

# PowerSmart Brookfield Clean Energy Day & Night!



Bob Wall & Patrice Gillespie

SmartPower • August 23, 2023

# About SmartPower

- The nation's leading non-profit marketing organization dedicated to promoting renewable energy & energy efficiency.
- Founded in CT in 2002, we manage high impact community campaigns designed to help customers make smart energy choices.
- Previous local initiatives include *Clean Energy Communities* & *Solarize CT*.



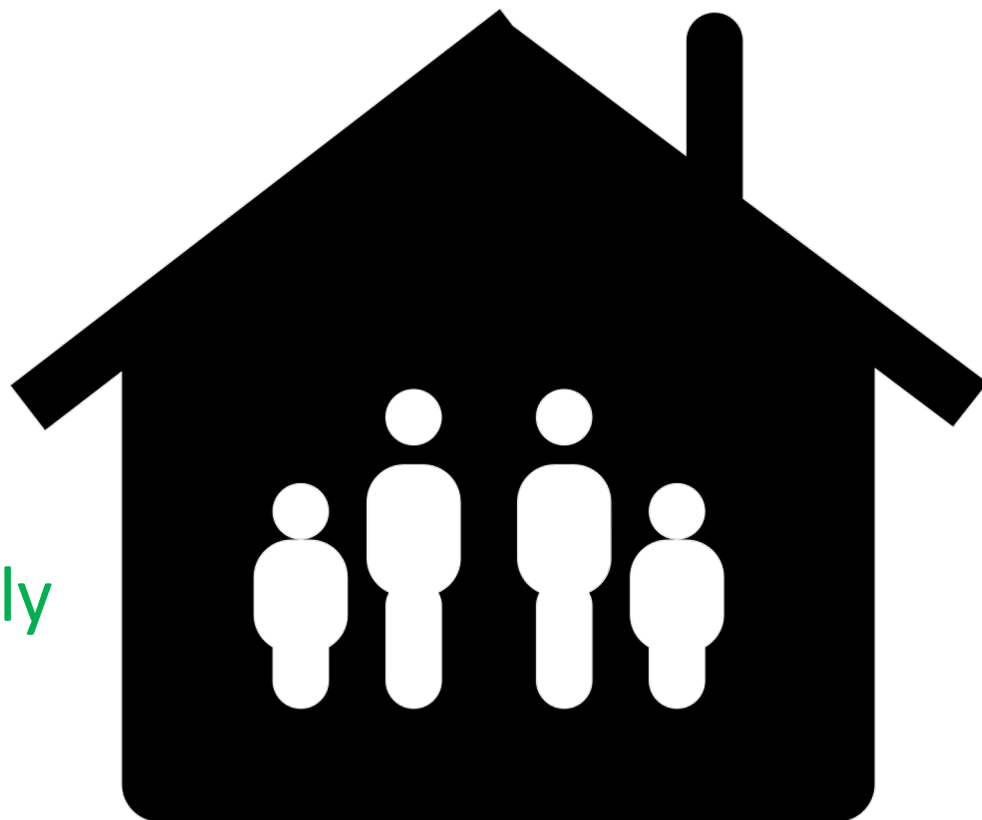
# What is PowerSmart?

- A community-based, 20-week campaign to promote residential battery storage plus solar.
- Funded by US DOE; led by Yale & NYU to understand co-adoption of solar and related technologies.
- SmartPower will manage campaigns in **28** CT municipalities, including Brookfield.



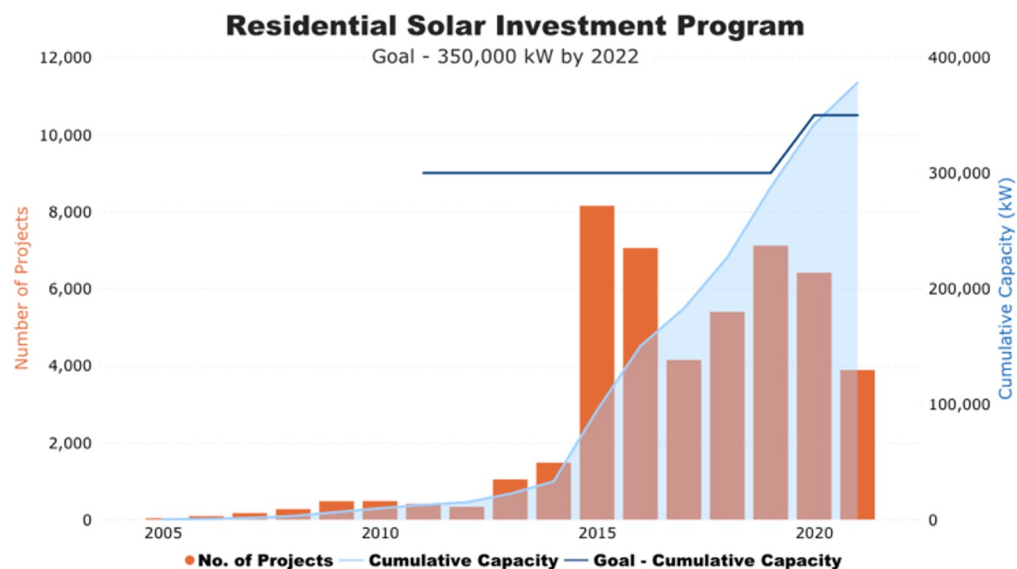
# What Is Our Target Audience?

- Residential customers in Eversource/UI territory
- Existing solar owners:
  - Add storage system
- Non-solar owners:
  - Add solar+storage
  - Add storage system only



# Solar - That Was Then

- Residential Solar Investment Program (RSIP), including incentives from CT Green Bank, ended on 12/31/21
- ~47,000 homes installed solar
- > 378 MW





# Solar - This Is Now

- [Residential Renewable Energy Solutions](#)  
Program launched on 1/1/22
- Administered by Eversource & UI
- Replaces previous net metering and RSIP program

RESIDENTIAL RENEWABLE ENERGY SOLUTIONS PROGRAM

**EVERSOURCE**



# Benefits of Solar

- **Cost Savings** – lower utility bill & hedge against price increases
- **Increased Home Value** – great investment
- **Help Environment** – reduce greenhouse gas emissions, other pollutants & water consumption



# Is My House Right for Solar?

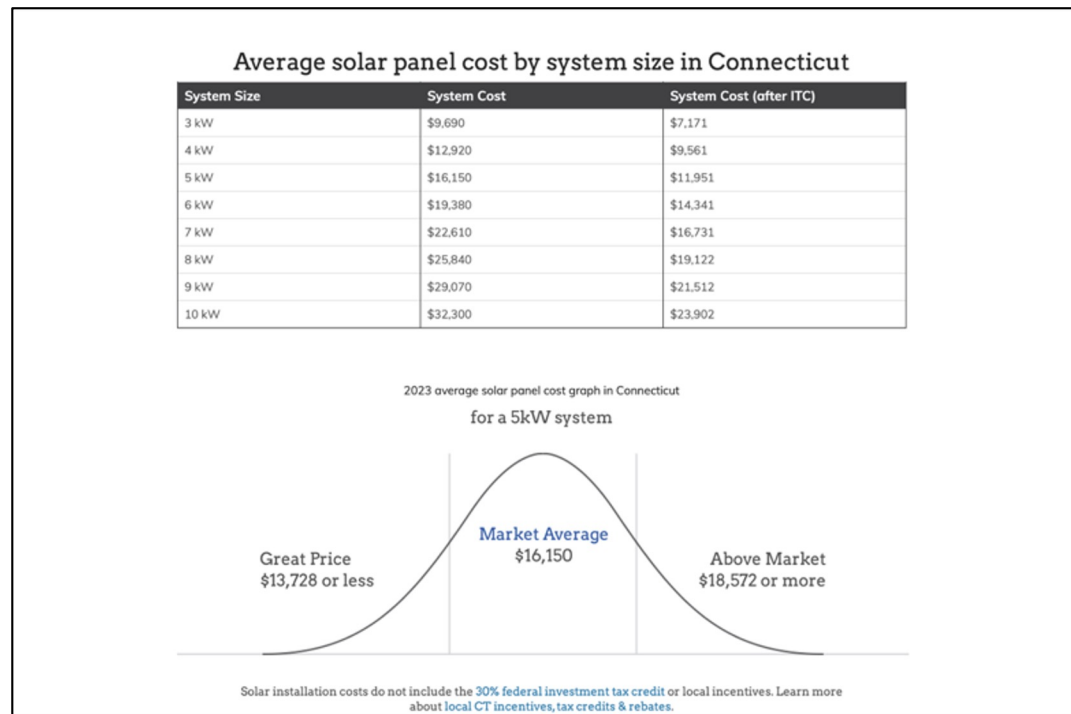
- Orientation – south, east or west facing roofs
- Shade Free – trees, tall buildings, chimneys
- Roof Age – < 10 years; in good shape
- Roof Material – almost any; slate and wood can be difficult





# Average Cost of Solar in CT

- \$2.80/w (EcoWatch) - \$3.23/w (Energy Sage)
- 30% federal tax credit (ITC)
- Net metering credit

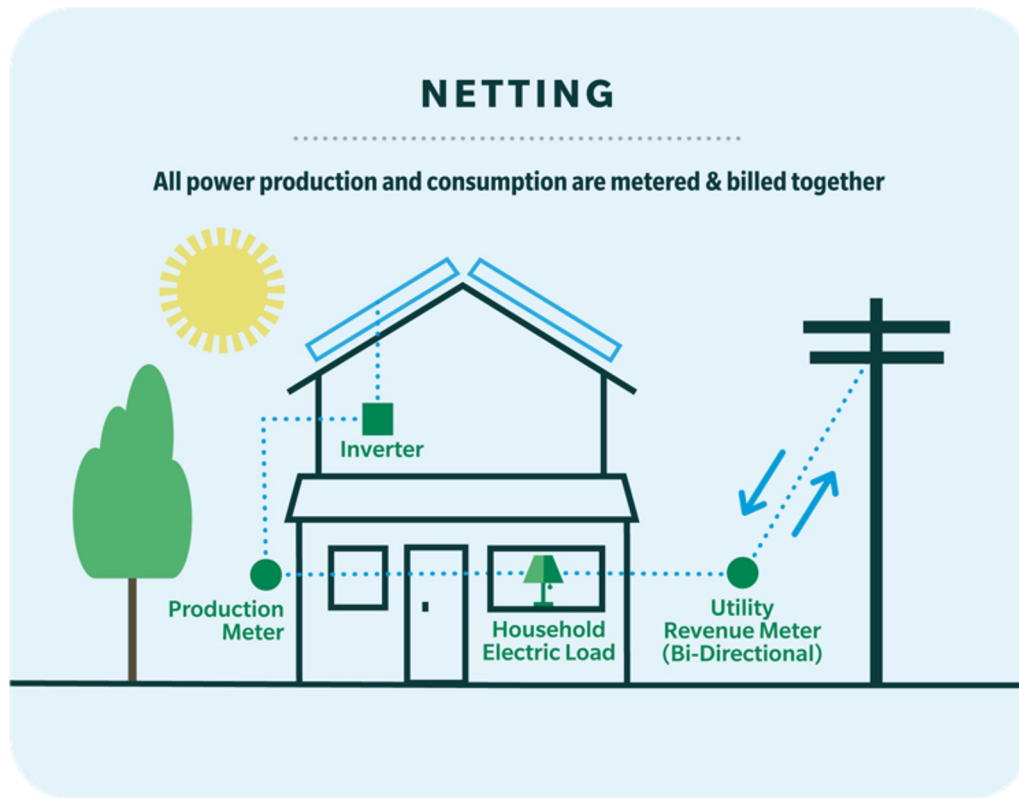


# Option 1 – “Buy All”



- **Cannot be used if buying a battery!**
- Sell all solar power to grid; purchase all power from grid
- Utility buys at approved rate locked in for 20-year term

# Option 2 – “Netting”



- Power produced but not consumed within month is “netted” at same rate you pay
- Net credits applied to bill in dollars
- Excess credits carry over each month
- Incentive rate is current retail rate (fluctuates) + quarterly Renewable Energy Certificate (REC) payment (fixed for 20 years); adder for low income HH

# Finding a Solar Installer

- **Get multiple quotes & references!**
- See list of [Eligible Contractors](#) (required to join *Energy Storage Solutions* program)
- Ask a friend who has solar
- Research pricing & reviews online
- Get online quotes via [Energy Sage](#)



# Batteries Are Everywhere!





# Benefits of Battery Storage

- Backup power source when grid goes down
- Use clean energy when sun goes down
- Keep critical medical devices running
- Earn money by helping the grid
- Avoid turning on dirtiest power plants during peak periods



# Battery Storage Options

## Buy Outright

- Incentive: 30% Federal Tax Credit
- Choose any licensed contractor
- Buy any make of battery
- Use all stored power whenever you want



# Battery Storage Options



## Enroll in *Energy Storage Solutions*

- Incentive ① - Upfront, up to \$7,500
- Incentive ② – 30% Federal Tax Credit
- Incentive ③ – Earn money for selling stored power to Eversource
- Must use approved contractor & battery type



# Energy Storage Solutions

## How The Dispatch Works

	July 2	July 3	July 4	July 5	July 6	July 7	July 8
1 pm			Holiday	Active Dispatch		Storm	
2 pm							
3 pm		Passive Dispatch		Passive Dispatch	Passive Dispatch		
4 pm							
5 pm							
6 pm							
7 pm							
8 pm							



## Eligible Equipment - Home

- Batteries: Enphase Energy, Generac PWRcell, SunPower, Fortress Power, FranklinWH
- Inverters: SolArk (inverters paired with approved energy storage systems are permitted)
- [https://energystoragect.com/submitted\\_ess\\_system\\_status\\_list/](https://energystoragect.com/submitted_ess_system_status_list/)





# ESS Eligible Contractors

- 33 approved contractors for Residential systems
- List includes Name, Address, Property Type, Batteries & Services Offered, Contact Info
- Searchable by Location (e.g., within x miles)
- <https://energystoragect.com/eligible-contractors/>



# Average Cost of Storage in CT

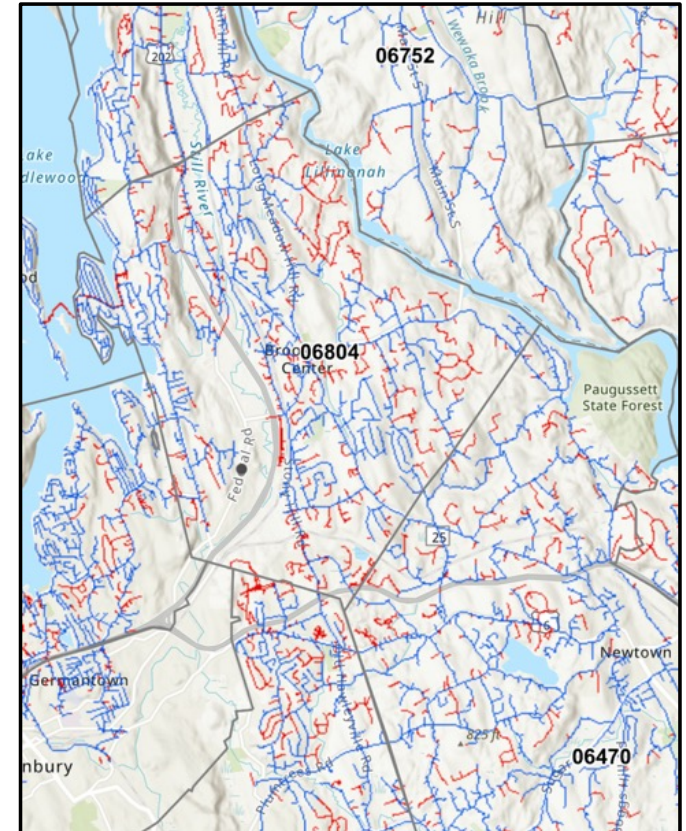
- \$1,438/kWh as of August 2023 per Energy Sage
- Typical battery system - \$15,000 - \$35,000 (pre-incentives)
- Additional upfront incentives – “Grid Edge” & Low Income

Average storage system cost by system size in Connecticut

System Size	System Cost	System Cost (after ITC)
10 kWh	\$14,385	\$10,645
13 kWh	\$18,700	\$13,838
20 kWh	\$28,770	\$21,290
26 kWh	\$37,401	\$27,677

# What is “Grid Edge”?

- Top 10% of circuits with **highest number of storm outages** since 7/1/12
- Top 10% of circuits with **longest storm outages** since 7/1/12
- See if you qualify:  
<https://energystoragect.com/grid-edge-map-instructions/>



# What Size Battery Do I Need?

- Work with your contractor to determine essential load for generator:
  - Lights
  - Refrigerator
  - Outlet(s) to charge devices
  - Other?
- Consider how long you want backup power to run



# Residential Battery Incentive Calculator

<https://energystoragect.com/contractor-resources-2/>

Complete orange shaded fields 1-6 

Optional: Edit values in fields 7-9 

**energy storage SOLUTIONS**

**Residential Incentive Estimate Calculator**

INSTRUCTIONS: Complete the orange shaded fields 1-6. Optionally, edit the values in fields 7-9.

**Residential Battery System - 10 kW / 20 kWh**

**Battery System Inputs**

1	10	kW
2	20	kWh
3	\$ 31,500	Total BESS Cost (Not including solar PV)

**Customer Class Inputs**

4	N/A	Underserved Community?
5	No	Low Income?
6	No	Grid-Edge?

**Residential Battery System - 10 kW / 20 kWh**

<b>Your Estimated Upfront Incentive</b>	<b>\$ 4,000</b>
Rate (\$ per kWh)	\$ 200.00
Upfront Incentive Calculation	Rate * kWh
<b>Your Estimated 10-Year Performance Incentive Total (Nominal)</b>	<b>\$ 6,627</b>
PBI Estimation Method	Average kW

**Active Dispatch Assumptions**

7	2.5%	Annual Degradation of Battery	<small>Default value 2.5%, varies by manufacturer.</small>
8	80%	Maximum Depth of Discharge	<small>Default value 80%, varies by manufacturer.</small>
9	75%	Participation Rate	<small>Default value 75%, varies based on weather, recharge rate, number and timing of events, and customer opt-out per-event. Estimated number of active events is 30-60 per summer and 1-5 per winter.</small>

**10 Year PBI Estimate**

	Max Battery Capacity (kWh)	Average kW	Summer	Winter	Total
Year 1	20.0	4.00	\$ 800	\$ 100	\$ 900
Year 2	19.5	3.90	\$ 780	\$ 98	\$ 878
Year 3	19.0	3.80	\$ 761	\$ 95	\$ 856
Year 4	18.5	3.71	\$ 741	\$ 93	\$ 834
Year 5	18.1	3.61	\$ 723	\$ 90	\$ 813
Year 6	17.6	3.52	\$ 441	\$ 55	\$ 493
Year 7	17.2	3.44	\$ 430	\$ 52	\$ 481
Year 8	16.8	3.35	\$ 419	\$ 50	\$ 469
Year 9	16.3	3.27	\$ 408	\$ 49	\$ 457
Year 10	15.9	3.18	\$ 398	\$ 48	\$ 446
<b>Nominal PBI</b>			\$ 6,627		\$ 6,627
<b>10% Discount</b>			\$ 4,371		\$ 4,371
<b>Revised</b>					3/22/23



# Example - Small Battery System

## 6 kW / 13 kWh – Original Cost - \$21,000

Incentive Type	Standard Rate	Grid Edge
Upfront Incentive	\$2,600	\$3,900
<i>Method</i>	<i>\$200*kWh</i>	<i>\$300*kWh</i>
ITC Tax Credit	\$5,520	\$5,130
<i>Method</i>	<i>Net Cost*30%</i>	<i>Net Cost*30%</i>
10 Year PBI Estimate	\$6,230	\$6,230
<i>Method*</i>	<i>Average kW</i>	<i>Average kW</i>
<b>Net Cost</b>	<b>\$6,650</b>	<b>\$5,740</b>

- Assumes enrollment in *Energy Storage Solutions* program; **90%** participation yielding \$702 for Summers Years 1-5 & \$88 for Winters Years 1-5 and \$404 for Summers Years 6-10 & \$53 for Winters Years 6-10.
- Low Income Households - \$400/kWh Upfront Incentive

# Example - Medium Battery System

## 12 kW / 26 kWh – Original Cost - \$35,000

Incentive	Standard Rate	Grid Edge
Upfront Incentive	\$5,200	\$7,500
<i>Method</i>	<i>\$200*kWh</i>	<i>\$7,500 cap</i>
ITC Tax Credit	\$8,940	\$8,250
<i>Method</i>	<i>Net Cost*30%</i>	<i>Net Cost*30%</i>
10 Year PBI Estimate	\$12,460	\$12,460
<i>Method*</i>	<i>Average kW</i>	<i>Average kW</i>
<b>Net Cost</b>	<b>\$8,400</b>	<b>\$6,790</b>

- Assumes enrollment in *Energy Storage Solutions* program; **90%** participation yielding \$1,404 for Summers Years 1-5 & \$176 for Winters Years 1-5 and \$807 for Summers Years 6-10 & \$105 for Winters Years 6-10
- Low Income Households - \$400/kWh Upfront Incentive

# Finding a Battery Storage Contractor

- **Get multiple quotes & references!**
- See list of [Eligible Contractors](#) (required to join *Energy Storage Solutions* program)
- Talk to your solar installer or ask a friend who has battery storage
- Get online quotes via [Energy Sage](#) (be sure contractor & equipment are eligible for *ESS*)



<https://powersmartbrookfield.wee.green>

- Find Out if Solar + Storage is Right for You
- Events
- Testimonials
- Media
- Resources

**POWERSMART**  
Energy storage saves the city & the planet

**PowerSmart  
Brookfield**  
Clean Energy Day & Night!

**Welcome**

PowerSmart is the newest community-based clean energy campaign in selected towns throughout Connecticut, now available to Brookfield residents and a limited number of other CT municipalities.

Think of it as "Solarize + Storage" — with your own stored clean energy back-up! It's an opportunity for homeowners to own solar PV panels and energy storage systems and have zero-fossil-fuel backup power even at night, and especially when the grid goes down!

For information on going solar, please visit the [Residential Renewable Energy Solutions](#) program, administered by Eversource and UI.

Brookfield residents can purchase a battery storage system outright or enroll in the [Energy Storage Solutions](#) program, administered by CT Green Bank, Eversource and UI. This program provides residents with generous upfront battery purchase rebates in exchange for agreeing to have their batteries partially drawn down by Eversource during "peak demand" times in the summer months and for a handful of days during the winter months. Participants will receive payments after each season based upon the amount of electricity that is drawn from their enrolled batteries.

The program has safeguards in place so that draw-downs are suspended in the event of a potential power outage. Regardless of which option is chosen, your new solar panels and/or your battery energy storage system will be eligible for a federal tax credit of 30% under the Inflation Reduction Act.

**UPCOMING EVENTS**

August 23 2023 6:30 PM

**POWERSMART  
BROOKFIELD**

**PowerSmart  
Brookfield**

# About Residential Renewable Energy Solutions

- FAQs: <https://portal.ct.gov/-/media/PURA/electric/TRA/Eversource-Residential-Renewable-Energy-Solutions-FAQs.pdf>
- Email: [CTResiRenewables@eversource.com](mailto:CTResiRenewables@eversource.com)

RESIDENTIAL RENEWABLE ENERGY SOLUTIONS PROGRAM



# About Energy Storage Solutions

- FAQs:

<https://energystoragect.com/homeowner-faq/>

- Email: <https://energystoragect.com/contact/>





# About PowerSmart

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