



Green Bond Framework

April 22, 2020

An illustration of a diverse group of people participating in a climate protest. They are holding signs with messages such as "Save for the Planet", "There is no PLANET B", and "FIERCE URGENCY OF NOW!". One person is holding a globe. The background shows a lighthouse on a rocky shore with water in the foreground.

**GREEN LIBERTY
BONDS**



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1. Overview

The Green Bond Framework (“Framework”) sets out how the Connecticut Green Bank (“Green Bank”) proposes to use its Master Trust Indenture (“MTI”) in a manner consistent with its purpose and provide the transparency and disclosures investors require to make investment decisions through green bonds. This Framework is specifically intended for the MTI approved and adopted April 22, 2020, which establishes the purposes for which the Green Bank may issue green bonds or other public debt.

In order to be more efficient with green bond certification, the Green Bank proposes to use a programmatic structure versus an individual certification process – see Figure 1 and 2.¹

Figure 1. Programmatic Green Bond Certification Process

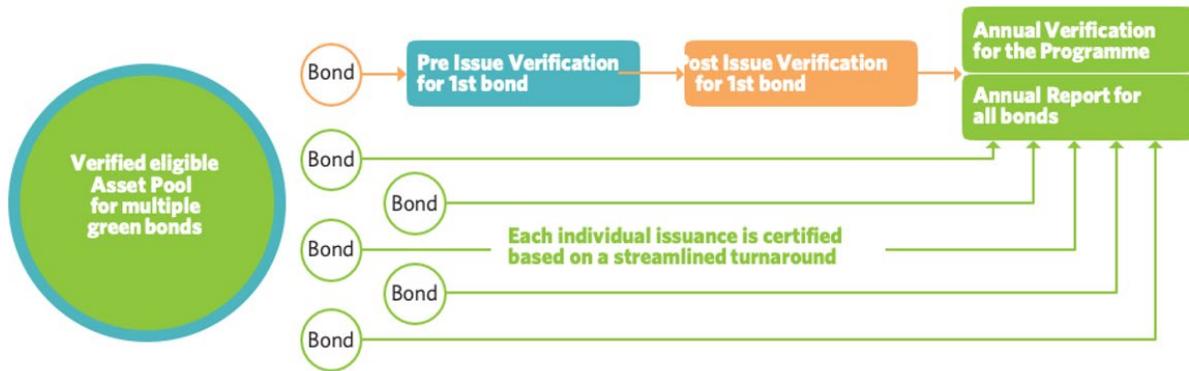


Figure 2. Basic Certification Process for Individual Green Bond Issuances



There are a number of public entities that have used a programmatic approach to green bond certification – see Appendix A.

Since the mission of the Green Bank is consistent with the principles of investing in solutions to climate change and sustainability, each issuance of green bonds by the Green Bank would be programmatically certified based on a streamlined turnaround, which would require annual verification for the programs as well as an annual report for all of the green bonds issued.

The Framework is established in accordance with the Climate Bonds Initiative (CBI) Standard and adheres to the Green Bond Principles issued by the International Capital Market Association.

¹ Green Bond certification routes as noted by the Climate Bonds Initiative

2. Introduction

The Green Bank was established by the Governor and Connecticut's General Assembly on July 1, 2011 through Public Act 11-80 as a quasi-public agency that supersedes the former Connecticut Clean Energy Fund². As the nation's first state green bank, the Connecticut Green Bank leverages public and private funds to drive investment and scale-up clean energy³ deployment in Connecticut.

The Green Bank supports the Governor's and Legislature's energy strategy to achieve cleaner, affordable, and more reliable sources of energy while creating jobs and supporting local economic development. The Green Bank aims to create a thriving marketplace to accelerate green energy adoption in Connecticut by making green energy financing accessible and affordable for homeowners, businesses and institutions.

The Green Bank has become a model for other states, counties, cities, and even countries—that are seeking to use public resources in a smarter way to attract more private capital investment in the acceleration and deployment of clean energy. From its inception in 2011, the Green Bank has mobilized over \$1.7 billion of public and private capital in clean energy deployment in Connecticut⁴.

The Green Bank's programs and investments have a significant impact for the state of Connecticut and society as a whole. The Green Bank has established an [Evaluation Framework](#) to assess performance and impacts. Within the Evaluation Framework, there is an objective to provide an assessment, monitoring and reporting mechanism to support the issuance of green bonds that provide increased capitalization to the Green Bank for clean energy investment. This Evaluation Framework has been reviewed by the organization's Audit, Compliance, and Governance Committee and approved by the Board of Directors.

Associated with the Evaluation Framework are specific [supporting impact methodologies](#) that define how the organization will quantify its impact in specific areas. Each methodology has been developed with guidance from experts in the relevant fields and officials from Connecticut state government. Methodologies are reviewed by the Green Bank Audit, Compliance, and Governance Committee and are approved by the Board of Directors.

At present the Green Bank has the following methodologies approved or under development that reasonably estimate the environmental and social impact resulting from investment in and deployment of clean energy supported by the Green Bank:

- **Environmental (Air Quality) Impact** – assessed by the Connecticut Department of Energy and Environmental Protection (“DEEP”), the Green Bank uses the US Environmental Protection Agency (“EPA”)’s Avoided Emissions and Generation Tool (AVERT), which is a model that estimates the changes in air quality associated with clean energy projects in terms of Carbon Dioxide, Sulfur Dioxide, Nitrogen Oxides and Particulate Matter. The Green Bank also has adopted the EPA’s environmental equivalency calculator as a way to make these impacts more relatable.

² Public Act 11-80 repurposed the Connecticut Clean Energy Fund (CCEF) administered by Connecticut Innovations, into a separate quasi-public organization called the Clean Energy Finance and Investment Authority (CEFIA). Per Public Act 14-94, CEFIA was renamed to the Connecticut Green Bank.

³ Clean energy is defined in CGS 16-245n.

⁴ [Green Bank Comprehensive Annual Financial Report 2019](#)

- **Health Impact** – assessed by the Connecticut Department of Public Health (“DPH”) and DEEP, the Green Bank uses the EPA’s CoBenefit Risk Assessment (CoBRA) model that estimates the economic value of improved health outcomes associated with improved air quality resulting from clean energy deployment.
- **Jobs Created** – assessed by the Connecticut Department of Economic and Community Development (“DECD”), working with Navigant Consulting, the Green Bank uses a model that estimates the number of direct, indirect, and induced job-years created per \$1 million dollars of investment in each clean energy technology supported by the Green Bank.
- **Tax Revenue Generated** – assessed by the Connecticut Department of Revenue Services (“DRS”), working with Navigant Consulting, the Green Bank uses a model that estimates tax revenue generated for the State of Connecticut from sales, personal, and corporate income taxes associated with Green Bank supported projects.
- **Community Reinvestment Act Compliance (under development)** – being assessed by the Connecticut Department of Banking (“DoB”), the Green Bank expects to implement a methodology that qualifies its public-private partnership investments in clean energy projects that are eligible towards Community Reinvestment Act (“CRA”) requirements for investments in underserved communities (e.g., low-to-moderate income families, small businesses, etc.).
- **Equity (under development)** – being assessed by the Connecticut Commission on Human Rights and Opportunities (“CHRO”), the Green Bank expects to implement a methodology that evaluates the reach of the Green Bank’s programs in underserved communities (e.g., low-to-moderate income families, communities of color, etc.).
- **Energy Burden (under development)** – the Green Bank expects to implement a methodology that estimates the economic relief from energy expenses that is provided to families and businesses that reduce the burden of energy costs, including the affordability gap, by investing in and deploying clean energy.

The Green Bank’s efforts to increase investment in and deployment of clean energy projects – which result in increased benefits to Connecticut and all of society – can also be looked at through the lens of the United Nation’s Sustainable Development Goals (“UNSDG”)⁵ – see Figure 3.

⁵ Green Bank Comprehensive Plan – Green Bonds US

Figure 3. Green Bank Impact Metrics from the Perspective of the UNSDG



Progress against these goals also advances society towards the vision of the Connecticut Green Bank – “...a world empowered by the renewable energy of community.”

In honor of the 50th anniversary of Earth Day in the United States, the Green Bank is creating the Green Liberty Bond.⁶ The Green Liberty Bond is a specific class of green bond with the following characteristics:

1. **Confront Climate Change** – proceeds raised from the issuance of green bonds go towards confronting climate change by acknowledging the need to increase capital flows for mitigation and adaptation projects as recognized by the Paris Agreement;
2. **Democratize Public Finance** – denominations for green bonds are to be no more than \$1,000 in order to attract individual retail investors, who can invest alongside institutional investors in confronting climate change through the purchase of green bonds; and
3. **Third-Party Certification** – the green bonds are independently certified by a third-party as a form of consumer protection for individual retail investors seeking to confront climate change through their green bond investments.

The Green Bond Framework provides a structure in which the Green Bank can more efficiently and effectively support its efforts to raise capital and deploy more clean energy through the issuance of green bonds.

⁶ <https://cleanenergyfinanceforum.com/2020/02/18/connecticut-green-banks-green-liberty-bonds-aim-at-retail-climate-finance>

3. Goals of the Green Bond Issuance

Connecticut has been at the forefront of state-level efforts to combat the threat of global climate change. Created as the successor to the Connecticut Clean Energy Fund, the Green Bank has increased annual investment on a per capita basis by a factor of 10 – from \$8 in 2011 (i.e., \$30 million) to \$80 in 2019 (i.e., \$300 million) –and is now a recognized leader in Green Finance.

Now the Green Bank is prepared to increase annual clean energy investment by another factor of 10—to \$800 per person—which is the level needed to hold off the worst effects of climate change as identified by the United Nations.⁷

Working to advance its mission to “confront climate change and provide all of society a healthier and more prosperous future by increasing and accelerating the flow of private capital into markets that energize the green economy,” the Green Bank will continue its work through the following goals:

- Leverage limited public resources to scale-up and mobilize private capital investment in the green economy of Connecticut;
- Strengthen Connecticut’s communities by making the benefits of the green economy inclusive and accessible to all individuals, families, and businesses; and
- Pursue investment strategies that advance market transformation in green investing while supporting the organization’s pursuit of financial sustainability.

These support implementation of Connecticut’s clean energy policies be they statutory (e.g., CGS 16-245ff), planning (i.e., Comprehensive Energy Strategy, Integrated Resources Plan), or regulatory (e.g., Docket No. 17-12-03) in nature.

This is also in line with the Green Bank’s enabling statute⁸ which empowers the organization to:

- Develop programs to finance and otherwise support clean energy investment in residential, municipal, small business and larger commercial projects and such other programs as the Green Bank may determine;
- Support financing or other expenditures that promote investment in clean energy sources to foster the growth, development and commercialization of clean energy sources and related enterprises; and
- Stimulate demand for clean energy and the deployment of clean energy sources within the state that serves end-use customers in the state.

In order to increase investment by the necessary factor of 10, the Green Bank will use its statutory authority (i.e., CGS 16-245kk) to issue bonds, including Green Bonds. These are key to sourcing capital for clean energy projects and providing a way for all residents, businesses, and institutions of Connecticut to invest in growing our green economy.

⁷ ["Financing Sustainable Development: Moving from Momentum to Transformation in a time of Turmoil" by the UNEP \(September 2016\).](#)

⁸ CGS 16-245n

4. Green Bond Framework

The Framework is established in accordance with the Climate Bonds Initiative (CBI) Standard and adheres to the Green Bond Principles issued by the International Capital Market Association. Both the CBI Standard and the Green Bond Principles focus on these four pillars: Use of Proceeds, Process for Project Evaluation and Selection, Management of Proceeds, and Reporting.

4.1 Use of Proceeds

4.1.1 Eligibility Criteria

By statute, the Green Bank may invest in projects and programs that further the deployment of generation of clean energy.⁹ The Green Bank recognizes that there are different standards for green bond verification and will use the following criteria to evaluate eligibility for green bond designations.

The Green Bank will always seek to apply the CBI standards to its bonds and will use the Green Bond Principles where either CBI methodology has yet to be developed or does not cover that particular activity. The Green Bank staff actively monitor developments of new CBI standards and Green Bond principles in order to keep up to date with which standard should be applied.

Based on the existing mission of the Green Bank and the standards available at this time, the Green Bank will use the following methodology for the below activities – see Table 1:

Table 1. Primary Methodology for Green Certification Given Activity and Technology

Activity	Technology	Primary Methodology for Green Certification
Generation	Solar	CBI Standard
	Wind	CBI Standard
	Geothermal Generation	CBI Standard
	Biomass Facilities	Green Bond Principles
	Hydropower	Green Bond Principles
	Landfill Gas Capture	Green Bond Principles
	Anaerobic Digestors	Green Bond Principles
	Wave or Tidal Power	Green Bond Principles
	Ocean Thermal Power	Green Bond Principles
Energy Efficiency	New Buildings	CBI Standard
	Commercial Building Upgrades	CBI Standard
	Commercial Building Retrofits	CBI Standard
	Residential Retrofits	Green Bond Principles
Alternative Fueled Vehicles	Electric and Hydrogen Vehicles	CBI Standard
	Alternative Fuel and Charging Infrastructure	CBI Standard
	Other Alternative Fueled Vehicles	Green Bond Principles

⁹ CGS 16-245n

If the Green Bank can not apply the CBI Standard for any reason to an issuance, it will seek to apply the Green Bond Principles as the method of certifying that issuance as “Green.” The Green Bank also reserves the right to apply additional certifications to its issuances (e.g., social bonds, sustainability bonds, etc.).

This list of project types is fully aligned with the Green Bank’s stated vision, mission, and goals as outlined in its Comprehensive Plan – Green Bonds US. The Green Bank will finance projects that align with the Comprehensive Plan and those that align with the statutory definition of clean energy (see Appendix B).

4.1.2 Process for Project Evaluation and Selection Process

The Green Bank plans to finance existing programs with green bonds including Certified Climate Bonds. The Green Bank’s programs are centered around the deployment of clean energy offered to homeowners, businesses, and institutions through its contractor and capital provider partners. These programs are implemented through a variety of structures shown in Appendix C.

The Green Bank utilizes a robust and transparent planning process that identifies market needs and tailors programming to address those needs. Per the organization’s bylaws, the Green Bank programs are reviewed and approved by the organization’s Deployment Committee and approved by its Board of Directors. Each year, staff of the Green Bank recommend program targets that are reviewed by the Budget and Operations Committee and approved by the Board of Directors. While the Board has authorized staff to approve investments up to a certain threshold (i.e., up to \$500,000 per transaction, but no more in aggregate than \$1,000,000 in between Deployment Committee meetings) for projects that are within specific approved programs and budget, the Deployment Committee (i.e., transactions between \$500,000 to \$2,500,000) or the Board of Directors (i.e., beyond the Deployment Committee, transactions greater than \$500,000) reviews and approves projects and programs. In this way, the Board of Directors ultimately approves all projects that are not part of a program or are above staff or Deployment Committee thresholds. All green bond issuances must be approved by the Board of Directors.

4.1.3 Management of Proceeds

Proceeds from green bonds issued under the MTI or a separate financing indenture, will be earmarked for the Green Bank’s investments into the eligible project types listed. Funds will be either deployed after issuance or refinance Green Bank balance sheet capital that was previously used to finance eligible project types, in order to achieve a timely green impact. The Green Bank will maintain a set of internal procedures for the management of proceeds to ensure that proceeds from various green bond issuances can only be used for green projects, as described in the MTI. Ensuring that the proceeds from a green bond issuance are used according to established procedures will be the responsibility of the Operation’s Department of the Green Bank.

The green bond proceeds will be held in the appropriate fund within the respective indenture structure and used exclusively to fund Green Bank eligible programs and projects or refinance eligible green projects, funded by other means. Green bond proceeds may also be used to pay the cost of issuance and underwriter’s fees, as well as other administrative costs for such programs and projects. These costs will be specifically delineated in closing documents within the respective financing indentures.

4.2 Reporting

4.2.1 Allocation Reporting

New Projects:

Connecticut Green Bank will produce a voluntary annual report within its Comprehensive Annual Financial Report, detailing how the green bond proceeds were used to finance existing programs that meet the eligibility criteria of this framework. When necessary, an Approved Verifier will produce an annual program report meeting the Climate Bonds Standard and covering third party verification of program allocations and impacts.

Refunded Projects:

In the future, green bond proceeds may be used to refund prior debt financing of eligible projects. The Comprehensive Annual Financial Report following such future issuance will include the relevant details of the selected projects that were financed by the initial issuance.

4.2.2 Impact Reporting

The Green Bank presents impact data from both these tools in a Comprehensive Annual Financial Report which is produced at the end of each Fiscal Year. Furthermore, the Green Bank commits to provide reporting on specific key performance indicators (KPIs), which are shown in Appendix D.

4.3 Assurance

The Green Bank will seek a Second Party Opinion on the MTI Green Bond Framework from a Climate Bonds Initiative Approved Verifier. The Green Banks plans to follow a programmatic approach to green bond issuance following this Green Bond Framework.

A programmatic approach allows the Green Bank to issue green bonds based off of the Framework Second Party Opinion – see Appendix E. Furthermore, for Certified Climate Bonds, the Green Bank may issue certified bonds without pre-issuance verifier engagement for issuances that align with the Eligibility Criteria. This streamlined process will allow the Green Bank to issue a higher volume of bonds while consolidating Post-Issuance Reports into its single Comprehensive Annual Financial Report as required by the Climate Bonds Initiative.

5. Appendix A – Organizations Using a Programmatic Approach to Green Bond Certification

The following organizations are using a programmatic approach to green bond certification – see Table 2.

Table 2. Climate Bonds initiative Programmatic Issuers

Issuer	Sector	Country	\$MM USD Equivalent	Number of Issues
Investa	Buildings	Australia	Confidential	-
National Australia Bank (NAB)	Multiple Sectors	Australia	2,010	4
Queensland Treasury Corp	Multiple Sectors	Australia	1,464	2
TCorp (New South Wales)	Multiple Sectors	Australia	1,300	1
Westpac	Multiple Sectors	Australia	1,090	4
Commonwealth Bank of Australia	Multiple Sectors	Australia	492	1
Société du Grand Paris (SGP)	Transport	France	8,398	9
SNCF Réseau	Transport	France	6,301	7
Landesbank Baden Württemberg (LBBW)	Buildings	Germany	1,465	2
Volkswagen Immobilien	Buildings	Germany	193	2
Japan Railway Construction (JRTT)	Transport	Japan	1,393	4
Contact Energy Ltd.	Geothermal	New Zealand	1,475	multiple
DNB Boligkreditt AS	Buildings	Norway	2,844	2
PKO Bank Hipoteczny	Buildings	Poland	130	2
Russia Railways	Transport	Russia	585	1
NY Housing Finance Agency (HFA)	Buildings	US	1,663	17
NY Metropolitan Transport Authority (MTA)	Transport	US	7,888	13
Bay Area Rapid Transit (BART)	Transport	US	1,213	5
City and County of San Francisco	Transport	US	328	2
SF Public Utilities Commission (SFPUC)	Water	US	2,035	6

6. Appendix B – Connecticut Green Bank Statutory Definition of “Clean Energy”

Per CGS 16-245n, the definition of “clean energy” is solar photovoltaic energy, solar thermal, geothermal energy, wind, ocean thermal energy, wave or tidal energy, fuel cells, landfill gas, hydropower that meets the low-impact standards of the Low-Impact Hydropower Institute, hydrogen production and hydrogen conversion technologies, low emission advanced biomass conversion technologies, alternative fuels, used for electricity generation including ethanol, biodiesel or other fuel produced in Connecticut and derived from agricultural

produce, food waste or waste vegetable oil, provided the Commissioner of Energy and Environmental Protection determines that such fuels provide net reductions in greenhouse gas emissions and fossil fuel consumption, usable electricity from combined heat and power systems with waste heat recovery systems, thermal storage systems, other energy resources and emerging technologies which have significant potential for commercialization and which do not involve the combustion of coal, petroleum or petroleum products, municipal solid waste or nuclear fission, financing of energy efficiency projects, projects that seek to deploy electric, electric hybrid, natural gas or alternative fuel vehicles and associated infrastructure, any related storage, distribution, manufacturing technologies or facilities and any Class I renewable energy source, as defined in section 16-1.

7. Appendix C – Existing Programs

The following is a listing and brief description of the Green Bank programs – see Table 3.

Table 3. Existing Green Bank Programs

Program	Program Description
Commercial Property Assessed Clean Energy (“C-PACE”)	An innovative financing program that lets commercial and industrial property owners pay for clean energy improvements over time through a voluntary benefit assessment on their property tax bill.
Multifamily Energy Financing Programs	<p>A number of programs are offered by the Green Bank to help developers and owners of multifamily housing.</p> <ul style="list-style-type: none"> ▪ Navigator Pre-Development Energy Loan funds 75% of eligible energy-related pre-development expenses ▪ Low Income Multifamily Energy (LIME) Loan funds energy improvement projects for low- and moderate-income properties. ▪ Solar power purchase agreement (PPA) allows residents to deploy solar PV systems with no money down through a third-party owned and maintained system. ▪ EnergizeCT Health & Safety Revolving Loan Fund provides low interest loans that allow owners of multifamily housing serving low income residents to make health and safety improvements
PosiGen Solar + Energy Efficiency	An innovative financing approach that offers low-to-moderate income single-family homeowners a solar lease that also combines money-saving energy efficiency measures. The program takes away the concern of being turned down based on credit profile, making solar more affordable for all.
Residential Solar Investment Program (“RSIP”) and Solar Home Renewable Energy Credit (“SHREC”)	<p>An Incentive program for single-family homeowners that deploy solar PV systems on their property. RSIP offers two incentives:</p> <ul style="list-style-type: none"> ▪ Expected Performance-Based Buydown incentive (EPPB): an upfront rebate available to homeowners who purchase a PV system from contractor.

	<ul style="list-style-type: none"> Performance-Based Incentive (PBI): a performance-based incentive paid out quarterly over a 6-year period that allows homeowners to benefit from solar PV systems for little to no upfront cost. <p>Costs to administer the RSIP are recovered through the sale of SHRECs.</p>
Smart-E Loan	A low-interest long-term loan financing program offered through participating community banks and credit unions to help homeowners upgrade their home’s energy performance (e.g., insulation, windows, efficient HVAC, solar PV, etc.), including health and safety (e.g., asbestos removal, lead abatement, etc.) with no money down.
Small Business Energy Advantage (“SBEA”)	A zero-interest on-bill repayment program offered through the electric utilities to participating small businesses, including municipal and state governments, providing financing for energy efficiency improvements.
Solar Power Purchase Agreement (“PPA”)	An innovative financing program that enables commercial and industrial property owners, including state and municipal facilities, to deploy solar using a PPA.

8. Appendix D – Key Performance Indicators

The Green Bank reports on a number of impact metrics relevant to the various sectors in its Comprehensive Annual Financial Report – see Table 4.

Table 4. Example of Impact Metrics Captured by the Green Bank in the Comprehensive Annual Financial Report

Sector	Metrics
Renewable Energy	<ul style="list-style-type: none"> Total capacity installed in MW GHG emissions avoided per year based on this capacity Where possible – actual MWh of generation achieved
Clean Transportation	<ul style="list-style-type: none"> Estimated vehicle miles travelled
Green Buildings and Energy Efficiency	<ul style="list-style-type: none"> Estimated MWh and/or MMBtu saved / reduced per year
Financial	<ul style="list-style-type: none"> Total capital deployed

9. Appendix E – Green Bond Framework Second Party Opinion

[Following the approval of the Board of Directors, a letter from Kestrel Verifiers will be included here.]

