# SOLUTIONS FOR THE DEVELOPMENT OF GREEN FINANCIAL TECHNOLOGY IN VIETNAM

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**Abstract:** ***Green Fintech is a synergy between financial technology and sustainable development, leveraging technologies such as AI, Blockchain, and Big Data to create financial solutions that minimize environmental impacts. Green Fintech drives the green transition, reduces carbon emissions, and supports renewable energy projects through digitalization and electronic documentation. Currently, Green Fintech plays an increasingly vital role in fostering global sustainable development. By integrating digital technology into the financial sector, Green Fintech offers innovative and efficient solutions to realize sustainable development goals (SDGs). This article discusses an overview of Green Fintech, the current state of Green Fintech in Vietnam, and subsequently proposes several solutions to promote Green Fintech in the coming time.***

• Keywords: *green fintech, financial technology, financial inclusion.*

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## 1. Introduction

In the digital era, Financial Technology (Fintech) has become a powerful driving force for the development of the financial sector, contributing to the integration of information technology and modern innovations into traditional financial products and services (Bao Binh, 2025). Statistics show a significant investment flow: in just the first half of 2025, Southeast Asia's tech ecosystem raised a total of USD 2 billion, with the Fintech sector alone accounting for approximately USD 775 million a 31% increase compared to the end of 2024 (Tam An, 2025). In Vietnam, the scale of the Fintech market is experiencing remarkable growth, surging from USD 0.8 billion in 2014 to USD 16.9 billion in 2024. It is projected to continue growing strongly, reaching approximately USD 52 billion by 2028 with a compound annual growth rate of about 14.2% (Bao Binh, 2025).

With the progress of science and technology and the application of technologies such as digitization, artificial intelligence, big data and blockchain, green finance is not limited to traditional forms such as green bonds and green funds but also includes more accurate carbon asset management, green project evaluation and monitoring, and digitalization of the carbon trading market and other emerging fields (Zhang et al., 2024; Zhao et al., 2024). In Vietnam, as climate risks become increasingly evident, green fintech is no longer just a niche market but is becoming an essential requirement. The development of financial technology has expanded beyond optimizing economic efficiency to influencing other areas, such as promoting financial inclusion, enhancing social equity, and deploying environmentally friendly solutions.

However, due to the lack of a dedicated legal framework, coupled with the limited awareness among stakeholders - including users, investors, and Fintech enterprises themselves - Green Fintech in Vietnam has yet to develop to its full potential (Bao Binh, 2025). This context necessitates a comprehensive set of solutions to promote the development of green fintech in Vietnam.

## 2. Overview of Green Fintech

### *2.1. Definitions*

Green Fintech is the implementation of climate objectives through the medium of financial technology. Utilizing the internet, it involves the integration of technology into finance for the allocation, oversight, and deployment of capital based on green criteria. It enhances the efficiency, accessibility, and scalability of sustainable financial activities, and conforms to regulatory or audit-based verification mechanisms (Daniel Broby, Zhenjia Yang, 2025). As a combination of financial and technological innovation, green fintech has become an important tool for promoting the realization of carbon peak carbon neutrality (Liu et al., 2021).

The term "green Fintech" refers to technology-enabled innovations applied to financial operations and products that intentionally support the Sustainable Development Goals (Huy Pham, 2023). Green Fintech is the application of financial technology to promote positive environmental impacts. This can include digital tools to support fundraising for renewable energy projects, or consumer applications that help track and offset carbon emissions (Tam An, 2025). Green Fintech is the most powerful tool for achieving sustainable development

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goals through digitalization and the provision of green financial products (Bao Binh, 2025).

### *2.2. Objectives of green Fintech*

There are several types of green Fintech, including green digital payment, green digital investment solutions, digital green analytics, green crowdfunding, green risk analysis, green digital lending, green digital asset solutions, and green regulatory technology (Green Digital Finance Alliance, 2022).

Green Fintech arises from the imperative to align financial systems with environmental objectives. Green Fintech offer tools to support this transition by enabling quantification, verification, and accountability in environmental performance. A widely used operational metric, in this respect, is the carbon footprint. This attributes GHG emissions to firms and can be stated by enterprise value (Daniel Broby, Zhenjia Yang, 2025). According to DigitalDefynd, the goal of green Fintech is not only to provide selected environmentally friendly resources but also to integrate them naturally and effectively into people's daily financial lives (Tam An, 2025).

**Table 1: Core Objectives of Green Fintech**

| Core Objectives | Meanings |
|---|---|
| Mobilizing Sustainable Capital | Directing investment toward green initiatives such as renewable energy, energy efficiency projects, and pollution prevention. |
| Achieving Environmental Goals | Supporting the Paris Agreement and United Nations Sustainable Development Goals through measurable outcomes like emission reductions and resource efficiency. |
| Enhancing Data Transparency & Reducing Greenwashing | Using digital technologies to provide verifiable, transparent data on environmental impacts and sustainable investments, mitigating the risk of fraudulent "green" claims. |
| Improving Risk Assessment | Utilizing AI-based algorithms and big data to analyze climate-related financial risks, helping institutions make better-informed investment and lending decisions. |
| Promoting Consumer Engagement | Empowering individuals to track their carbon footprint via digital apps, encouraging green investing, and promoting cashless, eco-friendly financial transactions. |
| Enabling Regulatory Compliance | Helping businesses comply with sustainability mandates and regulatory frameworks. |

*Source: Compiled by the author*

### *2.3. Benefits of Green Fintech*

According to resource-based theory and innovation diffusion theory, green fintech can effectively promote the flow of capital to low-carbon and environmental protection industries, improve CEE, and help achieve sustainable development goals (Fahy, 2000; Green and Hevner, 2000). From the perspective of institutional economics, green fintech can optimize resource allocation and effectively address market failure by establishing a sound green financial system (Hamiltonet al., 1976).

According to Chengzhi Qiao, Wanhuan Cai, Shan Chen (2025), in the case of a good market environment, green financial technology can guide enterprises to more actively carry out green transformation through the capital market and promote further amplification of the carbon emission reduction effect. Green fintech instruments, particularly green bonds and sustainable green investment funds, have also been analyzed for their role in financing projects to reduce carbon emissions. Green bonds have become an important financial tool for raising funds for projects that reduce carbon emissions, such as renewable energy facilities and energy-efficient infrastructure (Chengzhi Qiao, Wanhuan Cai, Shan Chen, 2025). Meanwhile, according to Colibrix (2026), there are main benefits of green Fintech as follows (Table 2).

**Table 2: Benefits of Green Fintech**

| Benefits | Meanings |
|---|---|
| Reduced Environmental Impact | Green fintech companies use technology to minimise their environmental footprint. This includes using renewable energy for data centres, implementing paperless processes and developing digital-only financial products. In reducing their reliance on physical infrastructure and resources, such companies are helping to cut greenhouse gas emissions and waste. |
| Enhanced Financial Inclusion | Sustainable fintech solutions often prioritise accessibility and inclusivity. Through the delivery of digital financial services, companies can reach underserved populations in remote and rural areas. With mobile banking apps and digital wallets, for one, individuals without access to traditional banking services can participate in the financial system, boosting economic growth and contributing to poverty alleviation. |
| Investment in sustainable projects | Companies are developing financial products that encourage investment in renewable energy, clean technology and other sustainable ventures. Think of green bonds, which are debt securities issued to finance environmentally friendly projects, giving investors the opportunity to support sustainability while earning a profit. |

*Source: Colibrix (2026)*

## 3. Current situation in Vietnam

In the world and in Southeast Asia, green fintech is currently being implemented in diverse forms. Typical examples include automated financial advisory systems oriented towards Economics, Social, and Sustainable (ESG) investments, helping users invest in sustainable portfolios; and green savings accounts, where interest rates are linked to environmental protection goals (Tam An, 2025). The Southeast Asian is also witnessing the development of platforms that enable transparent trading of carbon credits (commercial certificates representing ownership of $CO_2$ or other greenhouse gases). In Singapore and Indonesia, several banks have begun piloting carbon-linked debit cards (carbon-linked debit cards designed to track and measure carbon emissions from users' purchases), monitoring emissions based on spending habits. Simply put, these are green cards that help users recognize and assess the environmental impact of their consumption activities (Tam An, 2025).

Vietnam's fintech market has evolved from a payment-focused ecosystem into a broader multi-vertical financial technology landscape. Market size is expected to reach USD4.3 billion in 2026 and nearly double to USD8.9 billion by 2031. The expansion is underpinned by strong digital infrastructure, high smartphone penetration, and regulatory initiatives including a fintech sandbox and the National Digital Transformation Program (Thai Van Linh, 2026). The development of fintech, coupled with the requirement to implement commitments of net-zero emissions by 2050, has created opportunities for the emergence of green fintech.

In Vietnam, green fintech development is still in

its infancy stage, though the Vietnamese government has shown interest in green Fintech. The Vietnamese government support will be crucial in facilitating the development of green Fintech. For example, Decree No. 94/2025/ND-CP of the Government, effective from July 1, 2025, marks a significant step forward in fintech management in Vietnam. However, the scope of application of the controlled testing mechanism (sandbox) under Decree No. 94/2025/ND-CP is currently limited to only three areas: credit scoring, data sharing (open API), and peer-to-peer lending (P2P lending). Therefore, further research is needed to expand the scope of application of the sandbox to many other areas of Fintech (Bao Binh, 2025). Meanwhile, the State Bank of Vietnam (SBV) is expected to soon issue guidelines for financial institutions to promote green finance. The SBV Governor has also issued a directive requesting relevant entities to establish a legal framework for green credit development and an action plan for the banking sector to implement the National Strategy on Green Growth (Huy Pham, 2023).

Many large banks and Fintech companies in Vietnam have been at the forefront of adopting electronic contracts, electronic invoices, and electronic statements. These solutions help minimize the use of paper in daily transactions, directly contributing to the protection of forest resources. Digital payments dominated with 71.7% market share in 2025, supported by 5.5 billion cashless transactions recorded in the first quarter of 2025 alone. Mobile applications accounted for 79.3% of user interface share, while insurtech is forecast to grow fastest at 31.3% annually (Thai Van Linh, 2026). In particular, several Fintech companies have now pioneered launching specialized financial products to support businesses that need to switch to clean energy, especially solar energy. These are the first but extremely important steps, creating an effective channel for capital flow into environmentally friendly projects (Bao Binh, 2025).

**4. Difficulties and challenges**

As a new field, green fintech in Vietnam currently faces many difficulties and challenges in its development.

***Firstly,*** there is the issue of legal regulation. The Monetary Authority of Singapore (MAS) has taken pioneering steps to support this sector, including the Green Fintech Challenge initiative. However, across ASEAN, efforts to build a unified cross-border regulatory system are still underway. Without synchronization among countries, Fintech solutions are unlikely to scale up or operate smoothly across different markets. In Vietnam, the Fintech sector still lacks a common, unified, and specific legal framework. Regulations related to Fintech are scattered across various legal documents such as the Law on Credit Institutions, the Law on Electronic Transactions, the Law on Cybersecurity, etc. (Bao Binh, 2025).

***Secondly,*** the transparency of data. Many environmental claims made by Fintech products are based on accurate emissions data. However, in many emerging markets, there is still a lack of standardized and independently verified information. Without reliable databases, businesses struggle to accurately measure their environmental impact, let alone provide effective solutions to help users reduce or offset carbon emissions. Environmental data sources in Vietnam lack consistency and completeness, making it difficult for Fintech companies to build environmental risk assessment models and verify green projects. This creates barriers to data-driven decision-making and reduces the effectiveness of Fintech services for sustainable development goals (Nguyen Trong Co et al., 2018). These are also challenges Vietnam faces, as disclosing and verifying data transparency is not easy.

***Thirdly,*** there is the increasing risk of "greenwashing." This refers to the practice of labeling products or services as "green" without actual commitment and action (greenwashing). While some regulatory bodies and industry organizations have begun to take action, the necessary regulations and standards to ensure honesty are still being developed, particularly in the Fintech sector in Southeast Asia. Environmental data sources in Vietnam lack consistency and completeness, making it difficult for Fintech companies to build environmental risk assessment models and verify green projects. This creates barriers to data-driven decision-making and reduces the effectiveness of Fintech services for sustainable development goals (Nguyen Trong Co et al., 2018).

***Fourthly,*** most Fintech companies are startups that have recently entered the market, and they face significant difficulties in raising capital from investment funds, especially venture capital funds. Without sufficient capital, Fintech companies cannot invest in upgrading their technology infrastructure, develop new products, or even maintain the quality of existing products, thereby diminishing the user experience.

***Fifthly,*** Vietnam is facing an increasing threat of cybercrime such as malware attacks, online fraud, and personal data leaks. This will impact the sustainable development of green fintech and increase concerns among stakeholders about the risk of attacks.

***Sixthly,*** there are limitations in businesses' awareness and knowledge of sustainable development in general and green Fintech in particular. The fact show that stakeholder awareness of green Fintech remains limited (Bao Binh, 2025). In Vietnam, a lack of understanding of Fintech in general and green Fintech in particular is one of the challenges hindering the development of green Fintech.

***Seventhly,*** other existing issues include a shortage of skilled human resources, limitations in technological

infrastructure. These issues are fundamental barriers and challenges to the future development of Fintech in general and Green Fintech in particular (Vu Quang Ket, Doan Tien Ban, 2025).

**5. Solutions to promote green fintech in Vietnam**

To sustainably develop green fintech, effectively promote the flow of capital to low-carbon and environmental protection, the following solutions should be focused on in the future:

***Firstly,*** raise awareness and knowledge about the development trends of green fintech and the immense benefits this approach offers among regulatory bodies, credit institutions, and fintech companies.

***Secondly,*** green financial technology should be incorporated into the national sustainable development strategy system, and a multilevel green financial tool framework should be established and improved. Supporting policies and regulations will play a key role in the development of green fintech. It is vital for governments and regulators to create an enabling environment that encourages and incentivises sustainable practices. Policy priorities should be dynamically adjusted on the basis of the development stage and regional characteristics. In the early stage of technology promotion, basic investment and demonstration guidance should be increased. As the application deepens, the focus should gradually shift to the construction of market mechanisms and institutional optimization to ensure the long-term, stable and sustainable nature of carbon reduction actions.

***Thirdly,*** Vietnam should establish a monitoring and evaluation mechanism for the effectiveness of green fintech. It plays an important role in controlling the increasing risk of "greenwashing. Vietnam should actively promote the establishment and popularization of special tools such as green funds, green bonds and green loans and focus on guiding funds to flow into key emission reduction areas such as energy, transportation and construction.

***Fourthly,*** collaboration between fintech companies, traditional financial institutions and other stakeholders will be crucial to the growth of green fintech. Partnerships can facilitate the sharing of knowledge, resources and best practices, driving innovation and promoting sustainability across the industry.

***Fifthly,*** there is a need for preferential policies for financial companies, especially incentives in terms of financial resources and taxes for fintech companies in their early stages, in order to encourage and promote these companies.

***Sixthly,*** develop high-quality human resources knowledgeable in green fintech. This workforce should be knowledgeable in the fields of finance and banking, financial technologies, and regulations on development and environmental protection, as well as international commitments on net emission reduction. Developing this workforce requires close collaboration between universities, financial and credit institutions, fintech companies, investment funds, and innovation funds.

**Conclusion:** Sustainable development in the Fintech sector is no longer an option, but a prerequisite for countries to promote overall sustainable economic development. The future of green fintech looks very promising, with continued advances in technology and growing consumer demand for sustainable solutions. With increasing awareness of environmental issues, investment in green technologies is expected to grow. This includes not only financial products, but also the infrastructure and tools needed to support sustainable practices in the fintech industry. Companies that prioritise sustainability are likely to attract more investment and support from stakeholders (Colibrix, 2026). If properly developed and managed, green fintech can become a powerful driver of sustainable growth, empowering consumers while expanding financing channels for climate change adaptation solutions across the region.

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