2.9	244.00	122.53	50.22	84.95	34.82	11.74	528.44	362.60	3.697
2021	2.6	253.61	118.03	46.54	108.48	42.77	29.49	475.06	314.20	3.176
2022	8.5	265.11	104.04	39.24	131.13	49.46	34.84	415.41	322.65	3.237
2023	5.0	276.59	129.76	46.91	118.77	42.94	37.28	472.40	347.40	3.462
2024	7.0	303.58	152.77	50.32	128.36	42.28	38.61	484.32	370.93	3.673

Sources: World Bank indicators; Our World in Data Energy Data; Our World in Data CO_2 Data based on the Global Carbon Budget. Renewable generation includes hydropower. Territorial CO_2 refers to fossil-fuel and industrial emissions and excludes land-use change.

5. Evolution of the Institutional Framework

5.1 From strategy setting to an operational architecture

Vietnam's green institutional framework has developed in layers. The first layer establishes strategic direction. The Law on Environmental Protection 2020 created a broad legal foundation for climate mitigation, greenhouse-gas management, environmental protection, and market-based instruments. Decision No. 1658/QD-TTg, issued in 2021, approved the National Green Growth Strategy for 2021–2030 with a vision to 2050. Decision No. 882/QD-TTg approved the corresponding national action plan in 2022. Decision No. 896/QD-TTg approved the National Climate Change Strategy to 2050. Together with the updated NDC, these documents articulate a coherent long-term direction: lower emissions, greater resource efficiency, climate resilience, and a net-zero pathway.

The second layer concerns operating rules. Decree No. 06/2022/ND-CP established provisions on greenhouse-gas mitigation and ozone-layer protection. Amendments under Decree No. 119/2025/ND-CP and Decree No. 83/2026/ND-CP indicate continuing refinement as the carbon-market framework becomes more concrete. Decision No. 232/QD-

TTg, issued in January 2025, approved the scheme for establishing and developing a carbon market in Vietnam. Decision No. 21/2025/QD-TTg, effective from August 2025, issued environmental criteria and confirmation procedures for projects under the green classification list. These are important steps because they move beyond broad ambition toward classification, data, and market infrastructure.

The third layer links climate policy to the energy system. The adjusted Power Development Plan VIII, approved under Decision No. 768/QD-TTg in April 2025, is particularly important because the electricity sector is a system constraint for both decarbonization and industrial competitiveness. A factory cannot credibly lower the embedded emissions of its output if it lacks access to cleaner power. An exporter cannot respond effectively to carbon-related procurement requirements if the grid remains carbon-intensive. Power planning is therefore not merely a sectoral issue; it is part of trade and industrial policy.

The fourth layer is international. Vietnam's COP26 net-zero commitment, updated NDC, JETP participation, trade agreements, and engagement with global value chains raise the expected quality of domestic institutions. International partnerships can mobilize finance and technical assistance, but they also sharpen the need for transparent project selection, credible safeguards, and measurable results. The presence of external finance does not compensate for weak domestic coordination. It makes coordination more valuable.

5.2 Institutional progress should be evaluated through interoperability

The recent policy sequence demonstrates momentum. Yet a mature framework is not measured by the number of instruments adopted. It is measured by whether instruments work together. The green taxonomy is a case in point. Its direct value lies in defining environmental criteria and procedures for confirming projects under the classification list. Its larger value emerges only when banks, bond issuers, investors, public authorities, auditors, and enterprises use compatible definitions. If each institution maintains separate templates and evidentiary requirements, transaction costs remain high and capital allocation remains uneven.

The same logic applies to carbon-market development. A market requires more than a trading platform. It requires an emissions cap or allocation logic, covered entities, verified inventories, standardized methodologies, registry infrastructure, enforcement, and a credible approach to offsets and carbon credits. It also requires firms to understand the economic implications of emissions data. If MRV is treated as a one-off reporting exercise, the market will have limited influence on investment decisions. If MRV becomes part of management accounting, energy procurement, and capital budgeting, the market can affect behavior.

5.3 International integration changes the benchmark

Domestic institutions are increasingly benchmarked against external rules. The definitive phase of the EU CBAM began on 1 January 2026. The direct legal obligations fall on EU importers, but the practical data burden travels upstream. Vietnamese producers need to generate credible information on embedded emissions. Firms that cannot do so may depend on default values or face less favorable commercial treatment. The lesson is broader than CBAM: environmental performance is becoming auditable information.

This change alters the meaning of competitiveness. Low labor costs, reliable delivery, and investment incentives remain important. They are no longer sufficient. Competitive firms increasingly need energy data, product footprints, supplier information, environmental management systems, and access to finance for upgrading. Competitive jurisdictions need recognized standards, verifiers, digital registries, testing facilities, and predictable regulatory pathways. Green institutions are therefore a form of trade infrastructure.

Table 3: Major Institutional Milestones and Their Operational Significance

Year	Instrument or milestone	Operational significance
2020	Law on Environmental Protection No. 72/2020/QH14	Creates the legal foundation for environmental protection, climate mitigation, greenhouse-gas management, and market-based approaches.
2021	Decision No. 1658/QD-TTg: National Green Growth Strategy 2021–2030, vision to 2050	Places green growth within national development strategy and identifies long-term transformation priorities.
2022	Decree No. 06/2022/ND-CP; Decisions No. 882/QD-TTg and No. 896/QD-TTg; updated NDC	Moves from strategic direction toward mitigation rules, implementation planning, climate strategy, and quantified international commitments.
2022–2023	JETP political declaration and Resource Mobilisation Plan	Links domestic transition priorities to international public and private finance, with at least EUR 15.5 billion expected over three to five years.
2025	Decision No. 232/QD-TTg; Decree No. 119/2025/ND-CP; Decision No. 768/QD-TTg; Decision No. 21/2025/QD-TTg	Strengthens the carbon-market pathway, updates greenhouse-gas rules, adjusts power planning, and issues green classification criteria.
2026	Decree No. 83/2026/ND-CP; definitive phase of EU CBAM	Further refines the domestic greenhouse-gas regime while carbon-related trade obligations become operational in a major export market.

Source: Author's synthesis from official Government of Vietnam documents, the UNFCCC, and European Commission materials. Regulatory status reviewed to 3 June 2026.

6. Where the Institutional Architecture Remains Incomplete

6.1 Coordination remains too fragmented for a system transition

The first gap is horizontal coordination. Green economic development cuts across environmental regulation, energy, trade, finance, industry, construction, agriculture, transport, science and technology, public investment, and provincial planning. Each field has legitimate sectoral objectives, but the transition requires joint problem solving. A grid bottleneck can delay renewable projects even when energy targets are clear. A lack of product-level emissions methodologies can weaken exporters even when national inventories improve. A green taxonomy can remain underused if lenders lack verified data or firms lack project-preparation capacity.

Vietnam does not need another broad strategy document as its first response. It needs a more disciplined implementation mechanism. The key function is not symbolic coordination but the resolution of cross-sector bottlenecks. Such a mechanism should identify a limited set of transition outcomes, assign lead responsibility, specify deadlines, publish progress indicators, and escalate unresolved problems. Without this discipline, strategies risk becoming parallel work programs rather than a coherent reform sequence.

6.2 MRV is the central enabling infrastructure

The second gap is data architecture. Green transition increasingly depends on the ability to produce information that is timely, comparable, auditable, and reusable. Vietnam needs to connect national greenhouse-gas inventories with facility-level reporting, sectoral benchmarks, carbon-market registries, and product-level emissions calculations. These layers serve different purposes, but they should be interoperable. Firms should not have to recreate basic datasets for each reporting request. Regulators should be able to aggregate verified facility data. Banks should be able to use recognized metrics in credit assessment. Export agencies should be able to direct firms toward accepted methodologies.

The data problem is both technical and institutional. Methodologies must be specified; reporting boundaries must be consistent; verification bodies must be accredited; digital systems must be secure; and commercially sensitive information must be protected. Small and medium-sized enterprises need simplified pathways because they cannot carry the same reporting burden as large corporations. A tiered system is therefore preferable: detailed requirements for large emitters and firms in exposed sectors, standardized tools for medium-sized enterprises, and shared-service support for smaller suppliers.

CBAM makes the urgency clear. Product-level embedded emissions cannot be produced reliably from general sustainability narratives. They require activity data, emissions factors, production boundaries, electricity-consumption records, and verification. If Vietnam develops this capability only for immediate CBAM sectors, it will miss the wider transition. The better approach is to build a reusable carbon-data infrastructure that also supports banking, procurement, industrial policy, and corporate management.

6.3 The electricity transition requires market and network institutions, not capacity targets alone

The third gap concerns the electricity system. The 2015–2024 data show both the scale of renewable expansion and the persistence of coal. The central problem is not a lack of strategic recognition. It is the need to align generation, grids, dispatch, storage, demand response, market arrangements, and financing. Renewable projects have system value only when electricity can be delivered reliably at the right time and location.

Grid investment should therefore be treated as a priority transition asset. Planning procedures need to identify congestion risks early, and investment approval needs to be coordinated with generation development. Storage, flexible generation, and demand-side management should be valued according to their contribution to reliability and emissions reduction. Direct power-purchasing arrangements and other market reforms can help industrial users obtain cleaner electricity, but only if contract rules, settlement mechanisms, and risk allocation are sufficiently clear for both buyers and lenders.

The rebound in power-sector carbon intensity after 2022 is a warning against overreliance on installed-capacity narratives. A credible transition dashboard should report actual generation, curtailment, grid investment, storage deployment, emissions intensity, and the availability of clean electricity for industrial consumers. These indicators reveal whether the system is changing in practice.

6.4 Green finance needs a broader transition pipeline

The fourth gap is financial intermediation. Green credit has grown faster than overall credit, but it remains concentrated and limited relative to investment needs. A taxonomy helps establish a common language, but it does not automatically create bankable projects. Many investments that reduce emissions are embedded in ordinary business decisions: replacing industrial equipment, improving building performance, electrifying vehicle fleets, upgrading waste systems, reducing water use, or digitizing energy management. These investments are heterogeneous, smaller, and more difficult to evaluate than utility-scale projects.

The policy response should combine classification with project aggregation and risk reduction. Standardized technical packages can reduce appraisal costs for energy efficiency, rooftop solar, industrial motors, boilers, cooling systems, and green buildings. Credit guarantees, blended finance, and performance-based instruments can be used selectively where they address clear barriers. Public support should not substitute for commercial discipline; it should improve the risk-return profile of investments with measurable environmental benefits and learning spillovers.

The green taxonomy should also be connected to transition finance. A binary distinction between green and non-green is insufficient for emissions-intensive industries that need a credible pathway to improve. Transition activities require sector-specific benchmarks, time-bound performance thresholds, and safeguards against locking in high-emission assets. The objective is to direct capital toward measurable improvement while preserving the integrity of green labels.

6.5 Export-oriented firms need an upgrading ecosystem

The fifth gap concerns enterprise capability. Large multinational firms and major domestic exporters can invest in sustainability teams, consultants, and digital systems. Many domestic suppliers cannot. Yet supply-chain requirements increasingly reach beyond first-tier exporters. A small component producer may need to provide energy and material data because its customer faces reporting obligations. A logistics provider may be asked to document fuel use. A manufacturer may need product-level emissions estimates to retain a contract.

An effective policy response should be sector-specific and practical. Generic awareness campaigns are no longer enough. Exporting sectors need standardized calculators, guidance on accepted emissions factors, lists of accredited or recognized service providers, training for technical staff, and co-financing for audits and equipment upgrades. Industrial parks can function as platforms for shared services, including renewable-energy procurement, waste exchange, water management, and carbon accounting. Trade-promotion agencies, industry associations, banks, and

technical institutions should coordinate rather than operate separate programs.

6.6 Subnational implementation and adaptation finance remain uneven

The sixth gap is local capacity. Climate risk is spatially differentiated. Flood exposure, salinity intrusion, heat stress, water scarcity, coastal erosion, and urban drainage constraints vary by location. Provinces and cities therefore need the capability to integrate climate information into land-use planning, infrastructure appraisal, industrial-zone development, and public investment. National strategies cannot substitute for local decisions.

A recurring weakness is that local climate plans may be disconnected from budget processes and project appraisal. To correct this, climate tagging should be integrated into public-investment management, but tagging must be linked to quality criteria. A project should not be classified as climate-relevant merely because its narrative mentions resilience. Appraisal should identify the hazard, the adaptation objective, the design response, the expected service-life benefit, and the indicator used to evaluate performance.

Local capacity also has a data dimension. Provinces need access to interoperable datasets and technical support. Fragmented pilot projects can generate useful lessons, but they should be converted into repeatable templates. The low-emission rice example demonstrates the value of institutional scaling: technical guidance, farmer organization, finance, and market incentives can generate both income and emissions benefits when they are connected.

6.7 A just transition must be operational rather than rhetorical

The seventh gap concerns distribution. Green transformation creates benefits, but it also changes the geography and structure of employment, investment, and public revenue. Coal-dependent communities, workers in affected industries, low-income households, and small firms may face adjustment costs. A just transition cannot be reduced to a statement of principle. It requires labor-market data, regional diagnostics, social dialogue, reskilling programs, targeted support, and monitoring.

Distributional design also matters for energy pricing and carbon pricing. Price signals are necessary, but they can be regressive if introduced without compensatory mechanisms. The preferred approach is not to suppress price signals indiscriminately. It is to identify affected groups and use transparent measures that protect vulnerable households while preserving incentives for efficiency and clean investment. The credibility of the transition depends on whether the public can see both the costs and the benefits.

Table 4: Institutional Gap Matrix

Institutional domain	Observed gap	Economic consequence
Coordination	Strategies and sectoral instruments exist, but cross-sector bottlenecks are not consistently resolved through a results-oriented delivery process.	Delayed grid projects, fragmented implementation, and parallel work programs.
MRV and data interoperability	National, facility-level, product-level, financial, and carbon-market data are not yet fully connected.	Higher compliance costs, weaker CBAM readiness, and limited ability to price transition risk.
Electricity system	Renewable investment has expanded faster than the institutional capability to optimize grids, dispatch, flexibility, storage, and clean-power procurement.	Persistent coal dependence and volatile power-sector carbon intensity.
Green and transition finance	Green credit is growing, but taxonomy use, verification, project aggregation, and transition-finance pathways remain incomplete.	Capital concentration in a limited set of recognizable projects and underinvestment in SMEs and industrial retrofits.
Enterprise upgrading	Exporters and suppliers face carbon and traceability requirements with uneven technical capacity.	Risk of losing contracts, relying on default values, or facing higher compliance costs.
Subnational adaptation	Local planning, climate data, project appraisal, and budget processes remain unevenly integrated.	Climate exposure translates into avoidable infrastructure losses and lower public-investment quality.
Just transition	Distributional objectives are recognized but not yet embedded in a measurable regional and labor-market framework.	Political resistance, regressive impacts, and missed opportunities for regional diversification.

Source: Author's analysis.

7. Reform Agenda for 2026–2030

7.1 Establish a results-oriented national green-transition delivery mechanism

The first priority for 2026–2030 is a delivery mechanism with authority to resolve cross-sector implementation problems. Its mandate should be narrower than a general strategy committee and more operational than an advisory forum. It should track a limited set of outcomes: power-sector emissions intensity; grid and storage milestones; verified emissions reporting by covered facilities; taxonomy-aligned credit and investment; readiness of CBAM-exposed exporters; climate-resilient public investment; and just-transition indicators.

The mechanism should operate through quarterly problem-solving sessions supported by a public annual dashboard. Each bottleneck should have a lead institution, a deadline, and an escalation pathway. The objective is not administrative centralization. It is disciplined coordination. Ministries retain sectoral authority, but cross-sector constraints become visible and actionable.

7.2 Build a national carbon-data and MRV infrastructure

The second priority is a digital MRV architecture that supports multiple uses. Vietnam should develop a common data model for facility emissions, electricity consumption, production output, emissions factors, verification status, and carbon-market records. The architecture should allow secure exchange between environmental authorities, the carbon-market registry, financial institutions, relevant sector agencies, and firms. Access controls are essential because commercially sensitive data must be protected.

Implementation should be phased. Large emitters and CBAM-exposed sectors should be prioritized because the

economic case is immediate. Sector-specific methodologies and templates should be published in a user-oriented format. Accreditation and supervision of verification bodies should be strengthened. Universities, technical institutes, auditors, and industry associations can help expand the pool of qualified professionals. For smaller firms, shared digital tools and sector-based service centers are more efficient than requiring each firm to build its own reporting system.

The MRV system should avoid becoming an isolated environmental database. Its value increases when it supports credit appraisal, corporate disclosure, procurement, industrial benchmarking, and trade facilitation. Data interoperability is therefore a policy objective in its own right.

7.3 Embed the green taxonomy across finance and public policy

The third priority is operationalization of the green taxonomy. Decision No. 21/2025/QD-TTg provides an important reference point, but implementation should extend beyond project confirmation. Banks need supervisory guidance on taxonomy use, environmental-risk assessment, and disclosure. Bond issuers need consistent reporting expectations. Public investment and procurement authorities need criteria that prevent unsupported green claims. Investors need a way to compare reported outcomes.

A taxonomy implementation manual should specify evidence requirements, verification pathways, treatment of mixed-use projects, and periodic review procedures. It should also clarify the relationship between green classification and transition finance. The taxonomy must be stable enough to support investment decisions but flexible enough to incorporate technological change and sector-specific learning.

The State Bank of Vietnam and financial regulators should publish an annual green-finance dashboard. The dashboard should report not only the volume of green credit but also its sectoral distribution, maturity profile, non-performing-loan performance where appropriate, taxonomy alignment, environmental-risk assessment coverage, and measurable outcomes. Quantity is useful; quality and additionality are more important.

7.4 Reframe power-sector reform around system performance

The fourth priority is to treat the power system as the backbone of green competitiveness. The adjusted Power Development Plan VIII should be supported by an integrated implementation dashboard that tracks generation, transmission, storage, curtailment, reliability, emissions intensity, and project bankability. Grid projects should receive the same strategic attention as generation projects because delayed transmission weakens the value of renewable capacity.

Market rules should reward flexibility. Storage, demand response, and efficient dispatch reduce the cost of integrating variable renewables. Industrial users need clearer pathways to procure cleaner electricity. Direct purchasing arrangements should be implemented with transparent settlement rules, predictable risk allocation, and standardized contracts where appropriate. Electricity reform is technically complex, but delay has an economic cost: carbon-intensive power raises the embedded emissions of manufactured exports.

7.5 Create a carbon-competitiveness program for exporters and industrial parks

The fifth priority is enterprise upgrading. A national carbon-competitiveness program should focus initially on sectors with high exposure to carbon-related market requirements and strong export linkages. It should offer practical tools: product-footprint calculators, sector benchmarks, audit support, technical advice, access to accredited verifiers, training for engineers and accountants, and financing packages for efficiency improvements.

Industrial parks should be used as implementation platforms. Shared infrastructure can lower the cost of renewable-energy procurement, wastewater treatment, materials recovery, logistics optimization, and data services. Park-level programs can reach suppliers that are too small to participate efficiently in stand-alone schemes. The approach also allows authorities to connect investment promotion with measurable environmental performance.

Trade-promotion policy should incorporate carbon readiness. Export support should not be limited to market information and commercial matchmaking. It should help firms satisfy the technical conditions of market access. This is particularly important because carbon regulation and buyer standards can affect firms before they appear in customs statistics.

7.6 Integrate adaptation into public-investment management

The sixth priority is adaptation mainstreaming. Public-investment appraisal should require climate-risk screening for infrastructure with long service lives. High-risk projects should include a documented adaptation response and a monitoring indicator. Climate-budget tagging should be improved so that it distinguishes between nominally relevant spending and spending with a clearly specified resilience outcome.

Provinces need standardized guidance and access to technical support. National agencies should publish sector templates for resilient roads, drainage, water systems, hospitals, schools, industrial parks, and agricultural infrastructure. The objective is to make climate resilience routine rather than exceptional. Adaptation should become part of the quality standard for public investment.

7.7 Make just transition measurable

The seventh priority is a practical just-transition framework. The first step is diagnostic: identify affected regions, occupations, firms, and household groups. The second is program design: combine reskilling, employment services, local economic diversification, and targeted social protection. The third is monitoring: publish indicators on worker transitions, training completion, employment outcomes, household impacts, and regional investment.

JETP financing and other climate-finance channels should support this work where appropriate. Just transition should not be separated from industrial strategy. Regions facing adjustment need credible alternatives, not only compensation. Skills programs should be linked to actual investment pipelines in grid development, renewable energy, construction retrofits, environmental services, and climate-resilient infrastructure.

7.8 Use a sequenced 2026–2030 implementation roadmap

Sequencing is essential because institutional capacity is

finite. During 2026–2027, the priority should be to establish data standards, exporter support, taxonomy implementation guidance, a delivery dashboard, and a grid-investment bottleneck process. During 2028–2029, the emphasis should shift toward scaled carbon-market operation, expanded verification capacity, transition-finance instruments, industrial-park programs, and adaptation-linked public investment. By 2030, the objective should be an integrated framework in which national targets, sector rules, finance, and trade-related evidence reinforce one another.

This sequencing does not imply that sectors should wait. It means that foundational capabilities should be built early so that later instruments operate effectively. Carbon pricing without MRV is weak. Finance without a project pipeline is underused. Export support without product data is generic. Renewable investment without grid reform is incomplete. The roadmap is designed to reduce these mismatches.

7.9 Apply evaluation discipline to green policy instruments

The eighth priority is to strengthen evaluation. Green policy is vulnerable to two opposite errors. One is underinvestment caused by excessive caution and fragmented approval procedures. The other is over-classification: projects receive a green label even when their environmental additionality is limited, their safeguards are weak, or their performance cannot be verified. Both errors undermine credibility. Vietnam should therefore treat policy evaluation as part of institutional design rather than as an ex-post administrative exercise.

Each major support instrument should identify its theory of change. A credit guarantee should specify which risk it is intended to reduce and why commercial lenders cannot manage that risk without temporary support. A fiscal incentive should state the technology or market barrier it addresses. A public-investment project should identify the climate hazard, the resilience benefit, and the indicator used to evaluate that benefit. An industrial-upgrading program should measure energy savings, emissions reductions, productivity effects, and the extent to which participating firms retain or gain market access. Clear logic improves both implementation and accountability.

Evaluation should also distinguish outputs from outcomes. The number of workshops, registered projects, participating firms, and signed memoranda can show administrative activity, but they do not demonstrate transition progress. More informative indicators include verified emissions reductions, power-sector carbon intensity, grid-connection delays, actual curtailment, taxonomy-aligned lending, product-level carbon-data coverage, reductions in energy expenditure, private capital mobilized per unit of public support, and employment outcomes in affected regions. These measures are harder to collect, which is precisely why the MRV and digital-data agenda is foundational.

A disciplined approach does not mean that every policy must pass a narrow short-term cost-benefit test. Green transformation involves uncertainty, learning, and long-lived infrastructure. Some projects generate option value or system benefits that are difficult to monetize fully. Nevertheless, uncertainty is not a reason to avoid evaluation. It is a reason to use staged implementation, pilots with explicit learning objectives, transparent assumptions, and periodic review. Support measures should be expanded when evidence is positive, redesigned when bottlenecks are identified, and discontinued when benefits cannot be demonstrated.

Finally, evaluation can improve the quality of international partnerships. Climate finance is more likely to be mobilized at scale when the project pipeline is transparent and results are credible. A consistent framework for identifying, appraising, and monitoring projects would help Vietnam move from a project-by-project approach toward a portfolio approach. That shift is important because the additional investment requirement is large. The purpose of public resources and concessional finance is not to fund the whole transition. It is to unlock private investment, reduce well-defined risks, and strengthen the institutions that make subsequent investment easier.

Table 5: Proposed 2026–2030 Implementation Roadmap

Period	Priority	Core action	Illustrative indicators
2026–2027	Delivery mechanism and public dashboard	Create a cross-sector process for resolving transition bottlenecks; define a compact results dashboard.	Named lead institutions; quarterly bottleneck reviews; annual public dashboard.
2026–2027	MRV and carbon-data foundation	Prioritize large emitters and CBAM-exposed sectors; publish sector methodologies; expand verifier capacity.	Share of priority facilities reporting verified data; number of qualified verifiers; data reuse across regulatory and financial systems.
2026–2027	Taxonomy operationalization	Issue implementation guidance for lenders, issuers, public authorities, and project developers.	Taxonomy-aligned credit disclosure; consistent verification pathways; annual green-finance dashboard.
2026–2028	Grid and clean-power access	Accelerate grid investment; improve flexibility; strengthen direct purchasing and settlement arrangements.	Transmission milestones; curtailment indicators; storage deployment; clean-power procurement by industrial users.
2026–2029	Exporter and industrial-park upgrading	Deploy product-footprint tools, shared services, technical audits, and targeted finance.	Number of supported firms; share of exposed exporters with product-level data; verified energy savings and emissions reductions.
2027–2030	Adaptation-linked public investment	Integrate climate-risk screening and quality criteria into infrastructure appraisal and provincial budgeting.	Share of long-life public investment screened for climate risk; resilience indicators in project monitoring.
2027–2030	Just-transition implementation	Build regional diagnostics, reskilling programs, employment services, and transparent household-support measures.	Worker transition outcomes; regional investment; training-to-employment conversion; household-impact monitoring.

Source: Author's proposal. Indicators should be refined by responsible agencies and published with definitions, baselines, and reporting frequency.

8. Discussion

The Vietnamese case offers a broader lesson for middle-income economies. Green transition is often presented as a choice between growth and environmental protection. The evidence suggests a different framing. The real issue is the quality of investment and the institutions that shape it. Vietnam's economy grew rapidly during 2015–2024, renewable electricity expanded substantially, and green finance developed. Yet coal generation and territorial CO_2 emissions also increased. The coexistence of progress and carbon growth is not paradoxical. It reflects the difficulty of changing a production system while the system itself is expanding.

This interpretation helps explain why institutional completion is a more useful policy objective than the multiplication of individual initiatives. Vietnam already has strategies, action plans, legal provisions, and sectoral instruments. The next gains will come from connecting them. A firm-level emissions report should be usable for regulatory compliance, carbon-market participation, bank credit assessment, and supply-chain reporting. A grid investment plan should be evaluated not only as infrastructure spending but also as an enabler of industrial decarbonization. A provincial adaptation project should be assessed not only by disbursement but by resilience outcomes. A green classification system should influence capital allocation rather than remain a reference document.

International integration intensifies this need because external requirements are becoming more data-driven. CBAM is important not merely because it affects a defined list of goods. It signals the direction of travel: carbon performance is moving into commercial documentation. Firms that can measure and improve their performance will have more options. Firms that cannot will face greater dependence on default assumptions, external consultants, or higher-cost compliance pathways. The same is true at the national level. Countries with reliable green data, credible verifiers, and coherent investment rules will be better placed to attract climate finance and higher-quality foreign investment.

The analysis also suggests caution. Policy should avoid mechanically copying external models. Vietnam's electricity system, industrial structure, fiscal capacity, banking system, and provincial governance arrangements are specific. The objective is not formal convergence with every international practice. It is functional compatibility: rules and data should be credible enough to support domestic goals and international transactions while remaining proportionate to local capacity.

Finally, the transition must retain a development perspective. Climate policy is not only a matter of reducing tonnes of emissions. It is also about productivity, resilience, employment, technological capability, and household welfare. Low-emission rice cultivation that raises farmer profits, grid investment that improves reliability, industrial retrofits that reduce energy costs, and better flood protection for cities are not secondary co-benefits. They are the economic substance of green development.

9. Conclusion

Vietnam has moved decisively from general green-growth aspirations toward a more operational institutional framework. The 2021–2030 Green Growth Strategy, the climate-change strategy to 2050, the updated NDC, the carbon-market development scheme, the green taxonomy, greenhouse-gas regulatory amendments, and the adjusted power plan provide important foundations. The remaining challenge is not a lack of policy intent. It is the need to make the system work as a system.

The 2015–2024 evidence is clear. Vietnam maintained strong growth and achieved a remarkable expansion of solar and wind generation. At the same time, electricity demand increased sharply, coal-fired generation rose, and territorial CO_2 emissions continued to grow. These trends show why the next stage of reform must focus on implementation infrastructure: interoperable MRV, taxonomy-aligned finance, grid and market reform, exporter upgrading, adaptation-linked public investment, and measurable just-transition arrangements.

International economic integration raises the stakes. Green institutions are becoming part of competitiveness. They determine whether Vietnam can attract transition finance, sustain access to demanding markets, reduce climate losses, and upgrade its productive capacity. Institutional completion should therefore be treated as an economic reform agenda at the center of development strategy, not as a separate environmental workstream.

10. References

1. Andrew RM, Peters GP. The Global Carbon Project's fossil CO_2 emissions dataset. Global Carbon Project. Data processed by Our World in Data, 2025.
2. Department of Climate Change. Nationally determined contribution targets: Viet Nam's updated NDC 2022. Ministry of Natural Resources and Environment, 2022.
3. Ember. Yearly electricity data. Ember Energy Research, 2026.
4. European Commission. Political declaration on establishing the Just Energy Transition Partnership with Viet Nam, December 13, 2022.
5. European Commission. Viet Nam Just Energy Transition Partnership: Resource Mobilisation Plan, 2023.
6. European Commission. Carbon Border Adjustment Mechanism: Definitive regime from 2026 onwards, 2026a.
7. European Commission. CBAM successfully entered into force on 1 January 2026, January 14, 2026b.
8. Government News. Breakthroughs in developing green credit and sustainable finance [Vietnamese]. Government of Vietnam Online Newspaper, May 21, 2025.
9. Government of Vietnam. Law on Environmental Protection No. 72/2020/QH14, 2020.
10. Government of Vietnam. Decision No. 1658/QD-TTg approving the National Green Growth Strategy for 2021-2030, with a vision to 2050, 2021.
11. Government of Vietnam. Decree No. 06/2022/ND-CP on greenhouse-gas emission mitigation and protection of the ozone layer, 2022a.
12. Government of Vietnam. Decision No. 882/QD-TTg approving the National Action Plan on Green Growth for 2021-2030, 2022b.
13. Government of Vietnam. Decision No. 896/QD-TTg approving the National Climate Change Strategy to 2050, 2022c.
14. Government of Vietnam. Decision No. 232/QD-TTg approving the scheme for establishing and developing a

carbon market in Viet Nam, 2025a.
15. Government of Vietnam. Decision No. 768/QD-TTg approving the adjustment to the national power development plan for 2021-2030, with a vision to 2050, 2025b.
16. Government of Vietnam. Decree No. 119/2025/ND-CP amending and supplementing provisions of Decree No. 06/2022/ND-CP, 2025c.
17. Government of Vietnam. Decision No. 21/2025/QD-TTg issuing environmental criteria and confirmation procedures for investment projects under the green classification list, 2025d.
18. Government of Vietnam. Decree No. 83/2026/ND-CP amending and supplementing provisions of Decree No. 06/2022/ND-CP as amended by Decree No. 119/2025/ND-CP, 2026.
19. Meckling J, Allan BB. The evolution of ideas in global climate policy. Nature Climate Change. 2020; 10:434-438.
20. North DC. Institutions, institutional change and economic performance. Cambridge University Press, 1990.
21. OECD. Towards green growth? Tracking progress. OECD Publishing, 2015.
22. Ostrom E. Polycentric systems for coping with collective action and global environmental change. Global Environmental Change. 2010; 20(4):550-557.
23. Our World in Data. Energy data explorer and energy data repository, 2026a.
24. Our World in Data. CO_2 emissions per capita and territorial fossil-fuel and industrial CO_2 emissions datasets, 2026b.
25. Porter ME, Van Der Linde C. Toward a new conception of the environment-competitiveness relationship. Journal of Economic Perspectives. 1995; 9(4):97-118.
26. Rodrik D. Green industrial policy. Oxford Review of Economic Policy. 2014; 30(3):469-491.
27. United Nations Framework Convention on Climate Change. Viet Nam nationally determined contribution (Updated in 2022), 2022.
28. World Bank. Vietnam country climate and development report. World Bank Group, 2022.
29. World Bank. Viet Nam country overview and development update. World Bank Group, 2026a.
30. World Bank. Viet Nam selected indicators. World Bank Group, 2026b.
31. World Bank. World Development Indicators: GDP growth (annual %) and trade (% of GDP), Viet Nam. World Bank Group, 2026c.