ANNUAL REPORT 2016

## Building a Stronger Connecticut



## Banking on growth

The Connecticut Green Bank is a guasi-public state agency that promotes green energy deployment in Connecticut by using public dollars to attract to lead the growing green bank movement nationwide. We partner with

**INNOVATING:** Using a unique financing model to make green energy investment safer, more affordable and more accessible

**EDUCATING:** Increasing awareness of green energy's benefits to stimulate interest

**ACTIVATING:** Inspiring people to take action to make green energy part of their lives

#### VISION

green energy deployment to help Connecticut achieve economic prosperity,

#### MISSION

To support the governor's and legislature's energy strategy to achieve cleaner, cheaper and more reliable sources of





## Investing in Connecticut for Connecticut

Despite being one of the country's smallest states, Connecticut made a bold move to launch the nation's first green bank in July of 2011. For the past five years, the Connecticut Green Bank has been driven to increase society's access to the transformative power of clean energy. By means of leveraging limited public resources to attract multiples more in private investment, the green bank model is supporting a powerful economic engine. Once again in FY16, the Connecticut Green Bank led successful efforts to scale up clean energy deployment reducing green house gas emissions, easing the energy cost burden on the state's residents and businesses, and creating ever more jobs in Connecticut's clean energy economy.

Fueled by our mission to increase access and affordability of clean energy, the Green Bank "engine" leveraged \$48 million in public funds to attract over \$268.3 million more in private investment. Or in other words, for every public dollar the Green Bank invested, private capital chose to invest more than \$5. We continue to positively impact Connecticut as a job creator within the growing green economy. In FY16, we created over 4,400 direct, indirect, and induced job-years from investment mobilized by the Green Bank, an 8% increase over the previous year.

In addition to our economic impact, we are also helping to make Connecticut cleaner and healthier. FY16 saw our projects produced more than 70 megawatts of installed renewable energy capacity — the most ever deployed in a year. By replacing fossil fuels with renewable energy, we reduced the emissions of polluting greenhouse gases by over 885,000 tons of carbon dioxide over the life of the projects.

The success of our Green Bank engine continues to reinforce Connecticut's position as a national leader. The Connecticut Green Bank model and its results are demonstrating to people both inside the state and out, that green banks can have a significant impact on global climate change. With the establishment and subsequent success of green banks in New York, New Jersey, and Rhode Island, other states like Colorado, Maryland, and Nevada are being inspired to develop their own green banks. This report offers a glimpse into our successes in FY16 as we continue to grow the Green Bank movement in Connecticut and beyond.



### Our economic development engine



#### INVESTMENT

Connecticut Green Bank attracts philanthropic institutions, banks, and other capital to directly invest in our programs.

#### **CO-INVESTMENT**

Connecticut Green Bank initiates public-private partnerships that co-invest in clean energy projects and programs.

provides local community banks and credit unions with

aggregates smaller projects under larger capital facilities, which in turn attract private

on incentives by increasing

#### HIGHLIGHTS

2016 by the numbers

#### ORGANIZATIONAL

#### **\$316.3 MILLION DEPLOYED**

\$48 million in rate payer funds leveraged \$268.3 million in private capital, \$5 in private investment per every \$1 in public funds

#### **4.444 JOB** YEARS CREATED

Direct, indirect, and induced

#### **GREEN ENERGY**

74.4 MW **OF INSTALLED** RENEWABLE **ENERGY** CAPACITY

### 885,103 TONS

The equivalent of planting 11,643 acres of trees

#### PROGRAMMATIC

#### **\$9.8 MILLION OF INVESTMENT INTO** THE LOW INCOME **SOLAR LEASE** PROGRAM

#### \$5.2 MILLION **INVESTMENT IN 263 SMART-E LOANS**

333 projects for 2,199 kW of residential solar PV deployment

Including 1,052 kW of residential solar PV deployment



#### 8.271 CLEAN **ENERGY PROJECTS**

Completed, approved or closed

2,548 projects were in distressed communities (\$86 million invested for 21 MW of energy)

3,167 projects benefited residents in low to moderate income (LMI) census tracts (100% or less of area median income)



#### **\$21.6 MILLION IN C-PACE INVESTMENTS**

Including 37 projects for 5,272.7 kW of commercial solar PV deployment

## Making investments across Connecticut

This year, we have made significant investments and seen tremendous results in Residential, Commercial, Industrial & Institutional, and Infrastructure markets.

Our investments have resulted in accessible capital for important energy efficiency and green energy upgrades for our businesses, community organizations, homeowners, and government.

See how we are innovating, educating, and activating to accelerate the growth of green energy in Connecticut.



## Growing Connecticut businesses

Connecticut Green Bank enhances the opportunity for commercial, industrial and institutional entities to access green energy and reduce their energy burden, allowing them to invest the savings into their organization.

By leveraging public funds to attract private capital, Connecticut Green Bank continues to uncover new and innovative ways to fund more green energy projects across Connecticut.



### **SUPPORTING** CONNECTICUT MANUFACTURING

Since its inception, Connecticut Green Bank's Commercial Property Assessed Clean Energy (C-PACE) program has been successful across the state's industrial sector. In fact, nearly 29% of the end-use customers participating in C-PACE were from industry, with more than \$22.8 million invested in these projects since 2013. To further support industrial and manufacturing companies, the Connecticut Green Bank and the state

Department of Economic and Community Development, through its Manufacturing Innovation Fund, launched the Energy on the Line program.

**INNOVATE:** The program helps manufacturers in the state thrive and be more competitive by reducing one of their biggest expenses: energy costs. Energy on the Line offers companies grants of up to \$50,000 to apply to project-related expenses when they complete a clean-energy project through C-PACE. Energy on the Line grants let manufacturers take smaller loans and further improve cash flow.

"Connecticut Green Bank's trailblazing effort to advance energy efficiency and renewables through their C-PACE program paved the way for investors such as Hannon Armstrong to provide capital essential to scaling the commercial market."

Jeffrey Eckel, President & CEO Hannon Armstrong

#### ATTRACTING **PRIVATE CAPITAL**

In Fiscal Year 2016, Connecticut Green Bank and Hannon Armstrong struck an agreement that expanded the already successful C-PACE program by providing access to up to \$100 million in private capital. Under this agreement, Hannon Armstrong invests up to \$9 for every dollar the Connecticut Green Bank invests to help the C-PACE program reach its full potential.

Joining forces with Hannon Armstrong was an innovative approach to making the Connecticut Green Bank's limited funds stretch further to finance more energyimprovement projects for commercial and industrial properties. The financing structure allows the Connecticut Green Bank to effectively leverage private capital while providing Hannon Armstrong access to a high quality, rapidly growing class of assets.

**EDUCATE:** To get the word out about the program, the Connecticut Green Bank educated contractors and manufacturers directly, through the state's manufacturing associations and through outreach to local economic development coordinators.

ACTIVATE: Launched in April 2016, the Energy on the Line program received significant attention and the initial response was strong.



## Making a difference for Connecticut homeowners

In fiscal year 2016, Connecticut Green Bank set a strategic goal of reducing the energy burden on low- to moderate-income residents and distressed communities. We have made great strides toward this goal with exciting new programs and partnerships.



### REDUCING **FAMILIES' ENERGY** BURDEN

Historically, solar PV systems, which can successfully reduce the energy burden on residents, have been financially out of reach for low- and moderate-income households. Connecticut Green Bank is closing this clean-energy affordability gap and making solar PV more accessible by working with PosiGen Solar Solutions.

**INNOVATE:** The first-of-its-kind collaboration, called Solar for All, combines affordable solar leasing with energy-efficiency upgrades. There is no down payment or minimum credit score requirement. Best of all, families save on energy costs right away, so they can put those precious dollars toward other needs.

**EDUCATE:** Connecticut Green Bank and PosiGen educated residents in limited-income communities about the program. High-profile launch events were held in Bridgeport, New Haven, Hartford and New London.

50 new jobs.

"For PosiGen and the Connecticut Green Bank to come together to help people who need it the most is amazing. I have such respect for them."

Susan B. Young Solar ambassador and Posigen team member

### BROADENING **ACCESS TO FINANCING**

Connecticut Green Bank has teamed up with Capital for Change (C4C), a non-profit community development financial institution, to help credit-challenged homeowners finance projects that will cut both energy consumption and costs.

For years, the highly successful Smart-E loan program has worked with banks and

credit unions to provide homeowners with no-money-down, low-interest loans for energy-improvement projects. The new initiative with C4C makes loans available to even more homeowners, including those whose credit ratings and debt-to-income ratios fall outside traditional underwriting criteria.

Connecticut.

**ACTIVATE:** This collaboration prompted PosiGen to establish a Connecticut headquarters, which created roughly

By collaborating with C4C, we are bringing the benefits of green energy to a new group of homeowners and reducing the energy burden on residents across



### A SOLAR AMBASSADOR

Susan B. Young, of Bridgeport, was struggling with electric bills that sometimes reached \$300 a month. She considered going solar, but the cost was prohibitive. Then she heard about Solar for All and she signed up. PosiGen weatherized her home and installed a solar PV system.

"After the solar system was turned on, the first utility bill I received was about *\$26," she says. "I thought the utility* company had left off a zero."

Young was so excited by her experience that she now works for PosiGen. With a background in social work, Young finds it rewarding to educate people about the benefits of the Connecticut Green Bank/PosiGen program.

## Investing in our community

The Connecticut Green Bank is leveraging its public funds to attract private capital earmarked for reducing energy costs and making Connecticut multifamily buildings healthier, greener and more efficient.

This year, we made significant progress in funding upgrades to the state's aging housing stock creating new green energy opportunities, while expanding the reach and impact of our solar lease program.

### UPGRADING **MULTIFAMILY DWELLINGS**

Connecticut Green Bank is deploying a \$5 million investment by the John D. and Catherine T. MacArthur Foundation to reduce operating costs and improve the comfort, safety, value and affordability of the state's aging multifamily housing stock for property owners and tenants alike.

Many of Connecticut's multifamily dwellings need environmental and other building improvements before proceeding with energy upgrades. But, because of the financial complexity of these properties and the need to remediate health and safety issues along with other physical problems, these properties often do not conform to banks' typical underwriting requirements, making private financing challenging, if not altogether prohibitive.

**INNOVATE:** Connecticut Green Bank is overcoming these obstacles by directing the MacArthur funds into unsecured loans for assessing, designing, and funding comprehensive energy upgrade projects that deliver significant savings to owners and residents. In some cases, savings are so significant, they can pay for other major capital improvements like roof replacements.

ACTIVATE: To date, this innovative financing approach has helped motivate multifamily property owners to analyze, identify, and pursue energy improvement opportunities for their properties that would otherwise not move forward.

GROWING **CONNECTICUT'S SOLAR MARKET** 

Connecticut Green Bank continues to grow the state's solar market. Our commercial solar lease program was the first to combine a solar power purchase agreement (PPA) with the C-PACE structure to make solar leases possible for small businesses or non-profits.

Previously, third-party solar equipment owners were reluctant to incur the risk of leasing to a non-profit. However, the presence of a C-PACE credit enhancement provides payment security against the property, which reduces the risk for the third-party owner and makes going solar possible for organizations that need it most.

In Fiscal Year 2016, this innovative program provided nearly 20 solar lease projects for non-profits.

"I think we'll be a model for other communities when they see the savings we've incurred and helping out the environment."

Deborah Deptula Homeowner, East Meadow Condominium

> Debra Deptula (homeowner) and Lisa Rasmussen (property manager) of East Meadow Condominium, who improved their multifamily building with the LIME loan.

See their story at ctgreenbank.com/our-stories/#multifamily

## Constructing a cleaner Connecticut

In the infrastructure sector, Connecticut Green Bank works closely with state government to create a new policy that will accelerate the growth of green energy in Connecticut.

#### TRANSFORMING **WASTE INTO ENERGY**

Thanks, in large part, to Connecticut Green Bank, a brand-new, food-waste-toenergy plant in Southington is up and running. The Quantum Biopower facility will annually divert 40,000 tons of food waste from Connecticut landfills, displace 5,000 tons of carbon dioxide and produce 7.5 million kilowatt hours of renewable energy — enough to power nearly 800 homes for a year. It will also produce useful byproducts such as fertilizer, compost, and high-quality soil amendments.

**INNOVATE:** The Quantum Biopower facility is the first large-scale anaerobic digester project of its kind in New England. It was made possible by Connecticut Green Bank's collaboration with People's United Bank and

"We see renewable energy as an area of growth for People's. Our investment in Quantum gives us visibility that will open the doors to similar investment opportunities.'

Domenic Cessario, Senior Commercial Relationship Manager, Senior Vice President People's United Bank, N.A.

### ACCELERATING **THE GROWTH OF SOLAR**

A new state policy approved this year will enable Connecticut Green Bank to further accelerate the growth of solar energy in the state.

Solar Home Renewable Energy Credits (SHRECs) will make more funds available for Connecticut Green Bank's Residential Solar Investment Program (RSIP).

Quantum Biopower. Connecticut Green Bank's \$2 million investment in the project has successfully leveraged \$12 million in private investment.

**EDUCATE:** Connecticut Green Bank collaborates with developers and lenders to ensure all proposed technologies meet or exceed financial objectives as well as all government environmental regulations.

**ACTIVATE:** Connecticut Green Bank supported the project through the complex process of loan approvals, permitting (with assistance from the Department of Energy and Environmental Protection (DEEP)), siting and more to bring it to life.

The state's forward-looking policy requiring large food-waste generators to recycle organic materials helped drive the project's development. Food waste

RSIP provides financial incentives for owners of one- to four-family homes to install solar PV systems. The program has been so successful that more funds were needed to keep up with demand.

Under the SHREC policy, Connecticut Green Bank will sell renewable energy credits derived from solar installations to the state's electric distribution companies. The proceeds will fund additional

makes up about 25 percent of the 2 million tons of trash generated yearly in Connecticut.

State statute calls for Connecticut Green Bank to develop up to a total of five food-waste-to-energy plants. That's good news for Connecticut and ratepayers. These facilities will pay taxes, create jobs, support the state's recycling efforts and contribute to a greener, healthier environment for state residents.

> The Quantum Biopower facility in Southington, CT made possible by Connecticut Green Bank and private capital provided by People's United Bank

residential solar projects to reach its mandate of creating at least 300 megawatts of new residential solar PV by the end of 2022.

SHRECs will save ratepayers millions of dollars, create more jobs in Connecticut's solar industry and reduce reliance on fossil fuels.

### In the News

JULY 2015 Governor Malloy Tours Bridgeport House with Solar and Energy Efficient Measures

An innovative public-private partnership that is making clean energy more accessible and affordable to families susceptible to rising energy costs

> AUGUST 2015 Crowdfunding of Homeowner Solar Installations Surpasses \$1 million in Connecticut

Connecticut Green Bank, the nation's first Green Bank, successfully utilizes crowdfunding platform to finance innovative solar loans for homeowners

DECEMBER 2015 Green Bank and Hannon Armstrong Partner for Commercial Clean Energy Financing

Under the terms of the agreement, Hannon Armstrong will provide access to up to \$100 million in funding for green energy projects for commercial and industrial buildings and businesses

**MARCH 2016** Solar Exhibit at the Energize Connecticut Center Constructed

Students work on exhibit for residents and business owners to learn more about solar energy

APRIL 2016 Energy on the Line Program Will Lower Energy Costs for Connecticut Manufacturers

**NOVEMBER 2015** 

Town of Easton Unveils

Solar Farm at Samuel Staples Elementary School

New system will generate 50 percent of school's electricity

Affordable financing and grant opportunities will help eligible manufacturers be more competitive

**JUNE 2016** Connecticut Green Bank Recognized for Connecticut Solar Lease Commercial Program

The Connecticut Green Bank received a 2016 State Leadership in Clean Energy Award for an innovative finance program that makes solar adoption possible for commercial and nonprofit organizations

### Read more at ctgreenbank.com/news-events

### From the Governor

The ability to change is essential to success. When facing a new reality, people, organizations—even states—that respond with creative new ideas are the ones that will come out on top.

So it is with the Connecticut Green Bank. The Green Bank represents an innovative response to the energy and economic challenges facing all states today. It drives the critical transition to green energy, creates good jobs and helps state residents and businesses save on energy costs. But it does this in an innovative way, by utilizing public funding to attract private investment into our state. As you see by this annual report, this innovative approach is not only succeeding, but has been adopted as a model by other states.

The Connecticut Green Bank is just one example of how Connecticut is responding to changes taking place across the country and around the world. As we have throughout our history, we continue to lead the nation in developing innovative solutions to meet the challenges of our times. I congratulate the Connecticut Green Bank, its people and its partners on their success in 2016.



### **BOARD OF** DIRECTORS

Commissioner, Connecticut Department

Commissioner, Connecticut Department of Energy and Environmental Protection

of Economic and Community

Catherine Smith

Board Chair

Development

**Robert Klee** Board Vice Chair **Matthew Ranelli** Board Secretary Partner, Shipman & Goodwin, LLP

**Denise Nappier** Treasurer, State of Connecticut

President, Connecticut State Council of Machinists

Kevin Walsh Managing Director and Group Head, Power and Renewable Energy, GE Capital, Energy Financial Services

John Harrity



Mun Young Choi Provost and Executive Vice President of Academic Affairs, University of Connecticut

Norma Glover Principal, NJG Associates

Patricia Wrice Executive Director, Operation Fuel

Reed E. Hundt Chief Executive Officer, Coalition for Green Capital

Thomas M. Flynn Managing Member, Coral Drive Partners

# Connecticut Green Bank

#### STATEMENTS OF NET POSITION

			Increase
	2016	20151	(Decrease)
Cash and cash equivalents - unrestricted	\$ 48,072	\$ 39,894	\$ 8,178
Other current assets	\$ 13,274	\$ 18,079	\$ (4,805)
Program loans & other long term assets	\$ 47,618	\$ 43,830	\$ 3,788
Capital assets, net	\$ 58,115	\$ 26,971	\$ 31,144
Cash and cash equivalents - restricted	\$ 9,750	\$ 8,799	\$ 951
Total assets	\$ 176,829	\$ 137,573	\$ 39,256
Deferred amount for pensions	\$ 2,575	\$1,670	\$ 905
Total deferred outflows of resources	\$ 2,575	\$ 1,670	\$ 905
Current liabilities	\$ 13,222	\$ 9,343	\$ 3,879
Long term liabilities	\$ 21,096	\$ 4,641	\$ 16,455
Fair value of interest rate swap	\$ 1,628	\$ 660	\$ 968
Pension liability	\$ 16,096	\$ 14,900	\$ 1,196
Total liabilities	\$ 52,042	\$ 29,544	\$ 22,498
Deferred amount for pensions	\$ -	\$ 532	\$ (532)
Total deferred inflows of resources	\$ -	\$ 532	\$ (532)
Net position, unadjusted			
Invested in capital assets	\$ 58,115	\$ 26,971	\$ 31,144
Restricted Net Position:			
Non-expendable	\$ 1	\$ 1	\$ -
Restricted - energy programs	\$ 9,750	\$ 8,799	\$ 951
Unrestricted Net Position	\$ 59,496	\$ 73,396	\$ (13,900)
Total net position, unadjusted	\$ 127,362	\$ 109,167	\$ 18,195
Net position, adjusted			
Unrestricted Net Position	\$ 59,496	\$ 73,396	\$ (13,900)
Contingent liabilities - programs and projects <sup>2</sup>	\$ (84,502)	\$ (83,433)	\$ (1,069)
Total net position, adjusted	\$ (25,006)	\$ (10,037)	\$ (14,969)

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FINANCIAL HIGHLIGHTS

For the years ended June 30, 2016 and 2015: (in thousands)

#### STATEMENTS OF REVENUE, EXPENSE AND CHANGE IN NET POSITION

Revenues
Operating Expenses:
Grants and programs
General and administrative expense
Total Operating Expenses
Operating Income
Non-operating revenue (expense)
Provision for loan losses
Payments to State of Connecticut
Capital contributions
Distributions
Total Non-Operating Revenue (Expenses)
Net Change
For more details on the financial statements, please access the Comprehe



<sup>1</sup>2015 has been restated to agree to the 2016 Comprehensive Annual Financial Report (June 30, 2016).

<sup>2</sup> See Note 14 to CGB's 2016 audited financial statements for further detail.

2016	2015 <sup>1</sup>	Increase (Decrease)
¢ 07700	<i><b>†</b></i> 46 20 4	
\$ 37,788	\$ 46,294	\$ (8,506)
\$ 26,843	\$ 22,131	\$ 4,712
\$ 4,630	\$ 3,117	\$ 1,512
\$ 31,473	\$ 25,248	\$ 6,225
\$ 6,316	\$ 21,046	\$ (14,731)
\$ 908	\$ 352	\$ 557
\$ (1,022)	\$ (564)	\$ (458)
\$	\$ (19,200)	\$ 19,200
\$ 12,294	\$ 6,844	\$ 5,450
\$ (302)	\$ (105)	\$ (197)
\$ 11,879	\$ (12,672)	\$ 24,552
\$ 18,195	\$ 8,374	\$ 9,821

nore details on the financial statements, please access the Comprehensive Annual Financial Report (June 30, 2016) at www.ctgreenbank.com

<b>Use of Resources</b> (in thousands)	
<ul> <li>Loans and Leases</li> <li>Credit Enhancements</li> </ul>	
Subsidies	
*Subsidies identified in early fiscal years were predominantly resource uses of the Connecticut Green Bank's predecessor – the Connecticut Clean Energy Fund.	
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Find out more about how Connecticut Green Bank is accelerating the growth of green energy for a stronger Connecticut at www.ctgreenbank.com

