



Connecticut Green Bank

Attracting Private Investment, Growing Our Economy,
Creating Jobs, and Helping Our Communities Thrive

National Association of State Energy Officials

Updates from the Field – Green Banks

August 8, 2018

Connecticut Green Bank

Delivering Results for Connecticut



- **Investment** – mobilized over \$1.3 billion of investment into Connecticut’s clean energy economy
- **Economic Development** – created nearly 16,000 total job-years – 6,200 direct and 9,700 indirect and induced, while raising nearly \$50 million in state and local tax revenues
- **Energy Burden** – reducing the energy burden on over 30,000 households and businesses, including “beyond parity” for LMI solar
- **Environmental Protection** – deployed more than 285 MW of clean renewable energy helping to reduce over 4.6 million tons of greenhouse gas emissions that cause climate change

Private investment drives economic growth

Creates jobs, lowers energy costs, and reduces GHGs



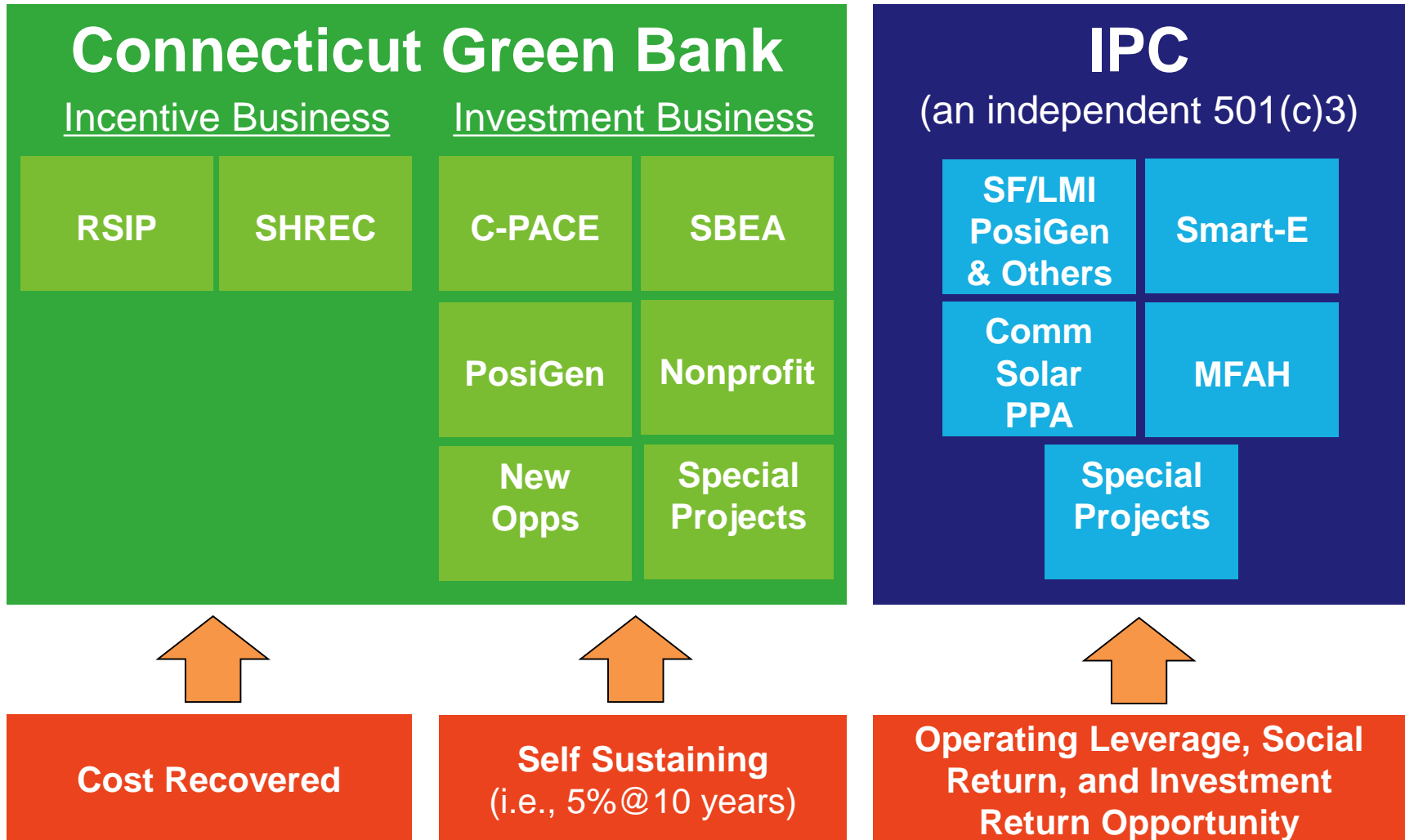
REFERENCES

CT Green Bank data warehouse report from July 1, 2011 through June 30, 2018

Connecticut Green Bank

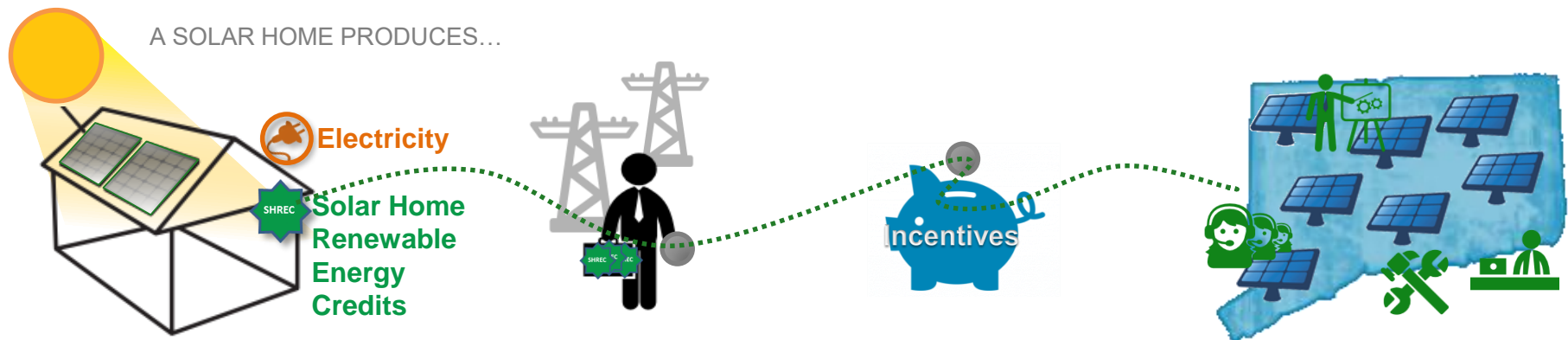


Business Units and Nonprofit “Spinoff”



Incentive Business

RSIP Incentive and SHREC Securitization



When panels produce electricity for a home, they will also produce Solar Home Renewable Energy Credits (SHRECs). The Green Bank provides upfront incentives through RSIP and collects all the SHRECs produced per statute.

Utilities required to enter into 15-year contracts with the Green Bank to purchase the stream of SHRECs produced. This helps utilities comply with their clean energy goals (i.e., Class I RPS).

The Green Bank would then use the revenues from the 15-year fixed price contracts to support the RSIP incentives (i.e., PBI and EPBB), cover admin costs, and fund securitization or financing costs.

A public policy with 300 MW target will create more locally-sourced sustainable energy, helping make our power grid more secure and less congested, and also curb pollution.

Investment Business Public-Private Partnerships



Credit Enhance	Warehousing	Tax Equity Finance		Project Finance	PRI	Tax Credit Bonds
<p>\$45 MM OPEN 20:1¹</p> <p>Residential Energy</p>	<p>\$50+ MM OPEN 9:1</p> <p>C-PACE</p>	<p>\$75 MM CLOSED 7.5:1</p> <p>Residential Solar Commercial Solar</p>	<p>\$60+ MM OPEN 6:1³</p> <p>Green Bank Solar PPA</p>	<p>\$65 MM CLOSED 10:1</p> <p>Grid-Tied</p>	<p>\$5 MM OPEN 100%²</p> <p>Multifamily Energy</p>	<p>\$9 MM CLOSED 9:1</p> <p>Green Bank Solar PPA</p>
<p>\$6 MM CLOSED 6:1</p> <p>Residential Solar</p>	<p>\$30 MM CLOSED 4:1</p> <p>C-PACE</p>	<p>\$35 MM OPEN 4:1</p> <p>Solar for All</p>	<p>\$22 MM CLOSED 8:1</p> <p>Colebrook Wind</p> <p>5 MW Wind Project</p>	<p>\$3 MM OPEN 100%⁴</p> <p>Residential and Commercial Storage</p>	<p>\$3 MM CLOSED 3:1</p> <p>Archimedes Screw Hydroelectric Project</p>	

REFERENCES

1. LLR yields high leverage – and it is 2nd loss and thus with no to low defaults, we haven't used to date. IRB's not considered in the leverage ratio.
2. Foundation PRI is to HDF, guaranteed by the CGB in the case of MacArthur Foundation.
3. Onyx Partnership has no upper limit and CGB currently has authorization to commit up to \$15mm.
4. Foundation PRI's are backed by CGB balance sheet



Inclusive
PROSPERITY



Inclusive Prosperity Capital



Sparked by the Connecticut Green Bank



INCLUSIVE
PROSPERITY CAPITAL

- **Foundation of Success** – mobilized over \$1.3 billion of public and private capital deployed in Connecticut from 2012–2018 (\$360 million in underserved markets)
- **Geographic Expansion** – \$810 billion of renewable generation investment potential across the U.S. from 2018-2050 (Real 2017 \$'s);
- **Cost Reductions & Scale** – origination expansion, geographic diversification, and operational efficiencies; and
- **Project Deployment & Risk-Adjusted Returns** – successful capitalization of underserved markets & credits with private capital at appropriate returns.

Inclusive Prosperity Capital

Fund Launch



- **Launch Date:** August 2018
- **Assets Under Management at Launch:** \$20 million
- **Assets Under Management Year 1 Total Target Raise:** \$75+ million
- **Key Contributors at Launch:** Connecticut Green Bank, Kresge Foundation, Hewlett Foundation, Calvert Impact Capital
- **Fund Leadership:** Seven (7) program and investment professionals transferring from the Connecticut Green Bank at launch
- **Unique Features:** In addition to capital injection, Connecticut Green Bank to provide full operational support of \$10 million¹ over first six (6) years of operation (no “going concern” risk)

NOTES

1. Of this total, \$6 million will run through Inclusive Prosperity Capital, while \$4 million will be expenses covered directly by the Connecticut Green Bank

Inclusive Prosperity Capital

Support for Connecticut Green Bank



- **Solar for All** – single family residential solar PV lease and EE ESA targeted at LMI HH in partnership with PosiGen
- **Green Bank Solar PPA** – small to medium commercial, MUSH, affordable housing, and nonprofits solar PPA in partnership with tax equity and debt providers
- **Affordable Multifamily Housing** – multifamily energy efficiency, renewable energy, and health and safety financing from predevelopment to term in partnership with MacArthur Foundation
- **Smart-E Loan** – single family residential energy efficiency, renewable energy, and health and safety in partnership with local community banks and credit unions





Thank You

Bryan Garcia

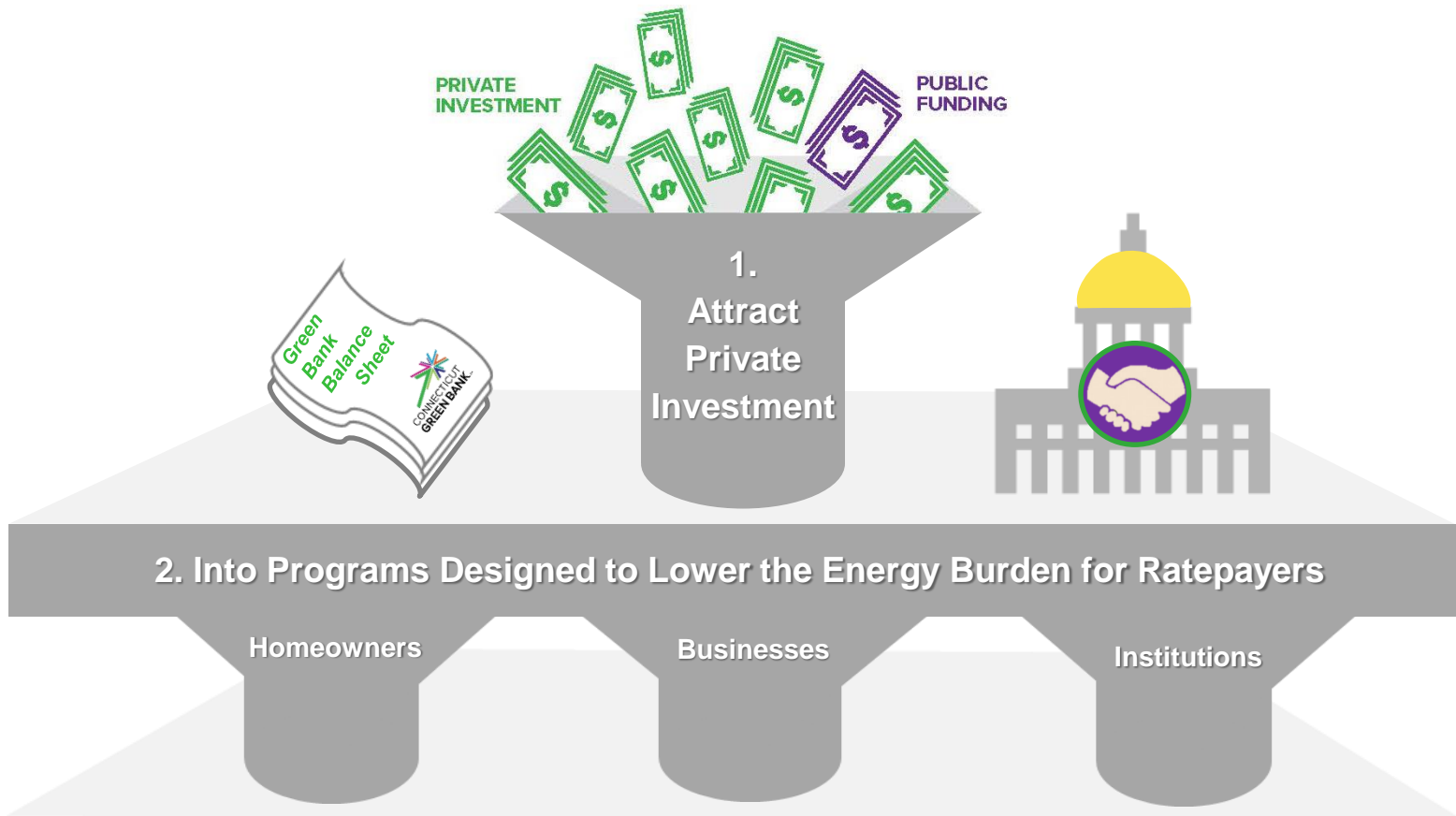
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Connecticut Green Bank Economic Engine



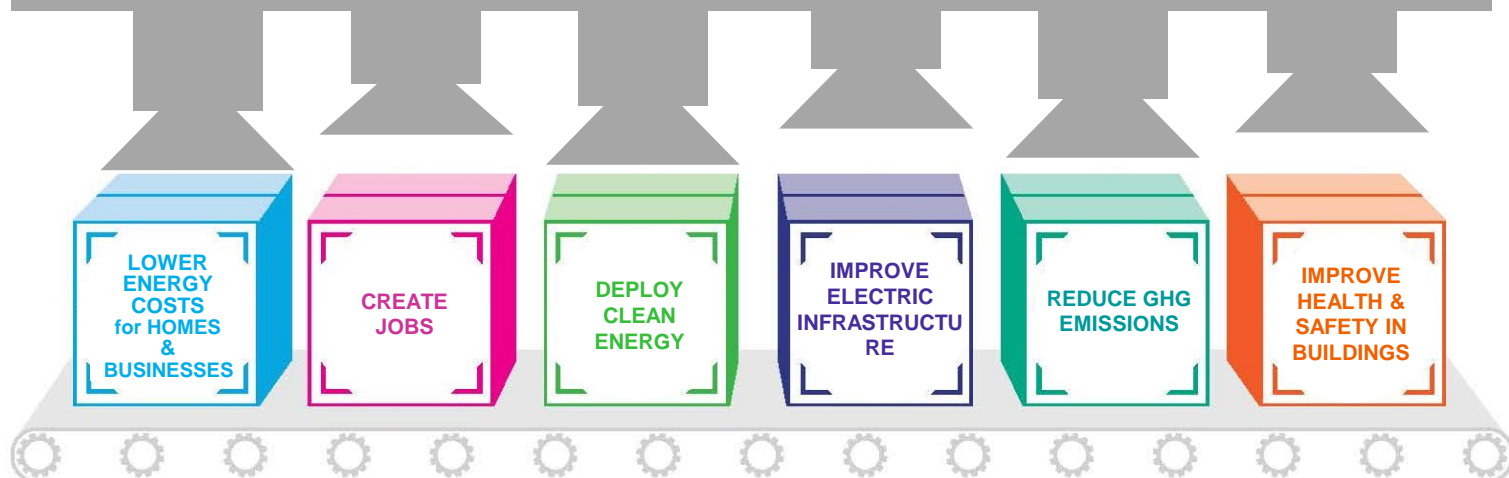
Connecticut Green Bank

Economic Engine (cont'd)

3. Apply Innovative Financing Tools to Deploy Public and Private Capital



4. Educate and Activate Consumers with Ratepayer-focused Marketing Strategies



5. ACCELERATE THE GROWTH OF CLEAN ENERGY BENEFITS TO CONNECTICUT*

Connecticut Green Bank

Mission and Goals

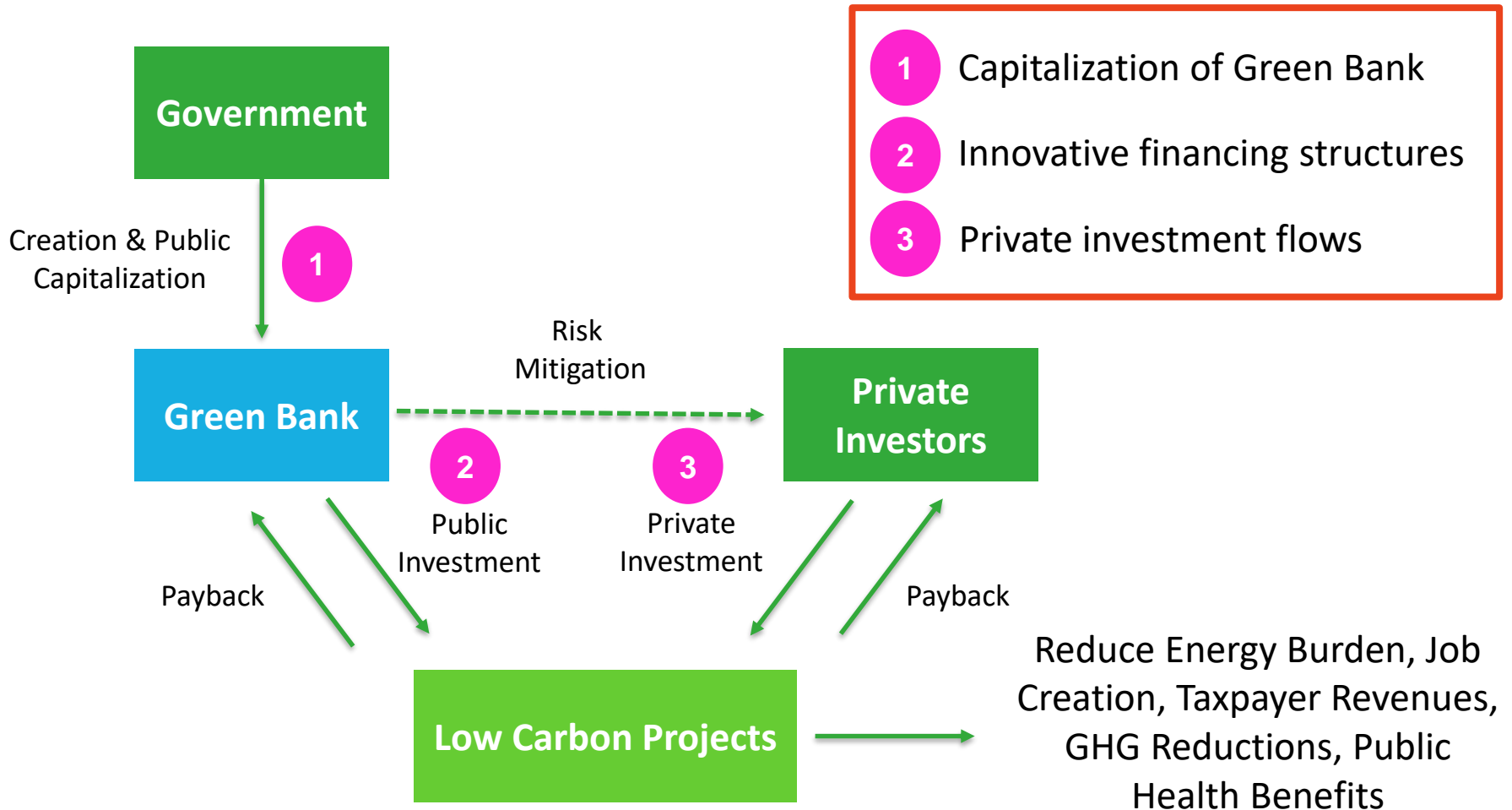


Support the strategy to achieve **cheaper, cleaner, and more reliable** sources of energy while **creating jobs** and supporting **local economic development**

- **Attract and deploy private capital investment** to finance the **clean energy policy goals** for Connecticut
- **Leverage limited public funds to attract multiples of private capital investment** while **reinvesting public funds over time**
- Develop and implement strategies that **bring down the cost** of clean energy in order to make it more **accessible** and **affordable** to customers
- Support affordable and healthy homes and businesses in distressed communities **reduce energy burden** and **address health & safety**

Green Bank Model Basics

Reduce Risk – Increase Supply of Capital

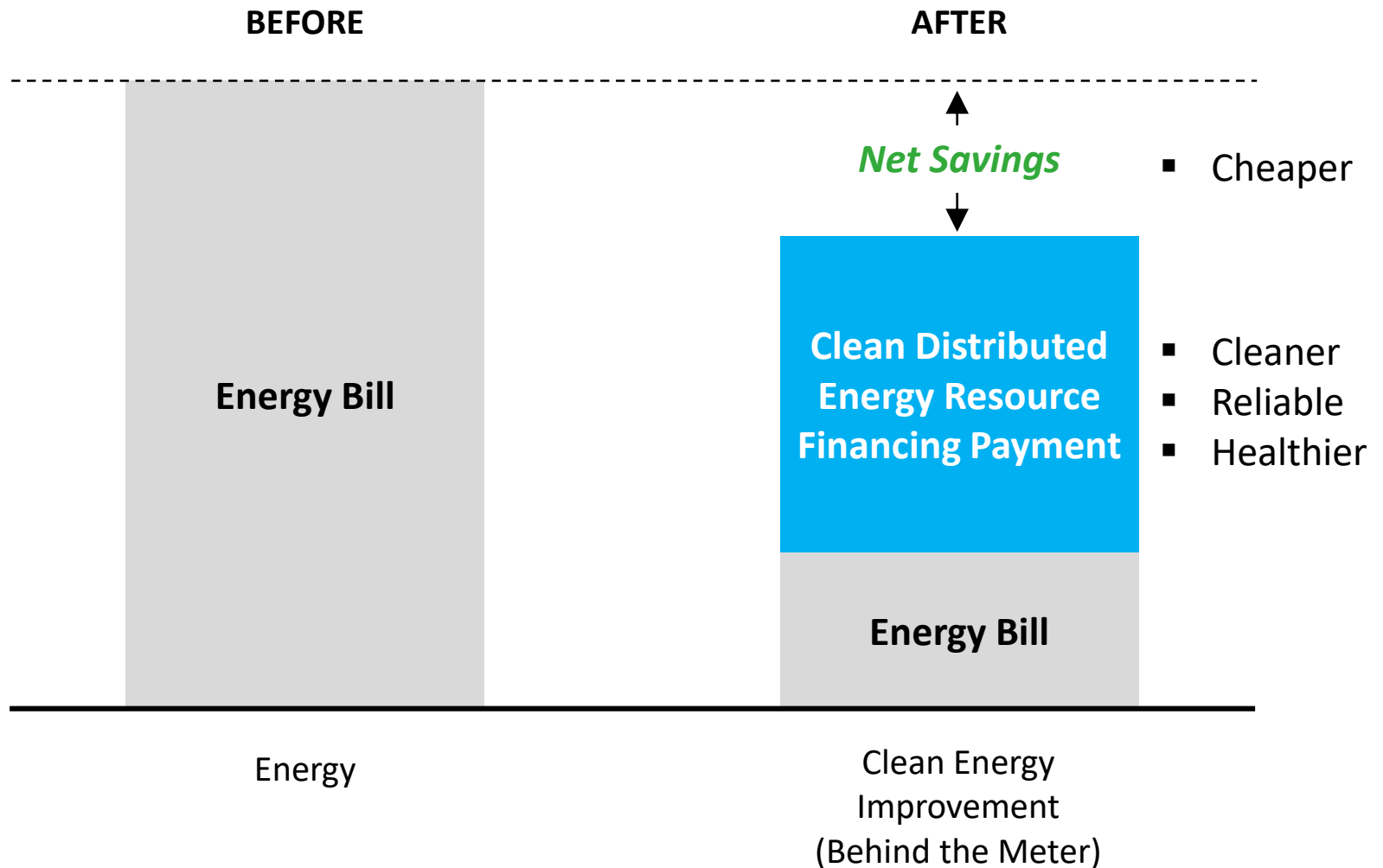


REFERENCE

Definition provided by the Coalition for Green Capital and adapted by the Connecticut Green Bank

Green Bank Model Basics

Reduce Costs – Increase Customer Demand



REFERENCE

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Connecticut Green Bank



About Us

- **Quasi-public organization** – Created in 2011 and successor to the Connecticut Clean Energy Fund (which was administered by Connecticut Innovations).
- **Focus** – Finance clean energy (i.e. renewable energy, energy efficiency, and alternative fuel vehicles and infrastructure).
- **Balance Sheet** – Approximately \$190 million in assets and \$130 million net position – leverage ratio from 3:1 to 12:1
- **Public Support** – Supported by a \$0.001/kWh surcharge on electric ratepayer bills (about \$7-\$10 per household per year) that provides approximately \$27 MM a year for investments, RGGI about \$3 MM a year for renewable energy, federal competitive solicitations (i.e. SunShot Initiative) and non-competitive resources (i.e. ARRA-SEP), private capital, and private foundations

Connecticut Green Bank Governance



Board of Directors



Chair
Catherine Smith
DECD

Vice Chair
Rob Klee
DEEP

Secretary
Matthew Ranelli
Shipman & Goodwin

Member
Denise Nappier
Treasurer
State of Connecticut

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Eric Brown
CBIA

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Thomas Flynn
Coral Drive Partners

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John Harray
Connecticut State
Council of Machinists

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Kevin Walsh
GE Energy Financial
Services

Member
Betsy Crum
Women's Institute for
Housing & Economic
Development

Member
Gina McCarthy
Former Head of the
EPA



Committees

B&O
John Harray
Connecticut State
Council of Machinists

Deployment
Rob Klee
DEEP

AC&G
Matthew Ranelli
Shipman & Goodwin

Joint CEEF-CGB
Eric Brown
CBIA

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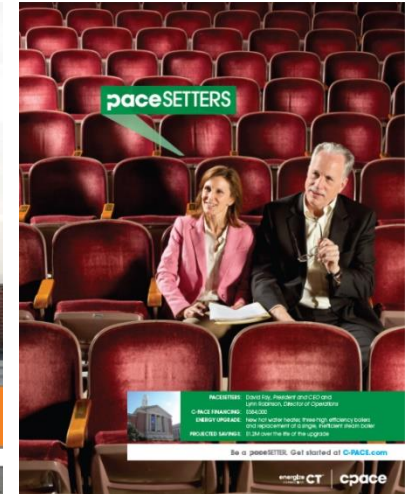
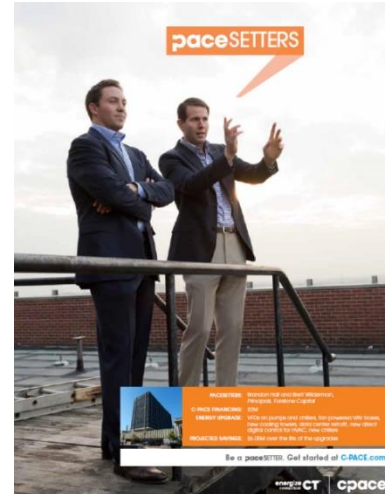
Established Board of Directors in September of 2011 – bylaws, operating procedures, employee handbook, etc.

Investment Business

C-PACE (Example)



Market Segment	Commercial, Industrial, Nonprofit and Multifamily
Product Summary	Commercial Property Assessed Clean Energy (C-PACE) applies a benefit assessment to a property to finance clean energy improvements with SIR>1
Support Needed	<ul style="list-style-type: none"> • Capital to finance clean energy improvements • Contractors to install clean energy improvements • Supportive municipality • Supportive mortgage lender
CT Results	232 projects for \$135.9 MM investment and \$220.5 MM in savings over the life of the projects



Investment Business

Bridgeport Fuel Cell Park (Example)



Market Segment	Grid-Tied Procurement
Project Summary	Long-term power and REC purchase agreement through Project 150 (PA 05-01). 2 nd largest fuel cell power plant in the world. Technology manufactured in CT and site located on brownfield in a distressed municipality.
Support Needed	<ul style="list-style-type: none">▪ Project finance▪ “Back levered” financing to the developer to attract buyer for the project (i.e., buyer demanded a cash reserve fund for O&M)
CT Results	15 MW fuel cell project totaling \$125 MM investment creating nearly 140 jobs



Investment Business

New England Hydropower (Example)



Market Segment	Virtual Net Metering - Municipality
Project Summary	Long-term PPA (i.e., 30+ years) for behind the meter (VNM) for this run-of-the-river hydro facility in Meriden – first of its kind in the U.S.
Support Needed	<ul style="list-style-type: none">▪ Project finance▪ Support for start-up developer using European technology▪ Working capital (Webster Bank), construction financing (First Niagara), and green bonds (BAML)
CT Results	193 kW hydro project using federal CREBs



Investment Business

Food Waste to Energy AD Project (Example)



Market Segment	Project Finance
Project Summary	Provided long-term subordinated debt (i.e., 15 years) at low interest rate (i.e., 2%) for 20% of the capital structure to finance the 1 st AD project of its kind in CT
Support Needed	<ul style="list-style-type: none">▪ Links to food waste collection policy (PA 11-127)▪ Attracted local lender to finance the remainder of the project as a senior debt provider (i.e., Peoples Bank) along with equity and tax equity
CT Results	Diverts organic materials from waste stream while producing renewable energy



Investment Business w/ IPC



Solar Lease and Energy Efficiency ESA (Example)

Market Segment	Residential Single Family LMI
Product Summary	Solar lease + energy efficiency package (fixed 20-25 years) to reduce energy burden with alternative underwrite/no credit score using community based marketing approach
Support Needed	<ul style="list-style-type: none">▪ Good solar economics including tiered LMI incentive▪ Municipal, community and nonprofit introductions▪ Subordinated debt capital – if available, but not required
CT Results	1,615 leases for \$44.5 MM investment, 99.9% get EE (HES), 63% ESA, and 63% LMI

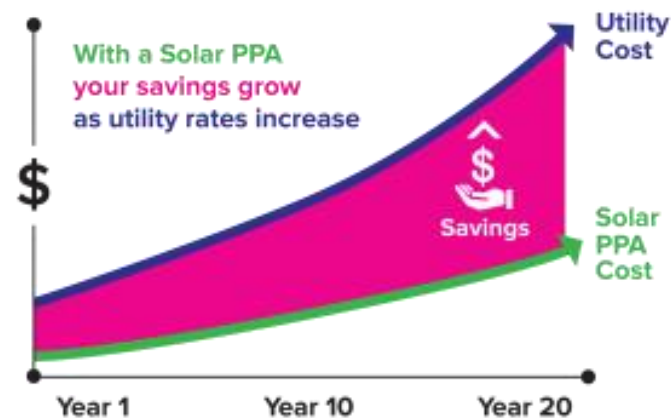


Investment Business w/ IPC

Green Bank Solar PPA (Example)

Market Segment	Small/medium commercial, MUSH, affordable housing, nonprofits, community assets
Product Summary	3 rd party solar power purchase agreement, backed by C-PACE lien where possible
Support Needed	<ul style="list-style-type: none"> ▪ Good solar economics for C&I ▪ Local solar installer & project developer introductions ▪ Municipal, community and nonprofit introductions ▪ Subordinated debt capital – if available, but not required
CT Results	94 PPAs closed/completed, \$69.3 MM, and 22.7 MW

green bank solar ppa



Investment Business w/ IPC

Affordable Multifamily Housing (Example)

Market Segment	Naturally occurring and subsidized/regulated affordable housing (5+ units)
Product Summary	Pre-development and term financing products (including unsecured) for renewables, efficiency, storage, resiliency, health & safety and other building improvements
Support Needed	<ul style="list-style-type: none">▪ Overview of utility and state affordable housing program/ incentive landscape▪ Portfolio owner introductions▪ Municipal, community and nonprofit introductions▪ Subordinated debt capital – if available, but not required
CT Results	73 loans for \$72MM impacting ~5,400 units



Save money on energy



Increase property value



Improve occupancy rates



Improve comfort and safety



Investment Business w/ IPC

Energize CT Smart-E Loan (Example)



smart-e loan



Market Segment	Residential Single Family
Product Summary	Partnership with eleven (11) local community banks and credit union to provide easy access to affordable financing for comprehensive clean energy measures, including H&S. 5-20 year terms at rates ranging from 4.99-6.99% for \$500-\$40,000 of borrowing.
Support Needed	<ul style="list-style-type: none"> Provide 2nd Loan Loss Reserve (LLR) up to 7.5% of losses EV pilot
CT Results	2,942 projects for \$51.8 MM financed with \$5.9 MM of Interest Rate Buydowns (IRB)



PLUG IN!

Special Offer for Electric Vehicle buyers!

LIMITED-TIME LOW RATES **0.99%** APR*

NO MONEY DOWN

NCUA