



# Initiatives to Advance Clean Energy in the Low to Moderate Income Residential Market

June, 2016



# Agenda



1. Who We Are
2. CT Residential Solar: Current Status
3. Single Family Initiatives
4. Multifamily Initiatives
5. What Else to Get to Scale?



# Who is the CT Green Bank?



Help ensure Connecticut's energy security and community prosperity by realizing its environmental and economic opportunities through clean energy finance and investments.



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





19,600 homes with solar,  
and growing rapidly.

Solar potential in CT...  
At least 150,000 homes

# Program Activity in Service Area



Program	East Haven	Hamden	New Haven	Woodbridge	Statewide Total	Service Area's % of Total
Smart-E Loan	5	12	8	2	719	3.8%
CT Solar Lease	11	17	6	15	1,192	4.1%
CT Solar Loan	7	10	2	1	575	3.5%
PosiGen	8	12	6	0	280	9.3%
C-PACE	0	0	1	2	140	2.1%
Multifamily	0	1	0	0	46	2.2%
Residential Solar PV Projects	211	434	264	74	19,600	3.9%
<b>Amount Financed</b>	<b>\$812,038</b>	<b>\$1,173,050</b>	<b>\$1.394722</b>	<b>\$4,710,222</b>	<b>\$216,558,095</b>	<b>3.8%</b>
<b># of Households</b>	<b>12,356</b>	<b>25,465</b>	<b>57,190</b>	<b>3,222</b>	<b>1,356,206</b>	<b>7.2%</b>

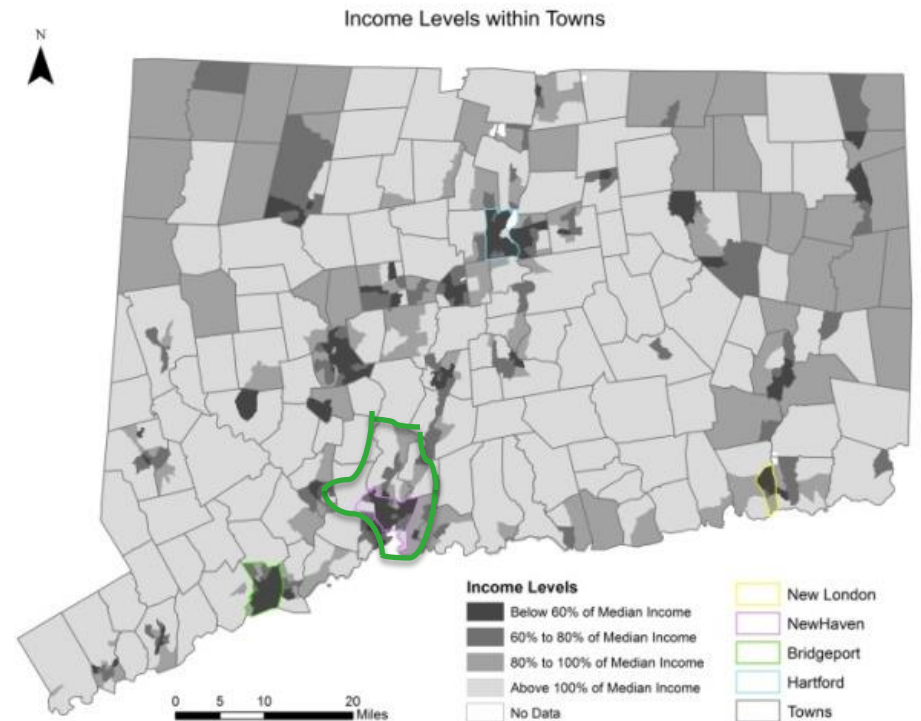
# CT Low-to-Moderate Income Market By the Numbers



Income Level by AMI Band	# Census Tracts	Tract Households	% of Households	Tract Owner Occupied Households	% OO HHs in AMI Band	Tract Renter Occupied Households	% Rental HHs in AMI Band	Average 2010 Tract Median HH Income
<60% AMI	166	224,393	17%	66,067	29%	158,326	71%	\$32,804
60%-80% AMI	118	216,437	16%	114,600	53%	101,826	47%	\$52,657
80%-100% AMI	137	231,014	17%	158,812	69%	72,202	31%	\$66,543
100%-120% AMI	160	278,174	21%	218,664	79%	59,510	21%	\$78,522
>120% AMI	246	406,185	30%	354,889	87%	51,296	13%	\$117,136
Grand Total	833	1,356,206	100%	913,043	67%	443,163	33%	\$74,522

Low Income = 80% AMI or lower, 1/3 of total or 440,000 households, 40% are homeowners

Moderate income – 81%-100% AMI, 17% of total or 230,000 households, 70% homeowners





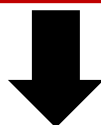
# Residential Solar PV in CT

## Deployment by Area Median Income

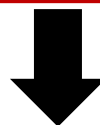


Census Tract Income Level (AMI)	# of Census Tracts	Tract Households	# of Projects	Installed Capacity (kW)	Projects per 1,000 Households	Watts/ Tract Households
Less than 60%	166	224,393	868	5,206	3.9	23.2
60-80%	118	216,437	1,757	11,842	8.1	54.7
80-100%	137	231,014	3,087	22,071	13.4	95.5
100-120%	160	278,174	5,266	39,436	18.9	141.8
More than 120%	246	406,185	7,923	62,386	19.5	153.6
<b>Total</b>	<b>827</b>	<b>1,356,203</b>	<b>18,901</b>	<b>140,941</b>	<b>13.9</b>	<b>103.9</b>

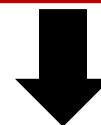
For LMI to reach non-LMI market penetration, solar PV deployment in less than 60% AMI, 60-80% AMI, and 80-100% AMI, projects/1,000 households **would have to increase by approximately 5 times, 2.4 times and 1.4 times respectively**



10



3



2

### REFERENCES

Note – projects include both Connecticut Clean Energy Fund and Connecticut Green Bank.  
Residential Solar Investment Program (RSIP) Market Watch Report of May 13, 2016

# Single Family





# Residential 1-4 Owner Occupied Low Income Portfolio



- Residential Solar Incentive Program
- Low-to-Moderate Income Performance Based Incentive for Third Party Owners

- \$27 MM Solar for All campaign
- Solar Lease and Energy Efficiency Energy Services Agreement
- HES or HES-IE leveraged
- Alternative underwrite
- Community partnerships

- Low interest
- Unsecured loan
- 40+ measures
- 580+ FICO
- 25% of loan for health and safety upgrades

# Reducing LMI Energy Burden

## Solar Lease & EE ESA Model



**Home**  
(New Haven – Oil Heat)



\$59,250 HHI  
\$2,963 Energy Costs

**5.0% HHI on  
Energy Costs**

**Solar PV  
(Lease)**



Up to \$85/month Lease  
\$427 Energy Savings

**4.3% HHI on  
Energy Costs**

**Energy Efficiency  
(ESA)**



Up to \$15/month ESA  
Energy Savings

Additional Savings  
\$543

**3.4% HHI  
on Energy Costs**

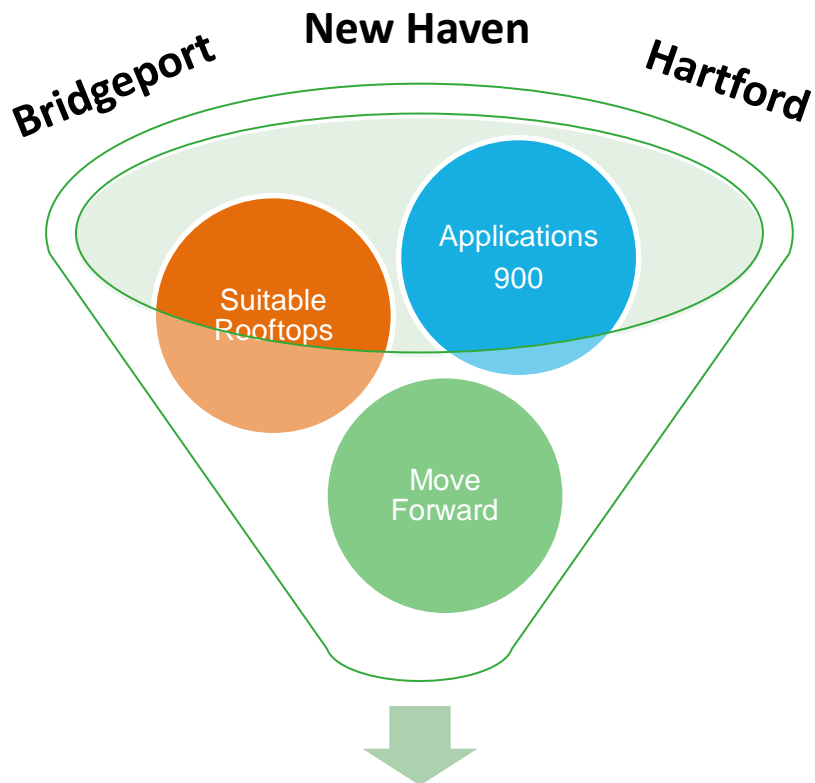
### REFERENCES

Note – analysis examines 20-year lease for a 6-kW system at an \$85 monthly cost and an additional \$15 for energy efficiency measures through a 20-year energy savings agreement with (i.e., HES core services plus insulation) expected energy savings. Based on oil-heated home in New Haven.



# PosiGen

## Solar for All Campaign



**Installations** 225  
**In Process** 130



- **Target** – 1,000 participating households for 6.00 MW of solar PV deployment
- **Solar PV Progress** – 225 installations in 9 months for 1.43 MW of solar PV deployment
  - ✓ \$55-\$70 solar PV lease payment/month for 20 years
  - ✓ 65% of contracts are LMI
- **Energy Efficiency Progress**
  - ✓ 100% of households installing solar PV undertake HES or HES-IE
  - ✓ 64% of households also undertake “deeper” energy efficiency projects (e.g., insulation, thermostats, etc.) through \$10 ESA payment/month for 20 years



- **Jobs** – 33 hired in 2015, 19 additional in 2016 and 30 more planned



# Multifamily

# Reducing LMI Energy Burden

## Multifamily Offerings



### **We help multifamily housing building owners:**

- Better access green energy financing
- Save money on energy and operating costs and improve property values
- Achieve higher occupancy and improve tenant retention
  - More attractive profile of units with improved comfort and lower utility costs



# Multifamily Energy Upgrades

## Resources throughout the Process



Pre-Development Support

Project Development Financing



Analyze  
property  
performance  
opportunity



Design and  
engineer



Fund viable  
project



Install  
upgrades



Operate  
and monitor  
improvements

# Pre-Development Resources



In partnership with:



## Pre-Development Financing



Analyze property performance opportunity



Design and engineer

### Sherpa Loan

- Designated service provider
- Standardized process and fee schedule



### Navigator Loan

- Client managed contractor(s)
- Customized technical services



**Announcing...Benchmark CT**  
Brought to you by CHFA, Green Bank and WegoWise



# Term Financing Options



## Project Development Financing



### LIME

*Affordable  
Low Income  
Multifamily Energy*



### C-PACE

*Market-rate  
Commercial Property  
Assessed Clean Energy*



### SOLAR

*Solar projects only  
Commercial solar lease*



## Coming Soon...Green Booster Loan

2+% rate, 12-15 year terms, layer with other funding, use for health & safety measures or to bring good projects across finish line

# LMI Portfolio and Strategies – What Else?

# Scaling Up – What Else?



- **Clean energy upgrades as a “way in” to community development, neighborhood revitalization/stabilization**
  - Energy + Housing – e.g. integrating with HOME, CDBG
  - Community strategies – neighborhood targeting across all sectors
    - Residential, nonprofits, institutions, businesses
    - Partnerships with municipalities, faith-based networks, social service nonprofits
  
- **Energy + Health**
  - Pulling in health sector dollars – opportunities with Affordable Care Act
  - Innovating on integrated service delivery, financing and business models
  - Explore regionally with NY, RI? – GHHI.org working with both

# Scaling Up – What Else?



- **Solar solutions for small rentals – 2-4’s and 5-9’s**
  - Is this an owned model? Leased (but who?)
  - Suffer from incentive gaps/challenges, financing gap, sub-metering issue, developer gap
- **Community Solar policy... statewide, not just pilots**
  - Critical piece to making solar available to all LMI, especially renters and those who can’t go solar given roof condition/siting
  - Open question... is community solar a better solution for small rental market than installs?
- **Sub-metering policy**
- **Modifications to utility allowances in multifamily**
- **Grid 2.0**
  - Pilots targeting LMI communities and locational benefits
  - Data platform including grid, DER, LMI, housing, health et al data



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