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THE EUROPEAN GREEN BOND MARKET AND THE PATH FORWARD FOR THE UNITED STATES

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Green bonds—bonds whose proceeds are to be used for "green" purposes—have a significant market position. For example, they have made up around 5 to 7% of European corporate bond issuances in recent years.

Questions remain, however, about how investors know that issuers actually use green bond proceeds to advance the bonds' ostensible purpose. Scholars have pointed to capacious definitions of "green," weaknesses in reviews and reporting, the absence of remedies for failure to use proceeds as stated, and other gaps in investor protection. These gaps may help explain why European corporate green bonds do not appear to command an economically significant premium over non-green bonds.

The EU has recently adopted the EU Green Bond Standard (EU GBS), a voluntary framework designed to increase investor assurance of the "green quality" of green bonds. This Article reviews the key components of the EU GBS, including its definition of "green" activities, reporting and disclosure requirements, requirements for external reviews of issuers' green bond reporting, and (indirect) administrative penalties for noncompliance. It provides a detailed comparison of the EU GBS to the prevailing standard, the International Capital Market Association Green Bond Principles, and identifies several areas in which the EU GBS are more demanding. These differences, by and large, tend to address scholarly criticisms of the green bond market.

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Early signs indicate that issuers are starting to use the EU GBS. An experiment is underway: if issuers find that adhering to the EU GBS leads to a greenium—a higher price for green bonds relative to comparable non-green bonds—they may be induced to commit voluntarily to green quality along lines similar to those of the EU GBS. Such a development would be important for the future development of the U.S. bond market, as government action to raise green bond quality standards seems unlikely in the near future.

Introduction

Issuance of green bonds, defined as bonds whose proceeds are to be used for green purposes[1] has grown tremendously since the World Bank issued the first one in 2008.[2] The Climate Bonds Initiative, for example, reports over $600 billion in global issuance in 2024, as compared with less than $200 billion in 2017.[3] In Europe, green bonds have been issued to fund, for example, low-carbon buildings and transport, as well as renewable energy projects.[4] By providing green-minded investors a way to channel funds to green projects, green bonds could make such projects more attractive to issuers and promote the transition to green energy.[5]

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1. *See* Int'l Cap. Mkts. Ass'n, Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds 2 (2025), https://www.icmagroup.org/assets/documents/Sustainable-finance/2025-updates/Green bond-Principles-GBP-June-2025.pdf [hereinafter ICMA Green Bond Principles] ("Green Bonds are any type of bond instrument where the proceeds or an equivalent amount will be exclusively applied to finance … Green Projects.").

2. *See* World Bank Group, *10 Years of Green Bonds: Creating the Blueprint for Sustainability Across Capital Markets* (Mar. 18, 2019), https://www.worldbank.org/en/news/immersive-story/2019/03/18/10-years-of-green-bonds-creating-the-blueprint-for-sustainability-across-capital-markets (recounting story of World Bank's issuance of first green bond).

3. *See* Climate Bonds Initiative, Sustainable Debt Global State of the Market 3 (2025), https://www.climatebonds.net/data-insights/publications/https-www.climatebonds.net-data-insights-publications-global-state-market.

4. *See* Climate Bonds Initiative, Certified Climate Bonds Database, https://www.climatebonds.net/data-insights/market-data/certified-climate-bonds-database (workpapers on file with author).

5. *See* Moran Ofir & Tal Elmakiess, *The Eco-Agency Problem and Sustainable Investment*, 49 BYU L. Rev. 1675, 1704 (2024) ("In sum, the fundamental purpose of a green bond is to promote environmental investments by funding projects that yield environmental benefits.").

But questions persist about the "green quality" of such bonds. How are investors to know that the intended purpose is actually "green," and how are they to know that bond proceeds are actually used for the intended purpose?

The leading green bond framework in the United States, and globally, has been the Green Bond Principles (hereinafter referred to as GBP or ICMA GBP) developed by the International Capital Market Association, an association of financial firms.[6] Commentators have pointed out several potential weaknesses in the GBP-governed market;[7] the new EU standards are designed to address some of the weaknesses.[8]

The criticisms include the following. First, the standards for what counts as a "green" use of proceeds are loose. The GBP provide that permissible uses "include, but are not limited to" ten very broadly defined categories, such as "clean transportation."[9] Commenters have worried that the GBP thus allow "green" bonds to be issued for projects with little or no environmental benefit.[10] Second, there are gaps in reporting on the use of proceeds. The GBP "recommend[]," but do not require, that companies use an external reviewer to provide assurance that funds are used as the company states.[11] Issuers do not always engage reviewers and, when they do, the reviews often provide assurance only at a high level of generality.[12] Third, the GBP do not require the issuer to assume contractual liability for failure to use bond proceeds for green purposes.[13] Research suggests that such liability is rare to nonexistent in the U.S. corporate market[14] and limited globally.[15] Fourth, the GBP indicate that the issuer "should" report on the "expected" environmental impact of the projects the bond finances,[16] but

6. *See generally* ICMA GREEN BOND PRINCIPLES, *supra* note 1.
7. *See* discussion *infra* Part I.B.
8. *See* discussion *infra* Part II.C.2.
9. *See* ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 3–4. The GBP do provide a non-exhaustive list of clean-transportation projects. *Id.* at 4.
10. *See* discussion *infra* Part I.B.1.
11. *See* ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 6.
12. *See* John Patrick Hunt, *Green Bond Reporting*, 2024 COLUM. BUS. L. REV. 201, 201 (summarizing findings).
13. *See* ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 6.
14. *See* John Patrick Hunt, *Enforcing Green Bond Commitments*, 2026 U. ILL. L. REV. (forthcoming) (manuscript at 10–12) (on file with author).
15. *See* Quinn Curtis, Mark Weidemaier & Mitu Gulati, *Green Bonds, Empty Promises*, 102 N.C. L. REV. 131, 138 (2023).
16. *See* ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 5.

does not require reporting of actual impacts after funds have been allocated.[17]

Stricter standards could actually help green bond issuers themselves. The (small) existing literature finds that green bonds in the U.S. corporate market do not command a significant premium over similar non-green bonds (a "greenium").[18] Studies of European markets, reflecting the situation before adoption of the new standards, are mixed, but there is no scholarly consensus that green bonds command a significant, persistent greenium in either the U.S. or the European market.[19]

More stringent standards could enhance the credibility of the green bond market and allow issuers to command a greenium: if green-minded investors had more confidence in how the proceeds would be used, they might be willing to pay more for the bond. Surveys indicating that investors in green bonds want more transparency and credibility from the market buttress the argument.[20] However, there is at present little direct evidence on this question. It is possible that raising quality standards could just increase the cost of issuing green bonds without enhancing credibility—at least in a way the market values.

The recently adopted heightened quality standards for European green bonds may provide insight into the issue. Among other things, the new European rules prescribe permitted uses of green bond proceeds and require both external review of the use of proceeds and reporting on the environmental impact of activities financed by the green bond.[21] In these respects, they are more stringent than the currently prevailing ICMA GBP, referenced above.[22]

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17. *See id.*

18. *See* Hunt, *Enforcing Green Bond Commitments, supra* note 14, at 14–18 (reviewing literature).

19. *See* discussion *infra* Part I.A.2.

20. *See, e.g.*, Ivan Sangiorgi & Lisa Schophohl, *Why Do Institutional Investors Buy Green Bonds: Evidence from a Survey of European Asset Managers*, 75 INT'L REV. OF FIN. ANALYSIS 1, 2, 16 (2021) (reporting, based on survey, that investors would be deterred from buying green bonds by poor reporting and that investors believe that greenwashing is hindering development of the market).

21. *See* discussion *infra* Part II.B (summarizing major provisions of EU Green Bond Standard).

22. *See* discussion *infra* Part II.C.1.

The new European rules (hereinafter referred to as "EU Green Bond Standard" or "EU GBS")[23] will function as an experiment in raising the quality of green bonds. If a persistent and significant greenium appears in the European market after the introduction of the new standard, that would suggest that stronger green-quality standards are good for issuers as well as investors.

The experiment is imperfect in some respects. The European approach could be stronger. For example, the EU GBS does not mandate contractual remedies if an issuer does not use green bond proceeds for green purposes, although the EU GBS does provide that national governments should implement a regime of administrative sanctions for certain conduct related to green bonds. The best reading of the EU GBS probably is that failure to use green bond proceeds for green purposes is to be administratively sanctionable, although this is not entirely clear.[24] The EU GBS may also expand fraud remedies for deceptive green representations.[25] Thus, if a greenium does not appear, the reason may be that the rules did not go far enough, rather than that they went too far.

The EU Green Bond Standard is voluntary.[26] However, given their provenance from a major global institution, they are likely to have a greater impact than existing voluntary green bond certification schemes, such as those offered by the non-profit Climate Bonds Initiative.[27] For example, the European Investment Bank, a leading issuer of green bonds, reportedly has committed to aligning its program with the EU GBS.[28]

The appearance of a significant, persistent greenium in Europe after the new rules are in place could be important to the development of the U.S. market. At least for the next few years, the United States seems unlikely to follow Europe's path

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23. *See* Regulation (EU) 2023/2631 of the European Parliament and of the Council of 22 November 2023 on European Green Bonds, 2023 O.J. (L 2631) 1 [hereinafter EU GREEN BOND REGULATION].

24. *See* discussion *infra* Part II.C.2.

25. *See infra* note 226 and accompanying text.

26. *See* EU GREEN BOND REGULATION, *supra* note 23, art. 3 (requiring compliance with standards' requirements only if "[t]he designation 'European Green Bond' or 'EuGB' [is] used").

27. *See* discussion *infra* Part III.A.

28. *See* EU GREEN BOND REGULATION, *supra* note 23, recital 20, at 5. The European Investment Bank already has issued at least one green bond under the EU Green Bond Standard. *See* discussion *infra* Part I.A.3.

of legislative and administrative development of green bond quality standards.[29] Progress seems likely to come, if at all, from market participants.

If issuers in the U.S. market see that committing to quality standards commands a premium, they will have a reason to do so even without government action. Issuers could commit in bond indentures and prospectuses to external review and certification of use of bond proceeds and to reporting on the environmental impact of the use of proceeds. Although a tighter market-wide definition of "green bond" might require collective action, individual issuers could commit to detailed descriptions of the projects the bond is to finance. This would help combat the perception that "greenwashing" afflicts the green bond market.

Inducing a greenium is not the only reason to strengthen transparency and raise quality standards in the green bond market. Protecting investor expectations and combating fraud are others.[30] But concrete experience indicating that high-quality products command a significant, persistent premium over non-green bonds would help the U.S. market develop in the coming years.

I.
Background

A. *Description of the European Corporate Green Bond Market*

1. *Size*

As Table 1 demonstrates, green bonds grew rapidly as a share of the Eurozone corporate market in 2018–21, before their market share stabilized in the range of 5.5 to 7.5%. It is possible that green bonds' share of the market has since started to decline, as the 5.18% share in the first half of 2025 is the lowest recorded since 2020,[31] but it is too early to say definitively that this is the case.

29. *See* discussion *infra* Part I.A.3.
30. *See* discussion *infra* Part I.C.2.
31. *See infra* Tbl. 1.

TABLE 1: GREEN BONDS AS SHARE OF EUROZONE CORPORATE BOND ISSUANCE[32]

Period	Corporate Green Bond Issuance (EUR billions)	Total Corporate Bond Issuance (EUR billions)	Green Bond Share of Total Corporate Bond Issuance (%)
2025 (first half)	69.84	1,349.38	5.18
2024	161.68	2,370.04	6.82
2023	131.59	2,257.18	5.83
2022	133.84	1,953.59	6.85
2021	128.65	1,752.32	7.34
2020	81.72	1,933.72	4.23
2019	67.59	2,582.25	2.62
2018	32.20	2.339.77	1.38

2. *Greenium Does Not Appear Economically Significant*

Economists have modeled markets in which some, but not all, investors prefer green assets.[33] They find that in such markets, we would expect green assets to offer a lower expected financial return relative to equivalent non-green assets.[34] Given that bond prices are inversely related to returns,[35] the lower expected return for green bonds translates to a higher price, or

32. *See* workpapers on file with author (data from Bloomberg Financial Information Service).

33. *See* Ľuboš Pástor, Robert F. Stambaugh & Lucian A. Taylor, *Sustainable Investing*, 17:7 ANN. REV. FIN. ECON. 1 (2025); Malcolm Baker, Daniel Bergstresser, George Serafeim & Jeffrey Wurgler, *The Pricing and Ownership of US Green Bonds*, 14 ANN. REV. FIN. ECON. 415 (2022).

34. *See* Pástor, Stambaugh & Taylor, *supra* note 33, at 1 (predicting that greenium is positive and increases when green investors have a greater share of invested wealth, have more intense green preferences, and have less risk aversion; and when either green or non-green assets predominate among available assets); Baker, Bergstresser, Serafeim & Wurgler, *supra* note 33, at 426 (predicting that green bonds will have lower expected returns than non-green bonds).

35. For example, consider a bond that will pay $1,000 in a year. For the bond to produce a 5% return, the price today must be $952.38. For the bond to produce a 10% return, the price today must be $909.09. A lower price is associated with a higher return.

"greenium."[36] Importantly, such models implicitly assume that an investment's degree of greenness is known to investors, so that they can express their green inclinations through market decisions.

If green bonds were, in fact, green and known to be green, the economists' models suggest that we should observe a greenium. The empirical evidence is somewhat mixed, but it does not show a strong, persistent greenium in either the U.S. or the European markets for corporate green bonds.

An early study by Gianfranco Gianfrate and Mattia Peri of euro-denominated corporate green bonds finds a greenium of 15 to 19 basis points (0.15% to 0.19%) of yield in the primary market, the market for bonds at issuance.[37] The authors find that this greenium is statistically significant.[38] In the secondary market, where bonds trade after they are issued, Gianfrate and Peri find a (less significant) greenium of "about" 5 basis points."[39]

A more recent study of corporate green bonds by Paulo Alves, João Pinto, and Euclides Lopes finds no significant greenium in the dollar- or euro-denominated markets.[40] The authors estimate the euro greenium at 8 basis points (0.08%) of yield.[41] Alves, Lopes, and Pinto do not distinguish between U.S. and non-U.S. issuers of dollar-denominated bonds. They find a 17-basis-point greenium (0.17% of yield) for such bonds, which still is not significant.[42]

The most recently published study by John Caramichael and Andreas C. Rapp finds that there is "no significant average greenium in the domestic dollar market and in the non-euro market more generally."[43] Caramichael and Rapp do find that euro-denominated green corporate bonds command a

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36. *See, e.g.*, Pástor, Stambaugh & Taylor, *supra* note 33 at 4 ("[T]he difference in expected returns between brown and green assets having equal market betas" is "sometimes termed the greenium.").

37. Gianfranco Gianfrate & Mattia Peri, *The Green Advantage: Exploring the Convenience of Issuing Green Bonds*, 219 J. CLEANER PROD. 127, 130 Tbl. 2 (2019)

38. *See id.*

39. *Id.* at 131 & 133 Tbl. 6.

40. Paulo Alves, Euclides Lopes & João Pinto, *Is There a Greenium in the Corporate Green Bond Market?*, II:2 EUR. REV. OF BUS. ECON. 123, 137 (2023).

41. *Id.* at 136.

42. *Id.*

43. John Caramichael & Andreas C. Rapp, *The Green Corporate Bond Issuance Premium*, 162 J. BANKING & FIN. 1, 2 (2024).

statistically significant greenium,[44] as do dollar-denominated green corporate bonds from non-U.S. issuers.[45] They estimate the euro greenium at 6 basis points (0.06%).[46] To provide a potential explanation for the difference between Alves, Lopes, and Pinto findings and those of Caramichael and Rapp, Alves, Lopes and Pinto note that their sample excluded green bonds issued by state-owned enterprises.[47]

Thus, the (small) literature provides some support for the proposition that a greenium is more prevalent in Europe than in the United States. The Gianfrate and Peri[48] and Caramichael and Rapp[49] studies find that the euro greenium is significant. The Alves, Lopes, and Pinto study finds no significant greenium for dollar-denominated bonds,[50] and the Caramichael and Rapp study finds no significant greenium for U.S. issuers.[51]

However, even the observed European greenium has not been large. To see this more clearly, an illustrative translation of the yield greenium into a dollar price difference follows. Consider a 10-year bond with a 1,000 euro face value and a 5% annual coupon (interest) rate with two coupons per year. The bond thus promises to pay 25 euro (5%/year x 1000 euro divided by 2 payments/year) every six months until ten years after issuance, when it promises a final payment of 1,025 euro (a final interest payment plus payment of the face value). Now assume that the non-green version of this bond yields 5%, a plausible estimate for investment-grade corporate bonds. These assumptions translate to a price for the non-green bond of 1,000 euro. Now consider the green version of this bond. Due to the greenium, the green bond will have a lower yield and a higher price relative to the non-green bond. Table 2 presents the price difference for this bond implied by each of the greenium estimates just recounted.

44. *Id.* at 18 Tbl. 9.

45. *Id.*

46. *Id.*

47. *Id.*

48. *See* Gianfrate & Peri, *supra* note 37, at 128 (noting "statistically significant advantage" of green bonds to issuers)

49. *See* Caramichael & Rapp, *supra* note 44, at 17 ("We find significant statistical evidence for a 6 point average greenium for euro area issuers").

50. *See* Alves, Pinto & Lopes, *supra* note 40, at 135 (referring to USD-denominated and EUR-denominated subsamples, "[E]ach of the subsamples reveals a green bond premium, but yields do not differ significantly between green and conventional corporate bonds at the 5% significance level.").

51. *See* Caramichael & Rapp, *supra* note 44, at 17 ("no statistical evidence of a greenium for issuers from the United States").

TABLE 2: GREENIUM ESTIMATES IN TERMS OF BOND PRICE

	Base Case (Non-Green Bond)	Gianfrate & Peri (2019) (Primary Market)	Gianfrate & Peri (2019) (Secondary Market)	Alves et al. (2023)	Caramichael & Rapp (2024)
Greenium (Yield %)	0	17	5	8	6
Annual Yield	5%	4.83%	4.95%	4.92%	4.94%
Price	1,000.00 €	1,013.36 €	1,003.91 €	1,006.26 €	1,004.69 €
Greenium (Price %)	0.00%	1.34%	0.39%	0.63%	0.47%

Notably, the difference in the bond's price is less than 1% in all cases except for Gianfrate and Peri's estimate of the greenium for the primary market, where it is 1.34%. Gianfrate and Peri's greenium, modest as it is, appears to be an outlier, possibly due to the older data they were working with.[52] The bottom line is that euro-denominated green bonds may command a greenium, but it is at most a small one.[53]

3. *Greenium Bonds Meeting the European Green Bond Standard*

The EU Green Bond Standard went into effect on December 21, 2024. As of August 1, 2025, the Bloomberg Financial Information Service reported that 10 corporate

52. The bonds Gianfrate and Peri studied were issued between 2013 and 2017, *see* Gianfrate & Peri, *supra* note 37, at 127, and the last secondary-market observations those authors analyze are from December 2017. *Id.* at 133 Tbl. 6. By contrast, the bonds that Alves, Lopes, and Pinto analyze were issued from 2014 to 2021. *See* Alves, Lopes & Pinto, *supra* note 40, at 131. Caramichael & Rapp likewise analyze bonds issued from 2014 to 2021. *See* Caramichael & Rapp, *supra* note 44, at 4.

53. Caroline Flammer's study of global green bond issuance from 2013 to 2018 finds "no pricing differential," which the author terms "inconsistent with the cost of capital argument, according to which companies would issue green bonds to benefit from a cheaper source of financing." Caroline Flammer, *Corporate Green Bonds*, 142 J. FIN. ECON. 499, 501 (2021).

bonds had been issued under the EU Green Bond Standard.[54] Table 3 gives information about these bonds.[55]

TABLE 3: GREEN BONDS ISSUED UNDER EU GREEN BOND STANDARD[56]

Issuer	**Business**	**Country**	**Amount Issued (EUR millions)**	**Issue Date**
A2A SpA	Multi-utility (energy, water, waste management)	Italy	500	1/30/2025
ABN AMRO Bank NV	Bank	Nether-lands	750	2/25/2025
European Investment Bank	Investment bank	Supra-national	3,000	4/9/2025
Iberdrola Finanzas SA	Electric utility	Spain	750	5/16/2025
ABN AMRO Bank NV	Bank	Nether-lands	1,000	6/4/2025
Rigas Udens SIA	Water utility	Latvia	20	6/4/2025
Norsk Hydro ASA	Aluminum production, renewable energy, mining	Norway	500	6/17/2025
Covivio SA/ France	REIT – office, hotel, residential	France	500	6/17/2025
Snam SpA	Natural gas storage, transmission, regas-ification	Italy	1,000	7/1/2025
Terna – Rete Elettrica Nazionale	Grid operator	Italy	750	7/22/2025

54. *See* workpapers on file with author (data from Bloomberg Financial Information Service).
55. The currency for all bonds was the euro.
56. *See* workpapers on file with author (data from Bloomberg Financial Information Service).

Total issuance under the EU Green Bond Standard was 8.77 billion euro during this period.[57] For comparison, all green bond issuances by European issuers were 92.18 billion euro from January 30, 2025 (the date of issuance of the first European Green Bond) to August 1, 2025 (the closing date of the research).[58] Issuances under the EU Green Bond Standard thus accounted for around 9.5% of all issuances of European green bonds.[59]

In addition to the corporate bonds in Table 3 that are the focus of this paper, governmental units also issued two bonds under the EU GBS. The issuers were the French public transit authority, Ile-de-France Mobilités (one billion euro), and the Spanish municipality, the Autonomous Community of Madrid (500 million euro).[60]

Thus, the early evidence suggests that issuers will try the new standard in sufficient numbers to make for a meaningful experiment. The bond rating firm S&P Global Ratings expects that the EU GBS will "continue stimulating bond issuance in Europe," predicting "wider adoption" outside the utility and energy sectors "as data quality improves."[61]

B. *Criticisms of the Green Bond Market*

1. *Overly Lenient Definitions of "Green"*

Commentators have noted that the prevailing ICMA GBP are not highly prescriptive or detailed. Stephen Kim Park

57. *See* workpapers on file with author (data from Bloomberg Financial Information Service).

58. *See* workpapers on file with author (data from Bloomberg Financial Information Service). This number is computed by adding issuance from Norwegian issuers and the European Investment Bank to issuance by Eurozone issuers. Both a Norwegian issuer and the European Investment Bank issued bonds under the EU Green Bond Standard, but neither Norwegian issuers nor the European Investment Bank are considered Eurozone issuers by Bloomberg.

59. *See* workpapers on file with author (data from Bloomberg Financial Information Service).

60. *See* workpapers on file with author (data from Bloomberg Financial Information Service).

61. S&P Global Ratings, Sustainability Insights: Sustainable Bonds Global, Feb. 12, 2026, at 16https://www.spglobal.com/ratings/en/regulatory/article/sustainability-insights-sustainable-bonds-global-outlook-2026-consolidation-not-expansion-s101668325. The firm predicts in the same report that the global sustainable bond market will stabilize in 2026 after a sharp drop in 2025. *See id.* at 1.

observed of the 2017 ICMA GBP, "[t]he lack of prescriptiveness of the GBPs is a central feature, reflected in the absence of mandatory language."[62] This arguably makes it "too easy" to qualify the intended uses of a bond's proceeds as green.[63]

The current ICMA GBP, dated 2025, do not appear to contain any definition of green projects that issuers must follow, apart from the provision that "Green Projects should provide clear environmental benefits, which will be assessed and, where feasible, quantified by the issuer."[64] The ICMA GBP do contain a list of ten project categories.[65] The categories take up less than a page, indicating the lack of specificity with which the projects are defined.[66] And the GBP make clear that even this list is non-exhaustive, stating, "[t]he eligible Green Projects categories . . . include, but are not limited to" the listed items.[67]

2. *Weak Pre-Issuance Reviews*

Commentators such as Paul Rose have criticized pre-issuance review as weak.[68] They have identified aspects of the market for pre-issuance reviews that might cause it to function poorly, such as the fact that issuers pay the reviewers for the reviews[69] and the risk that an oligopoly of reviewing firms might

62. Stephen Kim Park, *Investors as Regulators: Green Bonds and the Governance Challenges of the Sustainable Finance Revolution*, 54 STAN. J. INT'L L. 1, 23 (2018).

63. *See* Cristina M. Banahan, *The Bond Villains of Green Investment: Why an Unregulated Securities Market Needs Government to Lay Down the Law*, 43 VT. L. REV. 841, 856–57 (2019) (reporting criticism of green status of bond issued by petroleum producer Repsol); VIGEO EIRIS ENTERPRISE, SECOND PARTY OPINION ON THE SUSTAINABILITY OF REPSOL'S GREEN BOND 10 (2017), https://www.repsol.com/content/dam/repsol-corporate/es/accionistas-e-inversores/pdf/repsol-greenbond-second-party-opinion.pdf (reporting that Repsol green bond complied with GBP for use of proceeds); *see also* Park, *supra* note 61, at 43 (noting that NGOs argue that "the flexibility of private governance standards is a proximate cause of environmentally-destructive greenwashing").

64. ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 3.

65. *Id.* at 3–4.

66. *Id.*

67. *Id.* at 3.

68. *See* Paul Rose, *Certifying the "Climate" in Climate Bonds*, 14 CAP. MKTS. L.J. 59, 70 (2019) (reporting, based on review of pre-issuance reports on sovereign green bonds, "[b]ecause of their limited scope, the texts of the verifications studied above do not themselves inspire confidence in the 'climate' nature of the climate bonds verified thereunder.").

69. *See id.* at 71; Paul Rose, *Sustainability Verification*, 72 AM. U. L. REV. 1017, 1056–57 (2022).

emerge.[70] Oligopolies have emerged in other certification markets, such as bond rating, possibly because the difficulty of developing reputational capital protects market leaders from competition.[71]

To strengthen pre-issuance reviews, Park recommends that reviews take the form of third-party audits rather than that of second-party reviews, which is the market standard.[72] Failing that, he advocates rules to "incentivize issuers to permit the public disclosure of second opinions."[73]

3. *Gaps in Proceeds Reporting*

As Luca Enriques, Alessandro Romano, and Andrew Tuch have noted, "[i]t can be hard for [ESG-conscious investors] to tell whether a green bond is truly invested in projects that are beneficial to the environment."[74] The existing ICMA GBP do require post-issuance reporting on use of proceeds, although research has found gaps in the system.

The ICMA GBP require annual reporting from issuance of a green bond until full allocation of its proceeds.[75] The GBP provide that the reporting "should include a list of the projects to which Green Bond proceeds have been allocated, as well as a brief description of the projects, the amounts allocated, and their expected impact."[76] The GBP "recommend," but do not require, "the use of an external auditor, or other third party, to verify the internal tracking and the allocation of funds."[77] As Park has observed, pre-issuance reviews "do not provide ongoing or *ex post* assurance."[78]

Research has pointed to gaps in post-issuance reporting. A study of U.S. corporate green bonds issued from mid-2019 to mid-2022 found that although around 90% of surveyed green bonds did have some locatable post-issuance reporting, only around 70% had reporting certified by a third party and only

70. *See* Rose, *supra* note 68, at 1057–59 (noting potential positive and negative effects of certification oligopolies); Rose, *supra* note 68, at 70–71 (same).
71. *See* Rose, *Sustainability Verification, supra* note 68, at 1057.
72. *See* Park, *Investors as Regulators, supra* note 62, at 44.
73. *Id.*
74. Luca Enriques, Alessandro Romano & Andrew Tuch, *Green Gatekeepers*, 109 MINN. L. REV. 609, 626 (2024).
75. ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 5.
76. *Id.* at 5.
77. *Id.* at 6.
78. *See* Park, *supra* note 62, at 30.

around 60% reported at a project-by-project level.[79] These findings could indicate deficiencies. When reported information is not checked by a third party and is not reported on a granular level, investors are in essence asked to take the issuer's representations on faith.

4. *Weak or No Contractual Liability*

Contractual liability for failure to invest bond proceeds for green purposes does not seem to be an important feature of the green bond market. An empirical study of the global market by Quinn Curtis, Mark Weidemaier, and Mitu Gulati finds that "the market has evolved away from, not towards, enforceability."[80] The present author's study of green bonds issued in the U.S. corporate market from mid-2023 to mid-2024 finds no examples of contractual commitment to green use of proceeds.[81]

As commenters have pointed out, issuers may face securities fraud liability if the relevant standards are met.[82] However, securities fraud in the United States[83] and Europe[84] generally

79. *See* Hunt, *Green Bond Reporting*, *supra* note 12, at 207.

80. Curtis, Weidemaier & Gulati, *supra* note 15, at 138.

81. *See* John Patrick Hunt, *Enforcing Green Bond Commitments*, *supra* note 18, at 10–11.

82. *See, e.g.*, Curtis, Weidemaier & Gulati, *supra* note 15, at 167–68.

83. *See, e.g.*, Tellabs, Inc. v. Makor Issues & Rights, Ltd., 551 U.S. 308, 319 (2007) ("To establish liability under § 10(b) and Rule 10b-5, a private plaintiff must prove that the defendant acted with scienter, a mental state embracing intent to deceive, manipulate, or defraud."). Section 11 of the Securities Act of 1933 imposes strict liability for untrue statements of material fact and misleading omissions of material fact in registration statements. *See* 15 U.S.C. § 77k (2025). But, even if a registration statement is issued for a green bond, the issuer can limit itself to a statement, at most, of present intention to use bond proceeds for green purposes.

84. The EU's Prospectus Regulation provides, "Member States shall ensure that their laws, regulations, and administrative provisions on civil liability apply to those persons responsible for the information given in a prospectus." Regulation 2017/1129 of the European Parliament and Council of June 14, 2017, on the Prospectus to Be Published When Securities Are Offered to the Public or Admitted to Trading on a Regulated Market and Repealing Directive 2003/71/EC, art. 11(2), 2017 O.J. (L 168) 12, 41. A 2013 report on different national liability schemes within the EU for prospectus statements indicates that "[i]n most countries, the degree of fault required for civil liability is at least negligence," with strict liability applied in Bulgaria, Hungary, Ireland, Latvia, and Slovenia. EUROPEAN SECURITIES AND MARKETS AUTHORITY, COMPARISON OF LIABILITY REGIMES IN MEMBER STATES IN RELATION TO THE PROSPECTUS DIRECTIVE 13 (2013).

requires some showing of the defendant's mental state, and such a showing may be difficult for plaintiffs to make.[85]

5. *No Impact Reporting Review Requirement*

"Impact reporting" is reporting on the actual environmental effects of the use of green bond proceeds.[86] For example, the International Finance Corporation's *Green and Social Bond Impact Report* for Fiscal Year 2024 reports on tons of greenhouse gas emissions avoided, megawatt-hours of renewable energy generated, and megawatt-hours of energy saved as a result of the green bonds the organization issued in fiscal 2024.[87]

The ICMA GBP require reporting of "expected" impacts, but apparently not of actual impacts.[88] A 2019 study by the Climate Bonds Initiative reportedly found that only 79% of green bonds, and only 53% of issuers, "provid[ed] reporting on allocation/impact metrics."[89]

6. *Exclusive Reliance on Market Actors*

Park notes that, as of his writing in 2018, the green bond market relied primarily or exclusively on market actors to set its rules.[90] This resulted in the exclusion of the perspectives of other stakeholders[91] and, potentially, a legitimacy deficit.[92] As Park puts it, "the entire regulatory fabric of the green bond market may suffer from systemic legitimacy deficits," which, if

85. In the United States, under the Private Securities Litigation Reform Act, "an inference of scienter must be more than plausible or reasonable—it must be cogent and at least as compelling as any opposing inference of nonfraudulent intent." Tellabs, Inc. v. Makor Issues & Rights, Inc., 551 U.S. 308, 314 (2007). In general, as the Court of Appeals for the Seventh Circuit has observed, "fraud is easy to allege and difficult to prove or disprove." Bower v. Jones, 978 F.2d 1004, 1012 (7th Cir. 1992).

86. *See, e.g.*, AARON E. FRANKLIN, CHRISTOPHER HARRIS & NICHOLAS HAZEN, GREEN BOND IMPACT REPORTING UNDER SECURITIES LAW (2020), https://www.lw.com/admin/upload/SiteAttachments/Latham%20-%20Bloomberg%20Law%20byline%20GreenBondImpactECO-53429.pdf.

87. *See* INT'L FIN. CORP., GREEN AND SOCIAL BOND IMPACT REPORT, FISCAL YEAR 2024, at 6 (2025), https://www.ifc.org/content/dam/ifc/doc/2025/fy24-green-and-social-bonds-impact-report.pdf.

88. *See* ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 5.

89. *See* Michael Doran & James Tanner, *Critical Challenges Facing the Green Bond Market*, INT'L FIN. L. REV., Oct./Nov. 2019, at 24 and Fig. 5.

90. Park, *supra* note 62, at 6.

91. *Id.* at 36.

92. *Id.* at 39. Park argues that reliance on private actors for standard-setting does have the compensating advantage of regulatory flexibility. *Id.* at 30, 46.

unaddressed, could "hinder the growth of the green bond market and . . . stall the sustainable finance revolution."[93]

7. *Regulatory Fragmentation and Race to the Bottom*

Park contends that regulatory regimes that depend on a variety of private actors can exhibit regulatory fragmentation and regulatory arbitrage.[94] Participants potentially can choose which regime they wish to use.[95] Park notes that competition among regulators for issuers in this setting could lead to a "race to the bottom."[96] He argues that, in the green bond market, "[r]egulators may also compete for issuers by ratcheting down the specificity requirements for use of proceeds and post-financing monitoring of use of proceeds."[97]

8. *Arguments That No Action Is Needed*

Despite the criticisms leveled at the green bond market, not all commentators believe that action is needed. For example, Sergio Gilotta writes that concerns about greenwashing and uncertainty arising from the lack of a uniform legal definition of green bonds are "largely unwarranted."[98] He argues that existing law and private ordering are sufficient and that there is "no compelling case for the regulation of green bonds" as such.[99] Gilotta does not fault the EU Green Bond Standard itself; he instead notes that issuers are free to choose whether to use the EU Green Bond designation.[100]

Paul Rose has a mixed view on attempts to standardize the definition of a green bond. While standardized definitions "will reduce search and information costs, allow for comparability of green investment opportunities, and should allow for a more rapid development of expertise and reputation by certifiers,"[101] these advantages come at the risk of "a more rigid and brittle

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93. *Id.* at 7.
94. *Id.* at 31.
95. *Id.* at 36–37.
96. *Id.* at 37.
97. *Id.*
98. *See* Sergio Gilotta, *Green Bonds: A Legal and Economic Analysis, in* RESEARCH HANDBOOK ON ENVIRONMENTAL, SOCIAL, AND CORPORATE GOVERNANCE 226, 227 (Thilo Kuntz ed., 2024).
99. *Id.* at 228.
100. *Id.* at 247–48.
101. Rose, *Sustainability Verification, supra* note 69, at 1065.

market that struggles to adapt to changing policies, social preferences, and technologies."[102]

C. *The Case for Stricter Standards*

Stricter standards for green bond quality could potentially lead to at least two positive outcomes: green bonds could start to command a meaningful greenium, and investors could be better protected.

1. *Potential Induction of Greenium*

The social purpose of green bonds is to attract capital to the green transition.[103] Intuition, confirmed by theoretical work in financial economics, suggests that the most straightforward way for the bonds to accomplish their purpose is to make it cheaper for their issuers to raise capital for green purposes.[104] In other words, for green bonds to work, they should command a greenium. Investors should be willing to pay the issuer more for a green bond than for a similar non-green bond.[105]

To see this, consider a bond that promises to make ten payments of 50 euro at six-month intervals, with a final payment of 1,000 euro after five years. If the issuer can sell this bond for 1,000 euro it will pay 5% interest and will have a cost of (debt) capital of 5%. By contrast, if the issuer can command a 100 euro greenium and can therefore sell the bond for 1,100 euro, the issuer will pay 3.78% interest and will have cost of (debt) capital of 3.78%.

Findings of an economically insignificant greenium dovetail with recent work on the additionality of green bonds. Analyzing the U.S. market, Doctor Pauline Lam and Jeffrey

102. *Id.*

103. *See, e.g.*, ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 1; EU Green Bond Regulation, *supra* note 23, recitals 1–3, at 1.

104. *See* Hunt, *supra* note 18, at 32–33 (discussing studies).

105. Caroline Flammer's results indicate another possible way green bonds could work: through increasing stock price by signaling green commitment. *See* Flammer, *supra* note 53, at 500. Firms might thus be induced to increase green investment by issuing green bonds to gain the increase in stock price. Flammer's study, which covers corporate green bonds issued globally from 2013 to 2018, *id.*, appears to find a statistically significant stock-price increase only for an issuer's first green bond issuance. *See id.* at 508 ("the abnormal returns are … small and insignificant for seasoned issuers"). This phenomenon calls into question the bonds' usefulness in inducing green investment over the long term.

Wurgler report in a 2024 paper that "[o]nly 2% of corporate and green bond proceeds initiate projects with clearly novel green features."[106] If green bonds do not offer a lower cost of capital for green projects, we would not expect them to induce green investment at the margin. Conversely, if more-credible green bonds did offer a lower cost of capital for green projects, we might expect to see issuers using the bonds to tackle projects that they would not otherwise undertake.

As noted, green bonds currently do not seem to be commanding a greenium, at least in the U.S. and European corporate markets.[107] A possible reason that green bonds do not command a greenium is that investors do not trust their "green" nature. Indirect evidence for this proposition comes from studies indicating that the lack of "green credibility" is holding the market back.[108] Increasing the perceived green quality of green bonds (ideally by increasing their actual green quality) could potentially induce a greenium and allow green bonds to fulfill their purpose.

2. *Investor Protection*

Although corporate green bonds do not consistently command a significant greenium,[109] they are purchased in significant quantity,[110] as noted. Information about who owns green bonds is hard to come by, but, given the emphasis on green bonds' "green" nature,[111] it seems likely that many investors in such bonds are drawn by their green characteristics. Increasing the actual green quality of green bonds through stricter standards thus functions as a form of investor protection, ensuring that reasonable expectations are not disappointed.

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106. Pauline Lam & Jeffrey Wurgler, *Green Bonds: New Label, Same Projects* 1 (Nat'l Bur. of Econ. Rsch. Working Paper No. 32960, 2024).

107. *See* discussion *supra* Part I.A.2.

108. *See* Hunt, *supra* note 18, at 32–33 (citing literature).

109. *See* discussion *supra* Part I.A.2.

110. *See* discussion *supra* Part I.A.1.

111. *See* Hunt, *supra* note 18, at 21 (discussing information sources readily available to retail investors that emphasize the "green" aspect of green bonds). Another indicator of the emphasis on green bonds' "green" nature is issuers' reference to the bonds' sustainability characteristics in public statements. *See, e.g.*, Volvo Cars, Press Release, *Volvo Cars Raises EUR 500m through new green bond issuance*, https://www.media.volvocars.com/global/en-gb/media/pressreleases/349680/volvo-cars-raises-eur-500m-through-new-green bond-issuance-1 (stating that Volvo's green bond "demonstrates the company's commitment to sustainability").

The no-greenium and investor-protection rationales may seem mutually contradictory, as one suggests that investors do not value bonds' green nature and the other suggests that investors purchase green bonds for just that reason. But consider two brands of cereal selling for the same price, one of which makes health claims. It is not implausible to imagine that many buyers of the health-claiming cereal are motivated by the health claims, even though overall the cereal is not able to command a price premium over its competitor (perhaps because the competitor has compensating advantages to its buyers, some buyers affirmatively do not want a healthy cereal, or health-conscious buyers use the health claims as a "tie-breaker," but are unwilling to pay more for the health-claiming cereal). Green bonds similarly may appeal to their own customers for "green" reasons without commanding a greenium.

II.
The European Green Bond Standards

This Part briefly summarizes the development of the EU Green Bond Standard in Part II.A. Part II.B gives a concise overview of the standard's major provisions. Part II.C.1 provides a detailed comparison of the EU Green Bond Standard to the ICMA GBP to show how the newly introduced standard is stricter than the currently prevailing one. Part II.C.2 shows that the EU Green Bond Standard includes provisions that could potentially address many academic criticisms of the green bond market.

A. *Background and Process of Developing the Standards*

According to EU website information, the EU Green Bond Standard has its origin in a 2016 study of green bond finance.[112] The study stated, "[t]rust in green labels, and ensuring transparency to the underlying assets, are crucial for this market to reach scale."[113] Noting that investors, particularly non-institutional investors, might have limited "capacity to assess

112. *See* European Union, *The European Green Bond Standard—Supporting the Transition*, https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/european-green bond-standard-supporting-transition_en#policy-making-timeline (last visited Jan. 7, 2026).

113. European Commission, Study on the Potential of Green Bond Finance for Resource-Efficient Investments 57 (2016), available at https://

green credentials,"[114] the report found that "credible guidelines and standards about what should or should not be considered a qualifying green investment, which are accepted by the market, can help guide investors."[115] The report concluded, *inter alia*, that "a common European evidence-based classification of what is green could be beneficial,"[116] recognizing that any "policy/regulatory interventions regarding an upcoming EU Green Bond Standard should be built upon the experience of the GBP and the CBS [Climate Bonds Standards]."[117]

After taking feedback on an interim report on an EU Green Bond Standard, the EU Technical Expert Group on Sustainable Finance produced a proposal for an EU Green Bond Standard in 2019.[118] Public consultation on the standard and the EU's overall sustainable finance strategy occurred in 2020,[119] and later that year the European Council "invited the Commission to put forward a legislative proposal for a green bond standard."[120]

In 2021 the Directorate-General for Financial Stability, Financial Services and Capital Markets Union produced a legislative proposal for the standard.[121] In March 2023, the Commission announced political agreement between the European Parliament and the European Council on the standard.[122] The EU Green Bond Standard was published as a regulation in the

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op.europa.eu/en/publication-detail/-/publication/5a95e1b0-dc82-11e6-ad7c-01aa75ed71a1/language-en.

114. *Id.*

115. *Id.*

116. *Id.* at 77.

117. *Id.*

118. EU Technical Expert Group on Sustainable Finance, Rep. on EU Green Bond Standard, at 8 (June 2019), https://finance.ec.europa.eu/document/download/bca86ee3-0534-49fe-a7c4-c6ba3a73b63b_en?filename=190618-sustainable-finance-teg-report-green bond-standard_en.pdf.

119. *See Summary Report of the Stakeholder Consultation on the Renewed Sustainable Finance Strategy*, at 5 (Feb. 10, 2021) https://finance.ec.europa.eu/regulation-and-supervision/consultations/2020-sustainable-finance-strategy_en (reporting consultation period of Apr. 8, 2020 to July 15, 2020).

120. *See* EU Green Bond Regulation, *supra* note 23, at 1.

121. *See Proposal for a Regulation of the European Parliament and of the Council on European Green Bonds*, COM (2021) 391 final (July 6, 2021).

122. *See* European Commission Daily News MEX/23/1301, Daily News 01/03/2023 (Feb. 28, 2023) (reporting on March 1, 2023 that "[t]he Commission welcomes the political agreement reached yesterday between the European Parliament and the Council on the Commission's proposal for a European Green Bond Regulation").

Official Journal of the European Union on November 22, 2023.[123] The regulation went into effect on December 21, 2024.[124]

B. *Overview of the European Green Bond Standard*

This Section presents a brief overview of the EU Green Bond Standard.

An important aspect of the EU Green Bond Standard is that it is optional. Issuers must comply with it only if they choose to use the "European Green Bond" or "EuGB" designation.[125] The four main components of the EU Green Bond Standard for issuers can be described as (1) defining permissible uses of proceeds, (2) enhanced disclosure and reporting, (3) required external review, and (4) administrative remedies. The EU GBS also creates a detailed supervisory regime for external reviewers,[126] as well as special rules for green securitization bonds,[127] which will be left for future work.[128]

The core idea of a green bond is that the proceeds will be used for "green" purposes.[129] The EU Green Bond Standard requires that all uses of proceeds be aligned with the "EU Taxonomy,"[130] which has been described as "a robust classification system that allows companies to share a common definition of sustainable activities in order to promote uniform disclosures and prevent greenwashing."[131] The EU Taxonomy defines many environmentally sustainable activities in terms of "technical screening criteria."[132] For example, the standards for

123. *See* EU Green Bond Regulation, *supra* note 23.
124. *See European Green Bond Standard*, EUR-LEX: ACCESS TO EUROPEAN LAW (last visited Nov. 8, 2025), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=legissum:4711782.
125. *See* EU Green Bond Regulation, *supra* note 23, art. 1(a).
126. *See* EU Green Bond Regulation, *supra* note 23, tit. IV.
127. *See* EU Green Bond Regulation, *supra* note 23, tit. II, ch. 3.
128. The EU GBS also provides for the creation of optional disclosure templates for sustainability-related bonds that are not green bonds. *See id.* tit. III.
129. *See, e.g.*, ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 3 ("The cornerstone of a Green Bond is the utilization of the proceeds for eligible Green Projects.").
130. *See* EU Green Bond Regulation, *supra* note 23, art. 16.
131. *See* Samuel Pinson, *Revamping Green Securitization Frameworks in the EU*, 31 U. MIA. INT'L & COMPAR. L. REV. 201, 216 (2024).
132. *See* Commission Regulation 2021/2139, recitals 1–2, 2021 O.J. (L 442) 1,1.

cement manufacture prescribe a limit of "0.722 tCO_2e [tons of carbon dioxide emitted] per ton of grey cement clinker."[133]

The EU Green Bond Standard requires that 85% of bond proceeds be used for activities complying with technical screening criteria.[134] The other 15% can be used for activities for which there are no technical screening criteria,[135] or for a limited set of "international support activities."[136] The technical screening criteria require that activities "do no significant harm" to environmental or social objectives.[137]

On disclosure and reporting, the EU GBS requires a pre-issuance fact sheet describing the bond's green characteristics,[138] a prospectus (in most cases),[139] annual post-issuance reports on how the issuer is allocating the bond proceeds,[140] and a post-allocation impact report describing the bond's positive and negative environmental impacts.[141] All these reports must be prepared according to standard disclosure templates[142] and made available on the issuer's website free of charge.[143]

For the third pillar, required external review, the EU GBS requires external review of the pre-issuance report[144] and of final allocation reports.[145] External review of the impact report is optional.[146] The EU GBS prescribes, to some extent, the contents of the reviews. For example, reviewers must provide information about sources and must explain the methodology

133. *See id.* annex I, point 3.7.
134. *See* EU Green Bond Regulation, *supra* note 23, annex 1 (4).
135. *See id.* art. 5(1).
136. *See id.*
137. *See, e.g.*, Commission Regulation 2021/2139, *supra* note 132, annex I, point 4.1 (explaining "do no significant harm" standard as applied to solar electricity generation). If a green bond issuer allocates proceeds to activities for which there are no technical screening criteria, those activities also must meet generic criteria for the "do no significant harm" standard. *See* EU Green Bond Regulation, *supra* note 23, art. 5(3); Commission Regulation 2021/2139, *supra* note 131, annex I, app. A-D.
138. *See* EU Green Bond Regulation, *supra* note 23, art. 10(1).
139. *See id.* art. 14(1). A prospectus is not required for certain bonds issued or guaranteed by certain government or quasi-government entities. *Id.*
140. *See id.* art. 11(1).
141. *See id.* art. 10(2).
142. *See id.* annexes I-III.
143. *See id.* art. 15
144. *See id.* art. 10.
145. *See id.* art. 11(4). Annual external reviews are required of issuers using the portfolio method in some circumstances. *See id.* art. 11(6).
146. *See id.* art. 12.

and assumptions they used.[147] As noted, the EU GBS also creates a detailed regulatory regime for the external reviewers themselves.[148]

The fourth pillar of the EU GBS is administrative remedies. The EU GBS generally delegates the task of seeking such remedies to the constituent EU governments while imposing minimum requirements. The EU GBS provides, "Member States shall, in accordance with national law, provide for competent authorities to have the power to impose administrative penalties and take other appropriate administrative measures which shall be effective, proportionate and dissuasive."[149] Although it is not entirely clear that these remedies apply to the substantive failure to use green proceeds for green purposes, rather than to nondisclosure of such failure,[150] it seems likely that they are at least a partial substitute for contractual liability. Some of the penalties appear, on their face, significant. For example, issuers that are legal persons can face administrative fines of "0.5% of the total annual turnover of that legal person."[151]

147. *See id.* annex IV.

148. *See id.* tit. IV.

149. *See id.* art. 49(1).

150. The administrative-penalty provisions apply to "infringements by issuers of their obligations under Title II, Chapter 2, or Article 18, 19, or 21." *Id.* Articles 18, 19, and 21 apply to securitizations and to sustainability-related bonds other than green bonds. *See id.* art. 18; *id.* art. 19; *id.* art. 21. Title II, Chapter 2, comprising Articles 10–15 of the EU GBS, requires the pre-issuance fact sheet with external review, *id.* art. 10, allocation reports with external review, *id.* art. 11, impact report, *id.* art. 12, prospectus, *id.* art. 14, and publication of these documents, *id.* art. 15. With respect to allocation specifically, the EU GBS requires an annual report "demonstrating that the proceeds of the European Green Bond, from its issuance date until the end of the period referred to in the report, have been allocated in accordance with Articles 4 to 8." *Id.* art. 11(1). Article 4 provides that the proceeds of the green bond "shall be allocated, in full, in accordance with the taxonomy requirements." *Id.* art. 4(1). If the issuer does not use proceeds for green purposes, it seems that the issuer would not be able to produce an allocation report demonstrating that the proceeds had been allocated in accordance with the requirements of Article 4, but an issuer might argue that Article 11 imposes only a reporting requirement, one that would be satisfied by reporting that proceeds were not used as required. Notably, violation of Article 4 itself does not trigger the administrative-penalty provisions.

151. *Id.* art. 49(4)(e). For legal persons that are subsidiaries, the turnover used in the calculation appears to be that of the ultimate parent. *Id.* art. 49(4)(f).

C. *Assessment of the European Green Bond Standard in Light of Existing Standards and of Academic Criticisms of the Green Bond Market*

1. *Comparison of the European Green Bond Standard and ICMA Green Bond Principles*

Table 4 presents a detailed comparison of the EU Green Bond Standard with the currently prevailing ICMA GBP.

TABLE 4: ICMA GREEN BOND PRINCIPLES V. EU GREEN BOND STANDARD

Issue	ICMA GBP	EU GBS
Compliance voluntary or mandatory?	Voluntary[152]	Mandatory if issuer designates the bond as "European Green Bond" or "EuGB."[153]
Definition of "green"	Proceeds are to be used for "Green Projects," which "should provide clear environmental benefits."[154] The Principles provide a non-exhaustive, high-level list of 10 areas that count as "green," including, for example, renewable energy, energy efficiency, and pollution prevention and control.[155]	At least 85% of proceeds must be allocated according to EU Taxonomy requirements, including detailed technical screening criteria.[156] Up to 15% of proceeds may be allocated to economic activities that comply with taxonomy, except for screening criteria.[157] Heightened disclosure requirements if less than 100% of proceeds are used for activities that align with the technical screening criteria.[158]

152. See ICMA GREEN BOND PRINCIPLES, supra note 1, at 1 ("The Principles are a collection of voluntary frameworks" that "outline best practices.").
153. *See* EU Green Bond Regulation, *supra* note 23, art. 3.
154. ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 3.
155. *Id.* at 3–4.
156. *See* EU Green Bond Regulation, *supra* note 23, art. 4; *id.* art. 5(1).
157. *See id.* art. 5(1). This flexibility is permitted only where there are no technical screening criteria for the activity or the activities are "in the context of international support reported in accordance with internationally agreed guidelines." *Id.*
158. *See id.*, annex I; id. annex II; *id.* annex III.

Issue	ICMA GBP	EU GBS
Allowable uses of funds	“Green Projects” and “Green Enabling Projects.” The latter are “necessary component[s] for an eligible Green Project to be developed and/or implemented.”[159]	Fixed nonfinancial assets, other environmentally sustainable capital expenditure, environmentally sustainable operating expenditures incurred less than three years before issuance, financial assets created no more than five years after issuance where use of proceeds meets EU Taxonomy, and household assets or expenditures.[160]
Enabling projects allowed	Principles allow use of funds for “Green Enabling Projects” that are “a necessary component for an eligible Green Project to be developed and/or implemented.”[161]	An enabling activity qualifies as green if it “directly enabl[es] other activities to make a substantial contribution”[162] to environmental objectives and meets other criteria.[163]

159. ICMA Green Bond Principles, *supra* note 1, at 4.

160. *See* EU Green Bond Regulation, *supra* note 23, art. 4(1).

161. ICMA Green Bond Principles, *supra* note 1, at 4. The GBP direct issuers th*at w*ish to use green bond proceeds for enabling projects to “refer to the Green Enabling Projects Guidance document.” Id.

162. *See, e.g.*, EU Green Bond Regulation, *supra* note 23, annex I, at 56 (contemplating potential allocation of green bond proceeds to “enabling or transitional economic activity”). An “enabling economic activity” is defined as one that “complies with Article 16 of Regulation (EU) 2020/852.” *Id.* art. 2(17), at 13. The referenced provision in turn requires that the activity in question “directly enable[] other activities to make a substantial contribution to” an environmental objective. Regulation (EU) 2020/852 of the European Parliament and of the Council on the Establishment of a Framework to Facilitate Sustainable Investment, and Amending Regulation (EU) 2019/2088, 2020 O.J. (L 198) 13, 34.

163. The other criteria for an enabling activity are that it “does not lead to a lock-in of assets that undermine long-term environmental goals” and “has a substantial positive environmental impact, on the basis of life-cycle considerations.” Commission Regulation 2020/852, *supra* note 162 art. 16.

Issue	ICMA GBP	EU GBS
Allocation of proceeds to natural gas and nuclear energy	Not expressly addressed; "[T]he GBP's purpose is not to take a position on which green technologies, standards, claims, and declarations are optimal for environmentally sustainable benefits."[164]	Permitted; issuer must disclose percentage of bond proceeds allocated to these uses.[165]
"Do no significant harm" requirement	Issuer to "clearly communicate to investors . . . information on processes by which the issuer identifies and manages perceived social and environmental risks associated with the relevant project(s)."[166] Issuers are "encouraged . . . to have a process in place to identify mitigants to known material risks of negative social and/or environmental impacts from the relevant project(s)."[167]	Technical screening criteria include specific requirements to ensure activities "do no significant harm."[168] Activities not covered by technical screening criteria for which green bond proceeds are used must "do no significant harm" to environmental or social objectives.[169]

164. ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 4.

165. EU Green Bond Regulation, *supra* note 23, recital 10; *id.* recital 22; id. annex I; *id.* annex II; *id.* annex III.

166. ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 5.

167. ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 5. The Principles specify that "[s]uch mitigants may include clear and relevant trade-off analysis undertaken and monitoring required where the issuer assesses the potential risks to be meaningful." *Id.* at 5.

168. *See, e.g.*, Commission Regulation 2021/2139, *supra* note 113, annex I, point 4.1, at 62-63 (prescribing that for solar photovoltaic project to "do no significant harm," the project must use components of "high durability" and recyclability" that "are easy to dismantle and refurbish"—at least where this is "feasible."). If the issuer allocates proceeds to activities for which there are no technical screening criteria, those activities must "meet, where applicable, the generic criteria for 'do no significant harm'" set out in Regulation 2021/2139. EU Green Bond Regulation, *supra* note 23 art. 5(3).

169. *See* EU Green Bond Regulation, supra note 23, art. 5(3); *see* Commission Regulation 2021/2139, *supra* note 113, annex I, app. A-D.

Issue	ICMA GBP	EU GBS
Minimum safeguards for labor, human rights, anti-corruption, and other issues	Not addressed	External reviewer is to confirm compliance.[170]
"Portfolio approach"[171] permitted?	Yes[172]	Yes[173]
Pre-issuance disclosure of planned uses	Green projects for which proceeds are to be used "should be appropriately described in the legal documentation of the security."[174]	Standardized pre-issuance factsheet required.[175] Factsheet must describe the "intended allocation to taxonomy-aligned economic activities" and must do so "at least at the level of the economic activity, and ideally at the level of the project or group of projects."[176]
Pre-issuance external review	Recommended, not required.[177]	Required.[178] External reviewer must be registered with ESMA.[179]

170. *See* EU Green Bond Regulation, *supra* note 23, annex II.
171. In the portfolio approach, the issuer need not identify which green assets each green bond financed. Instead, the issuer "disclose[s] the allocation of the aggregate proceeds of their portfolio of European Green Bonds to a portfolio of environmentally sustainable assets on their balance sheet." Id. recital 16.
172. ICMA Green Bond Principles, *supra* note 1, at 5.
173. EU Green Bond Regulation, *supra* note 23, art. 4(2).
174. ICMA Green Bond Principles, *supra* note 1, at 3.
175. *See* EU Green Bond Regulation, *supra* note 23, art. 10(a).
176. *See id.*, annex I.
177. ICMA Green Bond Principles, supra note 1, at 6 ("It is recommended that issuers appoint (an) external review provider(s) to assess through a pre-issuance external review the alignment of their Green Bond … with the four core components of the GBP ….").
178. *See* EU Green Bond Regulation, *supra* note 23, art. 10.
179. *Id.* art. 22. Registration with ESMA involves submission to a detailed supervisory regime. *See* generally id. title IV, arts. 22–43.

Issue	ICMA GBP	EU GBS
Prospectus	Not required by GBP (may be required by law for issuance of the bond itself).	Required,[180] except for certain bonds issued or guaranteed by a government or quasi-government entities.[181] Must state throughout prospectus that bonds are "European Green Bonds" or "EuGB."[182]
Reporting on use of proceeds	Report annually on "projects, amounts allocated, and their expected impact" until full allocation.[183]	Report annually according to detailed template.[184]
External review of use-of-proceeds reporting	Recommended, not required.[185]	Required for final allocation reports,[186] and in limited circumstances for interim reports.[187] External reviewer must be registered with ESMA.[188]

180. *See id.* art. 14, point 1.

181. *See id.* art. 14, point 1(a).

182. See id. art. 14, point 2; Commission Regulation 2017/1129, art. 1(2), points (b) and (d).

183. ICMA Green Bond Principles, *supra* note 1, at 5.

184. *See* EU Green Bond Regulation, *supra* note 23, art. 11(1); *see id.* annex II.

185. ICMA Green Bond Principles, supra note 1, at 6 ("Post-issuance, it is recommended that an issuer's management of proceeds be supplemented by the use of an external auditor, or other third party, ...").

186. *See* EU Green Bond Regulation, *supra* note 23, art. 11(4).

187. *See id.* art. 11(6) (external review required where issuer uses portfolio method unless "no asset in the portfolio was changed or was itself subject to a change in portfolio allocation compared to the period covered by the previous allocation report."); *id.* art. 13 (sovereign issuers may use state auditor to review the allocation of bond proceeds, along with external reviewer to "ascertain whether the economic activities funded through the bond align with the taxonomy requirements.").

188. *See id.* art. 22. Registration with ESMA involves submission to a detailed supervisory regime. See id. title IV, arts. 22–43.

Issue	ICMA GBP	EU GBS
Impact reporting	No post-allocation reporting requirement. Prior to full allocation, issuer to report on "expected" impact.[189] GBP "recommend" the use of both qualitative indicators and quantitative indicators and disclosure of supporting assumptions and methodology.[190] Report using prescribed impact measures and reporting templates "where possible."[191]	Post-allocation impact reporting required.[192] Issuer must provide "information on the methodology and assumptions used to evaluate the impacts of projects," where the factsheet did not provide this information.[193]
External review on impact reporting	Not required	Not required.[194] If an external review is obtained, the reviewer must be registered with ESMA.[195]
Standardized disclosure templates	Issuers "should," "where possible," use impact reporting templates provided in the Harmonised Framework for Impact Reporting.[196]	Provided and required for pre-issuance factsheet,[197] allocation reports,[198] and impact report.[199]

189. *See* ICMA Green Bond Principles, *supra* note 1, at 5.
190. *Id.*
191. *Id.*; *see also* ICMA, Handbook: Harmonized Framework for Impact Reporting (2024) (setting forth impact measures and reporting templates for different categories of green bonds).
192. *See* EU Green Bond Regulation, *supra* note 23, art. 12(1); *id.* annex III.
193. *Id.* annex III.
194. *Id.* art. 12(3) ("Issuers of European Green Bonds may seek a review by an external reviewer of the impact report."). If the issuer does get an external review of the impact report, the Regulation prescribes contents for the report. *Id.*
195. *See id.* art. 23. Registration with ESMA involves submission to a detailed supervisory regime. *See id.* title IV, arts. 22–43.
196. ICMA Green Bond Principles, *supra* note 1, at 5.
197. *See* EU Green Bond Regulation, *supra* note 23, art. 10(1); *id.* annex I.
198. *Id.* art. 11(1); id. annex II.
199. *See id.* art. 12(1); *id.* annex III.

Issue	ICMA GBP	EU GBS
Requirements for contents of external reviews	GBP "encourage" external reviewers to disclose credentials and relevant expertise.[200] Issuers "should consult" ICMA's voluntary Guidelines for External Reviews,[201] which direct reviewers to address the environmental features, benefits, and impact of the bond, but do not require disclosure relative to information sources or key assumptions.[202]	Review must disclose information about sources and an explanation of assessment methodology and key assumptions used in the review.[203]
Administrative penalties for green nonperformance	Not addressed; not applicable to these private standards.	Member States directed to authorize administrative penalties that potentially cover green nonperformance as well as reporting failures.[204] Potential penalties to include fines of up to 0.5% of annual turnover.[205]
Issuer contractual liability for green non-performance	Not addressed	Not addressed

As the table shows, the EU Green Bond Standard is stricter than the ICMA GBP in several respects. One important difference is that the EU GBS defines what a "green" use of proceeds is: all uses of green proceeds must comply with the EU Taxonomy,[206]

200. ICMA Green Bond Principles, *supra* note 1, at 6.
201. *Id.* at 6.
202. Int'l Cap. Mkts. Ass'n, Guidelines for Green, Social, Sustainability and Sustainability-Linked Bonds External Reviews 5 (2022).
203. See EU Green Bond Regulation, *supra* note 23, annex IV.
204. *See id.* art. 49(1).
205. *See id.*, art. 49.
206. *See id.* arts. 4, 5(1).

and all but 15% must comply with the detailed technical screening criteria.[207] The GBP's list of categories is non-exhaustive; the only requirement is that the project "provide clear environmental benefits."[208] The new EU Green Bond Standard includes specific rules to implement the requirement that projects funded by green bonds "do no significant harm" to environmental and social objectives;[209] the GBP require only disclosure relating to "perceived social and environmental risks."[210] Similarly, unlike the GBP, the new EU GBS requires that external reviewers confirm compliance with minimum safeguards relating to labor, human rights, and anticorruption practices.[211]

Perhaps the second most important difference between the EU GBS and the ICMA GBP is that the EU GBS requires external reviews of the issuer's pre-issuance disclosures[212] and of final post-issuance allocation reports.[213] The GBP merely "recommend" such external reviews.[214] The new EU Green Bond Standard, unlike the GBP, requires disclosure of sources, methodology, and assumptions in the external review.[215] The EU GBS also creates an extensive supervisory regime for external reviewers and requires issuers to use reviewers that are subject to that regime.[216] The GBP have no comparable provisions.[217]

Disclosure requirements are also higher, or at least more prescriptive. Under the new EU GBS, issuers must provide a pre-issuance estimate of the expected impact, as well as a post-allocation disclosure of the actual impact, on prescribed

207. *See id.* art. 5(1).
208. *See* ICMA Green Bond Principles, *supra* note 1, at 3.
209. *See* Commission Regulation 2021/2139, *supra* note 132, annex I (setting forth technical screening criteria that include requirements for the "do no significant harm" standard for activities contributing to climate change mitigation); *id.* annex II (setting forth technical screening criteria that include requirements for the "do no significant harm" standard for activities contributing to climate change adaptation).
210. *See* ICMA Green Bond Principles, *supra* note 1, at 5.
211. *See* EU Green Bond Regulation, *supra* note 23, annex I.
212. *See id.* art. 10.
213. *See id.* art. 11(4). The Regulation provides for external review of interim allocation reports in some circumstances. *See id.* art. 11(6).
214. *See* ICMA Green Bond Principles, *supra* note 1, at 6.
215. *See* EU Green Bond Regulation, *supra* note 23, annex IV.
216. *See id.* tit. IV.
217. The closest the ICMA GBP come to regulating reviewers is in the following sentence: "The GBP encourage external review providers to disclose their credentials and relevant expertise and communicate clearly the scope of the review(s) conducted." *See* ICMA Green Bond Principles, *supra* note 1, at 6.

forms that require specific information.[218] The GBP do not require any particular form, and they do not require post-allocation impact reporting at all.[219] When an issuer using the GBP does choose impact reporting, there is no requirement to disclose the methodology and assumptions used in the reporting.[220] The new EU GBS does incorporate such a requirement.[221] Unlike the GBP, the new EU GBS expressly requires a prospectus for privately issued green bonds,[222] although general securities law, not directed at green bonds, may have required a prospectus in many cases.[223]

There are respects in which the EU Green Bond Standard arguably does not go beyond the ICMA GBP. For example, as with the GBP, compliance with the EU GBS is voluntary; compliance is required only if the issuer wishes to use the "European Green Bond" label.[224] Both sets of rules require annual reporting on the use of proceeds.[225] And neither set of rules requires the issuer to sign on to contractual liability for failure to use bond proceeds for green purposes. With the limited exception of the EU GBS's prospectus requirement,[226] neither set of rules addresses liability at all.

2. *The European Green Bond Standard and Criticisms of the Green Bond Market*

Table 4 indicates that the EU Green Bond Standard addresses many of the criticisms leveled at the green bond

218. *See id.* art. 12(1); *id.* annex III.
219. *See* ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 5. The GBP do require "a brief description" of projects' "expected impact" in the annual allocation reports. *Id.*
220. *See id.* at 5. The GBP "recommend" the use of qualitative and quantitative indicators and measures in impact reporting, as well as "disclosure of the key underlying methodology and/or assumptions used in the quantitative determination."
221. *See* EU Green Bond Regulation, *supra* note 23, annex III.
222. *See id.*, art. 14(1).
223. *See* Parliament and Council Regulation 2017/1129, art. 3(1), 2017 O.J. (L 168) 12, 31 (setting forth general requirement that "securities shall only be offered to the public in the Union after prior publication of a prospectus in accordance with this Regulation"); *But see id.* arts. 1(3), 1(4), 1(5) (setting forth limits on and exceptions to prospectus requirement); *id.* art. 3(2) (providing that member states can exempt certain securities offers from prospectus requirement).
224. *See* EU Green Bond Regulation, *supra* note 23, art. 3.
225. *See id.* art. 11(1); ICMA GREEN BOND PRINCIPLES, *supra* note 1, at 5.
226. *See* EU Green Bond Regulation, *supra* note 23, recital 29 (stating that prospectus regulation "includes liability provisions.").

market. By prescribing a definition of "green,"[227] it addresses the contention that standards are overly lenient. They address concerns about weak pre-issuance external reviews by requiring such reviews,[228] prescribing their form (thus ensuring a minimum level of substantiveness),[229] and creating an extensive supervisory regime for reviewers.[230] They address concerns about proceeds reporting by mandating the form of such reporting[231] and requiring external review of such reporting.[232] The EU GBS require post-allocation impact reporting,[233] addressing concerns about the absence of that disclosure. The EU GBS were issued after extensive input from a variety of stakeholders,[234] addressing concerns that rules are set exclusively by market participants.

But the new EU GBS does not address all criticisms. On the "overly lenient definition" front, some undoubtedly would take issue with the permissible use of green bond proceeds to fund nuclear and natural-gas projects.[235] The fact that the EU GBS are mandatory only for issuers that use a particular label[236] will please those who think no regulatory action is necessary, while potentially leaving unsatisfied those who worry about regulatory fragmentation and the race to the bottom.

Enriques, Romano, and Tuch provide interesting insight into what empirical state of affairs would justify the EU Green

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227. *See id.* arts. 4–9 (describing permissible uses of green bond proceeds).

228. *See id.* art. 10.

229. *Id.* annex IV (prescribing form and content of external reviews).

230. *See id.* tit. IV.

231. *See id.* annex II. The Regulation prescribes reporting "at least at the level of the economic activity, and ideally at the level of the project or group of projects." *Id.*

232. *See id.* art. 11(4) (requiring external review of final allocation reports). The Regulation provides for external review of interim reports for issuers using the portfolio method. *See id.* art. 11(6). The rules provide an exception to this requirement for portfolio-method reporters where there is no change in assets or allocations over the reporting period. *Id. See also id.* art. 13 (providing that sovereign issuers may use state auditors instead of external reviewers for part of the review).

233. *See id.* art. 12(1).

234. *See generally* European Commission, *Summary Report of the Stakeholder Consultation on the Renewed Sustainable Finance Strategy* (Feb. 10, 2021), https://finance.ec.europa.eu/document/download/969cb4bd-1a61-49ad-bac0-7e253611c2ff_en?filename=2020-sustainable-finance-strategy-summary-of-responses_en.pdf (summarizing stakeholder input into the Regulation).

235. *See* EU Green Bond Regulation, *supra* note 23, recital 10; *id.* recital 22; *id.* annex I; *id.* annex II; *id.* annex III.

236. *See id.* art. 3.

Bond Standard's approach.[237] The authors posit that in an environment where (1) claims are highly verifiable by policymakers and courts, and (2) private costs of incorrect claims are low, then preferred policy options are ex ante regulation and regulatory licenses, while ex-post liability is likely to be relatively ineffective.[238]

As noted, the EU Green Bond Standard seems to provide for *ex ante* regulation of issuers and external reviewers and regulatory licenses for reviewers. They do not appear to feature *strong ex-post liability* provisions. Thus, at least according to the authors' framework, the EU GBS's approach would be justified if claims to greenness are highly verifiable and private costs of incorrect claims of greenness are low.

Enriques, Romano, and Tuch argue that liability is less effective when private costs of inaccurate claims are low because "plaintiff lawyers may have limited incentives to pursue litigation because compensation—and hence their fee—may be limited."[239] In commentary accompanying this article, Gero and Park outline the idea of a third-party enforcer for green bonds that could address this issue.[240]

In sum, the EU Green Bond Standard is considerably more prescriptive than the ICMA GBP, and the increase in strictness appears rationally related to the objective of increasing the perception and reality that bonds issued under the EU GBS will contribute to the green transition.

III.
What We (Could) Learn from the European Green Bond Standards

A. *What the Greenium Experiment Will and Will Not Show*

Although the EU Green Bond Standard is not as strict as it could be, its definition of potential uses of proceeds,[241]

237. *See* Enriques, Romano & Tuch, *supra* note 74.
238. The authors' framework is designed for gatekeepers (which here would be the external reviewers of green bonds), but it seems reasonable to apply it to issuers as well. *See id.* at 677.
239. *See id.* at 679.
240. Jesse R. Gero & Stephen Kim Park, *External Remediation as a Regulation by Proxy:* 22 N.Y.U J.L. & Bus. 351, 358 (2026).
241. *See supra* Tbl. 4.

heightened disclosure requirements,[242] and extensive external-review provisions,[243] taken together, mark an advance in strictness over the ICMA GBP. Investor-protection arguments might support a mandatory standard, but as a voluntary standard, the EU Green Bond Standard poses an experiment: can issuers attract a significant and persistent greenium by volunteering to be held to a higher standard of greenness?

To be sure, voluntary standards stricter than the ICMA GBP already exist. Certification by the nonprofit Climate Bonds Initiative (CBI) is an example.[244] According to Bloomberg, CBI certification seems to be on the wane in the European market: CBI certified 16 green bonds from Eurozone corporate issuers in 2019, eight in each of 2020 and 2021, five in 2022, two in 2023, one in 2024, and none in the first half of 2025.[245] Over the period 2015–2025, CBI certified just over 2% of green bond issues from Eurozone corporate issuers.[246]

This record may seem to bode ill for the EU Green Bond Standard, but there is reason to think that market participants will more widely adopt the EU's proposal. The EU Green Bond Standard has the backing of what can be described as the governing authority responsible for one of the world's three major green bond markets: Europe.[247] And the regulation adopting the EU GBS reports that "[t]he European Investment Bank, as a worldwide leading issuer of green bonds, remains committed to gradually aligning its green bond program with the European

242. *See id.*

243. *See id.*

244. *See Certification*, Climate Bonds Initiative, https://www.climatebonds.net/expertise/standard-sector-criteria-certification/certification (last visited Nov. 8, 2025) (describing Climate Bonds Initiative's certification program).

245. *See* workpapers on file with author (source: Bloomberg Financial Information Service). The Climate Bonds Initiative's own data presents a similar story. It reports 10 certified European green bonds for 2020, 12 for 2021, 9 for 2022, 4 for 2023, 2 for 2024, and none in 2025 through October 31. The total for 2020–25 is 37. *See* workpapers on file with author (source: Climate Bonds Initiative).

246. *See* workpapers on file with author (source: Bloomberg Financial Information Service).

247. *See, e.g.*, Shaobo Long, Hao Tian & Zixuan Li, *Dynamic Spillovers Between Uncertainties and Green Bond Markets in the US, Europe, and China: Evidence from the Quantile VAR Framework*, 85 Int'l Rev. of Fin. Analysis 102416 (2022) ("[T]he US, Europe, and China have become the three largest green bond markets in the world.").

Green Bond standard."[248] The European Investment Bank is indeed a major green bond issuer: it issued 61 green bonds with a principal value of over 72 billion euro from 2020 through the first half of 2025.[249] And it issued a 3 billion euro green bond under the EU Green Bond Standard on April 9, 2025.[250] Thus, there is reason to believe that the EU GBS experiment will at least be performed at scale.

If issuers whose green bonds adhere to the EU Green Bond Standard can command a significant and persistent greenium, there will be a solid market incentive to issue higher-quality green bonds. We might expect issuers to be increasingly drawn to the EU GBS in this case.

That would be significant in itself. First, the greenium represents a reduction in the cost of capital for (more) credible green bonds.[251] That reduction might be expected to spur additional investment in the green transition, thereby fulfilling the purpose of green bonds. Second, if issuers are drawn to commit to more credible guarantees, this would enhance investor protection in the market.

A greenium is not a panacea. It may be possible for issuers to issue bonds under the EU GBS with no environmental benefit, through figuring out either how to make such a bond comply technically with the rules or how to evade the rule while still using the European Green Bond label. In this case, a greenium could actually make matters worse by lulling investors into a false sense of security and attracting investment to "green" bonds under false pretenses. But the tighter controls incorporated into the EU GBS should at least make this more difficult. Thus, it currently seems that the emergence of a strong greenium for issuers that use the EU GBS would likely be a positive development.

If no greenium appears, two potential explanations are that: (1) the standards are not strict enough to make green bonds credible or (2) demand does not exist for even credible green bonds to command a greenium. Further research into green investors' preferences and attitudes might help find the

248. *See* EU Green Bond Regulation, *supra* note 23, recital 20.
249. *See* workpapers on file with author (source: Bloomberg Financial Information Service).
250. *See* workpapers on file with author (source: Bloomberg Financial Information Service).
251. *See* discussion *supra* Part I.C.1.

explanation.[252] Even if the new standard does not give rise to a greenium, retaining it for investor-protection reasons might be justified.[253]

B. *Why a Greenium Is Important*

The emergence of a greenium under the EU Green Bond Standard would be important for the U.S. market for two related reasons. First, the emergence of such a greenium would provide a roadmap for U.S. issuers to lower their own cost of capital for green investment: they could sign on to standards similar to the European ones. The European greenium could thus increase U.S. investment in the green transition. Second, if U.S. issuers do sign up for stricter standards, that would enhance investor protection for purchasers of U.S. issuers' green bonds.

Notably, both of these effects require only that market participants act on their own. Pursuit of the greenium would motivate issuers to adopt stricter standards on their own, without government mandates or incentives. This is important because government-driven development of the green finance market in the United States is stalled,[254] and it seems likely to remain so for some time,[255] at least at the federal level.[256] Moreover, for

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252. For an example of such research, *see* Sangiorgi & Schopohl, *supra* note 20.

253. *See* discussion *supra* Part I.C.2.

254. *See* Peter Tankov & Olivier David Zerbib, *Can Green Finance Weather the Trump Storm?*, POLYTECHNIQUE INSIGHTS, June 25, 2025, https://www.polytechnique-insights.com/en/columns/economy/will-green-finance-weather-the-trump-storm/ (noting that recent U.S. government actions relating to climate finance including not defending the SEC's Climate Disclosure Rule, considering repeal of the Department of Labor's Investor Duties Rule permitting use of ESG criteria by pension funds, SEC reinstatement of "very permissive standards for rejecting shareholder resolutions on climate issues," the cancellation of subsidies for climate-transition projects, and suspension of new wind turbine permits).

255. *See id.* (cataloguing desirable government actions to support green finance and the green transition and noting, "the political and geopolitical environments lead us to acknowledge that these ambitious binding measures are unlikely to be implemented in the near future.").

256. For an example of green finance development at the state level, consider "green banks." Green banks are described as being "similar to regular banks, except that they have more access to public funding since they're seen by the governments that support them as providing a public service." Kristoffer Tigue, *Manchin's Climate Bill Includes $27 Billion for a Green Bank. Here's Why That's a Big Deal*, INSIDE CLIMATE NEWS, July 29, 2022, https://insideclimatenews.org/news/29072022/manchins-climate-bill-includes-27-billion-for-a-green-bank-heres-why-thats-a-big-deal/. As of

better or worse, development of the green market to date has largely occurred through the actions of market participants, specifically the ICMA,[257] whose GBP are currently dominant.[258]

Even where it is not practical for U.S. issuers to issue European Green Bonds, the emergence of a greenium could spur the development of analogous practices in the U.S. market. Issuers could commit in bond documents to external review and certification and to reporting on the environmental impact of their use of proceeds.

A tighter definition of "green" might require concerted action. Most simply, ICMA could tighten its GBP so that it more closely resembles the EU GBS. Other organizations of bond market participants might also be able to create voluntary standards.[259] Private actors might not be able to duplicate the European supervisory regime for external reviewers or the administrative penalties for noncompliance. But new or revised standards could require the use of an external reviewer registered in Europe and subject to the European regime.

Conclusion

Although the EU Green Bond Standard could have gone further in some respects, such as by introducing contractual liability for failure to use green bond proceeds for green purposes, it marks a significant step forward in assuring the "green

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2022, 23 green banks reportedly operated in 17 states, with another 25 states in the process of forming their own. *Id.*

257. ICMA describes its membership as follows: "ICMA currently has about 640 members active in all segments of international debt capital markets in 71 jurisdictions globally. Among our members are private and public sector issuers, banks and securities dealers, asset and fund managers, insurance companies, law firms, capital market infrastructure providers and central banks." INT'L CAPITAL MARKETS ASS'N: ABOUT ICMA, https://www.icmagroup.org/About-ICMA/ (last visited Nov. 8, 2025).

258. According to Bloomberg, in the period from January 1, 2020 to June 30, 2025, issuance under the ICMA GBP accounted for 96.4% of green bond issues, and 98.0% of green bond principal, from Eurozone corporate issuers. *See* workpapers on file with author (source: Bloomberg Financial Information Service).

259. Examples of organizations that include bond-market participants are the Securities Industry and Financial Markets Association (SIFMA and the Bond Dealers of America (BDA). SIFMA, for example, has issued non-binding guidelines on various aspects of securities markets. *See, e.g.*, SIFMA, *U.S. Treasury Auctions Guideline*, https://www.sifma.org/resources/general/u-s-treasury-actions-guideline/ (last visited Nov. 8, 2025).

quality" of green bonds—for issuers who choose to use it. The EU GBS, backed by one of the world's major governments and by the commitment of a leading green bond issuer, the European Investment Bank, stands as an experiment in whether issuers can charge more for higher quality. If it is successful, and issuers who use the standard can command a significant, persistent greenium, the result may be both an influx of capital for the green transition in the European market and a potential model for the United States.

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COMMENTARY ON *THE EUROPEAN GREEN BOND MARKET AND THE PATH FORWARD FOR THE UNITED STATES*: EXTERNAL REMEDIATION AS REGULATION BY PROXY

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INTRODUCTION

Achieving the Sustainable Development Goals (SDGs) and addressing climate change and other environmental and social challenges requires the mobilization of private capital.[1] Green

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1. UNITED NATIONS ENVIRONMENT PROGRAMME FINANCE INITIATIVE, ET AL., *Scaling Private Capital Mobilization: Call to Action to Heads of State, Policymakers and Multilateral Development Bank Officials* 3 (2023), https://www.unepfi.org/wordpress/wp-content/uploads/2023/11/CTA_Scaling-Private-Capital-Mobilization_final.pdf.

bonds and other "thematic" or "labeled" bonds[2] have become important instruments of such mobilization in global capital markets, with total issuances expected to reach a trillion dollars in 2025.[3] Yet, labeled bonds are beset by concerns about greenwashing and similar concerns about how reliably they channel capital toward investment in sustainable development and climate action.[4] As this market has grown, the sustainability characteristics of these financial instruments have largely been regulated by market-based private governance regimes, such as the Green Bond Principles (GBP) developed by the International Capital Markets Association (ICMA).[5] Legal scholars have questioned whether these standards-based frameworks adequately align the incentives of market participants, particularly in the green bond market.[6] Critiques of the GBP and other market-based private governance regimes highlight a lack of

2. There is no universal definition of a green bond. A green bond is any debt security that raises capital from investors to support environmentally beneficial projects or other activities. What distinguishes a green bond from any other bond is the use of proceeds, with which an issuer supports environmentally-enhancing projects, assets, or business activities. Stephen Kim Park, *Green Bonds and Beyond: Debt Financing as a Sustainability Driver*, *in* THE CAMBRIDGE HANDBOOK OF CORPORATE LAW, CORPORATE GOVERNANCE AND SUSTAINABILITY 596, 596–97 (Beate Sjåfjell & Christopher M. Bruner eds., 2019) [hereinafter Park, *Green Bonds and Beyond*]. The progeny of green bonds includes social, sustainability, ESG, and SDG bonds, which are distinguished from each other by their stated objectives, and sustainability-linked bonds, which do not tie proceeds to a specific project. *See id.*; *see also* Federico Lupo-Pasini, *Sustainable Finance and Sovereign Debt: The Illusion to Govern by Contract*, 25 J. INT'L ECON. L. 680, 684–86 (2022) (distinguishing project-specific bonds and sustainability-linked or KPI bonds).

3. *What's in Store for Sustainable Finance and ESG in 2025*, MOODY'S RATINGS, https://www.moodys.com/web/en/us/insights/credit-risk/outlooks/esg-sustainable-finance-2025.html (Jan. 23, 2025); OECD, SUSTAINABLE BONDS: TRENDS AND POLICY RECOMMENDATIONS 13 (2025), https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/11/sustainable-bonds_70ea7450/26726c68-en.pdf.

4. *See* John P. Hunt, *Green Bond Reporting*, 1 COLUM. BUS. L. REV. 201, 217–32 (2024) [hereinafter Hunt, *Green Bond Reporting*] (reviewing legal scholarship analyzing green bonds); *see also* James Thuo Gathii, *Financing Climate Change Through Racial Capitalism Lens*, 41 WIS. INT'L L.J. 521, 547 (2024) ("It is the Global North's abdication of the legal and moral responsibility for the climate crisis that has provided private capital the opportunity to make the climate crisis its newest business opportunity.").

5. *See* INT'L CAP. MKT. ASS'N, GREEN BOND PRINCIPLES 2 (2025), https://www.icmagroup.org/assets/documents/Sustainable-finance/2025-updates/Green-Bond-Principles-GBP-June-2025.pdf.

6. *See* Stephen Kim Park, *Investors as Regulators*, 54 STAN. J. INT'L L. 1, 4, 7 (2018) [hereinafter Park, *Investors as Regulators*]; Paul Rose, *Sustainability*

rigor in the definition of "green," monitoring of use of proceeds, and reporting on environmental and social impacts. Arguably most critically, the terms of green bonds lack an enforceable covenant requiring use of proceeds from their sale for green purposes, thereby giving the issuer tremendous discretion to use proceeds how they wish.[7] If left unaddressed, these defects give rise to a legitimacy deficit affecting market-based private governance regimes for green bonds and their ilk.[8] At risk are the very premise and rationale for sustainable finance.[9]

Amidst these concerns, responses can come through changes to the market-based private governance regimes in question or their regulation. In his article, *The European Green Bond Market and the Path Forward for the United States*, John Hunt argues that the European Union's regulation of green bonds (the EuGB standard)[10] responds to a number of greenwashing concerns in ways that may lead bonds issued thereunder (i.e., European Green Bonds) to command a significant and persistent greenium, which may serve as a financial incentive that will drive changes to market-based practices in the United States.[11] In particular, such a greenium could incentivize issuers to issue European Green Bonds under the EuGB standard or,

Verification, 72 AM. U.L. REV. 1017, 1055–65 (2022); Hunt, *Green Bond Reporting*, *supra* note 4, at 217–32.

7. Surveying nearly 1,000 green bonds, Quinn Curtis, Mark Weidemaier, and Mitu Gulati starkly observe:

> Issuers of green bonds almost never promise to devote proceeds to green activities. The few bonds that do include promissory language often include contradictory language denying the existence of any promise. Even if an investor could point to a green promise, there would be no meaningful remedy.

Quinn Curtis, W. Mark C. Weidemaier & Mitu Gulati, *Green Bonds, Empty Promises*, 102 N.C. L. REV. 131, 178 (2023). Green loans, by contrast, more commonly include enforceable green covenants. Michal Pyka, *The EU Green Bond Standard: A Plausible Response to the Deficiencies of the EU Green Bond Market?*, 24 EUR. BUS. ORG. L. REV. 623, 633–34 (2023). *But see* Nakita Q. Cuttino, *Private Debt for Public Good*, 76 FLA. L. REV. 637, 681–82 (2024) (noting the absence of an ESG covenant in sustainability-linked loans entered into by U.S. corporate borrowers).

8. *See* Park, *Investors as Regulators*, *supra* note 6, at 7, 30–34.

9. *Id.* at 47.

10. Regulation (EU) 2023/2631 of the European Parliament and of the Council of 22 November 2023 on European Green Bonds and optional disclosures for bonds marketed as environmentally sustainable and for sustainability-linked bonds, 2023 O.J. (L 2631) [hereinafter EuGB Regulation].

11. John Hunt, *The European Green Bond Market and the Path Forward for the United States*, 22 N.Y.U. J.L. & BUS. 309, 315 (2026) [hereinafter Hunt, *European Green Bond Market*].

where that would be impractical or unappealing, to commit in bond documentation to EuGB standard-style monitoring of use of proceeds (including external reviews *qua* second opinions) and to EuGB standard-style impact reporting.[12]

The EuGB standard's potential as an inspiration for market-based innovation may not be limited to cases in which European Green Bonds command a significant and persistent greenium, as Hunt implicitly acknowledges.[13] Apart from the investor protection rationale Hunt identifies, green bonds may have other benefits for an issuer: inducing a positive stock market response, stimulating investment in its environmental performance, and attracting investors who are mindful of the long term and the environment.[14] Accordingly, the EuGB standard may generate benefits for issuers of European Green Bonds apart from a greenium. Indeed, the EuGB standard may be more important in driving changes in corporate behavior than even Hunt suggests.

This commentary situates Hunt's article in the academic literature and policy discourse on green bonds and highlights the importance of the administrative remedies embedded in the EuGB standard. Building on Hunt's analysis of the global green bond market in the context of the EuGB standard, this commentary outlines an external remediation regime as a market-based proxy for regulation that could plausibly fulfill the function of the EuGB standard's administrative remedies regime.[15]

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12. *Id.* at 314, 348.

13. *Id.* at 328–29.

14. *See* Caroline Flammer, *Corporate Green Bonds*, 142 J. FIN. ECON. 499, 501, 511–12, 514–15 (2021) (examining green bond issuances from 2013 until 2018); s*ee also* Walter Bachmann & Kristjan Jespersen, *No More Greenium: What the Vanishing Green Bond Premium Means for Sustainable Finance*, NORDIC ESG LAB (July 18, 2025), https://nordicesglab.cbs.dk/no-more-greenium-what-the-vanishing-green-bond-premium-means-for-sustainable-finance/ ("The financial incentive that once spurred issuers has largely evaporated, replaced by intangible benefits linked to brand value, stakeholder expectations, and regulatory readiness."). *But see* Hunt, *European Green Bond Market*, *supra* note 11, at 327 n. 105 (interpreting some of Flammer's conclusions as calling into question the usefulness of green bonds in inducing green investment over the long term).

15. The value to issuers of each element of the EuGB standard depends on its other elements. The value of the EuGB standard's administrative remedies regime is enhanced by a clear definition of "green" and the existence of a robust external review regime. Similarly, the value to an issuer of the external remediation regime outlined in this commentary would depend on what other green elements are included in its green bond issuance.

I.
The EuGB's Administrative Remedies Regime

If adherence to the EuGB standard yields benefits for issuers of European Green Bonds—in the form of a greenium or otherwise—one element that may be responsible is the EuGB standard's administrative remedies regime. This regime introduces a form of accountability for failure by European Green Bond issuers to comply with the EuGB standard's requirements, including disclosure of use of proceeds. Under the EuGB standard, EU Member States are required to "provide for competent authorities to have the power to impose administrative penalties and to take other appropriate measures which shall be effective, proportionate and dissuasive" in response to identified compliance failures.[16] These remedies include, *inter alia*, administrative fines of 500,000 euro or 0.5% of the issuer's total annual turnover, as well as a public statement identifying the person responsible for, and the nature of, the compliance failure.[17] Compliance failures that directly trigger availability of these remedies *do not* include failure to allocate proceeds in accordance with the EuGB standard's use of proceeds requirement but *do* include, *inter alia*, non-compliance with the requirement that each issuer produce and disclose an annual allocation report "demonstrating that the proceeds of the European Green Bond, from its issuance date until the end of the period referred to in the report, have been allocated in accordance with" the EuGB standard's use of proceeds requirement.[18]

Hunt correctly notes, therefore, that "it is not entirely clear that these remedies apply to the substantive failure to use green bonds for green purposes, rather than to nondisclosure of such failure."[19] An issuer might argue that, because the EU did not see fit to provide that non-compliance with the EuGB standard's use of proceeds requirement directly triggers availability of administrative remedies, the annual allocation report requirement should be satisfied by any report regarding the allocation of the proceeds—even a report that reveals non-compliance with

16. EuGB Regulation, *supra* note 10, art. 49(1).
17. *Id.* at arts. 49(4)(a), (d), and (e).
18. *Id.* at arts. 4–8, 11(1), and 49(1) (illustrating, *inter alia*, that non-compliance regarding the allocation of proceeds is not in the list of compliance failures that directly trigger availability of administrative remedies).
19. Hunt, *European Green Bond Market*, *supra* note 11, at 333.

the EuGB standard's use of proceeds requirement.[20] This hypothetical issuer's interpretation of the reporting requirement would be in tension with the plain meaning of the text of that requirement, however, which calls for a report "demonstrating" allocation of proceeds in accordance with the EuGB standard's use of proceeds requirement. A report cannot so "demonstrat[e]" if the proceeds have not been so allocated. Moreover, the hypothetical issuer's interpretation of the EuGB standard's allocation report requirement would appear to be inconsistent with the purpose of the administrative remedies regime under which competent authorities are to be empowered with remedies that are "effective, proportionate and dissuasive."[21]

More defensible is what we call the "plain meaning" interpretation of the EuGB standard's use of proceeds requirement, which holds that, in the event of a misuse of proceeds, the issuer should be unable to submit a report that complies with the EuGB standard's allocation report requirement and availability of administrative remedies should be triggered. If the plain meaning interpretation prevails—as we argue it should—then the administrative remedies regime may be perceived by the green bond market as an element of European Green Bonds that is partially responsible for an increase in their green quality. Where that is the case, issuers may have an incentive to incorporate a functional substitute for the EuGB standard's administrative remedies regime in green bonds governed by the GBP or in unlabeled green bonds.

II.
The External Remediation Regime

How might a green bond issuer incorporate a functional substitute for the EuGB standard's administrative remedies

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20. *Id.* at 333 n. 150.

21. EuGB Regulation, *supra* note 10, art. 49(1). At least one European Green Bond prospectus acknowledges that administrative sanctions may be imposed for "non-compliance with *any of its obligations* under the EU Green Bond Regulation." ABN AMRO Bank N.V., First Supplement Dated 14 February 2025 to the Base Prospectus Dated 20 August 2024 4 (2025), https://assets.ctfassets.net/1u811bvgvthc/4xYDJ4VMOcYZ6a3CguPDDS/c6f238b60a547f5e819d70be1f14fc77/ABN_AMRO_-_Reg_S_MTN_-_1st_Supplement_dd_14Feb2025.pdf (emphasis added). A closer examination of this interpretative problem may be warranted, as the interpretation of Article 11(1) determines whether the EuGB standard is responsive to a primary greenwashing critique regarding liability for misuse of proceeds.

regime in the absence of the regulatory framework provided by the EuGB standard? We suggest this might be accomplished by drawing inspiration from sovereign debt, specifically recent innovations in commercial debt-for-development swaps or sovereign debt conversions for development.

In the sovereign debt conversions completed by Belize in 2021 and Ecuador in 2023, the sovereigns exchanged external bond debt with cheaper, credit-enhanced loans from intermediaries, financed through new bond issuances.[22] The green additionality of these transactions is effectuated in part by allocating a portion of the reduction in debt service to the funding of conservation projects[23] and is further supported by policy commitments relating to conservation made by each sovereign borrower in a commitments agreement separate from the loan agreement.[24] In addition to the sovereign borrowers, the parties to these commitments agreements include the new lenders and, in the case of the Ecuador commitments agreement, two third parties: a verification agent and a project manager.[25] In both the Belize and Ecuador commitments agreements, failure by the sovereign borrower to comply with its commitments triggers an obligation to pay additional amounts to the lender, and a failure to pay such additional amounts constitutes a payment

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22. *See* Mitu Gulati, *Belize's Green Buyback: A Template for Future Sovereign Debt Restructurings*, 16 CAP. MKTS. L.J. 391, 391 (2021); Stephanie Fontana-Raina & Sebastian Grund, *Debt-for-Nature Swaps: The Belize 2021 Deal and the Future of Green Sovereign Finance*, 19 CAP. MKTS. L.J. 128, 130–38 (2024). Sovereign debt conversions are related to what are sometimes referred to as "bilateral debt swaps," which emerged in the 1980s. *See generally* DEBT-FOR-DEVELOPMENT EXCHANGES: HISTORY AND NEW APPLICATIONS (Ross P. Buckley ed., 2011).

23. In this sense, any sovereign debt conversion *converts* a portion of *sovereign debt* service into a cash flow available *for* investment in *development*—hence the name sovereign debt conversion for development.

24. Conservation Funding Agreement, BLUE BONDS LOAN ACT, 2021 (Act No. 28/2021) (Belize) [hereinafter Belize CFA]; Blue Loan Agreement, BLUE BONDS LOAN ACT, 2021 (Act No. 28/2021) (Belize) [hereinafter Belize BLA] (both the Belize CFA and Belize BLA were attached as a schedule to Belize's Blue Bonds Loan Act of 2021 approving Belize's debt conversion); Facility Agreement, Apr. 25, 2023 (Ecuador), https://ire.finanzas.gob.ec/content/2023/06/Project%20Darwin%20-%20Facility%20Agreement%20dated%2025%20April%202023_Redacted.pdf [hereinafter Ecuador FA].

25. Belize CFA, *supra* note 24; Ecuador FA, *supra* note 24, at 16 (defining "Sustainability Commitments Agreement"). The verification agent's function is similar to that of an external reviewer, and the project manager in the Ecuador debt conversion has various functions relating to Ecuador's policy commitments. *See* Ecuador FA, *supra* note 24, sched. 4, §§ 1.1, 6.4, 19.15(c)(ii)(A) (defining "Grace Period" and "Remedy Period").

default under the loan agreement, enabling the lender to exercise standard remedies, including acceleration of the new loan.[26]

We propose that green bond issuances can include an external remediation regime subject to an external remediation agreement (ERA) similar in form to the commitments agreements in the Belize and Ecuador debt conversions.[27] Similar to the Ecuador commitments agreement, the ERA would include as a party a third party, the external remediator (ER), whose functions would relate to the issuer's green obligations.[28] In addition, like the Belize and Ecuador commitments agreements, the ERA would be separate from the legal instrument that sets forth the issuer's obligations to pay principal and interest to investors. The ERA would be a contract principally between the green bond issuer and the ER. As in the Belize and Ecuador commitments agreements, investors or their trustee would also be party to the ERA.[29]

The issuer's principal obligation under the ERA would be a covenant to the ER to use the proceeds of the green bond issuance for green purposes.[30] The ER would be the sole obligee of this covenant.[31] The ERA would provide that if the issuer fails to

26. Belize CFA, *supra* note 24, §§ 2.1, 3.4, 7.1, 7.2; Belize BLA, *supra* note 24, §§ 8(b), 9; Ecuador FA, *supra* note 24, §§ 6.4, 19.16.

27. Similar to other proposals regarding the design of the governance structure of debt, ours is a commentary on how an ER regime might be designed to address identified concerns and is not a prescription for how it must be designed. *See, e.g.*, Yakov Amihud, Kenneth Garbade & Marcel Kahan, *A New Governance Structure for Corporate Bonds*, 51 STAN. L. REV. 447, 470 (1999); Park, *Green Bonds and Beyond*, *supra* note 2, at 607.

28. A remediator may be defined as a designated individual or organization responsible for restoring, correcting, or improving a problem, structure, or situation. *See* Chinonso Anozie, *Equalizing Remediation*, 2023 WIS. L. REV. 919, 921 (2023) (citing *Remediation*, BLACK'S LAW DICTIONARY (12th ed., 2024)).

29. As in the Ecuador commitments agreement, an external reviewer would ideally also be a party to the ERA.

30. The covenant could cover other green obligations, such as any obligations whose infringement triggers availability of administrative remedies under the EuGB standard. To facilitate discussion, we focus on use of proceeds.

31. The trustee would not be an obligee as the green bond market has generally not accepted such a covenant. *See* Curtis, Weidemaier & Gulati, *supra* note 7, at 158–59. Any consideration or other enforceability questions would need to be assessed under applicable law, but the trustee being a party to the agreement (even if it is not an obligee of the use of proceeds covenant) allows the parties to make clear the parties' legitimate interests and that the ER regime (including the remedy discussed below) is an essential part of the bargain represented by the bond issuance. Our proposed ERA does not

comply with the use-of-proceeds covenant, the issuer shall pay liquidated damages to the ER as a remedy for the noncompliance. This remedy would serve a function similar to that of the sovereign borrower's obligation under the Belize and Ecuador commitments agreements to pay additional amounts.[32]

Furthermore, the ERA could require that any damages paid by the issuer to the ER be allocated to purposes equivalent to those to which the bond proceeds were intended to be applied. The ERA could further require that any damages paid by the ER to bondholders for failure by the ER to comply with the above obligation, likewise, be allocated to such purposes. These arrangements would enhance the green purpose of the green bond and ensure that bondholders have a remedy in the event of nonperformance by the ER, without creating incentives for bondholders to interfere with the ER's functions. Allocating a small percentage of recovered liquidated damages as compensation for the ER could further enhance its incentives without undermining these results.[33]

The EuGB standard and our proposed ER are both ex post liability regimes that aim to deter harm through the threat of negative consequences imposed following the occurrence of a harm.[34] As Hunt notes, an ex post liability regime is most effective where verifiability of compliance and the private costs of non-compliance are both high.[35] If the EuGB standard's administrative remedies regime comes to be viewed by the green bond market as a contributing factor to the green quality of European

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preclude the possibility of the labeled bond market later evolving to accept a use of proceeds covenant to the trustee.

32. The amount of liquidated damages could be modeled on the penalty amounts contemplated in the EuGB standard's administrative remedies regime, with due attention to factors ensuring the liquidated damages are not characterized as unenforceable penalties under applicable law, such as proportionality to the harm represented by the misuse of proceeds. *See, e.g.*, Glen Banks, *New York Contract Law, in* NEW YORK PRACTICE SERIES § 22:40 (2d ed. 2025).

33. While beyond the scope of this commentary, careful attention should be paid to compensation of ERs and the incentives such compensation creates.

34. *See* Luca Enriques, Alessandro Romano & Andrew Tuch, *Green Gatekeepers*, 109 MINN. L. REV. 609, 678 (2024).

35. Hunt, *European Green Bond Market*, *supra* note 11, at 344 (citing Enriques, Romano & Tuch, *supra* note 34, at 677, 679). This framework is designed to assess the incentives of external reviewers and other gatekeepers but may also be applied to issuers, as Hunt notes, and to the EuGB standard's administrative remedies regime and the ER regime.

Green Bonds, then the penalty amounts that it contemplates may represent sufficiently high private costs of non-compliance if used to calibrate the amount of liquidated damages available as a remedy in an ER regime.[36] In order to maximize verifiability of compliance in an ER regime, the ER's determination of non-compliance with the use of proceeds covenant would ideally be made on the basis of such a determination by an external reviewer—perhaps one that is registered in Europe and subject to the EuGB standard, as Hunt explores.[37]

In the green bond market, both the EuGB standard's administrative remedies regime and the ER regime may be more effective than alternative ex post liability regimes, such as an enforceable use-of-proceeds covenant.[38] As Hunt has examined in related scholarship, the latter suffers from several weaknesses.[39] So long as external reviewers conduct adequate monitoring, the ER regime is not hindered by these weaknesses because the ER is differently situated from bondholders. First, it does not suffer from the collective action problems faced by fragmented bondholders. Second, it would not be influenced by non-green financial considerations that dissuade some bondholders from exercising an available remedy. Third, the ER's remedy would be less objectionable to issuers, as payment of liquidated damages under the ERA would not be a default on indebtedness that might be expected to trigger a cross-default.[40]

The EuGB standard's administrative penalties regime and the ER regime are not the only innovative ex post liability regimes that could warrant further analysis. Other such regimes include delegation of bondholder monitoring and enforcement to a "supertrustee" with broad-ranging powers to act on behalf

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36. Contrast the potentially substantial EuGB standard administrative remedies and ERA-governed green bond with the minimal private costs associated with a remedy that consists only in decertification as a green bond. *See* Curtis, Weidemaier & Gulati, *supra* note 7, at 174.

37. *See* Hunt, *European Green Bond Market*, *supra* note 11, at 344–45.

38. *See* Curtis, Weidemaier & Gulati , *supra* note 7, at 143.

39. John P. Hunt, *Enforcing Green-Bond Commitments*, 2026 U. ILL. L. REV. 493, 523–27 (2026) [hereinafter Hunt, *Enforcing Green-Bond Commitments*] (noting underenforcement of covenants by trustees, conflicting investor incentives with respect to acceleration, and issuer concerns about cross-default risk). *See also* Park, *Green Bonds and Beyond*, *supra* note 2, at 600, 607 (discussing moral hazard and collective action problems); Curtis, Weidemaier & Gulati, *supra* note 7, at 158, 162 (discussing issuer concerns with liability associated with an enforceable use of proceeds covenant, including cross-defaults).

40. *See* Hunt, *Enforcing Green-Bond Commitments*, *supra* note 39, at 523–27.

of bondholders, including in respect of a use of proceeds covenant,[41] and a variation on the social impact guarantee structure that emphasizes issuer incentives to use proceeds for green purposes.[42] Importantly, in these alternative *ex post* liability regimes, the supertrustee's and guarantor's rights with respect to use of proceeds would be derivative of bondholders' rights, which stands in contrast to the EuGB standard's administrative remedies regime and the ER regime, where the issuer's obligations to the competent authority or ER, respectively, are independent of the issuer's obligations to bondholders.

Each of the aforementioned *ex post* liability regimes may be vulnerable to capture. The analysis here assumes that the EuGB standard's administrative remedies regime has come to be viewed by the green bond market as a contributing factor to the green quality of European Green Bonds. However, this assumption does not foreclose the risk of capture of ERs. Indeed, where ERs are expected to be private actors, the potential for capture of ERs would be elevated relative to the risk of regulatory capture.[43] The effectiveness of external remediation would depend on the development of an ecosystem of credible ERs, just as the effectiveness of external reviews and other forms of green gatekeeping depends on an ecosystem of credible external reviewers and other gatekeepers.[44]

Conclusion

If the heightened green quality of European Green Bonds secures benefits for issuers, and potential issuers would like

41. *See* Park, *Green Bonds and Beyond*, *supra* note 2, at 607–08.

42. *See* Kevin Tan, Nadia A. Samdin & Pierre Lorinet, *Social Impact Guarantees: The Next Evolution in Outcomes-Based Funding*, Stan. Soc. Innovation Rev. (Aug. 30, 2021), https://ssir.org/articles/entry/social_impact_guarantees_the_next_evolution_in_outcomes_based_funding). For preliminary discussions of this adaptation, we are grateful to Kenneth Hansen, James Head, Casey Martin, and María Salomé Perea Isaza.

43. *See* Park, *Investors as Regulators*, *supra* note 6, at 31.

44. Like external reviewers, an ER would be a unique type of green gatekeeper, and further work would be required to determine the exact qualities required of a competent ER. *See* Hunt, *Green Bond Reporting*, *supra* note 4, at 226–32 (exploring differences between green bond verification and credit ratings). Multilateral development banks and other development finance institutions may have the institutional resources and market presence to serve as effective ERs. *See* Park, *Green Bonds and Beyond*, *supra* note 2, at 608 (addressing their potential role as bondholder monitors).

to secure those benefits without issuing under the EuGB standard directly, Hunt suggests that they incorporate into green bond issuances specific elements of the EuGB standard.[45] Drawing on insights from sovereign debt conversions, we build on Hunt's work by outlining one way in which such issuers could incorporate a functional substitute for the EuGB standard's administrative remedies regime through the use of an ER under an ERA. Further scholarship and structuring by practitioners would be needed to assess and realize the ER regime's potential, including in combination with other elements of the EuGB standard that may or may not be incorporated into an issuer's borrowing program. Importantly, the ER regime's potential is not limited to green bonds. An ER could be used in any use of proceeds labeled bond issuance. All of these potential applications, and variations thereof, are ripe for further exploration, debate, and experimentation.

45. Hunt, *European Green Bond Market*, *supra* note 11, at 348.