MUNICIPAL DISCLOSURE | MARCH 28-29, 2023

LAKE NATOMA INN | FOLSOM, CALIFORNIA

CDIAC

Session 2

Disclosure Practices for Successful Issuance of Labeled Debt

David Blair, Managing Director, Portfolio Manager, Nuveen Asset Management

Eric McKean, Managing Director, Ramirez & Co., Inc.

Michael Paparian, California Representative, Climate Bonds Initiative

Monica Reid, Chief Executive Officer, Kestrel Verifiers

Nikolai Sklaroff, Capital Finance Director, San Francisco Public Utilities Commission

CDIAC

My Agency…

1) Has issued green or labeled bonds.
2) Is considering green or labeled bonds
3) Might consider issuing green or labeled bonds now that we know more about them.
4) Would never consider issuing green or labeled bonds.

What is the approximate cumulative total of labelled green bonds issues in California since 2014?

1) $5 Billion
2) $10 Billion
3) $20 Billion
4) $30 Billion

Source: Financial Times

Overview of Green Bond Market Development

2007/2008

- EIB, World Bank issue first green bonds

2009

- Green bond market takes off with the World Bank issuing first USD green bond

2012

- Launch of Climate Bond Standard
- Start of green definition, clear labeling process

2013

- Green Bond Market takes off with larger deals and increased investor interest

2014

- Green Bond Principles (GBP) published by ICMA
- First green bond indices
- First US&California labelled green bonds

2015/2016

- Maturing market
- Surge of Asian issuance
- Stock exchange launches green segments
- Guidance and regulations begin to emerge

2019

- Cumulative Calif Muni Issuance tops USD8 billion
- California Green Bond Market Development Committee launched

2020/2021

- 3 California Issuers issue green bonds over $1 billion:
  - LA Metro
  - San Diego Unified School District
  - Calif CCA

2023

- California tops $30 billion in labelled green muni bonds
- Range in size from $4 million to over $1.2 billion

Many Types of Labels

- Green
- Social
- Climate Aligned
- Sustainability
- Sustainable Development Goals (SDG)
- Shades of Green (Light, Medium, Dark)
- ESG

Many Ways to Verify Claims

CLIMATE BONDS STANDARD CERTIFIED

The Green Bond Principles

The Social Bond Principles

BAM GREENSTAR

kestrel

The Sustainability Bond Guidelines

°CICERO Dark Green

SUSTAINABLE DEVELOPMENT GOALS

How do California Issuers Justify Labels?

- **Self labeled (with or without criteria)**
  - Reasons stated in Official Statement
  - May be general (e.g. green building built to Title 24) or more specific (e.g. meeting internal green criteria)
- **Verification/Second Party Opinion**
  - Alignment to known definitions/standards such as ICMA
- **Certification**
  - Independent review to confirm alignment with climate goals & sector specific standards (Climate Bonds Initiative)

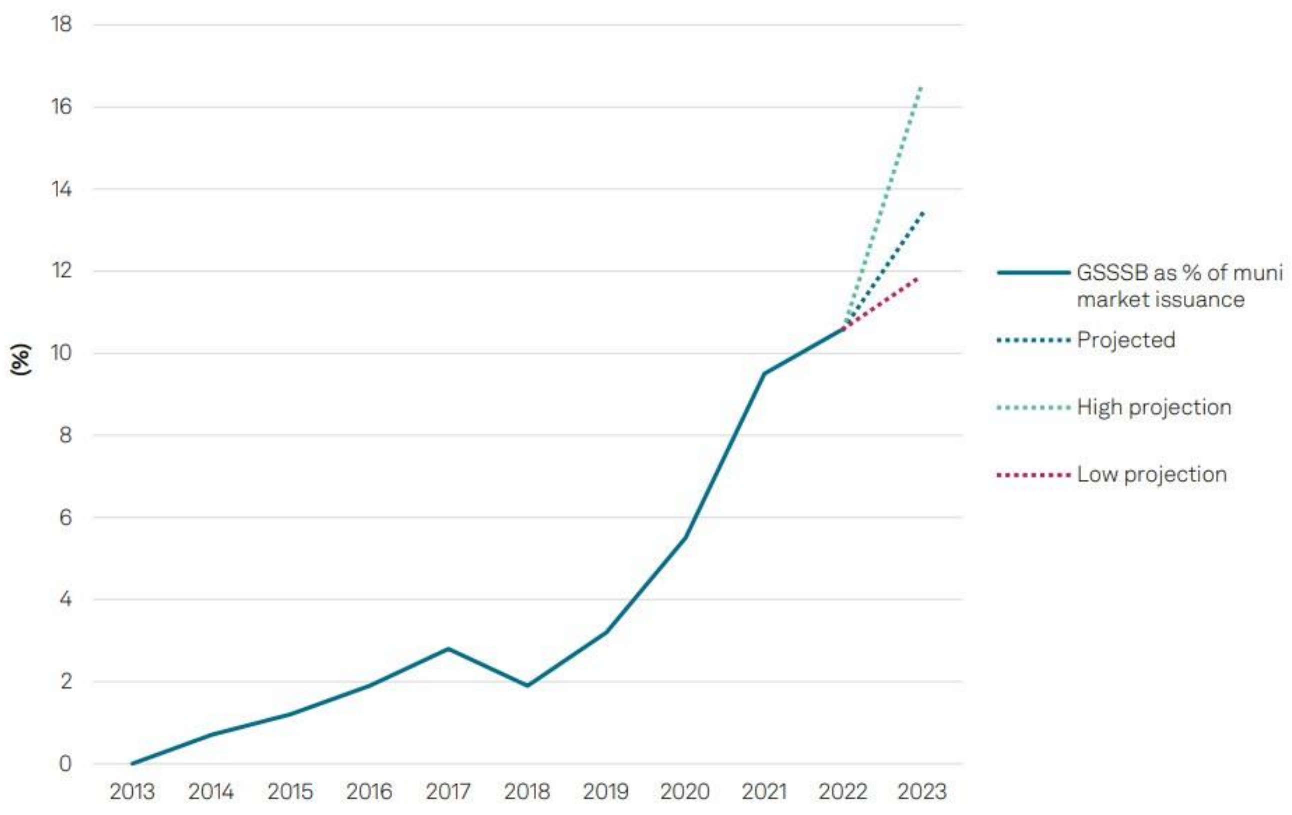
Why Consider Issuance of Labeled Debt?

Nikolai J. Sklaroff
Capital Finance Director
San Francisco Public Utilities Commission

Labeled Bond Market Growth

- U.S. Labeled Municipal Market is relatively new
- SFPUC entered the Green Bond Market in 2015 with Power Bonds
- City released first Climate Action Plan in 2004
- Has been leading local climate action, environmental justice and developing innovative programs since then.

Municipal GSSSB As A Percentage Of Total Municipal Bonds



Source: S&P Global Ratings.

S&P Global Ratings

Our 1st Labeled Bonds

- First SFPUC Green Bonds issued for $30.2 million of project funds.

- SFPUC self-certified the bonds.

- Proceeds funded (i) Hetch Hetchy Project hydroelectric generation facilities; (2) Other renewable energy project such as biomass, biowaste, solar and wind.

- Self-certified. Retained Sustainalytics in early 2016 to review reallocation of green bonds proceeds.

NEW ISSUE—Book-Entry Only

Ratings:
Fitch: "AA-"
S&P: "A+"
(see "RATINGS")

*In the opinion of Orrick, Herrington & Sutcliffe LLP, San Francisco, California, and Curls Bartling P.C., Oakland, California, Co-Bond Counsel to the SFPUC, based upon an analysis of existing laws, regulations, rulings and court decisions, and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the 2015 Series AB Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986 and is exempt from the State of California personal income taxes. In the further opinion of Co-Bond Counsel, interest on the 2015 Series AB Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although Co-Bond Counsel observe that such interest is included in adjusted current earnings when calculating corporate alternative minimum taxable income. Co-Bond Counsel express no opinion regarding any other tax consequences related to the ownership or disposition of, or the amount, accrual or receipt of interest on, the 2015 Series AB Bonds. See **TAX MATTERS**.*

$39,555,000
PUBLIC UTILITIES COMMISSION
OF THE CITY AND COUNTY OF SAN FRANCISCO
Power Revenue Bonds,
2015 Series AB

$32,025,000	**$7,530,000**
2015 Series A Bonds	**2015 Series B Bonds**
(Green Bonds)	

Dated: Date of Delivery **Due:** As shown on inside front cover

The Public Utilities Commission of the City and County of San Francisco (the "SFPUC") is issuing its Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A (Green Bonds) (the "2015 Series A Bonds"), and its Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series B (the "2015 Series B Bonds" and, together with the 2015 Series A Bonds, the "2015 Series AB Bonds"), pursuant to authority granted by Sections 9.107(6) and 9.107(8) of the Charter of the City and County of San Francisco (the "City") and a First Supplemental Trust Indenture, dated as of May 1, 2015, by and between the SFPUC and U.S. Bank National Association, as trustee (the "Trustee"), which supplements a Trust Indenture, dated as of May 1, 2015 (collectively, the "Indenture"), by and between the SFPUC and the Trustee.

The 2015 Series AB Bonds are being issued to finance reconstruction or replacement of existing facilities of the SFPUC's Hetch Hetchy Project to fund capitalized interest on the 2015 Series AB Bonds, to fund a debt service reserve account for the 2015 Series AB Bonds and to pay costs of issuance of the 2015 Series AB Bonds.

The 2015 Series AB Bonds will be available in denominations of $5,000 or any integral multiple thereof and will mature in the years and amounts and accrue interest from their date of delivery at the rates set forth on the inside cover page of this Official Statement. Interest on the 2015 Series AB Bonds is payable semiannually on May 1 and November 1 of each year, commencing November 1, 2015.

The 2015 Series AB Bonds will be issued as fully registered bonds, registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York ("DTC"), and will be available to ultimate purchasers (the "Beneficial Owners") under the book-entry only system maintained by DTC. Beneficial Owners will not receive physical certificates representing their interests in the 2015 Series AB Bonds. The principal of, premium, if any, and interest on the 2015 Series AB Bonds are payable to DTC by the Trustee, and, so long as DTC is acting as securities depository for the 2015 Series AB Bonds, disbursements of such payments to DTC Participants is the responsibility of DTC and disbursements of such payments to the Beneficial Owners is the responsibility of DTC Participants.

The 2015 Series AB Bonds are subject to optional and mandatory redemption prior to maturity as described in this Official Statement.

Under the Indenture, the SFPUC has irrevocably pledged the Revenues of its Power Enterprise, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, to the punctual payment of principal of, premium, if any, and interest on the Bonds, which consist of all outstanding parity revenue bonds issued under the Indenture, including the 2015 Series AB Bonds. The 2015 Series AB Bonds, all other Bonds and outstanding parity obligations permitted by the Indenture are secured by a parity lien on Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits.

The 2015 Series AB Bonds are special limited obligations of the SFPUC. The SFPUC is not obligated to pay the principal of, premium, if any, or interest on the 2015 Series AB Bonds from any source of funds other than Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. Neither the general funds of the SFPUC nor the funds of any SFPUC enterprise (other than the Revenues and the funds pledged therefor under the Indenture) shall be liable for the payment on the 2015 Series AB Bonds. The SFPUC has no taxing power. The General Fund of the City is not liable for the payment of the principal of, premium, if any, or interest on the 2015 Series AB Bonds, and neither the credit nor the taxing power of the City is pledged to the payment of the principal of, premium, if any, or interest on the 2015 Series AB Bonds. The 2015 Series AB Bonds are not secured by a legal or equitable pledge of, or charge, lien, or encumbrance upon, any of the property of the City or of the SFPUC or any of its income or receipts, except Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits.

MATURITY SCHEDULE
(See inside cover)

This cover page contains information for general reference only. It is not intended to be a summary of this issue. Potential purchasers are advised to read the entire Official Statement to obtain information essential to making an informed investment decision.

The 2015 Series AB Bonds are offered when, as and if issued by the SFPUC and received by the Underwriter, subject to the approval of validity by Orrick, Herrington & Sutcliffe LLP, San Francisco, California, and Curls Bartling P.C., Oakland, California, Co-Bond Counsel, and to certain other conditions. Certain matters will be passed upon for the SFPUC and the City by the City Attorney of the City and County of San Francisco and for the Underwriter by Nossaman LLP, Irvine, California. Orrick, Herrington & Sutcliffe LLP, San Francisco, California, is also acting as Disclosure Counsel. Public Financial Management, Inc., San Francisco, California, and Kitahata & Company, San Francisco, California, Co-Financial Advisors to the SFPUC, assisted in the structuring of this financing. It is expected that the 2015 Series AB Bonds in fully registered form will be available for delivery in book-entry form in New York, New York, on or about May 20, 2015.

Wells Fargo Securities

May 7, 2015

Linkage to Our Core Mission

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

My Account | Report A Problem | Careers | Contact Us | Translate | Alerts

Accounts & Services | Programs | Learning | Construction & Contracts | About Us

Home / About Us / Who We Are / **Our Mission**

Who We Are

- **Our Mission**
- Executive Management
- Community Benefits Approach
- Our History

Our Mission

We Are Here to Serve You.

Our mission is to provide our customers with high quality, efficient and reliable water, power, and sewer services in a manner that is inclusive of environmental and community interests, and that sustains the resources entrusted to our care.

The San Francisco Public Utilities Commission provides retail drinking water & wastewater services to the City of San Francisco, wholesale water to three Bay Area counties, green hydroelectric & solar power to Hetch Hetchy electricity customers, and power to the residents & businesses of San Francisco through the CleanPowerSF program.

We are comprised of three essential 24/7 service utilities: Water, Wastewater and Power. These functions are supported by the Business Services, Infrastructure and External Affairs bureaus.

Headquartered at 525 Golden Gate Avenue in San Francisco, we have about 2,300 employees working in seven counties with a combined annual operating budget of over $1billion.

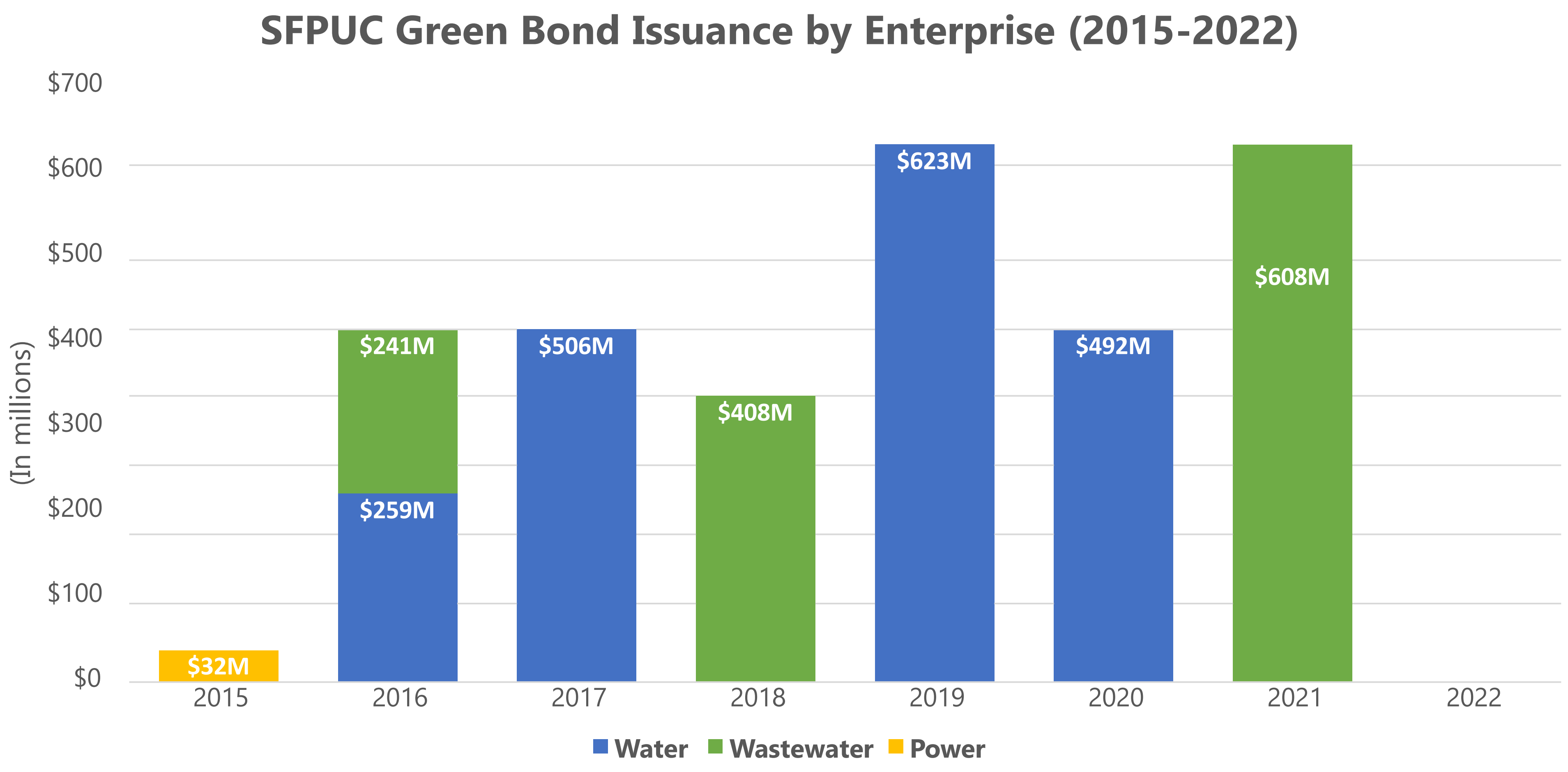
SFPUC and Green Bonds

- After first Self Certified Power Enterprise Green Bonds in 2015, more in 2021
- Have sold more than $3.1 billion in certified green bonds across two enterprises: Water and Wastewater
- Projects increased water storage, application of green infrastructure to manage stormwater and upgrades to renewal energy generation.

Leadership in Green Bonds

- **2015**: Our 1st Green Bonds
- **2017:** Recognized by the Climate Bonds Initiative as the first issuer worldwide to sell bonds under its water criteria
- **2019 & 2021:** US Municipal Green Bond of the Year by *Environmental Finance*
- **2020:** First US Municipality to list Green Bonds on an exchange in Europe (the London Stock Exchange)
- **2021:** Combined green bond programs of the City of San Francisco and SFPUC recognized as a global leader in the C40 report Cities100

SFPUC Green Bond Issuance



SFPUC Green Bond Issuance

<u>Green Bond Issuance Total by Enterprise</u>

Water Green Bonds Total (7):	$1,880M
Wastewater Green Bonds Total (6):	$1,257M
Power Green Bond Total (2):	$106M

SFPUC Total Green Bond Issuance (15): $3,243M

SFPUC Water Certified Green Bonds Issued to Date (7 issuances)	
Water Revenue Bonds Series 2016C (Green Bonds)	$259,350,000
Water Revenue Bonds Series 2017A (Green Bonds)	$121,140,000
Water Revenue Bonds Series 2017D (Refunding) (Green Bonds)	$350,305,000
Water Revenue Bonds Series 2017G (Refunding) (Green Bonds)	$34,280,000
Water Revenue Bonds Series 2019A (Refunding) (Green Bonds)	$622,580,000
Water Revenue Bonds Series 2020A (Green Bonds)	$150,895,000
Water Revenue Bonds Series 2020E (Green Bonds)	$341,435,000
Total	**$1,879,985,000**
SFPUC Wastewater Certified Green Bonds Issued to Date (6 issuances)	
Wastewater Revenue Bonds Series 2016A (Green Bonds)	$240,580,000
Wastewater Revenue Bonds Series 2018A (Green Bonds)	$229,050,000
Wastewater Revenue Bonds Series 2018C (Green Bonds)	$179,145,000
Wastewater Revenue Bonds Series 2021A (Green Bonds)	$260,835,000
Wastewater Revenue Bonds Series 2021A (Green Notes)	$218,355,000
Wastewater Revenue Bonds Series 2021B (Green Notes)	$129,110,000
Total	**$1,257,075,000**
SFPUC Power Green Bonds Issued to Date (1 issuance)	
Power Revenue Bonds Series 2015A (Green Bonds)	$32,050,000
Power Revenue Bonds Series 2021A (Green Bonds)	$74,280,000
Total	**$106,330,000**

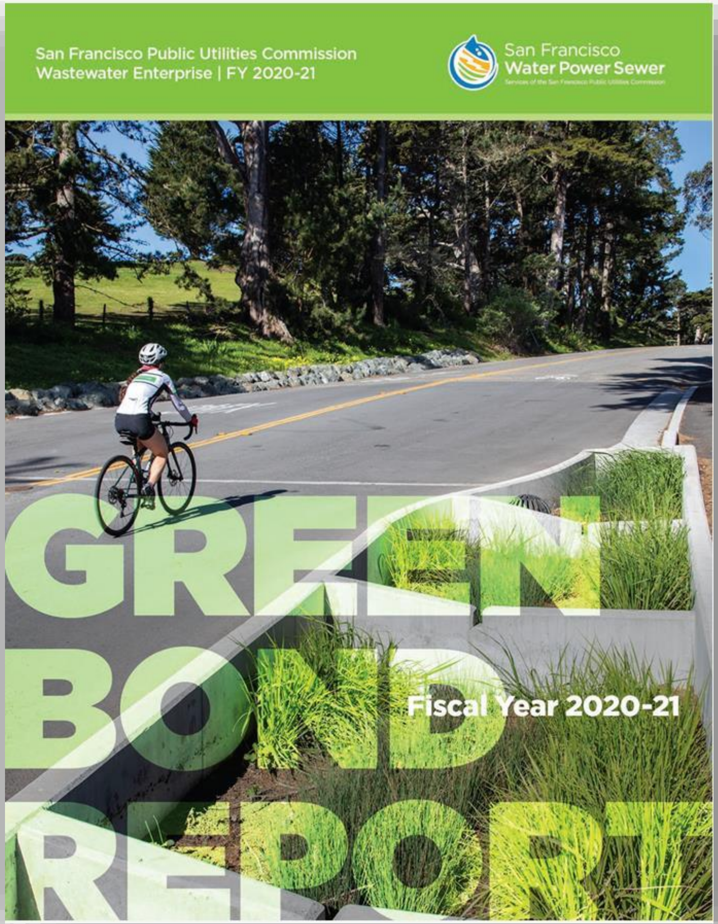
SFPUC Wastewater
CBI Green Bond Certification

Sewer System Improvement Program (SSIP) Programmatic Certification with Climate Bonds Initiative

- The Climate Bonds Initiative (CBI) is an international, investor-focused non-profit organization, that the capital market considers the highest standard for green bond certification.

- The SFPUC received programmatic certification from CBI
  - Develop ICMA Green Bond Principles
  - Meet the Water Infrastructure Criteria under the Climate Bonds Standard
    - Mitigation Component (related to GHG emissions)
    - Adaptation & Resilience Component (Resilience to Climate Change)
  - Receive third-party verification by a CBI approved verifier (Sustainalytics)
    - The SFPUC also received a Second Party Opinion (SPO) from Sustainalytics

Reporting: Green Bond Reports



Green Bond Reports Contents

- **Introduction**
- **Enterprise Green Bond Impact Report**
  - Green Bond Proceeds
  - Project Environmental Impacts Aligned with United Nations Sustainable Development Goals (UN SDGs)
  - Case Study
- **Appendix:**
  - State, City, and SFPUC Regulations, Policies and Programs
  - SFPUC Green Bond Program
  - SFPUC Climate and Social Inclusion Impacts Aligned to the UN SDGs
  - Green Bond Verification Report (provided by third party verifier Sustainalytics)

Reevaluating Pros and Cons

Benefits	Challenges
• Articulate the values of our organization • Expand investor base • Potential interest rate benefits • Aligns infrastructure development to climate challenges • Demonstrates commitment to environmental initiatives • Earmark funds for climate projects • Ease of explaining climate initiatives to constituents • Fostering growth of the green bond market	• Regulatory responsibility • Cost (time and money) • Measuring of new metrics • Cheerleading vs. Reporting • Need to embrace new processes • Aligning reporting • Assuring green commitments are maintained • Shifting politics/Green backlash • Lack of central reporting • Aspirational: Shifting from actions taken, to impact of actions taken

Leadership in Green Bonds

Top 10 Green Bond Issuers In U.S. Public Finance 2013-2022

Issuer	Par (Mil. $)	% Green
New York MTA	12,476	13
Indiana Finance Authority	3,443	4
San Francisco Public Utilities	3,243	3
California Community Choice Financing Authority	2,768	3
San Francisco Bay Area Rapid Transit District	2,694	3
Massachusetts Water Resources Authority	2,400	3
Los Angeles County Metropolitan Transportation Authority	2,246	2
Central Puget Sound Transit Authority	2,212	2
Greater Orlando Aviation Authority	2,011	2
Power Authority of the State of New York	1,843	2
Top 10	**35,337**	**38**

*Public transport consists of mass transit and rail financings. Issuance by airports (i.e., financing terminal projects) largely resides within green buildings. Source: S&P Global Ratings

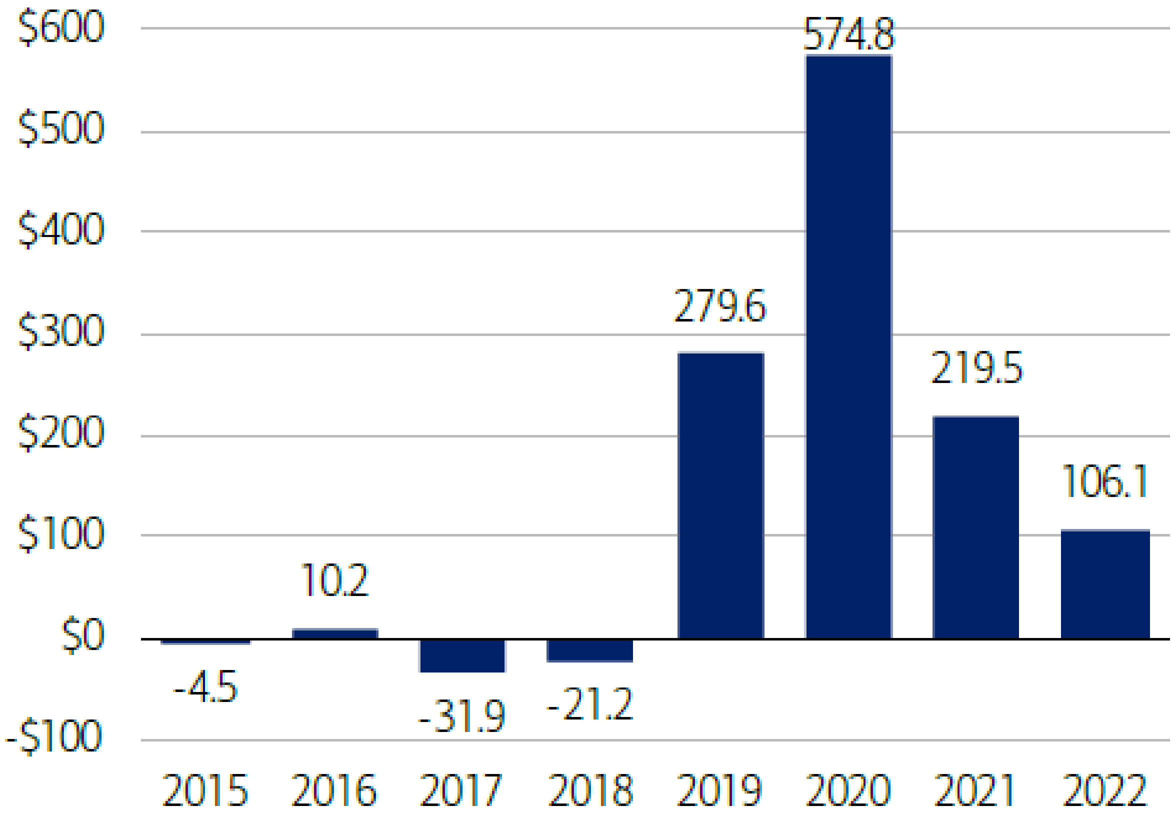
S&P Global

Why Consider Issuance of Labeled Debt?

David Blair, CFA
Managing Director, Portfolio Manager
Nuveen

Annual Municipal ESG Fund Flows ($mm)

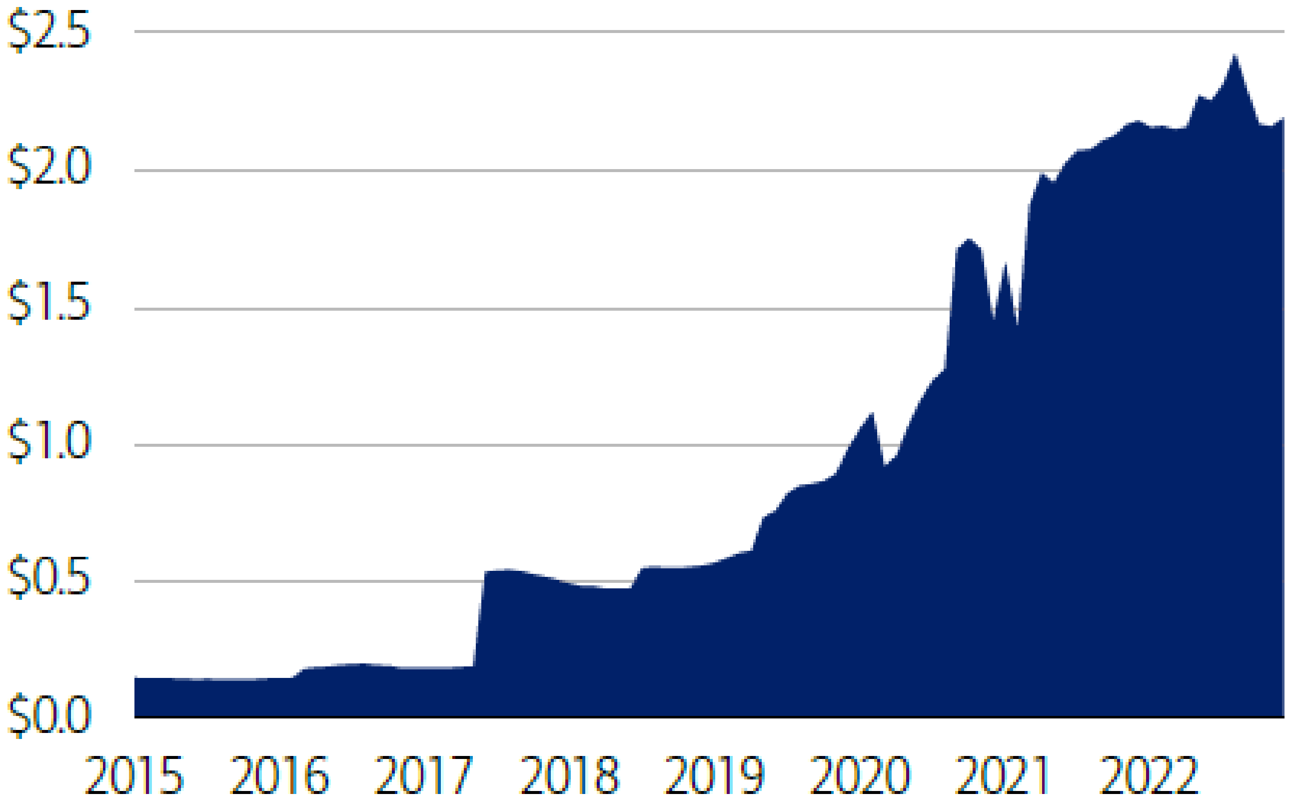
- Muni ESG flows remained positive in 2022 as non-ESG muni funds had heavy outflows



Source: EPFR Global. Includes funds that report daily, weekly and monthly. As of 31 Dec 2022.
BofA GLOBAL RESEARCH

Municipal ESG Fund AUM ($bn)

- While still a small part of municipal market, ESG funds have rapidly gathered assets

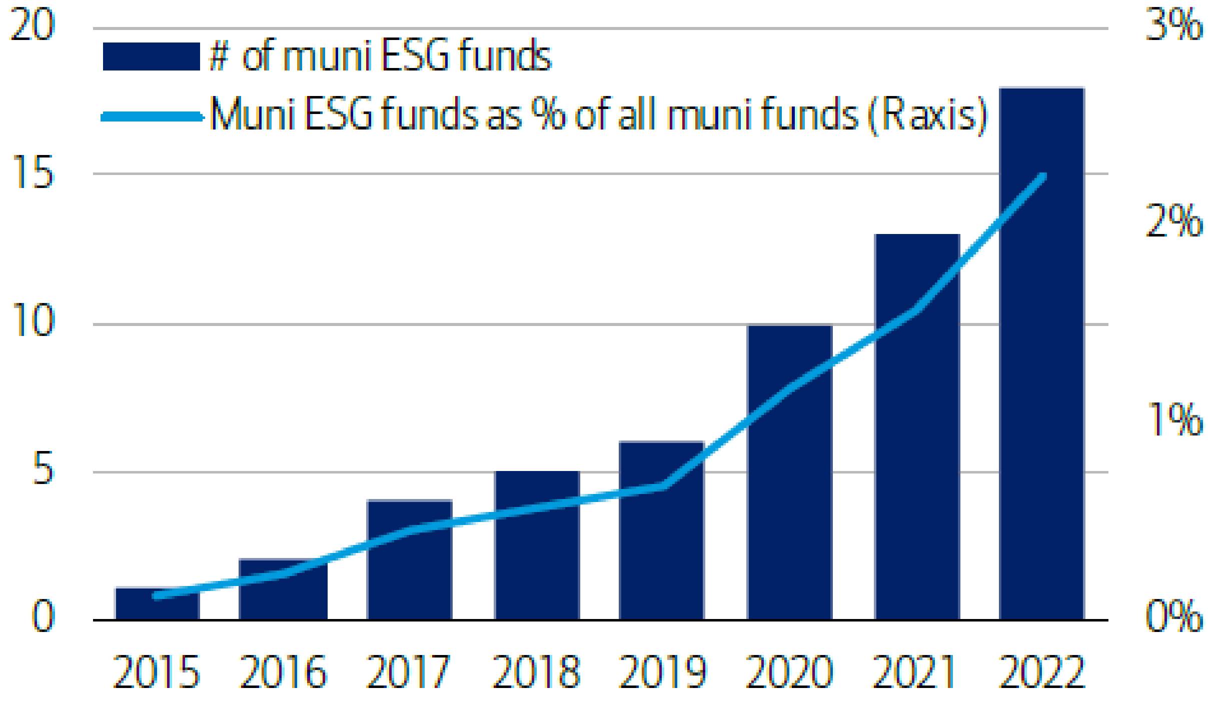


Source: EPFR Global. Includes funds that report daily, weekly and monthly. As of 31 Dec 2022.

BofA GLOBAL RESEARCH

Growing Number of Muni ESG Bond Funds

- More funds have been launched in recent years, even in 2022

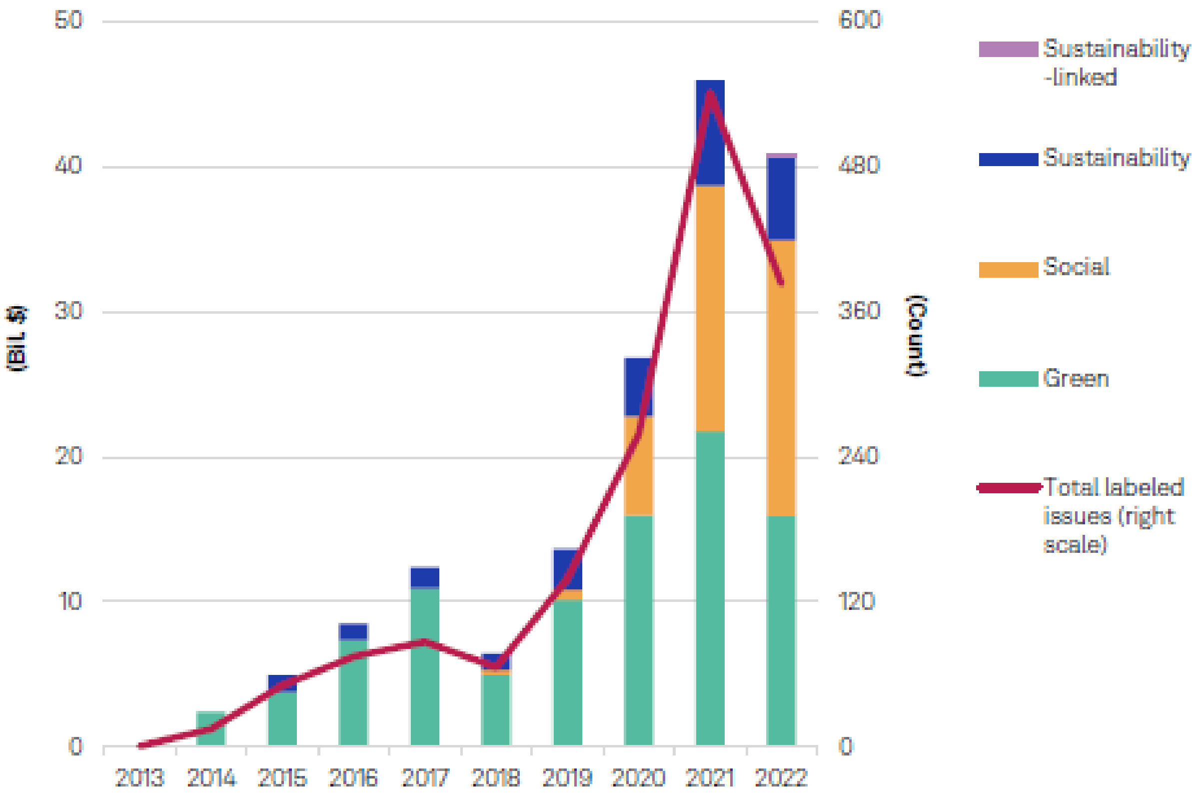


Source: EPFR Global. Includes funds that report daily, weekly and monthly. As of 31 Dec 2022.

BofA GLOBAL RESEARCH

Explosive Growth in Labeled Debt Issuance in Last Few Years

- Social Bonds issuance was roughly equal to Green Bonds in 2022



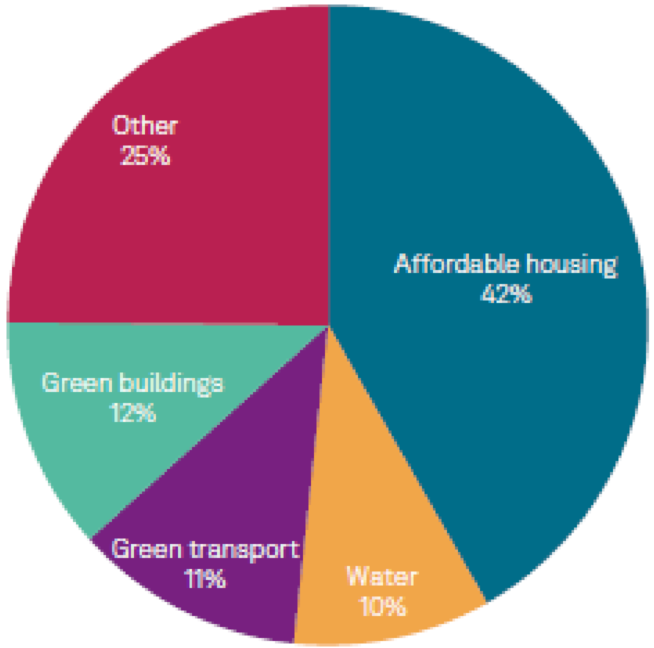
Source: S&P Global Ratings

Which sectors accounted for most of the labeled debt issuance in 2022? Rank from highest to lowest.

Affordable Housing
Green Buildings
Green Transport
Water

Labeled Debt Issuance by Sector in 2022

- Affordable housing dominates issuance but diversity of sectors overall



Other includes green energy, green manufacturing, land conservation, mixed, waste, education, and socioeconomic advancement and development. Source: S&P Global Ratings.

What does an issuer communicate to stakeholders through issuance of labeled debt?

Monica Reid
CEO/Founder
Kestrel

Self-Labeled vs External Review

- Self-Labeled Debt can communicate:
  - *Possible* Impact
    - By signaling to the market the presence of bond-financed projects that *likely* have positive environmental and/or social impacts

- Labeled Debt with an External Review can communicate:
  - Impact
    - By informing the market of environmental and social benefits of bond financed projects that have material impacts
  - Integrity
    - By communicating the alignment of bond-financed activities with internationally recognized ESG standards, including the ICMA Green/Social Bond Principles and the Climate Bond Standard
    - By using third party verification
  - Transparency
    - Through distillation of complex (and possibly elusive) project details into accessible content for the market
  - Leadership
    - By informing the market of best practices that support a just transition to a low carbon economy

Typical G/S/S Reporting Schemes

- What is basic?
  - **Continuing Disclosures:** posted to EMMA or elsewhere
  - **Bond Proceeds Reporting**: a post-issuance update report on percent of proceeds allocated to projects
  - *Frequency*: once
- What is best practice?
  - **Project Update Reporting**: post-issuance reports with construction status and project updates until the project is complete or proceeds fully spent
  - **Impact Reporting:** post-issuance report(s) with quantitative impact metrics (such as GHG emissions avoided) and qualitative outcomes (such as community response)
  - *Frequency*: annually until project is complete or until bond maturity

How is Labeled Debt Issued and What are key decision points?

Eric McKean, CFA
Managing Director
Ramirez & Co., Inc.

Steps for Issuing Labeled Debt

Approach #1	Alternative Approach
1. Identify Projects to be Financed	
2. Establish Labeled Debt Framework	2. Use of Proceeds Review by External Party
3. Designate Bonds as Green, Social or Sustainable	
4. Include G/S/S Bond Disclosure & Sell Labeled Debt	
5. Monitor Use of Proceeds and Report Annually	

What are Differences from Unlabeled Debt?

- Evaluation of projects required for alignment with Green Bond Principles and/or Social Bond Principles
- Additional consultant(s), if externally reviewed
- Additional disclosure
  - Disclosure section speaks to the specific label
  - Project description typically highlights environmental/social attributes
  - External Review" report incorporated into offering document, if externally reviewed
- Annual reporting update on use of proceeds
  - Typically done through continuing disclosure report filed on EMMA
  - Reporting requirement usually ends once all proceeds are spent

Case Study: Successful Outcomes for Less Frequent Issuers

CONNECTICUT GREEN BANK

Climate Bond Certified

kestrel

- Security: SHREC Securitization
- Par: $24,834,000
- Project: Solar Panel Incentive Program
- Label Process: Climate Bond Certified
- S&P Rating: A
- Highlights: Marketed as Green Liberty Bonds; extensive local outreach led to almost all retail investor distribution

City of LEMOORE CALIFORNIA

BAM GREENSTAR

- Security: Water Revenue Bond
- Par: $27,380,000
- Project: Water Treatment Facility
- Label Process: BAM Green Star
- S&P Rating: A+ / AA Insured
- Highlights: No additional cost to BAM (bond insurer) label; anchor order from large ESG bond fund

Case Study: Successful Outcomes for Large, Frequent Issuers

- Security: CFD 2014-1 Special Tax Bonds
- Par: $496,055,000 (7 series)
- Project: Transbay Transit Center facilities
- Label Process: Climate Bond Certified
- Fitch Rating: AA+
- Highlights: Programmatic Certification

- Security: Airport Revenue Bonds
- Par: $330,000,000* [pricing March 27th]
- Project: Terminal improvements
- Label Process: Kestrel External Review*
- S&P Rating: AA*
- Highlights: 4th Green Bond in last year; first refunding issue as Green Bond

* Preliminary, subject to change

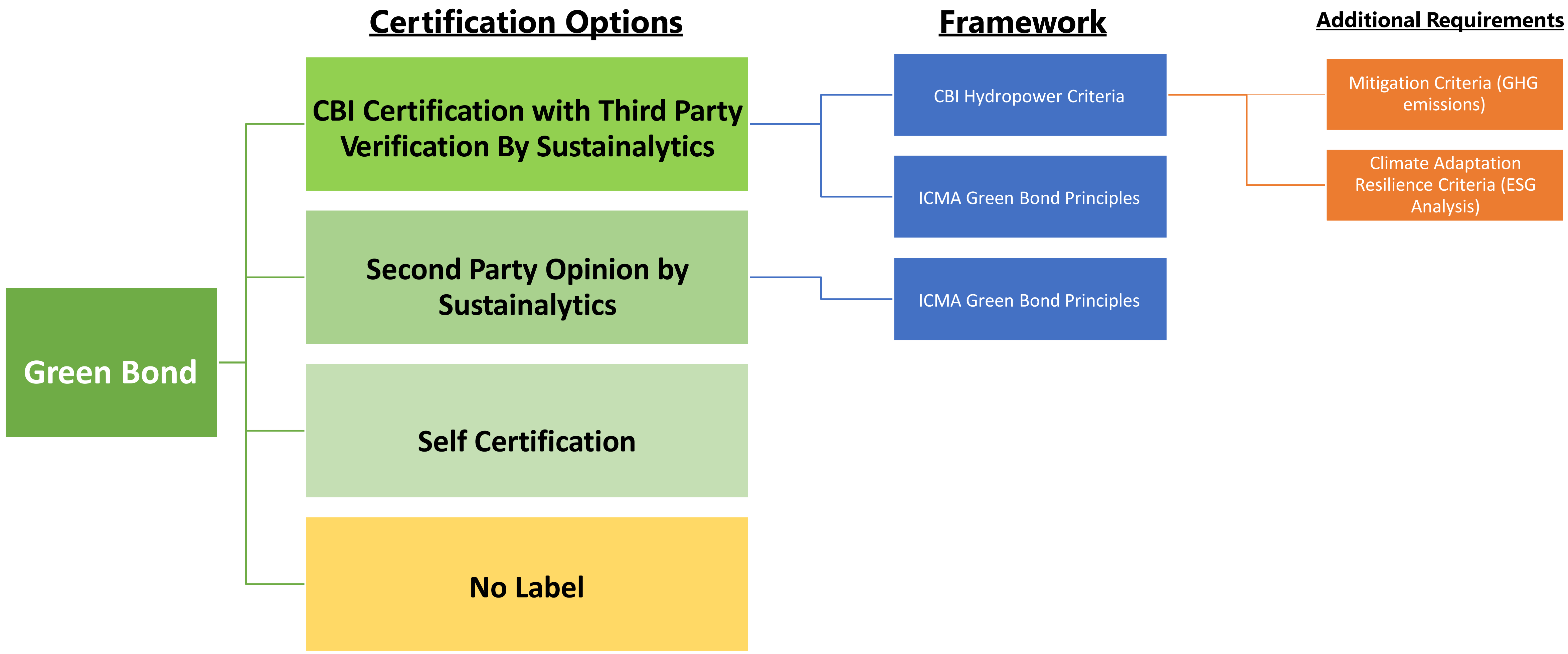
Investor Feedback

- Detailed description of Green/Social Projects in Official Statement
  - Description and/or data on why projects are labeled “Green” or “Social”
    - Body of Official Statement or in third party External Report
    - Critical for “Impact Investors”
- Taxable municipal bond investors have expressed preference for third party External Reports
  - Mixed feedback from tax-exempt investors
- Ongoing disclosure is expected
  - Issuer provides ongoing, project-level, disclosure to investors until all proceeds are spent to ensure that monies were spent appropriately – core tenant of ICMA principles

Short Case Study: SFPUC Power Bonds

Nikolai J. Sklaroff, *Capital Finance Director*
San Francisco Public Utilities Commission

Power Bond Certification

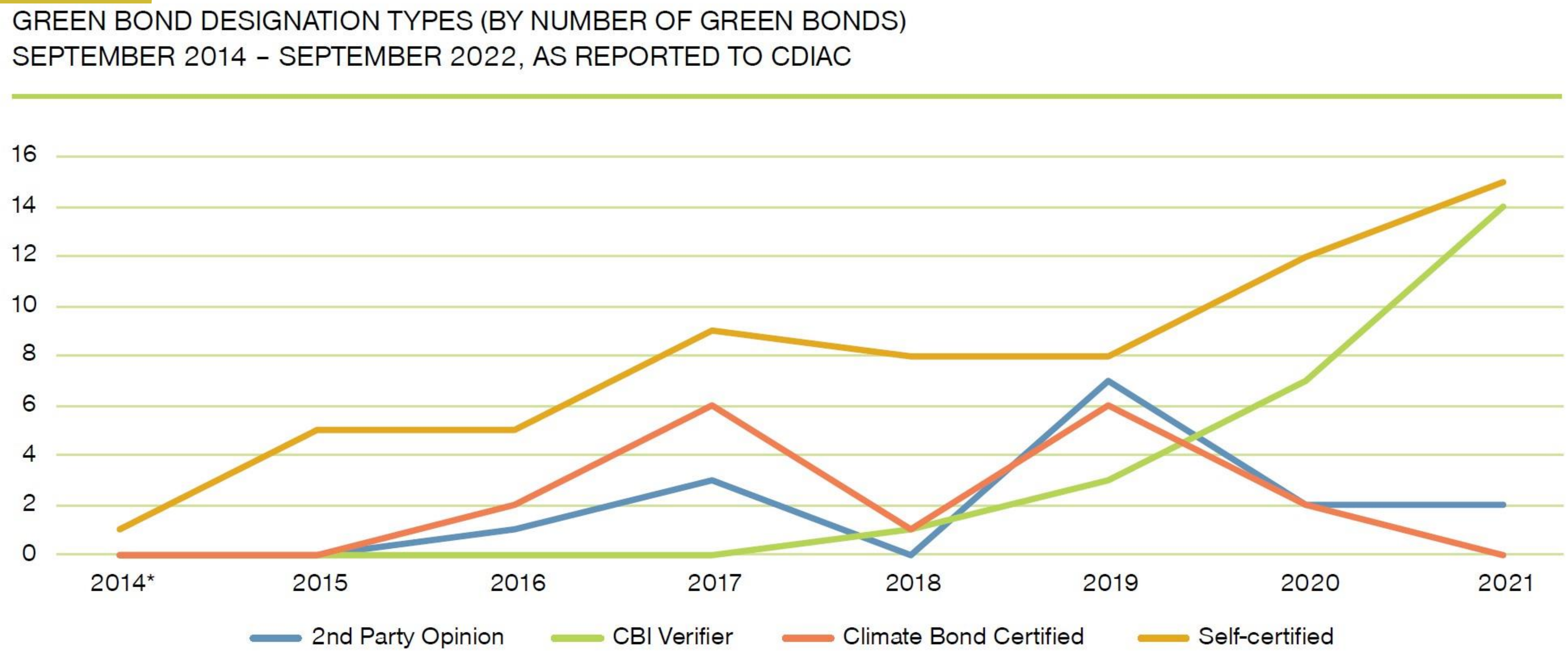


Second Party Opinion (SPO) vs. Climate Bond Certification

	The International Capital Market Association (ICMA)	Climate Bonds Initiative (CBI)
Standards and Definitions	Green Bond Principles: Proceeds will finance or refinance, in part or in full, new and/or existing eligible Green Projects	Proceeds will finance projects that contribute to a low carbon and climate resilient economy, consistent with the 2 degrees Celsius warming limit established in the Paris Agreement.
Core Components	1.Use of Proceeds 2.Process for Project Evaluation and Selection 3. Management of Proceeds 4. Reporting	In addition to meeting the ICMA core components, projects and assets will conform with the overarching Climate Bonds Standard and detailed, science-based eligibility criteria for relevant sectors.
External Review	Recommended by the ICMA	Approved "3rd Party Verifier" Required
Title of Report	"Second Party Opinion (SPO)"	"Verifier's Report"
Post-Issuance Reporting	Expected annually until full allocation of proceeds	Required – Verifier must submit within 24 months of sale

Source: *Kestrel Verifier's FAQs*

Green Bond Designation Types (By Number of Green Bonds)



*Period in 2014 includes September 1 through December 31, 2014

**Period in 2021 includes January 1 through September 30, 2022

Source: CDIAC Debt Line Vol.41, No.12, December 2022

Certification Type Benefits and Challenges

Type of Certification	Benefits	Challenges
CBI Certification with Third Party Verification by Sustainalytics	Highest standard for green bond certification	Additional requirements to meet CBI criteria can be time-intensive and costly
Second Party Opinion by Sustainalytics	Aligns with ICMA recommended Green Bond Principles	Requires development of green bond framework and third party verification
Self Certification	No additional cost	Speculation of “greenwashing”