CONNECTICUT
GREEN BANK®

Comprehensive Plan Fiscal Year 2023

Comprehensive Plan

Fiscal Year 2023

Green Bonds US

July 2022
January 2023 (Revised)

Table of Contents

1. Executive Summary

The past two years have been some of the most challenging in living memory.

The COVID-19 pandemic upended the world. In Connecticut alone, there have been over 833,000 confirmed COVID-19 cases and more than eleven thousand COVID-19 associated deaths.[1] We were forced to quickly adapt to new safety precautions, changing how we work with our partners and interact with our customers. Global supply chains have faced massive disruptions, including international shipping delays that delayed the arrival of clean energy technology required to support our programs. In the past six months, global armed conflict in Ukraine instigated by Russia has sent further shockwaves through the supply chain and energy markets. These and other emergencies have drawn political attention away from the climate crisis while increasingly violent storms, drought, wildfires, flooding and other climate-related catastrophes sweep the planet.

The most recent update from the United Nations on progress towards the Sustainable Development Goals[2] paints a bleak picture: to avoid the worst effects of climate change, global GHG emissions will "need to peak before 2025 and then decline by 43% by 2030, falling to net zero by 2050. Instead under current voluntary national commitments to climate action, greenhouse gas emissions will ***rise*** [emphasis added] by nearly 14 percent by 2030."

Here in the United States, we witnessed historical progress made at the federal level towards changing our emissions trajectory towards 40% reduction from 2005 levels by 2030. In November 2021, the US Congress enacted the Infrastructure Investment and Jobs Act ("IIJA"), also called the Bipartisan Infrastructure Law ("BIL"). The $1.2 trillion act established and refunded programs to support new infrastructure over a 10-year period. The Act contains research and development funds for low-carbon energy technology and support for deployment of clean energy technology such as electric vehicles. In fact, the largest portion of this investment will be overseen by the Department of Transportation.[3] And in August 2022, the US Congress reached a deal on budget reconciliation and enacted the Inflation Reduction Act ("IRA"). The IRA is a landmark federal law which aims to curb inflation, including the single most significant legislation to combat climate change in our nation's history investing a total of $369 billion to help build the clean energy economy through incentives and tax credits, including the creation of a $27 billion Greenhouse Gas Reduction Fund ("GHGRF") modelled after the Connecticut Green Bank ("Green Bank").[4]

Here in Connecticut, the Green Bank continues to seek solutions that can accelerate progress towards the state decarbonization goals established in the 2008 Global Warming Solutions Act ("GWSA") and our investments are making a measurable difference, but greater public and private investment in and deployment of clean energy is needed. In the 10 years of its existence, the Green Bank has helped avoid nearly 10 million tons of carbon dioxide emissions (the equivalent of 2.1 million passenger vehicles driven for one year).[5] Avoiding 1 million tons

[1] COVID-19 data resources | Connecticut Data
[2] The-Sustainable-Development-Goals-Report-2022.pdf (un.org)
[3] The US Bipartisan Infrastructure Law: Breaking it down | McKinsey
[4] https://www.ctgreenbank.com/connecticut-green-bank-the-countrys-first-state-green-bank-salutes-u-s-congress-and-president-biden-for-passage-and-signage-of-inflation-reduction-act/
[5] https://www.ctgreenbank.com/wp-content/uploads/2022/09/FY12-FY22-CGB-ImpactReport-8242022.pdf

of carbon dioxide emissions a year, for a state that emits over 40 million tons per year, is just over 2 percent of all emissions avoided, or over 10 percent of emissions avoided from electricity generation (and consumption).

Connecticut is not on track to achieve 2030 and 2050 targets established in the GWSA.[6] The 2018 Connecticut Greenhouse Gas Emissions Inventory, released in 2021 by the Connecticut Department of Energy and Environmental Protection ("DEEP"),[7] revealed that while emissions have fallen 7.3% from a 1990 baseline, there was in fact a slight increase in emissions in 2018 over 2017 emissions.

In response to this, and to growing threats from severe storms, rain bombs, heat domes, polar vortexes, and rising sea levels, on July 6, 2021, Governor Ned Lamont, with the support of the Governor's Council on Climate Change, signed into law Public Act 21-115.[8] This act expanded the Green Bank mandate to include environmental infrastructure – a recognition that the same financing tools we have successfully leveraged to increase investment in and deployment of clean energy in Connecticut can support other environmental sectors in need of rapid transformation as well. The act includes the creation of an Environmental Infrastructure Fund which could receive federal funds (e.g., GHGRF) to mobilize private investment in environmental infrastructure.

Liu Zhenmin, the United Nations Under-Secretary-General for Economic and Social Affairs, concludes his comments on the annual SDG report with the following guidance: "Nothing short of a comprehensive transformation of the international finance and debt architecture will be required to accomplish these aims…"

Although the Green Bank is geographically limited in our ability to invest in resilience and mitigation to confront climate change, we can continue to be a leader in the space and demonstrate how new financing models through public-private partnerships can drive innovative investment in our global future.[9] Since the Green Bank's launch in 2011 as the first green bank in the nation, dozens of state and local green banks have popped up both nationally and abroad. With the IIJA and the IRA in place at the federal level, and the public policies and incentives available in Connecticut, the Green Bank is poised to continue its leadership and advance its mission.

The old adage of "think globally – act locally" is appropriate – "let's go!"

[6] Reduce GHG emissions by 45% from 2001 levels by 2030 and 80% from 2001 levels by 2050

[7] https://portal.ct.gov/-/media/DEEP/climatechange/GHG_Emissions_Inventory_2018.pdf

[8] An Act Concerning Climate Change Adaptation – https://www.cga.ct.gov/2021/ACT/PA/PDF/2021PA-00115-R00HB-06441-PA.PDF

[9] "There's finally a national climate bank. Here's how it can make its $27 billion go even further" in Fast Company by Ashley Stimpson (December 16, 2022)

2. Organizational Overview

The Green Bank[10] was established on a bipartisan basis by Governor Malloy and the Connecticut General Assembly ("CGA") on July 1, 2011 through Public Act ("PA") 11-80[11] as a quasi-public agency that supersedes the former Connecticut Clean Energy Fund ("CCEF"). On July 1, 2021, the 10th anniversary of the Green Bank, again, on a bipartisan basis, Governor Lamont and the CGA enacted PA 21-115 expanding the scope of the Green Bank beyond "clean energy" to include "environmental infrastructure". As the nation's first state green bank, the Green Bank leverages public funds to mobilize multiples of private investment to increase and accelerate investment in clean energy deployment and environmental infrastructure improvement in Connecticut.

The Green Bank's statutory purposes are:

- To develop programs to finance and otherwise support clean energy and environmental infrastructure investment in residential, municipal, small business and larger commercial projects and such other programs as the Green Bank may determine;

- To support financing or other expenditures that promote investment in clean energy sources and environmental infrastructure to foster the growth, development and commercialization of clean energy sources, environmental infrastructure, and related enterprises; and

- To stimulate demand for clean energy and the deployment of clean energy sources and investment in environmental infrastructure within the state that serves end-use customers in the state.

The Green Bank's purposes are codified in Section 16-245n(d)(1) of the Connecticut General Statutes ("CGS") and restated in the Green Bank's Board approved Resolution of Purposes. The Green Bank is a public policy innovation that exemplifies Connecticut's more than two-decade history of bipartisan executive and legislative branch leadership on the issue of climate change. Leadership highlights include:

- **Governor Rowland** – co-chaired the New England Governors and Eastern Canadian Premiers Conference, which established a regional commitment to reduce greenhouse gas ("GHG") emissions (i.e., 1990 levels by 2010, 10% below 1990 levels by 2020, and 80% below 2001 levels by 2050);[12]

- **Governor Rell** – supported PA 08-98[13] codifying the regional commitment into state law, appointing Gina McCarthy to be the Commissioner of the Department of Environmental Protection who would help lead the development of the Regional

[10] PA 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.

[11] An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut's Energy Future – https://www.cga.ct.gov/2011/act/pa/pdf/2011PA-00080-R00SB-01243-PA.pdf

[12] NEG-ECP Resolution 26-4 adopting the "Climate Change Action Plan 2001" (August 2001 in Westbrook, CT) – Westbrook Resolution

[13] An Act Concerning Connecticut Global Warming Solutions – https://www.cga.ct.gov/2008/ACT/Pa/pdf/2008PA-00098-R00HB-05600-PA.pdf

Greenhouse Gas Initiative ("RGGI"), later become the Administrator of the United States Environmental Protection Agency ("USEPA") under President Obama, and becoming the White House National Climate Advisor for President Biden;

- **Governor Malloy** – led the passage of PA 11-80 establishing DEEP, creating the Green Bank, and other policies catalyzing the market for clean energy, as well as PA 18-50[14] and PA 18-82[15] increasing the state's renewable portfolio standard ("RPS") to 40% by 2030 and establishing a midterm GHG emissions reduction target of 45% below 2001 levels by 2030, respectively; and

- **Governor Lamont** – issued his first[16] and third[17] executive orders on state "Greener Gov" for sustainability, clean energy, and climate change leadership, passing PA 21-115 expanding the scope of the Green Bank to include "environmental infrastructure," PA 22-5[18] including a 100% zero emission electricity target by 2040, and PA 22-25[19] confronting greenhouse gas emissions from the transportation sector, including 100% targets for school buses in environmental justice communities by 2030 and all communities by 2040.

The CGA has worked hand-in-hand with these Governors and the citizens of the state over the years to devise and support public policies that promote clean energy, environmental infrastructure, and lead the movement to confront climate change.[20]

2.1 Vision Statement

…a planet protected by the love of humanity.[21]

2.2 Mission Statement

Confront climate change by increasing and accelerating investment into Connecticut's green economy to create more resilient, healthier, and equitable communities.

2.3 Goals

To achieve its vision and mission, the Green Bank has established the following three goals:

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[14] An Act Concerning Connecticut's Energy Future – https://www.cga.ct.gov/2018/act/pa/pdf/2018PA-00050-R00SB-00009-PA.pdf

[15] An Act Concerning Climate Change Planning and Resiliency – https://www.cga.ct.gov/2018/act/pa/pdf/2018PA-00082-R00SB-00007-PA.pdf

[16] https://portal.ct.gov/-/media/Office-of-the-Governor/Executive-Orders/Lamont-Executive-Orders/Executive-Order-No-1.pdf

[17] https://portal.ct.gov/-/media/Office-of-the-Governor/Executive-Orders/Lamont-Executive-Orders/Executive-Order-No-3.pdf

[18] An Act Concerning Climate Change Mitigation – https://www.cga.ct.gov/2022/act/Pa/pdf/2022PA-00005-R00SB-00010-PA.PDF

[19] An Act Concerning the Connecticut Clean Air Act – https://www.cga.ct.gov/2022/ACT/PA/PDF/2022PA-00025-R00SB-00004-PA.PDF

[20] Reducing greenhouse gas emissions and confronting climate change is supported by a number of public policies, including, but not limited to PA 17-3, PA 18-82, PA 19-71, Governor Lamont's Executive Orders 1 and 3, Comprehensive Energy Strategy, Governor's Council on Climate Change, and many other past acts, plans, or policies.

[21] Vision Statement inspired by the Innovations in American Government Awards at the Ash Center of Harvard University's Kennedy School of Government, Maya Angelou's "On the Pulse of Morning," the powerful words of Mary Evelyn Tucker on "inclusive capitalism," and Mother Jennifer of the Daughters of Mary of the Immaculate Conception

1. To leverage limited public resources to scale-up and mobilize private capital investment in the green economy of Connecticut.

2. To strengthen Connecticut's communities, especially vulnerable communities,[22] by making the benefits of the green economy inclusive and accessible to all individuals, families, and businesses.

3. To pursue investment strategies that advance market transformation in green investing while supporting the organization's pursuit of financial sustainability.

The vision statement, mission statement, and goals support the implementation of Connecticut's climate change, clean energy, and environmental infrastructure policies be they statutorily required (e.g., PA 21-53),[23] planning (e.g., Comprehensive Energy Strategy), or regulatory (e.g., Docket No. 17-12-03RE03)[24] in nature.

Framework for an Equitable Modern Grid[25]

The Public Utilities Regulatory Authority's ("PURA") Framework for an Equitable Modern Grid, seeks to (1) support, or remove barriers to, the growth of Connecticut's green economy; (2) enable a cost-effective, economy-wide transition to a decarbonized future; (3) enhance customer access to a more resilient, reliable and secure electricity commodity; and (4) advance the ongoing energy affordability dialogue in the state, particularly in underserved communities.

The Green Bank supports PURA in their efforts through participation in many of the re-openers in the equitable modern grid as a commentor, a participant and a program administrator.

2.4 Definitions – Clean Energy and Environmental Infrastructure

The Green Bank's investment focus is on "clean energy" and "environmental infrastructure" as defined by CGS Section 16-245n:

- **Clean Energy** – clean energy means 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

[22] Per PA 20-05, "An Act Concerning Emergency Response by Electric Distribution Companies, the Regulation of Other Public Utilities and Nexus Provisions for Certain Disaster-Related or Emergency-Related Work Performed in the State," "vulnerable communities" means populations that may be disproportionately impacted by the effects of climate change, including, but not limited to, low and moderate income communities, environmental justice communities pursuant to section 22a-20a, communities eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time, populations with increased risk and limited means to adapt to the effects of climate change, or as further defined by DEEP in consultation with community representatives.

[23] An Act Concerning Energy Storage – https://www.cga.ct.gov/2021/act/Pa/pdf/2021PA-00053-R00SB-00952-PA.PDF

[24] Equitable Modern Grid Initiative – Electric Storage

[25] https://portal.ct.gov/PURA/Electric/Grid-Modernization/Grid-Modernization

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 GHG 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 CGS 16-1(a)(2).

- **Environmental Infrastructure** – structures, facilities, systems, services and improvement projects related to (A) water, (B) waste and recycling, (C) climate adaptation and resiliency, (D) agriculture, (E) land conservation, (F) parks and recreation, and (G) environmental markets, including, but not limited to carbon offsets[26] and ecosystem services.[27]

2.5 Governance

Pursuant to Section 16-245n of the CGS, the powers of the Green Bank are vested in and exercised by a Board of Directors ("BOD")[28] that is comprised of twelve voting and one non-voting members each with knowledge and expertise in matters related to the purpose of the organization – see Table 1.[29]

Table 1. Board of Directors of the Connecticut Green Bank

Position	Status	Appointer	Voting
State Treasurer (or designee)	Ex Officio	Ex Officio	Yes
Commissioner of DEEP (or designee)	Ex Officio	Ex Officio	Yes
Commissioner of DECD (or designee)	Ex Officio	Ex Officio	Yes
Secretary of OPM (or designee)	Ex Officio	Ex Officio	Yes
Residential or Low-Income Group	Appointed	Speaker of the House	Yes
Investment Fund Management	Appointed	Minority Leader of the House	Yes
Environmental Organization	Appointed	President Pro Tempore of the Senate	Yes
Finance or Deployment of Renewable Energy	Appointed	Minority Leader of the Senate	Yes
Finance of Renewable Energy	Appointed	Governor	Yes
Finance of Renewable Energy	Appointed	Governor	Yes
Labor	Appointed	Governor	Yes
R&D or Manufacturing	Appointed	Governor	Yes
President of the Green Bank	Ex Officio	Ex Officio	No

[26] Carbon offsets means an activity that compensates for the emission of carbon dioxide or other greenhouse gases by providing for an emission reduction elsewhere.

[27] Ecosystem services means benefits obtained from ecosystems, including, but not limited to, (A) provisioning services such as food and water, (B) regulating services such as floods, drought, land degradation and disease, and (C) supporting services such as soil formation and nutrient cycling.

[28] https://www.ctgreenbank.com/about-us/governance/board-of-directors/

[29] https://www.ctgreenbank.com/about-us/governance/

There are four (4) committees of the BOD of the Green Bank, including Audit, Compliance, and Governance Committee ("ACG Committee"), Budget, Operations, and Compensation Committee ("BOC Committee"), Deployment Committee, and the Joint Committee of the Energy Efficiency Board ("EEB") and the Green Bank.[30]

Principal Statement of the Joint Committee

To support the Joint Committee of the EEB and the Green Bank, the following is a principal statement to guide its activities:

The EEB and the Green Bank have a shared goal to implement state energy policy throughout all sectors and populations of Connecticut with continuous innovation towards greater leveraging of ratepayer funds and a uniformly positive customer experience.

The BOD of the Green Bank is governed through enabling legislation, as well as by an Ethics Statement and Ethical Conduct Policy, Resolutions of Purposes, Bylaws, Joint Committee Bylaws, and a Comprehensive Plan. All meetings, agendas, and materials of the Green Bank's BOD and its Committees are publicly available on the organization's website.[31,32]

2.6 Organizational Structure

The Green Bank is administered by a professional staff overseeing three (3) business units, including:

- **Incentive Programs** – the Governor and the CGA from time-to-time may decide that there are certain incentive programs that they seek to have the Green Bank administer (e.g., PA 21-53). The Green Bank administers such programs with the goal of delivering on the public policy objectives, while at the same time ensuring that funds invested by the Green Bank are cost recoverable.[33] For example, the Green Bank co-administers the Energy Storage Solutions ("ESS") program with the Electric Distribution Companies ("EDC") (i.e., Avangrid and Eversource Energy) to deploy 580 MW of behind the meter residential and non-residential battery storage systems through an upfront declining incentive block structure and ongoing performance-based incentive.

- **Financing Programs** – the Green Bank's core business is financing clean energy projects. The use of public revenues by the Green Bank (i.e., Clean Energy Fund ("CEF") and RGGI allowance proceeds) are to be invested with the expectation of principal and interest being paid back over time (i.e., earned revenues). For example,

[30] Pursuant to CGS 16-245m(d)(2) – There shall be a joint committee of the Energy Conservation Management Board and the board of directors of the Connecticut Green Bank. The boards shall each appoint members to such joint committee. The joint committee shall examine opportunities to coordinate the programs and activities funded by the Clean Energy Fund pursuant to section 16-245n with the programs and activities contained in the plan developed under this subsection and to provide financing to increase the benefits of programs funded by the plan so as to reduce the long-term cost, environmental impacts and security risks of energy in the state. Such joint committee shall hold its first meeting on or before August 1, 2005.

[31] https://www.ctgreenbank.com/about-us/governance/board-meetings/

[32] https://www.ctgreenbank.com/about-us/governance/committee-meetings/

[33] In the past, per CGS 16-245ff, the Green Bank administered the Residential Solar Investment Program ("RSIP") which resulted in 350 MW of residential solar photovoltaic system deployment between 2012 through 2021.

per CGS 16a-40g, the Green Bank administers the Commercial Property Assessed Clean Energy ("C-PACE") program. Through C-PACE, the Green Bank provides capital to building owners to make clean energy and resilience improvements on their properties that is paid back over time from a benefit assessment on the building owner's property tax bill. The interest earned from these types of investments, over time, is expected to cover the operational expenses and a return for the Green Bank.

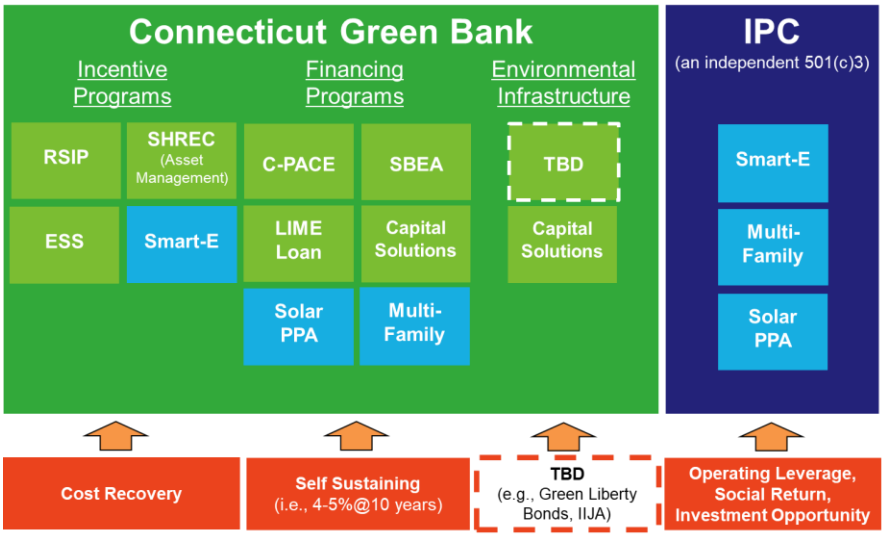
- **Environmental Infrastructure Programs** – as a result of the passage of PA 21-115 expanding the scope of the Green Bank beyond "clean energy" to include "environmental infrastructure," the financing tools of the green bank model will be used to mobilize private investment in Connecticut's green economy. Raising capital for the Environmental Infrastructure Fund ("EIF") through the issuance of Green Liberty Bonds, accessing federal resources (e.g., IIJA, GHGRF), and/or other means, will provide resources to invest in the modernization, decarbonization, and resilience of the state's environmental infrastructure.

These three business units – Incentive Programs, Financing Programs (i.e., for "clean energy") and Environmental Infrastructure Programs – serve the purposes of the Green Bank. To support the business units and their investments, the Green Bank has administrative support from finance, legal, marketing and operations.

In FY19, the Green Bank, in partnership with DEEP and the Kresge Foundation, formed a nonprofit organization called Inclusive Prosperity Capital ("IPC"). The mission of IPC is to attract mission-oriented investors in underserved clean energy market segments (e.g., low-to moderate-income ("LMI") single and multifamily properties) of the green economy. Although not an affiliate, nor a component unit of the Green Bank, IPC serves an important role supporting Green Bank programs (e.g., Smart-E, Solar PPA, and Multifamily Affordable) through FY26.

For an overview of the organizational structure of the Green Bank, and its partnership with IPC – see Figure 1.

Figure 1. Organizational Structure of the Green Bank with Support from Inclusive Prosperity Capital



An Employee Handbook and Operating Procedures have been approved by the BOD and serve to guide the staff to ensure that it is following proper contracting, financial assistance, and other requirements.

3. Incentive Programs

The Green Bank administers incentive programs, including credit enhancements (e.g., interest rate buydowns, loan loss reserves), used to deploy clean energy and environmental infrastructure, while at the same time cost recovering the expenses associated with several of these programs (i.e., CGS 16-245ff, PA 21-53) within the business unit – including, but not limited to, incentives, administrative expenses, and financing costs.

3.1 Residential Solar Investment Program and Residential Renewable Energy Solutions

Residential Solar Investment Program

Per CGS 16-245ff, the Green Bank administered the Residential Solar Investment Program ("RSIP") to deploy no more than 350 megawatts of new residential solar PV systems on or before December 31, 2022, while promoting the sustained, orderly development of a local state-based solar PV industry and ensuring that solar PV systems are accessible and affordable to vulnerable communities.[34] As of June 30, 2022, the RSIP achieved 380 MW of deployment, providing nearly 47,000 households with access to solar PV systems, including 50% within vulnerable communities. With the end of the RSIP policy on December 31, 2022, the focus of the Green Bank will be to manage the Solar Home Renewable Energy Credits ("SHREC") generated from the systems supported through the RSIP to recover incentives, administrative expenses, and financing costs, by selling SHRECs to the EDCs through a 15-year Master Purchase Agreement ("MPA") to pay for bonds sold to support the program.

Residential Renewable Energy Solutions

Starting January 1, 2022, the residential solar PV market transitioned from the RSIP and net metering to a tariff-based compensation structure.[35] In order to ensure the continued sustained, orderly development of the local solar industry beyond the conclusion of the RSIP, and access to such clean energy technologies by vulnerable communities, the Green Bank actively engaged in the regulatory process (i.e., Docket No. 20-07-01) overseen by PURA to establish Residential Renewable Energy Solutions ("RRES") – an EDC-administered residential renewable energy tariff program.

As a result of the Green Bank's engagement in the PURA process for the RRES, the following key program design principles were included:

- **Rate of Return** – a just, reasonable, and adequate rate of return of between 9 to 11 percent was determined (i.e., equivalent to $0.294/kWh in 2021) for the 20-year tariff through the Green Bank's inclusion of an objective rate of return analysis of the RSIP;

[34] Each year, from 2019 through 2021, and cumulatively from 2014 through 2021, Connecticut had the largest per capita deployment of residential solar PV in the entire northeast (i.e., New England, New Jersey, and New York) as a result of administering the RSIP (SEIA – Solar Market Insights 2022).

[35] See CGS 16-244z and Docket No. 20-07-01

- **HES or HES-IE Requirement** – to continue the linkage between energy efficiency and solar PV as demonstrated by the RSIP, an important objective of the Joint Committee, the Green Bank advocated for a Home Energy Solutions ("HES") or Home Energy Solutions – Income Eligible ("HES-IE") requirement as part of every project supported through RRES;

- **Additional Incentives for Vulnerable Communities** – given the success of the RSIP in reaching vulnerable communities, the Green Bank wanted to ensure that solar PV was affordable and accessible to LMI households, and thus adders for low income (i.e., $0.0250/kWh) or households located in distressed municipalities[36] (i.e., $0.0125/kWh) over the 20-year tariff were determined;

- **Direct Payment** – due to the perceived risks of underwriting financing (i.e., loans, leases, or power purchase agreements ("PPAs")) for vulnerable communities, the Green Back advocated for direct payments of the tariff rates from the EDCs to a third-party in-part or in-whole as a way to reduce borrower risk (including perceived risk) and therefore make renewable energy more affordable and accessible to vulnerable communities. This provides a financing mechanism that would allow the Green Bank to provide investment in developers serving vulnerable communities; and

- **Affordable Housing** – as part of the Green Bank-led amendments to Section 2 of PA 21-48,[37] which includes "affordable housing" as part of RRES (i.e., versus Non-Residential Renewable Energy Solutions or "NRES"), and a subsequent decision by PURA in Docket No. 22-08-02, it will be easier for property owners to participate in RRES, enabling energy savings to both the property owner and its low-income tenants.

These key program design principles within the EDC-administered tariff program will improve the program's likelihood of success in deploying no less than fifty (50) megawatts of new residential solar PV a year, while ensuring that vulnerable communities have continued opportunities to reduce the burden of energy costs that they experienced through the RSIP. To support PURA in overseeing the EDC-administered RRES, the Green Bank is a consultant to the Office of Education, Outreach, and Enforcement.

3.2 Energy Storage Solutions

With the passage of PA 21-53 establishing a 1000 MW energy storage target by 2030, and the final decision in Docket No. 17-12-03RE03 on electric storage, the Green Bank was selected by PURA to co-administer a 580 MW behind the meter residential and non-residential battery storage incentive program with the EDCs called ESS. The Green Bank is responsible for administering the upfront incentive, marketing the program, overseeing evaluation, measurement, and verification ("EM&V"), and fostering the sustained, orderly development of a state-based electric energy storage industry. ESS seeks to deploy battery storage systems to help families and businesses become more resilient against power outages, while reducing peak demand during summer and winter periods reducing electric rates for all ratepayers.

[36] https://portal.ct.gov/DECD/Content/About_DECD/Research-and-Publications/02_Review_Publications/Distressed-Municipalities

[37] An Act Establishing and Energy Efficiency Retrofit Grant Program for Affordable Housing – https://www.cga.ct.gov/2021/act/Pa/pdf/2021PA-00048-R00SB-00356-PA.PDF

3.3 EnergizeCT Smart-E Loan

The EnergizeCT Smart-E Loan ("Smart-E Loan") is a partnership between the Green Bank and local community banks and credit unions that provide easy and affordable access to capital for homeowners to finance clean energy and environmental infrastructure improvements on their properties through local contractors. The Green Bank provides credit enhancements to the participating financing institutions in the form of interest rate buydowns (i.e., from the use of federal resources) and loan loss reserves (i.e., from the Green Bank balance sheet). This allows financial institutions to provide low-interest and longer-term loans to families.

In FY 2023, the Green Bank, working with DEEP and other stakeholders, will be expanding the Smart-E Loan offering beyond clean energy to include environmental infrastructure measures.

3.4 Incentive Program Targets

The Green Bank has set targets for its Incentive Programs business unit for FY 2023 in terms of the number of projects, total investment (i.e., public and private), and installed capacity – see Table 2.

Table 2. Revised FY 2023 Targets for the Incentive Programs Business Unit

Program / Product	Projects	Total Capital Deployed ($MM's)	Installed Capacity (kW)
Energy Storage Solutions – Residential	350	$14.9	4,700
Energy Storage Solutions – Non-Residential	30	$67.5	45,000
EnergizeCT Smart-E Loan	960	$15.0	200
Total	**1,340**	**$97.4**	**49.9**

In terms of the Green Bank's vulnerable community's prioritization, the following is a goal for Incentive Programs:

- By 2025, no less than 40 percent of investment and benefits (e.g., jobs) from Incentive Programs is directed to vulnerable communities.

As a result of successfully achieving these targets, the Green Bank will reduce energy burden and increase energy security for Connecticut families and businesses, especially those in vulnerable communities, create jobs in our communities, raise tax revenues for the State of Connecticut, and reduce air pollution causing local public health problems and contributing to global climate change.

4. Financing Programs

The Green Bank manages financing programs. That is to say that it oversees financing programs that invest capital upfront (i.e., public revenues including CEF and RGGI) to deploy clean energy, while at the same time returning principal and interest (i.e., earned revenues) over time from the financing of projects, products, or programs to ensure the financial sustainability of the Green Bank.

4.1 Commercial Property Assessed Clean Energy

Per CGS 16a-40g, C-PACE enables building owners to pay for clean energy improvements over time through a voluntary benefit assessment placed by participating municipalities on their property tax bills. As of June 30, 2022, there have been 139 cities and towns that have opted into C-PACE. This process makes it easier for building owners to secure low-interest capital for up to 25 years to fund clean energy improvements and is structured so that energy savings more than offset the benefit assessment. With the passage of PA 22-6,[38] resilience and electric vehicle recharging stations were added to the list of eligible measures for C-PACE.

In FY 2023, the Green Bank, working with DEEP, Connecticut Institute for Resilience and Climate Adaptation ("CIRCA"), and other stakeholders, will be expanding C-PACE beyond clean energy to include resilience[39] measures.

4.2 Green Bank Solar Power Purchase Agreement & Solar Roof Lease

The Green Bank Solar PPA and the Green Bank Solar Roof Lease are third-party ownership structures to deploy solar PV systems for commercial scale end-use customers (e.g., businesses, nonprofits, municipal and state governments, affordable multifamily properties, etc.) that uses a multi-year PPAs or site lease to finance projects while either reducing energy costs for the host customer or providing a fixed annual lease payment.

4.3 Small Business Energy Advantage & Business Energy Advantage

Small Business Energy Advantage ("SBEA") and Business Energy Advantage ("BEA") are Eversource Energy administered on-bill commercial energy efficiency financing programs for small and medium-sized businesses, municipalities and Connecticut state agencies. Low-cost capital is provided by Amalgamated Bank with a credit enhancement from the Green Bank (i.e., subordinated debt) and the Connecticut Energy Efficiency Fund (i.e., loan loss guaranty and interest rate buydown). SBEA and BEA enables qualifying customers to access 0% on bill financing for up to $100,000 per site for businesses (up to a maximum of $1,000,000), up to $5,000,000 for municipalities, and up to $5,000,000 per project for state facilities with no overall outstanding loan cap.

4.4 Multifamily Products

Defined as buildings with 5 or more units, the Green Bank provides a suite of financing options in collaboration with our partners IPC and Capital for Change (a Community Development Financial Institution or "CDFI") that support property owners to assess, design, fund, and monitor high impact clean energy and health & safety improvements for their properties.

4.5 Green Bank Capital Solutions

As opportunities present themselves, the Green Bank from time-to-time invests as part of a capital structure in various projects (e.g., fuel cell, hydropower, food and farm waste to energy). These projects are selected based on the opportunity to expand the organization's experience with specific technologies, advance economic development in a specific locale, or to

[38] An Act Concerning the Commercial Property Assessed Clean Energy Program – https://www.cga.ct.gov/2022/act/Pa/pdf/2022PA-00006-R00SB-00093-PA.PDF

[39] Per CGS 16-244aa, "resilience" means the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring threats or incidents, including, but not limited to, threats or incidents associated with the impacts of climate change.

drive adoption of clean energy that would otherwise not occur, while also earning a rate of return.

4.6 Financing Program Targets

The Green Bank has set targets for its Financing Programs business unit for FY 2023 in terms of the number of projects, total investment (i.e., public and private), and installed capacity – see Table 3.

Table 3. Revised FY 2023 Targets for the Financing Programs Business Unit

Program / Product	Projects	Total Capital Deployed ($MM's)	Green Bank Capital Deployed ($MM's)	Installed Capacity (kW)
Commercial PACE	23	$31.0	$7.0	-
Green Bank Solar PPA	19	$13.7	$2.7	7,600
Small Business Energy Advantage	839	$18.6	$3.7	-
Multifamily Term Loan	6	$1.4	-	600
Multifamily Health and Safety	1	$0.9	-	-
Total	**882**	**$64.2**	**$13.4**	**7,600**

In terms of the Green Bank's vulnerable communities prioritization, the following is a goal for Financing Programs:

- By 2025, no less than 40 percent of investment and benefits (e.g., jobs) from Financing Programs is directed to vulnerable communities.

The capital provided by the Green Bank, which is a portion of the total investment, is expected to yield a return commensurate with the financial sustainability objectives of the organization and business unit.

As a result of successfully achieving these targets, the Green Bank will contribute to its financial sustainability, while also reducing the energy burden on and improve the resiliency from climate change for Connecticut families and businesses, especially those in vulnerable communities, create jobs in our communities, raise tax revenues for the State of Connecticut, and reduce air pollution that cause local public health problems and global climate change.

5. Environmental Infrastructure Programs

Following the passage of PA 21-115 in June of 2021, the Green Bank began the process of policy assessment and development for environmental infrastructure in FY 2022, including:

- **Governance Amendments** – revising various governance documents including the Resolution of Purpose, Bylaws, and Operating Procedures;
- **Assessing Bond Potential** – investigating the potential for Green Liberty Bonds to be issued to raise proceeds for environmental infrastructure investment, including fifty (50) year maturity terms;

- **Developing Products** – expanding the ability for the Smart-E Loan to support environmental infrastructure projects for single family property owners and C-PACE to support resilience projects for multifamily and commercial property owners;

- **Stakeholder Engagement** – initiating outreach to public, private, nonprofit, and academic stakeholder organizations to introduce the Green Bank, understand public policies and targets, identify funding opportunities, market potential, investment requirements, and financing models, and metrics for environmental infrastructure; and

- **Strategic Retreat** – engaging members of the BOD, staff, and key stakeholders in an offsite strategic retreat to expand the scope of the Green Bank to mobilize private investment in environmental infrastructure.

As a result of these efforts in FY 2022, the Green Bank makes the following observations with respect to environmental infrastructure:

1. **Market Intermediary Role** – as is the case with respect to "clean energy," the Green Bank has a role to play as a market intermediary for "environmental infrastructure" – see Figure 2. Given the ambitious nature of public policies with respect to environmental infrastructure (e.g., 21% open space by 2023), and the need to mobilize and attract private investment to achieve the policy objectives (e.g., $1.5 billion of additional public and/or private investment needed to achieve the open space target), there is a need for an intermediary role for the Green Bank between capital markets and public policy.

Figure 2. Market Intermediary Role - Capital Markets and Public Policy

2. **Better Market Signals** – again, as is the case with respect to "clean energy" (e.g., zero emission renewable energy credits), there is a need for public policy to send better market signals to unlock and mobilize private capital investment in "environmental infrastructure". For example, beyond "sticks" (e.g., regulation and enforcement requiring producers of food waste to transport their waste to an anaerobic digester per PA 11-127), there need to also be associated "carrots" (e.g., virtual net metering, low emission renewable energy credits, renewable natural gas) in order to enable private investment in "environmental infrastructure". A strong market signal public policy for

green and blue infrastructure is Maryland's Conservation Finance Act of 2022 and the pay-for-success contracts for certain environmental outcomes.[40]

3. **Appropriately Priced Capital** – if public policy in Connecticut is designed to reduce risks (including perceived risks), then attracting and mobilizing appropriately priced private capital (e.g., lower interest rates, longer terms) must ensue. The Green Bank can access affordable private capital through the issuance of Green Liberty Bonds, which can be paid back over 50 years (or the useful life of the asset) and whose proceeds can be invested in environmental infrastructure.

4. **Community Engagement** – there is a continuous need to not only engage public, private, nonprofit and academic stakeholders, but also municipal, councils of government, and other community-level officials. Empowering impacted communities, especially vulnerable communities, through near-term engagement (i.e., informing, consulting, and involving) to long-term engagement (i.e., collaborating and empowering) is vital to identifying needs to support the development of programs and the success of investments in projects to achieve their intended impacts.

5. **Vulnerable Communities** – with a key goal to "strengthen Connecticut's communities, especially vulnerable communities, by making the benefits of the green economy inclusive and accessible to all individuals, families, and businesses," as is the goal for "clean energy," the Green Bank will ensure that by the end of 2025 no less than 40 percent of investment and benefits (e.g., jobs) in "environmental infrastructure" are directed to vulnerable communities.

In FY 2023, the Green Bank will continue its progress on developing its environmental infrastructure business unit and programs including, but not limited to:

- **Building the Team** – hiring several critical positions including the Manager of Community Engagement and Director of Environmental Infrastructure, as well as qualifying a suite of contractors to support the work of the business unit;

- **Continuing Engagement** – wrapping up stakeholder outreach for the water and initiating engagement of municipal and regional governments, especially those in vulnerable communities;

- **Raising Resources** – identifying and realizing opportunities for federal (i.e., GHGRF) and foundation funding, and developing the Green Liberty Bonds to raise proceeds from the issuance of bonds to provide capital for investment;

- **Launching New Products** – developing existing financing products for clean energy (i.e., Smart-E Loan, C-PACE) to support environmental infrastructure measures; and

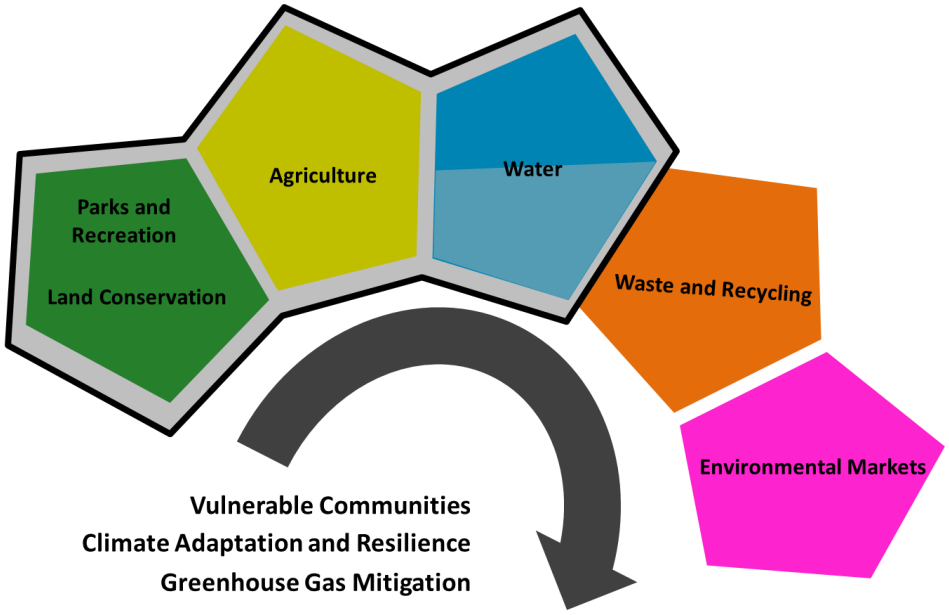
- **Conducting Research** – continuing to identify research opportunities to develop markets for carbon offsets and ecosystem services for the purposes of generating revenues from projects as a result of Green Bank investments.

[40] https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/sb0348?ys=2022RS

5.1 Confronting Climate Change and Vulnerable Communities

Given the mission of the Green Bank, investments in environmental infrastructure must seek to confront climate change (i.e., mitigate GHG emissions and increase resilience against its impacts) and increase investment in vulnerable communities – see Figure 3. The combination of land conservation, parks and recreation, agriculture, and water – together "green infrastructure" or "nature-based solutions" – provide an opportunity for the Green Bank, in partnership with public, private, nonprofit, municipal and other stakeholders, to mobilize investment.

Figure 3. Confronting Climate Change and Enabling Investment in Vulnerable Communities through Environmental Infrastructure



Through stakeholder engagement, the Green Bank recognizes the opportunity for investment in nature-based solutions that protect land and water from loss, improve management of natural resources for productive use in the economy, and restore native cover – all of which help Connecticut confront climate change – see Figure 4.

Figure 4. Nature-Based Solutions and Green Infrastructure

In terms of the Green Bank's vulnerable communities prioritization, the following is a goal for Environmental Infrastructure Programs:

- By 2025, no less than 40 percent of investment and benefits (e.g., jobs) from Environmental Infrastructure Programs is directed to vulnerable communities.

The following is a succinct breakdown of each area of environmental infrastructure, including links to more detailed primers based on stakeholder outreach.

5.2 Environmental Markets – Carbon Offsets and Ecosystem Services

Carbon offsets are measurable outcomes from carbon sequestration activities, traded in voluntary (e.g., requiring verification and certification) and compliance (e.g., RGGI) markets, whereby regulations, sustainability priorities, and public relations are motivators for buyers and sellers. Ecosystem services are the benefits people obtain from ecosystems.[41] Fundamentally, ecosystem services markets are designed to embed the positive benefits (e.g., public health, resilience) and negative impacts (e.g., GHG emissions) of individuals on natural resources into market-based systems which financially incentivize environmental stewardship, conservation, and rehabilitation of natural ecosystems.

Environmental infrastructure projects that involve carbon offsets and ecosystem services can be quantified and sold in markets to generate additional revenues from the projects.

For further details on the market opportunity, see Primer – Environmental Markets.

5.3 Land Conservation

Nature-based solutions such as protecting intact lands from loss (e.g., forestlands, wetlands), improving the management of working lands (e.g., sustainably certified timberlands), and restoring native land cover, including coastlines, can both mitigate GHG emissions that cause climate change (e.g., forest carbon sequestration) and increase resilience against the impacts of climate change (e.g., flood protection).

The following is the market potential for land conservation from the perspective of forestland – see Table 4.

Table 4. Market Potential for Land Conservation in Connecticut based on Forest Land

3,205,762 Acres Land in Connecticut				
1,869,761 Acres Forest Land			**1,336,001 Acres** Non-Forest Land	
298,994 Acres Protected Core Forests	**568,857 Acres** Unprotected Core Forest	**1,001,910 Acres** Non-Core Forest	**1,130,000 Acres** Urban Area	**206,001 Acres** Other Non-Urban and Non-Forest

[41] Provisioning services (e.g., food, water, fuel, wood), supporting services (e.g., nutrient cycling, soil formation, habitat provision, primary production), regulating services (e.g., climate regulation, flood regulation, water purification), and cultural (e.g., spiritual, aesthetic, educational, and recreational).

To retain the multiple benefits that forests provide, there is a "no net loss of forest" policy goal.

The following is a breakdown of the land conservation target outlined in the CGS 23-8[42] – see Table 5.

Table 5. Progress Towards the Open Space Land Target in Connecticut (as of December 31, 2019)

3,205,762 Acres Land in Connecticut								
320,576 Acres State Goal (@10%)				**352,634 Acres** Partner Goal (@≥11%)				**2,532,552 Acres** No Land Conservation (@79%)
175,000 Acres State Forests[43]	**36,000 Acres** State Parks[44]	**46,000 Acres** Wildlife Area and Other[45]	**63,500 Acres** left to achieve target	**84,000 Acres** Cities and Towns	**99,000 Acres** Water Companies	**66,000 Acres** Non-Profit Land Trusts	**104,000 Acres** left to achieve target	

Of the open space goal of 21% by 2023 (i.e., 673,210 acres), approximately 510,249 acres are conserved (as of December 31, 2019), or 76% of the open space goal comprising 261,806 acres of state (i.e., 82% of the 10% state target) and 248,953 acres of partner (i.e., 71% of the partner target) – leaving an estimated 162,451 acres of open space left to achieve. If the average land acquisition cost is $9,000 per acre, then approximately $1.5 billion of public and private investment in land conservation would be needed to acquire and protect over 160,000 acres of open space in order to achieve the 21% target.

As the Green Bank looks to increase and accelerate private investment in land conservation, it will be exploring the following financing tools, including, but not limited to:

- Carbon offset markets
- Ecosystem services markets
- Pay-for-Performance
- Eco-Labeling (e.g., FSC Certified)
- Green Liberty Bonds
- Buy-Protect-Sell Revolving Loan Fund
  - Predevelopment Financing
  - Bridge Financing
  - Traditional Debt Financing
- Forest Investment Fund

For further details on the market opportunity, see Primer – Land Conservation.[46]

5.4 Parks and Recreation

Infrastructure investments in parks and recreation can both mitigate the GHG emissions that cause climate change (e.g., carbon sinks from urban tree canopy cover) and increase resilience

[42] State goal for open space acquisition – https://law.justia.com/codes/connecticut/2012/title-23/chapter-447/section-23-8/
[43] 33 locations
[44] 107 locations
[45] Including wildlife management areas, fish hatcheries, flood control, natural area preserve, water access, wildlife sanctuaries, and other
[46] https://www.ctgreenbank.com/wp-content/uploads/2023/01/Environmental-Infrastructure_Land-Conservation_Oct-16-2022.pdf

against the impacts of climate change (e.g., stormwater management through urban parks, improve public health).

The following is a breakdown of the market potential for parks and recreation from the perspective of active[47] and passive[48] outdoor recreation facilities, and on "land" or "water" based activities from the Statewide Comprehensive Outdoor Recreation Plan ("SCORP") – see Table 6.

Table 6. Outdoor Recreation Facilities in Connecticut (2005)

Outdoor Recreation Type	# of Facilities	DIRPS[49] per 10,000 Residents	Ownership		
			Statewide Average	Municipal Average	Other Average
Active – Land	4,788	1.4	4%	77%	20%
Active – Water	137	0.4	2%	69%	30%
Passive – Land	1,957	1.0	27%	46%	27%
Passive – Water	1,130	1.1	22%	45%	33%
Total	8,012	1.2	14%	62%	24%

The Trust for Public Land's ("TPL") ParkScore Index is a comprehensive rating system to measure how cities are meeting the needs for parks.[50] In an effort to assess ParkScore, the following data are for Connecticut's "Top 10" most populated municipalities with respect to park access – see Table 7.

Table 7. "Top 10" Most Populated Municipalities in Connecticut and ParkScore

City	Population	Acres	% Land as Parks	Acres of Land as Parks	Acres of Parks per 10,000 Residents	# of Parks	Parks per 10,000 Residents	10-Minute Walk
Hartford	121,203	11,136	9%	1,002	83	218	18.0	99%
New Haven	130,764	11,968	12%	1,436	110	128	9.8	96%
West Hartford	63,063	13,952	20%	2,790	442	48	7.6	82%
Stamford	129,302	24,064	5%	1,203	93	54	4.2	74%
New Britain	72,303	8,576	7%	600	83	23	3.2	73%
Bridgeport	143,653	10,304	7%	721	50	35	2.4	73%
Waterbury	106,458	18,240	6%	1,094	103	30	2.8	60%
Norwalk	88,326	14,656	3%	440	50	45	5.1	55%

[47] Active outdoor recreation facilities based on 2005 data (X – #) and 2017 use frequency index data, if available (# – Y), include fields, courts, and courses for baseball and softball (984 – 16.0), basketball (645 – 23.0), football (154 – 10.0), golf (125 – 13.6), multi-use (624), soccer (495 – 14.6), tennis (384 – 11.2), and volleyball (74 – 23.0), as well as playgrounds (1,065), swimming pools (137 – 60.9), and winter sports (238 – 9.3)

[48] Passive outdoor recreation facilities based on 2005 data (X – #) and 2017 use frequency index data, if available (# – Y) include access to sites for beaches (176 – 60.1), boating (285 – 10.9), camping (88 – 13.5), fishing (669 – 19.0), gardens (109), historic landmarks (99 – 35.9), hunting (88 – 3.5), picnics (677), and trails (896 – 102.8)

[49] Discrete Identifiable Recreation Places

[50] The "% of Land as Parks," "# of Parks," and "10-Minute Walk" data were used from TPL's ParkScore data set.

Bristol	59,639	16,896	4%	676	113	20	3.4	51%
Danbury	84,732	26,880	5%	1,344	159	17	2.0	37%

The quality of parks is difficult to discern. To better understand the quality of parks, TPL partnered with the Urban Resources Institute ("URI") to compare New Haven against the nation's most populous cities on five (5) categories reflective of an excellent city park system: Acreage,[51] Access,[52] Investment,[53] Amenities,[54] and Equity[55] – see Table 8.[56]

Table 8. TPL and URI Analysis of New Haven Compared to Other Cities

City	Overall	Acreage	Access	Investment	Amenities	Equity
New Haven, CT	60	36	95	35	71	65
Boston, MA	-	47	100	79	65	79
Baltimore, MD	-	25	81	68	40	83
Buffalo, NY	-	25	85	47	61	64

The TPL-URI research also delves deeper into the twenty (20) neighborhoods of New Haven to collect data with respect to population, acres of parks, and acres per 1,000 population, as well as demographic data including income and people of color. Based on data from TPL from 14,000 cities, parks that serve low-income households are four (4) times as crowded as parks that serve high-income households, and parks that serve people of color are five (5) times as crowded as parks that serve majority-white populations.[57] Such analyses in municipalities across Connecticut could elucidate opportunities for areas of improvement, including improving the public health of residents (e.g., reducing urban heat island effects) with access to parks and the economic development impact of property values within proximity to parks.

As the Green Bank looks to increase and accelerate private investment in parks and recreation, it will be exploring the following financing tools, including, but not limited to:

- Carbon offset markets
- Ecosystem services markets (e.g., Park Rx)
- Pay-for-Performance
- Green Liberty Bonds
- Tax Increment Financing
- Buy-Protect-Sell Revolving Loan Fund
  - Predevelopment Financing
  - Bridge Financing
  - Traditional Debt Financing

[51] Acreage score indicates the relative abundance of large 'destination' parks, which include large natural areas that provide critical mental health as well as climate and conservation benefits.

[52] Access score indicates the percentage of the city's residents that live within a walkable half-mile of a park – the average distance that most people are willing to walk to reach a destination.

[53] Investment score indicates the relative financial health of a city's park system, which is essential to ensuring parks are maintained at a high level for all to enjoy.

[54] Amenities score indicates the relative abundance of six park activities popular among a multi-generational cross-section of user groups (i.e., playgrounds, basketball courts, dog parks, senior and recreation center, splashpads, and permanent restrooms).

[55] Equity score indicates how fairly parks and park space are distributed within a city, including percentage of people of color and low-income households within a 10-minute walk of a park, and comparison of the amount of park space between neighborhoods by race and income.

[56] For example, a score of 90 means that the municipality is within the top 90 percent across the country.

[57] "The Heat is On" by The Trust for Public Lands

For further details on the market opportunity, see Primer – Parks and Recreation.[58]

5.5 Agriculture

Nature-based solutions such as protecting farmlands from loss and improving farming practices, can both mitigate GHG emissions that cause climate change (e.g., climate smart agriculture) and increase resilience against the impacts of climate change (e.g., flood protection).

The following is a breakdown of the market potential for "agriculture" (i.e., farmland), including other natural forms of land cover (i.e., forestland and wetlands) – see Table 9.

Table 9. Land Cover in Connecticut (2015)[59]

3,179,253 Acres Land and Water in Connecticut				
921,827 Acres Developed Land[60] 29%	**233,847 Acres** Farmland 7%	**1,873,471 Acres** Forestland[61] 59%	**129,153 Acres** Wetlands[62] 4%	**20,955 Acres** Other Lands[63] 1%

More than 70% of Connecticut's land is farmland, forestland, or wetland. From 2001 through 2016, approximately 6% of the state's farmland was converted to urban or low-density residential development – placing the state in the top three nationally in percent of farmland lost to development.[64]

The long-term goal of the Farmland Preservation Program, which was set back in the 1980's, is to preserve 130,000 acres of farmland – see Table 10.

Table 10. Progress Towards the Farmland Preservation Program Target in Connecticut

3,205,762 Acres Land in Connecticut				
381,539 Acres[65] Farmland				**2,824,223 Acres** Non-Farmland
148,609 Acres Farmland	**113,355 Acres** Woodland	**31,923 Acres** Pastureland	**87,652 Acres** Other[66]	
130,000 Acres				

[58] https://www.ctgreenbank.com/wp-content/uploads/2023/01/Environmental-Infrastructure_Parks-and-Recreation_Oct-16-2022.pdf

[59] UCONN CLEAR Project – 2015 Land Cover

[60] Includes "Developed," "Turf & Grass," and "Other Grasses" classifications

[61] Includes "Deciduous Forest," "Coniferous Forest," "Forested Wetland," and "Utility-Rights-of-Way (Forest)" classifications

[62] Includes "Water," "Non-Forested Wetlands," and "Tidal Wetlands" classifications

[63] Includes "Barren" classification

[64] "Planning for Agriculture – A Guide for Connecticut Municipalities: Emerging Agricultural Trends" by the American Farmland Trust and Connecticut Department of Agriculture (2020 Edition) (Page 19)

[65] USDA Economic Research Service – 2017 data

[66] Land in house lots, ponds, roads, wasteland, etc.

Preserved Farmland Goal		
48,744 Acres Preserved	**81,256 Acres** Not Preserved	

As of October 2020, the Farmland Preservation Program has protected nearly 49,000 acres on 418 farms with agricultural conservation easements – leaving 81,000 acres of farmland left to preserve.[67] If the average real estate value of an acre of farmland in Connecticut in 2019 was $12,200, and Purchasing Development Rights ("PDR") is 30-50% of value, then between $300 to $500 MM of public investment (e.g., through the Connecticut Department of Agriculture ("DoAg") and/or USDA-Natural Resources Conservation Service ("NRCS")) would be needed to protect 81,000 acres of farmland to achieve the 130,000 acres of farmland preserved target.

As the Green Bank looks to increase and accelerate private investment in agriculture, it will be exploring the following financing tools, including, but not limited to:

- Carbon offset markets
- Ecosystem services markets
- Pay-for-Performance
- Eco-Labeling (e.g., Connecticut Grown)
- Green Liberty Bonds
- Linked Deposits
- Buy-Protect-Sell Revolving Loan Fund
  - Predevelopment Financing
  - Bridge Financing
  - Traditional Debt Financing
- Farmland Investment Fund
- Loan Guarantees (e.g., Smart-E Loan)

For further details on the market opportunity, see Primer – Agriculture.[68]

5.6 Water

In FY 2023, the Green Bank will continue to explore opportunities to enable private investment in Connecticut's water infrastructure.

Per PA 21-115, there are several boundaries with respect to what the Green Bank can do with respect to water, including:

- **Environmental Infrastructure Fund** – may not receive funds from the Clean Water Fund pursuant to sections 22a-475 to 22a-438f, or funds collected from a water company as defined in section 25-32a; and

- **Apply for Federal Assistance** – may not apply directly or through a subsidiary to be eligible for federal grant assistance under the Clean Water Act, 33 USC 1251 et seq., nor the Safe Drinking Water Act, 42 USC 300f et seq., without the approval of the State Treasurer, Commissioner of Energy and Environmental Protection, and Commissioner of Public Health.

As a result of these restrictions, and since Connecticut's State Revolving Fund ("SRF") hasn't invested in green infrastructure,[69] the Green Bank will focus its efforts on nature-based solutions (e.g., land conservation) and stormwater (e.g., green roofs), as well as its financing

[67] Connecticut Department of Agriculture, Farmland Preservation Programs Report (January 2022)
[68] https://www.ctgreenbank.com/wp-content/uploads/2023/01/Environmental-Infrastructure_Agriculture_Oct-16-2022a.pdf
[69] Hansen, K., Thomas, T., Vo, S., Berven, K., Moudgalya, P., Vedachalam, S. (2022). Financing Green Stormwater and Natural Infrastructure with Clean Water State Revolving Funds. by the Environmental Policy Innovation Center – EPIC. (pp 11)

programs (e.g., Smart-E Loan, C-PACE) to help end-use customers improve water on their property. It should be noted that within PA 21-115, that municipalities can create stormwater authorities.

5.7 Waste and Recycling

In FY 2024, the Green Bank will explore opportunities to enable private investment in Connecticut's waste and recycling infrastructure.

It should be noted that the Green Bank is a leading financier of food waste[70] and farm waste[71] to energy projects that utilize anaerobic digesters and combined heat and power to reduce methane and produce renewable natural gas for onsite clean energy.

6. Citizen and Community Engagement – Green Bonds US

The Green Bank, and its predecessor the CCEF, have a long-standing history of community engagement in Connecticut. In 2002, the CCEF partnered with six private foundations[72] to co-found SmartPower – which launched the 20 percent by 2010 campaign and led the administration of the CCEF's EPA award-winning Connecticut Clean Energy Communities Program to engage citizens in signing-up to purchase clean energy.[73] Then in 2013, the Green Bank launched a series of Solarize campaigns in communities across the state in partnership with SmartPower and the Yale Center for Business and the Environment to help citizens install solar PV on their homes,[74] while also advancing the SunShot Initiative of the U.S. Department of Energy ("USDOE") in partnership with the Clean Energy States Alliance through projects that reduce soft-costs for solar PV (i.e., customer acquisition, permitting, and financing) and provide better access to solar PV for LMI households.

Citizen and community engagement have been in the DNA of the Green Bank since its inception. The Green Bank is reaching citizens and communities through various ways including green bonds, community match funds, community-based campaigns, and municipal assistance programs.

6.1 Green Bonds US

Whether through markets or within communities, the Green Bank is bringing people together and strengthening the bonds we share with one another. As the name of the Comprehensive Plan suggests – "Green Bonds US" seeks to promote a simple but critically important message; green, the environment, bonds us, brings us together, the environment unites us. The simple slogan combines the financial tool of green bonds that are being sold to retail investors across the United States with a unifying message that humanity and the environment are inextricably linked.

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[70] Quantum Biopower – http://www.quantumbiopower.com/

[71] Fort Hill Farm – https://aggridenergy.com/fort-hill-ag-grid-digester/

[72] Emily Hall Tremaine Foundation, The John Merck Fund, Pew Charitable Trust, The Oak Foundation, Rockefeller Brothers Fund, and Surdna Foundation

[73] "Climate Policy and Voluntary Initiatives: An Evaluation of the Connecticut Clean Energy Communities Program," by Matthew Kotchen for the National Bureau of Economic Research (Working Paper 16117).

[74] "Solarize Your Community: An Evidence-Based Guide for Accelerating the Adoption of Residential Solar" by the Yale Center for Business and the Environment.

CGS Section 16-245n(d)(1)(C) is the enabling statute that allows the Green Bank to issue revenue bonds for up to 25 years for clean energy and 50 years for environmental infrastructure projects to support its purposes. Green Bonds are bonds whose proceeds are used for projects or activities with environmental or climate benefits, most usually climate change mitigation and adaptation. Research shows that citizens across the US, including Connecticut, are interested in seeing their investments go towards green projects – see Table 11.[75]

Table 11. Green Project Types of Interest by Private Investors by Location

Green Project Types	Composite	National	Connecticut	Connecticut with Solar
Clean Water	65.4%	63.5%	68.6%	65.8%
Waste Reduction and Recycling	48.8%	40.7%	51.4%	62.2%
Rooftop Solar	48.5%	34.9%	38.4%	85.6%
Home Energy Efficiency	41.6%	30.7%	37.2%	67.6%
Electric Vehicles	38.0%	30.9%	30.0%	60.2%
Land Conservation	37.3%	29.5%	40.4%	49.4%
Agriculture	33.2%	26.1%	36.6%	43.8%
Parks and Recreation	30.1%	24.8%	34.6%	36.0%
Climate Adaptation and Resiliency	28.8%	21.8%	30.4%	41.0%

To enable everyday citizens with an opportunity to invest in the green economy, the Green Bank created two fixed income securities – Green Liberty Bonds and Green Liberty Notes, which have three features:

1. **Use of Proceeds** – funds raised from the bonds must go towards projects that support the Paris Agreement (i.e., mitigation of GHG emissions or adaptation to the impacts of climate change);

2. **Retail Accessible** – like the Series-E War Bonds of the 1940's, bonds must be small denomination (i.e., less than $1,000) and available to everyday retail investors; and

3. **Independently Certified and Verified** – due to the expectation by retail investors that the use of proceeds will go towards projects that support the Paris Agreement, the bonds must be independently certified and verified as green.

6.2 Green Liberty Bonds

In April of 2019, the Green Bank issued $38.6 million in green asset backed securities – its first rated debt issuance and the first ever solar asset-backed security ("ABS") transaction by a green bank. The issuance was certified by Kestrel Verifiers and independently assessed by Climate Action Reserve. In July 2020, the Green Bank issued $16.8 million in a Special Capital Reserve Fund ("SCRF") backed Green Liberty Bond that was Climate Bond Certified. And in April 2021, the Green Bank sold out $25 million in Green Liberty Bonds drawing four times as

[75] 2021 Brand Awareness Digital Survey by Great Blue for the Connecticut Green Bank (August 2021)

much demand as could be fulfilled from retail investors in Connecticut and across the U.S., as well as institutional investors interested in sustainability investments.

In March and December of 2020, and June of 2022, the Green Bank's Green Liberty Bonds were awarded for innovation and green bond structure by Environmental Finance, The Bond Buyer, and Clean Energy States Alliance respectively.

For more information on Green Liberty Bonds, visit www.greenlibertybonds.com

6.3 Green Liberty Notes

In January of 2022, the Green Bank, in collaboration with Raise Green, began a two-year campaign to raise $2 million by providing an opportunity for citizens to invest as little as $100 to confront climate change. Issuances are anticipated quarterly. Investment by everyday citizens in Green Liberty Notes supports Eversource's SBEA program, administered through the Conservation and Load Management Plan, which helps small businesses reduce their energy consumption through deploying energy efficient equipment. As a result of the climate benefits associated with this program, the offering was reviewed and verified for its environmental attributes by Kestrel Verifiers.

To attract more investors, the program offers one-year maturity notes, with $100 minimums, that are easy to purchase through an online platform without a broker. The Green Liberty Notes were created as an investment companion to Green Liberty Bonds, which have been offered in $1,000 minimums to retail and institutional investors through brokerage firms.

For more information on Green Liberty Notes, visit https://invest.raisegreen.com/offerings

6.4 Sustainable CT and Community Match Fund

The strategic partnership between Sustainable CT and the Green Bank is focused on the following key priorities:

- Driving investment in projects in our communities, with a goal to accelerate over time;
- Community-level engagement, from project origination through financing, that is inclusive, diverse, and "knitted";
- Creating a structure that harnesses all types of capital for impact – from donations to investment;
- Developing a business model that covers the cost of the program; and
- Creating a measurable impact, both qualitative and quantitative.

Sustainable CT, in collaboration with Patronicity, has developed a community matching grant platform to raise capital in support of local projects that provide individuals, families, and businesses with funding opportunities to make an impact on sustainability in their communities. This online crowdfunding platform enables citizen leaders to have access to financial resources (i.e., matching grants) that they need to support local sustainability projects.

For more information on Sustainable CT's Community Match Fund, visit https://www.patronicity.com/sustainablect

6.5 Community-Based Campaigns

The Green Bank has once again partnered with the Yale School of the Environment,[76] to support USDOE-funded Solar Energy Evolution and Diffusion Study 3 ("SEEDS 3"). SEEDS 3 research builds on nearly a decade of work investigating the peer-to-peer effects of solar PV adoption – how do prospective solar PV customers make the decision to adopt and how do people talk to each other about going solar. Professor Gillingham developed a community-based solar adoption strategy that accelerated the adoption of solar in Connecticut through various Solarize campaigns.[77]

SEEDS 3 expands on this work to investigate the co-adoption of solar, storage, and electric vehicles. The Green Bank will support Professor Gillingham as he initiates and runs community-based solar plus storage campaigns over the next two years. We will leverage the learnings that these campaigns create to refine our storage marketing messages to assist ESS in achieving its goals.

6.6 Municipal Assistance Programs

Supported by public policy,[78] the Green Bank continues to support municipalities in their sustainability initiatives through the Solar Marketplace Assistance Program for Towns and Cities ("Solar MAP"). Many Connecticut towns, primarily smaller towns, are challenged to get through the many project steps preventing them from taking advantage of clean energy. Solar MAP provides turnkey support from start to finish to make it easier for towns to identify projects that will provide savings, to access necessary incentives and Green Bank financing, and to add much-needed capacity to manage project implementation and construction. The program administers a competitive solicitation to select a construction partner and bring more projects to the market to grow our state's clean energy economy. Projects are bundled into portfolios to achieve economies of scale driving down project costs and delivering better savings a town wouldn't experience if they acted alone. With feedback from contractors and municipalities, the Green Bank integrated additional transparency into the Programs' status and activities and developed a clearer mission and target audience. Solar MAP aims to support municipalities that are underserved by the market, typically towns that are smaller in population and/or town staff without recent history of doing solar projects. The comprehensive program support and refined mission help better serve municipalities and the clean energy market.

7. Investment

The Green Bank pursues investments that advance market transformation in green investing while supporting the organization's pursuit of financial sustainability. With the mission to confront climate change, the Green Bank leverages limited public resources to scale-up and mobilize private capital investment in the green economy of Connecticut.

[76] Professor Ken Gillingham

[77] https://cbey.yale.edu/our-stories/lessons-learned-from-solarize-campaigns-in-connecticut

[78] CGS 16-245n "…stimulate demand for clean energy and deployment of clean energy sources that serve end use customers in the state…" (i.e., 16-245n(c)); and "…shall (i) develop separate programs to finance and otherwise support clean energy investment in residential, municipal, small business and larger commercial projects…" CGS 16-245n(d)(1)(B).

7.1 State Funds

The Green Bank receives public revenues from a number of sources that are leveraged to mobilize multiples of private capital investment in the green economy of Connecticut.

System Benefit Charge

As its primary source of public revenues, the Green Bank through CGS 16-245n(b) receives a 1 mill per kilowatt-hour surcharge called the CEF from ratepayers of Eversource Energy and Avangrid. The CEF has been in existence since Connecticut deregulated its electric industry in the late 1990s.[7980] On average, households contribute between $7-$10 a year for the CEF, aggregating to about $25 MM per year, which the Green Bank leverages to attract multiples of private capital investment in clean energy through its Financing Programs.

Regional Greenhouse Gas Emission Allowance Proceeds

As a secondary source of public revenues, the Green Bank receives a portion (i.e., 23%) of Connecticut's RGGI allowance proceeds through CGS 22a-174(f)(6)(B). The Green Bank invests RGGI proceeds to finance clean energy projects through its Financing Programs. It should be noted that with the passage of PA 22-25, that allowance proceeds received in excess of $5.2 MM from the Green Bank's portion of RGGI, are to be directed to DEEP for the purposes of supporting electric school buses in environmental justice communities.

7.2 Federal Funds

The Green Bank receives public revenues through a number of past, current, and future sources[81] of federal funds as well that it leverages to scale-up and mobilize private capital investment in the green economy of Connecticut.

American Recovery and Reinvestment Act

Through the American Recovery and Reinvestment Act ("ARRA") the CCEF received $20 million for its programs and initiatives. After nearly $12 million of those funds were invested as grants, the Green Bank invested the remaining $8.2 million in financing programs. With $600,000 of ARRA funds left,[82] the Green Bank invested over $7.6 million of ARRA funds to attract and mobilize $167 million of public and private investment in residential clean energy financing programs.[83]

United States Department of Agriculture

The Green Bank has applied to the United States Department of Agriculture ("USDA") to seek access to low-cost and long-term federal loan funds for the deployment of clean energy in rural

[79] PA 98-28 An Act Concerning Electric Restructuring – https://www.cga.ct.gov/ps98/act/pa/1998pa-00028-r00hb-05005-pa.htm

[80] The Clean Energy Fund should not be mistaken with the Conservation Adjustment Mechanism (or the Conservation and Loan Management Fund), which is administered by the EDCs

[81] There have been ongoing public policy proposals at the national level that the Connecticut Green Bank has been a part of to create a US Green Bank. If such a public policy were passed, then the Connecticut Green Bank would have access to significant federal funds to leverage to scale-up and mobilize private capital investment in the green economy of Connecticut.

[82] As of June 30, 2022

[83] https://www.ctgreenbank.com/wp-content/uploads/2023/01/CGB_ARRA_infographic-Jan-2023.pdf

communities.[84] The USDA has vast lending authority under the Rural Electrification Act of 1936, which enables direct loans, project financing and loan guarantees to a variety of borrowers.

Infrastructure Investment and Jobs Act

As a result of the IIJA, significant federal resources are being made available to local and state governments through formula grants, and through competitive requests for proposals from budget allocations across many federal agencies. The Green Bank will pursue federal funding to support its programs.

Greenhouse Gas Reduction Fund

Within the IRA, is the $27 billion GHGRF modelled after the Connecticut Green Bank. $7 billion under Sec. 134(a)(1) is competitive grants for States, Municipalities, Tribes, and other eligible entities for zero emission technologies (e.g., residential rooftop solar) for low income and disadvantaged communities. Approximately $20 billion under Sec. 134(a)(2-3) is the national climate bank.

7.3 Additional Funding Sources

Per CGS 16-245n, additional funding sources include, but are not limited to:

- Charitable gifts, grants, contributions as well as loans from individuals, corporations, university endowments and philanthropic foundations;
- Earnings and interest derived from financing support activities for clean energy projects backed by the Connecticut Green Bank;
- If it qualifies as a CDFI under Section 4702 of the United States Code, funding from the CDFI Fund administered by the United States Department of Treasury, as well as loans from and investments by depository institutions seeking to comply with their obligations under the United States Community Reinvestment Act of 1977; and
- Contracts with private sources to raise capital.

8. Impact

The Green Bank's evaluation efforts seek to understand how the increase in investment and deployment of clean energy and environmental infrastructure supported through the Green Bank, result in benefits to society. To that end, the Green Bank has devised an Evaluation Framework and Impact Methodologies for various societal benefits.

8.1 Evaluation Framework

The Green Bank has established an Evaluation Framework to guide the assessment, monitoring and reporting of the program impacts and processes, including, but not limited to energy savings and clean energy production and the resulting societal impacts or benefits arising from

[84] "Rural" communities are defined by a population bound and the various limits depend on the program; at the broadest, "rural" may be considered a town that has a population not greater than 50,000 people. Despite its positioning in a mostly-developed corridor, we estimate Connecticut would have 69% of towns eligible at the 20,000-person limit and 89% of towns at the 50,000-person limit.

clean energy investment.[85] This framework focuses primarily on assessing the market transformation the Green Bank is enabling, including:

- **Supply of Capital** – including affordable interest rates, longer term maturity options, improved underwriting standards, etc.

- **Consumer Demand** – increasing the number of projects, increasing the comprehensiveness of projects, etc.

- **Financing Performance Data and Risk Profile** – making data publicly available to reduce perceived technology risks by current or potential private investors.

- **Societal Impact** – the benefits society receives from more investment and deployment of clean energy.

With the goal of pursuing investment strategies that advance market transformation in green investing, the Green Bank's evaluation framework provides the foundation for determining the impact it is supporting in Connecticut and beyond across the four (4) "E's" (i.e., E^4) – including Economy, Environment, Energy, and Equity.[86]

The Evaluation Framework will have to be revised, over time, to include environmental infrastructure, as well as the important role Green Liberty Bonds play in raising capital for investments.

8.2 Impact Methodologies

To support the implementation of the Evaluation Framework, the Green Bank, working with various public sector organizations, has developed methodologies that estimate the impact from the investment, installation and operation of clean energy projects, including:

- **Jobs** – working in consultation with the Connecticut Department of Economic and Community Development ("DECD"), through the work of Guidehouse (formerly Navigant), the Green Bank devised a methodology that takes investment in clean energy to reasonably estimate the direct, indirect, and induced job-years resulting from clean energy deployment.[87]

- **Tax Revenues** – working in consultation with the Connecticut Department of Revenue Services ("DRS"), through the work of Guidehouse, the Green Bank devised a methodology that takes investment in clean energy to reasonably estimate the individual income, corporate, and sales tax revenues from clean energy deployment.[88]

- **Environmental Protection** – working in consultation with the USEPA and DEEP, the Green Bank devised a methodology that takes the reduction in consumption of energy

[85] https://ctgreenbank.com/wp-content/uploads/2017/02/CTGreenBank-Evaluation-Framework-July-2016.pdf
[86] https://www.ctgreenbank.com/wp-content/uploads/2022/09/FY12-FY22-CGB-ImpactReport-8242022.pdf
[87] https://www.ctgreenbank.com/wp-content/uploads/2018/03/CGB_DECD_Jobs-Study_Fact-Sheet.pdf
[88] https://www.ctgreenbank.com/wp-content/uploads/2018/09/CGB-Eval-Tax-Methodology-7-24-18.pdf

and increase in the production of clean energy to reasonably estimate the air emission reductions (i.e., CO2, NOx, SO2, and PM2.5) resulting from clean energy deployment.[89]

- **Public Health Improvement** – working in consultation with the USEPA, DEEP, and the Connecticut Department of Public Health ("DPH"), the Green Bank devised a methodology that takes air emission reductions to reasonably estimate the public health benefits (e.g., reduced hospitalizations, reduced sick days, etc.) and associated savings to society resulting from clean energy deployment.[90]

- **Equity** – with the passage of PA 20-05, the Green Bank devised a methodology that takes the definition of "vulnerable communities" to track progress towards the goal of ensuring that no less than 40 percent of investment from its programs are directed to vulnerable communities by 2025.[91]

- **Energy Burden** – working in consultation with DEEP and PURA, the Green Bank devised a methodology that takes actual solar PV production data from meters compared against contractual lease and PPA prices, to estimate the energy burden reduction from financing solar PV.[92]

Each year, the Green Bank develops additional methodologies that value the impact the Green Bank is helping create in Connecticut and all of society. For more information on the Green Bank's impact methodologies, visit the Impact page of the website.[93]

In time, additional impact methodologies will be developed for environmental infrastructure.

8.3 Green Bond Framework

The Green Bank's Green Bond Framework[94] provides a structure in which the Green Bank can more efficiently and effectively support its efforts to raise capital and deploy more clean energy and environmental infrastructure through the issuance of green bonds.

Connecticut has been at the forefront of state-level efforts to combat the threat of global climate change. In order to increase investment, 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 and environmental infrastructure projects and providing a way for all residents, businesses, and institutions of Connecticut to invest in growing our green economy.

The framework sets out how the 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. The

[89] https://www.ctgreenbank.com/wp-content/uploads/2018/01/CGB-Eval-IMPACT-091917-Bv2.pdf
[90] https://www.ctgreenbank.com/wp-content/uploads/2018/03/CGB-Eval-PUBLICHEALTH-1-25-18-new.pdf
[91] https://www.ctgreenbank.com/wp-content/uploads/2022/07/Equity_Investment_in_Vulnerable_Communities.pdf
[92] https://www.ctgreenbank.com/wp-content/uploads/2022/07/CGB-Eval-Solar-Methodology-combined-6-8-2021-final.pdf
[93] https://www.ctgreenbank.com/strategy-impact/evaluations/
[94] https://ctgreenbank.com/wp-content/uploads/2020/04/CGB_Green-Bond-Framework_final-4-22-2020.pdf

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.

The Green Bond Framework will have to be revised, over time, to include environmental infrastructure.

9. Reporting and Transparency

The Green Bank has extensive reporting on its financial management and societal impact through various mechanisms. As a recipient of public revenues (i.e., CEF and RGGI allowance proceeds), the Green Bank believes that complete transparency is important to ensure the public's continued trust in serving its purpose. The Green Bank reports to the Governor's Office (i.e., Office of Policy and Management ("OPM")), various committees of cognizance within the CGA (i.e., energy & technology, commerce, environment, and banking), and other departments (e.g., DEEP, Office of Fiscal Analysis).

9.1 Annual Comprehensive Financial Report

An Annual Comprehensive Financial Report ("ACFR") is a set of government financing statements that includes the financial report of a state, municipal or other government entity that complies with the accounting requirements promulgated by the Governmental Accounting Standards Board ("GASB"). GASB provides standards for the content of an ACFR in its annually updated publication *Codification of Governmental Accounting and Financial Reporting Standards*. An ACFR is compiled by a public agency's accounting staff and audited by an external American Institute of Certified Public Accountants ("AICPA") certified accounting firm utilizing GASB requirements. It is composed of three sections – Introductory, Financial, and Statistical. The independent audit of the ACFR is not intended to include an assessment of the financial health of participating governments, but rather to ensure that users of their financial statements have the information they need to make those assessments themselves.[95]

To date, the Green Bank has issued eight ACFR's, including:

- Fiscal Year Ended June 30, 2014 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2015 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2016 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2017 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2018 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2019 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2020 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2021 (Certificate of Achievement)
- Fiscal Year Ended June 30, 2022

[95] The Government Finance Officers Association (GFOA), founded in 1906, represents public finance officials throughout the United States and Canada. GFOA's mission is to enhance and promote the professional management of governmental financial resources by identifying, developing, and advancing fiscal strategies, policies, and practices for the public benefit. GFOA established the Certificate of Achievement for Excellent in Financial Reporting Program in 1945 to encourage and assist state and local governments to go beyond the minimum requirements of generally accepted accounting principles to prepare CAFRs that evidence the spirit of transparency and full disclosure and then to recognize individual governments that succeed in achieving that goal.

As the "gold standard" in government reporting, the ACFR is the mechanism the Green Bank uses to report its fiscal year financial, investment, and impact performance to its stakeholders. For each of its seven years filing the ACFR with the Government Finance Officers Association the Green Bank has received a Certificate of Achievement for Excellence in Financial Reporting.[96]

9.2 Annual Report

Beyond the ACFR, the annual reports of the Green Bank are compiled by the marketing staff and include consolidated financial statement information and narratives of various program achievements in a condensed format that can be widely distributed.

To date, the Green Bank has issued eleven annual reports, including:

- Fiscal Year 2012 Annual Report
- Fiscal Year 2013 Annual Report
- Fiscal Year 2014 Annual Report
- Fiscal Year 2015 Annual Report
- Fiscal Year 2016 Annual Report
- Fiscal Year 2017 Annual Report
- Fiscal Year 2018 Annual Report
- Fiscal Year 2019 Annual Report
- Fiscal Year 2020 Annual Report
- Fiscal Year 2021 Annual Report
- Fiscal Year 2022 Annual Report

9.3 Auditors of Public Accounts

The office of the Auditors of Public Accounts ("APA") is a legislative agency of the State of Connecticut whose primary mission is to conduct audits of all state agencies, including quasi-public agencies. Included in such audits is an annual Statewide Single Audit of the State of Connecticut to meet federal requirements. The office is under the direction of two state auditors appointed by the state legislature. The APA audited certain operations of the Green Bank in fulfillment of its duties under Sections 1-122 and Section 2-90 of the CGS

To date, the APA has conducted four audits, including:

- Fiscal Years 2012 and 2013
- Fiscal Years 2014 and 2015
- Fiscal Years 2016 and 2017
- Fiscal Years 2018 and 2019

9.4 Open Connecticut and Open Quasi

Open Connecticut centralizes state financial information to make it easier to follow state dollars. In Connecticut quasi-public agencies are required to submit annual reports to the legislature, including a summary of their activities and financial information. In addition to that, the Comptroller's Office requested that quasi-public agencies voluntarily provide payroll and checkbook-level vendor payment data for display on Open Connecticut. The Green Bank, which

[96] GAO has yet to designate the FY 2021 ACFR with a Certificate of Achievement

was among the first quasi-public organizations to participate, has voluntarily submitted this information since the inception of Open Connecticut.[97] In June of 2020, the Comptroller launched Open Quasi, which provides payroll and checkbook level data for all quasi-public organizations in Connecticut.

For more information, go to https://openquasi.ct.gov/

10. Research and Product Development

As the Green Bank implements its Comprehensive Plan, there will be ongoing efforts to develop market opportunities for future green investments. With the lessons being learned and best practices being discovered in the green economy, the Green Bank's ability to deliver more societal benefits requires understanding potential opportunities and the development of pilot programs and initiatives to increase and measure impact, including, for example:

- **Ecosystems Services** – increasing understanding of ecosystem services values from environmental infrastructure, will help to identify opportunities to mobilize private investment to maximize GHG emissions reductions and resiliency against climate change. Ongoing support of research studies to understand the value of ecosystem services from environmental infrastructure is important.

- **Carbon Offsets** – continuing to increase understanding of carbon offsets,[98] recognizing their importance within environmental infrastructure (e.g., forest carbon, climate-smart agriculture) and the potential to generate revenues in support of projects, there is need for ongoing support of research studies to understand carbon offset markets.

- **Resiliency** – in its efforts to advance resilience, the Green Bank working with DEEP, Insurance Department, and CIRCA, will seek to better understand labelling (e.g., FORTIFIED by the Insurance Institute for Business and Home Safety), direct install measures, and other programs (e.g., adapting Solarize campaigns to Ruggedize campaigns). To continue to develop ESS, research and pilots for vehicle to grid ("V2G") will also be pursued.

- **Electric School Buses** – per Public Act 22-25, the Green Bank supported contract extensions for electric school buses ("ESB") and financial support through RGGI for vouchers in support of ESB deployment in environmental justice communities through the Connecticut Hydrogen and Electric Automobile Purchase Rebate ("CHEAPR") program. Support for the deployment of ESBs and electric vehicle supply equipment ("EVSE") will enable increased private investment to support the 100% zero emission ESB goals for 2030 (i.e., environmental justice communities) and 2040 (i.e., all communities).

[97] https://openquasi.ct.gov/

[98] Verified Carbon Standard – VM0038 Methodology for Electric Vehicle Charging Systems (V1.0) – https://verra.org/methodology/vm0038-methodology-for-electric-vehicle-charging-systems-v1-0/

- **Hydrogen** – per Special Act 22-8,[99] and consistent with the definition of "clean energy" under CGS 16-245n, the Green Bank is chair of the task force to study hydrogen power. Recognizing the importance of "green hydrogen" to Connecticut's fuel cell industry, there may be the need for research on the sources, infrastructure, and uses related to hydrogen.

- **Impact Methodologies** – building on the Green Bank's leading impact methodologies for "clean energy," efforts will be undertaken to develop impact methodologies for "environmental infrastructure".

- **Battery Recycling** – as the co-administrator of the 580 MW Energy Storage Solutions program, understanding the implications, challenges, and opportunities for battery recycling (e.g., lithium-ion batteries) is important.

The Green Bank's research product development efforts are intended to open-up new market channels for private investment in Connecticut's green economy through studies, pilot projects, and other initiatives that have the potential for expanding the impact of the Green Bank.

11. Budget

11.1 FY 2023 Budget

For the details on the FY 2023 budget– click here.

For details on the FY 2023 revised budget – click here.

[99] An Act Establishing a Task Force to Study Hydrogen Power – https://www.cga.ct.gov/2022/ACT/SA/PDF/2022SA-00008-R00HB-05200-SA.PDF

12. Glossary of Acronyms

ABS	Asset-Backed Security
ACFR	Annual Comprehensive Financial Report
ACG Committee	Audit, Compliance, and Governance Committee
AICPA	American Institute of Certified Public Accountants
APA	Auditors of Public Accounts
ARRA	American Recovery and Reinvestment Act
BEA	Business Energy Advantage
BIL	Bipartisan Infrastructure Law
BOC Committee	Budget, Operations, and Compensation Committee
BOD	Board of Directors
CBI	Climate Bonds Initiative
CCEF	Connecticut Clean Energy Fund
CDFI	Community Development Financial Institution
CEF	Clean Energy Fund
CGA	Connecticut General Assembly
CGS	Connecticut General Statutes
CHEAPR	Connecticut Hydrogen and Electric Automobile Purchase Rebate
CIRCA	Connecticut Institute for Resilience and Climate Adaptation
C-PACE	Commercial Property Assessed Clean Energy
DECD	Department of Economic and Community Development
DEEP	Department of Energy and Environmental Protection
DoAg	Department of Agriculture
DPH	Department of Public Health
DRS	Department of Revenue Services
EDC	Electric Distribution Company
ESB	Electric School Bus
EEB	Energy Efficiency Board
EIF	Environmental Infrastructure Fund
ESS	Energy Storage Solutions
EM&V	Evaluation, Measurement, and Verification
EVSE	Electric Vehicle Supply Equipment
GASB	Governmental Accounting Standards Board
GHG	Greenhouse Gas Emissions
GHGRF	Greenhouse Gas Reduction Fund
GWSA	Global Warming Solutions Act
HES	Home Energy Solutions
HES-IE	Home Energy Solutions – Income Eligible
IPC	Inclusive Prosperity Capital
IIJA	Infrastructure Investments and Jobs Act
IRA	Inflation Reduction Act
LMI	Low-to-Moderate Income
MPA	Master Purchase Agreement
MTI	Master Trust Indenture
NRCS	Natural Resources Conservation Service

NRES	Non-Residential Renewable Energy Solutions
OPM	Office of Policy and Management
PA	Public Act
PDR	Purchasing Development Rights
PPA	Power Purchase Agreement
PURA	Public Utilities Regulatory Authority
RGGI	Regional Greenhouse Gas Initiative
RPS	Renewable Portfolio Standard
RRES	Residential Renewable Energy Solutions
RSIP	Residential Solar Investment Program
SBEA	Small Business Energy Advantage
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SCRF	Special Capital Reserve Fund
SHREC	Solar Home Renewable Energy Credit
SRF	State Revolving Fund
TPL	Trust for Public Land
URI	Urban Resources Institute
USDA	U.S. Department of Agriculture
USDOE	U.S. Department of Energy
USEPA	United States Environmental Protection Agency
V2G	Vehicle to Grid

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