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D I A L O G U E

GREEN BONDS AND THE CLIMATE CRISIS

SUMMARY

Environmentally conscious financiers are increasingly pursuing green ventures, especially through green bonds and stocks, social investing, and social benefit corporations. On September 21, 2021, the Environmental Law Institute hosted a panel of experts for its Environmental Law and Finance Series that explored the regulatory process for green bonds and stocks, best practices for advising stakeholders and clients interested in green bonds, and the opportunities and challenges of leveraging green financial tools to combat climate change. Below, we present a transcript of that discussion, which has been edited for style, clarity, and space considerations.

Chandler Randol (moderator) is Manager of Educational Programs at the Environmental Law Institute.
John Shideler, Ph.D., is President of Futurepast: Inc.
Phillip Ludvigsen, Ph.D., is a Senior Associate at First Environment Inc.
Cait Lamberton, Ph.D., is the Alberto I. Duran President's Distinguished Professor of Marketing at the Wharton School, University of Pennsylvania.

Chandler Randol: I would like to thank our outstanding panelists for joining us today. I'll briefly introduce the panel.

Dr. John Shideler is the president of Futurepast: Inc., a consulting firm located in Arlington, Virginia. John leads as a validator and verifier of greenhouse gas (GHG) projects and as a verifier of statements related to green debt instruments and climate actions of financial institutions, and as a management system consultant and auditor. He has helped to write numerous international standards related to climate change and environmental performance. He was a member of the working group that developed the International Organization for Standardization (ISO) 14064 standards from 2002 to 2006, and currently serves as the chair of ISO Subcommittee 4 on Environmental Performance Evaluation, where he guided the development of new ISO standards on green debt instruments.

Dr. Phil Ludvigsen has served as a subject matter expert assessing green bond standards and guidance for the Climate Bonds Initiative, as well as ISO's 14030 standards on green bonds, loans, taxonomy, and verification. He currently serves as the liaison between ISO's U.S. Technical Committees on Environmental Management and Financial Services, and was recently appointed to ISO's Global Strategic Advisory Group advising its technical management board on environmental, social, and governance (ESG) market developments and standard development. In addition, Phil has served as a lead verifier on more than a dozen green bond external reviews totaling more than $4 billion in funds raised.

Dr. Cait Lamberton is the Alberto I. Duran Presidential Distinguished Professor of Marketing at the Wharton School of Business at the University of Pennsylvania. She is an expert in consumer behavior with an emphasis on the sharing economy, attitudes toward taxation and public spending, and financial and medical decisionmaking. Cait has developed numerous executive programs focused on the application of behavioral science principles to specific business problems, equipping business leaders with a systematic approach to analysis and behavioral design.

With that, I will turn things over to our first speaker, Dr. Shideler.

John Shideler: My first contribution here is to talk about green debt instruments in the form of the standards just published by ISO. But before I get into the new 14030 international standards, I'd like to run through a brief history of green bonds.

The very first bond that was issued for specifically environmental purposes goes back to 2007.[1] It wasn't called a green bond then, but it fulfilled the same function. By 2008, we had the first green bond that was called a green bond, issued by the World Bank.[2] And in 2011, the Climate Bonds Initiative was started. The Climate Bonds Initiative is a subset of green bonds because they focus on climate mitigation. It was followed by the Green Bond Principles published in 2014. So up to 2014, you can think of this as the beginnings of green debt instruments.

1. Climate Bonds Initiative, *Explaining Green Bonds*, https://www.climatebonds.net/market/explaining-green-bonds (last visited Oct. 22, 2021).
2. The World Bank, Green Bond Impact Report 2019 (2019), https://thedocs.worldbank.org/en/doc/790081576615720375-0340022019/original/IBRDGreenBondImpactReportFY2019.pdf.

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In 2015, the People's Bank of China published the first taxonomy, which they called the *Green Bond Endorsed Projects Catalogue*.[3] In 2015, the Paris Agreement was also signed.[4] And as a result of the world's unanimous commitment to combat climate change, estimates were developed by the International Energy Agency, the Organisation for Economic Co-operation and Development, the World Bank, and the World Economic Forum that suggested between 2016 and 2030, $92 trillion of investment would be needed to meet the Paris Agreement goals.[5] This is an important number, not because of its exact amount, but because of the idea that it is absolutely essential that we marshal private investment money, as well as government funds, in order to meet the climate objectives of the Paris Agreement. It's unthinkable that could be done with only public money.

By 2018, cumulative green bond issuances had topped $500 billion.[6] And in 2019, the European Union (EU) proposed a green bond standard and an EU taxonomy.[7] These are wending their way through the regulatory process now. By 2020, we had green bond issuances just above US$1 trillion.[8] That's a great number. It's a significant milestone to be in the trillions now. But we're six years on from Paris, and, according to early estimates, we've only got about another $91 trillion to go. We're still in the early days of issuance of green debt instruments.

I will pause to say that what I've just said may be a little deceptive, because certainly there are conventional bonds that serve environmental purposes that are not counted as green bonds. It's very difficult to know what the volume of those issuances are, but they are important and we should take into account that the trillion dollars is a floor, not a ceiling, on the amount of financing offered to date.

And then, finally, on September 13, ISO published three of four parts of ISO 14030, which is called green debt instruments. That will be the focus of the rest of my remarks. I would like to acknowledge the important contribution of the Green Bond Principles. We had representatives of the International Capital Market Association (ICMA), which developed the Green Bond Principles, in our working group.

In the Green Bond Principles, there are four major components. First, the use of proceeds, which basically says that the amount of money raised through an issuance must fund green projects—projects with environmental benefits. Second, there must be a process for project evaluation and selection. Often, this is described as a framework for an organization to meet its environmental objectives, which includes a description of the processes that they use to identify projects and explain the eligibility criteria that they use for identifying which projects will be funded. The third is management of proceeds. This relates to how funds raised by the issuance are used and allocated to green projects, to make sure that there is a process for ensuring that the money is used for its intended purpose. And finally, we have reporting, which is the transparent accounting of projects financed and their expected impacts.

Before I get into the description of the standards themselves, I'd like to briefly introduce the ISO. It's a Geneva-based, independent, nongovernmental organization with members from 165 national standards bodies. You may recall that the Paris Agreement was signed by 195 nations. ISO is made up of a very large majority of the world's countries with national standards bodies. It goes back to 1947, with a purpose to promote international trade and commerce and to help devastated post-World War II economies get back on their feet. It has a few hundred technical committees that operate in different sectors to develop harmonized global standards.

The new ISO standards are all part of ISO 14030, and there are Parts One, Two, Three, and Four. In September, Parts One, Two, and Four were published—the process for green bonds, the process for green loans, and verification program requirements. Part Three, the taxonomy, is still under development, but we expect it to be published in 2022.

As with all ISO standards, the 14030 documents were developed in a working group that was part of a subcommittee. That's part of ISO Technical Committee 207 on Environmental Management, which includes Subcommittee 4 on Environmental Performance Evaluation. We had eight in-person and virtual meetings, stretching from December 2017 to April 2021. Those meetings are now concluded with the exception of the Part Three meetings, which will continue through the end of 2021 as we finalize the Part Three standard on taxonomy.

We had very good representation from organizations such as the ICMA. We had members who had participated in the writing of the Green Bond Principles. The Climate Bonds Standard people participated, and we had representatives from other groups as well. It was a well-balanced working group representing most regions of the world, from Europe to Asia, Australia, North America, and South America.

Parts One and Two address, respectively, green bonds and green loans. They are very similar in many ways. First of all, they're specifications, meaning that they contain requirements that users must follow if they're going to claim conformity to the standards. We express a requirement by including the verb "shall" in a statement. This

3. The People's Bank of China, China Green Bond Endorsed Project Catalogue (2015), http://www.greenfinance.org.cn/displaynews.php?cid=79&id=468.
4. Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104.
5. G20 Green Finance Study Group, G20 Green Finance Synthesis Report (2016), https://g20sfwg.org/wp-content/uploads/2021/07/2016_Synthesis_Report_Full_EN.pdf.
6. Christopher R. Kaminker, SEB, The Green Bond (2018), https://www.oecd.org/water/Presentations-3rd-Roundtable-Financing-Water-Christopher-Kaminker-SEB.pdf.
7. European Commission, *European Green Bond Standard,* https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/european-green-bond-standard_en (last visited Oct. 22, 2021).
8. Liam Jones, *$1 Trillion Mark Reached in Global Cumulative Green Issuance: Climate Bonds Data Intelligence Reports: Latest Figures,* Climate Bonds Initiative (Dec. 15, 2020), https://www.climatebonds.net/2020/12/1trillion-mark-reached-global-cumulative-green-issuance-climate-bonds-data-intelligence.

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is important to note, because the Green Bond Principles and the Green Loan Principles are not specification documents. We decided that it was important that the ISO standards be auditable. And for this reason, we include "shall" statements.

Both documents also include guidance, which is signaled by the use of the verb "should." It means that it's a good practice to do what is suggested, but it's not a requirement. So, the "shall" statements make these standards suitable as criteria for third-party verification and validation. We have the same four major sections as the Green Bond Principles, though they're slightly relabeled as eligibility, management of proceeds, environmental performance, and reporting.

The process for green bonds revolves around the determination of eligibility of "projects, assets, and supporting expenditures." This is the same phrase that is used in the Green Bond Principles.

We recognize as eligible the projects and assets that are described in our taxonomy. But we also recognize that users of our document may be in countries where a national government has developed a taxonomy, which users in that country might want to use instead. We allow for that by providing that users can specify other suitable taxonomies. We also have a process where if a user that has, for example, an innovative project that is not found in either the Part Three taxonomy or another suitable taxonomy, they can use that project for green financing as long as the eligibility has been validated by an independent third party.

Management of proceeds in our document is very similar to the Green Bond Principles. We have a reinforced section on environmental performance, which sets the requirements for environmental impact assessment, the identification of environmental performance indicators, and then reporting on these impact categories and the indicators as required, prior to and after issuance.

Part Two has very similar requirements to Part One with respect to eligibility, management of proceeds, environmental performance, and reporting. What is particularly innovative about our green loans document is that we separate the universe of green loans into two parts. First are standardized loans, where documentation and responsibility for conformity to the requirements lies primarily with the lender. Imagine a green bank or another lender with a program of activity to install solar panels on residences. So, in this case, borrowers would be individual consumers. They agree, of course, to the requirements that the bank has set up. But we make the lender responsible for fulfilling the requirements of Part Two.

Second are specialized loans—the loans that are given to corporate borrowers, typically larger entities where the borrower is a sophisticated actor fully capable of meeting the responsibilities of documenting conformity to requirements and doing environmental analysis, impact reporting, and so on. In this case, the responsibility for conformity to requirements lies with the borrower. And that is, by the way, how the Green Loan Principles are set up. The Green Loan Principles do not have the facility that we need for recognizing standardized loans managed by a lender.

I've already discussed to some extent that we have a taxonomy for users who want to use it. And we're hoping that that's a large number. We're also hoping that countries that are still developing their taxonomy may adopt parts of the ISO taxonomy into their local one. One of the advantages of international standards is that they can be adopted by regulatory bodies and made part of national regulation. This happens around the world in many cases.

The working group was concerned about what we called "taxonomy shopping," which would be users of Parts One or Two looking for the most favorable taxonomy. So, we included in Part Three and the other parts an annex that describes what a suitable taxonomy would be. We also define threshold requirements and exclusions in this taxonomy.

Finally, we have Part Four, verification program requirements, which sets out requirements for bodies performing verification of bond issuances and loan originations. In this, we set out the accreditation requirements for the bodies. We set out competence requirements and we offer these bodies the choice of using either ISO standard 14064 Part Three, which defined criteria for greenhouse gas verification, or the International Standard on Assurance Engagements 3000 or International Standard on Related Services 4400 standards developed for the financial auditing community.

We're hopeful that these standards will fill a gap in the marketplace and gain widespread adoption. And we're hoping, again, that we will be advancing the understanding in the marketplace of what is "green" through the publication of our taxonomy next year. And that the use of these standards in a very transparent way, with third-party verification, will help prevent greenwashing in this space.

Phillip Ludvigsen: Let me start out by thanking John. I've been involved with green bonds for about seven years. And in the marketplace, everyone's saying we need a global standard, we need an international standard. Well, now we have one, and in large part due to John's efforts. It's not an easy thing. It was four years of a lot of hard work. And it's kind of like herding cats when you're dealing with expert representation from around the world.

I'll be talking about what makes a green bond a *quality* green bond. It can be summed up as a fight against greenwashing, as I call it. John provided a time line of green bonds. I'll talk about the evolution of green bonds and, more specifically, the best practices at the time. I'll talk about the risks that are driving that evolution, and the biggest one is greenwashing. And I'll talk about different ways of finding greenwashing, which is important when you're looking at de-risking green bond deals, a very important role that lawyers play. I'll finish with the benefits and rewards, which are driving the market, and then look at what may be coming next.

The evolution of green bonds has always been a balance between addressing greenwashing and the procedural burdens that risk management may put on the markets. If only I had a nickel for every time I dealt with an underwriter saying, "Don't kill the market by making these standards

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or guidelines too onerous." Now, I think we have come to a pretty good balance.

But in the early days, the Green Bond Principles didn't exist. There wasn't anything. It was sort of a situation where common sense prevailed. And the green bond underwriters would always say, so-and-so is a "pure play" green bond, like renewable energy. And what we'll see a little later on is that "pure plays" may not necessarily be pure. Then, as the market developed and grew, we had the Green Bond Principles that talked about eligible categories of bonds and laid out the process for issuing a green bond.

Finally, we evolved into standards. And now we're starting to see regulations, which are more sector-specific and are based on sector-specific taxonomies that John mentioned. These sectors may have their own environmental objectives. But then the taxonomies also get down to more granular issues, such as the core metrics for a sector like transportation or manufacturing. What could be some of the thresholds that you have to meet? And, just as important, what are some conditions such as "do no significant harm"? Because implementing one environmental objective may actually impinge on another.

As I mentioned, we see different risks that have driven this evolution to more standardization. Probably the first risk that the green bond market had to address was additionality, or business as usual. As John mentioned, there have long been green bonds. Although they weren't labeled as such, they've been issued for years to fight pollution, to build mass transit, and to even do alternative energy. They were done out of necessity or just made good business sense. I think the response from the market is, look, if we can label the green bond and market it appropriately, it's going to attract more demand and lower the cost of capital. By using this tool, we can build a larger wind farm, or more solar, or move quicker to decarbonization.

Another risk I mentioned is the "pure play" risk. There are examples and lawsuits related to a green bond funding a solar farm in Massachusetts, in which the developer violated the permit and destroyed an adjacent wetland.[9] There's also concerns about green bonds funding, say, a solar developer. In that case, all they do is act as a consumer lender, lending to consumers to develop their own solar projects. That's not to say that's a bad thing. It's just that they're not a solar development company. They're a consumer lending company, so it may not be as simple as it's labeled.

Now, we're starting to see legal risks. These things were kind of put on hold for the past four years. The bow had been pulled back and, now with the new administration, has been let go. We see the Federal Trade Commission (FTC) and the Securities and Exchange Commission (SEC) getting involved in these kinds of green financing. We've had §5 of the FTC Act for some time that deals with misleading or insufficient information or deceptive acts. But now we're starting to see them get more involved with the Sustainability Accounting Standards Board and the Financial Accounting Standards Board—so sustainable and financial accounting standards are coming together. I think by the end of the year we'll see some very detailed guidelines that could morph into environmental regulations.

The U.S. Environmental Protection Agency and others are looking to ensure that when someone says they're going to perform at a certain level, they meet that requirement. We've seen that in carbon offset markets where there's nondelivery risk, and there may be that in green bonds. Currently, the bond lawyers are doing a very good job at being transparent and saying, look, even though this is labeled as a green bond, there is no chance of a green default because we're not making any representations on performance.

The investors are starting to push back and say that they do want to see some representations and more impact reporting. And we're even seeing what's called sustainability-linked bonds, whereby if a key metric is not met, then there's maybe a penalty or additional premium to pay. Then, of course, there's the reputational risk of greenwashing, which I think everyone is concerned about.

There are ways to fight greenwashing. We've talked about frameworks and guidelines like the Green Bond Principles. They're designed primarily for transparency, to say this is how it works, this is what we're doing, this is how the money is being managed, this is how it's being spent. And that is a very good first step. Now we're seeing voluntary standards being developed, like ISO 14030. And that's designed to hopefully bring some market acceptance to green bonds in general, and awareness that there is standardization out there, and it is recognized globally.

John touched on impact reporting; ISO 14030 talks about reporting and how you would go about relaying progress. External reviews are another way to fight greenwashing. With external reviews, we have to be careful about what we're reviewing. That's important. And then finally, there are mandatory regulations. I'll briefly touch on each one of these.

The guidelines John mentioned, the Green Bond Principles, have actually morphed over the past two years into the additional Social Bond Principles, Sustainability Bond Guidelines, and lastly, Sustainability-Linked Bond Principles. John mentioned the four components: use of proceeds, process for project evaluation and selection, management of proceeds, and reporting. Thus, people get an idea of exactly how this should work.

On the standards side, many people don't realize there are actually international standards or guidelines for standard development. And some of the general principles are based on consensus decisionmaking. Hopefully, it's open to all interested parties. And if it's going to be open, there needs to be a balance between the interests that are represented in a fair and equitable way. Easier said than done. As I said, it's like herding cats, and I'm sure John can talk about some of the frustrations that he's gone through.

There are guidance standards and there are guidelines. But what people really look for are requirements that if someone is going to issue a green bond, they're in confor-

9. Associated Press, *Solar Farm Ordered to Pay $1M for Polluting Wetlands, River*, U.S. News (Feb. 2, 2021), https://www.usnews.com/news/best-states/massachusetts/articles/2021-02-02/solar-farm-ordered-to-pay-1m-for-polluting-wetlands-river.

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mance with those requirements. And as a little bit of trivia: we *conform* to standards; we *comply* through regulations.

John discussed ISO 14030, the green bonds initiative standard, which is a subset of green bonds. Now, we have the European green bond standard, which was set up through regulation but interestingly enough is still a voluntary initiative.

As for impact reporting, I'm sure you've heard that what gets measured gets managed. When you're doing impact reporting, it's very important to make it clear how you're going about measuring and monitoring. What methodologies are you using? You don't know if you made progress if you don't know where you started from, so establishing that baseline is critical. It's also important to have some core indicators that are usually laid out in the taxonomies for the eligible categories or sectors. Some examples for climate are GHG avoided, GHG removed, and efficiencies. If we broaden it to other issues besides climate change, we can bring in increased eco-efficiencies for water, soil, waste, and other forms of pollution.

ICMA has done a really good job laying out some basic principles for impact reporting, including some templates by sector, which I encourage people to look at if they want to know more about impact reporting. The whole area of external reviews, like I said, has to do with the idea that what gets measured gets managed. I also like to say, what gets verified gets believed. That's the purpose of external reviews; you're bringing in an additional party who has environmental expertise and, hopefully, green bond expertise, to assess either some kind of assertion or requirements.

But not always. What's very popular in the market is second-party opinions, which are usually done pre-issuance of a green bond. If you look closely and read the most popular provider of second-party opinions, Sustainalytics, their opinion is not over the bond, but over the green bond framework. It's over a document, to check that the document is aligned with Green Bond Principles. So, when you see that so-and-so came in and issued a second-party opinion, it was over the framework, not necessarily over the bond.

First Environment has issued second-party opinions. We look at whether the bond documents align with the Green Bond Principles and align with their green bond framework. Do they all line up together? Is there evidence? What evidence did we come across to show that, besides just saying we read the document and see that they touched on all four pillars of the Green Bond Principles? You need to know what you're getting in a second-party opinion.

A third-party verification is usually done pre- and post-issuance. There's an independent aspect to that where you're expected to follow professional standards. The verification process is very similar, and it is in most regards an audit that we're familiar with. It offers increased transparency. As a buyer, when you look at the verification, you know exactly what was looked at. Hopefully, to some degree, what was found supports the assertion that it is a green bond and is in conformance with the requirements of the standard that's being followed.

Lastly, there's certification, which builds on third-party verification. A certification body may have their own requirements. They look at the verification that was done and then come to the conclusion that, yes, they can certify this green bond. It offers an additional level of credibility.

Mandatory regulations are something I think we'll see more of. In the EU, they have a regulation that establishes this green bond standard for the EU built around their taxonomy.[10] It provides a framework for sustainable investments. There have been multiple drafts. There are ongoing discussions. There have been controversies, especially around transitional bonds. It's not an easy thing to get that kind of consensus even within the EU, which is just a region, not a global standard. And it is still voluntary. Even though the regulation mandated that this thing be developed, people don't have to use it.

With that said, they do have to use it if they want to claim that they're in conformance with the EU green bond standard. In that way, it offers flexibility. There is some flexibility around the external reviews as well. That's an ongoing discussion around what would be required, what wouldn't be. Typically, when you fall under a certification or a regulatory regime, the verifiers have to be at a minimum approved by the regulatory or certification body. Better yet, they would be accredited under international standards such as ISO 14065 for accreditation of verifiers of environmental information.

Currently, there's no mandatory use of standards, requirements, or external review of non-EU green bond standard labeled bonds. Ultimately, it provides the market a lot of room to grow, a lot of flexibility. But we are seeing this proliferation of taxonomies being developed. It will be interesting to see how the government moves forward on either developing a taxonomy, which I hope they don't do, or taking an established taxonomy, such as what's being developed by ISO and then running with it.

Lastly, with every investment, there are always rewards or benefits. I sum that up as a "greenium," which is a buzzword that you might hear. And typically, the greenium focuses on the financial benefits—but not always, as there are nonfinancial benefits as well.

Because there's increased demand from ESG investors coming in on a limited supply of quality green bonds—so, supply and demand—that's going to affect the pricing, which typically means there's a lower cost of capital for issuing that green bond in the primary market. And then a lower interest rate, which is a good thing if you're the issuer.

If you're the buyer, there's a lot of talk about fiduciary responsibilities. We have to maximize. We can't pay a premium. That's not always the case because it has to be risk-adjusted. But we see a lot of buyers buying it because it enhances their reputation. Part of their fiduciary respon-

10. Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the Establishment of a Framework to Facilitate Sustainable Investment, and Amending Regulation (EU) 2019/2088, 2020 O.J. (L 198) 13.

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sibility is to purchase ESG fixed assets. Green bonds are a good way to do that.

And not only that, there's financial benefits to the buyers in the secondary market. This is when they want to sell their green bond in the secondary market. There's even higher demand in the secondary market, which increases liquidity, which is a really good thing, and increases pricing, which is another good thing.

So, you've got an issuer playing lower prices. You have buyers—if they want to sell—getting a better price for their green bond. And then everyone else, the underwriters, bond counsels, financial advisors, it's a differentiator for them. If they want to be in this fast-growing market, they need to know a little bit about green bonds and participate in it.

What's next? I think we'll see actual ESG regulations. I touched on what the SEC may do by the end of the year through mandatory disclosures. With the FTC, we may actually start seeing audits of different green financial products, either by them or by third parties. And eventually—and we may not see this right away, but we've seen it in the carbon markets—there will be enforcement with penalties based on various state, federal, and regional departments or agencies that are assigned financial regulation.

Since most of you are lawyers, we see green bonds folding into the expanding ESG practices. I'm just amazed. Over the past year, it seems like every major law firm out there has created an ESG practice. And it's something that they point to as a differentiator for themselves.

Cait Lamberton: I'm going to come at this from a different perspective, in part because I'm a marketing professor. When I talk about these funds, what I'm often interested in is how we keep this demand going, assuming that that's a good thing. Where is the demand going to come from? How do we meet it?

What we find when we look at green bonds is that we don't actually know where the demand is coming from. We have an idea where the supply is coming from; there's a need for these funds. As was previously mentioned, there are too many projects to be funded in other ways. But if there is not sufficient demand and that demand is not sustained over time, we don't really know the future of these animals.

If you look at the literature, you find a bunch of different reasons why a consumer—and this could be an individual who is an institutional investor or this could be a retail investor on the secondary market—invests in ESG. There's a vague sense of what greenness is—which of course all of these different standards are codifying for us. But to the typical consumer who isn't part of this experience, that's quite opaque.

Rather, consumers seem to be driven by a general sense that something good might happen if they invest their money in these funds. Specifically, there are new or existing projects that are meant to have—who knows if they do or not—positive environmental or climate effects. These effects could be related to energy, transport, waste management, building construction, water, or land use. Whatever it is, the project has this green label on it. This vague sense of greenness may be enough to create demand.

But there are other potential reasons for demand. Demand may also be driven because these alternatives contrast with the increasingly nonnormative alternatives—those not framed in terms of sustainability. We also don't know if this surge in demand is simply context-specific. For example, during 2020, sales flattened out for a bit. The explanation for this was that peoples' attention turned to COVID, and away from more abstract concerns. If this is correct, once COVID recedes in importance, sales of green investment options will rebound. If macro-level changes can so radically spike or kill interest in a product, we might in fact think the demand is in danger. We don't know how context-independent the demand for these things is going to be.

As for the greeniums that we are seeing, are they there because there's more demand or because there just isn't enough supply? If it's the latter, that's a very different basis for value—value may simply be driven by scarcity as opposed to a true burgeoning demand in the market.

Another possibility is that demand is driven by virtue signaling. Maybe it's social influence; some funds want to be able to say they contain these bonds. Maybe it's a desire for firms to stay up-to-date; some financial institutions that do a lot of consulting with major financial services companies just want to say they offer them. Demand could be driven by forward-looking forecasts—people think something is going to happen in the future that's going to make these more valuable or perhaps more liquid than they are now. Or high levels of demand could represent the idea that ESGs are currently getting over-marketed.

Finally, maybe demand is driven by demographics or firmographics. I often see a lot of consulting white papers that say, for example, the demand is all going to come from millennials. Or the demand is going to come from institutions, but not retail.

So, we are a group of people who is going to hope that funding continues to come in this form. We're going to build units of our business around green bonds or other kinds of ESG funds. Perhaps, you're thinking about this from an investment perspective, or are working in the regulation area on this, or have spent years developing this really sophisticated understanding. But we don't know how stable any of this is until we understand why people are actually buying. We can't know how to manage these without understanding the actual sources of demand.

So first, I want to give a broader framework about how to think about this, such that if you're working with this marketplace, you have a way to understand why different people are going to be drawn to these green bonds. With that knowledge, you can identify the barriers that you need to deal with to create sustained demand.

Second, I want to talk about differentiation. It may be that your firm is differentiating in terms of its ability to work with green bonds. You're going to have the same differentiation problems that the green bonds face themselves. These are the two principles of value in a capitalist market: do you provide something of value to the

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consumer that you can actually get to them, and are you differentiated? So, understanding differentiation is key to sustained success.

First, let's talk about drivers of demand. I'd like to argue that, counter to many white papers, the most important segmentation that you can have in an area like this is actually not based on age. Age is only interesting in as much as it's correlated with other ways that people process this information. Rather, I'll suggest that you can understand heterogeneity in consumers' demand for ESGs as a function of two major factors: investing expertise and intrinsic concern for green behaviors.

First, peoples' level of expertise in investing in general is going to radically change the way that they interpret a sustainable option. Let's take expertise as an X-axis. People who are more experienced are going to have more detailed cognitive structures for investments. They're going to better understand things like a taxonomy, as previously discussed, or the distinctions between different kinds of green bonds. They're also likely, because they have a longer horizon of experience, to understand the way that fluctuations might affect them.

We can next imagine a Y-axis—a second factor—that captures peoples' inherent interest in engaging in sustainable behaviors. This is something that can be measured with a very brief scale.[11]

When you take these two axes, expertise and green tendencies, together, you end up with four distinct segments of investors from whom you might seek demand. In the upper right, you have the low-hanging fruit, the people who are experienced investors. They know what they care about investing in. And it just so happens they really care about green investments. These are the easy sources of demand to tap. We call them "sages."

If you're working with institutional buyers, they are likely to fall into this segment because they've already decided that greenness matters and that there are profits to be made by building their green portfolio. What we do in those cases to stoke demand is to appeal to sages' sense of intrinsic reward. That is, we can make sure to recognize that they are doing something that represents their values, and we can give them feedback about the extent to which that investment actually executes on those values. Right now, this is rarely done well—when I invest in a green bond, am I ever going to see the effect of that investment? The first firm who provides real, meaningful feedback to sages about the effects that their investments have will be able to lock in a much more stable source of continued demand than other firms.

Now, let's look at the second segment. If you have the same strong drive to do green things, but you don't have much experience in investing, we call you a "mint." For this segment, our primary goal should be the removal of friction. We simply have to make it easy for these consumers to follow through on their values. As they do, they'll gain more experience—they may become sages over time. But in the short term, you'll allow their latent interest to manifest in visible demand. This is another area in which firms could do much better. Right now, it's quite difficult to actually find green bonds. Not only are they a relatively small part of the market, they're often embedded in other investments. If we want the mints' demands to convert to engagement, we have to make green bonds more obvious and clear, and the path to purchase much smoother.

Next, we have the "limes." These are people who don't feel that comfortable investing and don't have a strong green drive. We might expect these to be the toughest sells. These are going to be the last to get there. So to the extent that you see these people in your segment somewhere, you have to decide whether or not you want to exert the effort to sell to them. There may be a long-term payoff, but you'll likely have to move them into the mint quadrant, and hope that they become sages. That is, you have a journey ahead with these consumers. If you're not sure that you can plan for that entire trajectory, you may want to refocus your efforts.

Finally, we have the "jades." These are experienced investors who historically have not cared about green anything. They're going to be challenging in another way. Because what they're going to push for is hardcore, persuasive data about the performance that these things provide. So, for jades, you need to provide the data. You wouldn't do this for mints; they'll be overwhelmed and alienated by this focus on extrinsic outcomes. You wouldn't do it for sages; they're already able to infer or anticipate performance, and their inherent desire to invest in sustainability will provide stronger motivation than additional data. But for jades, information and logical argument are your primary demand-generation tools.

Our failure to differentiate among these different segments, I think, is part of the reason why the data related to demand is so confusing. Perhaps people care a great deal about objective outcomes. Perhaps they're willing to forego that in favor of knowing they've done something to increase sustainability. Most likely, both things are true—for different consumers. The tendency to make a blanket statement about all investors is obscuring our ability to understand demand. We have to recognize there are different types.

In the marketing world, we would say that we have to define the buyer for these products strategically. It's not just about the size of institution or the age of retail investor. It's about their underlying characteristics like their knowledge level and their green affinity. Get behind the tactical differences, get to the strategic differences, and you'll have a better way to predict how they're going to respond to these opportunities. Then, we can think about what could stop them. If you want to help them buy, you can do that. You just have to frame the information that's provided in a different way.

The second principle I'd like to discuss is differentiation. This is something that I find very difficult to address when I talk with companies about offering green bonds. We'd like to say that our interest in green bonds or a green

11. Kelly L. Haws et al., *Seeing the World Through GREEN-Tinted Glasses: Green Consumption Values and Responses to Environmentally Friendly Products*, J. Consumer Psych. (2013).

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bond practice really makes us different. The problem is that that difference is very hard to see. In fact, if you go look at a bunch of websites of companies that provide services related to green bonds, ESGs in general, and so forth, they all look the same. It's always the stack of money with a sprout coming out of it. If you look at legal services for green bonds, or if you look at organizations that verify these things, there's also very little clear differentiation. Practically speaking from a marketing perspective, that's not sustainable. Looking the same is our first differentiation problem.

Problem two in differentiation is how we're differentiating from—hypothetically—our competition. This is also a really interesting category because we don't even know what the competition is. Is it green bond versus not green bond? Is it green bond versus sustainable bond? Is it green bond versus green adjacent bond? If we want to be meaningfully differentiated in this space, we have to understand what the other options are. As far as I know, we haven't really captured that yet. If you google "what types of investors do green bonds commonly attract?" and you look at the search results, you see a wide range of consumers listed. And their interests can be satisfied by other means, too.

If we want to understand the specific promise of green bonds in the market, we have to understand what other competing options are out there. This is interesting particularly in light of the first two presentations. Euromoney did a survey where they asked, "How much does it bother you that there's not a definition for 'green' in green bonds?"[12] Interestingly, many people said the lack of clarity doesn't bother them at all because they like it being fuzzy. If the definition is fuzzy, then everybody gets to participate.

But I would say one of the wonderful things about all the work that's being done to define these terms is that it allows differentiation. If your edges are fuzzy, you cannot be well-differentiated. If you're not well-differentiated, you will be lost in the market. Your demand will be weak. So, for the second principle, we have to ask, what are the green bonds doing that is truly different in a way that's meaningful to that strategically designed segment we talked about under principle one? What are they really competing with?

We might ask why this hasn't been better defined already. Historically, finance is product-driven, not customer-driven. A product is made. We spend a lot of time on the back end figuring exactly what it is and how it might become profitable. But that second question—where the demand is and with whom we need to compete—often only comes up once we reach the retail side. If we want to really think about how stable this can be in the long term, we have to consider that question earlier.

But our differentiation task is still not done. We also have to think about differentiation not only with green bonds versus other kinds of bonds, but also within green bonds. All the work that's done to create the formal taxonomies is incredibly valuable. But is it the kind of differentiation that is meaningful in the end to a consumer who makes the choice?

We talked about greenwashing, which is such an interesting topic all in itself from a consumer perspective. People sometimes say, look, it's all marketing. It's all smoke and mirrors. I would say it's not too much marketing. It's just a lot of not very good marketing. And for those of you who say I'm not a marketer, I'm not an advertiser, consider that every piece of persuasion you do is actually a marketing act.

Anytime you want to change someone's behavior—and that's the business a lot of us are in—you're working with these same principles. Are you providing value to a specific segment that wants it? And are you well-differentiated? If we don't do that well, it's going to be very difficult for us to predict the future of green bonds.

I would argue that these are things that we need to understand if we want to figure out how green bonds are going to live in the consumer landscape, in what cases we're going to need to regulate the communications about them more closely, the potential for unwise investments as a result, and the way that consumers are going to respond over the future time horizon.

Chandler Randol: We've gotten a lot of really interesting questions. The first one is, what is the benefit to a lender or borrower from having a loan or bond that satisfies the ISO standard?

John Shideler: The research that I've read suggests that there are two benefits. Phil mentioned the greenium, which is a slightly lower cost of capital. The second is the fact that green bond issuances typically are oversubscribed, which means that there are more people who want to buy the bond than there is supply for it. That means that the organization issuing it has attracted a universe of investors that is larger than it had previously. And some research suggests that these investors may come back and buy other financial instruments because of what they call a halo effect of the issuer having issued a green bond.

Phillip Ludvigsen: I will add to that. I had mentioned that for years it's been the Holy Grail. Why don't we have an international green bond standard? Well, now we do. And I would say if you read the standard and you look at it, the differentiator—picking up on what Cait was talking about—is pretty clear. You know exactly what you're going to get as opposed to other green bonds that are labeled but do not fall under the international standard.

Cait Lamberton: I would say that the more prevalent these certifications become, the more visible they become, and the more expected they are. So, it's not just that you gain by having it. But it may eventually hurt you to not have it as the market shifts this way.

Particularly to John's point, if people have bought something like this before, they will notice the loss of that certification. So, it's about the short-term play in the sense

12. Catherine Snowdon, *Green Bonds Survey: What Investors Want,* Euromoney (Sept. 25, 2015), https://www.euromoney.com/article/b12knjfmnwsctf/green-bonds-survey-what-investors-want.

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that you get the greenium. But it's also a long-term play in the sense that you're moving in the direction the market is moving. And you won't look as though you're left behind. Looking as though you are not innovating at the same pace as everybody else is going to create a lot of other negative halos. That could certainly be damaging to a firm.

Chandler Randol: This next question asks, in your opinions, will green bonds play a significant role in combatting climate change? Why or why not?

Phillip Ludvigsen: I guess it depends on the marketing, right, Cait?

Cait Lamberton: Well, there's been a lot of interesting pushbacks. There's a piece by a former BlackRock director who said, "No, this isn't going to do it. It's a drop in the bucket."[13] But I think we sometimes underestimate the change in the normative requirements of a purchase or an investment that happens when we change the market.

Is a green bond going to change everything? No. But it will suggest to people that things being green should be something that matters to them. They then over-weight that, not just when they buy green bonds, but also when they buy light bulbs or choose their energy source.

It's quite likely that a lot of these projects would get funded anyway even if they weren't in green bonds. Is that the direct effect of green bonds? No. The effect is the market saying that being green is an important thing. And we are going to put all the work into codifying and regulating this. Is it a direct return on investment? No. But a lot isn't in the market. That doesn't mean that a downstream effect isn't going to emerge.

John Shideler: Building on Cait's last point, one of my hopes for this is that over time, the issuance of debt instruments will tend to ask the questions that are in the green bond standards and make this analysis a de facto requirement for seeking funding of any kind. Now, that's an aspiration. It's not where we are in the market. I think the market currently is motivated simply by the enormity of the problem and the idea that if we don't do this, bad things are going to happen.

Phillip Ludvigsen: Adding to that, being an engineer, I don't see green bonds being the solution, per se, but more of a catalyst. I think they could serve that role of lowering the activation energy or increasing the sensitivity.

As John could probably tell you, from dealing with different countries and their experts, a few years ago, China appeared to have no interest in green bonds. And now, they are very interested in this area because they see that the number of signatories to the Principles for Responsible Investment represents somewhere in the neighborhood of 80% of the world's managed capital. And if you're China and you want to do your Belt and Road Initiative and you are, for whatever reason, excluded from 80% of the world's capital, that's a problem.

But I think green bonds could be that catalyst. The standards can serve as a pattern for other sustainable financing mechanisms.

Chandler Randol: I know that was quite a big question. Another important one: Are there any provisions in place or ways to encourage projects included in green bonds to provide benefits to overburdened or underserved communities? What is the potential environmental justice tie here?

John Shideler: I can speak for the ISO 14030 standards. These were developed in a technical committee whose scope of standardization is environmental. There were discussions about including social criteria in the standards, and we decided not to address that—in part, because it was not our area of expertise, and we did not define "green" in the standard.

Social criteria are typically viewed as something different. I can speak for myself that social criteria are important. And, like Phil, I'm participating in a high-level ISO strategic committee that is looking at ESG as an area of standardization for ISO. But the short answer is that we didn't include that in the 14030 standard.

Phillip Ludvigsen: The ICMA has expanded the Green Bond Principles to Social Bond Principles and Sustainability-Linked Bond Principles. Here again, the green bond is serving that template in pioneering the way these things can be approached. And we are seeing more social bonds being issued. Sustainability-linked bonds often have social components and environmental justice components.

I think where the principles and eventually standards will play a role is—many of the metrics that the bonds are linked to, they've already met. If you already met it or you know it's a slam dunk, what are the processes and procedures that got you to come up with those metrics? Are they meaningful? Are they material?

Chandler Randol: A quick follow-up. Phil, do you have any concrete examples of projects that did include social aspects in their green bonds or social bonds more generally?

Phillip Ludvigsen: Not that I've worked on. In New Jersey, where I'm based, there are state regulations on environmental justice that are coming out. And it primarily deals with housing development and whatnot. Many times, that housing is funded by Fannie Mae, which I believe is the largest green bond issuer in the world. So, green bonds play an extremely important role to providing financing. I see these two things coming together and colliding. I can't point to any specific examples yet.

Chandler Randol: This next question is also for you, Phil. What kind of evidence do you look for in aligning green

13. Silvia Amaro, *Blackrock's Former Sustainable Investing Chief Now Thinks ESG Is a "Dangerous Placebo,"* CNBC (Aug. 24, 2021), https://www.cnbc.com/2021/08/24/blackrocks-former-sustainable-investing-chief-says-esg-is-a-dangerous-placebo.html.

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bond documents with their framework? Can you give us some concrete examples?

Phillip Ludvigsen: Yes. The first pillar is selecting an eligible nominated project. How is that process conducted? Is it documented? Who makes those decisions? What are the criteria that they look for? We look at use of proceeds, which is almost always spelled out in some degree in the offering documents, or defeasance documents if it's a loan, and we also look at how then unallocated proceeds have to be managed. Under the Climate Bonds Standard, it has to be put into cash or cash equivalent, basically treasuries.

We ask for evidence of that. Is that part of their treasury policies and things like that? What are their treasury policies? And then we get those documents. When we verify even in a second opinion, we say, here are all the things we looked at. The verification report is not always published publicly because we do touch on things that could be confidential. We touch on things like areas for improvement that could be somewhat sensitive. It's usually just the verification statement, which is a summary of the report, that gets published. But in our reports, we go requirement by requirement. This is exactly what we looked at. This is what we found. Here's what we concluded on conformance.

Chandler Randol: John, this question is for you. What are the ISO's enforcement mechanisms for financial institutions that do not comply to ISO specifications?

John Shideler: That's a great question. The ISO limits its activity to the publication of standards. But having said that, there is a part of the ISO that develops conformity assessment standards. And that includes standards for certification, verification, all kinds of conformity assessment activities like testing, inspection, and so on.

Around the world, there are private-sector and sometimes governmental bodies that apply the conformity assessment documents that ISO has published and verify, certify, or inspect organizations using ISO documents as the criteria. So, an accredited verification body would use an ISO standard for obtaining its accreditation. That same body would use an ISO standard for verifying green bonds or green loans.

The accreditation body would use ISO standards to operate its accreditation service. There is an entire infrastructure around the world that has a motto: verified once, accepted everywhere. That suggests that all of these services in all the different countries where they're applied are equivalent because they're all using international standards to perform their work or their oversight function. But ISO has taken a step back and said they'll write the documents and leave it to the market to develop the enforcement mechanisms.

Chandler Randol: Cait, this question is for you. How has greenwashing influenced the consumer market of green bonds? Can you elaborate on this from your research?

Cait Lamberton: With green bonds right now, you may be picking up an effect that's endemic to sustainable products in general. The retail segment for green bonds is still not big enough to know. But what we do know is that consumers are very sensitive to inauthenticity. If greenwashing becomes detectable by consumers, it's going to undermine the entire value proposition.

There were earlier questions about what happens if the green bond is ultimately determined to have damaging effects on environmental justice. Even if it's not part of the standard, such effects are going to undermine the value of the word "green" to people. It's going to be a problem. So, to the extent that the certifications are broadly applied and enforced in a way that people can put some trust in, it's going to help everybody in the market. It does not take more than one high-profile case for people to become extremely skeptical.

We even look at very traditional marketing tactics. Things that have worked forever, like scarcity itself—prime people with scarcity or tell them there isn't much of something, and they're usually willing to pay more for it. Even that very fundamental marketing relationship is eroded because people don't believe anything is scarce anymore. So, can I say it's going to kill it by *x*%? I can't say that for sure.

What I can tell you is that if it acts like everything else, if the industry is not careful about this, in 20 years, they're going to have to find a new word besides "green." Green simply isn't going to work anymore. They're going to need something else. It's interesting because I think people fundamentally misunderstand what ESG is and that has protected ESG to some extent. People don't know what governance is. So, they don't get mad or ask hard questions about what ESG funds are actually accomplishing. And that keeps people from the skepticism that they feel when they hear words like "green."

Chandler Randol: This next question asks, do rating agencies rate green bonds and, if not, why?

Phillip Ludvigsen: I can address that, having informally worked with Moody's when they were putting together their assessment methodology. In fact, we worked with one client to do a readiness assessment.

Moody's used to do that. They don't do it anymore. And they never really called it rating because there are regulatory implications to rating. I won't get into all the details, but they would call it more of a scoring or just a general assessment. And now, Moody's has backed off of that. They're doing second-party opinions and consulting more around green bonds.

The rating agencies have to be very, very careful. I think a lot of people remember the book and the movie *The Big Short*.[14] They said "we're independent." Even though we're paid, we're independent. That statement probably cost them over a billion dollars in settlements.

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14. Michael Lewis, The Big Short (2010).

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As for verifiers, I see second-party opinion providers who wrote the green bond framework that they then offered an opinion on. And they say, oh, it's an independent opinion. No, it's not. And they're not going to get hit with big regulations or whatever. But rating agencies would, so they have to be very careful.

Chandler Randol: I'm going to throw a big question at you. What makes a green bond green? I think the question is getting at how we actually define "green," which I know is a little unfair. But I'm interested in each of your perspectives.

John Shideler: Essentially, we define a debt instrument as green if it has environmental benefits. There are some guardrails that say that we need to do no significant harm, and that there is an environmental assessment that should prevent projects that maybe have an environmental benefit but at too large a cost. For example, it has an environmental benefit in mitigating GHG emissions but it destroys a fishery or something. So, the greenness is related to environmental benefits.

Phillip Ludvigsen: Maybe I've been involved with John too long with the standards, but "green" is defined by the process and procedures. That's why we've seen the taxonomies develop because that's an easy way to structure and organize it.

Many times, when I'm asked that—and I've been asked that by different regulators or policymakers—I've said, well, you're a financial regulator. How do you define "profit"? Give me a definition for profit that's globally accepted. They think about it, and they say it depends. Well, green is the same thing.

Cait Lamberton: I think that's right. And right now, from a consumer perspective, it involves net significant impact. Right now, the consumer can project whatever they believe a green fund should do on that fund. So, that is both awesome, because they can project their value and wishes, and really dangerous because their expectations may be much higher than reality.

If we want to start helping people understand this, we need to show consumers not only the outcome of their investment in terms of the economically quantified return, but also the effects in terms of the projects and goods they funded. If they start to see feedback on that green bond in terms of something concrete in the world, you're going to see a lot better understanding of exactly what's happening and likely more stable demand over the long term.