



SOLAR IN CT

# RESIDENTIAL SOLAR

*What are the benefits?*



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# WHAT ARE THE BENEFITS OF A HOME SOLAR ARRAY?



Installing solar on your home comes with many advantages:

**Reduced Energy Costs:** CT has very high electric rates. By reducing grid reliance, solar panels help cut energy costs.

**Income Generation:** You receive payments for any excess solar power that your array supplies to the grid.

**Reduced Pollution:** The CT grid still relies heavily on methane gas, the leakage and combustion of which emits pollutants. Electricity from your solar system comes from the sun and does not produce emissions.

**Added Property Value:** Home buyers favor reduced energy bills.

**Resiliency and Energy Independence:** Producing your own power reduces your vulnerability to fossil fuel price volatility and, when paired with battery storage, your solar array can provide power during a grid outage.

# WHAT IS THE RETURN ON INVESTMENT FOR SOLAR?



For homeowners who **lease** the solar panels, there are no upfront costs and the financial gains begin as soon as your array is connected to the grid.

For homeowners who prefer to **own** their solar array, the long-term gains may be greater but upfront costs are significant and vary based on several factors, including: the price of the system, available incentives, and financing options. Low-cost financing is available through the CT Green Bank [Smart-E Loan](#) program.

The savings over time will be affected by the system's energy production, as well as electricity rates. On average, the payback period for a residential solar system in Connecticut is typically around 6 to 10 years.

## SOLAR INCENTIVES

Solar PV systems installed from 2023 through 2031 are eligible for a **30% federal tax credit** during the year of installation. There is no limit but you must have a tax bill sufficient to take the credit. The price for a solar array will generally range between \$10,000 and \$20,000 after the tax credit.

There is **no sales tax** on solar in CT. Also, the state has a **Solar Property Tax Exemption** so you don't have to pay taxes on the increased value of your home relating to the solar.

The [state incentive program](#) allows the solar owner to sell the energy and renewable energy certificates (RECs) at a fixed 20-year price by selecting one of two incentive rate structures: 1) **Buy-all** or 2) **Netting**. Additional incentives are available for those in distressed communities or who meet low-income qualifications. See Booklet 2 to learn more.

# WHAT SHOULD I KNOW BEFORE INSTALLING SOLAR?

Before installing solar panels, homeowners should consider several important factors to ensure a successful and cost-effective project:

## **Energy Usage and Needs:**

- Assess your current energy consumption to determine the appropriate size of the solar system needed. Add enough solar to accommodate future EVs and heat pumps.

## **Roof Suitability:**

- Use [Project Sunroof](#) or other tools to evaluate the suitability of your roof for solar.

## **Future Roof Work:**

- Solar units can last for 25 years or longer. Think twice before adding solar to an old roof. Once solar is on, installers charge on the order of \$5000 for removing and replacing the system if the roof needs repair. Specifically ask your installer, “Will my roof last the length of the install?”

## **Local Regulations and Permits:**

- Research local zoning regulations, homeowners' association rules, and permit requirements for solar installations in your area. The [CT Clean Air Act](#) passed in 2022 banned many Home Owner's Associations from prohibiting solar.

## **Financial Considerations:**

- Calculate the upfront costs, potential return on investment, and available financing options, such as loans, leases, or power purchase agreements.

## **Incentives and Rebates:**

- Explore available federal, state, and local incentives, tax credits, and rebates that can significantly reduce the cost of your solar installation.

# More Considerations

## **Utility Policies and Net Metering:**

Understand your utility's net metering policy, which determines how you'll be credited for excess energy from your system

## **System Quality and Warranty:**

Research solar installers and equipment brands. Ensure they offer warranties that cover the solar panels and system components. Get several quotes. The lowest offer is not always the best.

## **Maintenance and Upkeep:**

Maintenance is minimal but ask about such needs, including cleaning, potential repairs, and regular system checks.

## **Contract and Agreement Review:**

Thoroughly review contracts and warranties provided by the solar installer before committing. Ask about the "soft costs" and what they cover. Soft costs can increase costs by 50%.

## **Energy Storage:**

Consider adding an energy storage system (like batteries) to provide backup power during outages and to take advantage of further incentives.

## **Transferring the System:**

If you decide to sell your home, understand how the solar panel system lease can be transferred to the new owner.

## **Homeowner's Insurance Policy Review:**

Contact your homeowner's insurance provider to discuss how installing solar panels may impact your policy. Some insurers may require adjustments to your coverage.

## **Future Technological Advancements:**

Consider the potential for technological advancements in solar panels and energy storage and how they might impact your investment.

By carefully considering these factors, homeowners can make informed decisions about installing solar panels that align with their energy goals, financial situation, and the specific characteristics of their property.

# HOW DOES MY SOLAR BENEFIT THE COMMUNITY AND THE PLANET?



Your solar array benefits your community, region, and the planet in several meaningful ways:


## **Community Benefits:**

- **Job Creation:** Solar arrays generate local employment
- **Property Values:** Increased resale value for homes with solar panels
- **Energy Independence:** Reduced reliance on central power sources
- **Education:** Raises awareness and promotes sustainable practices
- **Community Pride:** Demonstrates commitment to environmental responsibility

## **Regional Benefits:**

- **Energy Diversification:** Reduces reliance on fossil fuels
- **Air Pollution:** Decreases fossil fuel-related air pollution
- **Energy Demand:** Eases grid strain during peak demand
- **Economic Growth:** Attracts investments
- **Climate Resilience:** Combats climate change

## **Planetary Benefits:**

- **Emission Reduction:** Produces clean energy, lowering greenhouse gas emissions
  - **Climate Mitigation:** Helps mitigate climate change effects
  - **Resource Conservation:** Reduces fossil fuel consumption
  - **Environmental Stewardship:** Demonstrates responsible environmental action
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# HOW CAN WE ENCOURAGE RESIDENTIAL SOLAR?

There are many ways that communities can encourage residential solar adoption:

- Run townwide solar campaigns working with installers to offer discounts
- Educate on the benefits of solar through workshops, social media, and other means. Ensure that school curricula at all age-levels incorporate lessons on clean energy
- Work for improved state legislation on energy-related issues such as energy data collection, building stretch codes, and improved building efficiency standards
- Streamline local solar permitting
- Encourage energy efficiency audits and heat pump installations for residents, showing them how solar can complement their efforts to reduce energy consumption

By tailoring these strategies to the unique characteristics and needs of towns and communities, local leaders can create an environment that encourages residents to adopt solar energy, fostering a sense of shared responsibility for a greener future.

## RESOURCES

- [State and Federal Incentives for Residential Solar Projects](#)
- [Residential Renewable Energy Solutions Program \(ct.gov\)](#)
- [Residential Solar Options - CT Green Bank](#)
- [DOE Homeowner's Guide to the Federal Tax Credit for Solar](#)
- [EcoWatch: How Much Do Solar Panels Cost in Connecticut? \(2023\)](#)

For more information, visit [PACEcleanenergy.org](https://PACEcleanenergy.org)

