

PowerSmart West Hartford

Clean Energy. Day & Night!



Photo credit: Ronni Newton

Bob Wall & Patrice Gillespie
SmartPower • May 1, 2024

About PowerSmart

- A community-based, 20-week campaign to promote residential battery storage plus solar (both existing solar and non-solar owners).
- Funded by US DOE; led by Yale & NYU to study co-adoption of solar and battery storage.
- SmartPower will manage campaigns in **28** CT municipalities, including West Hartford.



Solar In Connecticut

- [Residential Renewable Energy Solutions](#)
- Replaces previous net metering and RSIP program (administered by CT Green Bank)
- Administered by UI & Eversource

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 & water consumption



Is My House Right for Solar?

- Orientation – south, east or west facing roofs (can be ground-mounted)
- Shade Free – trees, chimneys, dormers
- Roof Age – < 10 years; in good shape



Average Cost of Solar in CT

- \$2.75/w - \$3.20/w (per online sources)
- 30% federal tax credit (ITC)
- No state sales or local property tax
- Net metering options: Buy-All or Netting
(**must choose Netting if buying a battery**)

Solar System Size	Energy Use (per month)	House Size (square feet)	Total Cost	Cost After the Federal ITC	Energy Savings (over 25 years, after system is paid off)
5 kW	500 kWh	1,600	\$14,000	\$9,800	\$9,859
6 kW	600 kWh	1,800	\$16,800	\$11,760	\$11,831
7 kW	700 kWh	2,000	\$19,600	\$13,720	\$13,803
8 kW	800 kWh	2,200	\$22,400	\$15,680	\$15,775
9 kW	900 kWh	2,400	\$25,200	\$17,640	\$17,747
10 kW	1,000 kWh	2,600	\$28,000	\$19,600	\$19,719
11 kW	1,100 kWh	2,800	\$30,800	\$21,560	\$21,690

Batteries Are Everywhere!



Benefits of Battery Storage

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



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 \$16,000
- Incentive ② – 30% Federal Tax Credit
- Incentive ③ – Earn money for selling stored power to Eversource
- Must use approved contractor & battery type



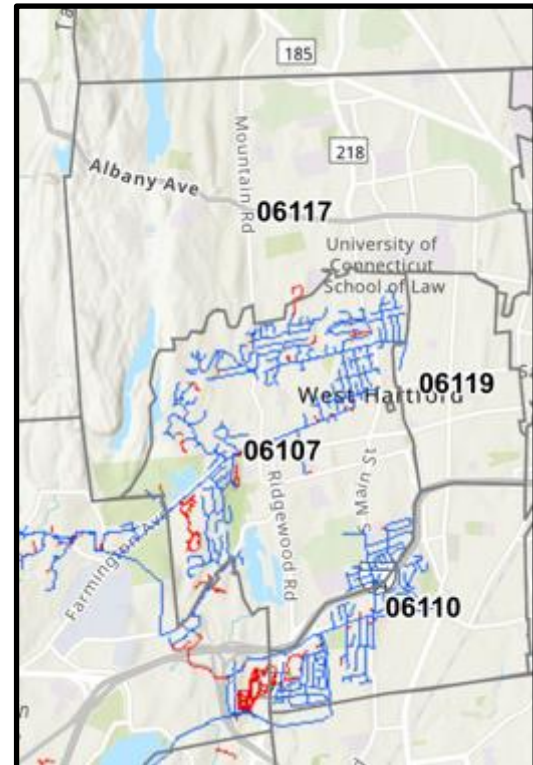
Incentive Rates

	Residential Upfront Incentive (\$/kWh)			
	Installed Capacity	Baseline	Underserved	Low-Income
Step 1	10 MW	\$250	\$450	\$600
Step 2	15 MW	\$212.50	\$450	\$600
Step 3	25 MW	\$162.50	\$450	\$600
Grid Edge Adder	+ 50%	+ 50%	+ 50%	+ 50%

	Residential Performance Incentive (\$/kW)			
	All customers			
	Years 1 – 5		Years 6 – 10	
Season	Summer	Winter	Summer	Winter
Incentive	\$200	\$25	\$115	\$15

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/>



How The Dispatches Work

- **Passive Dispatch**
 - Mandatory; draws up to 80% of battery from 3-8 pm except (a) if Active Dispatch called or (b) for 2 days prior to predicted severe outage events
- **Active Dispatch**
 - Optional; discharges up to won't be called for 2 days prior to predicted severe outage events

Program Element	Design Item	Summer	Winter
Upfront Incentive (Passive Dispatch)	Events per Season	All non-holiday weekdays (~60)	N/A
	Months	June, July & August	N/A
	Event Duration	5 Hours	N/A
	Anticipated Dispatch Window	3 PM to 8 PM	N/A
Performance-Based Incentive (Active Dispatch)	Events per Season	30 to 60	1 to 5
	Months	June through September	November through March
	Event Duration	1 - 3 hours	1 - 3 hours
	Anticipated Dispatch Window	9 AM to 9 PM (All Days)	9 AM to 9 PM (All Days)

What Size Battery Do I Need?

- Work with your contractor to determine essential load for generator:
 - Lights
 - Refrigerator
 - Outlets to charge devices
 - Sump Pump
- Consider how long you want backup power to run




Eligible Equipment - Home

- https://energystoragect.com/submitted_ess_system_status_list/

Residential/Small Business:


Manufacturer	Energy Storage System Model
Cadenza Innovation + Schneider XW Pro ¹	CI48400-I-2P, CI48500-I-2P, CI48600-I-2P, CI48700-I-2P, CI48800-I-2P, CI481600-O-2P, CI481600-O-3P
Cadenza Innovation + Sol-Ark 5K & 15K ¹	CI48400-I-2P, CI48500-I-2P, CI48600-I-2P, CI48700-I-2P, CI48800-I-2P, CI481600-O-2P, CI481600-O-3P
Electriq Power	PowerPod 2 (350-10LC)
Enphase Energy	IQ Battery 3T, 10T, 5P
Fortress Power	eVault Max (18.5 kWh); eFlex (5.4 kWh)
FranklinWH	aPower X
Generac PWRcell	PWRcell M3, M4, M5, M6
Homegrid Energy	Stack'D Series
PylonTech + Sol-Ark 5K & 15K Inverters	Pelio-L (5.12 kWh)
StackRack Battery Systems + Sol-Ark 12K & 15K	SR5K-UL (5.12 kWh)
SunPower	SunVault (13, 19.5, 26, 39 kWh)

Top 5 quoted battery models in Connecticut




SunPower
SunVault

[Learn More](#)




Tesla Powerwall 2

[Learn More](#)




Enphase Energy
IQ 10

[Learn More](#)



Enphase Energy
IQ Battery 5P

[Learn More](#)



FranklinWH
Energy Storage
Inc...

[Learn More](#)

Average Cost of Storage in CT

- \$1,304/kWh as of Jan. 2024 (per Energy Sage)
- Typical system base cost - \$15,000 - \$35,000
- <https://energystoragect.com/contractor-resources-2/> (Residential Incentive Calculator)

Average storage system cost by system size in Connecticut

System Size	System Cost	System Cost (after ITC)
10 kWh	\$13,038	\$9,127
13 kWh	\$16,950	\$11,865
20 kWh	\$26,077	\$18,254
26 kWh	\$33,900	\$23,730

Example - Average Battery System

8kW / 18 kWh – Original Cost - \$31,500

Incentive	Standard Rate	Grid Edge	Low Income
Upfront Incentive	\$4,500	\$6,750	\$10,800
<i>Method</i>	<i>\$250*kWh</i>	<i>\$375*kwh</i>	<i>\$600*kwh</i>
ITC Tax Credit	\$8,100	\$7,425	\$6,200
<i>Method</i>	<i>Net Cost*30%</i>	<i>Net Cost*30%</i>	<i>Net Cost*30%</i>
10 Year PBI Estimate	\$5,800 (est)	\$5,800 (est)	\$5,800 (est)
<i>Method*</i>	<i>Average kW</i>	<i>Average kW</i>	<i>Average kW</i>
Net Cost	\$13,100	\$11,525	\$8,700

Source: Energy Storage Solutions residential project data - Feb 2024
 Note: Low Income on Grid Edge receives \$900 per kWh (not shown here)

Payment Options for Solar + Storage

Option	Who Owns	Who Gets Incentive	Who Gets Tax Credit	Examples
Cash	You	You	You	-
Loan	You	You	You	CT Green Bank's Smart-E Loan ; other lenders (including home equity loans)
Lease/ PPA	Third Party	Third Party	Third Party	Trinity, PosiGen, SunRun

Solar Reviews - What's the Best Way to Pay for Solar:
<https://www.solarreviews.com/blog/solar-financing-options>

Note – Third party owners may be able to capture additional tax incentives under the *IRA*

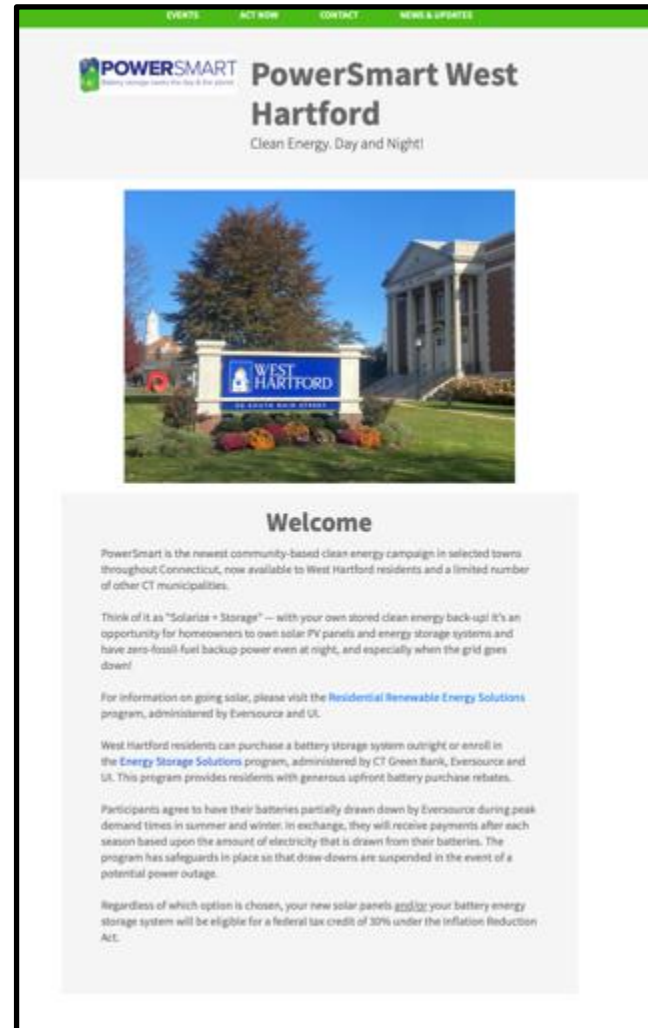
Finding a Contractor

- **Get multiple quotes & references!**
- **Contractor & equipment must be eligible to join *Energy Storage Solutions* program (not required for solar only)**
- See list of [Eligible Contractors](#) for *ESS program*
- Get online quotes via [Energy Sage](#)
- Ask a friend with solar or storage



<https://PowerSmartWestHartford.wee.green>

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



The screenshot shows the homepage of the PowerSmart West Hartford website. At the top, there is a green navigation bar with links for 'EVENTS', 'ACT NOW', 'CONTACT', and 'NEWS & UPDATES'. Below this is the PowerSmart logo and the text 'PowerSmart West Hartford' with the tagline 'Clean Energy. Day and Night'. A central image shows a building with a sign that reads 'WEST HARTFORD'. Below the image is a 'Welcome' section with the following text:

Welcome

PowerSmart is the newest community-based clean energy campaign in selected towns throughout Connecticut, now available to West Hartford 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 U.S.

West Hartford residents can purchase a battery storage system outright or enroll in the [Energy Storage Solutions](#) program, administered by CT Green Bank, Eversource and U.S. This program provides residents with generous upfront battery purchase rebates.

Participants agree to have their batteries partially drawn down by Eversource during peak demand times in summer and winter. In exchange, they will receive payments after each season based upon the amount of electricity that is drawn from their 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.

Important Links - Solar

- FAQs: <https://portal.ct.gov/-/media/PURA/electric/TRA/Eversource-Residential-Renewable-Energy-Solutions-FAQs.pdf>
- Net Metering Options: <https://www.eversource.com/content/residential/save-money-energy/clean-energy-options/solar-energy/solar-incentives>
- Email: [**CTResiRenewables@eversource.com**](mailto:CTResiRenewables@eversource.com)

RESIDENTIAL RENEWABLE ENERGY SOLUTIONS PROGRAM



Important Links - Batteries

- FAQs: <https://energystoragect.com/homeowner-faq/>
- Program Highlights:
<https://energystoragect.com/energy-storage-for-your-home/>
- Email: <https://energystoragect.com/contact/>



Questions About PowerSmart

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