



**Better Buildings Residential Network
Peer Exchange Call Series:**
*Finding the Balance Between Solar and Energy
Efficiency*
May 23, 2019

Agenda and Ground Rules

- Agenda Review and Ground Rules
- Opening Poll
- Residential Network Overview and Upcoming Call Schedule
- Featured Speakers:
 - **Shelley Cohen**, DC Sustainable Energy Utility (DCSEU)
 - **Tom Bone**, CivicSolar
 - **Rob Jones**, Elevation Solar
- Open Discussion
- Closing Poll and Announcements

Ground Rules:

1. **Sales of services and commercial messages are not appropriate** during Peer Exchange Calls.
2. Calls are a safe place for discussion; **please do not attribute information to individuals** on the call.

The views expressed by speakers are their own, and do not reflect those of the Dept. of Energy.

Better Buildings Residential Network

Join the Network

Member Benefits:

- Recognition in media and publications
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- One-on-One brainstorming conversations

Commitment:

- Members only need to provide *one number*: their organization's number of residential energy upgrades per year, or equivalent.

Upcoming Calls (2nd & 4th Thursdays):

- Jun 13th: Modular Housing, Tiny Homes and What the Future of Homeownership Means for Energy Efficiency
- Jun 27th: Making the Most of Home Performance Data
- Jul 11th: Getting Net Zero Upgrades to Scale – The Future is Now

Peer Exchange Call summaries are posted on the Better Buildings [website](#) a few weeks after the call

For more information or to join, for no cost, email

bbresidentialnetwork@ee.doe.gov, or go to energy.gov/eere/bbrn & click Join



Shelley Cohen
DC Sustainable Energy Utility



DC
SUSTAINABLE ENERGY
UTILITY

Shelley Cohen



What Is the Sustainable Energy Utility?

- ▶ Clean & Affordable Energy Act (2008)
- ▶ Ratepayer-funded, privately operated
- ▶ Performance-based contract to DOEE
- ▶ Designed to help District households, businesses, and institutions **save energy and money** through **energy efficiency** and **renewable energy** programs.



DCSEU Goals

Electricity Savings



Gas Savings

Green Jobs



Local Economic Development



Low-Income Spending/Savings



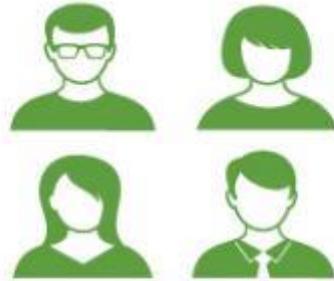
Renewables



Impact Since 2012



**\$850 Million in
Lifetime
Energy Cost
Savings for DC
Residents,
Businesses,
and Institutions**



**More than
500 DC
Residents
Working
Across
DCSEU
Projects**



**5 Million
Tons of
Lifetime
CO₂
Emissions
Prevented**



DCSEU Programming

- ▶ **Commercial and Institutional**
 - Custom Program
 - Pay for Performance
 - Business Energy Rebates
 - Instant Rebates
- ▶ **Residential**
 - Retail Efficient Products (Lighting, Appliances, Smart Thermostats, HVAC)
- ▶ **Multifamily**
 - Low-Income Multifamily Comprehensive
 - Income Qualified Efficiency Fund (Direct Installation)
- ▶ **Workforce Development**
- ▶ **Renewables**
 - Custom Solar
 - Solar For All



DCSEU's Program Support

- ▶ No-Cost Technical Assistance
- ▶ Financial Support
 - Prescriptive Rebates
 - Custom Rebates
 - Solar Project Incentives





SIBLEY MEMORIAL
HOSPITAL
JOHNS HOPKINS MEDICINE



Paralyzed Veterans
of America



Smithsonian



Georgetown
University



AMERICAN UNIVERSITY
WASHINGTON, DC



DCSEU.COM

No-Cost Technical Support

IDENTIFYING OPPORTUNITIES

- Site walkthroughs
- Capital planning assistance
- No-cost technical assistance
- Interval data analysis
- Peer-to-peer information exchange
- New technology seminars

FINDING SOLUTIONS

- Project planning & prioritization
- Unbiased review of vendor quotes
- Data logging baseline energy usage
- Guidance on operations and maintenance adjustments

PROJECT ANALYSIS

- Cash flow and ROI analysis
- Post-installation data logging
- Project savings regression analysis

CALCULATING IMPACT

- Demonstrating value to decision makers
- Analysis of reduced operations and maintenance costs
- Increased comfort and employee performance
- Guidance on PR and marketing opportunities



Rebate Program Overview

	Product Category	Prescriptive Rebates	Custom Projects
Lighting	Interior LEDs	●	
	Exterior LEDs	●	
	Controls	●	
Heating and Ventilation	Boiler Projects		●
	Hot Water Heaters		●
	Steam Systems		●
	Steam Trap Replacement		●
	Variable Frequency Drives (VFDs)	●	●
	Demand Control Ventilation		●
	Chillers		●
	Heat Pumps		●
Pay for Performance	Recommissioning and Retro-commissioning		●
	Advanced Building Controls		●
	Energy Management Information Systems		●
Refrigeration and Food Service	Walk-in refrigerators and freezers	●	
	ECM Motors for Walk-in coolers and freezers		
	Food Service Equipment	●	●
Other	New Construction Projects		●
	Complex, Multi-measure projects		●
	Renewables		●
	Net Zero Building Projects		●

DCSEU Custom Rebates

- ▶ Project support with ESPC/UESC
- ▶ Capital Projects/Retrofits
- ▶ Resiliency Efforts
- ▶ New Construction
- ▶ Retrocommissioning, Energy Management Programs (P4P)
- ▶ Net Zero Support
- ▶ Renewables



Solar for Low-Income Families

500+
single-family
solar PV
system
installations



2012

1 PV
system
every 1.8
work days
in 2015



Reduced Interconnection Time
through interagency/utility collaboration



\$10 million
in lifetime energy cost savings

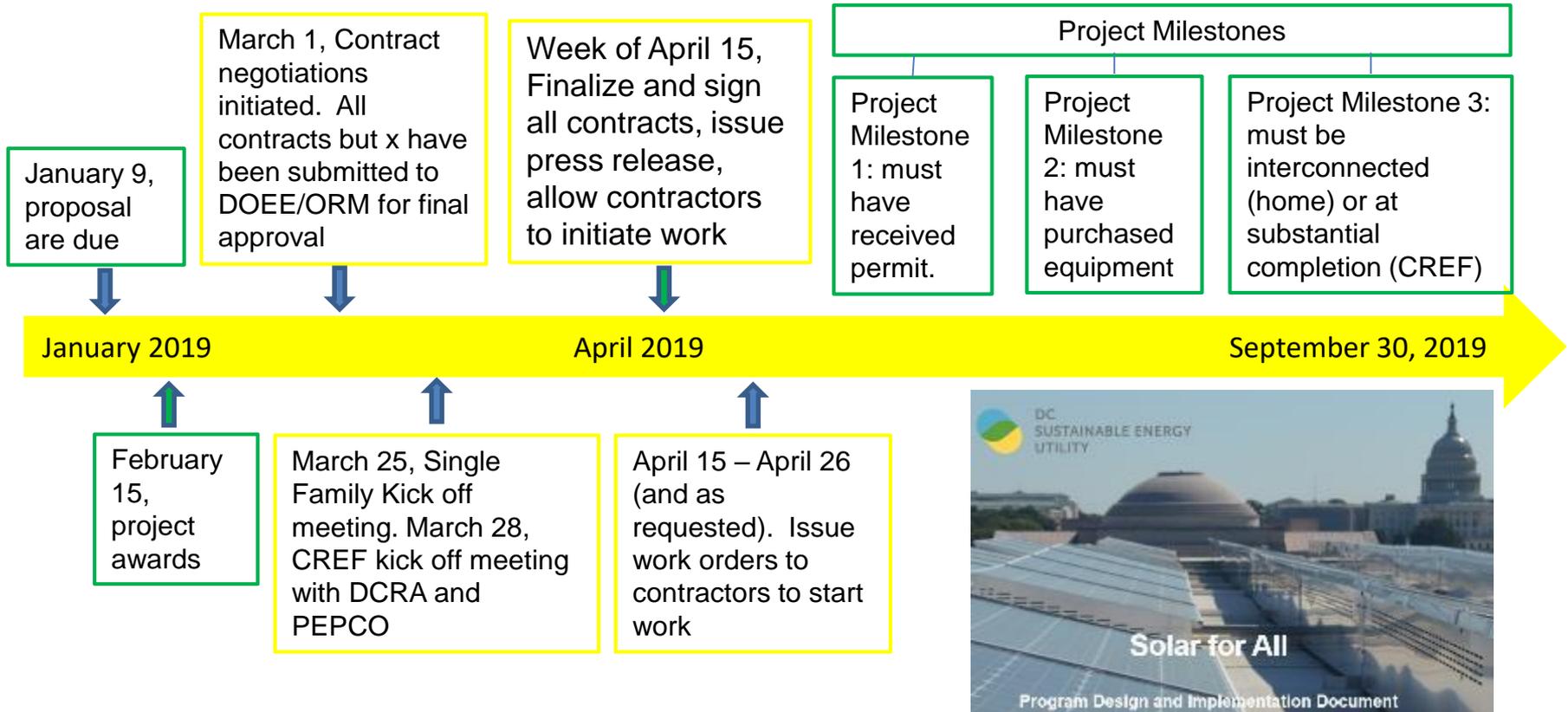
Solar For All Update

- CREF Projects
 - LOIs with 6 companies
 - *Enough solar for 51 CREF projects with output designated for DOEE*
 - *\$8,600,000 in incentives designated for these projects*
 - *Output will be designated for low income residents*
 - *Total of 7MW to be built**
- Single Family Projects
 - LOIs with 4 companies
 - *Enough solar for 130 income qualified homes*
 - *\$895,175 in incentives designated for these projects*
 - *Total of 600kw to be built**

** final amount identified at permitting*



Next Steps



WASHINGTON DC: CURRENT SOLAR MARKET CONDITIONS

- Best solar market in the US thanks to the 2018 Omnibus Energy Legislation requiring the District obtain 100% of its power from renewable energy resources.
- Need 3000MW or 3GW to meet the statutory solar requirement, which is expected to primarily be rooftop and parking canopies as there is limited opportunity for ground mount systems.



ITC

Federal Investment Tax Credit is a 30% federal tax credit for solar systems on residential and commercial properties that remains in effect through December 31, 2019 and progressively steps down to 26% in 2020 and 22% in 2021.



Solar Renewable Energy Credits (SRECs)

DC Legislation passed in 2018 increased the Renewable Portfolio Standard (RPS), stabilizing the SREC market. Compliance payments are currently at \$410/SEC.



Supportive Regulatory Environment

Permitting is becoming easier and faster due to improvements in the system. DC Council and agencies support industry achieving targets and generous feed-in-tariffs that pay residential solar investors at prime rate.

Use Solar Revenue to fund additional conservation measures

A photograph showing three solar installers on a roof. They are wearing blue shirts, white hard hats, and safety harnesses. They are working on a large array of solar panels. The background shows a brick building and trees.

Solar Creates Green Jobs

- ▶ Growth sector in DC because of recently enacted legislation
- ▶ 1,100 solar jobs in DC
- ▶ 242,000 people working in solar across the US

DCSEU Solar for All Impacts

Solar For All Impact - Installed Capacity (MW)

Element:	Fiscal Year 19	Fiscal Year 20	Fiscal Year 21	Total
CREF Solicitation	7.0	5.7	6.2	18.9
Single Family Solicitation	0.5	0.6	0.6	1.7
Custom Engagement	0.0	0.8	0.9	1.7
Customer Targeted	0.0	0.7	0.7	1.4
Total	7.5	7.8	8.4	23.7

Solar For All Impact - Downstream

Impact:	Fiscal Year 19	Fiscal Year 20	Fiscal Year 21
Cumulative First Year MWh	9,100	19,000	29,700
Cumulative Households Served	2,200	4,500	7,100



Thank You

- ▶ Shelley Cohen
- ▶ DCSEU, Solar Programs
 - ▶ 202-677-4828
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 - ▶ www.dcseu.com



@dcseu



/dcseu



@dcseu



DCSEU.COM

Key Points

- DCSEU's program offers no-cost technical assistance and financial support to homeowners wishing to install solar.
- Both standard and "custom" projects are encouraged, the latter being brought to DCSEU by homeowners.
- Since 2012, DCSEU has enabled the installation of over 500 low-income, single-family solar PV systems.



Tom Bone
CivicSolar



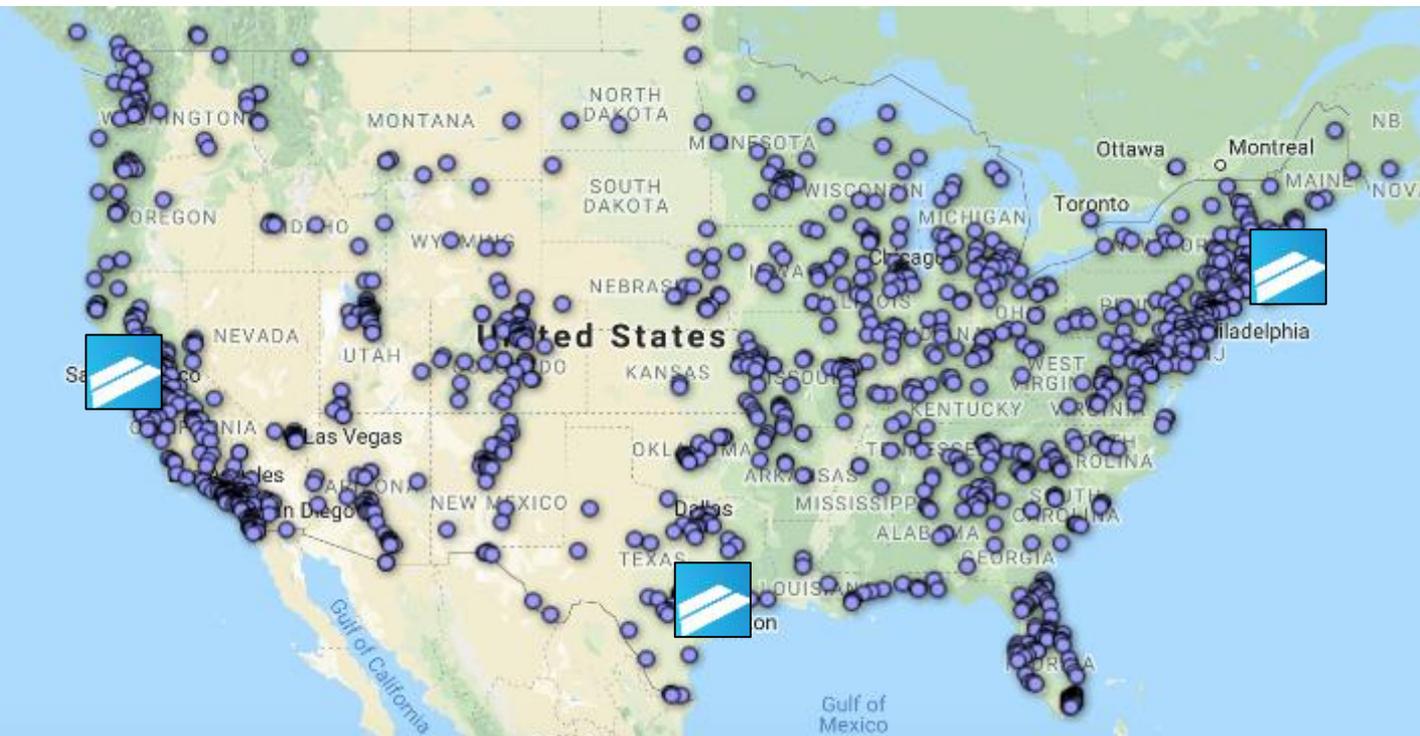
Adding solar to an efficiency contracting business

May 23, 2019

CivicSolar

Introduction

National Footprint



 Sales Offices (OAK, AUS, BOS)

 FY18 Customers

Today's contractor
is tomorrow's solar installer.

We support contractors, who need to

- **train** their teams,
- **market** their businesses,
- **design** and **engineer** durable solar systems,
- **finance** solar projects,
- build **proposals** and sell solar,
- **procure** solar equipment,
- **install** solar systems, and
- **maintain** solar systems for their warranted lives.

There are
known knowns...

Known Knowns: Synergies

- Leverage mechanical expertise
- Complementary category
- Existing relationships
- Permitting familiarity
- Mitigate seasonality
- Selling an ROI



- Production modeling
- Tariff modeling
- Incentive design
- Product differentiation
- Code compliance



- Federal ITC
- Tariffs & Duties
- State incentives
- Interconnection
- Incumbents



Becoming a solar + efficiency contractor

- Partner with / hire a trusted & experienced electrician
- Partner with / hire a competent solar designer & elec engineer
- Have a solar champion on staff
- Work with a knowledgeable distributor
- Focus on a limited product mix & develop product expertise
 - Premium & Value modules & inverters
 - Standard racking
- Inspector Sandwich

- Sell less solar!
 - Leverage the complementary offering of home performance and energy generation
- Know your model
 - Use Helioscope or Aurora or Sighthen or Solar Design Tool
 - Learn local energy costs, tariff structures, state tax credits and other incentives
 - Use Energy Toolbase for nuanced financial modeling

Prospect interest → Financing PreQual → Design Feasibility →
Full Proposal → Kitchen Table Conversation → Close →
Engineering → Interconnection & Permitting → Procurement →
Installation → Commissioning → Monitoring & Reporting →
Operations & Maintenance → Warranty Service

Standardize each stage.

Tracking Industry Changes



- Work with a knowledgeable distributor
- Read leading press
 - Greentech Media, UtilityDive, Solar Wakeup
- Join your state industry association(s)
- Network with your peers

Key Points

- Today's contractor is tomorrow's solar installer.
- Contractors seeking to enter the solar field should hire or partner with an experienced electrician.
- Policy risks are a major “unknown unknowns.”



Rob Jones, Elevation Solar

About Elevation Solar

Who We Are

- Founded in 2014
- Residential Solar Company
- Started Energy Efficiency in 2016
- Provide Customers with the Elevated Home



Elevated Home

Solar

Locked-in electricity costs for the next 20+ years. No more spikes or rate hikes, just predictable, affordable power for years to come.

Energy Efficiency

From certified home energy audits to insulation, air barriers, duct seal and efficiency lighting retrofits, we help you reduce your home's overall energy consumption.

Smart Home

We take the guesswork out of the process by integrating the best products into one simple solution; a truly connected home.

Vehicle Charging

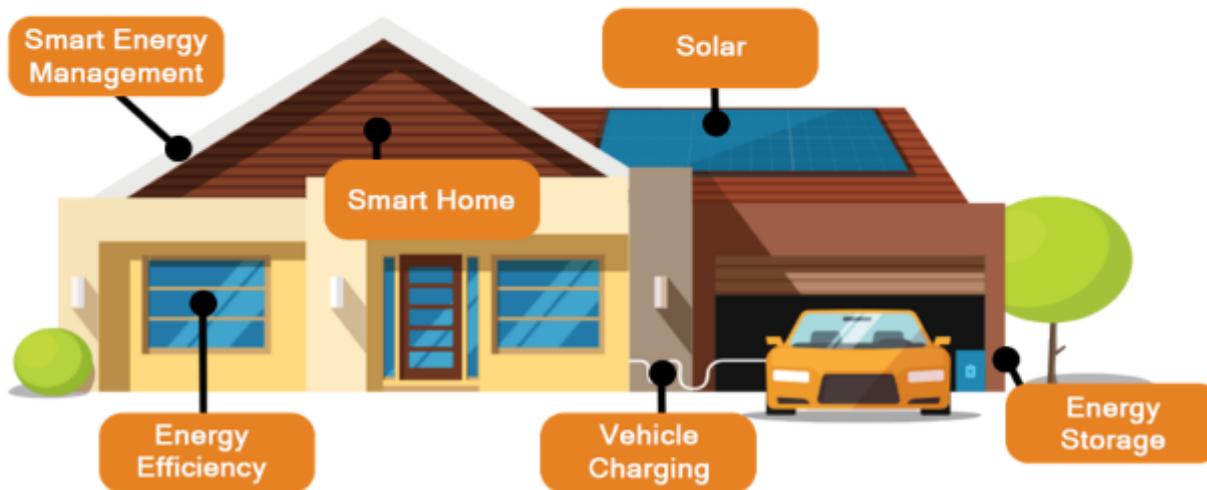
With the rise of electric vehicle use, having a charging station in your home is becoming increasingly important.

Energy Management

Use our Smart technology to efficiently manage your home's energy consumption.

Energy Storage

Our battery storage systems reserve excess solar power, giving you backup power if needed.



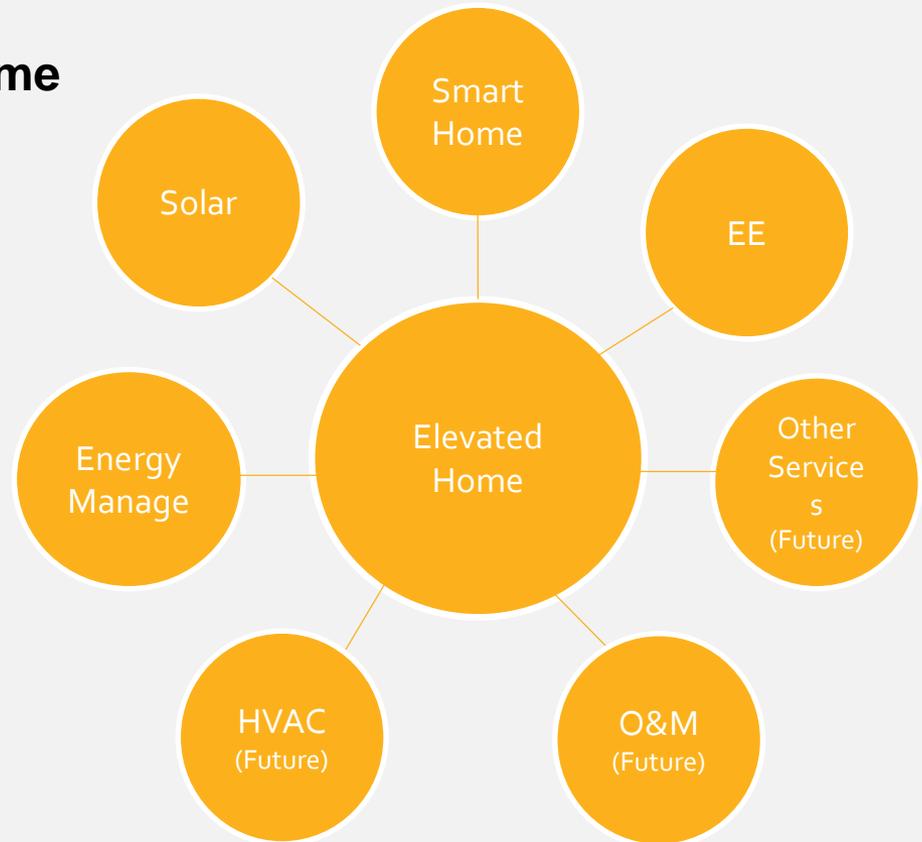
How Does Energy Efficiency Fit In

Existing Home to an Elevated Home

Our customers achieve an Elevated Home through solar, energy efficiency and other approaches.

Future Offerings

- HVAC
- O&M
- Roofing
- Other Services



Energy Efficiency Purpose

Why Does Elevation Solar Offer Energy Efficiency

- Helps lower the cost of home ownership
- Provide year round comfort
- Improve indoor air quality
- Helps the Environment
- Provides credibility to the company
 - BPI Certifications
 - Awards – Contractor of the year
 - Blower door test
 - Infrared camera
- Acquisition strategy for more customers
- Instant install
- Solidify the Sale



EE Included on Solar Proposal

Proposal

Includes the 4 Main Pro's to EE

- 10% Savings
- Increase Comfort
- Improve Air Quality
- Reduce Carbon Footprint

Before Solar is installed the customer will Reduce Before they Produce

ENERGY EFFICIENCY

Save Money (10%)

Increase Comfort

How Big is The Hole in Your House?

Improve Air Quality

Reduce Carbon Footprint

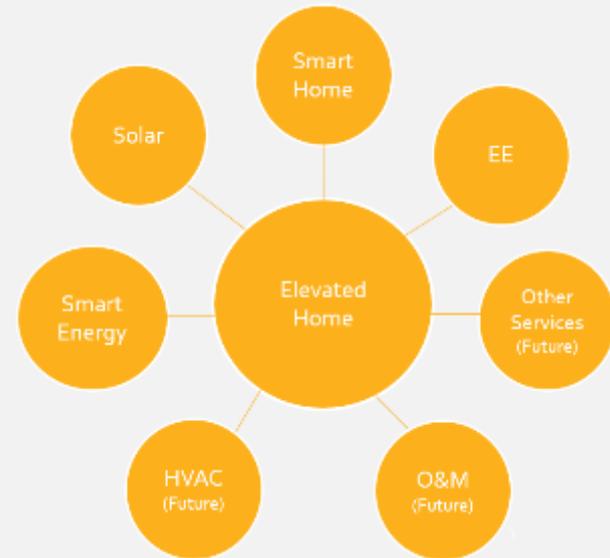
SAVE MONEY AND LIVE MORE COMFORTABLY WITH ENERGY EFFICIENCY!

REDUCE BEFORE YOU PRODUCE
THE SMART APPROACH TO ENERGY MANAGEMENT

Energy Efficiency Included with Solar

Customers Receive the Elevated Home

- Energy Efficiency is part of the solar offering
- EE is included in the proposal
- Not an after thought
- Included in the loan
- Makes it easy and simple to be included
- Installs happens quickly
- Able to scale in all markets



No Risk to the Customer

10% Energy Reduction

- 10% Reduction is validated through audit
- Any rebates go to the customer
 - SRP
 - APS
- If 10% is not met than a proration is given back to the customer

EE Customer Journey



- Inside sales talks with interested customer, collects electric bill and goes over products/services we offer.
- Proposal is created. EE pricing included in proposal.
- "Reduce Before You Produce". Information about EE work included in the proposal.
- EC goes over the proposal with customer and sells the Elevated Home.
- Solar, EE and any other Elevated Services are included in financing or cash price.
- Final docs are signed and financing is approved.
- Customer service schedules install with the customer.
- EE crew performs test in, install and test out all in one visit.
- Crew fills out audit numbers in SNUGG.
- If property is in a utility rebate area than rebate forms will be signed indicating rebate will go to the customer.
- Inside team verifies 10% energy reduction was achieved through Energy Efficiency improvements
- Rebate form is processed and submitted to utility company. Any rebates are sent to the customer.
- If 10% can't be achieved than a prorated amount of the EE price is refunded back to the customer.
- Audit report is completed and presented to the customer.

Key Points

- Elevate Energy incorporates solar as an integral part of their retrofit packages.
- Customers are guaranteed 10% energy savings.
- Top-to-bottom approaches offering holistic solutions and financing have resulted in very satisfied customers.

Explore the Residential Program Solution Center

Resources to help improve your program and reach energy efficiency targets:

- [Handbooks](#) - explain *why* and *how* to implement specific stages of a program.
- [Quick Answers](#) - provide answers and resources for common questions.
- [Proven Practices](#) posts - include lessons learned, examples, and helpful tips from successful programs.
- [Technology Solutions](#) **NEW!** - present resources on advanced technologies, **HVAC & Heat Pump Water Heaters**, including installation guidance, marketing strategies, & potential savings.



<https://rpssc.energy.gov>

Thank You!

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Please send any follow-up questions
or future call topic ideas to:

bbresidentialnetwork@ee.doe.gov