California Debt and Investment Advisory Commission

Webinar Transcript
Green Bonds in the Golden State: A Practical Path for Issuers
Webinar One: Green Bond Fundamentals
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[Editor's Note: This transcript has been prepared by the California Debt and Investment Advisory Commission (CDIAC) and it believes it to be a fair and accurate reproduction of the comments of the speakers. Any errors are those of CDIAC and not the speakers.]

Title Slide – Green Bonds in the Golden State: A Practical Path for Issuers

ROBERT BERRY: Good Morning everyone and welcome to *Green Bonds in the Golden State: A Practical Path for Issuers*, a webinar series presented by the California Debt and Investment Advisory Commission and the Goldman School of Public Policy at UC Berkeley. My name is Robert Berry and I am the Deputy Executive Director here at CDIAC.

This webinar, *Green Bond Fundamentals*, is the first in a three-part series on Green Bonds that we will webcast over the next month and a half or so. If you'd like to participate in either of the next two webinars, please be sure to go to the CDIAC website and register. You must register for each webinar individually. I'll talk more about the upcoming schedule toward the end of the webcast.

Slide 2 – Housekeeping **00:56**

Before we get started I'd like to cover several important topics. If you are experiencing any technical problems, please contact Go-to-Meetings at 877-582-7011 or you can try their website at the address on the screen.

The slides for today's presentation are available in PDF format in the Handouts section of your webinar control panel.

If you would like to access live captioning during the program, click on the link in the Chat section at the bottom of your control panel. Or you can copy and paste the address on the screen into a second browser window.

Now we really encourage you to submit questions using the box marked "Questions" near the bottom of your control panel. You could submit questions at any time, as they come to mind, usually that's easier. As you go through and things come to your mind, you can log those questions in. And then we will take those questions up during our question and answer session prior to conclusion.

If you would like to review this webinar at a later date, a replay and transcript will be posted in our library of webinars on the CDIAC website in about 2 weeks.

Also on the CDIAC website and on the page for that promotes this particular webinar series, we have a list of recommended readings for each session, and then we also have a list of library resources covering a variety of Green Bond related topics. I invite you all to take a look.

Slide 3 – Welcome **2:41**

Before I introduce our main presenters for today, I am pleased that we are joined by a special presenter this morning that is uniquely qualified to set the stage for our discussion today and for our series. Please join me in a virtual welcome to the Chair of the California Green Bond Market Development Committee, the Chair of CDIAC, and the 34th Treasurer of the State of California, Fiona Ma. Treasurer Ma…

CALIFORNIA STATE TREASURER FIONA MA: Thank you, Robert. And, thank you to the Goldman School of Public Policy at UC Berkeley for partnering with us on this webinar series, and thank you to our presenters today, Mike Paparian and Robert Hannay.

Welcome everyone to the first program in our three part webinar series Green Bonds in the Golden State. I am very passionate about this effort to both understand and develop the Green Bond market. I'd like to share a few opening thoughts that may help frame the discussion.

Climate change threatens our quality of life, our economy, and poses material risk to our communities. Catastrophic climate related events considered once- in- a- lifetime are now occurring at an alarming rate. Apart from slowing or reversing the warming of the planet, communities around the world must upgrade their fixed assets to make them more adaptable to these types of environmental shocks. A recent article by the Federal Reserve Bank of San Francisco directly states that climate change poses a real threat to our economy. In a more foreboding vein, another recent report by the Urban Land Institute claims that using insurance as a mitigation strategy against loss of value is simply not sustainable. At the same time, we have all read reports that identify tens of billions of dollars in infrastructure needs in California and most agree that new infrastructure must be resilient, adaptable, and respond to the threat of climate change.

What should we be doing about all of these things? Well, last year, California's leaders committed the state to eliminating fossil fuels from its electrical grid by 2045. At his first State of the State Address, Governor Newsom reaffirmed that California's long- time commitment to the environment and to fighting climate change remains as strong as ever.

In August 2018, my predecessor signed the Green Bond Pledge, which is an aspirational commitment to incorporate green finance into our future infrastructure replacement borrowings. And I know, the elected leaders of your communities have either made the same commitments to environmental sustainability and carbon neutrality or are at least making inquiries into why this is of such critical importance to our state.

As California public finance officials, we have an opportunity to demonstrate leadership in meeting these commitments. It starts with recognizing that Green Bonds can contribute to meeting the State's future infrastructure needs, but there must be a practical strategy to do that. That recognition should not be a blind commitment to selling Green Bonds because they are "trendy." That approach is tactical. What is needed is strategy. Green Bonds should be a vital part of an integrated strategy that addresses the economic dangers, real estate valuations that affect tax yields, and our long- term infrastructure liabilities.

Together, we need to leverage California's market presence and leadership to develop and execute a strategy that ensures that Green Bonds marketed to investors truly are green. Institutional investors are already showing increased demand for green investments that are more efficient and which have demonstrable benefits for our ecology. But what is green remains an open question.

As you know, in accountancy, there is a concept called "generally accepted accounting principles." However, there is not yet a universally accepted definition of what a Green Bond is. We can change that. By investing sooner rather than later in physical assets that support positive impacts on our climate—or which make the public infrastructure we all rely on more resilient to climate change—we can telegraph to the rest of the world in general, and investors in California's bonds in particular, that California intends to lead in a meaningful way toward the health of our planet.

I am calling upon each of you to join with me in a detailed effort to identify and promote those projects financed with bonds issued by California's state and local government as green, if they meet standards established by recognized international scientists as supporting resilience, adaptation, or climate response.

We have designed this webinar series as a way to bring public finance officials up to a knowledge and comfort level so that you can join this movement…so. that you can begin to engage officials and constituents in your communities in a thoughtful discussion about the opportunities Green Bonds present, and for those of you preparing to engage in the Green Bond market either more fully or for the first time, you will have the confidence that the path forward will strike a balance between the environmental and financial stewardship that we must all deliver.

I look forward to working with each of you to accomplish these lofty goals and to the development of a more sustainable, resilient future in California—home to the fifth- largest economy in the world.

Thank you, again, for all joining us this morning and your service to our great state. Robert, I'll turn it back over to you.

Slide 4 – Our Vision 8:35

ROBERT BERRY: Thank you, Treasurer Ma, for setting the stage for our program today and for our whole series.

Our vision for the program: this webinar series is designed to support the Green Bond market development efforts in California by supporting the issuer community through education, to help you to develop the necessary fluency in the subject of Green Bond issuance. During the series, our presenters will discuss the status and prospects for the market, explain the green standards and certification, discuss verification, use of proceeds, and disclosure implications, and the market and rating agency perceptions of Green Bond issues and the agencies that issue them. As stated by Treasurer Ma, we hope that at the end of the 3-part series, you as issuers will be able to engage with the elected or appointed leadership of your agency, and your broader constituency in a substantive discussion about Green Bond issuance, both the benefits and risks alike. As the title indicates, we have planned this series to be very practical, so please don't hesitate to ask questions as we go even those you may consider tough questions. Our presenters are ready and willing to answer those for you.

Now with that, let's introduce our presenters today.

Slide 5 – Presenter Introductions **9:52**

First, we are joined by Michael Paparian, a California Representative for the Climate Bonds Initiative. Michael has over 35 years of experience in environmental finance and environmental policy and currently consults on environmental finance issues. He has held a variety of positions inside and outside state government, including: Deputy California State Treasurer, Executive Director of the California Pollution Control Financing Authority, Special Consultant to the California Environmental Protection Agency, Board Member for the California Integrated Waste Management Board, and Sierra Club California State Director. At the Treasurer's office, he developed enhanced small business financing programs, improved environmental bond financing and implemented environmental grant programs. It's also interesting to note he serves on the Boards of Solar Cookers International and the InterEnvironment Institute and is a member of the IUCN World Commission on Protected Areas. Michael has a graduate degree in environmental planning and undergraduate degrees in biology and psychology.

Also joining Michael today is Robert Hannay. Robert joined the East Bay Municipal Utility District in 2018 as Treasury Manager. Prior to this appointment, Mr. Hannay worked in consulting, at a rating agency, at a financial advisory firm, and in public finance investment banking. As a director and public finance credit analyst with Standard & Poor's Ratings Services, Robert covered water and wastewater utilities, transportation entities and other local governments in California and throughout the United States. Robert has a Bachelor of Science degree in civil engineering from Texas A&M University and master's degrees in civil engineering and city planning from the University of California, Berkeley. Robert is also a Chartered Financial Analyst (CFA) charter holder.

So with that, I'll turn it over to Mike and Robert.

Slide 6 – Part 1: Fundamentals **11:47**

MICHAEL PAPARIAN: So this is Mike Paparian. Thank you, Treasurer Ma, Robert Berry, and the staff at CDIAC for pulling this Green Bonds webinar series together. I'm going to go through quite a lot during this overview, and hopefully you'll see why I'm excited to be part of this effort to improve the Green Bond marketplace.

I'll be moving quite quickly through the slides, but you can go back to the CDIAC website and find the slides if you want to look at them more carefully. I'll go over why Green Bonds are important, what is a Green Bond, the market for Green Bonds, standards and certification, and some related policy items. Future webinars will cover many of these topics in more depth.

As Robert mentioned, there are also a number of resource documents linked to the web page.

Slide 7 – Audience Polling **12:48**

So let's begin with a quick poll to see who's listening on this presentation. We know that there may be others in the room with you, so let's have the responder be whoever is at the computer or whoever else you might designate.

Poll Question Open for Responses **12:58**

So the poll is coming up now. Go ahead and just click the item for what role you serve on the issuance team, or if you're not on an issuance team, you might be clicking other government or other nonprofit, private sector, et cetera.

So we'll leave this open for a few moments here.

Poll Results **13:38**

It looks like we have a good mix, about a third issuers, about one fifth other finance members, and close to 40 or 50 percent of other government or other nonprofit. So we have folks directly involved in issuance and those who might be on the policy side. Good to know.

Slide 7 – Audience Polling **14:03**

As I get started here oh, we have one more poll. I'm sorry.

Poll Question Open for Responses **14:19**

I'm going to ask you how many Green Bond issues your organization has been involved in. So zero, one, two, three plus. Go ahead and answer those questions.

Poll Results **14:51**

All right. So again, nice mixture here. We have close to a quarter who have done quite a few Green Bonds, about 50 percent who have either done none or maybe have one projected soon and one or two or a little over 10 percent on those. So again, a nice mixture on those who have been involved in various aspects of the marketplace or may be involved soon.

Slide 8 – Why Green Bonds? **15:23**

So the first municipal bond, I think many of you know this better than I do, the first municipal bond was issued in the city of Amsterdam in 1517. That was a few years before *I* was born. The market has evolved some since then, but there hasn't been a lot of drama in the marketplace, so why are folks trying to insert a new concept into the market now?

You've heard about climate change. Treasurer Ma talked about it a bit, but let me try to summarize for you climate change in two slides and relate it to the bond market. The global goal you may have heard in some of your readings, is to keep the increase in temperature around the earth at between 1.5 and 2 degrees Celsius, or in Fahrenheit, which we're more used to, 2. 7 to 3. 6 degrees. It doesn't sound like much, but even at those numbers, the seas will rise, droughts will increase, tropical diseases will move north, and there will be other impacts. But within that temperature increase, we should be able to manage our way through the warming that's expected.

Slide 9 – Climate Change Will Impact Infrastructure… **16:43**

What this chart basically shows is the various pathways, depending on what we do going forward, to respond to climate change. What it shows, and you can come back to it later, is that we're on a pathway now to roughly double the desired numbers of where we need to be to have a habitable planet.

Slide 10 – …And the Next 10 Years Will Determine How Bad It Will Get 17:13

Let me put this another way. This chart shows that what we need to do with our global carbon emissions in the next two years, if we're going to have hope of keeping our temperatures in a livable range, is we're going to have to make some pretty dramatic changes. We need to not only stop increasing our emissions, we have to make a dramatic downturn in our emissions in the next couple of years, and that downturn has to be much bigger than what was agreed to in the Paris Climate Summit.

That is why global leaders are looking to the *finance* market, among many other places, and they are looking to the projects *financed* to be a big part of the solution.

Slide 11 – António Guterres Quote 18:03

U. N. Secretary General António Guterres tells us that finance is the key to successful climate action. We need more ambition. Climate change is moving faster than we are, and this is a war we cannot afford to lose. He also points to Green Bonds as a key tool and says that going forward, as we look at infrastructure, if big infrastructure projects aren't green, they shouldn't be given the green light. And the good way to get to that green light is to issue infrastructure financed bonds as Green Bonds.

Slide 12 – Moody's Announcement 18:43

Financial market participants are also recognizing the need to consider climate change. Moody's recently said that climate shocks have immediate and observable impacts on infrastructure, and these impacts will be taken into consideration in evaluating the overall fiscal health of localities.

Now with that as background, let's take a closer look at Green Bonds.

Slide 13 – Quick Bond Primer 19:06

Most of you are probably very familiar with what a bond is, but if you're not, this slide is a quick refresher, and there's more detail on the linked CDIAC guide at the bottom.

Slide 14 – Green Bond Basics 19:22

So let's look at the basics of Green Bonds.

Slide 15 – Green Bond Definitions 19:25

There is not a single definition of what a Green Bond is. I often liken this to the green building marketplace. There's not a single definition of green building, but green buildings have in common strong environmental attributes.

Similarly, Green Bonds have environmental attributes. Generally, a project is built to minimize environmental impacts, demonstrate environmental benefits, respond to climate change impact such as sea level rise or increased heat. Those kinds of things fit most definitions of Green Bonds.

Another way to think about it is that the infrastructure we need to keep us at and respond to a 1.5 to 2 degree increase in global temperatures can likely qualify for Green Bond financing. Again, there are different definitions, and I'll go into these in a little bit, but essentially it's about the projects and assets, not the issuer.

Slide 16 – Essentially… 20:25

The green label is a tool for investors, and essentially a Green Bond is a bond that qualifies as a normal bond but has attributes that benefit the climate or environment and is designated as a Green Bond. We'll get into standards and certification a bit later and in a future webinar.

Slide 17 – What Can Green Bond Proceeds Be Used For? 20:51

Here are a few examples of what Green Bonds can be used for: buildings, transportation, waste, water management, flood protection, adaptation, and many other things.

Slide 18 – At a High-level…Issuer Considerations 21:05

At a high level, there are benefits and challenges to issuing a Green Bond. Benefits include an expanded investor base, aligning infrastructure with climate goals, and demonstrating environmental commitment. Challenges include an inherent resistance to doing things in a different way when past practices of issuing bonds have worked, responding to concerns about minor additional costs, and responding to concerns about whether this is providing any added climate benefit.

I know Robby from East Bay MUD, you issued several Green Bonds. Have you had any different experiences in terms of benefits or challenges you've seen?

ROBERT HANNAY: No. I'd say it's basically been these benefits and challenges that we've encountered at East Bay MUD. I'd say one additional benefit is East Bay MUD has the goal to help grow the Green Bond market. And so each time we issue Green Bonds, we consider it that as fostering the growth of the market overall.

MICHAEL PAPARIAN: Thank you.

Slide 19 – At a High-level…Investor Considerations 22:17

In addition to green considerations, there are investor considerations. Investors are starting to have to respond to the issue of the greenium, i.e. higher demand leading to lower yields on Green Bonds. We've seen this in Europe and other parts of the world, and there is some anecdotal evidence that the U. S. market may be seeing the beginnings of a greenium; although it's not embedded in the marketplace in the way that we are already seeing in Europe. **Slide 20 – Who is Buying Green Bonds? 22:53**

Who is buying Green Bonds? Well, the world's largest investors are buying Green Bonds, ranging from our own CalPERS and CalSTRS. The Treasurer's Office is invested in Green Bonds through their investment funds, and the various other large institutional investors that you see here.

Slide 21 – The Market 23:15

So how is the market doing?

Slide 22 – Overview of Market Development 23:21

The Green Bond market has been around since about 2007, with initial issuances from the World Bank and European Investment Bank. In 2014 California was among the first issuers in the U. S. muni Green Bond market. In 2018, California signed the Green Bond Pledge, which we'll discuss again in a few minutes.

Slide 23 – Continued Market Growth 23:46

We're seeing an increasingly diverse mix of issuers from national and local governments to corporations, development banks, and others.

Slide 24 – Diversification of Proceed Use 24:00

We're also seeing a healthy mix of project types, from energy and building to transportation, land use, and even recently information technologies.

Slide 25 – North America Dominated by Fannie Mae 24:12

We're seeing similar diversity in the U. S. marketplace among issuers, although Fannie Mae is quite dominant with their green building issuances.

Slide 26 – Green Bond Issuance in the Golden State 24:27

In California, in just a few short years, we've seen close to $10 billion in Green Bond issuances by California government agencies, and those bonds have funded a wide range of projects.

Slide 27 – CA Green Muni Bond Issuances 24:40

This year alone, Green Bonds have funded water, transit, green schools, sewage treatment, renewable energy, recycling, and even a manufacturing facility turning rice straw into fiberboard. All of those wouldn't be possible without increasingly knowledgeable finance teams, including not just the issuer and their experts, but also the teams they rely on for support.

Note that you'll see about six or seven from the bottoms East Bay Municipal Utility District's recent issuance of over $161 million.

Slide 28 – Expansion of Issuance Team Roles 25:21

So the teams have included those working on Green Bonds, underwriters, counsel, advisers, and now even verifiers ancertification entities.

Slide 29 – Standards and Certification 25:35

Before I got involved in Green Bonds, I thought that taxonomy was something that Roy Rogers did to his horse Trigger, but I've learned that a "taxonomy" is a system to classify projects and is used in this context to define green projects. I'm going to talk about a couple of different approaches although there are several others.

Slide 30 – The Need to Define 'Green' 26:02

So the aim of the taxonomy is to create a uniform system of classification to avoid market fragmentation, to protect against greenwashing, and by "greenwashing," I mean someone claiming a project is green when it may not really be and provide the basis for future policy action, such as standards, labels, incentives, et cetera.

Slide 31 – Climate Bond Standards Taxonomy 26:27

This is the climate bonds initiative taxonomy. Some of these have been developed already. Some of these are under development, and some of these are a little bit further in the future, but as you can see, they're already clear definitions for solar, wind, geothermal, public transit, private transport, water, wastewater, and so forth.

Slide 32 – Climate Bonds Sector Criteria 26:57

Generally these fall into areas that you might imagine. This is, again, intended to cover the types of infrastructure we're going to need in the climate challenged world.

Slide 33 – Developing Sector Criteria 27:10

Slide 34 – Types of Reviews 27:16

We'll be hearing from a verifier on the next webinar, Monica Reed of Kestrel Consulting, in session two of this three part webinar, and I'll mention here, and Robert mentioned before and will probably mention again, that if you haven't signed up separately for session two and session three, you should do so. You sign up for each of the sessions individually, and, again, on the second session there will be a little bit more on verification.

But the types of reviews that are out there range from assurances, assurance whether it's consistent with things like the Green Bond Principles, a second party opinion to confirm compliance with Green Bond Principles or other items, a rating – Moody's, S&P, others – rating agencies assess the Green Bond's alignment with the Green Bond Principles and the integrity of the greenness of that. Post issuance verification is verification towards the Climate Bonds Standard, which I mentioned a few minutes ago, and then there are post issuance reviews which can happen as well.

Slide 35 – Programmatic Certification 28:39

In addition to certifying individual projects, what Climate Bonds Initiative has done is developed a programmatic certification that several entities, including the San Francisco PUC are now using, where it's clear that their overall programs and any projects that fall within those programs can be designated for Green Bond certification, and they don't have to go through as elaborate a process in the future.

Slide 36 – CBI Certification Mark 29:11

So what does the certification mark mean? It means it's fully aligned with the Green Bond Principles. It's using best practices for internal controls, and it's financing assets consistent with achieving the goals of the Paris Climate Agreement.

Slide 37 – CBI Standards Boards 29:27

The standards are developed and approved by, and the projects themselves are also approved by a CBI Standards Board, including the California State Treasurer, represented by Tim Schafer, and CalSTRS represented by Kathy DeSalvo, amongst several others.

Slide 38 – Green Bond Principles (GBP) 29:50

The Green Bond Principles are harmonized with the Climate Bond Standards in that, if you meet the Climate Bond Standards, you meet the Green Bond Principles, but the Green Bond Principles also stand alone. The standards include compliance with the principles, but the principles leave it more to the project to justify their use of proceeds under broad categories as opposed to the standards, which are more specific. The principles also include more on managing proceeds and reporting.

Slide 39 – GBP Governance Structure 30:29

I mentioned the Climate Bond Standards governance structure. The Green Bond Principles have a governance structure as well, described here. They have a pretty extensive executive committee and working groups, which are linked in the link at the bottom of the page there.

In addition to the standards and the principles, you may have heard the European Union is developing a taxonomy and approach to Green Bonds.

Slide 40 – Comparison of Approaches 31:07

This is still being reviewed, but to give you a high-level sense of the standards, principles and proposed EU standards, this chart gives a general comparison of the approaches, the eligibility criteria, whether external reviews are required, whether the reviewers have to be accredited, impact reporting, and so forth.

Slide 41 – Consistent Rules Support Market Growth 31:29

As I mentioned, there are many approaches, and different regions are adapting approaches to the local marketplace. You can see that Brazil, Mexico are developing some of their own approaches, the European Union, I mentioned, China, India, Indonesia, elsewhere are developing some of their own approaches but are doing their best to keep them consistent with the general approaches of the Climate Bond Standards and the Green Bond Principles.

Slide 42 – External Reviews Are Now Dominant 32:02

External reviews are now dominant in the marketplace, and there's some sort of external review on most issuances.

Slide 43 – Self Certification v. External Review 32:20

But not everyone gets an external review. Some self-certify and self-certify with some explanation of what they're doing. Now, Robby, I believe, East Bay MUD is doing self-certification, right?

ROBERT HANNAY: Yeah, that's right. So for each of our three Green Bond issues, we did go with self-certification, and I'll be talking more about that later in my slides, but just briefly, in 2015 we adopted, our board adopted our Green Bond guidelines based on the Green Bond Principles that you've been talking about and that we've relied on the guidelines to issue Green Bonds and for the self-certification, but we are seeing issuers more and more going with third party verification, so that is something we may be considering when we think about our next Green Bond issuance.

MICHAEL PAPARIAN: All right. Thank you.

Slide 44 – 2018 Approved Verifier Activity Globally **33:17**

So in 2018…and this chart is just the number of climate bonds certified deals. This is not the universe of outside verifiers, but in terms of climate bond verified deals, you can see some of the outside entities, ranging from Sustainalytics and First Environment, consulting firms to some of the bigger accounting firms, Ernst and Young and KPMG and others and. as I mentioned before, you'll be hearing from a smaller local entity, Monica Reed of Kestrel Consulting, in the next session, session 2 of the webinar series.

Slide 45 – CBI Standard Certification Scheme **34:11**

So to get a little more detail on Climate Bonds Initiative standards and certification, it's basically a five step process. You prepare the bond as you might normally. You look at its consistency with the Green Bond definitions. You engage a verifier. You get certified. You submit a verifier's report and information to the Climate Bonds Initiative. Ultimately, you issue your bond, and assuming, that it got certified, there's an emblem you can put on the bond documents. Then you confirm the certification post issuance, and you do some annual reporting.

Slide 46 – Reporting **35:01**

Now, the reporting in my conversations with issuers, reporting can be a scary thing, but what we have found and what many of the issuers have found, and I think we'll have some issuers on future webinars who can validate this as well, is that much of the reporting is already being done, either in the context of what you have to report in your bond reporting anyway, or in some of the reporting that most entities are already doing in terms of their projects and impacts and benefits of their projects.

Slide 47 – Green Bond Issuer Reporting **35:40**

We're finding that the reporting is not as daunting as people think and that many, many, many entities are now engaged in the reporting.

Slide 48 – The Path Forward **36:00**

So you've heard a lot from me about Green Bonds. You're going to hear from Robby of East Bay MUD, but I wanted to provide a bit more of what's going on to propel the Green Bond marketplace in California. Before I do that, I want to ask one more question.

Slide 49 – Audience Poll 36:17

That question is about to come up right now.

Poll Question Open for Responses 36:27

In the future, from your experience, your interactions with investors, do you think investor concern about the climate impact of bond financed projects will…increase in some way, stay about the same, or decrease in some way? Again, that's what do you think investor concern is going to be about the projects that you're financing with bonds and whether there are climate impacts associated with those bonds. We'll give that another few seconds here.

Poll Results 37:12

Interesting. Nobody thinks the investor concern will decrease, but, I think you know, a pretty significant majority of you think there's going to be an increase in investor interest in climate bonds, climate impacts associated with bonds. We're going to have a disclosure counsel on the next call, and if I get a chance to submit a question, or if I get a chance to talk to him ahead of time, I may ask him about what types of climate risks should now be disclosed no matter what in bond documents going forward.

But, again, back to kind of the policy area…

Slide 50 – California Green Bond Solutions 37:59

There's three activities that are intersecting right now in California. The Treasurer mentioned the California Green Bond Market Development Committee. The Milken Institute has been engaging in Green Bonds. I'll talk about them more in just a second. And there's an effort to pursue a Green Bond Pledge.

Slide 51 – California State Treasurer, Fiona Ma Quote 38:28

So one of the things that the treasurer said recently is that Green Bonds are used to finance the infrastructure of a climate challenged world, and I think that well summarizes why some of these policy related efforts are moving forward.

Slide 52 – California Green Bond Market Development Committee 38:50

So the California Green Bond Market Development Committee is housed at the Goldman School of Public Policy at UC Berkeley. They're working on a web page, which should be up soon, and they'll also be hosting the Treasurer in mid-September for the second meeting of the committee, followed by a more public speech that she's going to be giving on a variety of topics.

The role of the committee is to develop strategies and solutions to expand the Green Bond market in California. They're going to build on the Milken reports, promote the Green Bond pledge, advise policy leaders, and assist issuers. The participants in the committee are including finance experts, engineers, public policy experts, attorneys, climate scientists and others. The initial meeting took place in June, and as I just mentioned, there will be another meeting actually almost in fall. It will be mid-September at UC Berkeley.

Slide 53 – Growing the U.S. Green Bond Market **40:02**

The Milken Institute assisted with the volume two report that's linked down below. They're also going to be hosting a Green Bond symposium in mid-October at their facility in Santa Monica, along with the publication Environmental Finance. What the Milken Institute has found is that there are three major drivers in terms of growing the Green Bond marketplace aligning infrastructure needs with climate challenges, the rise of ESG investing, and the fact that there's an intergenerational wealth transfer going on. My children will probably love to hear this. As people who have been successful in building their assets in the '50s and '60s and '70s and '80s die off, the next generation coming in is going to be inheriting a lot of money, and that generation is *much* more interested in assuring that there's an alignment between their values and the types of investments that they're making; hence the interest in the ESG marketplace in assuring that those who are inheriting money and wanting to invest it consistent with their values know what's available and have things like Green Bonds available for their investments.

The expansion opportunities that the Milken Institute identified include the things I list there. I'll just mention a couple of them. They've talked about a responsible issuer program that is assuring that there are issuers that can either bundle bonds into bundle projects into a Green Bond or issue Green Bonds in a way that is notable to the marketplace in terms of the assurance that the projects involved are as green as they should be. Credit enhancement, taxable, green taxable bond program. We've seen that in the muni bond space in the past with some federal incentives and other things. There's some thought that in the future there may be some opportunities there to reinstitute a taxable bond program. But again, you can look at volume two in the link there and get more detail on all of this.

Slide 54 – Green Bond Pledge **43:09**

The Green Bond Pledge is a simple statement that climate will be taken into account as you finance infrastructure and that Green Bond strategies will be developed and Green Bonds utilized where practical. The pledge has been signed by a number of entities, including San Francisco, including the San Francisco PUC, the State of California, the treasurers of Rhode Island and New Mexico, Asheville, North Carolina, the government of Mexico City, and a number of others. This is something that the Treasurer mentioned, and the Treasurer and the Green Bond market Development Committee will be using as a way to introduce Green Bonds, particularly to policy makers who are looking for some way to connect the climate policies and strategies they want to engage with with the financing and infrastructure financing that they're doing going forward.

So that's my overview of Green Bonds. Now I'm going to hand it off to Robby of East Bay MUD to talk about their real world experiences in issuing Green Bonds. Robby?

ROBERT HANNAY: Thank you, Mike.

Slide 55 – Part 2: Issuer Experience **44:34**

Good, I have the ability to move the slides forward. Good morning, everyone. My name is Robert Hannay. I'm the treasury manager at the East Bay Municipal Utility District, and over the next few slides, I'll provide an overview of *our* experience as a Green Bond issuer.

Slide 56 – Introduction to EBMUD **44:50**

Slide 57 – Location and Customer Base **44:55**

So first I want to give a brief overview of my organization, East Bay MUD. We provide water and wastewater services to the East Bay of the San Francisco Bay area, and our water service area covers about 1.4 million customers, and that includes cities like Oakland, Berkeley, Walnut Creek, Richmond, and our wastewater service area is smaller, covering the more western part of the East Bay. We provide wastewater treatment service to about 685,000 customers.

Slide 58 – Sustainability is in Our Roots **45:28**

So East Bay MUD takes sustainability seriously. We adopted a sustainability policy in 1994, and that's been updated many times since then. And I'll read the intro sentence to the policy, "*We provide reliable, high quality drinking water and wastewater service through sustainable and resilient operations, maintenance, planning, design, and construction activities that manage long term economic, environmental, and human resource benefits*." So basically, that sets the stage for our board's decision to be a Green Bond issuer, which started in 2015.

Slide 59 – EBMUD Debt Profile **46:06**

So since we're talking about bonds, I want to spend a minute or two going over our debt profile. Our water system, which is the larger of two systems, has about $2.5 billion in revenue bonds outstanding. We also have $13 million in state loans and about $360 million in commercial paper. Our wastewater system, the smaller one, has $370 million in revenue bonds outstanding and $15 million in commercial paper. Each system has its own ratings, which are currently the same, so they are AAA from S&P, Aa1 from Moody's, and AA plus from Fitch.

Slide 60 – EBMUD Capital Improvement Program **46:46**

If we're talking about debt, we should be discussing our Capital Improvement Program. We update a five year CIP every two years as part of our biennial budget. Our current five year CIP covers $1.9 billion in projects through fiscal year 2024. Much of that spending, about 45 percent, is infrastructure maintenance, so for example, we're replacing about 17 or 18 miles of distribution pipeline annually.

So our CIP is dominated by a lot of smaller projects rather than a few larger projects.

Slide 61 – EBMUD Green Bond Issuances **47:25**

I'll now talk about our specific Green Bond issuances we've done here at East Bay MUD.

Slide 62 – Green Bond Issuances **47:33**

So we've done three series of Green Bonds since 2015, totaling $422 million in par amount. These issuances were in 2015, 2017, and 2019. And each of these issuances was self- certified as Green Bonds, as I said earlier during Mike's slides. I'll go into that on a further slide. One thing I want to note is we do put Green Bond in the formal series title, the formal designation. So the words Green Bonds kind of follow that series name through everything, on all the documents on EMMA, on CDIAC reports. Over the next few minutes, I'll go over the process we've taken to issue Green Bonds.

Slide 63 – Example EBMUD Green Bond Projects 48:15

Here are some examples of projects that we finance with Green Bonds. Again, our CIP is dominated more by smaller, renewal and replacement projects, rather than one or two really large projects. A few other projects not on the list, because the list is pretty long and we include it with each bond issue, but we also have fish and wildlife projects, watershed improvements, building upgrades. And our general project categories stayed the same through 2015, 2017, and 2019, again just kind of given the nature of our CIP and the large collection of projects that represent our CIP.

Slide 64 – Our Path to Board Approvals 48:55

Okay - here is a condensed timeline of our path to board approvals. As I said before, East Bay MUD adopted a sustainability policy in 1994, which has been updated seven times since then. In April 2015, the board adopted its guidance for issuing Green Bonds, which is a key document we rely on when we're selecting green projects and issuing Green Bonds, and I have a slide specifically on that. In 2015, 2017, 2019, in each of those we brought to our board the documents and approvals for the individual bond issues, and, of course, each of those had a staff presentation which included covering the Green Bond aspects of each issue.

In May, when we took the 2019 A Green Bonds to the board for approval, board members did have further questions about the Green Bond market, which is just an example of even if you have a history of issuing Green Bonds questions can still come up that need to be fielded, which actually resulted in us having a June staff memo to the board talking about Green Bonds, which I have a slide on in a moment.

Slide 65 – Guidance for Issuing Green Bonds 50:01

So as I said, our board adopted in 2015 its guidance for issuing Green Bonds, and as part of this guidance, our board established ten criteria for determining if a project is Green Bond eligible. The criteria builds off the Green Bond Principles developed by the International Capital Market Association in 2015. If a project meets one or more of these ten criteria, we consider it eligible for Green Bonds. We've used this criteria to select projects for each of our three Green Bond issuances. We also spell out this criteria in each of our official statements when we've issued Green Bonds, and as I mentioned today, we've always self-certified our Green Bonds issuances as green, using this criteria based on our board adopted policies, which go back to the Green Bond Principles.

As I said earlier, it's been our observation that people in the municipal bond market are increasingly using third party verification, so the methodology that we use now, that we currently use has worked well for us, but I think we will be considering the use of third party verifiers in the future.

My discussion with other issuers who have gone that route have generally been happy with the process.

Slide 66 – June 2019 Board Memo 51:27

I mentioned that when we brought our 2019A Green Bonds to our board, there were questions about the Green Bonds in general, which is an example of the questions that will keep coming about. So staff has to be ready to answer them. In this case, we provided a follow up memo to our board in June and it covered a few things. First it covered the growth of the Green Bond market. So we were asked by the board member if this market was growing. And we knew in general it was, we were able to say that, but following up with a memo gave us a chance to put data behind it. We found data. We reached out to CDIAC, Green Bond data on Bloomberg, and we were able to provide some of that information. We had questions about the pricing benefit of issuing Green Bonds, so we did a small literature review on research on the pricing. There's not a consistent and clear set of papers on the pricing differential yet at this time. There's at least one paper that shows evidence of yield savings that we found. So we said that basically the research and understanding on this market continues to evolve with the market.

We were also able to describe in this memo our own pricing experience, since we issue green and non-Green Bonds, and I have a slide coming up specifically on that.

Slide 67 – Ongoing Reporting and Verification 52:46

Green Bond investors are likely interested in the use of proceeds after issuance, as Mike talked about as well, basically wanting to know did you finance the projects you said you were going to when you issued Green Bonds? When I look around at other Green Bond issuers, I see a range of ongoing reporting to kind of no reporting being required, to maybe annual reporting on how the proceeds were spent. Our case is a little unique at East Bay MUD, so we typically front the cost of our capital projects before we issue bonds with our own funds, our own cash on hand, and then when we issue debt, we reimburse ourselves with those proceeds. That's generally how we've done bonds, green and non-green, in recent years.

And so because of this, for the projects we identify as green, we've already spent the money on the projects. Our view right now is it hasn't. It's kind of reduced the need for ongoing verification reporting specifically on the use of proceeds because, basically, we've already spent the money before we issue the bond so we know what we spent it on and can say that.

Slide 68 - Disclosure 53:53

I'm sure this will be touched on more in the future sessions, but I wanted to spend just a minute or two on disclosure because it's an important part of the process. Of course, I recommend starting early with bond and disclosure counsel and your financial adviser underwriter on the Green Bond process. Our disclosure counsel crafted the language in our official statement describing our process, the board adopted guidance. I said that we listed the criteria in there. In 2017 for the second issue, we added a separate appendix describing with more detail on the projects being financed. In general, the disclosure generally addresses the projects you're financing, the criteria used for selecting the projects, ongoing requirements if any, and then probably some disclaimers. I'll give an example of some of the disclaimers in our bond documents. We say that Green Bonds is not a defined term in the indenture, and we say that the owner is not entitled to any additional security because these are Green Bonds. We basically want to make it clear that there's no difference between our green and non-Green Bonds from a credit or security standpoint. The investor owns the same kind of security of bonds as the non-Green Bond investor.

Slide 69 – Yield Comparison and Tips 55:11

Slide 70 – Green v. Vanilla Yield Comparison 55:20

So my next and last section is yield comparison and tips. In 2015 and 2017, we priced green and non-Green Bonds on the same day, and so this provides the opportunity to observe any differences in pricing or yield benefit between green and non-Green Bonds, and our observation was this. In cases where we sold bonds with the same…they're being sold on the same day, green and non-green, same maturity dates, and same coupons, we did not see a yield difference between green and non-green. This was in 2015 and 2017. There were other cases where we sold on those same days, where we sold bonds with different couponing, and because of the call option on the bonds and the yield and maturity yield, the yield to worst kind of stuff, it's too hard to tell if there's a small difference in the pricing.

So then taking the ones that were the same couponing, same maturity dates, the yields were the same, so we can't say from that small amount of data if there was a pricing advantage. There was also no additional cost to Green Bonds, which we were glad to see, and most recently in June, when we issued our 2019A Green Bonds, we did not have a non-Green Bond issuance, so we were not able to do this kind of natural experiment on our most recent issue.

I should add that these have all been tax exempt bonds that we've issued in '15, '17, and '19. Were we to have issued taxable bonds for some reason, we probably would have had a different buyer base and might have had a different experience in the green versus non-green result. You could ask the question, "Why issue Green Bonds if we didn't see a pricing benefit or we haven't historically based on this data?" First of all, East Bay MUD is interested in supporting and growing this market and being a part of it. Also, our small analysis doesn't… It's anecdotal. It doesn't rule out the potential for yield savings and for there to be new buyers of our bonds.

And as the market continues to develop, we could see benefits going forward, and we want to be a part of that.

Slide 71 – Tips 57:28

I wanted to end with a few things we've learned along the way to summarize. Manage internal and external expectations. There may not be a large, obvious yield benefit, at least in our experience with the tax-exempt Green Bonds so far, but you are supporting the market generally, and you may be bringing investors to bonds that would not otherwise be there.

We found it helpful to establish our green guidelines within our organization up front and early, so it's something that we, with our 2015 adoption of the criteria. So it's something we've relied on for all of our issuances.

Most probably knew this, but putting Green Bonds in the series title just kind of helps it flow through to everything. I know, when I search around for other Green Bond issues on EMMA, it makes it easier to find. If it's be in the title of the series.

And start early with explaining your intention to issue Green Bonds with counsel and advisers so they can start helping early in the process.

Slide 72 – Audience Q&A Opportunity/Additional Resources 58:35
So I think that's it from my slides. I believe I'll pass it over to Robert.

ROBERT BERRY: At this point, I invite folks to send in their questions. We only have one here. Also, if there are any slides or any topics that you want us to revisit, we have a little extra time because we finished a little bit earlier than we thought. So we can, if you send a question and ask us to revisit any of the topics, I'm sure Mike and Robby would be happy to go back and revisit some of those.

So go ahead and send your questions in now. Really appreciate it. Also, there was a question about slides. Again, the slides for the presentation are in the handout section in your control panel. If you open your control panel down at the bottom, there's a handout section. They're also posted on the CDIAC website for your review.

So we do have a question here. Mike, Robby, as technology changes in the future, do you anticipate that the criteria for certification will become more stringent?

MICHAEL PAPARIAN: Yes, and I think, let me answer that in a couple of ways. I use the green building example a while ago. If you look at the history of the green building and green building certifications, they really started in the early 1990s. If you looked at a green building from the early 1990s, it's almost laughable the types of insulation, the amount of insulation, the types of appliances, other things that were in that green building and designated as green. It's evolved so much since then and so have the standards. In the Green Bond situation, we expect the same thing to happen. In fact, the Green Bond Principles are updated on a regular basis. The Climate Bond Standards are also updated on a regular basis, depending on technology as well as a greater understanding of climate impacts.

For example, we have increasingly detailed information in California about our ranges of expected sea level rise and where that might have impacts or ranges of increased temperatures. I've seen some recent data, I believe it was out of UCLA, in very small areas, the expected temperature increases. It can vary quite a bit depending on the topography and other factors. The San Fernando Valley's temperature increases might be different than Riverside, which might be different than Fresno and so forth.

So, again, as we have a greater understanding of impacts, as we have a greater understanding of technology as technology evolves, I would expect the various definitions to evolve with it.

ROBERT BERRY: Do you think there's any particular type of infrastructure project that's maybe more…(unintelligible)…that may see this technology advancing more than others?

MICHAEL PAPARIAN: I think, you know, we've certainly seen it in the building area. A lot of buildings have qualified for Green Bonds. In California we have financed everything from hospitals to fire stations to schools to office buildings with Green Bonds. That's certainly one area. I would expect others as well.

I don't know, Robby, in the water area, the efficiency improvements that you've seen and how you deliver water and treat water and so forth, I would expect that to change over time as well, but you're more of an expert on that than I am.

ROBERT HANNAY: Yeah. Of course, I'm in the finance group and not engineering, but, yeah, as that technology improves, I would think that the more and more efficient things will be the ones that would qualify versus others. I was also thinking, maybe this might not have been what the person asking the question had in mind, but I was thinking in terms of the market like as technology changes in terms of the information available. So I know, having to help put together an analysis of the growth of the Green Bond market, there's a lot of room for improvements in the data out there, and who knows, that will only…probably the data on Green Bonds and the projects getting funded will only get better and better, which will allow for more refined analysis, I would think, from investors. So maybe that's kind of a different part of technology as it relates to this, but maybe that will. I think that would lead to change over time.

ROBERT BERRY: This is another question: Can cities use Green Bonds to fund community solar projects?

MICHAEL PAPARIAN: I don't see why not. If you can issue a bond for the project…so the fact that there's a Green Bond…and I get this question a lot. The fact that there are these things called 'Green Bonds' out there doesn't magically mean there's suddenly money that wouldn't be out there anyway. So what I like to describe is that, if you could get bond financing anyway and you also think that it's a project that could qualify in terms of the underlying project for a green project, then you ought to be able to issue a Green Bond.

But the fact that you've got a really interesting green project doesn't mean you can automatically get Green Bond financing unless you could get bond financing anyway.

ROBERT HANNAY: Yeah, my head went to the same place right away, which is, "oh, well, is this something you could finance? Who's benefitting from the project? Is it tax-exempt eligible…" But if you solved all that, it sounds like it could be a Green Bond project.

ROBERT BERRY: Couple more here. Is there any thought being given to how to incentivize the market to purchase Green Bonds over vanilla bonds?

MICHAEL PAPARIAN: Yes, there's some discussion in the Milken Report that I talked about. There are some models out there for providing issuance incentives, and I'm not saying that this exists right now it does exist in a different context, but I'll use this as an example. When I was with the California Pollution Control Financing Authority, we had a program to assist small businesses with the cost of bond issuance, and small businesses could get up to a $200,000 subsidy for the cost of issuing a bond. You could look at models like that, and I know that others have been looking at models like that, to provide incentives for issuing Green Bonds.

So another way to think about this is there may not only be incentives in the future, there may be, I could envision, some things that would discourage non-Green Bonds from being issued. In your disclosure documents already, you probably are mentioning the issue of climate change, and some of the disclosure documents I'm familiar with, there's a paragraph or two saying, hey, there's a thing called climate change out there. It might impact the project in the future at some point. You ought to be aware of it. I could see those types of disclosures increasing in the future, and to the extent that a bond is issued as a Green Bond. And, again, this is speculation on my part, but I could envision a situation where the Green Bond designation could help validate that climate issues have been taken into account and that investors should be more comfortable with that issuance versus an issuance that's not a Green Bond.

ROBERT BERRY: And then you also mentioned in your presentation, there's at least in thoughts, about accessing the taxable market whereby perhaps different structures reminiscent of the ARRA Build America type bonds or subsidy type bonds and such. Again, those are thoughts. Discussed also in the Milken report, that was a finding there as well.

MICHAEL PAPARIAN: Yeah, and the taxable market, I'll mention that. The tax-exempt market in the U.S. is somewhat unique internationally. We actually have an interesting situation where some of our pension funds in this country want to invest in Green Bonds and are investing in Green Bonds, and to the extent they're looking at municipal Green Bonds, they're investing in like Swedish municipal Green Bonds or Green Bonds elsewhere because the tax-exempt nature of the U. S. Green Bonds makes them unattractive for an investor that doesn't pay taxes.

So the taxable Green Bond market, there is a clearer alignment with a greenium. Internationally, it's clearer that there's a slight advantage to the Green Bond designation in the taxable market internationally. If we were able to introduce something like that in the U. S., we might more rapidly see this greenium advantage for the tax exempt market.

ROBERT BERRY: Robby, this might be a question for you. Can you speak to any differences in the financing process for green versus non-Green Bonds? What's your experience?

ROBERT HANNAY: Well, there's the disclosure. Well, picking the projects and that whole process is definitely a change. It's a smaller subset of projects that we could otherwise finance. Then working with our disclosure counsel on the disclosure, working with our underwriter on trying to market these to ESG or green focused investors. Otherwise, they're pretty... In our case, they are standard revenue bonds, and so much of the rest of the process is very much the same. So it doesn't feel like a huge-huge difference, but there are those extra steps and extra disclosure. Then there's another party at the table if you do go with third party verification, so another entity on the financing team to work with.

ROBERT BERRY: All right. Another question. Is there thought being given to land use planning as a potential Green Bond use? For example, allowing the financing of infrastructure for in field developments to qualify as a Green Bond.

MICHAEL PAPARIAN: Interesting question. I'm pondering that right now. The building themselves…I'd have to get back to you on that. I think that, I think that if not in some of the building criteria that it's been discussed, where that building is and how it relates to other infrastructure, but I'm not certain of it off the top of my head.

ROBERT HANNAY: Of course, at East Bay MUD, we kind of focus on water and wastewater, so I wouldn't know. It could be a good question for the verification company on one of the other panels.

MICHAEL PAPARIAN: Yeah, good point.

ROBERT BERRY: Robby, a question I have for you. You mentioned that typically your bonds, Green Bonds are issued to reimburse already spent project costs. Are you doing anything differently in anticipation of the Green Bond issuance to track or verify the use of proceeds to meet your Green Bond goals?

ROBERT HANNAY: Well, in terms I guess, I guess zooming way out, we have this sustainability is an important policy here, and so in general, the kind of projects our capital team picks to do and to prioritize often have sustainability as part of them. So we have a decent subset of projects within our overall CIP that meet one of our ten criteria.

I think we're kind of unique in this way, that we are reimbursing ourselves with bond proceeds. So we've literally spent the money, gone through - there's rules around it. You can only…that tax counsel has the actual details, but you can only reimburse yourself for a certain amount, roughly the last 18 months of expenses or whatever, but we're going through our CIP, working on our projects, paying for them like we would do anyway, because sustainability is a big part of what we do, a lot of those projects have to have sustainability as part of them. And then when we decide to reimburse ourselves and issue bonds, that's when we're kind of able to, after the fact, say what portion of these would be eligible?

But, again, when we issue the bonds, we then point to the projects that we've already spent the money on, and we reimburse ourselves. So there's not too much more to say on the bond issue on how we're spending the money. It's kind of like it's spent on the first day in the reimbursement, and we are tracking exactly which projects that money reimbursed.

MICHAEL PAPARIAN: One of the things, I talked a little bit about issuer considerations and benefits and so forth. One of the things I noticed and, Robby, I think you mentioned this a little bit in your presentation as well. What I've observed with people who have done multiple issuances is that often they will start with just a non-verified, just declaring that what they're issuing is a Green Bond. And then there's a comfort level that's developed and, at the same time, a recognition of some of the benefits. Some of the benefits include very positive publicity, which you don't normally get for a bond issuance, but the alignment between environmental principles and what you're up to often can generate local publicity in a very positive way for the entity that hasn't existed otherwise.

Other benefits that some have seen have been different investors coming in that they aren't used to, but they're very happy having come in because of the Green Bond designation, and interest at different maturity dates than they've been used to with traditional investors. Some of the greener investors wanted different maturity dates. So as all of these things and with the other benefits have come together, what I've noticed is that some of the issuers will go from self-designating it as a Green Bond to then getting some sort of second party opinion, and then ultimately getting a more public sort of certification. So folks like the San Francisco PUC did this. Others who have done multiple issuances have started, again, with self-certification. Graduated is not quite the right term, but then have graduated to a more formal sort of second party opinion and or a labeling certification that I described.

For those of you who are thinking about issuing Green Bonds, there's certainly nothing wrong with the self-certification if the underlying project is truly aligned with the types of definition that's are out there, but you might consider whether some sort of verification or second party opinion is worth doing.

Again, Robby, I think you mentioned that you guys are considering for your next issuance, or did I overhear that? That you're considering whether to bring in somebody to do some sort of outside verification.

ROBERT HANNAY: Yeah, yeah. So, though we've issued Green Bonds a few times, we're in learning mode too, and the market continues to evolve. So we just issue bonds, so we're not on schedule to issue another series of bonds in the very short term, but, yeah, I've had a chance to talk to a number of other entities, a number of other issuers who have gone with the third party verification, and I do think it's something we're going to consider. We have considered it in the past, but that thinking can change over time as the markets change. So, yeah, we'll be weighing the costs and benefits of that for sure.

MICHAEL PAPARIAN: And on the other point, did you…I noticed others have told me that they've gotten different investors. Did you notice any different investors for the Green Bonds? Or was that not an issue in your case?

ROBERT HANNAY: So we did ask that through our underwriter, we were hoping to identify who were the ones, the buyers that would label themselves as green, and so we do have, it's a small subset of the overall investors. So we were able to do that and identify one of the names would have been there anyway, and I'm not sure that it was their whole, maybe it was a portion of what they do that was green, and they were going to put it into other funds that were regular. Then I think some others were maybe they wouldn't be there if it wasn't for the fact these are Green Bonds.

It makes me think I wonder, if there's an opportunity, and I should ask our underwriter this, to follow up and kind of get that information after the fact. I don't see why we couldn't do that and learn from how they heard about us, were they going to bid on our bonds if they weren't green? So that could be an interesting learning experience after the fact. We didn't issue the bonds that long ago.

ROBERT BERRY: We don't have any other questions. If something pops into somebody's mind as I'm making a few closing comments, throw it out, and we’ll go ahead and answer it because we do have a little extra time here. But I did want to remind everyone, we’ve mentioned a lot of different resources and reports, the Milken report, the reports done by the Treasurer's Office that analyzed and discussed the market and challenges and opportunities. Those are all available online at the CDIAC website. Our education team has developed quite an extensive list of resources through the participation and cooperation of our panelists. So all that material is there for your reference.

Slide 73 – Webinar Evaluation 1:19:29

We will be sending you out an evaluation, everyone who is registered. This will be your opportunity to give us some feedback on how we did in meeting your expectations for the webcast, but it will also allow to you address some topics that we may have missed or maybe glossed over and didn't go deeply enough into, and then we can cover those in the next two sessions. It might give us an opportunity to tailor some specific content for you. So if you wouldn't mind, please take a couple of minutes to complete that survey when you see it in your inbox.

Slide 74 – Upcoming CDIAC Programing 1:20:10

So lastly, I want to remind everyone about the upcoming programming. Again, this is the first of the three-part series. Our next two Green Bond webinars, the next one is *It's Not Easy Being Green*, which will be digging in deeply to the certification process and answering a lot of those questions about what I think people are most concerned about in issuing Green Bonds. The practical aspects of green project planning, green certification, the verification, and then the disclosure, which is often a very important consideration for issuers. And that's on September 18.

Then October 2nd, *Making Green Pencil Out*. That's where we'll really be focusing on the market perception and perspective of Green Bonds and the rating agencies and the implications for issuers of their perspective.

So we hope that you'll join us for both of those sessions. Again, we've said this a couple of times now, you need to register for each session in order to receive the information to connect. So please go to the website and register for each session that you're interested in.

And then also, several people have sent in some questions about replays. A replay of this webinar will be posted in about two weeks. The actual recording of the webinar as it's been presented and then a transcript will also accompany that. So we need about two weeks to pull all that together, and it will be posted on our website for your review at a later time.

Also, you'll see listed our full slate of educational programming that CDIAC produces, beginning next month and running right up until the holidays. Registration for all of those programs is open. So please visit our website and register for any of the programming you see there that's of interest to you. You can also stay abreast of all of our educational programs by subscribing to the CDIAC ListServ, and that's done right on our website. Fill in your information, and you'll receive our notices of upcoming educational programming.

So in closing, on behalf of CDIAC and the Goldman School of Public Policy, I'd like to thank Treasurer Ma for joining us and of course Michael Paparian and Robert Hannay for the dedication of their time and expertise to the public finance community through this program, and a big thank you to our CDIAC education team, especially Karen McMillen, Sandra Kent, and Angela Ayala, for their hard work in producing this webinar.

And of course, thank you to all of you for joining us this morning, and we look forward to you joining us for the next two webinars and our other future programming.

So long everyone and have a great day.