

# China's Legal Framework for Sustainable Innovation and Green Growth, and Lessons for Vietnam

## Abstract

In the global context of shifting towards sustainable development, establishing an effective legal framework has become an imperative for all nations. This paper focuses on analyzing China's legal system for promoting sustainable innovation and green growth, a model that has garnered significant attention. Employing comparative law, policy analysis, and synthesis methodologies, the study elucidates China's core legal mechanisms, including green finance, intellectual property for clean technologies, and environmental standards. The paper identifies the successes and practical challenges of this framework, drawing profound lessons on developing integrated policies, investment incentives, and enforcement mechanisms. Finally, the study proposes specific recommendations to offer valuable insights for Vietnam as it continues to refine its own legal framework.

**KEYWORDS:** green growth, sustainable innovation, legal framework, China, comparative law

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## 1 | Introduction

Entering the 21<sup>st</sup> century, humanity is confronted with numerous severe challenges, among which climate change, environmental degradation, and the depletion of natural resources have emerged as existential threats to the sustainable development of nations. Reports from the United Nations Environment Programme (UNEP) have repeatedly warned of these “planetary crises,” emphasizing that the traditional growth model based on resource exploitation and carbon-intensive emissions is no longer viable<sup>[1]</sup>. In this context, the United Nations’ 2030 Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Change have become global frameworks, calling for a profound transformation of development models.<sup>[2]</sup>

The concept of “green growth” has emerged as a central approach to realizing this transformation. According to the OECD, green growth means “fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.”<sup>[3]</sup> It is not a trade-off between growth and the environment but rather a strategy that creates co-benefits, whereby environmental policies serve as drivers of innovation, the creation of new markets, and job opportunities.

After more than three decades of rapid growth, China has become the “world’s factory,” but this has come at the cost of serious environmental problems. Since 2012, the country has undertaken a historic strategic shift toward building an “ecological civilization” and a comprehensive legal framework to promote sustainable innovation and green growth. Given its geopolitical, institutional, and developmental characteristics, China’s experience provides particularly valuable lessons for Vietnam – a country facing similar environmental pressures and committed to achieving net-zero emissions by 2050.<sup>[4]</sup> This commitment underscores the urgent

<sup>1</sup> Criticism of Global Climate Management in the Last Half Century. <https://sgkplanet.com/en/criticism-of-global-climate-management-in-the-last-half-century/>. [accessed: 21.6.2025].

<sup>2</sup> 17 Sustainable Development Goals (17 SDGS) of the United Nations. <https://www.pace.edu.vn/tin-kho-tri-thuc/muc-tieu-phat-trien-ben-vung>. [accessed: 21.6.2025].

<sup>3</sup> Definition of Green Growth of Some Countries and International Organizations. <https://moit.gov.vn/phat-trien-ben-vung/dinh-nghia-ve-tang-truong-xanh-cua-mot-so-quoc-gia-to-chuc-quoc-te.html>. [accessed: 21.6.2025].

<sup>4</sup> Understanding China’s Belt and Road Initiative. <https://www.lowyinstitute.org/publications/understanding-china-s-belt-road-initiative>. [accessed: 21.6.2025].

need to improve institutions, especially the legal framework, to guide and support the green transition process.

Although there have been many domestic and international studies on green growth, most focus either on general environmental policy analysis or on specific instruments such as green finance or carbon markets. The research gap lies in the lack of in-depth comparative studies between China's legal experience and Vietnam's practice, from which systematic lessons can be drawn and directly applied to the current demand for perfecting Vietnam's legal framework.

To fill these gaps, this paper employs the comparative law method, combined with policy analysis and literature synthesis. On this basis, the study clarifies the core legal architecture of China regarding sustainable innovation and green growth, while juxtaposing it with Vietnam's legal framework. This approach makes it possible not only to identify differences in orientation and system maturity but also to derive practical lessons for application.

The structure of the paper is designed as follows:

- Section 1: Theoretical foundation and high-level strategies in China's green legal framework;
- Section 2: Specialized laws, green finance, and green technology policies;
- Section 3: Assessment of Vietnam's legal framework for sustainable innovation and green growth;
- Section 4: Comparative analysis of the two legal systems, highlighting fundamental differences and underlying causes;
- Section 5: Lessons learned and recommendations for Vietnam;
- Section 6: Conclusion.

## 2 | China's Legal Framework for Sustainable Innovation and Green Growth

China's legal framework for green growth is a diverse architecture, institutionalized into law and operated through economic, financial, and technological instruments.

## 2.1. Theoretical Foundation and High-Level Strategic Orientation

From “Ecological Civilization” to “Dual Carbon” Goals: The ideological foundation for China’s entire green legal framework is the concept of “Ecological Civilization.” Unlike the Western concepts of “sustainable development” or “green economy,” “Ecological Civilization” carries a deeper philosophical and political connotation in the Chinese context, considered a higher stage of human social development where humans and nature coexist in harmony.<sup>[5]</sup> This concept was first incorporated into the Party’s Constitution and later the national Constitution, reflecting the highest political will. It positions environmental protection not as a cost of development, but as an inseparable part of high-quality development and the foundation for China’s rejuvenation.

To realize this vision, China has set specific and binding targets in its Five-Year Plans. The 13th (2016-2020) and 14th (2021-2025) Five-Year Plans both set hard targets to reduce CO<sub>2</sub> emission intensity by 18% and energy consumption intensity per unit of GDP by 15%, while increasing the share of non-fossil energy to 20% by 2025.<sup>[6]</sup> The pinnacle of this commitment was the 2020 announcement of the “dual carbon” goals (peaking carbon emissions before 2030 and achieving carbon neutrality before 2060), setting China on a new development trajectory and reshaping the country’s entire industrial, energy, and consumption structure.

“Latecomer Advantage” Theory<sup>[7]</sup>: Economically, China’s green policy also reflects a strategy of leveraging the “latecomer advantage.” Instead of competing directly in traditional industries, China focuses resources on developing in fields of the new industrial revolution, such as new energy vehicles (NEVs), renewable energy, and artificial intelligence. Strict environmental regulations are not only aimed at tackling pollution but also serve as a tool to eliminate outdated production capacity, creating space for green, high-tech industries to develop.

<sup>5</sup> Yao Wang, Chi-hui Guo, Xi-jie Chen, Li-qiong Jia, Xiao-na Guo, Rui-shan Chen, *Carbon Peak and Carbon Neutrality in China: Goals, Implementation Path and Prospects*. <https://www.sciencedirect.com/science/article/pii/S2096519222000131>. [accessed: 21.6.2025].

<sup>6</sup> M. Linster, C. Yang, “China’s Progress Towards Green Growth: an international perspective” *OECD Green Growth Papers*, No. 5 (2018): 29.

<sup>7</sup> *Effectiveness of Investment Attraction in China’s Economic Transformation*. <https://www.vietnamplus.vn/hieu-qua-thu-hut-dau-tu-trong-chuyen-doi-kinh-te-trung-quoc-post843294.vn>. [accessed: 21.6.2025].

## 2.2. A Tightly Regulated System of Specialized Laws

To create a highly manageable legal environment, China has carried out a “revolution” in its environmental laws, specifically:

First, Environmental Protection Law (amended in 2014, effective 2015): This law fundamentally changed the approach to environmental management, key points include<sup>[8]</sup>:

- Daily cumulative fines mechanism: Instead of a one-time fine, continuously violating enterprises are fined daily until they rectify the issue, creating significant financial pressure.
- Expansion of subjects for environmental litigation: Qualified non-governmental organizations (NGOs) are allowed to sue polluting companies on behalf of the public, creating an effective channel for social supervision.
- Accountability of leaders: Government officials can be demoted or dismissed if they fail to fulfill their environmental protection duties in their jurisdiction.
- Enhanced information transparency: Heavily polluting enterprises are required to disclose real-time emissions data. This law spurred a wave of green technology innovation among businesses, as the cost of compliance (investing in new technology) became cheaper than the cost of non-compliance (being fined).<sup>[9]</sup>

Second, other specialized laws:

- Air Pollution Prevention and Control Law (2015)<sup>[10]</sup>: Focuses on controlling total emissions for key regions and establishing inter-regional coordination mechanisms.

<sup>8</sup> Huaxing Wang, Tianzi Li, Junfan Zhu, *China's New Environmental Protection Law: Implications for Mineral Resource Policy, Environmental Precaution and Green Finance*. <https://www.sciencedirect.com/science/article/abs/pii/S0301420723007560>. [accessed: 21.6.2025].

<sup>9</sup> Wen Chen, Ying Wu, “China's New Environmental Protection Law and Green Innovation: Evidence from Prefecture-Level Cities” *Hindawi Complexity*, No. 1 (2021): 3.

<sup>10</sup> <http://en.cciced.net/NEWSCENTER/LatestEnvironmentalandDevelopment-News/201509/P020160908584777560703.pdf>. [accessed: 21.6.2025].

- Water Pollution Prevention and Control Law (2017)<sup>[11]</sup>: Government officials from provincial to township levels are held personally responsible for the water quality of a specific river or lake section.
- Environmental Protection Tax Law (2018): Replaced discharge fees with a tax, a more powerful economic tool, where tax rates can be adjusted higher by local authorities to suit their specific situations.<sup>[12]</sup>

### 2.3. Green Finance Pillar: Using Capital to Reshape the Economy

Recognizing the enormous capital demand for the green transition (estimated at trillions of Yuan annually) that the state budget cannot meet, China has identified green finance as a strategic tool.

First, foundational Documents and Standards: The “Guidelines for Establishing the Green Financial System” (2016) was the foundational document for this market. A key differentiator for China was the rapid development of standards. The “Green Bond Endorsed Project Catalogue” is issued and regularly updated, clearly defining which projects are considered “green,” creating a common language for the market and minimizing the risk of “greenwashing.”<sup>[13]</sup>

Second, key Green Finance Instruments:

- Green Credit: This constitutes the largest share of green finance. Commercial banks, especially large, state-owned ones, have played a pioneering role in integrating Environmental, Social, and Governance (ESG) factors into their credit assessment processes. China’s outstanding green credit has grown exponentially, becoming the most important source of capital for green industries.
- Green Bonds: China has quickly become one of the world’s largest issuers of green bonds. Issuances come not only from corporations but also from policy banks and local governments.

<sup>11</sup> [https://english.mee.gov.cn/Resources/laws/environmental\\_laws/202012/t20201211\\_812662.shtml](https://english.mee.gov.cn/Resources/laws/environmental_laws/202012/t20201211_812662.shtml). [accessed: 21.6.2025].

<sup>12</sup> Juqiu Deng, Jiayu Yang, Zhenyu Liu, Qingyang Tan, *Environmental Protection Tax and Green Innovation of Heavily Polluting Enterprises: A Quasi-Natural Experiment Based on the Implementation of China’s Environmental Protection Tax Law*. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10270568/>. [accessed: 21.6.2025].

<sup>13</sup> Chengwei Zhang, “The Significance of Improving China’s Green Finance Legal Framework from the Perspective of the «Dual Carbon» Goals” *Journal of Applied Economics and Policy Studies*, Vol. XIV (2024): 1.

- Emissions Trading Scheme (ETS): After years of piloting in 7 provinces and cities, China officially launched its national carbon market in 2021, starting with the power sector (the largest source of emissions). It is the world's largest carbon market in terms of emissions covered, using an intensity-based mechanism (tons of CO<sub>2</sub>/MWh), rather than an absolute cap, which is suitable for a still-growing economy.

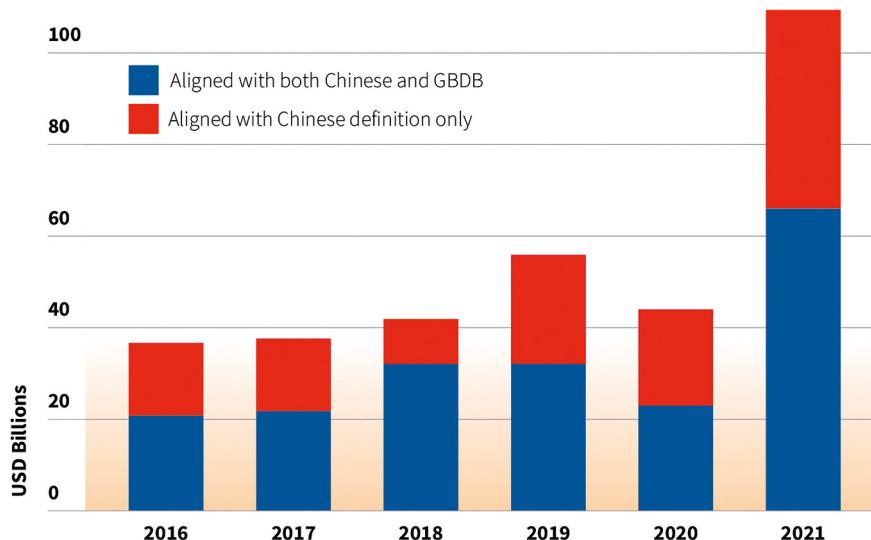


Chart 1: Scale of China's Green Bond Issuance (billion USD)<sup>[14]</sup>.

## 2.4. Policies to Promote Green Technology Innovation

China views green technology autonomy as a matter of national security, and an opportunity to lead the future global economy. Strategy and Planning: "Made in China 2025" identifies green technology sectors as top priorities, including energy-saving equipment and new energy vehicles, power equipment, and new materials. National R&D plans allocate large budgets to research projects on carbon capture, utilization, and storage (CCUS), energy storage batteries, and hydrogen energy. This investment has yielded impressive results. China now dominates the global supply chains for solar energy and electric vehicle batteries. The number of environment-related

<sup>14</sup> <https://www.climatebonds.net/files/documents/publications/China-Green-Bond-Market-Report-2021.pdf>. [accessed: 21.6.2025].

patents in the country has exploded, surpassing that of developed nations.<sup>[15]</sup> The rapid growth of tech companies like CATL (batteries), BYD (electric vehicles), and Longi (solar energy) testify to the success of this strategy.

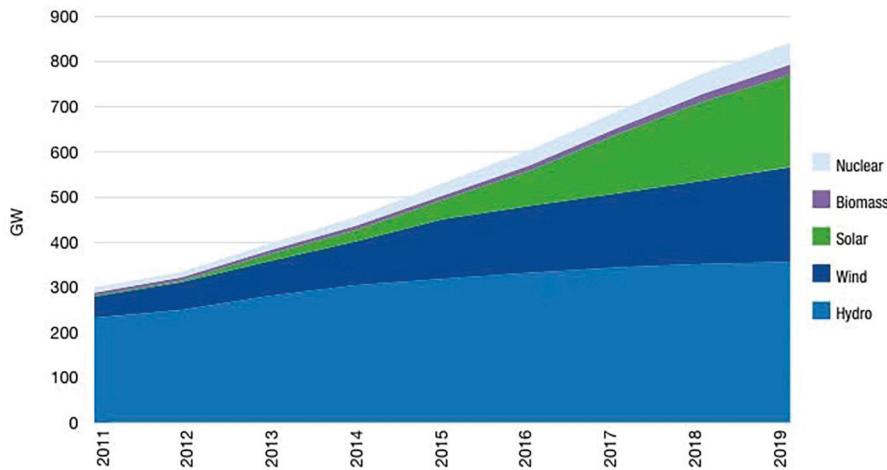


Chart 2: Installed capacity of renewable energy<sup>[16]</sup>

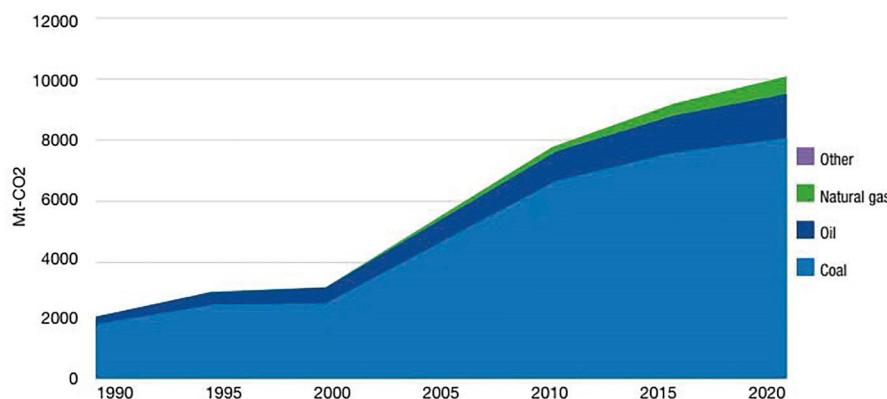


Chart 3: CO<sub>2</sub> emission in China and carbon intensity, 1990-2020<sup>[17]</sup>

<sup>15</sup> Feng Hao, Yuan Zang, Bokai Fan, Yuan Zhang, *Environmental Regulation Promotes Green Development in China: from the Perspective of Technological Innovation*, <https://www.frontiersin.org/journals/energy-research/articles/10.3389/fenrg.2023.1209650/full>. [accessed: 21.6.2025].

<sup>16</sup> Linster, Yang, "China's Progress Towards Green Growth.

<sup>17</sup> Ibidem.

## 3 | Vietnam's Legal Framework for Sustainable Innovation and Green Growth

### 3.1. Strategies and High-Level Policy Orientations

Over the past decade, Vietnam has promulgated several important strategies and orientations to promote green growth and sustainable development. The central document is the National Green Growth Strategy for the period 2021–2030, with a vision to 2050, approved by the Prime Minister under Decision No. 1658/QĐ-TTg dated October 1, 2021.<sup>[18]</sup> This strategy sets out four key objectives: (i) reducing greenhouse gas emission intensity per unit of GDP; (ii) greening economic sectors; (iii) greening lifestyles and promoting sustainable consumption; and (iv) ensuring a transition that is just, inclusive, and resilient.

Particularly at COP26 in 2021, the Prime Minister pledged that Vietnam would achieve net-zero emissions by 2050. This historic commitment has provided a powerful impetus for reshaping the country's energy, industrial, and environmental policies. Based on this, the Government issued the National Action Plan on Green Growth for the period 2021–2030, along with various sectoral action plans, such as the plan to reduce methane emissions by 2030, and the roadmap for implementing COP26 commitments.<sup>[19]</sup>

**Achievements:** These strategies have provided a clear orientation framework, raised social awareness, and attracted attention from the international community and investors. Vietnam is recognized as one of the leading countries in the region in linking development goals with global climate responsibility.<sup>[20]</sup>

**Limitations:** However, policies remain fragmented; some goals are contradictory, such as maintaining energy security based on coal, while strongly committing to greenhouse gas reductions. Moreover, coordination

<sup>18</sup> Dao Trong Duc, "Strategic Thinking and Breakthrough Vision in Promoting Green Transformation in Vietnam" *Environment Magazine*, No. 1 (2024): 30.

<sup>19</sup> Nguyen Viet Binh, "Financial Policy for Green Growth, Towards Vietnam's Commitment at COP26 to Reduce Net Emissions to Zero" *Journal of Financial and Accounting Research*, No. 263 (2024): 66.

<sup>20</sup> MPI Vietnam & BCG, *Green Growth: Breakthrough Opportunity and Direction for Vietnam*. [accessed: 10.2023].

mechanisms among ministries, sectors, and localities have not been effective, leading to overlaps or gaps in implementation.<sup>[21]</sup>

### 3.2. System of Specialized Laws

The Law on Environmental Protection 2020 marks a significant milestone, introducing fundamental innovations:

- Integrated environmental permits, consolidating multiple previous permits to reduce administrative procedures and strengthen cross-checking;
- Domestic carbon market, institutionalized with a roadmap for operation by 2028;
- Extended Producer Responsibility (EPR), requiring enterprises to recycle and collect discarded products and packaging;
- Classification of investment projects by environmental risk level, serving as a basis for applying appropriate Environmental Impact Assessment (EIA) procedures.

In addition, other laws, such as the Land Law, Investment Law, Construction Law, and Electricity Law, are directly related to green growth. However, the lack of coherence between these laws and the Law on Environmental Protection 2020 has led to conflicts. For example, land-use provisions for renewable energy projects under the Land Law are not aligned with the requirements of clean energy development, causing bottlenecks for many projects.

Another major limitation is the slow issuance of sub-law documents (decrees, circulars). To date, official criteria for “green projects” or a national green taxonomy have not been published, creating difficulties for financial institutions in appraising green credit.

Achievements: Vietnam has begun to establish a modern legal framework aligned with international standards, especially with new mechanisms such as the carbon market and EPR.<sup>[22]</sup>

<sup>21</sup> Nguyen An Dinh, Gang Chen, “Green Growth in Vietnam: Policies and Challenges” *E3S Web Conferences*, 164 (2020): 11010.

<sup>22</sup> Vo Tuan Nhan, “Developing Green, Low-Waste, Low-Carbon and Circular Economic Models to Achieve Sustainable Development Goals” *Environment Magazine*, No. 11 (2023): 12.

Limitations: The legal system remains fragmented, with inconsistent provisions across sectors; delays in sub-law documents have created legal gaps, leading to difficulties in implementation for both enterprises and regulatory authorities.

### 3.3. Supportive Instruments and Practical Implementation

#### 3.3.1. Green Finance

Vietnam has started to lay the foundation for a green finance market, through policies on green credit, green bonds, and sustainable investment funds. Several major commercial banks have provided preferential loans for renewable energy projects, while the Ministry of Finance has piloted the issuance of green bonds. In addition, green FDI inflows – particularly in offshore wind power and renewable energy equipment manufacturing – have increased.<sup>[23]</sup>

Achievements: Vietnam has attracted billions of USD in green FDI into clean energy, while initially establishing a legal basis for green credit and green bonds.

Limitations: The green finance market remains small-scale and lacks transparency, particularly in the absence of a national green taxonomy as a classification standard, which increases the risk of “greenwashing.”

#### 3.3.2. Green Technology and Innovation

The government has issued policies to encourage R&D and the application of green technologies and the circular economy. From 2018 to 2021, thanks to the feed-in tariff (FIT) mechanism, Vietnam witnessed a boom in solar and wind power, with installed capacity leading Southeast Asia.<sup>[24]</sup>

Achievements: Rapid growth in renewable energy, particularly wind and solar power; greater awareness of green innovation among society and businesses.

<sup>23</sup> Le Ngoc Hai Long, “Attracting green FDI in Vietnam” *Journal of Financial and Accounting Research*, No. 259 (2024): 16.

<sup>24</sup> Trang Nguyen Thi Minh, Long Nguyen Hoang, Tam Le Thi Thanh, “Mechanism of Buying and Selling Solar and Wind Power in the Competitive Electricity Market in Vietnam” *Ho Chi Minh City Open University Journal of Science – Social Sciences*, No. 1 (2024): 50.

**Limitations:** Most technologies still depend on imports; domestic R&D capacity is weak; small and medium-sized enterprises face challenges in accessing advanced technologies and capital.

### 3.3.3. Enforcement and Monitoring Mechanisms

Vietnam has strengthened institutional arrangements and inspection capacities in the environmental sector. Some localities have adopted automatic monitoring systems and publicly disclosed environmental data.

**Achievements:** Improved transparency of environmental information and increased community oversight.

**Limitations:** Enforcement capacity remains limited; penalties are not sufficiently deterrent; monitoring systems are not yet comprehensive or standardized; inter-sectoral coordination in supervision remains overlapping.

## 3.4. General Assessment

From the above analysis, it is clear that Vietnam has made significant progress in building its legal and policy framework for sustainable innovation and green growth. The National Green Growth Strategy, the Net Zero 2050 commitment, and the Law on Environmental Protection 2020 have laid down a modern institutional foundation and affirmed strong political will. Instruments such as green credit, green bonds, and EPR have been initially implemented, contributing to investment attraction and raising public awareness.

However, there remain fundamental limitations: lack of coherence between the Law on Environmental Protection and other sectoral laws; delays in sub-law documents leading to legal gaps; a small-scale and underdeveloped green finance market without a national taxonomy; weak enforcement and monitoring capacity; and ineffective inter-sectoral coordination, resulting in contradictions between economic development and environmental objectives.

Overall, Vietnam has established an important legal and policy foundation for the green transition, but further improvements are needed toward greater coherence, effectiveness, and alignment with international practices.

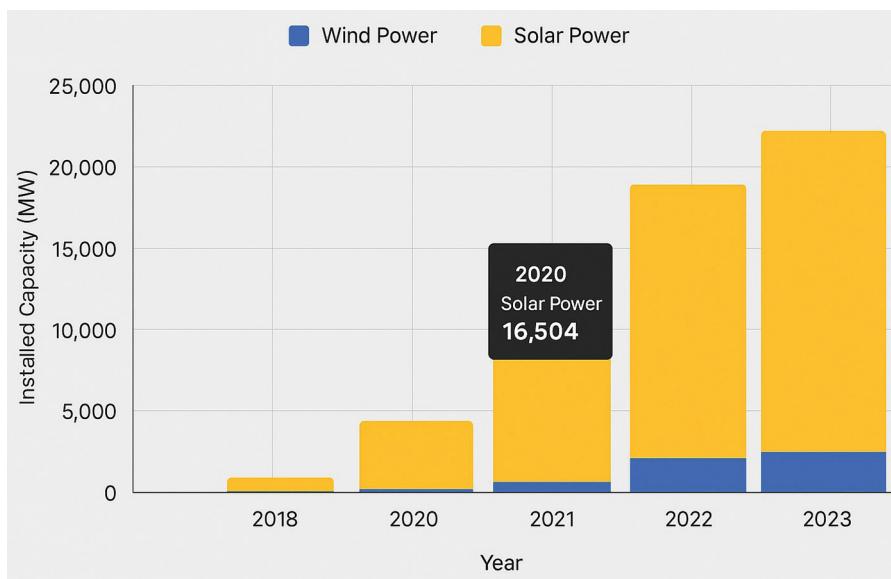


Chart 4: Growth of Solar and Wind Power Capacity in Vietnam (MW)<sup>[25]</sup>

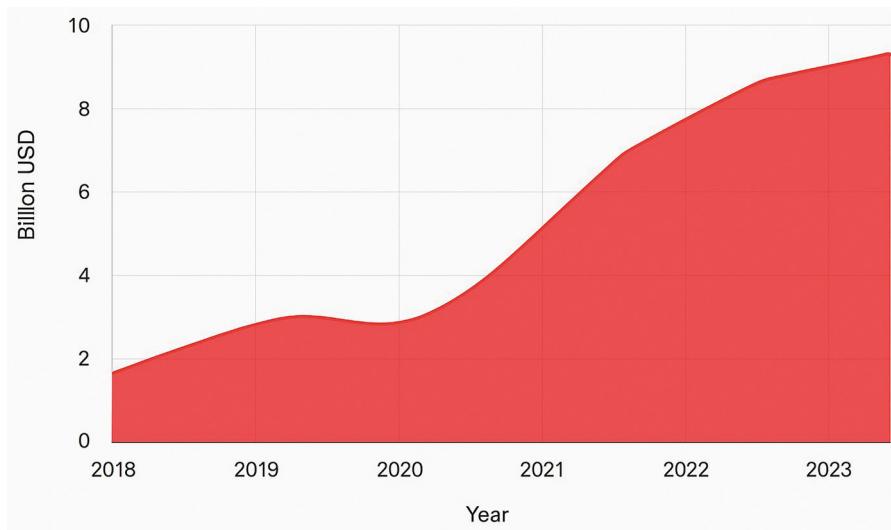


Chart 5: Estimated FDI in Green Sectors in Vietnam (billion USD)<sup>[26]</sup>

<sup>25</sup> Some General Figures on National Power Sources in 2023. <https://www.evn.com.vn/d6/news/Mot-so-so-lieu-tong-quan-ve-nguon-dien-toan-quoc-nam-2023-66-142-124707.aspx>. [accessed: 23.6.2025].

<sup>26</sup> Le Quynh Anh, *Solutions to Effectively Attract Green FDI Capital into Vietnam Today*. <https://www.quanlynhauoc.vn/2025/05/20/giai-phap-thu-hut-hieu-qua-von-dau-tu-truc-tiep-xanh-vao-viet-nam-hien-nay/>. [accessed: 23.6.2025].

## 4 | Comparison of the Legal Frameworks of China and Vietnam and Recommendations for Vietnam

### 4.1. Strategies and High-Level Policy Orientations

At the strategic level, China has elevated the concept of “ecological civilization” to a constitutional principle, institutionalized consistently throughout its Five-Year Plans and national development documents. As a result, China’s orientation toward green growth carries strong legal and political binding force, ensuring consistency in implementation. Vietnam, meanwhile, has promulgated the National Green Growth Strategy for 2021-2030 with a vision to 2050 and pledged to achieve net-zero emissions by 2050. However, these documents largely serve as policy orientations and lack coercive mechanisms to enforce accountability among ministries and local governments. From this difference, it is evident that Vietnam should move toward codifying the principle of green growth and the Net Zero 2050 commitment into higher-level legal instruments, while at the same time establishing an inter-sectoral monitoring mechanism to overcome the situation where policies are abundant but implementation remains limited.

### 4.2. Specialized Legal Frameworks

A key difference is that China has developed a relatively comprehensive system of specialized legislation, including the Environmental Protection Law, the Renewable Energy Law, the Circular Economy Law, and the Energy Conservation Law. Together, these form a coherent and interlinked legal network. Vietnam, in contrast, only has the Law on Environmental Protection 2020, alongside a set of fragmented provisions scattered across related laws such as the Land Law, the Investment Law, the Electricity Law, and the Construction Law. This lack of consistency has not only created conflicts in implementation but also obstructed many projects, most notably renewable energy projects hindered by land use regulations. From this comparison, it can be recommended that Vietnam urgently enact additional specialized laws such as a Renewable Energy Law and a Circular Economy Law, while also amending and supplementing existing laws to eliminate conflicts with the Environmental Protection Law. Furthermore, the early issuance of a national Green Taxonomy is essential to provide a unified legal basis for the development of the green finance market.

## 4.3. Supporting Instruments

### 4.3.1. Green Finance

China developed a green taxonomy at an early stage, thereby fostering the world's largest green bond market, strongly supported by policy banks. This mechanism has generated substantial financial momentum for green growth. Vietnam, though having taken initial steps with green credit, green bonds, and the attraction of green FDI, still has a market that is small, fragmented, and lacking transparency, particularly in the absence of a national Green Taxonomy as a classification standard. To address this, Vietnam needs to promptly issue a national taxonomy, combine it with tax and credit incentives, and establish an independent auditing mechanism to prevent "greenwashing."

### 4.3.2. Green Technology and Innovation

In the field of technology, China has adopted decisive policies to encourage research, development, and localization of green technologies, while forming industrial clusters and green innovation hubs. This approach has gradually reduced dependence on imported technologies and strengthened domestic competitiveness. Vietnam, by contrast, remains largely reliant on imported technologies, with weak domestic R&D capacity, and small- and medium-sized enterprises facing difficulties in accessing capital and advanced technology. The lesson from China suggests that Vietnam should establish a Green Technology Innovation Fund, adopt tax incentives for enterprises investing in R&D, and develop green industrial and technology clusters in key localities to promote endogenous innovation.

### 4.3.3. Enforcement and Monitoring Mechanisms

China stands out for its strict environmental monitoring system, application of digital technologies, and stringent sanctions, thereby significantly enhancing deterrence and management effectiveness. Vietnam, although it has strengthened inspection and introduced automatic monitoring systems in some localities, generally maintains light penalties, limited enforcement capacity, and overlapping inter-agency coordination. This indicates that Vietnam should increase the level of administrative sanctions, supplement criminal liability for serious pollution acts, expand automatic monitoring

systems nationwide, and strengthen capacity building for enforcement officials to improve regulatory effectiveness.

The analysis shows that China has established a comprehensive, coherent, and strongly enforceable legal framework, which provides powerful momentum for green transition. Vietnam, while having made important strides, is still at a foundational stage, lacking systemic consistency and specialized legal instruments. The key lesson is that Vietnam must undertake reforms simultaneously at multiple levels: elevating strategies and codifying green development principles, enacting additional specialized laws, promptly establishing a national taxonomy, enhancing support for green technologies, and strengthening enforcement capacity. Only through the combined implementation of these measures can Vietnam's green transition proceed in a coherent, substantive, and internationally aligned manner.

## 5 | Conclusion

Studying the experience of China, a country leading this transition with unprecedented scale and speed, offers profound insights and lessons. China has succeeded in building a relatively comprehensive and systematic policy and legal framework. The strength of this framework comes from the combination of four core elements: (1) Consistent political will and strategic orientation from the highest level with the philosophy of "Ecological Civilization"; (2) An increasingly strict environmental legal system with sufficient deterrent sanctions; (3) The strategic leverage role of a well-planned and developed green finance system; and (4) A focus on innovation and autonomy in green technology as a new growth driver. Although there are still challenges in implementation and a need for continuous improvement, this approach has created positive changes in China's economic and environmental structure, while providing a valuable reference model.

For Vietnam, the determination towards green growth and the net-zero emissions target is very clear. The 2020 Law on Environmental Protection is a significant legal step forward. However, the current situation shows that Vietnam's legal system still has gaps, especially a lack of synchronization between laws, ineffective enforcement mechanisms, and a dependence on external technology. Therefore, Vietnam must not merely enact individual laws, but must build a synchronized and effectively operating

policy ecosystem. This requires a foundational National Green Taxonomy, a transparent green finance market, a strict law enforcement mechanism with clear accountability, and most importantly, the seamless integration of environmental goals and national industrial development strategy.

## Bibliography

Chengwei Zhang, "The Significance of Improving China's Green Finance Legal Framework from the Perspective of the «Dual Carbon» Goals" *Journal of Applied Economics and Policy Studies*, Vol. XIV (2024).

*Criticism of Global Climate Management in the Last Half Century*. <https://sgkplanet.com/en/criticism-of-global-climate-management-in-the-last-half-century/>.

Dao Trong Duc, "Strategic Thinking and Breakthrough Vision in Promoting Green Transformation in Vietnam" *Journal of Environment*, No. 1 (2024).

*Definition of Green Growth of Some Countries and International Organizations*. <https://moit.gov.vn/phat-trien-ben-vung/dinh-nghia-ve-tang-truong-xanh-cua-mot-so-quoc-gia-to-chuc-quoc-te.html>.

*Effectiveness of Investment Attraction in China's Economic Transformation*. <https://www.vietnamplus.vn/hieu-qua-thu-hut-dau-tu-trong-chuyen-doi-Kinh-te-trung-quoc-post843294.vnp>.

*"Greening" China: An analysis of Beijing's sustainable development strategies*. <https://merics.org/en/report/greening-china-analysis-beijings-sustainable-development-strategies>.

Huaxing Wang, Tianzi Li, Junfan Zhu, *China's New Environmental Protection Law: Implications for Mineral Resource Policy, Environmental Prevention and Green Finance*. <https://www.sciencedirect.com/science/article/abs/pii/S0301420723007560>.

Juqiu Deng, Jiayu Yang, Zhenyu Liu, Qingyang Tan, *Environmental Protection Tax and Green Innovation of Heavily Polluting Enterprises: A Quasi-Natural Experiment Based on the Implementation of China's Environmental Protection Tax Law*. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10270568/>.

Le Ngoc Hai Long, "Attracting green FDI in Vietnam" *Journal of Financial and Accounting Research*, No. 259 (2024).

Le Quynh Anh, *Solutions to Effectively Attract Green FDI Capital into Vietnam Today*. <https://www.quanlynhauoc.vn/2025/05/20/giai-phap-thu-hut-hieu-qua-von-dau-tu-truc-tiep-fdi-xanh-vao-viet-nam-hien-nay/>.

Linster M., Yang, C., "China's Progress Towards Green Growth: an international perspective", *OECD Green Growth Papers*, No. 5 (2018).

MPI Vietnam & BCG, *Green growth: breakthrough opportunity and direction for Vietnam*.

Nguyen An Dinh, Gang Chen, "Green Growth in Vietnam: Policies and Challenges" *E3S Web Conferences*, 164 (2020). <https://doi.org/10.1051/e3sconf/202016411010>.

Nguyen Viet Binh, "Financial Policy for Green Growth, Towards Vietnam's Commitment at COP26 to Reduce Net Emissions to Zero" *Journal of Financial and Accounting Research*, No. 263 (2024).

Pham Thanh Long, Nguyen Thi Lieu, Dao Minh Trang, Doan Quang Tri, "Building a Measurement-Reporting-Appraisal System for Greenhouse Gas Emission Reduction Activities in the Agricultural Sector in Vietnam's NDC" *Meteorology and Hydrology Magazine*, No. 718 (2020): 42-56.

*Understanding China's Belt and Road Initiative.* <https://www.lowyinstitute.org/publications/understanding-china-s-belt-road-initiative>.

*Some general figures on national power sources in 2023.* <https://www.evn.com.vn/d6/news/Mot-so-so-lieu-tong-quan-ve-nguon-dien-toan-quoc-nam-2023-66-142-124707.aspx>.

Trang Nguyen Thi Minh, Long Nguyen Hoang, Tam Le Thi Thanh, "Mechanism of Buying and Selling Solar and Wind Power in the Competitive Electricity Market in Vietnam" *Ho Chi Minh City Open University Journal of Science - Social Sciences*, No. 1 (2024).

Van Manh Lai, Duc Binh Ta, "International Experience and Recommendations for Vietnam on Building a Green Classification List to Support the Green Credit Market and Green Bonds" *Environmental Magazine*, No. 1 (2023).

Vo Tuan Nhan, "Developing Green, Low-Waste, Low-Carbon and Circular Economic Models to Achieve Sustainable Development Goals" *Environment Magazine*, No. 11 (2023).

Vu Mai Chi, Do Van Hieu, "Green Monetary Policy Transmission Mechanism – Practices of Some Countries and Recommendations for Vietnam" *Journal of Economics – Law and Banking (Formerly: Journal of Banking Science and Training)*, No. 273-274 (2025).

Wen Chen, Ying Wu, China's New Environmental Protection Law and Green Innovation: Evidence from Prefecture-Level Cities, *Hindawi Complexity*, No. 1 (2021). <https://doi.org/10.1155/2021/5566357>.

Yao Wang, Chi-hui Guo, Xi-jie Chen, Li-qiong Jia, Xiao-na Guo, Rui-shan Chen, Carbon Peak and Carbon Neutrality in China: Goals, Implementation Path and Prospects; <https://www.sciencedirect.com/science/article/pii/S2096519222000131>.

