



INCLUSIVE PROSPERITY CAPITAL

STRATEGIES FOR SCALING SOLAR IN LOW INCOME COMMUNITIES

PERSPECTIVES LEARNED IN CONNECTICUT AND BEYOND

PRESENTATION TO VIRGINIA CLEAN ENERGY ADVISORY BOARD
DECEMBER 3, 2019

The “Why”



We believe everyone should have access to the **benefits** of clean energy:

- A cleaner, more resilient environment in the face of climate change
- Healthier communities & buildings that create **positive social externalities**
- **Sustainable economic value creation**: reduced energy burdens, increased household/business savings, and enhanced community productivity

We can **change the conversation** in underinvested neighborhoods and underserved markets, helping to deliver Inclusive Prosperity.

Tapping into our LMI Market



Market research and data-driven approaches are key to a product roadmap:

- Identifying our target audiences
- Developing programs that identify and address the needs of our target audiences
- Targeting our efforts and developing community partners
- Adapting our messaging and communicating benefits

DATA WE USE

- Census and general market data (DOE LEAD)
- Credit data (FICO)
- Customer segmentation data (PRIZM)
- Energy burden modeling



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



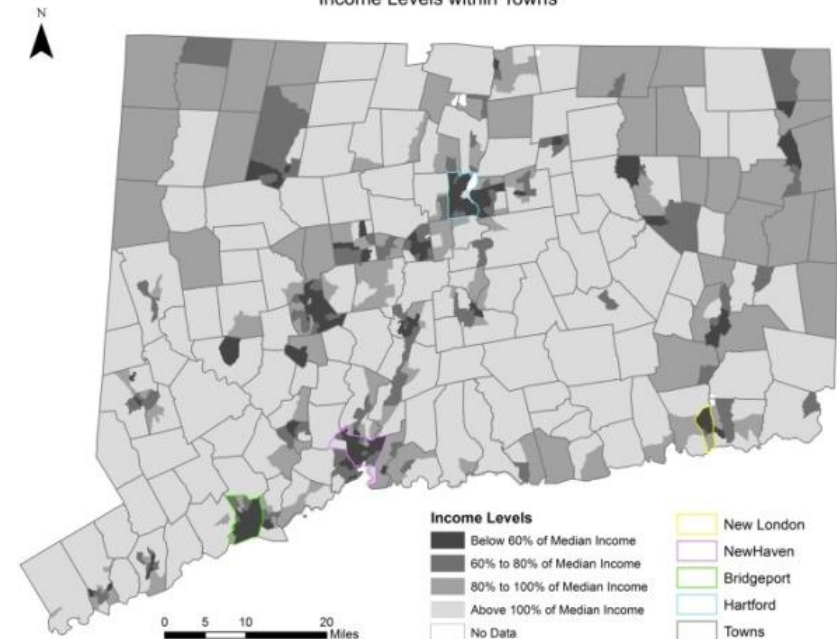
Income Level by AMI Band	# of Census Tracts	Tract Households	% of Households	Tract Owner Occupied Households	% OO HHs in AMI Band	Tract Renter Occupied Households	% Rental HHs in AMI Band	Average Median Household Income
<60%	167	232,021	17%	67,273	29%	164,748	71%	\$35,054
60%-80%	110	194,858	14%	103,963	53%	90,895	47%	\$55,135
80%-100%	128	225,955	17%	149,072	66%	76,883	34%	\$69,958
100%-120%	144	253,815	19%	193,581	76%	60,234	24%	\$81,930
>120%	274	448,028	33%	386,334	86%	61,694	14%	\$118,744
Grand Total	823	1,354,677	100%	900,223	66%	454,454	34%	\$78,658

CT Green Bank Definitions

**Low Income = 80% AMI or lower,
40% are homeowners**

**Moderate income – 81%-100% AMI,
66% homeowners**

Income Levels within Towns



REFERENCES

2016 ACS Census data

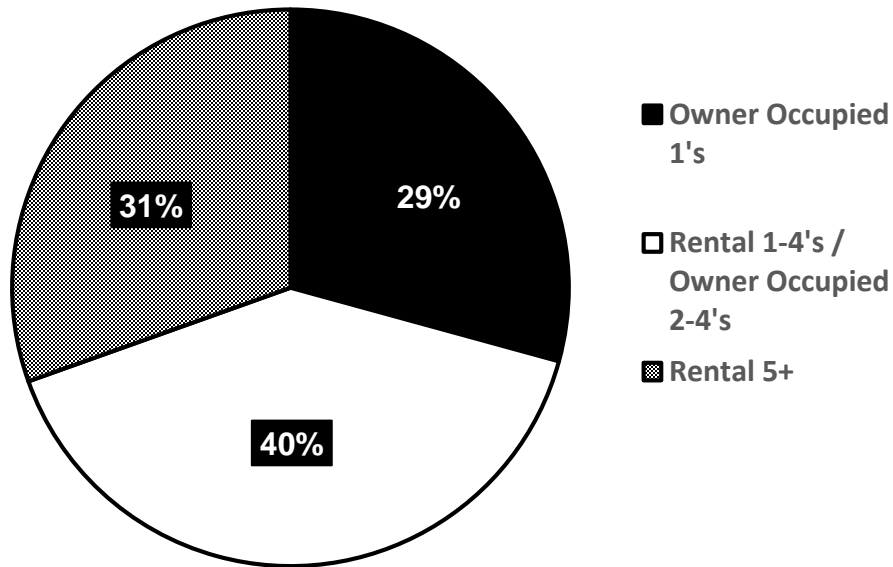
AMI census tract focus is based on Community Reinvestment Act

Residential Low-Income Market

By the Numbers



Low-Income Households by Housing Type



QUICK FACTS: LMI HOUSING IN CT

Connecticut Population - 3,589,000

Total Housing Units – 1,355,000

Total Low Income Units – 427,000 (32%)

% Low Income in 1-4 Units – 70% (297,000)

% of Low Income in 5+ Units – 30% (130,000)

% Homes that are Low Income

- Single Family – 17%
- 2-4 units – 64%
- Multifamily 5+ units – 56 %

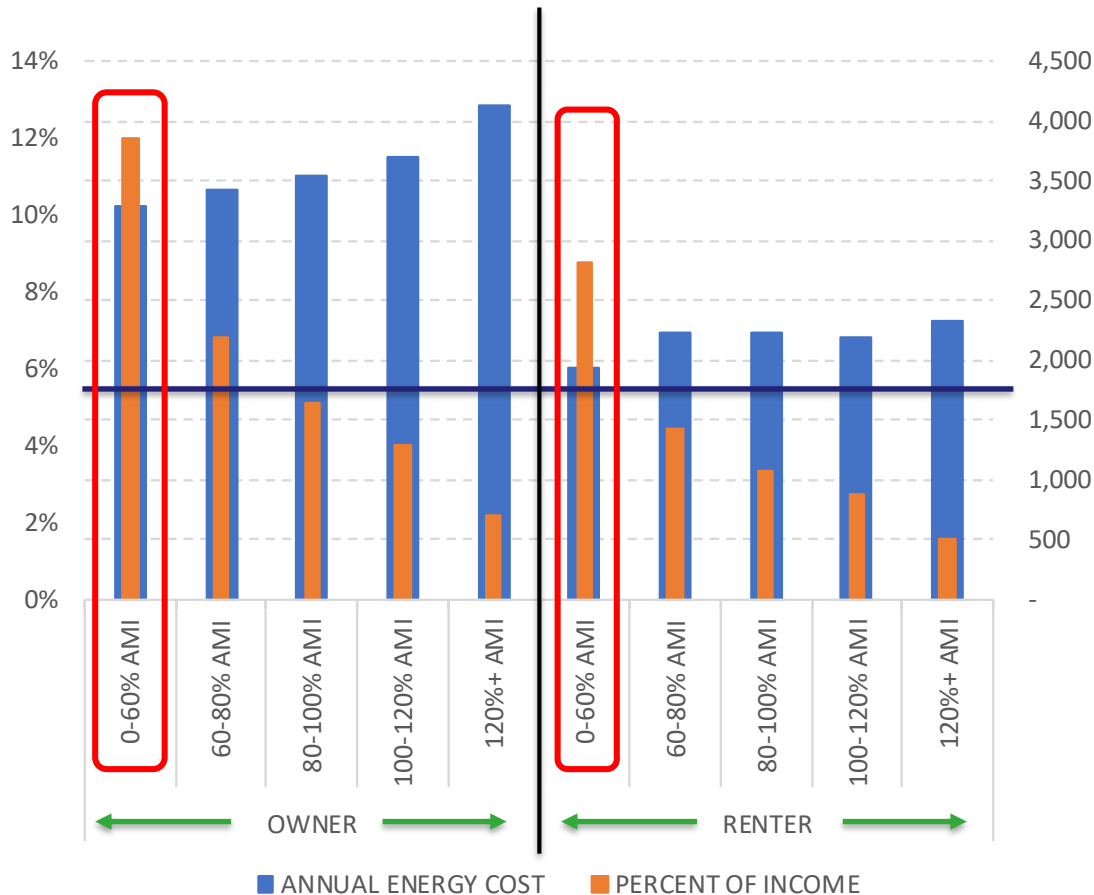
% of Homes Built Before 1979 – 72%

% of Homes Built Before 1939 – 25%

Low income households are concentrated in older properties in poor condition, in need of significant capital improvements, and include many smaller rental properties.

Reducing Energy Burdens For Those That Need It Most

ENERGY BURDEN [AVG. EXPENDITURES/AVG. INCOME, \$/YEAR]



Energy costs are amongst the highest in the country and a significant portion of household expenses

More than half our low income residents suffer a high energy cost burden (>10% of income)

Average annual residential energy expenditure in Connecticut is \$3,000*

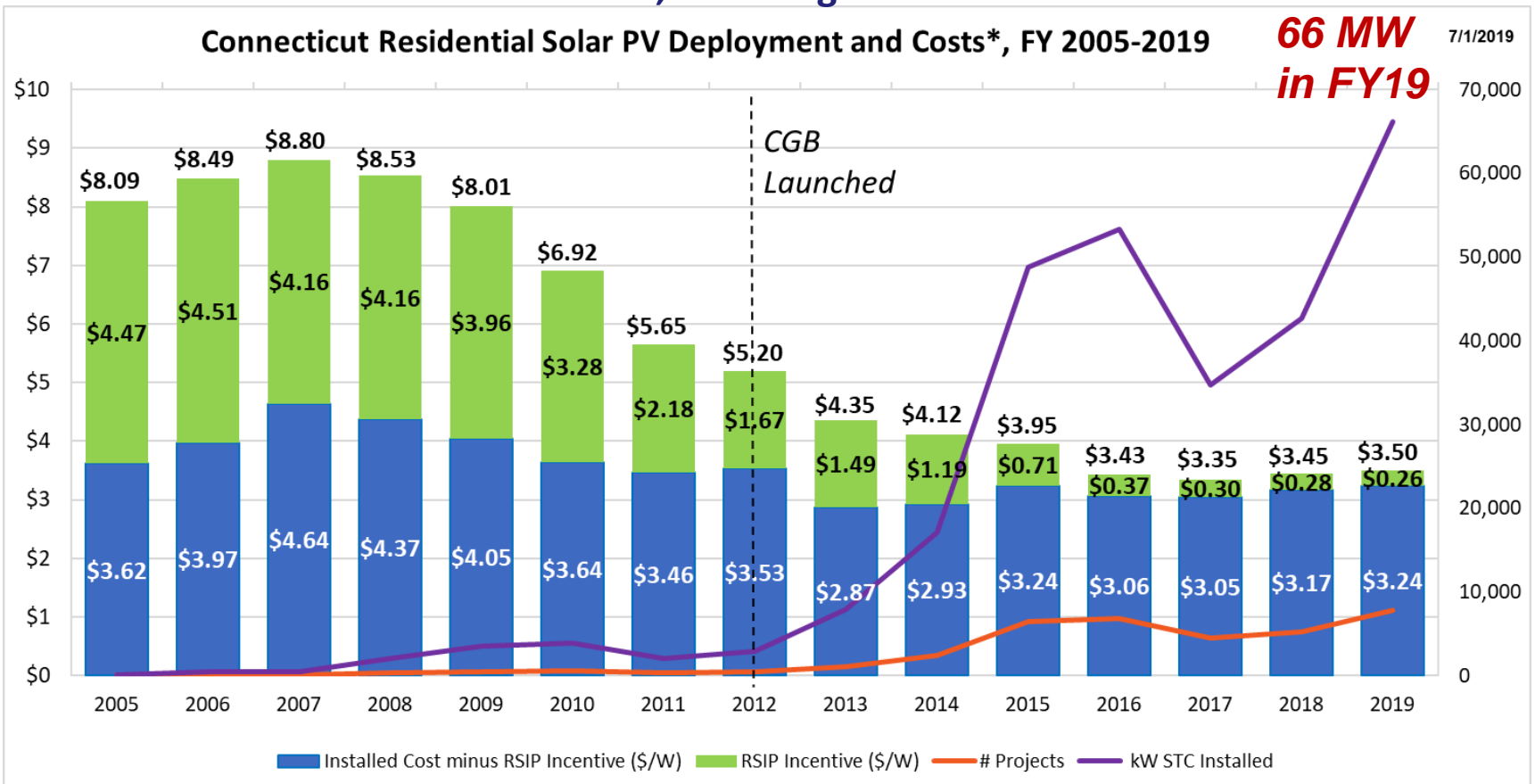
To have meaningful impact on energy burdens we must provide comprehensive solutions that combine solar + EE

CT's Residential Solar Deployment



273 MW out of 350 MW

A declining block incentive program began in 2012 and an elevated LMI incentive began in 2105. By calibrating incentives with availability of affordable financing, deployment has risen as incentives have declined, including for LMI.



* Total System Cost per Watt figures include all reported installed costs without including those projects where financing costs for some third party ownership installers are included as part of the total system cost.

Moving the Needle on Inclusive Prosperity

Equity for Rooftop Solar



AMI Band	# of Solar PV Projects	# Owner Occupied Households (1-4 Units)	% of Owner Occupied Households (1-4 Units) with Solar
<60%	2,759	60,769	4.5%
60-80%	4,007	99,220	4.0%
80-100%	5,931	165,331	3.6%
100-120%	6,934	187,463	3.7%
>120%	11,347	345,311	3.3%
Total	30,978	858,094	3.6%

	# Owner Occupied Households (1-4 units)	% Owner Occupied Households (1-4 units)	% of RSIP Installations
Majority Hispanic	31,152	3.6%	4.1%
Majority Black	18,163	2.1%	3.8%
Majority White	731,901	85.3%	81.8%
No Majority Race	76,878	9.0%	10.3%
Total	858,094	100.0%	100.0%

Households that were previously underrepresented in solar adoption responded favorably to market focus.

CT residential rooftop solar is now “beyond parity” in LMI and communities of color

Residential 1-4 Owner Occupied Low-to-Moderate Income Strategies



Solar for All Partnership



- Residential Solar Investment Program
- Low-to-Moderate Income **Performance Based Incentive** for Third Party Owners
- Nearly 3x market rate incentive
- Income screen of 100% AMI or lower

- \$70 MM Solar for All campaign
- **Solar Lease** and Energy Efficiency Energy Services Agreement
- Direct Install utility-administered EE program leveraged
- Alternative underwrite
- Community partnerships

- \$60MM program Low interest, long term
- Unsecured loan
- 40+ measures (EE and RE)
- **580+ FICO, 50% DTI** (waived for 680% FICO, offered through CDFI and credit unions)
- 25% of loan for health and safety upgrades

Thoughtful program guidelines help achieve strong consumer protections

Smart-E Loan *Now Focusing on Credit-Challenged and LMI*



- Unsecured personal loan that encourages **bundling energy measures**
- 10 **local lenders** participating and 300+ **local contractors**
- 40+** energy improvements can be financed
 - Solar, EV chargers, Storage, Boilers, Furnaces, Heat Pumps, Central Air, Insulation and more!
- Up to \$25,000 (new!)** can be used to address mold & asbestos as standalone measures
- Up to 25%** of loan can be used for other health & safety issues

Loan Terms

5-yr	7-yr	10-yr	12-20-yr
4.49%	4.99%	5.99%	6.99%

- Standard: **640+ FICO**, 40-45% DTI
- Credit-Challenged: **580+ FICO**, 50% DTI

FICO Score Range	# of Closed Loans	% of Loans	# of Owner Occupied 1-4 unit Homes	% of Owner Occupied Homes
580-639	98	2.75%	41,988	6.40%
640-679	276	7.76%	46,791	7.13%
680-699	348	9.78%	34,018	5.19%
700-719	379	10.65%	40,979	6.25%
720-739	386	10.85%	47,430	7.23%
740+	2071	58.21%	444,869	67.81%
Total	3558	100%	656,075	100%

AMI Bands	# of closed loans	% of loans	# of owner occupied 1-4 unit properties	% of owner occupied homes
<60%	220	6%	60,769	7%
60%-80%	417	12%	99,220	12%
80%-100%	673	19%	165,331	19%
100%-120%	790	22%	187,463	22%
>120%	1501	42%	345,311	40%
Total	3604	100%	858,094	100%

smart-e loan

Local Lenders

Program Sponsor



Loan Loss Reserve
T/A + Marketing + Contractor
Oversight



Contractors

Solar, HVAC,
EE, etc.

*New Customers &
Depositors*

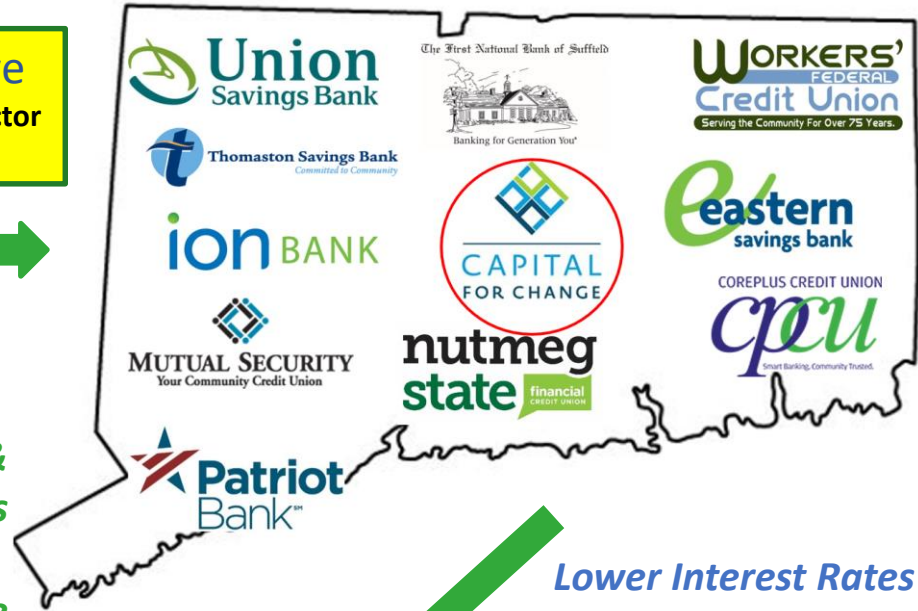


More Loan Volume

More Jobs



Customers



Lower Interest Rates

*Longer Repayment
Periods (5 – 12/15/20
Yrs.)*



Finance Your Next Smart Energy
Project with a Smart-E Loan

Solar For All Partnership

Lease & ESA for Single Family LMI Market



Co-investment: **\$20 million** of capital from Connecticut Green Bank and Inclusive Prosperity Capital leveraged to create a **\$70 million fund**

Home

(New Haven – Oil Heat)



\$59,250 HHI
High Energy Costs

High
Energy Burden

Solar PV (Lease)



\$60 to \$110/month Lease
Solar \$ Savings

Moderate
Energy Burden

Energy Efficiency (ESA)




\$10/month ESA
Energy Savings
<<Additional Savings>>
Solar + EE \$ savings

Reasonable
Energy Burden

Target \$500 a year in savings after financing.

Multifamily Solar Financing Programs

Solar PPA	Type	Solar projects	
	Rate	Fixed or escalating price	
	Term	20 years	
	Criteria	10%+ Year 1 Variable Electric Rate Savings	

Catalyst	Type	Affordable MFH	
	Rate	5.79-7.99%	
	Term	7-20 years	
	Criteria	1.2 project Energy Savings Coverage Ratio*	

C-PACE	Type	Market-rate projects	
	Rate	5.00-6.50%	
	Term	5-25 years	
	Criteria	1.0x+ Energy Savings Coverage Ratio	

* For solar projects; efficiency projects must be 1.3x+

Scaling Up Don't go it alone!



Empowering you to make smart energy choices



KRESGE COMMUNITY FINANCE
SOCIAL INVESTMENT PRACTICE

Conclusions

- **Partnerships** are needed to leverage resources and provide comprehensive solutions
- Programs should **fill gaps** in the market and be developed with a data-driven approach
- **Targeted outreach** and focused efforts can amplify results
- **Barriers** to program participation should be **reduced** as much as possible – don't assume just because uptake is low that your product is the problem... it could be execution (see above on partnerships + targeted outreach, also look at contractors/are they serving target markets?)
- Universal program metrics engender **transparency and accountability** – measure progress, identify what works, what doesn't and where the gaps are
- **Consumer protections** and education are a must, especially with LMI, and even more **especially with LMI seniors**
- Need to have a **long horizon**, analyze your market, **sequence strategies**, and **invest for long term**





Contacts

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Supplemental Materials

From Inclusive Prosperity Capital and Connecticut Green Bank

Resources

IPC Financing Products and Programs:

- Please [contact us](#) for inquiries about the Smart-E program model, LMI community solar, investments in LMI solar loan programs or PAYS program
- Catalyst term loan for affordable multifamily/nonprofit properties: overview available [here](#)
- Solar PPA for affordable multifamily/nonprofit properties: overview available [here](#)
- Solar + Storage low cost debt: overview available [here](#)

Connecticut Green Bank:

- **Sharing Solar Success: Solar in LMI and Communities of Color**
Report available [here](#)
- [Webinar Slides - Solar 101 for Multifamily Housing in CT](#) (full webinar recording)
- [Video case study - Southwest Terrace Apartments - CT](#)

Opportunity & Approach

*Inclusive Prosperity Capital, Inc. is a not-for-profit specialty financing **intermediary** focused on **aligning investment capital** with organizations, projects, and community initiatives that **successfully scale traditionally underserved markets:***

- **Low-to-Moderate Income** Residential Solar
- **Multifamily & Nonprofit** Developments & Retrofits
- **Solar** for C&I, Community Assets, and Nonprofits
- **Grid/Infrastructure** Hydro (Small-scale), Fuel Cells, Anaerobic Digestion
- **Fee for Service** Advisory and Residential Lending Platform



Capital + Products + Strategy honed by key members of the IPC leadership team at the Connecticut Green Bank

Partnering Advantages:

- Turnkey products and customized solutions created for hard-to-reach markets
- Expert staff experienced in motivating contractors, owners and partners to drive impact
- Proven approaches to bring new products to market
- Consumer protections built into products

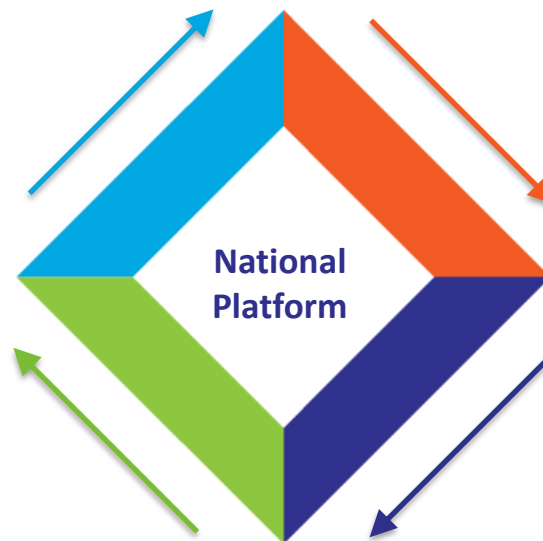


National Residential Loan Platform

*Smart-E mobilizes the **lending capacity of local lenders**, a **vettted contractor network**, and the **relationships of program sponsors** to scale clean energy home upgrades in a **national residential loan platform** using a **standardized product** that also supports **underserved borrowers**.*

Low-to-Moderate Income & Credit Challenged Expertise

- ❖ Same product serves this hard-to-reach market
- ❖ Deep expertise in reaching this segment
- ❖ Built in consumer protections
- ❖ Contractor vetting and oversight



Sustainable and Cost-Effective

- ❖ Build relationships with local lenders and contractors to support market transformation
- ❖ Lower rates possible using lenders' on-deposit capital vs. privately sourced capital and a credit enhancement
- ❖ No servicing fees for sponsors
- ❖ Administration costs lowered as volume on platform scales

Best-in-Class Backers

Connecticut Green Bank, Michigan Saves and Hewlett Foundation

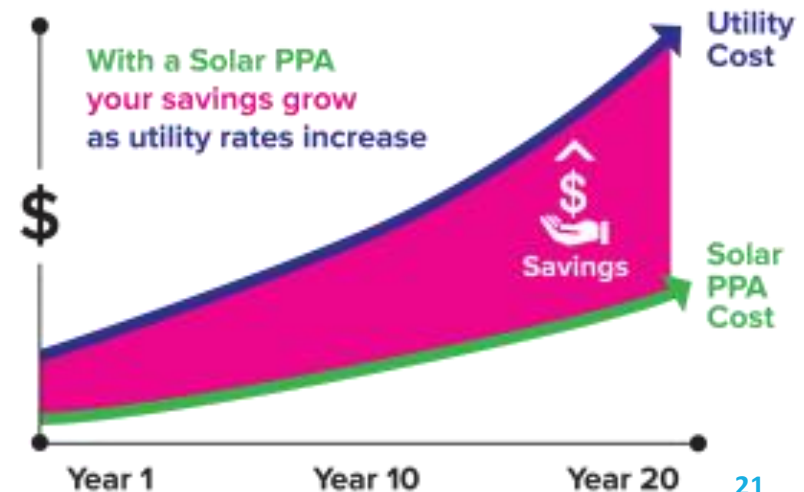
Serving Unconventional Credits & LMI

As an innovative, first-of-a-kind fund structure employing the PACE security for commercial-scale PPAs, the Green Bank Solar PPA has opened the market to sectors traditionally excluded from solar financing



green bank solar ppa

Project Type	# of PPAs	MW
Municipalities / Public Schools / State	53	18.4
Non-profits, housing authorities	27	4.8
Commercial	16	4.1
Houses of Worship	11	0.6



What are the Benefits of a PPA?

No upfront costs
(for PV system)

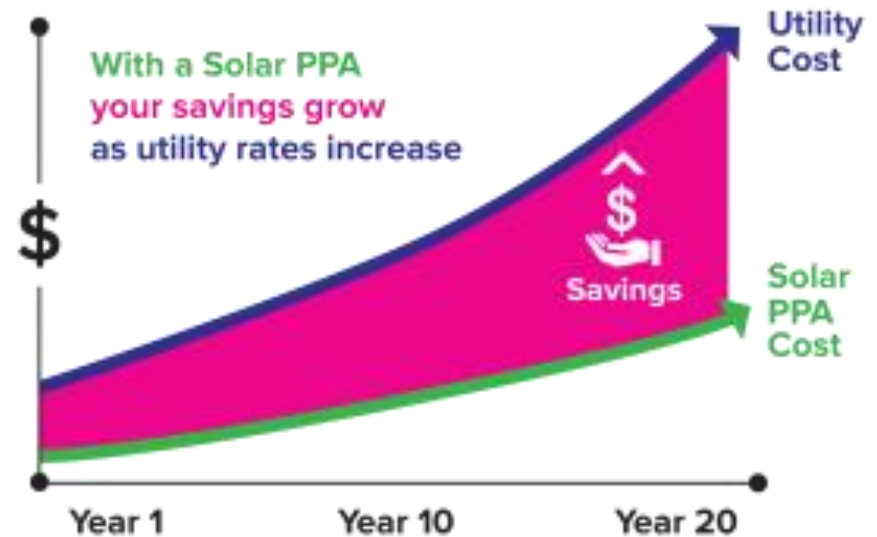
Lock in discounted
electricity rate

Positive cash flow

CGB owns
operations &
maintenance costs

Preserve capital &
credit lines

Monetizes value of
federal ITC



Product Comparison for Affordable MFH Properties

Solar PPA

- Off-balance sheet
- Ancillary project-related work may be financed (if identified prior to PPA execution)
- Monetizes and passes along financial benefit of ITC to property owner

LIME Loan

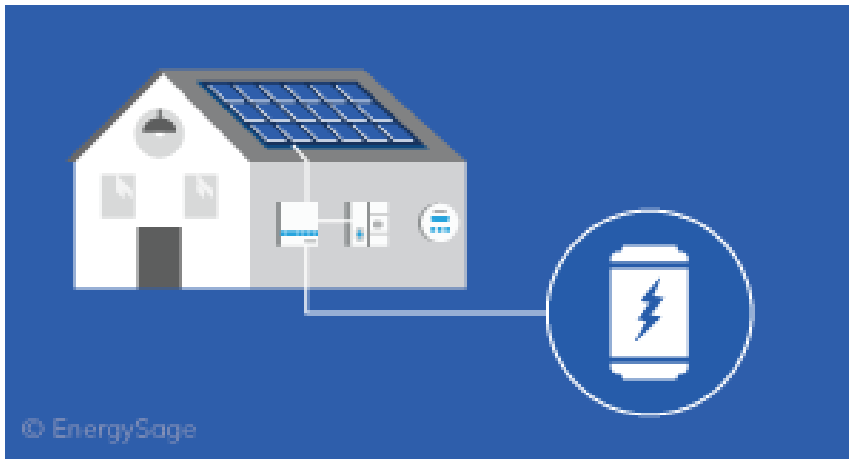
- Unsecured (UCC-1 filing)
- Ancillary project-related work may be financed (as identified prior to loan document execution, subject to ESCR reqs)
- ITC monetized by owner, independent of loan

C-PACE

- Secured to property (1st position lien)
- Ancillary project-related work may be financed (as identified prior to loan document execution, subject to ESCR reqs)
- ITC monetized by owner, independent of loan

Solar plus Storage

Low Cost Financing for LMI Communities



Loans up to \$300,000, 3-4% for up to 12 years, 2% closing fee.

Projects must provide resiliency to low income urban communities.

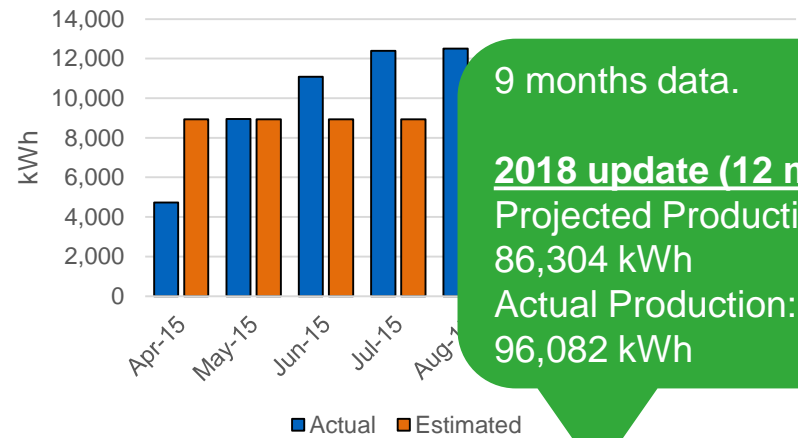
Learn more [here](#).



Net metering example – Ashford Senior Housing Center

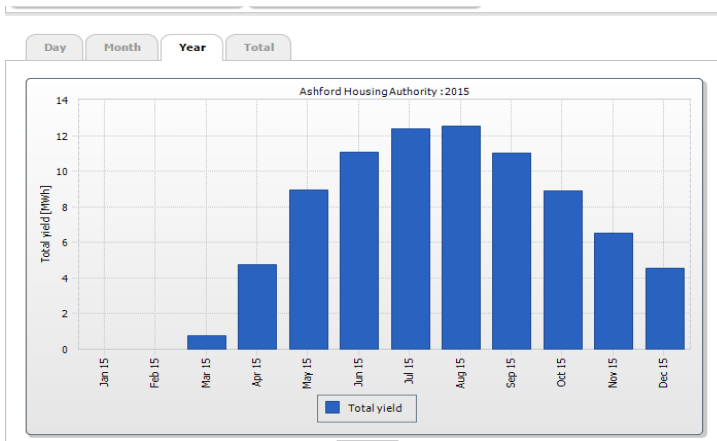


Estimated vs. Actual Solar Power Generation
2015



Estimated generation: 80,462 kWh
 Actual generation: 80,724 kWh
Difference: 262 kWh

Note: Solar PV system is sized based on annual electricity usage

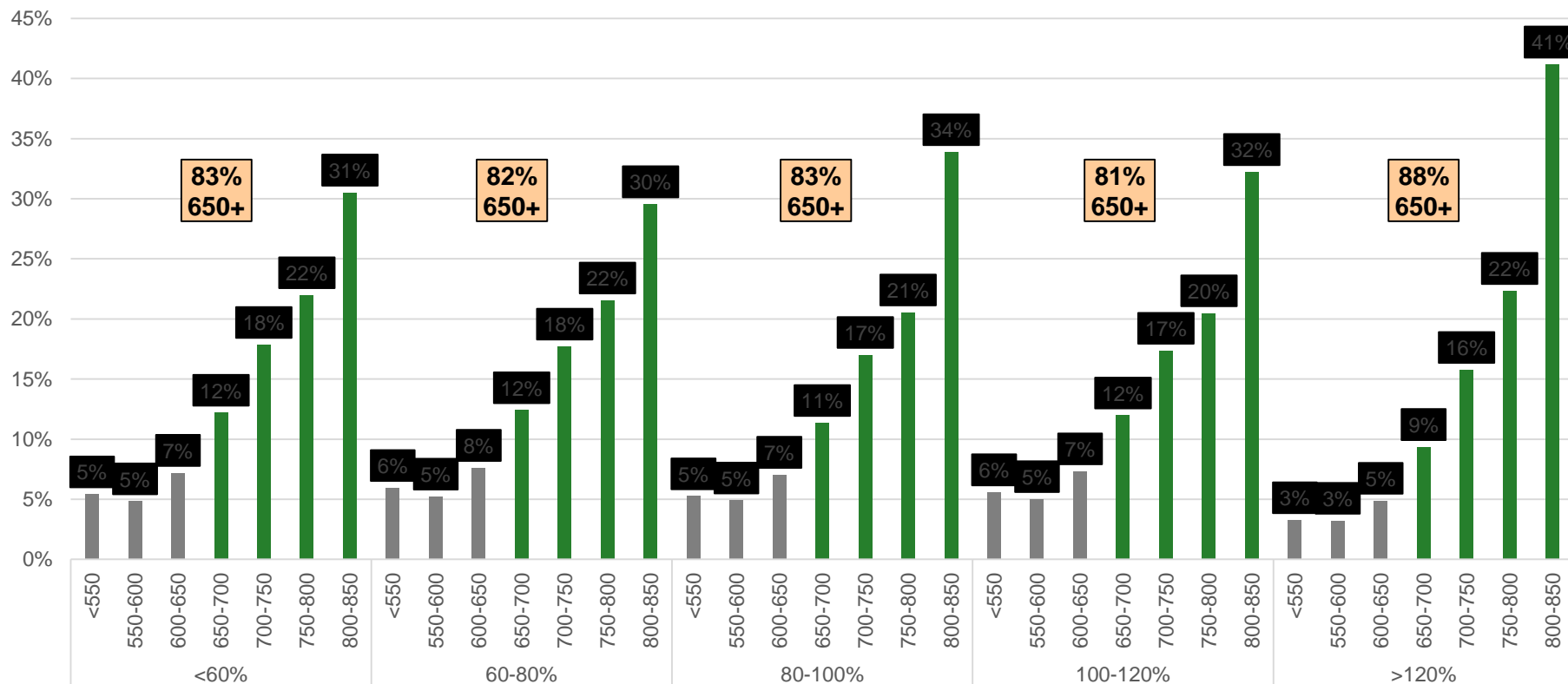


25 Live dashboard view of metered electricity

Credit-Worthy LMI Borrowers In Greater #'s in CT than Presumed



CT Homeowners 2017 FICO Scores by Income Band



This presents an opportunity for financing for some segments of the low-to-moderate income market

CT Communities of Color: By the Numbers

Housing Occupancy in Communities of Color*



	1-4 Unit Owner Occupied Households	Percent of all Owner Occupied 1-4 Unit Households
Majority Hispanic	31,152	3.6%
Majority Black	18,163	2.1%
Majority White	731,901	85.3%
No Majority Race	76,878	9.0%
Grand Total	858,094	100.0%

Less than 6% of owner-occupied households are in communities of color

Renters have fewer opportunities to participate in clean energy programs/make energy improvements than owners

REFERENCES

2016 ACS Census data

*Census tracts categorized based on whether over 50% of the population identifies as a single race or ethnicity

Customer Segmentation

A targeted approach to customer acquisition

DOLLARS & SENSE



“Judy & Dante”



Total Customer Count:
74,143

SEEKING STABILITY



“Kurt”

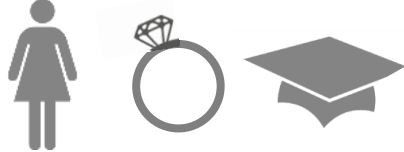


Total Customer Count:
61,434

SURVIVING NOT THRIVING

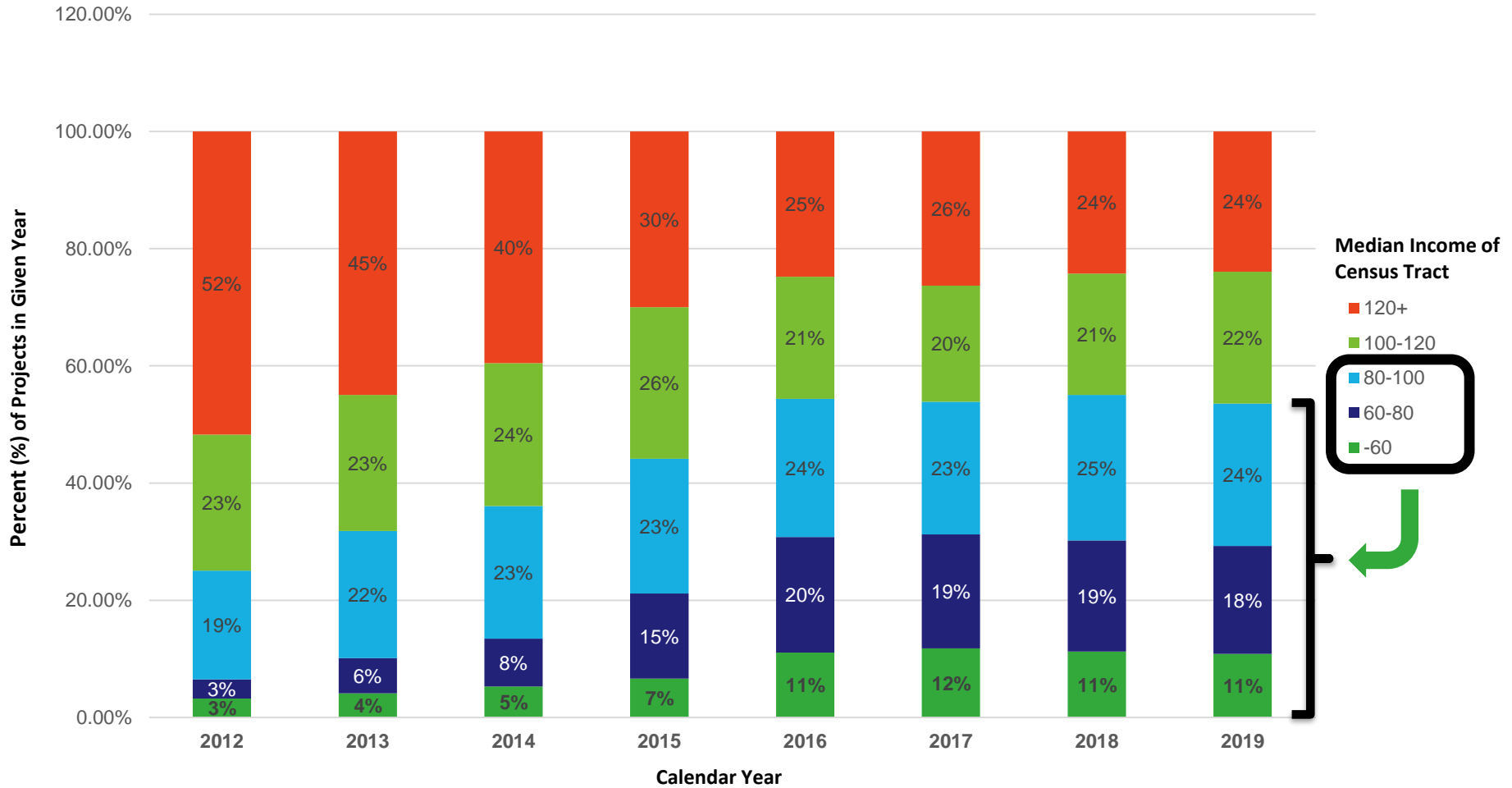


“Emma”



Total Customer Count:
18,186

Moving the Needle on Inclusive Prosperity



Solar penetration in census tracts earning <100% of area median income grew from 25% in 2012 to over 50% after 2016

On-Bill vs. Unsecured Lending



- On-bill doesn't appear to give a product an advantage over direct bill/unsecured
 - Contractor channel and targeted outreach are *much, much* more important to success
- But PAYS/On-Bill Tariff approaches have unique advantages that should be considered
- Get to know your utilities
 - Do they want to be involved in an on-bill program
 - Are their billing, customer service, other systems set up to handle all the intricacies of on-bill?
 - What's their IT queue like? (e.g., is it 1+ years before your project can get programmed?)
 - How much will it cost, and who is paying?
 - e.g., in Smart-E product, participating lenders pay for origination/underwriting/servicing, not the program

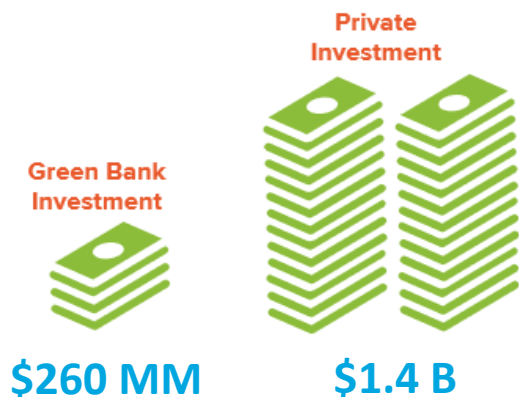


Connecticut Green Bank

Social and Environmental Impact



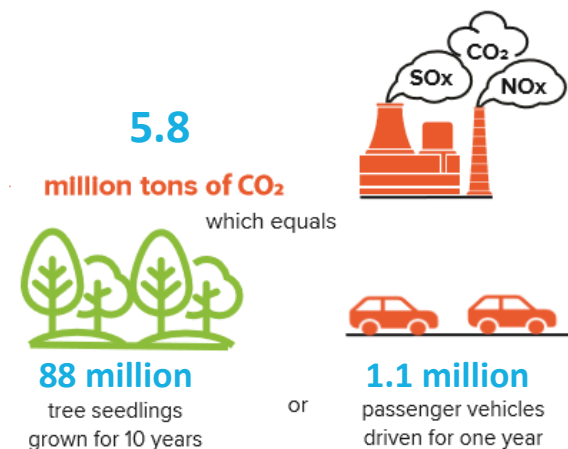
INVESTMENT



ECONOMIC DEVELOPMENT



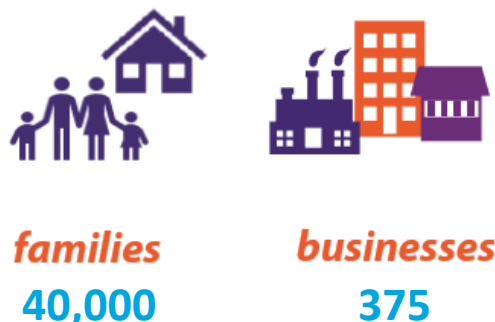
ENVIRONMENTAL PROTECTION



TAX REVENUES



ENERGY BURDEN REDUCED



PUBLIC HEALTH SAVINGS



REFERENCES

Connecticut Green Bank Comprehensive Annual Financial Report for FY 2019