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# **REGULATING SUSTAINABLE FINANCE: LEGAL FRAMEWORKS FOR GREEN BONDS AND CLIMATE RISK DISCLOSURE**

AUTHORED BY - MUKILAN N,

Student,

School of Law,

Vels Institute of Science, Technology & Advanced Studies, (VISTAS)

CO-AUTHOR - AKHIL SAJEEV,

Assistant Professor,

School of Law,

Vels Institute of Science, Technology & Advanced Studies, (VISTAS)

## **ABSTRACT**

Legal Frameworks for Sustainable Finance: An Investigation of Regulatory Requirements in Green Bond Markets and Climate Risk Disclosure The accelerating climate crisis has compelled financial systems worldwide to realign capital flows toward environmentally sustainable activities. In this context, sustainable finance has emerged as a critical mechanism for integrating environmental, social, and governance (ESG) considerations into financial decision-making. This paper examines the legal frameworks governing sustainable finance, with a particular focus on regulatory requirements in green bond markets and climate risk disclosure regimes. It seeks to evaluate how legal instruments shape market behavior, enhance transparency, and contribute to the broader objective of achieving climate resilience and sustainable development. Green bonds have become a prominent financial tool for funding environmentally beneficial projects, including renewable energy, clean transportation, and sustainable infrastructure. However, the rapid growth of the green bond market has raised concerns regarding standardization, accountability, and the risk of “greenwashing.” This study investigates the legal and regulatory structures that govern green bond issuance, including disclosure obligations, certification processes, and compliance mechanisms. It critically analyzes the role of both domestic regulations and international guidelines in ensuring the credibility and integrity of green financial instruments. The paper also explores the challenges

associated with fragmented regulatory approaches across jurisdictions, which may hinder cross-border investments and reduce investor confidence. In parallel, climate risk disclosure has gained increasing importance as regulators recognize the financial implications of climate-related risks. Legal requirements mandating the disclosure of such risks aim to provide investors with reliable and comparable information, thereby enabling more informed decision-making. This research assesses the evolution of climate disclosure frameworks, including mandatory and voluntary reporting standards, and examines their effectiveness in promoting corporate transparency. It further evaluates the extent to which these frameworks address both physical risks arising from climate change and transition risks associated with the shift to a low-carbon economy. The study adopts a comparative legal approach, analyzing regulatory developments across key 6 jurisdictions to identify best practices and persistent gaps. It considers the interplay between soft law instruments, such as guidelines and principles, and binding legal obligations, highlighting the strengths and limitations of each. Additionally, the research addresses enforcement challenges, including the lack of uniform verification standards and limited regulatory oversight in certain markets. These issues underscore the need for stronger legal coherence and institutional capacity to ensure the effectiveness of sustainable finance regulations. A central argument of this paper is that while significant progress has been made in developing legal frameworks for sustainable finance, existing mechanisms remain insufficient to fully address the complexities of climate-related financial risks. The absence of universally accepted standards, coupled with inconsistent implementation, creates uncertainty for market participants and undermines the overall objectives of sustainable finance initiatives. The paper therefore advocates for greater international coordination, enhanced regulatory harmonization, and the adoption of robust enforcement mechanisms. Furthermore, the research highlights the role of law as a transformative tool in aligning financial systems with environmental goals. By embedding sustainability considerations into legal and regulatory structures, governments and institutions can drive systemic change and facilitate the transition to a greener economy. The findings suggest that an effective legal framework must balance flexibility with accountability, enabling innovation while safeguarding against misuse and misrepresentation. In conclusion, this paper contributes to the growing body of scholarship on sustainable finance by providing a comprehensive analysis of the legal dimensions of green bond markets and climate risk disclosure. It emphasizes the need for continuous legal evolution to keep pace with emerging challenges and opportunities in the field. Strengthening regulatory frameworks will be essential not only for protecting investors but also for ensuring that financial markets play a meaningful role in addressing the global climate crisis.

**Keywords:** *Sustainable finance, green bonds, climate risk disclosure, ESG regulation, financial law, environmental governance, regulatory frameworks, greenwashing, transparency, climate change law*

## I. INTRODUCTION

The rapid acceleration of climate change has compelled governments, financial regulators, and international organisations to reassess the architecture of global capital markets. At the heart of this reassessment lies sustainable finance — an evolving paradigm that seeks to align financial flows with environmental and social objectives. Among the most prominent instruments of sustainable finance are **green bonds**, debt securities specifically earmarked to fund projects with positive environmental outcomes, and **climate risk disclosure** frameworks, which mandate the transparent reporting of climate-related financial risks by corporations and financial institutions. By the close of 2023, cumulative global green bond issuances had surpassed USD 2.5 trillion, underscoring their meteoric rise as a preferred instrument for channelling capital toward low-carbon infrastructure.<sup>1</sup>

Yet the dynamism of this market has not been matched by regulatory coherence. The proliferation of voluntary standards, divergent national frameworks, and persistent concerns over greenwashing — the practice of misleading investors about the environmental credentials of financial products — have exposed fundamental lacunae in the existing legal architecture. The *Green Bond Principles* (GBP) published by the International Capital Market Association (ICMA) represent the most widely adopted voluntary benchmark, offering guidance on use of proceeds, project evaluation, management of proceeds, and reporting.<sup>2</sup> However, their non-binding character has rendered them insufficient as a regulatory safeguard.

This paper examines the evolving legal frameworks governing green bonds and climate risk disclosure at the international, regional, and national levels. It analyses the regulatory approaches adopted by the European Union, the United States, and India, and critically evaluates the challenges of standardisation, enforcement, and jurisdictional divergence. The paper argues that effective regulation of sustainable finance demands a tripartite approach: mandatory disclosure obligations, harmonised green taxonomies, and robust enforcement

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<sup>1</sup> Climate Bonds Initiative, 'Green Bond Market Summary 2023' (Climate Bonds Initiative 2023) <https://www.climatebonds.net> accessed 10 April 2025.

<sup>2</sup> International Capital Market Association, 'Green Bond Principles 2021' (ICMA 2021) <https://www.icmagroup.org> accessed 10 April 2025.

mechanisms. In advancing this thesis, the paper draws on comparative legal analysis, recent judicial developments, and policy frameworks, contending that the current voluntary architecture is structurally inadequate to prevent greenwashing and systemic climate-related financial risk.

## II. CONCEPTUAL AND NORMATIVE FOUNDATIONS OF SUSTAINABLE FINANCE REGULATION

Sustainable finance regulation rests upon a convergence of environmental law principles and financial market governance theory. The normative premise derives from Article 2(1)(c) of the *Paris Agreement*, which commits signatory states to “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.”<sup>3</sup> This provision has progressively informed domestic legislative frameworks, albeit unevenly across jurisdictions.

The concept of a **green taxonomy** — a classification system defining environmentally sustainable economic activities — is central to the architecture of sustainable finance regulation. The European Commission’s work on EU Taxonomy represents the most comprehensive attempt to operationalise this concept.<sup>4</sup> By establishing technical screening criteria for what constitutes a “substantial contribution” to environmental objectives, a green taxonomy creates the definitional infrastructure necessary for credible green bond issuances and disclosure requirements.

From a jurisprudential standpoint, sustainable finance regulation draws upon the precautionary principle — a foundational norm in international environmental law that requires regulatory intervention in the face of uncertain but potentially severe environmental harm.<sup>5</sup> Applied to financial markets, this principle supports imposing prospective disclosure obligations on issuers and financial institutions even before climate risks fully materialise on balance sheets. The landmark Dutch case of *Urgenda Foundation v State of the Netherlands* reinforced the justiciability of climate obligations, signalling that courts may compel state actors to take

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<sup>3</sup> Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTS 3156 (Paris Agreement) art 2(1)(c).

<sup>4</sup> European Commission, ‘EU Taxonomy for Sustainable Activities’ (Publications Office of the European Union, 2020).

<sup>5</sup> Juliane Kokott and Christoph Sobotta, ‘The Precautionary Principle in European Law’ (2012) 6 *Journal of Risk Research* 211.

preventive financial regulatory measures.<sup>6</sup>

Moreover, the theoretical framework of information asymmetry — drawn from financial economics — justifies mandatory disclosure as a corrective market mechanism. Where issuers possess superior information about the environmental impact of funded projects, mandatory disclosure reduces the risk of adverse selection and moral hazard, thereby enhancing market integrity.<sup>7</sup> Regulatory frameworks thus serve both allocative efficiency goals and broader public interest objectives in transitioning to a low-carbon economy.

### III. INTERNATIONAL STANDARDS AND VOLUNTARY FRAMEWORKS

The international regulatory landscape for green bonds has been shaped predominantly by voluntary standard-setting bodies. The ICMA's *Green Bond Principles* establish a framework comprising four core components: (i) use of proceeds directed towards eligible green projects; (ii) a process for project evaluation and selection; (iii) management of proceeds via segregated accounts or equivalent tracking systems; and (iv) annual reporting on the allocation and environmental impact of proceeds.<sup>8</sup> While the GBP have achieved broad market adoption, their voluntary nature limits their deterrent effect against greenwashing.

Parallel developments in climate risk disclosure have been led by the *Task Force on Climate-related Financial Disclosures* (TCFD), established by the Financial Stability Board in 2017. The TCFD's recommendations organise climate-related disclosures around four thematic pillars: governance, strategy, risk management, and metrics and targets.<sup>9</sup> These recommendations have since been incorporated — to varying degrees — into the mandatory disclosure regimes of over thirty jurisdictions. The *Network for Greening the Financial System* (NGFS), a coalition of central banks and supervisors, has further advocated for climate scenario analysis as a supervisory tool, reinforcing the systemic risk dimension of climate finance.<sup>10</sup>

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<sup>6</sup> *Urgenda Foundation v State of the Netherlands (Ministry of Infrastructure and the Environment)* ECLI:NL:HR:2019:2007 (Supreme Court of the Netherlands, 20 December 2019).

<sup>7</sup> Suresh P Sethi, 'Sustainable Finance and ESG Investing: Legal Dimensions' (2022) 14 *Journal of Sustainable Finance and Investment* 89.

<sup>8</sup> International Capital Market Association, 'Green Bond Principles 2021' (ICMA 2021) <https://www.icmagroup.org> accessed 10 April 2025.

<sup>9</sup> Task Force on Climate-related Financial Disclosures, 'Recommendations of the Task Force on Climate-related Financial Disclosures' (TCFD, 2017).

<sup>10</sup> Network for Greening the Financial System, 'A Sustainable and Responsible Investment Guide for Central Banks' Portfolios' (NGFS 2019) <https://www.ngfs.net> accessed 10 April 2025.

The International Organization of Securities Commissions (IOSCO) has also contributed to standard-setting, particularly regarding ESG ratings providers, whose assessments significantly influence investor decision-making in green bond markets.<sup>11</sup> IOSCO's 2021 report highlighted concerns about conflicts of interest, opacity in methodologies, and the lack of standardised definitions — underscoring the inadequacy of self-regulation in this sector. The Basel Committee on Banking Supervision has similarly acknowledged climate-related financial risks as a systemic concern warranting enhanced supervisory attention and quantitative measurement methodologies.<sup>12</sup>

Most recently, the International Sustainability Standards Board (ISSB) issued *IFRS S2 Climate-related Disclosures* in 2023, establishing a global baseline for climate disclosure. This standard requires entities to report material climate-related risks and opportunities using scenario analysis and to disclose Scope 1, 2, and 3 greenhouse gas emissions.<sup>13</sup> The ISSB framework represents an important step toward international convergence, though its effectiveness depends upon national adoption and enforcement.

## IV. REGIONAL AND NATIONAL REGULATORY FRAMEWORKS

### A. The European Union

The European Union has pioneered the most comprehensive binding legal framework for sustainable finance. The *EU Taxonomy Regulation (Regulation (EU) 2020/852)* establishes a classification system for environmentally sustainable activities, providing the definitional bedrock for green finance instruments within the EU.<sup>14</sup> Activities qualify as “environmentally sustainable” if they substantially contribute to at least one of six environmental objectives — including climate change mitigation and adaptation — while doing no significant harm to the remaining objectives and complying with minimum social safeguards.

Complementing the Taxonomy Regulation, the *Sustainable Finance Disclosure Regulation (SFDR) (Regulation (EU) 2019/2088)* imposes mandatory pre-contractual and periodic disclosure obligations on financial market participants regarding the integration of

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<sup>11</sup> International Organization of Securities Commissions, ‘Environmental, Social and Governance (ESG) Ratings and Data Products Providers’ (IOSCO 2021).

<sup>12</sup> Basel Committee on Banking Supervision, ‘Climate-related Financial Risks – Measurement Methodologies’ (BCBS 2021).

<sup>13</sup> International Sustainability Standards Board, ‘IFRS S2 Climate-related Disclosures’ (IFRS Foundation 2023).

<sup>14</sup> Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment [2020] OJ L198/13 (EU Taxonomy Regulation).

sustainability risks and the principal adverse impacts of investment decisions.<sup>15</sup> The SFDR introduces a tiered classification system distinguishing between financial products that promote environmental or social characteristics (“Article 8” products) and those with sustainable investment as their objective (“Article 9” products).

A watershed development in EU sustainable finance law is the *EU Green Bond Standard Regulation (Regulation (EU) 2023/2631)*, which creates an optional but incentivised framework for issuers wishing to market their bonds as “European Green Bonds.” The EU GBS requires full alignment of proceeds with the EU Taxonomy, mandatory pre-issuance and post-issuance reporting, and independent verification by registered external reviewers.<sup>16</sup> The use of the “European Green Bond” label is conditional upon compliance with these requirements, creating a form of regulatory endorsement that signals heightened credibility to investors. The *European Climate Law (Regulation (EU) 2021/1119)* further enshrines into law the EU’s commitment to climate neutrality by 2050, providing the overarching statutory basis for the EU’s sustainable finance agenda.<sup>17</sup>

Judicial developments have reinforced legislative efforts. In *Milieudéfensie et al v Royal Dutch Shell plc*, the Hague District Court ordered Shell to reduce its global CO<sub>2</sub> emissions by 45% by 2030, demonstrating the courts’ willingness to hold corporate actors accountable for climate risk through private litigation.<sup>18</sup> Similarly, *ClientEarth v Shell* further tested the boundaries of corporate climate obligations, signalling an expanding litigation landscape that amplifies the stakes of inadequate climate risk disclosure.<sup>19</sup>

## B. The United States

The regulatory evolution in the United States has been characterised by tension between federal agency action and legislative inaction. In 2024, the Securities and Exchange Commission (SEC) adopted landmark rules requiring registrants to disclose material climate-related risks, greenhouse gas emissions, and the financial effects of climate-related events in their annual reports and registration statements.<sup>20</sup> These rules, grounded in the Securities Exchange Act of

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<sup>15</sup> Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector [2019] OJ L317/1 (SFDR).

<sup>16</sup> Regulation (EU) 2023/2631 of the European Parliament and of the Council on European Green Bonds [2023] OJ L268/1 (EU GBS Regulation).

<sup>17</sup> Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality [2021] OJ L243/1 (European Climate Law).

<sup>18</sup> *Milieudéfensie et al v Royal Dutch Shell plc* (2021) C/09/571932/HA ZA 21-379 (Hague District Court).

<sup>19</sup> *ClientEarth v Shell*, Case C-03/22, Rechtbank Den Haag (Hague District Court, 26 May 2021).

<sup>20</sup> Securities and Exchange Commission, ‘Enhancement and Standardization of Climate-Related Disclosures’ (SEC, 2024) 17 CFR Parts 210, 229, 232 and 249.

1934 and the Securities Act of 1933, represent the most significant expansion of climate-related disclosure obligations in US securities law.<sup>21</sup>

However, the SEC's rules have faced considerable legal challenges from industry groups and certain state attorneys general contesting the agency's statutory authority to mandate climate disclosures. These challenges raise fundamental questions about the scope of the SEC's mandate under administrative law and the extent to which climate risk qualifies as material information within the meaning of the federal securities laws. The Financial Stability Board has flagged that inadequate climate risk disclosure poses systemic risks to financial stability, providing regulatory justification for the SEC's intervention.<sup>22</sup>

In the green bond market, the United States lacks a federal statutory framework equivalent to the EU Green Bond Standard. Market participants predominantly rely on the ICMA Green Bond Principles and the Climate Bonds Standard administered by the Climate Bonds Initiative. The absence of a mandatory federal green bond standard creates regulatory fragmentation and increases the risk of greenwashing, particularly for retail investors who may lack the analytical capacity to independently assess environmental claims.

### C. India

India's regulatory framework for sustainable finance reflects the country's status as an emerging economy balancing developmental imperatives with climate commitments. The Securities and Exchange Board of India (SEBI) issued operational guidelines for green bonds in 2023, building upon earlier circulars and aligning domestic standards more closely with the ICMA's Green Bond Principles.<sup>23</sup> SEBI's framework mandates disclosure of utilisation of proceeds, appointment of independent third-party reviewers, and annual reporting to the stock exchange. These requirements apply to listed entities issuing green bonds, thereby channelling regulatory oversight through the existing securities law architecture.

The Government of India issued its inaugural Sovereign Green Bond in 2022–23 under a comprehensive *Sovereign Green Bond Framework*, which identifies eligible categories of expenditure including renewable energy, clean transportation, sustainable water management, and climate change adaptation.<sup>24</sup> The framework commits to annual reporting on allocation and

<sup>21</sup> Securities Exchange Act 1934 (US) s 13; Securities Act 1933 (US) s 11.

<sup>22</sup> Financial Stability Board, 'The Implications of Climate Change for Financial Stability' (FSB 2020).

<sup>23</sup> Securities and Exchange Board of India, 'Circular on Green Bonds' (SEBI, 2023) <https://www.sebi.gov.in> accessed 10 April 2025.

<sup>24</sup> Ministry of Finance, Government of India, 'Sovereign Green Bond Framework' (MoF 2022) <https://finmin.nic.in> accessed 10 April 2025.

impact, aligning India with international best practices in sovereign sustainable finance. The Reserve Bank of India's 2023 *Framework for Acceptance of Green Deposits* further extends green finance regulation to the banking sector, requiring regulated entities to disclose the allocation of green deposits to eligible categories.<sup>25</sup>

On climate risk disclosure, SEBI's *Business Responsibility and Sustainability Report (BRSR)* framework, which became mandatory for the top 1000 listed entities from FY 2022–23, requires disclosure of environmental parameters including energy consumption, water usage, greenhouse gas emissions, and waste management practices.<sup>26</sup> The BRSR Core framework further mandates reasonable assurance of nine key performance indicators by an independent third party, enhancing the credibility of disclosures. Nonetheless, the Indian framework remains at an early stage of development relative to its EU counterpart, with significant scope for strengthening taxonomy alignment and disclosure granularity.

## V. CRITICAL ANALYSIS: GAPS, GREENWASHING, AND ENFORCEMENT CHALLENGES

Despite the significant regulatory developments canvassed above, the legal architecture of sustainable finance continues to be beset by structural deficiencies. Three interrelated challenges merit particular attention: definitional fragmentation, greenwashing vulnerability, and enforcement asymmetry.

Firstly, the **absence of a universally accepted green taxonomy** creates definitional fragmentation that undermines market integrity. The EU Taxonomy, China's Green Bond Endorsed Projects Catalogue,<sup>27</sup> and India's evolving framework reflect divergent conceptions of what constitutes a "green" activity. This divergence has direct legal consequences: bonds issued in compliance with one jurisdiction's standards may not meet the requirements of another, thereby impeding cross-border capital flows and creating opportunities for regulatory arbitrage.

Secondly, **greenwashing** — the misrepresentation of financial products as environmentally beneficial — remains a pervasive threat to sustainable finance markets. The legal mechanisms

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<sup>25</sup> Reserve Bank of India, 'Framework for Acceptance of Green Deposits' (RBI, 2023) <https://www.rbi.org.in> accessed 10 April 2025.

<sup>26</sup> Companies Act 2013 (India) s 135; Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations 2015.

<sup>27</sup> People's Bank of China, 'Green Bond Endorsed Projects Catalogue' (PBC 2021).

to address greenwashing are inadequate in most jurisdictions. In the EU, the SFDR's product classification system has been criticised for enabling self-labelling without independent verification, leading to concerns about the credibility of "Article 8" and "Article 9" fund designations. In India, enforcement of disclosure non-compliance by SEBI has been limited, with the regulatory framework still maturing. The United States, absent a dedicated green bond statute, relies on existing securities fraud provisions and SEC guidance, which may be insufficient to deter sophisticated greenwashing. Academic literature has noted that greenwashing not only harms investors but also distorts capital allocation, directing resources away from genuinely transformative climate projects.<sup>28</sup>

Thirdly, **enforcement asymmetry** between developed and developing country jurisdictions threatens the global integrity of sustainable finance regulation. Jurisdictions with sophisticated regulatory infrastructure, such as the EU, are able to impose rigorous verification and reporting requirements, while developing country issuers — including emerging market sovereigns and corporate entities — may lack both the institutional capacity and the regulatory mandate to achieve equivalent standards. This asymmetry risks creating a two-tier market in which the credibility of "green" labels is inversely correlated with the regulatory capacity of the issuer's home jurisdiction.<sup>29</sup>

Furthermore, the role of external reviewers and ESG rating agencies in the green bond ecosystem raises significant concerns about conflicts of interest and opacity. Unlike credit rating agencies, which are subject to detailed regulatory oversight in most jurisdictions, ESG rating providers operate in a largely unregulated space. The divergence in ESG ratings across providers for the same issuer — which can be substantial — undermines investor confidence and calls for regulatory intervention to ensure methodological transparency, independence, and accountability.<sup>30</sup>

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<sup>28</sup> Beate Sjøfjell and others, 'Sustainable Companies – Key Issues and the Way Forward' in Beate Sjøfjell and Benjamin Richardson (eds), *Company Law and Sustainability* (Cambridge University Press 2015).

<sup>29</sup> Capital Markets Authority Kenya, 'Green Bond Guidelines' (CMA Kenya 2019).

<sup>30</sup> International Organization of Securities Commissions, 'Environmental, Social and Governance (ESG) Ratings and Data Products Providers' (IOSCO 2021).

## VI. TOWARDS A HARMONISED LEGAL FRAMEWORK: RECOMMENDATIONS

The foregoing analysis reveals that the current patchwork of voluntary standards and divergent national frameworks is insufficient to ensure the integrity of sustainable finance markets or to channel the scale of capital required for the global energy transition. This paper advances the following recommendations for a more coherent and effective legal framework.

First, the international community should pursue the development of a **global green taxonomy baseline** under the auspices of IOSCO or the UN Environment Programme Finance Initiative (UNEP FI).<sup>31</sup> Such a baseline need not displace domestic taxonomies but should establish minimum definitional criteria — analogous to the “do no significant harm” principle in EU law — that credibly distinguish green from non-green activities. This would reduce regulatory arbitrage while permitting jurisdictions to accommodate domestic developmental priorities.

Second, states should transition from voluntary to **mandatory disclosure regimes** calibrated to institutional capacity. The ISSB’s IFRS S2 standard provides a credible international baseline and should be adopted as the minimum standard for climate risk disclosure in capital markets regulation globally. Jurisdictions that have not yet mandated TCFD-aligned disclosure should incorporate such requirements into their securities laws. Where capacity constraints exist — as in many developing economies — phased implementation timelines should be adopted, supported by technical assistance from international financial institutions.

Third, **regulatory oversight of external reviewers and ESG data providers** must be strengthened. Drawing on the model of credit rating agency regulation under the EU’s Credit Rating Agency Regulation and the Dodd-Frank Act, legislators should introduce licensing requirements, conflict of interest rules, and methodological disclosure standards for ESG rating providers. This would enhance the reliability of third-party assessments upon which green bond credibility depends.

Fourth, jurisdictions should introduce dedicated **anti-greenwashing provisions** in their securities laws and consumer protection frameworks. Such provisions should impose liability on issuers who make materially false or misleading environmental claims, and should empower

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<sup>31</sup> United Nations Environment Programme Finance Initiative, ‘Principles for Responsible Banking’ (UNEP FI 2019) <https://www.unepfi.org> accessed 10 April 2025.

securities regulators to investigate and sanction greenwashing conduct. The EU's Green Claims Directive initiative, which targets greenwashing in corporate environmental communications, provides a useful legislative model.

## VII. CONCLUSION

The regulation of sustainable finance stands at a critical juncture. Green bonds have emerged as a pivotal instrument in mobilising private capital for climate action, and climate risk disclosure frameworks have begun to reshape corporate governance and investment practices globally. However, the current legal landscape is characterised by fragmentation, voluntary reliance, and inconsistent enforcement — conditions that are structurally incompatible with the urgency and scale of the climate challenge.

This paper has demonstrated that effective sustainable finance regulation demands a tripartite legal architecture: first, mandatory and internationally harmonised green taxonomies that provide a credible definitional foundation; second, binding climate risk disclosure obligations grounded in the ISSB's IFRS S2 standard; and third, robust enforcement mechanisms — including liability for greenwashing and oversight of ESG rating providers — that give legal teeth to disclosure and labelling requirements. The comparative analysis of EU, US, and Indian regulatory frameworks reveals that the EU has made the most significant strides toward a comprehensive binding framework, while the US and India, notwithstanding important recent developments, continue to rely substantially on voluntary or sectoral measures.

Ultimately, the transition to a sustainable financial system is not merely a market challenge but a legal imperative. As the *Paris Agreement* makes clear, aligning financial flows with climate objectives is a binding international commitment. Realising this commitment requires legal frameworks that are mandatory, standardised, and enforced — frameworks capable of ensuring that the billions of dollars flowing through green bond markets genuinely contribute to a low-carbon, climate-resilient future, rather than merely bearing the appearance of doing so.