



Empowering you to make
smart energy choices

Connecticut Green Bank

Energizing Connecticut

Department of Energy and Environmental Protection
SIPRAC Meeting
October 9, 2014

Why Clean Energy?

Economic Development and Environmental Protection



Connecticut Green Bank

Expand Private Investment in Clean Energy



... transitioning programs away from government-funded grants, rebates, and other subsidies, and towards deploying private capital

...CEFIA was established in 2011 to develop programs that will leverage private sector capital to create long-term, sustainable financing for energy efficiency and clean energy to support residential, commercial, and industrial sector implementation of energy efficiency and clean energy measures.

Case in Point

Residential Clean Energy Measures

- Enable energy efficiency improvements for at least 15% of single family homes in the state by 2020 – approximately 150,000 homes at \$10,000 to achieve 20% energy reduction would require an investment of \$1.5 billion
- Support the conversion from oil to natural gas for at least 200,000 households in the state in 8 years – at \$7,500 for an average cost of conversion with equipment for an estimated investment of \$1.5 billion
- Estimate potential market of over 150,000 households to install solar PV in the state – at an average cost of \$30,000 per system would require an investment of \$4.5 billion

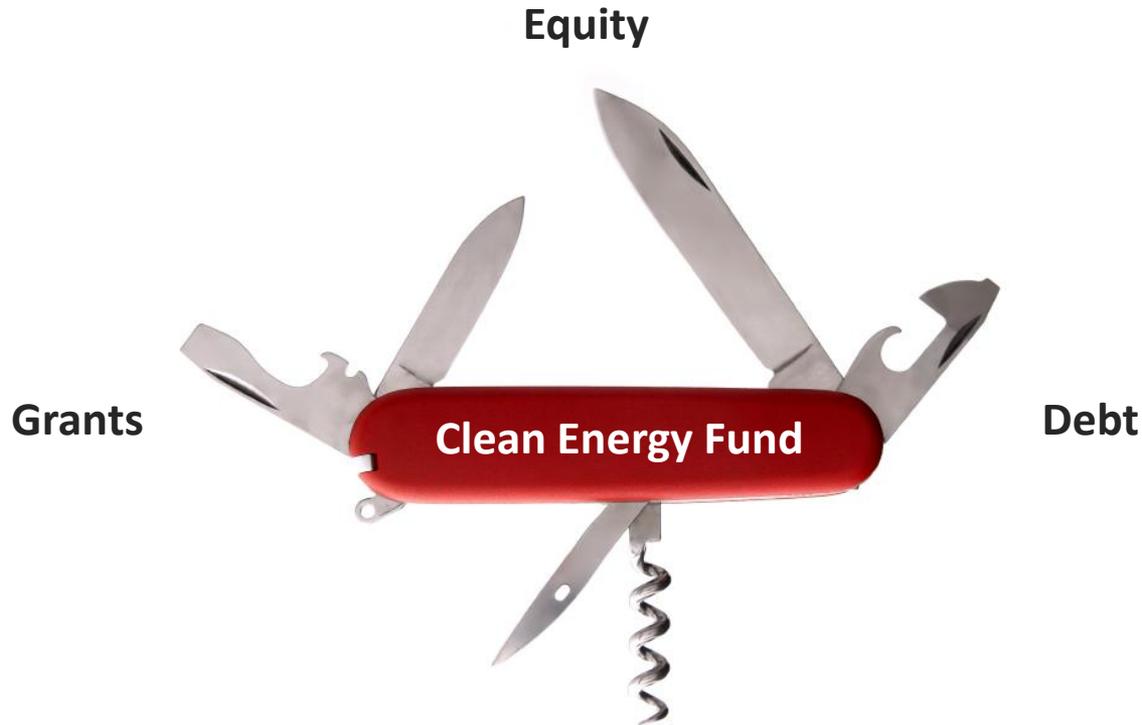
Connecticut Green Bank

About Us

- **Quasi-public organization** – created by PA 11-80 and successor to the Connecticut Clean Energy Fund
- **Focus** – finance clean energy (i.e. renewable energy, energy efficiency, and alternative fuel vehicles and infrastructure)
- **Balance Sheet** – currently \$120 million in assets
- **Support** – supported by a \$0.001/kWh surcharge on electric ratepayer bills that provides approximately \$30 MM a year for investments, RGGI (EE and RE) about \$5-\$10 MM a year, federal competitive solicitations (i.e. SunShot Initiative) and non-competitive resources (i.e. ARRA-SEP), private capital, etc.

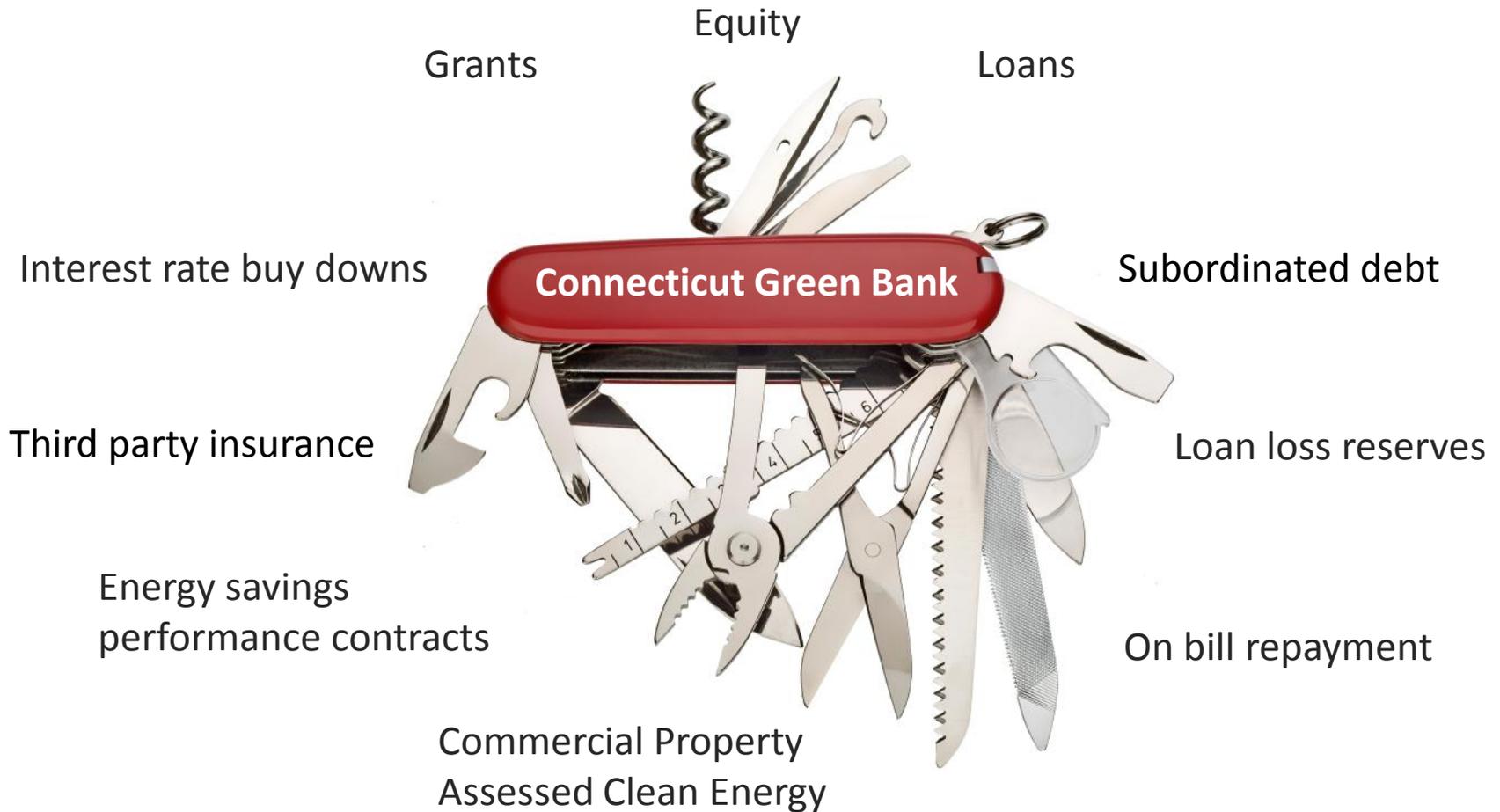
Connecticut Clean Energy Fund

The Old Model



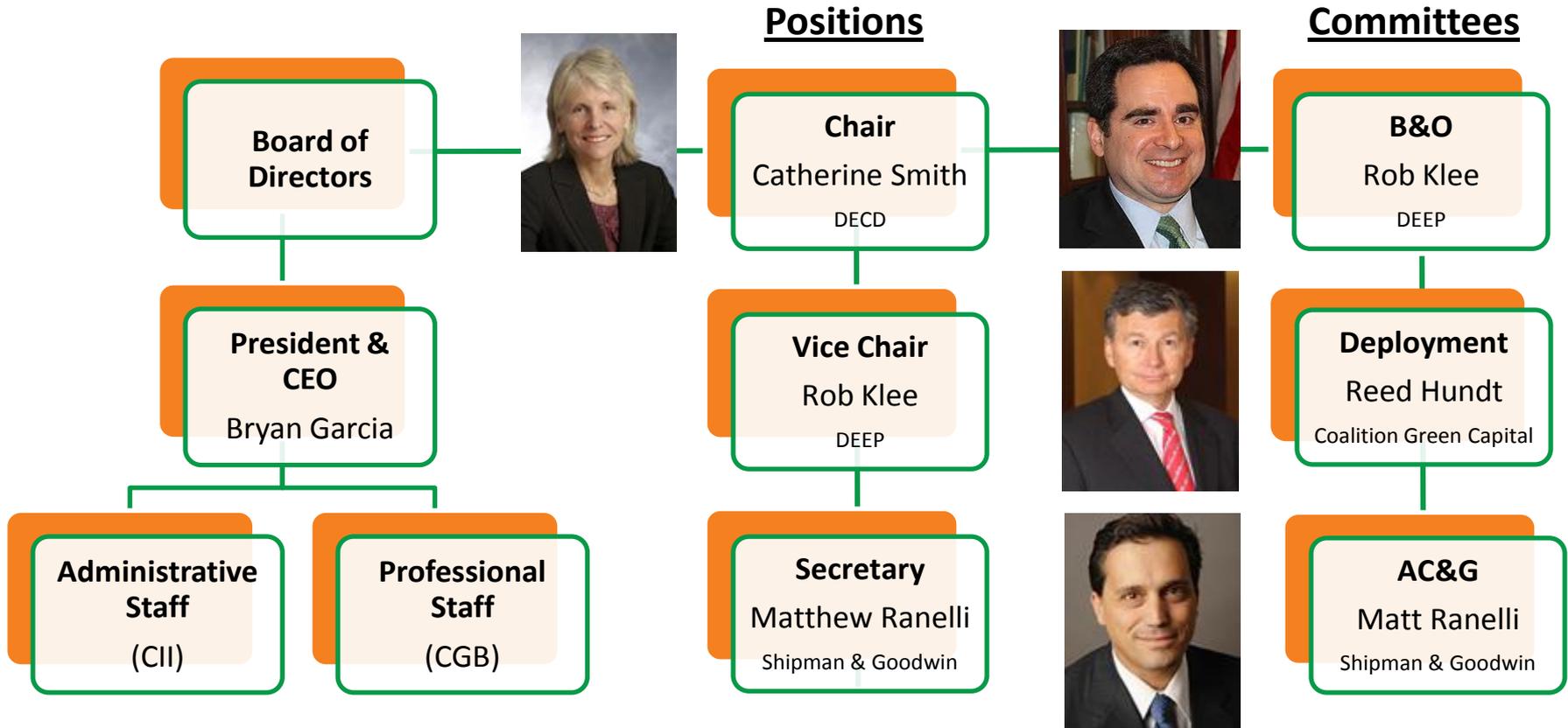
Connecticut Green Bank

The New Model



Connecticut Green Bank

Board of Directors



REFERENCES

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

Connecticut Green Bank

Mission and Goals



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

Attract and deploy capital to finance the clean energy goals for Connecticut

Develop and implement strategies that bring down the cost of clean energy in order to make it more accessible and affordable to consumers

Reduce reliance on grants, rebates and other subsidies and move towards innovative low-cost financing of clean energy deployment

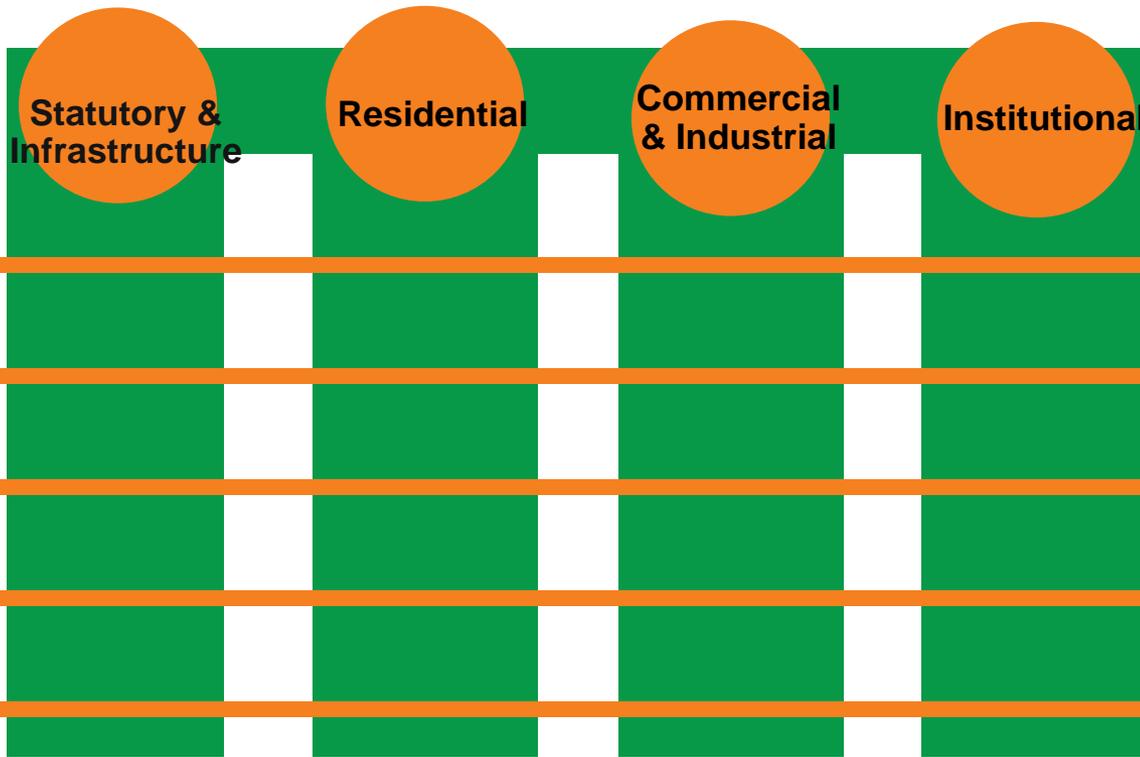


Connecticut Green Bank

Organizational Structure

Supply of Capital

Demand of Capital





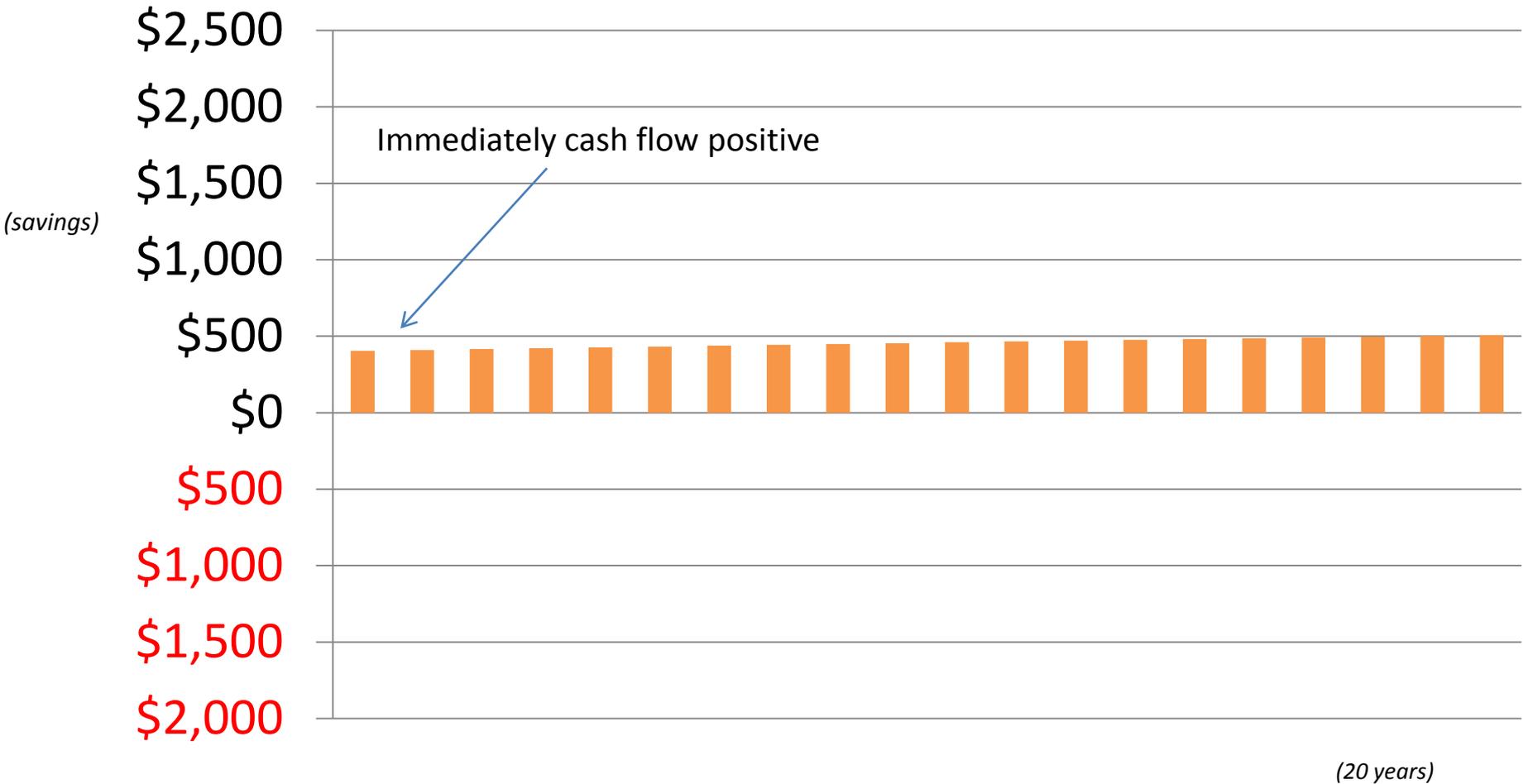
Why a CT Solar Lease?

Carline and Stuart



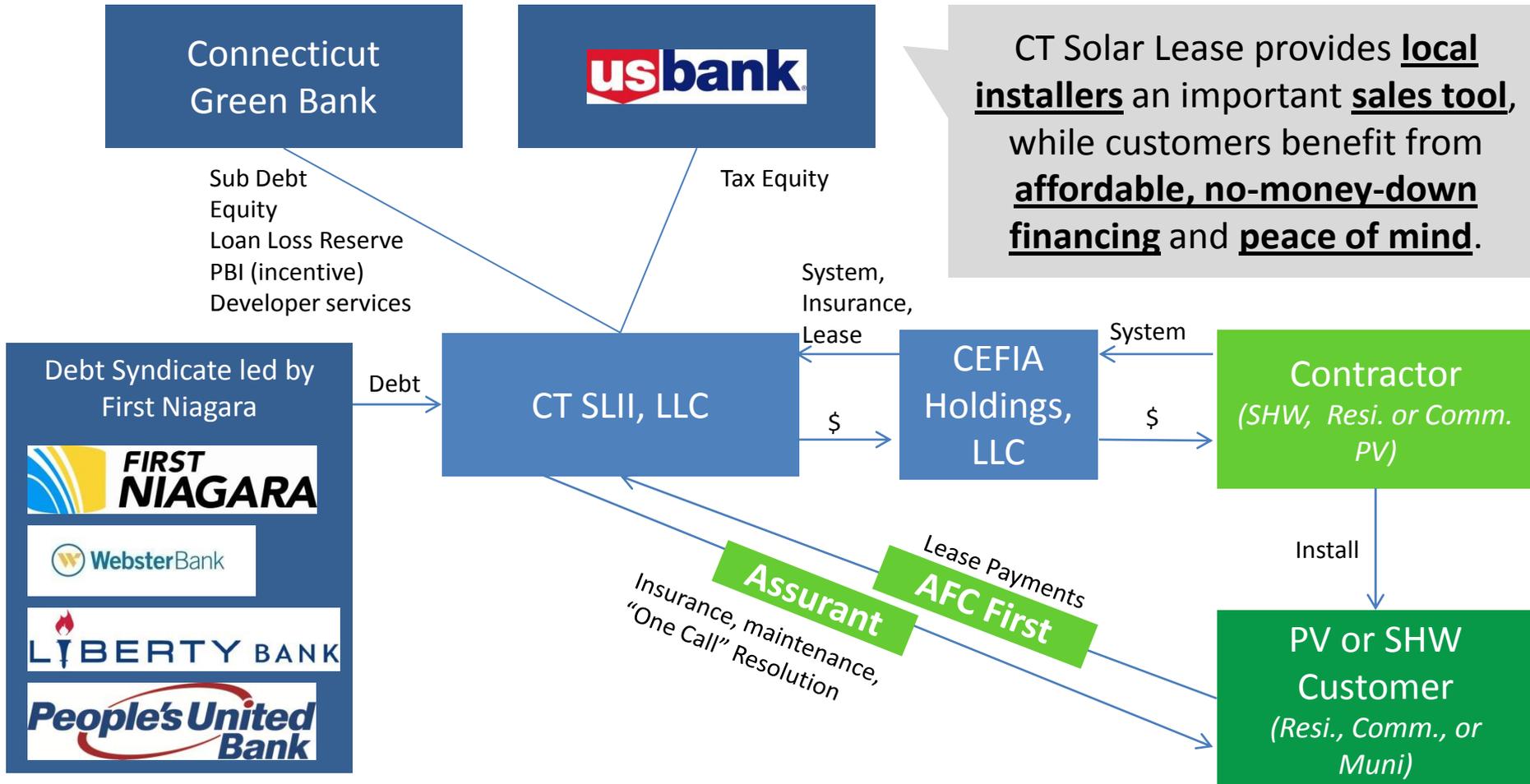
What is a CT Solar Lease?

Annual Homeowner Cash Flows



How a CT Solar Lease?

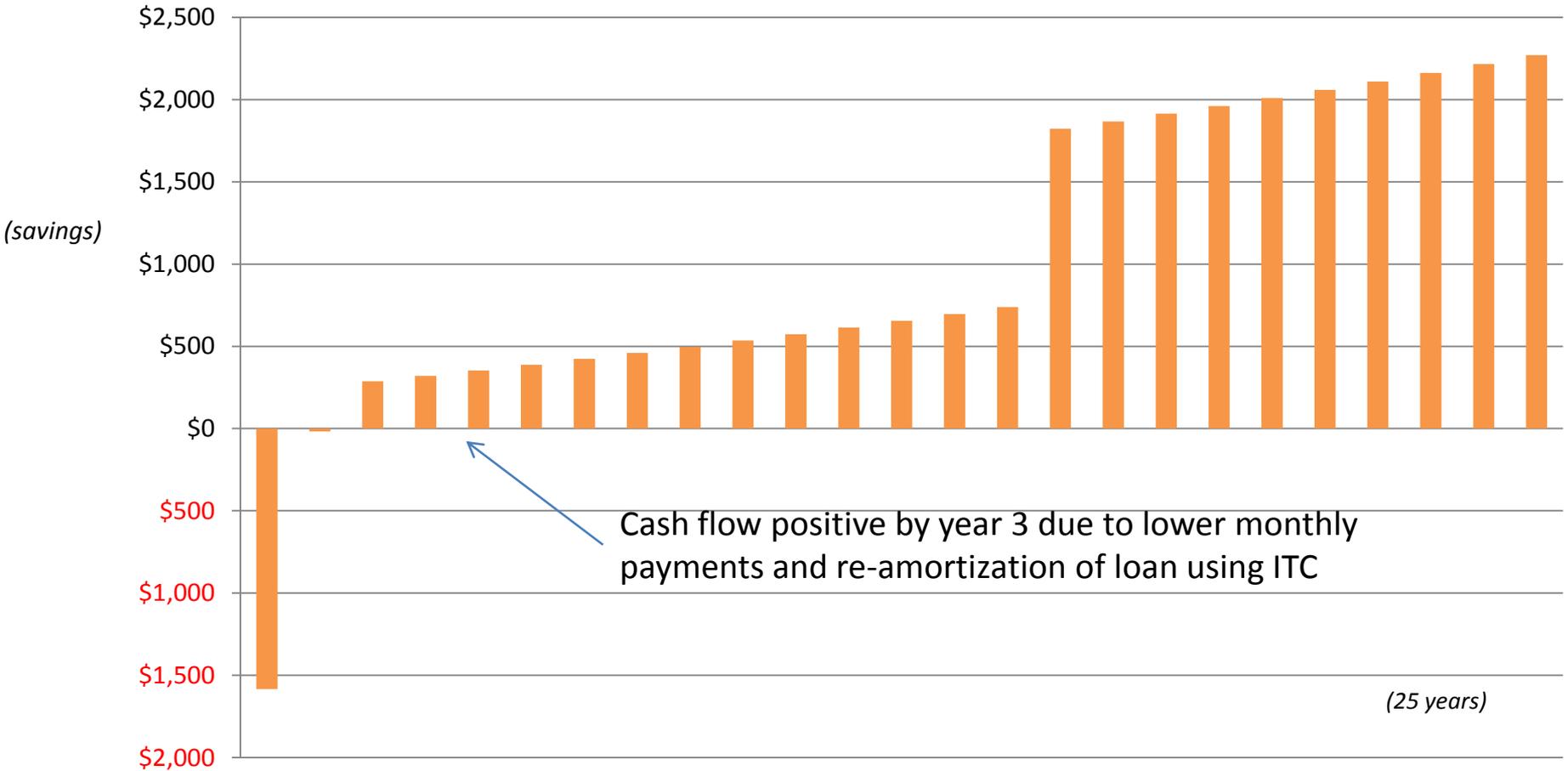
Basic Structure



CT Solar Lease provides local installers an important sales tool, while customers benefit from affordable, no-money-down financing and peace of mind.

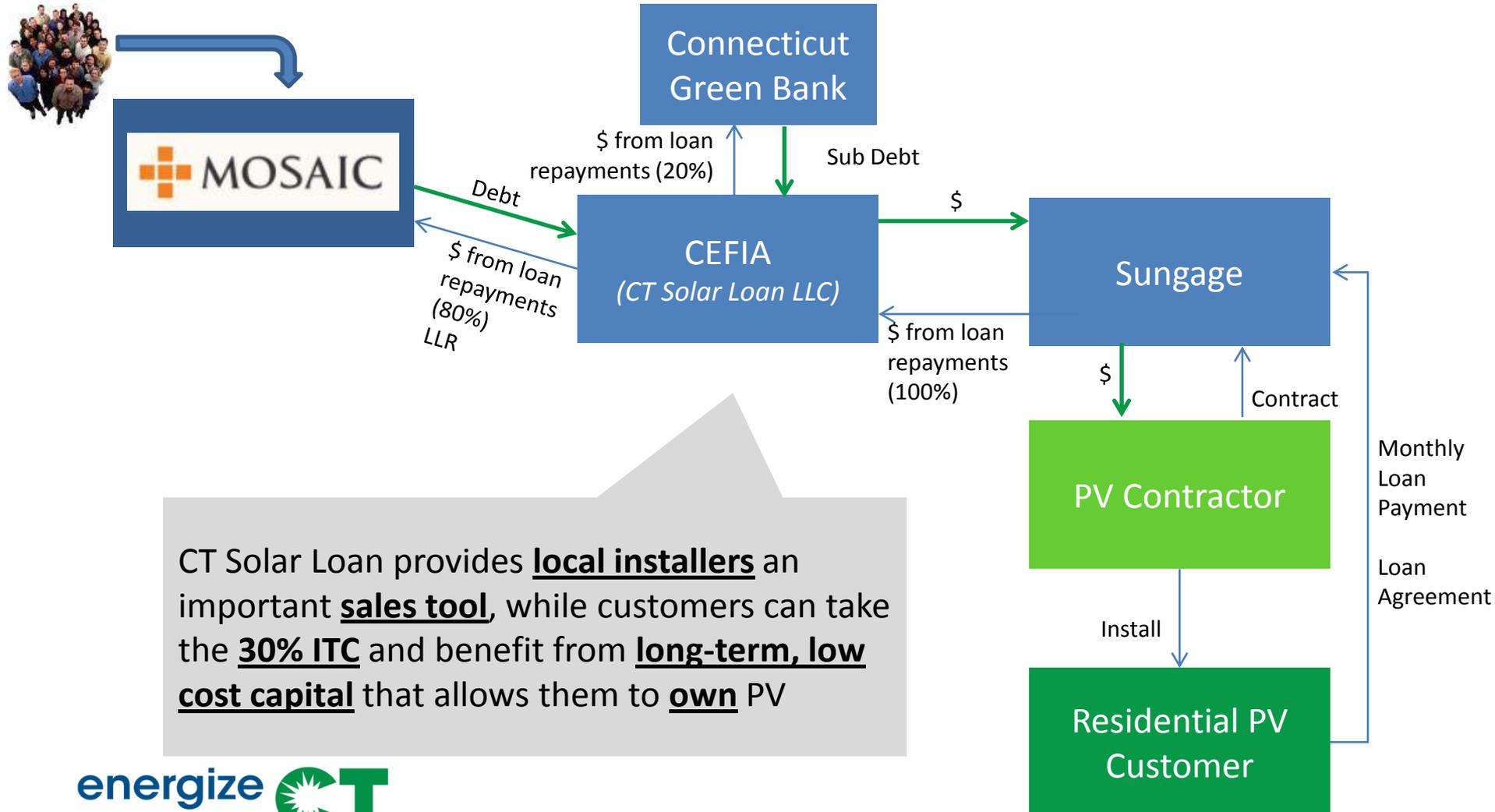
What is a CT Solar Loan?

Annual Homeowner Cash Flows



How a CT Solar Loan?

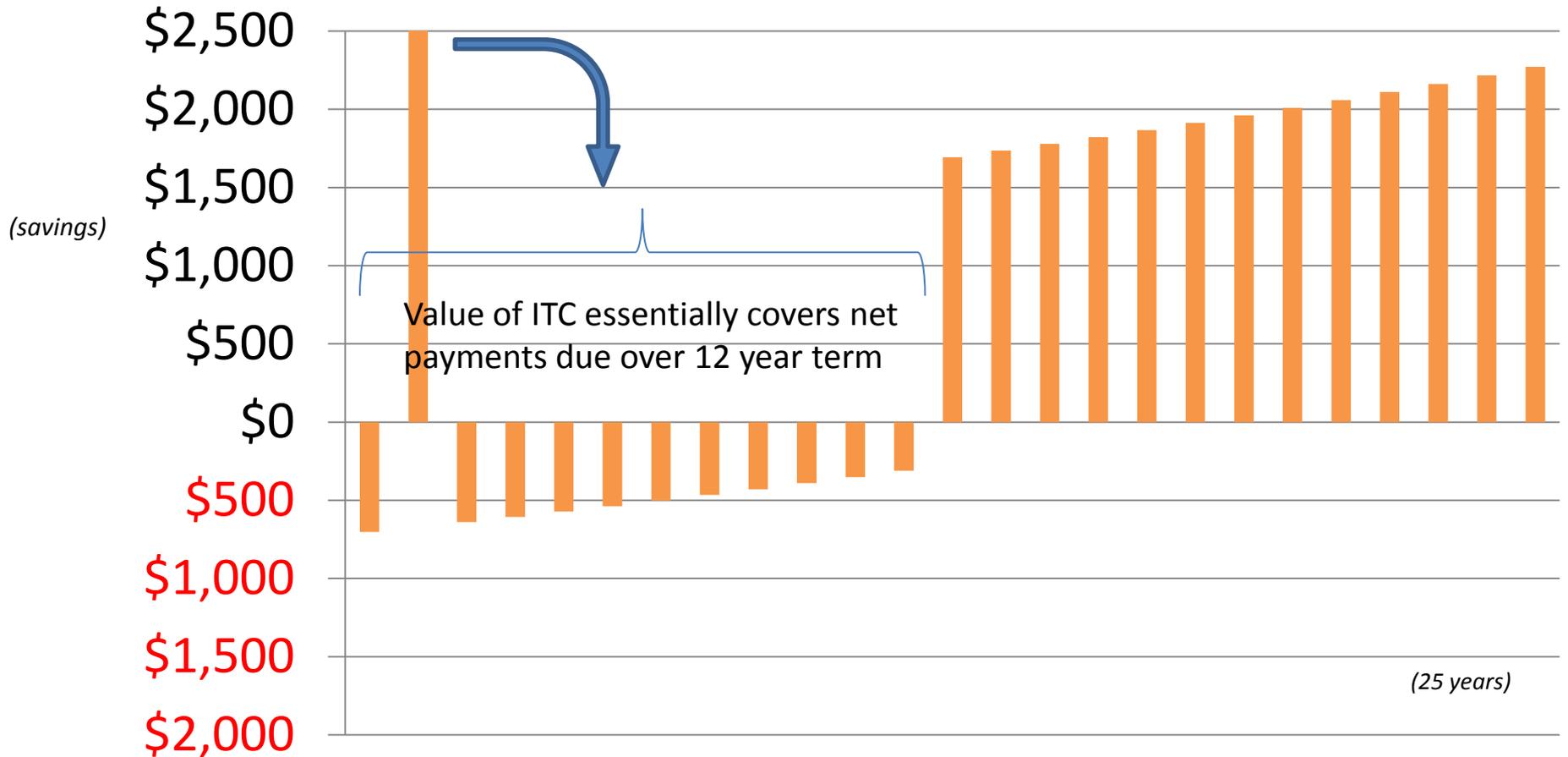
Basic Structure



CT Solar Loan provides **local installers** an important **sales tool**, while customers can take the **30% ITC** and benefit from **long-term, low cost capital** that allows them to **own** PV

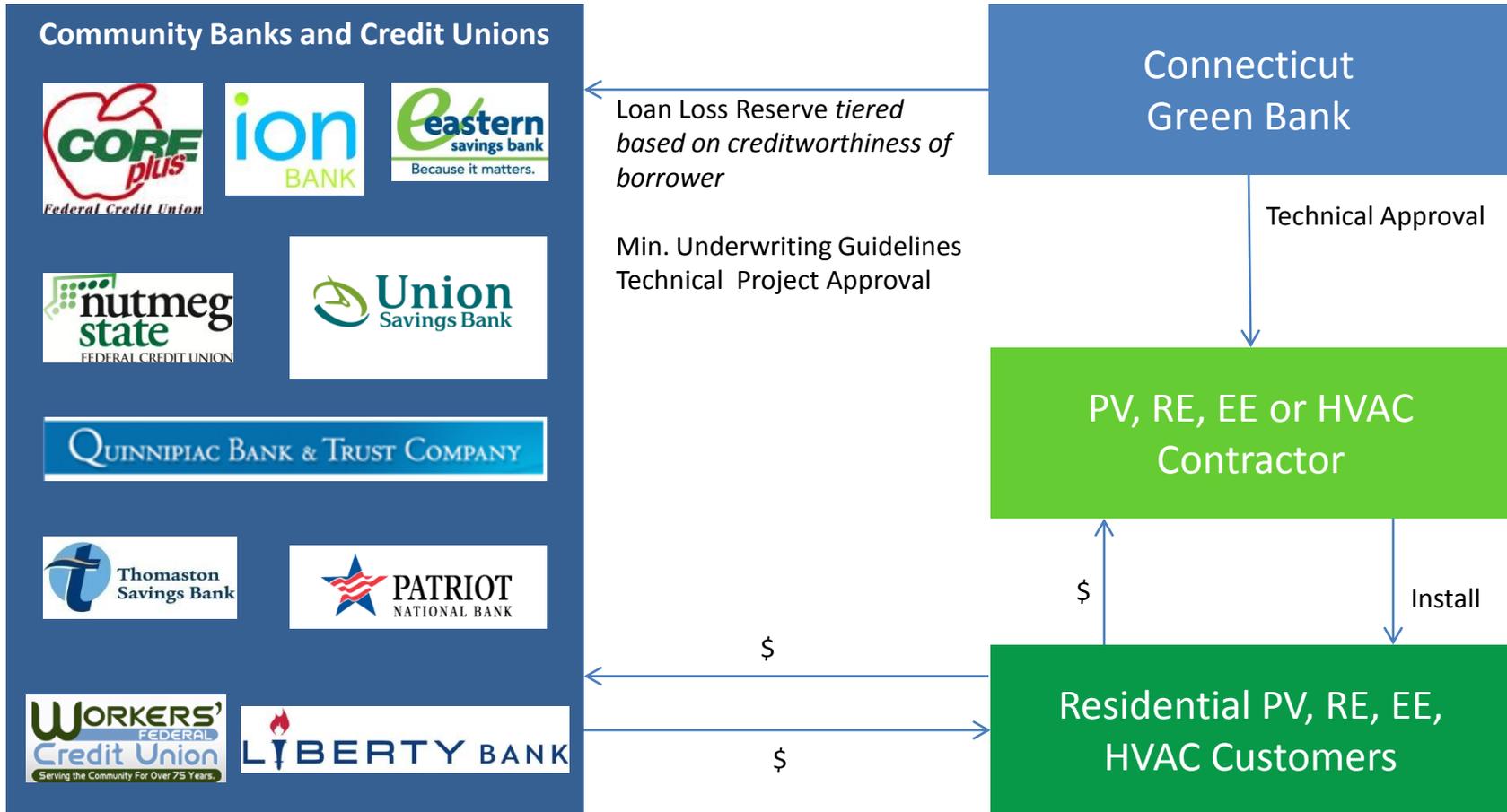
What is a Smart-E Loan?

Annual Homeowner Cash Flows



How a Smart-E Loan?

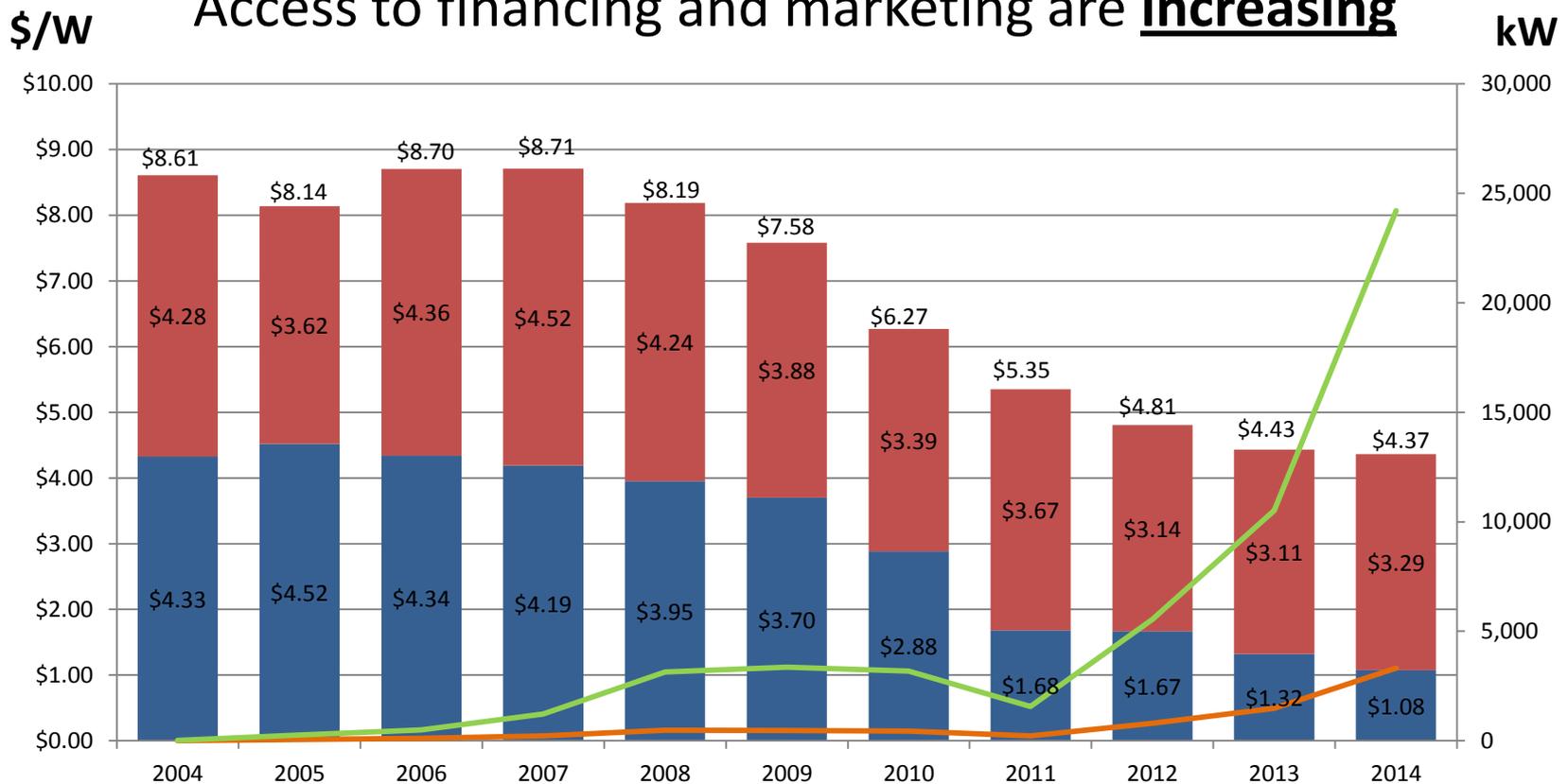
Basic Structure



Residential Solar PV in Connecticut

2004 through 2014 (as of October 2, 2014)

Installed costs and incentives are **decreasing**, while
 Access to financing and marketing are **increasing**



■ \$ Ratepayer Funds/W
 ■ \$ Non-Ratepayer Funds/W
 — # Projects
 — kW STC Installed

Solarize Connecticut Solar – Simple – Together

Solarize
Ashford-Chaplin-Hampton-Pomfret!
Solar. Simple. Together.

For Ashford, Chaplin, Hampton, and Pomfret Residents ONLY!!

Now is the time to go solar.

Save money by taking advantage of a unique group-buying opportunity from the towns of Ashford, Chaplin, Hampton, and Pomfret in partnership with the State of Connecticut. The Solarize program benefits include:

- Significant solar discounts which increase in size as more people sign up.
- Lower monthly utility bills.
- Pre-selected, competitively chosen installer for our communities, Ross Solar Group.

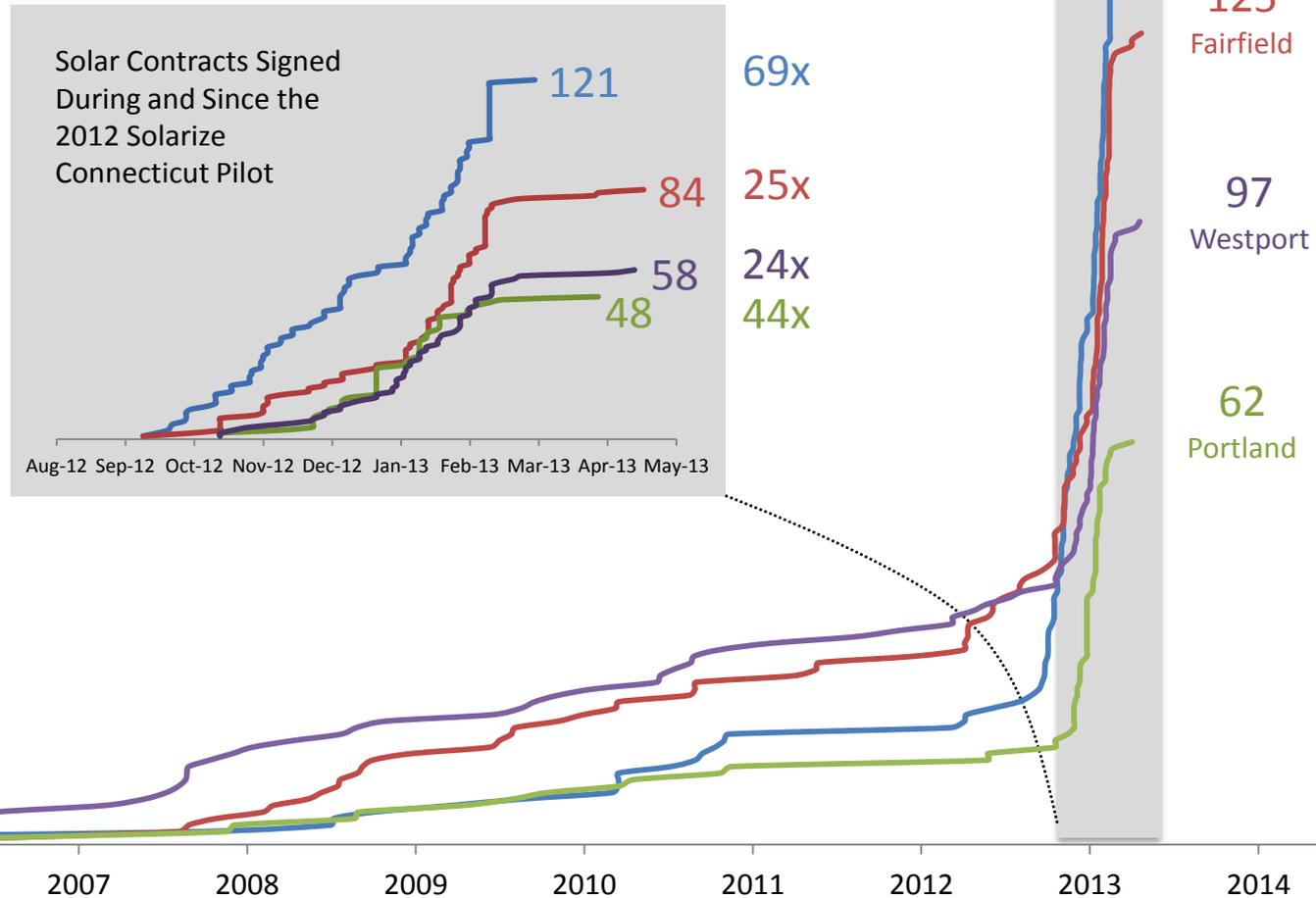
To learn more about Solarize, visit our website at www.SolarizeCT.com/Ashford.

Sign up today and be guaranteed the lowest price available by the end of the program.

You must sign a contract by **February 11, 2014** to qualify.

For a free no obligation site consultation, call Ross Solar Group at 203-512-4500.

www.SolarizeCT.com/Ashford



REFERENCES

Graphic created by Ken Gillingham, Assistant Professor at Yale University School of Forestry and Environmental Studies (2013)



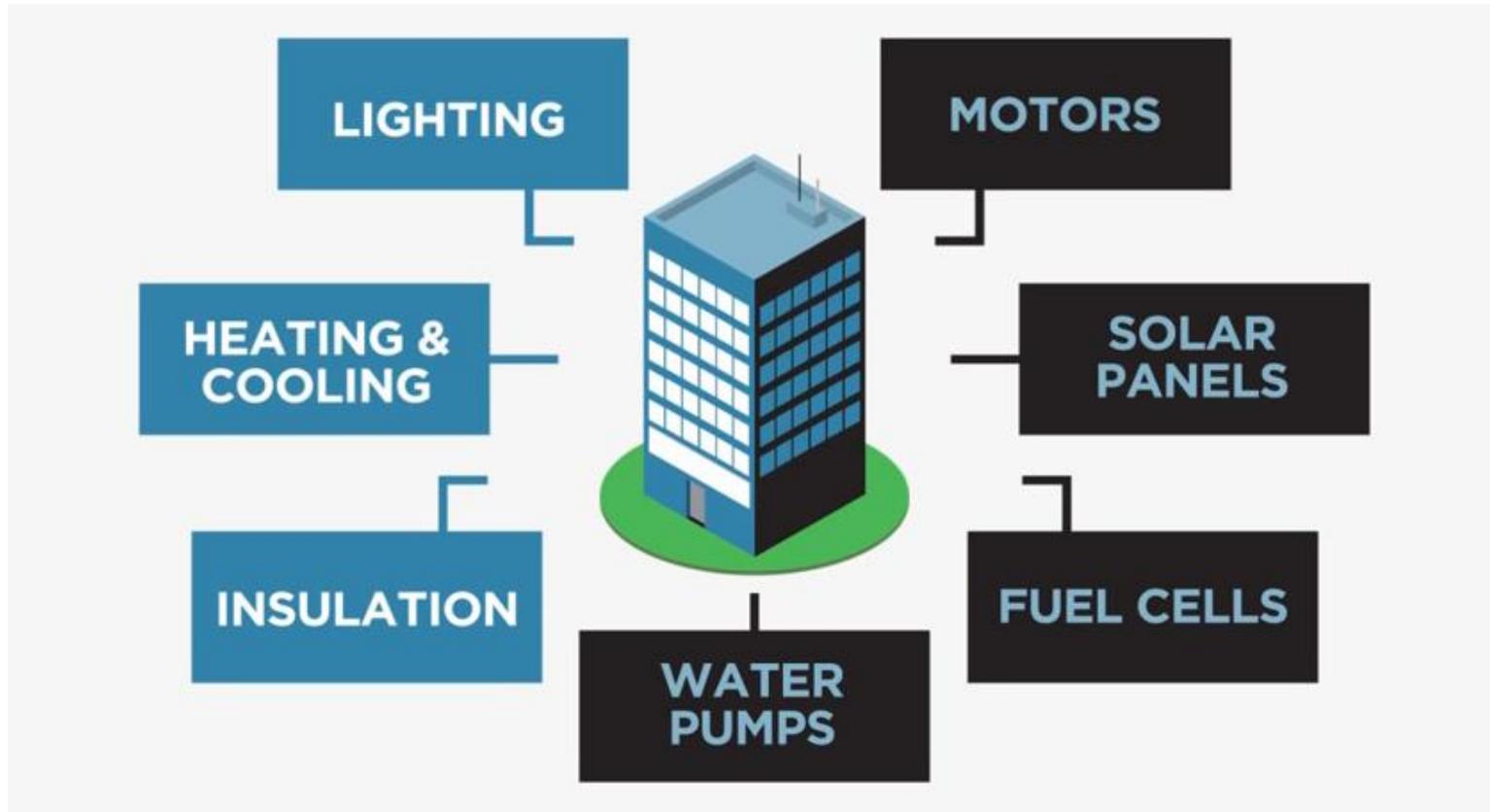


Why C-PACE?

Bishop Thompson and Co-Pastor Loyd-Thompson



What is C-PACE?



C-PACE and RGGI

Forstone Capital (Deep Energy Efficiency Upgrades)

Taking Action on Climate Change
2014 Progress Report

PREPARED BY:

The Connecticut Department of
and Environmental Protection



June 6, 2014

Issued Pursuant to Connecticut General Statute

Public Act 08-98: An Act Concerning Global

1

paceSETTERS

PACESETTERS: Brandon Holt and Brett Wildeman
Principals, Forstone Capital

C-PACE FINANCING: \$2M

ENERGY UPGRADE: VFDs on pumps and chillers, fan powered VAV boxes,
new ceiling fans, data center retrofit, new direct
digital control for HVAC, new chillers

PROJECTED SAVINGS: \$5.02M over the life of the upgrades

Be a paceSETTER. Get started at C-PACE.com

energize CT | cpace

- **Terms** – 20 years @ 5.5%
- **Project Cost** – \$2,462,000
- **Assessment** – \$166,563
- **Cost Savings** – \$241,900



How C-PACE?

Securitization of Commercial PACE Transactions

In a 'Watershed' Deal,
Securitization Comes to
Commercial



Securitization, the holy grail
of the commercial sector.

The Inside Story of How Connecticut Became So Influential in Energy Efficiency Finance



Shutterstock.com

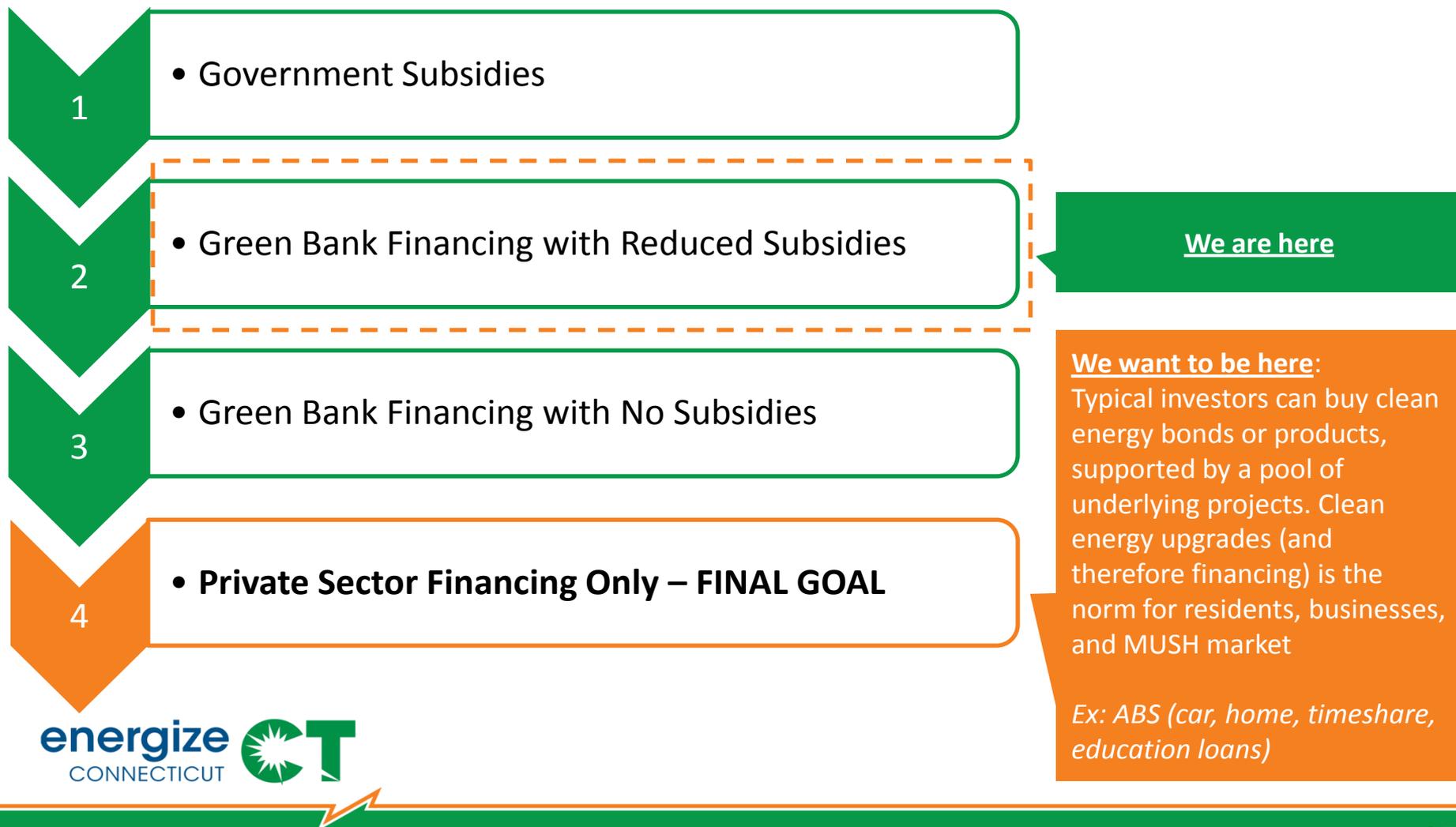
The state's green bank
executed a landmark
securitization of
efficiency loans. Will
lessons learned in
Connecticut spread?

Nick Lombardi
July 8, 2014

Back in May, news broke in Connecticut that CEFIA, the state's green bank, had inked a deal with specialty investor Clean Fund to bundle and securitize \$30 million of PACE loans for energy retrofits in commercial buildings.

Purpose of a Green Bank

Sustainable Clean Energy Marketplace



The Green Bank Model Works

Doing More, Faster and with Less

	FY 2000-FY 2011 (CCEF)	FY 2012-FY 2014 (CGB)
Years	11	3
Energy (MW / Lifetime GWh)	43.1 / 2,299	65.3 / 3,189
Total Investment (\$ MM)	\$334.2	\$350.2
Ratepayer Investment (\$ MM)	\$153.1	\$100.0
Ratepayer Investment as Loans (%)	0	57

Jobs ↑ GHGs ↓

New York Green Bank Follows Connecticut's Lead



“Through the New York Green Bank, we will leverage public dollars to attract private sector investment into building a new clean energy economy that will help make our state greener and create jobs...With this initiative, we will promote job growth and business development, improve resiliency and air quality, and lower costs for consumers while providing them with greater choices and value for their money.”

When fully capitalized, the Green Bank is expected to have a \$1 billion balance sheet.

New Jersey Energy Resilience Bank Follows Connecticut's Lead



“The launch of the Energy Resilience Bank, the first of its kind in the nation to focus on resilience, is yet another effort of the Christie Administration to increase energy resilience at critical facilities throughout New Jersey...Increasing energy resilience, whether through the Energy Resilience Bank, the BPU approved resiliency improvement measures implemented by utility companies or NJ's Clean Energy Program, will minimize the potential impacts of future widespread power outages due to major storms like Superstorm Sandy.”

The bank is capitalized with \$200 million through a federal Community Development Block Grant for Disaster Recovery as a result of Superstorm Sandy

Green Bank Movement

United States



Green Bank Act of 2014

\$50 Billion Federal Green Bank Modelled after CT

113TH CONGRESS
2D SESSION

H. R. 4522

To establish the Green Bank to assist in the financing of qualified clean energy projects and qualified energy efficiency projects.

IN THE HOUSE OF REPRESENTATIVES

APRIL 30, 2014

Mr. VAN HOLLEN (for himself, Mr. BLUMENAUER, Ms. ESTY, Mr. HIMES, Mr. CONNOLLY, Ms. NORTON, Ms. SLAUGHTER, and Mr. LANGEVIN) introduced the following bill; which was referred to the Committee on Ways and Means, and in addition to the Committee on Energy and Commerce, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To establish the Green Bank to assist in the financing of qualified clean energy projects and qualified energy efficiency projects.

113TH CONGRESS
2D SESSION

S. 2271

To establish the Green Bank to assist in the financing of qualified clean energy projects and qualified energy efficiency projects.

IN THE SENATE OF THE UNITED STATES

APRIL 30, 2014

Mr. MURPHY (for himself and Mr. BLUMENTHAL) introduced the following bill; which was read twice and referred to the Committee on Finance

A BILL

To establish the Green Bank to assist in the financing of qualified clean energy projects and qualified energy efficiency projects.

Realizing the Future

An Exercise in Team Work

Hartford Courant.
courant.com



Green Bank
promise in C

ROCKY HILL, CT – The C
Energy Finance and Investm
helped consumers in Connec
energy that is more affordab

THE WALL STREET JOURNAL.

FRIDAY, MAY 9, 2014

Goldman's Cleantech Activities Receive a Presidential Shout Out

MOUNTAINVIEW, CA – Goldman Sachs Group Inc.'s work financing and investing in clean-technology companies drew a mention Friday from President Barack Obama. "We've got public banks like Connecticut's Green Bank and private banks like Goldman Sachs ready to invest billions in renewable energy," the president Friday said during a speech at a Wal-Mart in Mountain View, Calif.



ROCKY HILL, CT – The Connecticut Clean Energy Finance and Investment Authority has proven that the green bank model is working. Through the Commercial Property Assessed Clean Energy (C-PACE) program...

Times

1, 2014



energize 
CONNECTICUT

Why Green Bank in Connecticut?

Make a Global Impact by Leading Locally



The two or three main ideas which constitute the basis of the social theory of the United States were first combined in the Northern English colonies, more generally denominated the States of New England...The civilization of New England has been like a beacon lit upon a hill, which, after it has diffused its warmth around, tinges the distant horizon with its glow.

Alexis de Tocqueville
Democracy in America



Empowering you to make
smart energy choices

Thank You!

Bryan Garcia

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