
GREEN BOND GOVERNANCE AND THE PARIS AGREEMENT

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INTRODUCTION: CLIMATE FINANCE AND THE RISE OF GREEN BONDS

Climate mitigation is severely underfinanced. In order to keep the global mean temperature from rising more than 2°C, parties’ agreed aim under the Paris Agreement, annual investments in renewable energy alone must reach roughly triple current levels by 2050.¹ “Green bonds”—debt securities that finance or re-finance climate mitigation, adaptation, or other environmental projects—have been recognized as a key instrument for driving and tracking this needed growth in climate finance.

Green bonds are a relatively new financial device, but their popularity has expanded rapidly over recent years. In the past five years alone, labeled green bond issuance has grown from \$11 billion in 2013² to \$155.5 billion in 2017.³ However, the labeled green bond market only represents a small amount of bonds contributing to climate finance. As of September 2017, there are an estimated \$1.45 trillion in unlabeled but “climate-aligned” bonds⁴ and \$389 billion of labeled green bonds in circulation, meaning that roughly seventy-five percent of bonds used to finance green projects are not signaling

¹ See CLIMATE POLICY INITIATIVE & THE INT’L RENEWABLE ENERGY AGENCY, GLOBAL LANDSCAPE FOR RENEWABLE ENERGY FINANCE 14 (2018), https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Jan/IRENA_Global_landscape_RE_finance_2018.pdf. Although Paris Agreement parties agreed to “pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels,” the current Nationally Determined Contributions submitted are insufficient to keep holding below 2°C, let alone 1.5°C. See Umair Irfan, *Climate Pledges Will Fall Short of Needed 2 Degree C Limit*, SCI. AM. (Nov. 3, 2016), <https://www.scientificamerican.com/article/climate-pledges-will-fall-short-of-needed-2-degree-c-limit/>. This paper fully supports the 1.5°C goal, but will frame the argument within a “well-below” 2°C context as the upper limit of warming within the Paris Agreement commitment.

² See CLIMATE BONDS INITIATIVE, BONDS AND CLIMATE CHANGE: THE STATE OF THE MARKET IN 2014, at 2 (2014), <https://www.climatebonds.net/files/post/files/cb-hsbc-15july2014-a3-final.pdf>.

³ See CLIMATE BONDS INITIATIVE, GREEN BOND HIGHLIGHTS 2017, at 1 (2018), <https://www.climatebonds.net/files/reports/cbi-green-bonds-highlights-2017.pdf>.

⁴ “Climate-aligned” bonds include bonds from issuers that make more than 95% of their revenues from “green” business lines (fully-aligned), bonds from issuers that derive 75% to 95% of revenue from “green” business lines (strongly-aligned), and labeled green bonds. See CLIMATE BONDS INITIATIVE, BONDS AND CLIMATE CHANGE: THE STATE OF THE MARKET 3 (2018), https://www.climatebonds.net/files/reports/cbi_sotm_2018_final_01k-web.pdf.

their mitigation or adaptation outcomes to financial markets.⁵ Many organizations have called for increased green bond labelling and standardization in order to maximize issuer access to climate finance, increase green bond liquidity, and better account for global investment in climate mitigation and adaptation.⁶ These prescriptions for green bond labelling have been accompanied by debate over what characteristics should qualify a bond as “green.”

The green bond labelling regime is fragmented: Non-Governmental Organizations (NGOs), sovereigns, accounting firms, multilateral development banks, and other actors promulgate disparate certification regimes and standards. In this decentralized world, labeled green bonds have been issued by oil companies in order to increase operational efficiency.⁷ Green bond proceeds have been used to finance a parking lot⁸ and so-called “clean coal” plants.⁹ While the majority of green bond proceeds may contribute to a healthier environment, these examples expose the potential for labeled “green” bonds to fund projects with questionable environmental outcomes.

Some analysts fear that greenwashing¹⁰ in a market without strict standards could undermine investor confidence in green bonds

⁵ See *id.* at 3.

⁶ See, e.g., Chris Flood, *Green Bonds Need Global Standards*, FIN. TIMES (May 7, 2017), <https://www.ft.com/content/ef9a02d6-28fe-11e7-bc4b-5528796fe35c>; see also Sophie Baker, *Green Bonds Need Definitions and Standards First*, PENSIONS & INV. (Mar. 5, 2018), <http://www.pionline.com/article/20180305/PRINT/180309916/green-bonds-need-definitions-and-standards-first>; GERMAN DEV. INST., *UPSCALING GREEN BOND MARKETS: THE NEED FOR HARMONISED GREEN BOND STANDARDS* (2017), https://www.die-gdi.de/uploads/media/BP_12.2017.pdf.

⁷ See Emily Chasan, *First Green Bonds Sold by an Oil Giant Find Willing Investors*, BLOOMBERG (May 21, 2017), <https://www.bloomberg.com/news/articles/2017-05-22/first-green-bonds-sold-by-an-oil-giant-find-willing-investors>.

⁸ See Mike Cherney, *‘Green Bonds’ for a Parking Garage?*, WALL ST. J., (Mar. 12, 2015), <https://www.wsj.com/articles/green-bonds-for-a-parking-garage-1426176294>.

⁹ See Michael Standaert, *China Support for ‘Clean Coal’ Gives Green Bonds Touch of Gray*, BLOOMBERG ENV'T (Jan. 22, 2018), <https://bna.news.bna.com/environment-and-energy/china-support-for-clean-coal-gives-green-bonds-touch-of-gray>. Clean coal has been discredited as a mitigation technology. See Fred Pearce, *Greenwash: Why ‘Clean Coal’ is the Ultimate Climate Change Oxymoron*, GUARDIAN (Feb. 26, 2009), <https://www.theguardian.com/environment/2009/feb/26/greenwash-clean-coal>.

¹⁰ “Greenwashing is the use of marketing to portray an organization’s products, activities or policies as environmentally friendly when they are not.” *Greenwashing*, INVESTOPEdia.COM, <https://www.investopedia.com/terms/g/greenwashing.asp> (last visited Oct. 18, 2018).

as a debt instrument altogether.¹¹ If investors committed to financing climate mitigation and adaptation do not trust that green-labeled bonds will go to green projects, they will have to conduct costly due diligence to analyze the climate impacts of individual issuances. This could chill private investor interest in climate finance at a period critical for achieving the mitigation necessary to stay below 2°C of warming.

While much has been written about the rise of green bonds, there has been little scholarship analyzing green bond standardization from perspectives of global environmental governance and international environmental law. This Note will attempt to contribute to the standardization debate by considering legal and policy arguments for creating green bonds standards within the United Nations Framework Convention for Climate Change (UNFCCC). I will explore where and how the Paris Agreement, in particular, implicates green bonds and how the green bond regime can evolve synergistically with parties' obligations under the UNFCCC. Using a "building blocks" theory of global climate protection,¹² this Note will argue that a dominant market actor strategy, whereby major actors use their market weight to promote standard adoption, represents the best path to effective green bond governance. Although this de-centralized approach does not directly follow UNFCCC processes, it supports the UNFCCC's central mitigation objectives.

I. FRAGMENTATION: THE CURRENT GREEN BOND STANDARDIZATION REGIME

There is no single set of standards for green bonds. Instead, diverse standards are promulgated by NGOs, Inter-Governmental Organizations (IGOs), governments, corporations, and commercial banks. Although this diversity of standard issuers poses governance problems in and of itself, the prospects for uniform standardization would be significantly enhanced if current standards exhibited only minimal misalignment. This Section will provide an overview of prominent green bonds standards with the aim of identifying and analyzing key areas of distinction between standards.

¹¹ See Flood, *supra* note 6.

¹² See generally Richard B. Stewart, Michael Oppenheimer & Bryce Rudyk, *Building Blocks for Global Climate Protection*, 32 STAN. ENVTL. L.J. 341 (2013).

A. *Non-Governmental Organizations*

The two main green bond standardization frameworks promoted by NGOs exemplify opposing inclinations about what a green bond standard should accomplish. The International Capital Market Association (ICMA) is a self-regulatory trade association composed of over 570 members from both the buy and sell sides of securities markets, including investment banks, commercial banks, securities dealers and brokers, asset managers, and stock exchanges, among others.¹³ The aim of ICMA is to promote “the resilience, efficiency and cost effectiveness of international capital markets,” in part by “promoting internationally accepted standards of best practice through the development of appropriate, broadly accepted guidelines.”¹⁴

ICMA’s green bond guidelines, first published in 2014 and updated yearly as The Green Bond Principles (GBP), are a certification regime based purely on procedural aspects of issuance without any substantive requirements regarding what should qualify as a “green” use of proceeds. These voluntary process guidelines are designed to help issuers launch “credible” green bonds and to help investors “by promoting availability of information necessary to evaluate the environmental impact of their Green Bond investments.”¹⁵ The GBPs are comprised of four core components: use of proceeds, process for project evaluation and selection, management of proceeds, and reporting.¹⁶

The GBP states that proceeds should be used for green projects, which should be “appropriately described in the legal documentation for the security.”¹⁷ The environmental benefits of green projects should be “clear” and “where feasible, quantified by the issuer.”¹⁸ Although the GBP lists categories of projects that may be considered green, it acknowledges that “the GBP’s purpose is not to take a position on which green technologies, standards, claims

¹³ See *Membership*, INT’L CAPITAL MKT. ASS’N, <https://www.icmagroup.org/membership/> (last visited Aug. 3, 2019).

¹⁴ *About Us*, INT’L CAPITAL MKT. ASS’N, <https://www.icmagroup.org/About-ICMA/> (last visited Aug. 3, 2019).

¹⁵ INT’L CAPITAL MKT. ASS’N, THE GREEN BOND PRINCIPLES 2 (2017), <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GreenBondsBrochure-JUNE2017.pdf>

¹⁶ See *id.*

¹⁷ *Id.*

¹⁸ *Id.*

and declarations are optimal for environmentally sustainable benefits.”¹⁹ Although issuers are “encouraged” to describe how the green bond fits within the issuer’s “overarching objectives”²⁰ relating to sustainability, the GBPs does not contain specific substantive criteria for determining whether a project is green.

The ultimate aim of the GBP’s procedure-oriented framework is to promote transparency, information disclosure, and use of bond proceeds for stated purposes. The GBPs clarify that “it is important to note that Green Bonds should not be considered fungible with bonds that are not aligned with the four core components of the GBP.”²¹ There would be no issue under the GBP, however, with bonds issued by a solar developer being fungible with bonds funding meager efficiency improvements in existing coal plants. The problems this poses for climate mitigation efforts will be discussed in greater detail in Section III of this Note.

In contrast to the GBP, the Climate Bonds Initiative (CBI) promotes a substantive standard, the Climate Bonds Standard and Certification Scheme (CBS), launched in 2010. CBI categorizes itself as “an investor-focused-not-for-profit.”²² A registered charity, the CBI is composed of a technical secretariat and a climate science reference group, which consult with technical and industry working groups to establish a climate bonds taxonomy. The work of the CBI is overseen by a Climate Bond Standards Board, which features representatives from environmental NGOs and institutional investors.

CBI frames its mission specifically as mobilizing capital towards climate solutions: to “promote investment in projects and assets necessary for a rapid transition to a low-carbon and climate resilient economy.”²³ To help achieve this objective, CBI provides a Climate Bonds Taxonomy to guide issuers in identifying assets and projects that are consistent with the 2°C goal of the Paris Agreement. The taxonomy “has been developed based on the latest climate science including research from the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), and has benefited from the input of hundreds of

¹⁹ *Id.*

²⁰ *Id.* at 3.

²¹ *Id.* at 1.

²² *About Us*, CLIMATE BONDS INITIATIVE, <https://www.climatebonds.net/about> (last visited Aug. 3, 2019).

²³ *Id.*

technical experts from around the world.”²⁴ CBI’s taxonomy lays out general areas of inclusion and exclusion by sector.²⁵ Fossil fuel energy technologies are explicitly excluded from the taxonomy.²⁶

The CBS’s detailed and sector-specific standards are developed by technical working groups composed of scientists, engineers, and technical specialists. The standards are designed to identify bonds “that truly contribute to addressing climate change.”²⁷ While issuers can state that their bonds are compliant with the GBPs simply by receiving an opinion from a secondary party, CBI requires issuers to submit a report, verified by a secondary party, to the CBI, showing that the issuance complies with relevant sector criteria and other standard requirements.²⁸

Upon approval from CBI, issuers can use the CBI’s “Certified Climate Bond” mark when bringing the bond to market. In order to maintain the certification, issuers must submit a post-issuance report within twelve months of issuance and subsequent reports each year for the term of the bond.²⁹ Certification under CBI has grown steadily from four percent of labeled green bonds receiving external review in 2015 to eleven percent in 2017.³⁰

As these two frameworks illustrate, there are discrepant ideas about what a green bond framework should require. Although the GBPs and CBS are often talked about as complementary, the reality is that they represent diverging options for the future of green bond standards. Under one vision, as evinced through the GBPs, bonds should be certified as green if they follow certain procedural obligations ensuring transparency—substantive questions of what qualifies as “green,” however, should be left to the market. Ultimately, this perspective promotes the idea that investors should

²⁴ *Taxonomy*, CLIMATE BONDS INITIATIVE, <https://www.climatebonds.net/standard/taxonomy> (last visited Aug. 3, 2019).

²⁵ As of writing the taxonomy sets guidelines for energy, buildings, and industry; waste, pollution control, and sequestration; transport; information technology, and communications; agriculture and forestry; and adaptation. *See id.*

²⁶ *See id.*

²⁷ *About*, CLIMATE BONDS INITIATIVE, <https://www.climatebonds.net/about> (last visited Aug. 3, 2019).

²⁸ *See id.*

²⁹ *See* CLIMATE BONDS INITIATIVE, CLIMATE BONDS STANDARD & CERTIFICATION SCHEME 2 (2017), <https://www.climatebonds.net/files/files/Certificate%20Bonds%20Certification%20Standard%20Scheme.pdf>.

³⁰ *See* CLIMATE BONDS INITIATIVE, BONDS AND CLIMATE CHANGE: THE STATE OF THE MARKET 2017, at 18 (2017), https://www.climatebonds.net/files/files/CBI-SotM_2017-Bonds%26ClimateChange.pdf.

be left to finance climate mitigation and adaption in whatever way suits their appetite. CBI exemplifies an alternative intuition: that green bond standards should be substantive, specific, and based on best available science. While this view still acknowledges the importance of informational disclosure and attracting investment, it pushes the green bond market towards projects “that truly contribute to addressing climate change.”³¹

B. *Inter-Governmental Organizations*

IGOs, and Multilateral Development Banks (MDBs) in particular, have introduced their own green standards. In contrast to the ICMA and CBI, MDBs act as issuers in the market at the same time as they promulgate standards. For reasons of space and lucidity, this Note will not attempt to provide a comprehensive overview of IGO green bond standards but will rather focus on the standards of a few critical actors: The International Bank for Reconstruction and Development (IBRD), the European Investment Bank, and the Asian Development Bank.

Part of the World Bank Group, the IBRD is the largest development bank in the world and services middle-income and creditworthy low-income countries.³² The IBRD has issued \$10.1 billion in green bonds over the past decade.³³ All projects must be submitted to the World Bank’s two-stage eligibility process.³⁴ The first step of the process involves screening to ensure that the bonds meet countries’ development priorities.³⁵ The second step of the process involves screening by environmental specialists against the World Bank’s environmental eligibility criteria, which have been independently reviewed by the Center for International Climate and Environmental Research at the University of Oslo (CICERO).³⁶ The World Bank’s standard scheme is, thus, based on substantive

³¹ CLIMATE BONDS INITIATIVE, *supra* note 27.

³² See *International Bank For Reconstruction And Development*, WORLD BANK, <http://www.worldbank.org/en/who-we-are/ibrd> (last visited Aug. 3, 2019).

³³ See WORLD BANK, GREEN BOND IMPACT REPORT 2017, at 6, <http://pubdocs.worldbank.org/en/343311520466168445/report-impact-green-bond-2017.pdf>.

³⁴ See *id.* at 8.

³⁵ See *id.*

³⁶ See *id.*

analysis against expert-certified criteria. No fossil fuel generation projects are eligible under the green bond framework.³⁷

The European Investment Bank (EIB), the bank of the European Union, became the world's first green bond issuer when it created the Climate Awareness Bond in 2007. Since then, the EIB has issued over \$22.6 billion in green bonds, making it the largest issuer to date.³⁸ Historically, the EIB has focused on aligning its eligibility framework with the GBP while explicitly excluding certain types of projects, including nuclear energy projects and coal-powered heating production.³⁹ While the EIB certification regime features some substantive restrictions, it has recently recognized the need to move to a full, detailed taxonomy of eligible green projects.⁴⁰ Such a taxonomy would move beyond the GBPs by, for instance, requiring compliance with a detailed taxonomy and statement of alignment with EIB's green bonds standards in legal documentation.⁴¹

Similar in structure to the World Bank, the Asian Development Bank (ADB) is a development bank designed to promote social and economic development, specifically in Asia.⁴² Membership is composed of forty-eight countries from the Asia and Pacific region and nineteen non-regional members.⁴³ Fossil fuel energy efficiency projects and fossil fuel adaptation projects are explicitly excluded from eligibility, but the ADB does not certify according to a specific taxonomy.⁴⁴ Like the World Bank's standard, the ADB's green bond framework has been certified by CICERO, which stated that it was

³⁷ See CTR. FOR INT'L CLIMATE ENVTL. RESEARCH AT THE UNIV. OF OSLO, 'SECOND OPINION' ON WORLD BANK'S GREEN BOND FRAMEWORK 6 (2015), <http://pubdocs.worldbank.org/en/917431525116682107/CICERO-second-opinion.pdf>

³⁸ See CLIMATE BONDS INITIATIVE, *supra* note 30, at 17.

³⁹ See EUR. INV. BANK, CLIMATE AWARENESS BONDS STATEMENT FOR THE YEAR ENDED 8 (2016), <http://www.eib.org/attachments/fi/cab-statement-2016.pdf>.

⁴⁰ See EU HIGH-LEVEL EXPERT GRP. ON SUSTAINABLE FIN., FINANCING A SUSTAINABLE EUROPEAN ECONOMY 19 (2018), https://ec.europa.eu/info/sites/info/files/180131-sustainable-finance-final-report_en.pdf.

⁴¹ See *id.* at 32.

⁴² See *About ADB*, ASIAN DEV. BANK, <https://www.adb.org/about/main> (last visited Aug. 3, 2019).

⁴³ See *id.*

⁴⁴ See *Green Bond Framework*, ASIAN DEV. BANK, <https://www.adb.org/sites/default/files/adb-green-bonds-framework.pdf> (last visited Aug. 3, 2019).

“encouraged” by the exclusion of fossil fuel projects.⁴⁵ Explicit exemption of fossil fuel projects from green bonds framework, however, is not required to receive CICERO certification. CICERO also certified the African Development Bank’s green bond framework, despite the fact that the African Development Bank does not explicitly exclude fossil fuel efficiency and adaptation projects.⁴⁶

C. Governments

The year 2017 was hailed as “the year of the sovereign” in the green bond market.⁴⁷ Governments impact the green bond market both as issuers and standard-makers. Poland and France became the first national governments to issue green bonds in late 2016 and early 2017, respectively.⁴⁸ For some countries, such as the United States, the majority of green bond issuance has come from municipalities and states, rather than the national government.⁴⁹ Government green bond standards have been growing rapidly, with Japan, Taiwan and India, among others, issuing green bond guidelines in 2017.⁵⁰ While Taiwan officially endorsed the CBS and GBP, other sovereigns, such as China and India, have not required alignment with the CBS taxonomy.

⁴⁵ See CTR. FOR INT’L CLIMATE ENVTL. RESEARCH AT THE UNIV. OF OSLO, ‘SECOND OPINION’ ON ADB’S GREEN BOND FRAMEWORK 7 (2014), <https://www.adb.org/sites/default/files/ADB051114final.pdf>.

⁴⁶ CICERO noted,

While investments that lead to emission reductions are good, small reductions are not enough for the longer term, even for Africa. Thus, one should avoid investing in projects that only leads to ‘small’ reductions over time and that may stand in the way of the more radical shift in technologies that are needed for the longer term. Such ‘blind alley’ projects are not ‘green’. An example could be retrofitting a coal fired power plant.

CTR. FOR INT’L CLIMATE ENVTL. RESEARCH AT THE UNIV. OF OSLO, AfDB—SECOND OPINION 2 (2013), https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AfDB_Second_Opinion_-_CICERO.pdf.

⁴⁷ CLIMATE BONDS INITIATIVE, SOVEREIGN GREEN BONDS BRIEFING 2 (Mar. 2018), https://www.climatebonds.net/files/files/Sovereign_Briefing2017.pdf.

⁴⁸ See CLIMATE BONDS INITIATIVE, *supra* note 30, at 16.

⁴⁹ See Michael Ferguson, *Playing Catch-Up: The US Green Bond Market Shows Promise*, RENEWABLE ENERGY WORLD (Nov. 21, 2017), <https://www.renewableenergyworld.com/ugc/articles/2017/11/16/playing-catchup-the-us-green-bond-market-shows-promise.html>.

⁵⁰ See CLIMATE BONDS INITIATIVE, *supra* note 30, at 21.

China is the world's largest green bond market, with a total issuance of \$64.3 billion.⁵¹ Year-to-date, China has issued \$20.91 billion in green bonds, accounting for more than twenty-three percent of the global green bond market.⁵² Ninety percent of green bonds issued in China are backed by the government.⁵³ The main government regulator in the green bond space is the Peoples' Bank of China (PBoC), China's central bank. PBoC regulates China's interbank market, which accounts for ninety percent of China's bond market.⁵⁴

PBoC produces a catalogue of projects that qualify for green bonds, which includes clean coal and high-efficiency transport fossil fuel.⁵⁵ Because of this relatively fossil fuel-friendly standard, more than half of the green bonds issued by China in the third quarter of 2018 did not align with the CBI's international green bonds definition.⁵⁶ This standard misalignment represents a serious issue for China's green bond market.⁵⁷ While China is the third largest bond market in the world, only two percent of Chinese bonds are foreign-owned.⁵⁸ PBoC has acknowledged that public funds will not be sufficient to reach China's finance requirements, but are rather expected to contribute only fifteen percent of required capital.⁵⁹ China has begun efforts to harmonize its standards with

⁵¹ See CLIMATE BONDS INITIATIVE, FACILITATING CROSS-BORDER CAPITAL FLOWS TO GROW THE CHINA GREEN BOND MARKET 8 (2017), https://www.climatebonds.net/files/reports/china_intracountry_2017-01d_da_en_28nov17_a4.pdf.

⁵² See CLIMATE BONDS INITIATIVE, CHINA GREEN BOND MARKET Q3 REPORT 2017, at 1 (2017), <https://www.climatebonds.net/files/files/CBI-Newsletter-China-Q3-2017.pdf>.

⁵³ See CLIMATE BONDS INITIATIVE, *supra* note 30, at 12.

⁵⁴ See Andrew Whiley, *China Issues Special Green Bonds Guidelines for Listed Companies + New China Local Govt Green Bond Policy Recommendations*, CLIMATE BONDS INITIATIVE (May 3, 2017), <https://www.climatebonds.net/2017/05/china-issues-special-green-bonds-guidelines-listed-companies-new-china-local-govt-green-bond>.

⁵⁵ See CHINA SOC'Y OF FIN. & BANKING, GREEN FIN. COMM., CHINA GREEN BOND ENDORSED PROJECT CATALOGUE (Dec. 22, 2015), <http://www.greenfinance.org.cn/displaynews.php?cid=79&id=468>.

⁵⁶ CLIMATE BONDS INITIATIVE, CHINA GREEN BOND MARKET NEWSLETTER Q3 2018, at 1 (2018), https://www.climatebonds.net/files/files/China%202018%20Q3%20EN_Final%281%29.pdf.

⁵⁷ See CLIMATE BONDS INITIATIVE, *supra* note 51, at 3.

⁵⁸ See *id.*

⁵⁹ See *id.* at 5.

international frameworks, but has yet to indicate a willingness to exclude clean coal from green bonds certification.⁶⁰

The GBPs provide the “backbone” for India’s new green bonds standards: most of the actual requirements issued by the Securities and Exchange Board of India (SEBI) relate to information disclosure and other process-based obligations.⁶¹ SEBI’s green bond issuing requirements do not include a substantive definition of “green” or a taxonomy of qualifying projects.⁶² SEBI’s requirements, rather, allow the board to consider projects on an individual basis while leveraging international standards, including those of the World Bank, EIB and CBI.⁶³ However, looking to the future and responding to concerns from CBI, SEBI has indicated that it intends to formalize such standards for itself.⁶⁴

1. *Corporations and Commercial Banks*

Corporations round out the universe of green bond standard makers. In 2016, corporations and commercial banks accounted for over fifty percent of issuances.⁶⁵ Many of the largest commercial banks endorse the GBP through their ICMA membership, but some have gone further to establish individual frameworks. HSBC is one of the largest corporate green bond issuers, issuing over \$2.5 billion in the third quarter of 2017.⁶⁶ HSBC’s green bonds framework features a list of eligible sectors that excludes nuclear power but not fossil fuels.⁶⁷ HSBC does state that, when analyzing fossil fuel

⁶⁰ See Standaert, *supra* note 9.

⁶¹ See Sean Kidney, *India’s Securities Regulator Finalises Official Green Bond Listing Requirements + Says Green Bonds Are a Tool to Finance India’s INDC (National Climate Change Plan)*, CLIMATE BONDS INITIATIVE (Jan. 12, 2016), <https://www.climatebonds.net/2016/01/india%E2%80%99s-securities%E2%80%99-regulator-finalises-official-green-bond-listing-requirements-says-green>.

⁶² See *id.*

⁶³ See SEC. & EXCH. BD. OF INDIA, MEMORANDUM TO THE BOARD: DISCLOSURE FOR ISSUANCE AND LISTING GREEN BONDS 4.1.2.2. (2016), https://www.sebi.gov.in/sebi_data/meetingfiles/1453349548574-a.pdf.

⁶⁴ See *id.* at 4.1.2.4.

⁶⁵ See CLIMATE BONDS INITIATIVE, *supra* note 30, at 17.

⁶⁶ See Andrew Whiley, *Q3 2017 Green Bonds Market Summary: Top Issuers, Top Underwriters*, CLIMATE BONDS INITIATIVE (Nov. 8, 2017), <https://www.climatebonds.net/2017/11/q3-2017-green-bonds-market-summary-top-issuers-top-underwriters-2nd-largest-quarter-ever>.

⁶⁷ See HSBC, GREEN BOND FRAMEWORK 3 (2015), <https://www.hsbc.com/-/files/hsbc/investors/fixed-income-investors/green-and-sustainability-bonds/pdfs/151115-hsbc-green-bond-framework.pdf>.

project eligibility, it “will be cautious and consider the net sustainability benefits.”⁶⁸

HSBC’s green bond framework has been certified as “dark green” by CICERO.⁶⁹ CICERO’s “dark green” certification is its highest rating, “allocated to projects and solutions that correspond to the long-term vision of a low carbon and climate resilient future.”⁷⁰ HSBC’s framework was granted its “dark green” status, despite CICERO being “in some doubt” over the integrity of HSBC’s framework, because the framework lacks procedures for impact reporting, does not require that all projects be made available to the public, and allows for fossil fuel consumption.⁷¹

Apple emerged as a major corporate green bond actor when it entered the green bond market in 2016 with a \$1.5 billion issuance⁷² and followed up with a \$1 billion issuance in 2017.⁷³ Both issuances were used to finance renewable energy projects, building efficiency, and implementing a closed-loop supply chain.⁷⁴ Apple’s green bonds framework contains defined criteria for green bond projects and was reviewed by Sustainalytics, the largest external reviewer of green bonds.⁷⁵ Apple’s framework aligns with the GBP and features

⁶⁸ *Id.* at 4.

⁶⁹ CTR. FOR INT’L CLIMATE ENVTL. RESEARCH AT THE UNIV. OF OSLO, ‘SECOND OPINION’ ON HSBC’S GREEN BOND FRAMEWORK 2 (2015).

⁷⁰ *CICERO Shades of Green*, CTR. FOR INT’L CLIMATE ENVTL. RESEARCH AT THE UNIV. OF OSLO, (Apr. 30, 2015), <https://www.cicero.oslo.no/en/posts/what-we-do/cicero-shades-of-green>.

⁷¹ CTR. FOR INT’L CLIMATE ENVTL. RESEARCH AT THE UNIV. OF OSLO, *supra* note 69.

⁷² See Gavin Jackson et al., *Apple Prices \$12bn Bond Sale*, FIN. TIMES (Feb. 16, 2016), https://www.ft.com/content/af9a76a4d4ca-11e5-888798e7feb46f27?_i_location=http%3A%2F%2Fwww.ft.com%2Fcms%2Fs%2F0%2Faf9a76a4-d4ca11e5888798e7feb46f27.html%3Fsiteedition%3Duk&_i_referer=&classification=conditional_standard&iab=barrier-app&siteedition=uk#axzz42ndLlfxh.

⁷³ See Joe Rennison et al., *Apple Raises \$1bn Through “Green Bond” in Environmental Push*, FIN. TIMES (June 13, 2017), <https://www.ft.com/content/db5b911e-508a-11e7-bfb8-997009366969>.

⁷⁴ See SUSTAINALYTICS, APPLE INC. GREEN BOND: FRAMEWORK OVERVIEW AND SECOND-PARTY OPINION BY SUSTAINALYTICS 2 (2017), <https://www.sustainalytics.com/wp-content/uploads/2017/06/Green-Bond-Framework-and-Second-Opinion-Apple2017-final.pdf>.

⁷⁵ See *About Us*, SUSTAINALYTICS, <https://www.sustainalytics.com/about-us> (last visited Aug. 3, 2019).

a pre and post-issuance review model in line with the CBS.⁷⁶ Fossil fuel projects are not included within Apple's eligible projects.⁷⁷

D. *Meaningful Distinction*

As explored in this Section, green bond frameworks differ in consequential ways. Some focus only on the procedural aspects of issuance and information disclosure, while others incorporate substantive standards for what qualifies as green. Frameworks that feature substantive standards have varying taxonomies; existing standards include clean coal and fossil fuels, while others exclude such projects. These conflicting standards pose significant problems for the growth and efficacy of green bonds as a tool to finance climate mitigation and adaptation.

II. ISSUES IN GREEN BOND GOVERNANCE: THE PERILS OF FRAGMENTATION

Disparity among current standards undermines the potential for green bonds to be used as a financial mechanism to combat climate change. As noted by many commentators, the current regime runs a risk that green bonds will be used to “greenwash”⁷⁸ activities that lack real environmental benefit.⁷⁹ Of course, what amounts to “greenwashing” depends on one's definition of what is green: purposeful deception by issuers is a serious concern, but existing

⁷⁶ See Sean Kidney, *How do you Like them Apples! Cupertino Commits to Largest Ever US Corporate Green Bond*, CLIMATE BONDS INITIATIVE (Feb. 17, 2016), <https://www.climatebonds.net/2016/02/how-do-you-them-apples-cupertino-commits-largest-ever-us-corporate-green-bond-%E2%80%93-huge-15bn>.

⁷⁷ See generally SUSTAINALYTICS, *supra* note 74.

⁷⁸ “Greenwashing” refers to “the use of marketing to portray an organization's products, activities or policies as environmentally friendly when they are not.” *Greenwashing*, INVESTOPEDIA.COM, <https://www.investopedia.com/terms/g/greenwashing.asp> (last visited Oct. 18, 2018).

⁷⁹ See, e.g., Emily Feng, *China's Annual Coal Consumption Rises for First Time in 3 Years*, FIN. TIMES (Feb. 28, 2018), <https://www.ft.com/content/5d351276-1c48-11e8-aaca-4574d7dabfb6>; see also Luca Morreale, *The Coming Backlash to 'Greenwashing' of Bonds*, BLOOMBERG BUSINESSWEEK (Aug. 10, 2017), <https://www.bloomberg.com/news/articles/2017-08-11/the-coming-backlash-to-greenwashing-of-bonds-quicktake-q-a>; Claire Milhench, *Emerging Climate Bonds Boom, but are they Really Green?*, REUTERS (Aug. 18, 2017), <https://www.reuters.com/article/us-emerging-bonds-green/emerging-climate-bonds-boom-but-are-they-really-green-idUSKCN1AY1F4>; Mona Dohle, *Green Bonds: All that Glitters is not Green*, INV. EUR. (Nov. 9, 2015), <http://www.investmenteurope.net/opinion/green-bonds-all-that-glitters-is-not-green-2/>

standards open the door to the funding of many activities with dubious environmental impacts. The fragmented standard regime implicates greenwashing concerns in three major ways. First, in the context of climate change, disagreement on what should qualify as a “green” project, or refusal to create a green taxonomy in the first place, muddles the market by allowing issuers to use green bonds for projects that do not achieve mitigation outcomes in line with a future of sub-2°C warming. Second, standards that do not evaluate green bonds within the context of the issuer’s broader mission and asset portfolio run the risk of propping up the fossil fuel industry against cleaner competitors. Finally, different levels of post-issuance review reduce accountability for use of funds and project performance.

A. *What is Green?*

Standards conflict over the use of certain technologies, including nuclear generation and “clean” coal practices. Other standards refuse to take a position altogether about what green should mean. Green bonds have been used to fund a parking garage,⁸⁰ refinance a new coal-fired power plant,⁸¹ increase the energy efficiency of gas generation refineries,⁸² and build dams that cause habitat loss for vulnerable fish species and displace native peoples.⁸³

Under the current deregulated system, self-designated green bonds can finance projects that support emissions-intensive practices over more efficient options. The Massachusetts State College Building Authority issued a self-designated⁸⁴ green bond in 2014 with proceeds used to build a number of LEED-rated buildings. A parking garage was listed as one of the construction projects funded by the bond, despite the fact that LEED certification

⁸⁰ See Cherney, *supra* note 8.

⁸¹ See David Stanway, *China Coal-Fired Power Plant Issues Green Bonds*, REUTERS (Aug. 4, 2017), <https://www.reuters.com/article/china-power-financing/china-coal-fired-power-plant-issues-green-bonds-idUSL4N1KP3RQ>.

⁸² See Chasan, *supra* note 7.

⁸³ See Ryan Brightwell & Zachary Hurwitz, “*Green Bond*” *Issue Risks Raising Finance for Destructive Dams*, BANKTRACK (Jul. 9, 2014), https://www.banktrack.org/blog/green_bond_issue_risks_raising_finance_for_destructive_dams.

⁸⁴ See MASS. STATE COLL. BLDG. AUTH., PROJECT REVENUE BONDS (GREEN BONDS) 5 (2014), <https://emma.msrb.org/EP840417-EP650155-EP1051765.pdf>.

does not apply to parking structures.⁸⁵ State officials explained that the garage would feature charging stations for electric cars and reduce pollution from students burning fuel while looking for spots.⁸⁶ Others questioned whether the added spaces would encourage more students to drive instead of using public transportation, increasing emissions overall.⁸⁷

Green bonds have also been used to fund new fossil generated power plants. In 2017, Tianjin SDIC Jinneng Electric Power issued a green bond to refinance loans used to build a new two gigawatt “ultra-supercritical” coal-fired power plant.⁸⁸ The “ultra-supercritical” designation indicates that the coal plant is more efficient than conventional coal-fired plants, and is included within China’s national green bond standards.⁸⁹ CBI has spoken against such “clean coal” projects, explaining that “although such investments will drive *incremental* improvements, these improvements are not seen as substantial enough to help deliver a sub-2°C pathway.”⁹⁰ Using green bonds to fund new coal plants cuts against China’s Paris Agreement commitment to reduce coal to fifty-eight percent of national energy mix by 2020.⁹¹ Coal currently represents just over sixty percent of national generation, with consumption rising by 0.4 percent in 2017.⁹²

A more complicated debate concerns whether or not green bonds should be used to finance efficiency improvements to existing fossil fuel generation units. In May 2017, Spanish oil and gas company, Repsol, issued a green bond to finance efficiency improvements for oil and gas refineries.⁹³ According to Repsol, the refinery retrofit funded by the bond (issued in 2017) would mitigate

⁸⁵ See Sean Kidney, *A Few More US Green Munis 2014: Utah, Jefferson County, Mass State College, Connecticut. Everything from Bioenergy and Heat Recycling from Gas (!) Turbine to, No Kidding, a Car Park. Stretching Boundaries of “Green”?*, CLIMATE BONDS INITIATIVE (Jan. 13, 2015), <https://www.climatebonds.net/2015/01/few-more-us-green-munis-2014-utah-jefferson-county-mass-state-college-connecticut>.

⁸⁶ See Cherney, *supra* note 8.

⁸⁷ See *id.*

⁸⁸ See Graham Cooper, *Chinese Firm Issues RMB1bn Green Bond for Clean Coal Plant*, ENVTL. FIN. (Aug. 7, 2017), <https://www.environmental-finance.com/content/news/chinese-firm-issues-rmb1bn-green-bond-for-clean-coal-plant.html>.

⁸⁹ See *id.*

⁹⁰ *Id.*

⁹¹ See Feng, *supra* note 79.

⁹² See *id.*

⁹³ See Chasan, *supra* note 7.

an estimated 1.2 million tons of CO₂ annually by 2020.⁹⁴ Repsol's green bond framework was reviewed by Vigeo Eris and met GBP's requirements.

Despite the mitigation potential of the specific project, CBI did not include the bond in its listings. CBI noted that, in order to avoid warming above 2°C, global CO₂ emissions from the energy industry need to be cut in half every ten years through 2050.⁹⁵ Given that Repsol's CO₂ emissions grew by 1.8 million tons from 17.9 million tons in 2015 to 19.7 million tons in 2016, the proposed 1.2 million tons in annual GHG savings “[seem] to be fiddling around the edges.”⁹⁶

The Repsol issuance also implicated the asset versus issuer debate, which asks whether a bond should be considered green if the specific asset attached to the bond is green, or whether the issuer itself should have to meet certain green criteria. In other words, should a green bond standard allow a bond that funds renewable energy projects issued by a company that primarily develops fossil fuel generation? In such an issuance, the specific asset might be green, but the proceeds would support the profitability of a company developing and maintaining fossil fuel infrastructure. Such issuers may be in direct competition for generation contracts with other companies that focus exclusively on renewables.

CBI argues that “the green bond market is about the asset *not* the issuer; and that using the ‘brown’ balance sheets of fossil fuel companies to fund green assets [is] needed for a faster transition to a green economy.”⁹⁷ For a bond issuance to be green, however, it must truly finance this transition. Within the context of Repsol as an issuer, the project was not financing a “brown to green” pathway;

⁹⁴ See VIGEO EIRIS, SECOND PARTY OPINION ON THE SUSTAINABILITY OF REPSOL'S GREEN BOND (May 5, 2017), https://www.repsol.com/imagenes/global/en/Repsol_GreenBond_Second_Party_Opinion_tcm14-71044.pdf.

⁹⁵ See Andrew Whiley, *An Oil & Gas Bond We Knew Would Come Eventually: Repsol: Good on GBPs, Not So Sure on Green Credentials*, CLIMATE BONDS INITIATIVE (May 23, 2017), <https://www.climatebonds.net/2017/05/oil-gas-bond-we-knew-would-come-eventually-repsol-good-gbps-not-so-sure-green-credentials> (citing Brad Plumer, *Scientists Made a Detailed “Roadmap” for Meeting the Paris Climate Goals. It's Eye-Opening.*, VOX (Mar. 24, 2017), <https://www.vox.com/energy-and-environment/2017/3/23/15028480/roadmap-paris-climate-goals>).

⁹⁶ *Id.*

⁹⁷ *Id.*

rather, it constituted an insufficient “incremental” improvement within the Paris Agreement context.⁹⁸

While Repsol’s bond may have reduced the emissions of certain units, it risked increasing the viability and growth of fossil fuel industries. CBI did not regard the bond as greenwashing, but merely symptomatic of the current regime: “Repsol has provided detailed, honest information to investors and, in the absence of any public guidance about whether or not more efficient refineries are green, left it to investors to decide their level of support for the bond...In a nutshell, the Repsol green bond encapsulates the international challenge.”⁹⁹

Even fossil fuel-free projects implicate complicated environmental concerns that are not accounted for under some current standards. In 2014, GDF Suez (a French multinational electric company now called Engie) issued a green bond, certified by ESG ratings-agency Vigeo-Eiris, to finance the Jirau Dam in Brazil.¹⁰⁰ But dam construction caused historic floods along the river, forcing the displacement of thousands of people from their homes.¹⁰¹ Indigenous peoples were not appropriately consulted about the project and faced loss of native land.¹⁰² The project also had serious ecological repercussions: scientists raised concerns that the dam would put several fish species at risk of extinction.¹⁰³ Investors focused on socially-responsible investing bought sixty-four percent of the issue.¹⁰⁴

B. *Accountability*

While the GBPs feature broad recommendations for reporting on use of proceeds, and CBI requires specific reporting

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ See Brightwell & Hurwitz, *supra* note 83.

¹⁰¹ See *id.*

¹⁰² See Survival International, *Amazon Mega-Dams Endanger Uncontacted Indians*, SURVIVOR INT’L (May 19, 2010), <https://www.survivalinternational.org/news/5941>.

¹⁰³ See Glenn Switkes, *Amazon in Peril*, INT’L RIVERS (June 30, 2009), <https://www.internationalrivers.org/resources/amazon-in-peril-1777>.

¹⁰⁴ See GDF SUEZ *Successfully Issues the Largest Green Bond to Date*, ENGIE.COM (May 12, 2014), <https://www.engie.com/en/journalists/press-releases/gdf-suez-successfully-largest-green-bond/>.

procedures,¹⁰⁵ current standards do not contain mechanisms for investor recourse in the event that bonds are not used for the green purposes identified at issuance. No actions have been filed against an issuer for a project failing to achieve its proposed green outcome,¹⁰⁶ likely because there is no currently accepted legal definition of green bonds.¹⁰⁷ Another difficulty in bringing suit stems from the difficulty for plaintiffs to show damages:¹⁰⁸ in the US, it is unclear whether a non-financial claim can be brought under Securities Exchange Commission (SEC) Rule 10(b)(5).¹⁰⁹

There is precedent for the US Internal Revenue Service auditing a developer to determine whether or not to revoke a bond's congressionally authorized tax-exempt status based on non-performance of listed green uses. In 2004, Congress approved \$2 billion in federally tax-exempt bonds for construction projects demonstrating new alternative energy technologies.¹¹⁰ Developers Destiny USA secured \$228 million in bonds, promising to build a number of green technologies in connection with a large shopping mall expansion.¹¹¹ Proposed projects included enough solar panels to cover six football fields, the largest fuel cell installation in the nation, and a power generator running on biofuels.¹¹²

Destiny did not deliver on a single one of its green promises, citing "significant changes in the economy."¹¹³ According to Destiny's counsel, the bonds, which went to funding the mall expansion generally, "should be allowed to remain tax-exempt because the federal law creating the program only required it to

¹⁰⁵ See CLIMATE BONDS INITIATIVE, CLIMATE BONDS STANDARD 12 (2015), [https://www.climatebonds.net/files/files/Climate%20Bonds%20Standard%20v2_0%20-%202022Dec2015%20\(1\).pdf](https://www.climatebonds.net/files/files/Climate%20Bonds%20Standard%20v2_0%20-%202022Dec2015%20(1).pdf).

¹⁰⁶ See Scott Breen & Catherine Campbell, *Legal Considerations for a Skyrocketing Green Bond Market*, 31(3) NAT. RESOURCES & ENV'T 16 (2017).

¹⁰⁷ See Motoko Aizawa, *Reflections on Legal Issues Associated with Green Bonds: A Reflection by Climate Bonds Senior Fellow Motoko Aizawa from our NYC Legal Workshop*, CLIMATE BONDS INITIATIVE (May 3, 2015), <https://www.climatebonds.net/2015/05/reflections-legal-issues-associated-green-bonds-reflection-climate-bonds-senior-fellow>.

¹⁰⁸ See *id.*

¹⁰⁹ See *id.*

¹¹⁰ See Rick Moriarty, *IRS Says Destiny USA Green Bonds Can Stay Tax-Exempt*, SYRACUSE.COM (Mar. 16, 2012), http://www.syracuse.com/news/index.ssf/2012/03/irs_says_destiny_usa_green_bon.html.

¹¹¹ See *id.*

¹¹² See *id.*

¹¹³ *Id.*

describe the energy efficiency, renewable energy and sustainable design features planned for the project and did not require that the project actually include all of them.”¹¹⁴ The Internal Revenue Service ruled that the bonds were in compliance with federal regulations.¹¹⁵

CBI suggests working with securities exchanges to establish guidance documents.¹¹⁶ Others have encouraged the SEC and EPA to develop a definitive green label, modeled off the “organic” labeling process undertaken by U.S. agencies.¹¹⁷ These are all important objectives; unfortunately, there appears to be little political will for such movement within the United States. Other actors will have to take the lead in establishing substantive green bond standardization above and beyond the current self-regulatory regime.

III. BENEFITS OF INCREASED STANDARDIZATION IN THE GREEN BOND MARKET

These greenwashing issues underlie a key dynamic in green bond standard certification: the incentives of issuers and for-profit second-party certifiers do not necessarily align with producing rigorous climate outcomes. As long as the GBPs remain the market’s main green bond standard, second party certifiers will continue to be able to certify bonds with dubious or harmful environmental outcomes. Green bond governance must develop beyond an industry-driven regime of self-regulation. A dominant, substantive standard is needed to direct the market to mitigation outcomes in line with the Paris Agreement.

Market actors have been pressing for green bond standardization based on a definition of what is green. Wim Bartels, global lead of Climate Risk Services at KPMG, one of the “Big Four” accounting firms, notes that “[s]tandardized criteria for what makes a bond green are critical for the future credibility of the

¹¹⁴ Aizawa, *supra* note 107.

¹¹⁵ See CITY OF SYRACUSE INDUS. DEV. AGENCY, MATERIAL EVENT NOTICE: FAVORABLE RESOLUTION OF IRS AUDIT, <http://media.syracuse.com/news/other/Green%20bonds.pdf>.

¹¹⁶ See Aizawa, *supra* note 107.

¹¹⁷ See Luke Trompeter, *Green is Good: How Green Bonds Cultivated into Wall Street’s Environmental Paradox*, 17 SUSTAINABLE DEV. L. & POL’Y, 2, 7 (2017), <http://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1590&context=sdlp>.

market. If too many issuers have green credentials of their bonds challenged, this could affect the growth of the market by discouraging both future investors and issuers.”¹¹⁸ Julian Bras, socially responsible investment portfolio manager at Allianz, cautioned that “[w]ithout some form of market or regulatory intervention, the risk is that the market is going to end up being a mixed bag, and then it will never recover its credibility... The need for standardisation on this market is self-evident and urgent.”¹¹⁹

This Section will explore the theoretical benefits of standardization in addressing issues associated with greenwashing and issuer accountability. A substantive, widely adopted set of standards is needed to ensure that green bonds fund only those projects that achieve real environmental results. A rigorous standard would curb the risk of greenwashing, attracting climate finance to projects that align with pathways to sub-2°C warming. Such a standard would also promote growth in the green bond market by enhancing investor confidence, reducing transaction costs, and increasing green bond liquidity.

A. *Curbing Greenwashing and Promoting Pathways to a Future of Sub-2 °C Warming*

Standardization is needed first and foremost so that green bonds are used to fund projects consistent with the goal of limiting global warming to a temperature rise of less than 2°C.¹²⁰ The most basic role of such a standard would be to curb greenwashing and exclude technologies that are clearly not aligned with the drastic action required under the Paris Agreement. According to a recent study published in *Science*, CO₂ emissions need to be approximately cut in half every decade through 2050 to limit warming in line with the Agreement.¹²¹

¹¹⁸ *Green Bonds a Low Carbon Economy Driver After COP21*, UNFCCC NEWS (July 11, 2016), <https://unfccc.int/news/green-bonds-a-low-carbon-economy-driver-after-cop21>.

¹¹⁹ Sophie Robinson-Tillett, *Green bond market risks losing credibility warns Allianz*, ENVTL. FIN. (Nov. 24, 2015), <https://www.environmental-finance.com/content/news/green-bond-market-risks-losing-credibility-warns-allianz.html>.

¹²⁰ See Carbon Brief Staff, *Two Degrees: The History of Climate Change's Speed Limit*, CARBON BRIEF (Dec. 8, 2014), <https://www.carbonbrief.org/two-degrees-the-history-of-climate-changes-speed-limit>.

¹²¹ See Johan Rockström et al., *A Roadmap for Rapid Decarbonization*, 355 SCI. 1269 (2017), <http://science.sciencemag.org/content/355/6331/1269>.

Under this stark reality, new “clean coal” power generation facilities cannot be considered green, nor can any project that contributes to increasing fossil fuel output.¹²² A dominant green bond standard excluding new fossil fuel energy generation would point the market towards true climate mitigation. Furthermore, as discussed, efficiency improvements to fossil fuel units may risk extending plant lifetimes, increasing fossil fuel company profitability and thereby leading to greater emissions over time.¹²³ For these reasons, a green bond standard should exclude financing or refinancing efficiency improvements to fossil fuel generation unless they demonstrably support the issuer’s “brown to green”¹²⁴ transition.

There are limits to what a single dominant standard can accomplish. An overly restrictive standard would risk locking out new technologies and prevent regional experimentation; it could also risk insensitivity to the different technological capabilities among national and emerging issuers. In order to combat this risk, a green bond standard should proceed in the format of CBI’s climate bonds taxonomy, which lays out permissible technologies by sector.

There may be arguments over which technologies represent best practices across different sectors, but these issues can be addressed through information exchange over time. CBI has already shown that such standardization is possible through its Climate Science Advisory Panel and industry and technical working groups.¹²⁵ As this work continues, excluding the outer limit of harmful activities currently funded through green bonds would represent a major improvement for the integrity of the market.

A standard based on a general taxonomy would still leave many environmental issues outside its ambit. For instance, a taxonomy would struggle to account for projects like the problematic Jirau Dam, which provide benefits of clean energy while harming local ecosystems. It is important to consider that a green bond standard would not exist in a vacuum: project developers and states must still comply with their obligations under domestic and international environmental law.

¹²² See Whiley, *supra* note 95.

¹²³ See *id.*

¹²⁴ See *id.*

¹²⁵ See CLIMATE BONDS INITIATIVE, *supra* note 105, at 19.

A final issue involves the extent to which a green bond standard should include human and environmental rights criteria. Mary Robinson, the former United Nations High Commissioner for Human Rights, has highlighted concerns about renewable energy companies building in areas without requisite land rights.¹²⁶ Many green projects implicate human and environmental rights issues. The Jirau Dam, as discussed, was developed without consulting native and other affected peoples; flooding from the project resulted in the displacement of thousands. The project implicated the right of free, prior, and informed consent,¹²⁷ the right to property,¹²⁸ and many other rights under international law. This important issue is deserving of greater exploration through future research. However, it should again be noted that a green bonds standard should not be expected to cover the entire spectrum of environmental, social, or governance issues related to green projects.

B. *Growing the Market*

Standardization with substantive green definitions would also help to ensure the continued growth of the green bond market and direct money to climate finance. Private and public investors and issuers have taken interest in green bonds as a mechanism for a variety of reasons, in part because they are often tax-free, relatively safe, and fulfill SRI mandates.¹²⁹ These qualities have helped make green bonds “the most prolific of green finance instruments developed to date,” according to Standard & Poor’s.¹³⁰

As this group of investors continues to grow, standardization will be critical to maintaining demand from SRI managers concerned about the market’s credibility.¹³¹ For SRI investors

¹²⁶ See Vibeka Mair, *Ex-UN Human Rights Chief Robinson Takes Aim at Renewable Energy Land Grabs*, RESPONSIBLE-INVESTOR.COM (Apr. 19, 2016), https://www.responsible-investor.com/home/article/robinson_takes_aim_at_renewable_energy_land_grabs/.

¹²⁷ On the duty of free, prior, and informed consent, *see generally*, UN DEV. PROGRAMME & UN-REDD PROGRAMME, GUIDELINES ON FREE, PRIOR AND INFORMED CONSENT (Jan. 2013), <https://www.unclearn.org/sites/default/files/inventory/un-redd05.pdf>.

¹²⁸ See G.A. Res. 217(III) A, Universal Declaration of Human Rights Art. 17(2) (Dec. 10, 1948).

¹²⁹ See Trompeter, *supra* note 117, at 5.

¹³⁰ See Susanna Rust, *ESG: Green Bonds get G20 Boost*, IPE (Oct. 2016) <https://www.ipe.com/investment/esg/esg-green-bonds-get-g20-boost/10015438.article>.

¹³¹ *See id.*

operating in the current market of diffuse standards, a green label may indicate nothing more than that an issuer has satisfied its own idea of what green means. Providing a uniform, dependable standard will support the market by reducing the need for investors to conduct costly due diligence in order to determine whether or not the bonds they are purchasing actually contribute to green causes. A market dominant standard grounded in a substantive green definition would help reduce these transaction costs and the potential chilling effect they could have on the market.

Additionally, analyst observations indicate that SRI managers are responding to these due diligence concerns in ways that could frustrate the growth of the green bond market. Currently, lack of certainty in standards means that SRI investors feel more comfortable buying green bonds from issuers they are familiar with.¹³² A uniform green standard would help overcome reputational uncertainties and promote the entrance of new issuers into the market.

A uniform standard could also help alleviate market liquidity concerns. Relatively small and new, the green bond market features “information asymmetries along with general illiquidity.” Liquidity¹³³ has been identified as one of the greatest risks associated with green bonds as an asset¹³⁴ and a threat to overall market growth potential.¹³⁵

Green bond exchanges have been cropping up in recent years, providing the green bond market with liquidity by regulating markets and giving investors confidence that they will be able to trade their bonds in the future. The London Stock Exchange, Mexico Stock Exchange, and Luxembourg Stock Exchange are just some of the exchanges that have established dedicated green bonds

¹³² Monica Insoll, managing director and head of the credit market research team at Fitch Ratings Inc. in London has noted that, “We understand that many asset managers will buy a green bond based on if they know the issuer from holding other bonds.” Baker, *supra* note 6.

¹³³ “Liquidity describes the degree to which an asset or security can be quickly bought or sold in the market without affecting the asset’s price.” *Liquidity*, INVESTOPEDIA.COM, <https://www.investopedia.com/terms/l/liquidity.asp> (last visited Oct. 18, 2018).

¹³⁴ See Don Moskowitz, *Opportunities and Risks of Green Bond Investing*, INVESTOPEDIA.COM (Oct. 7, 2018) <https://www.investopedia.com/articles/investing/081115/green-bonds-benefits-and-risks.asp>.

¹³⁵ See CLIMATE BONDS INITIATIVE, *THE ROLE OF EXCHANGES IN ACCELERATING THE GROWTH OF THE GREEN BOND MARKET* 3 (2017), <https://www.climatebonds.net/files/files/RoleStock%20Exchanges.pdf>.

listings.¹³⁶ Seventy-two percent of labeled green bonds, amounting to \$130 billion, are currently listed on exchanges.¹³⁷ The Shanghai Stock Exchange and Shenzhen Stock Exchange are piloting green bond exchange programs at the time of writing.¹³⁸

There are a mix of standards schemes currently employed by green bond stock exchanges. The London Stock Exchange, for example, admits bonds based on “specific criteria, which mainly relate to the issuer providing an external review document aligned with industry-wide accepted guidelines, such as the GBPs, whether it is third-party certification, a second opinion, or a green rating or verification.”¹³⁹ Other stock exchanges, such as the Shenzhen Stock Exchange, are governed by national regulatory green bond guidelines.¹⁴⁰

The Sustainable Stock Exchanges Initiative¹⁴¹ has identified the confusion over the term “green” as a key challenge for stock exchanges in greening financial markets.¹⁴² A market standard with clear exclusionary criteria is needed so that exchanges do not, for example, promote the fungibility of bonds funding coal plants with those achieving mitigation outcomes in line with the Paris Agreement mitigation goals. A market standard that excludes fossil fuel projects would help to ensure that the green bond exchanges promote liquidity without mobilizing investors towards greenwashed products.

¹³⁶ *See id.* at 2.

¹³⁷ *See id.*

¹³⁸ *See id.*

¹³⁹ Interview by Environmental-Finance.com with Lillian Georgopoulou, Product Manager, London Stock Exchange (Nov. 7, 2016), <https://www.environmental-finance.com/content/the-green-bond-hub/green-stock-exchange.html>.

¹⁴⁰ CLIMATE BONDS INITIATIVE, CHINA GREEN BOND MARKET 5 (2017) https://www.climatebonds.net/files/files/China_Annual_Report_2017_English.pdf.

¹⁴¹ According to their website,

[t]he Sustainable Stock Exchange is organized by UNCTAD, UN Global Compact, UN Environment Finance Initiative and the UN-supported Principles for Responsible Investment. The initiative was launched in 2009 by the United Nations Secretary-General as a peer-to-peer learning platform for exploring how exchanges (in collaboration with policymakers, regulators, investors and companies) can promote responsible investment for sustainable development.

SUSTAINABLE STOCK EXCH. INITIATIVE, HOW STOCK EXCHANGES CAN GROW GREEN FINANCE 3 (2017), <http://www.sseinitiative.org/wp-content/uploads/2017/11/SSE-Green-Finance-Guidance-.pdf>.

¹⁴² *See id.* at 6.

C. *Promoting Accountability: Who and How*

Along with greenwashing, lack of accountability was identified as one of the key problems facing the current fragmented green bond regime. Having established the benefits of a market dominant green bond standard that excludes fossil fuels for curbing greenwashing and promoting climate finance, the question becomes who should set such a standard and how. The following Section will explore legal and policy arguments for using the United Framework Convention on Climate Change (UNFCCC) regime as a forum within which to set a green bond standard. Relatedly, it will explore arguments for and against a legally binding standard.

IV. GREEN BOND STANDARDIZATION AND THE UNFCCC

The UNFCCC is an international treaty adopted in 1992. The UNFCCC entered into force in 1994 has been signed by 197 parties.¹⁴³ The “ultimate objective” of the UNFCCC is to achieve “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”¹⁴⁴

Article 7 of the UNFCCC established the Conference of the Parties (COP) as the “supreme decision-making body” of the convention.¹⁴⁵ The COP is charged with, among other things, making decisions necessary for the implementation of the convention, establishing subsidiary bodies as needed, and promoting and facilitating the exchange of information.¹⁴⁶ Unless otherwise decided, the COP is obliged to convene annually.¹⁴⁷ A secretariat (Secretariat) is established through Article 8 of the UNFCCC in order to support the COP and its subsidiary bodies.

The Paris Agreement was adopted in 2015 during the twenty-first COP. As of September 2019, 195 UNFCCC members

¹⁴³ See *Status of Ratification of the Convention*, U.N. CLIMATE CHANGE, <https://unfccc.int/process/the-convention/news-and-updates> (last visited Aug. 3, 2019).

¹⁴⁴ U.N. Framework Convention on Climate Change art. 2, May 9, 1992, 1771 U.N.T.S. 107 [hereinafter UNFCCC 1992].

¹⁴⁵ *What are Bodies?*, U.N. CLIMATE CHANGE, <https://unfccc.int/process-and-meetings/bodies/the-big-picture/what-are-governing-process-management-subsiary-constituted-and-concluded-bodies> (last visited Aug. 3, 2019). See also UNFCCC 1992, *supra* note 144.

¹⁴⁶ See UNFCCC 1992, *supra* note 144, art. 7.2.

¹⁴⁷ See *id.* art. 7.4.

have signed the Agreement.¹⁴⁸ The Agreement employs the UNFCCC's institutions, including the Secretariat, COP, financial mechanisms, and other subsidiary bodies.¹⁴⁹ The Agreement "aims to strengthen the global response to the threat of climate change," in part by "[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels."¹⁵⁰

Although the Agreement does not create a collective or individual legal obligation for its parties to achieve mitigation outcomes, it does create other legal obligations for signatory parties. As Daniel Bodansky writes, "The Paris Agreement does qualify as a treaty within the meaning of international law; it does create legal obligations for its parties; and compliance with these obligations is not voluntary."¹⁵¹ Parties have a number of legal obligations under the Agreement.¹⁵²

Each party "shall prepare, communicate and maintain successive nationally determined contributions" to achieving greenhouse gas mitigation in line with the sub-2°C goal.¹⁵³ Each party must provide the information necessary for clarity and transparency when communicating its Nationally Determined Contribution (NDC),¹⁵⁴ provide information necessary to track progress in implementing and achieving its NDC,¹⁵⁵ and communicate a successive NDC every five years, which must be a progression beyond the party's current NDC.¹⁵⁶ These obligations

¹⁴⁸ See U.N., Status of the Paris Agreement, UNITED NATIONS TREATY COLLECTION, https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtidsg_no=XXVII-7-d&chapter=27&clang=_en (last visited Aug. 3, 2019).

¹⁴⁹ See Daniel Bodansky, *The Paris Agreement: A New Hope?*, 110 AM. J. INT'L L. 288, 296-97 (2016).

¹⁵⁰ U.N. Framework Convention on Climate Change, *Report of the Conference of the Parties on its Twenty-First Session*, U.N. Doc. FCCC/CP/2015/10/Add.1, art. 2.1 (Jan. 29, 2016) [hereinafter *Paris Agreement*].

¹⁵¹ Daniel Bodansky, *The Legal Character of the Paris Agreement*, 25 REV. EUR. COMP. & INT'L ENV'T L. 142, 142 (2016).

¹⁵² Along with specific duties discussed, parties have a general obligation under the Vienna Convention on the Law of the Treaties, and under general principles of international law, to perform their treaty duties in good faith. See Vienna Convention on the Law of the Treaties art. 26, May 23, 1969, 1155 U.N.T.S. 331; see also Anthony Aust, *Pacta Sunt Servanda*, in MAX PLANCK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW (Rüdiger Wolfrum ed. 2012), <http://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1449?prd=EPIL>.

¹⁵³ See *Paris Agreement*, *supra* note 150, art. 4.2.

¹⁵⁴ See *id.* art. 4.8.

¹⁵⁵ See *id.* art. 13.7(b).

¹⁵⁶ See *id.* art. 4.3.

apply to all parties, regardless of their development status. While the transparency and reporting requirements form the core of the parties' obligations under the Agreement, there are a number of provisions related to financing climate mitigation and adaptation that are relevant for green bond governance.

A. *Legal and Political Relevance of the Paris Agreement for Green Bonds*

Articles 4.3 and 4.4 of the UNFCCC require OECD countries to provide financial assistance to developing countries for mitigation and adaptation efforts. In the Copenhagen Accord, reached during COP 15 in 2009, developed countries committed to mobilizing \$100 billion per year in climate finance by 2020 through public and private sources.¹⁵⁷ Article 9.1 of the Paris Agreement reiterates and extends developed country parties' existing financial obligations under the UNFCCC. The COP decision adopting the Paris Agreement¹⁵⁸ extends the \$100 billion annual finance commitment through 2025.¹⁵⁹ Developed country parties are also required to communicate "indicative quantitative and qualitative information" related to financial assistance provided as well as details on projected levels of public funding.¹⁶⁰

The Agreement specifies that the Financial Mechanism of the UNFCCC and its operating entities shall serve as the financial mechanism of the Agreement. The Financial Mechanism of the UNFCCC includes the Green Climate Fund (GCF).¹⁶¹ The GCF is a fund designed to help developing countries finance mitigation and adaptation initiatives and is charged with serving the Agreement's

¹⁵⁷ See United Nations Framework Convention on Climate Change, Copenhagen Climate Change Conference, Copenhagen, Den., Dec. 7–19, 2009, *Rep. of the Conference of the Parties on its Fifteenth Session, held in Copenhagen from 7 to 19 December, 2009*, FCCC/CP/2009/11/Add.1 (Mar. 30, 2010). As a COP decision, the Copenhagen Accord was not legally binding. See Bodansky, *supra* note 151, at 144.

¹⁵⁸ COP decisions represent political rather than legal commitments. See Bodansky, *supra* note 149, at 290.

¹⁵⁹ See Adoption of the Paris Agreement, UNFCCC, *Rep. of the Conf. of the Parties on its Twenty-First Session*, Addendum, ¶ 54, U.N. Doc. FCCC/CP/2015/10/Add.1 (Jan. 29, 2016) [hereinafter *Adoption*].

¹⁶⁰ *Paris Agreement*, *supra* note 150, arts. 9.5 & 9.7.

¹⁶¹ While the Paris Agreement uses pre-existing features of the UNFCCC's Financial Mechanism, it also replaces old ones. Article 6.4 of the Paris Agreement created what has come to be known as the Sustainable Development Mechanism. See *Paris Agreement*, *supra* note 150, art. 6.4.

aim to keep climate change well below 2°C.¹⁶² However, the GCF does not exclude fossil fuel projects from funding, in part due to lobbying from China, Japan, and Saudi Arabia.¹⁶³ The Japanese government argued that funding high-efficiency coal-fired power plants was part of a “realistic, pragmatic and effective” approach to tackling climate change.¹⁶⁴ President Trump has refused to give the remaining \$2 billion of the United States’ \$3 billion pledge to the GCF made during the Obama Administration unless the funds would be used to target advanced coal projects.¹⁶⁵

One of the aims of the GCF is to “use public investment to stimulate private finance,” which it seeks to do through its Private Sector Facility (PSF).¹⁶⁶ The PSF’s main mission is “to engage both the local and global private sector to support climate change mitigation and adaptation projects in developing countries.”¹⁶⁷ The PSF works with pensions funds, insurance companies, corporations, financial intermediaries, and capital markets.¹⁶⁸ The PSF has recently experimented with green bond issuances, although it has not developed a distinct green bond standard. In 2015, the GCF helped bundle energy efficiency projects in Latin America for financing through a green bond partially guaranteed by the fund.¹⁶⁹

¹⁶² See *Who We Are: About the Fund*, GREEN CLIMATE FUND, <https://www.greenclimate.fund/who-we-are/about-the-fund> (last visited Aug. 3, 2019).

¹⁶³ See Suzanne Goldenberg, *UN Green Climate Fund Can be Spent on Coal-Fired Power Generation*, GUARDIAN (Mar. 29, 2015, 7:12 AM), <https://www.theguardian.com/environment/2015/mar/29/un-green-climate-fund-can-be-spent-on-coal-fired-power-generation>.

¹⁶⁴ *Id.*

¹⁶⁵ See Ken Silverstein, *Should Advanced Coal Projects be Part of the Green Climate Fund?*, FORBES (Jul. 16, 2017, 6:18 AM), <https://www.forbes.com/sites/kensilverstein/2017/07/16/should-advanced-coal-projects-be-part-of-the-green-climate-fund/#b5766d42bb30>.

¹⁶⁶ GREEN CLIMATE FUND, *supra* note 162.

¹⁶⁷ GREEN CLIMATE FUND, THE GREEN CLIMATE FUND’S PRIVATE SECTOR FACILITY 6 (2017), https://www.greenclimate.fund/documents/20182/194568/The_Green_Climate_Fund_s_Private_Sector_Facility.pdf/c47eacd1-5b93-4fe0-97de-b4b9ebe669d3.

¹⁶⁸ See *What We Do: Private Sector Facility*, GREEN CLIMATE FUND, <https://www.greenclimate.fund/what-we-do/private-sector-facility> (last visited Aug. 3, 2019).

¹⁶⁹ See *Energy Efficiency Green Bonds in Latin America and the Caribbean*, GREEN CLIMATE FUND, <https://www.greenclimate.fund/-/energy-efficiency-green-bonds-in-latin-america-and-the-caribbean> (last visited Aug. 3, 2019) (noting that project has lapsed as of Sep. 26, 2018).

B. *Green Bonds Standards through the UNFCCC Framework*

To review, developed country parties to the Paris Agreement have a legal obligation to provide financial assistance to developing countries in line with the political commitment of keeping climate change “well below” 2°C.¹⁷⁰ Each party to the Paris Agreement is required to submit NDCs that set mitigation goals “in accordance with best available science”¹⁷¹ and must meet a number of reporting obligations relating to the achievement of NDCs.¹⁷² Collectively, parties “shall pursue domestic mitigation measures, with the aim of achieving the objectives of such NDCs.”¹⁷³

Green bonds standards are implicated under developed country parties’ financing obligations and under all parties’ collective obligation to pursue domestic mitigation efforts. A green bond funding new “clean” coal generation would not be in line with parties’ political commitment to keep warming “well below” 2°C.¹⁷⁴ Developed country parties that invest in green bonds issued by developing countries will not be satisfying their Article 9 finance obligations if those bonds fund projects that do not contribute to mitigation outcomes in line with the Agreement. The Paris Agreement influences non-party signatories as well. Hundreds of non-party bond-issuing entities, including businesses, cities, and banks, have signed the Paris Pledge for Action, promising to “ensure that the ambition set out by the Paris Agreement is met or exceeded to limit global temperature rise to less than 2°C.”¹⁷⁵

While green bonds are relevant to these obligations, commitments, and pledges, the UNFCCC currently provides no legal grounds for invalidating green bonds standards. To achieve standardization under the UNFCCC, parties could legalize a green bond standard by negotiating a separate green bond treaty that would bind government issuers. A second, more likely potential

¹⁷⁰ *Paris Agreement*, *supra* note 150, arts. 9 & 2.

¹⁷¹ *Id.* art. 4.1.

¹⁷² *See id.* arts. 4.8 & 13.7(b).

¹⁷³ *See id.* art. 4.2.

¹⁷⁴ Brad Plumer, *Scientists Made a Detailed “Roadmap” for Meeting the Paris Climate Goals. It’s Eye-Opening*, VOX (Mar. 24, 2017, 7:02 AM), <https://www.vox.com/energy-and-environment/2017/3/23/15028480/roadmap-paris-climate-goals> (discussing Johan Rockstrom et al., *A Roadmap for Rapid Decarbonization*, 355 SCI. 1269 (2017)).

¹⁷⁵ PARIS PLEDGE FOR ACTION, <http://www.parispledgeforaction.org/> (last visited Aug. 3, 2019).

option would be for the COP to issue a decision on green bond standardization.¹⁷⁶ Under this approach, the COP could direct the Subsidiary Body for Scientific and Technological Advice to consider the matter and make recommendations on substantive criteria for climate bonds. These recommendations could then be adopted by another decision of the COP.

Although this decision would not legally bind parties,¹⁷⁷ it would provide a concrete political commitment on a definition of “green.” Such action would be in line with the COP President’s decision adopting the Paris Agreement, which, “[r]ecommends that the Conference of the Parties...shall provide guidance to the entities entrusted with the operation of the Financial Mechanism of the Convention on the policies, programme priorities and eligibility criteria related to the Agreement for transmission by the Conference of the Parties.”¹⁷⁸

Ultimately, both of these options may not be practicable because of lacking political will. As long as China and the United States, among other parties, demand that new coal developments be included as climate finance, there is unlikely to be a rigorous green bond standard developed through UNFCCC mechanisms. The Paris Agreement is based on a “name and shame”¹⁷⁹ process that does not create legal obligations for parties to achieve mitigation outcomes. Moreover, parties’ current NDCs are not even in line with the aim of keeping warming below 2°C.¹⁸⁰ Any legally binding or COP-determined green bond standard that excluded fossil fuel generation would be an enormous step beyond parties’ commitments in Paris. Nevertheless, such a standard is clearly in

¹⁷⁶ This option is in line with its mandate under the Paris Agreement art. 13.13. See UNFCCC 1992, *supra* note 144; *Paris Agreement*, *supra* note 150, art. 13.3 (“The transparency framework shall build on and enhance the transparency arrangements under the Convention.”).

¹⁷⁷ Decisions of treaty bodies are generally do not have binding force. See CLIMATE ACTION NETWORK, COP DECISIONS: BINDING OR NOT? (2009), http://www.climatenetwork.org/sites/default/files/COP_Decisions_CAN_legal_group_June_8_09.pdf.

¹⁷⁸ *Adoption*, *supra* note 159, ¶ 62.

¹⁷⁹ Catherine Martini, *Transparency: The Backbone of the Paris Agreement*, YALE CTR. FOR ENVTL. L. & POL’Y (May 29, 2016), <https://envirocenter.yale.edu/transparency-the-backbone-of-the-Paris-Agreement>.

¹⁸⁰ See David Roberts, *There’s a Huge Gap Between the Paris Climate Change Goals and Reality*, VOX (Nov. 6, 2017, 10:56 AM), <https://www.vox.com/energy-and-environment/2017/10/31/16579844/climate-gap-uneq-2017>.

line with “best available science”¹⁸¹ and is needed to keep warming below 2°C.¹⁸² The following Section will examine how achieving a fossil-free green bond standard could be possible.

C. *Optimal Path Towards Greater Standardization*

The best option for achieving a green bond standard in line with the Paris Agreement’s sub-2°C warming goal is for dominant market actors to follow a building block approach to transnational cooperation while still pursuing standardization through the UNFCCC process.¹⁸³ The European Union, specifically, should harness its market weight and internal political support for mitigation and rules-based governance, as it has in the past, to help drive the movement for a substantive standard that excludes fossil fuel projects as well as projects that do not promote a “brown to green”¹⁸⁴ transition. This approach overcomes design features of the UNFCCC that frustrate mitigation commitments while still supporting the ultimate purpose of the Paris Agreement.

A building block approach to climate protection “seeks to take advantage of dispersed pockets of support for mitigation” rather than concentrating efforts on negotiating a treaty that requires universal participation.¹⁸⁵ The dominant market actor strategy to a building blocks approach “[r]educes GHG emissions through the power of public authorities or private actors with a dominant position in specific global or regional market sectors that enable them to effectively set or at least strongly...influence the regulatory norms governing the sector.”¹⁸⁶ The main idea behind the dominant actor strategy is that, when a market is big enough, the financial

¹⁸¹ As required under Paris Agreement art. 4.1. *See Paris Agreement, supra* note 150, art. 4.1.

¹⁸² *See* Whiley, *supra* note 95 (discussing that new “clean” coal plants are not in line with Paris goals, and that new gas generation facilities are not included within the CBS because “the global emissions trajectory we urgently need simply can’t afford those emissions.”); *see also* U.N. ENV’T PROGRAMME, THE EMISSIONS GAP REP. (Nov. 2017), at xxi, 41, <https://www.unenvironment.org/resources/emissions-gap-report> (explaining that “avoiding new coal-fired power plants and phasing out existing ones is crucial to closing the emissions gap” and that “emissions embodied in fossil fuel reserves already exceed extraction budgets consistent with 1.5°C or 2°C”).

¹⁸³ *See generally* Stewart et al., *supra* note 12.

¹⁸⁴ Whiley, *supra* note 95.

¹⁸⁵ *Id.* at 356.

¹⁸⁶ *Id.* at 345.

benefits of gaining access are so great that actors will adopt stricter standards out of self-interest.

A paradigmatic example of dominant market actor influence is referred to as “the Brussels Effect.”¹⁸⁷ The Brussels Effect refers to the European Union’s “unilateral power to regulate global markets.”¹⁸⁸ Regulations set by the European Union have resulted in global rules for food, chemicals, competition, and protection of privacy.¹⁸⁹ The European Union is able to achieve this influence for several reasons: it has the largest domestic economy in the world, a strong regulatory capacity, a preference for strict rules, and a predisposition to regulate inelastic targets.¹⁹⁰

Analyzing these criteria through a green bonds lens shows the potential for green bond governance via the Brussels Effect. The European Union has maintained its preference for strong rules when it comes to mitigation. It was a “friend of rules”¹⁹¹ based approaches to the Paris Agreement and has not been afraid to push market standards through GHG regulations in the past, against much international opposition.¹⁹² The sovereign green bond market is growing increasingly, and European Union member countries, cities, and other government entities are leading the way.¹⁹³ The European Investment Bank is the largest green bond issuer to date.¹⁹⁴ If European government issuers and pension funds only issued and subscribed to green bonds meeting rigorous criteria, the entire market would be pushed towards projects that complied with Paris commitments.

Green bond standardization through the Brussels Effect may well have begun. At the time of writing, the European Union is considering green bond standardization. In 2018, the European

¹⁸⁷ See Anu Bradford, *The Brussels Effect*, 107 NW. U. L. REV. 1, 5–6 (2013).

¹⁸⁸ *Id.* at 3.

¹⁸⁹ *See id.*

¹⁹⁰ *See id.* at 10.

¹⁹¹ Bodansky, *supra* note 149, at 301.

¹⁹² For example, the European Union extended its emission trading scheme to cover flights landing in and departing from airports within the EU, despite much international resistance. *See* Bradford, *supra* note 187, at 30.

¹⁹³ *See* CLIMATE BONDS INITIATIVE, *THE GREEN BOND MARKET IN EUROPE 2018*, at 1, https://www.climatebonds.net/files/reports/the_green_bond_market_in_europe.pdf.

¹⁹⁴ *See* CLIMATE BONDS INITIATIVE, *supra* note 30. The European Union is the largest regional market for green bonds. *See* CLIMATE BONDS INITIATIVE, *supra* note 193.

Commission published a call for applications to fill a technical expert group on sustainable finance, with a mandate to issue a report on a European Union Green Bond Standard.¹⁹⁵

This dominant actor approach is not perfect. It is not as broadly democratic as a treaty or COP decision within the UNFCCC, which require universal support. The European Union should dialogue with other countries, particularly those with less developed economies, in determining how to set equitable standards. The European Union, through the EIB, is currently pursuing harmonization dialogues with China, and should continue these harmonizing efforts with additional countries.¹⁹⁶ However, this collaboration should not compromise the central need for green bonds to only fund projects consistent with the aim of the Paris Agreement.

Another concern for a mandatory standard is that it may have a potential chilling effect on the market, as issuers would have to pay for certification. The European Union's member countries could prevent this by actualizing their Paris Agreement financing commitments. The European Union could pay for developing countries, and entities therein, to receive second- or third-party certification under the EU's green bond standard.

Another promising and complementary building block path towards green bond standardization is through a club strategy. Under this approach, the European Union could go further than imposing a market standard by creating a green bond club.¹⁹⁷ In this club, issuers who certify according to a European Union standard would receive access to a fund set aside specifically for standard-compliant green bonds.¹⁹⁸

Private actors could be invited to join the club as both buyers and sellers, provided they purchase and issue only standard-compliant green bonds. Other countries could also be invited to join if they adopt the European Union standard, or a substantively

¹⁹⁵ See *Frequently asked Questions: Action Plan on Financing Sustainable Growth*, EUR. COMM'N (Mar. 8, 2018), http://europa.eu/rapid/press-release_MEMO-18-1424_en.htm.

¹⁹⁶ See EUR. INV. BANK & CHINA SOC'Y FOR FIN. & BANKING, GREEN FIN. COMM., *THE NEED FOR A COMMON LANGUAGE IN GREEN FINANCE 4* (2017) <http://www.eib.org/attachments/press/white-paper-green-finance-common-language-eib-and-green-finance-committee.pdf>.

¹⁹⁷ For more on club strategy, see Stewart et al., *supra* note 12, at 344.

¹⁹⁸ Even without a set-aside fund, access to European Union member government pension funds as a source of capital would likely attract many issuers.

equivalent one. Upon acceptance to the club, members could invest in the potential fund, or simply gain access to a centralized market for green bonds. Ideally, once this fund achieved market dominance, it could be embedded within the UNFCCC regime,¹⁹⁹ either formally or by influencing green bond practices of the GCF and other entities within the UNFCCC's Financial Mechanism.

CONCLUSION

A dramatic increase in climate finance is needed to prevent catastrophic warming. Investors looking to drive the transition to a renewable economy should be able to green their portfolios with ease and confidence that their money is being spent on meaningful mitigation outcomes. Investors and issuers, however, are not the only parties implicated by green bonds standards and should not be left to determine what is or is not "green" on their own. The rigor of green bond certification will primarily impact those most vulnerable to the negative effects of global warming. Without standards that reflect the scientific and international political consensus of staying "well below 2°C," green bonds risk perpetuating climate injustice by cloaking insufficient mitigation efforts with an eco-friendly label. It is time to set a standard.

¹⁹⁹ Using a linkage strategy to develop a building block regime. *See* Stewart et al., *supra* note 12, at 374.