

Let's Solarize

Solarize ConnecticutSM Phase 1 Report

September, 2013



*Special acknowledgement to our town
leaders, volunteers, solar ambassadors
and solar installers for providing the
photos included in this report.*



Executive Summary

In the spring of 2012, the Clean Energy Finance and Investment Authority (CEFIA), in partnership with SmartPower and with the support of two private foundations, The John Merck Fund and the Putnam Family Foundation, launched the Solarize Connecticut program. Working closely with municipal leaders, CEFIA and SmartPower initiated campaigns in four pilot communities in Connecticut: Durham, Fairfield, Portland and Westport. The goal of this collaboration

was to advance the adoption of residential solar photovoltaic (PV) systems by lowering acquisition costs and making solar more affordable to residents using the Solarize model. The results of the Solarize campaigns in the four pilot communities speak for themselves. ***In every Solarize community, residential solar installations more than doubled during the 20 weeks of the program, compared to the previous seven years.*** In the town of Durham installed capacity more than quintupled. One of the most compelling reasons behind these results is that the average Solarize customer saved approximately \$7,500 on their system when compared to current market averages!

The Solarize Connecticut program consists of 1) tiered group buying discounts, resulting in a continuous drop in pricing as more customers sign up; 2) outreach provided by participating towns and volunteers; 3) one competitively-selected solar installer, using pre-approved equipment; and 4) an end date for the offer, motivating customers to take action.

The pilot ran for 20 weeks (although initially planned for 16 weeks, it was extended for an additional four weeks due to Superstorm Sandy). The Solarize Connecticut pilot achieved significant results, with each town more than doubling the amount of solar in its community over those 20 weeks when compared to solar installed over the previous seven years. Additional results include:

- More than 2.2 Megawatts (MW) of new solar PV capacity deployed across the four communities, close to triple what was installed in those towns during the preceding seven years;
- Approximately 280 signed contracts for solar, representing at least a doubling in the number of homeowners “going solar” in all towns, with Durham quintupling its solar ownership;
- Dramatically reduced costs for solar PV, with all towns achieving the lowest tier of pricing and cumulative savings of over \$2.2 million. The average Solarize customer saved \$7,500 off their system as compared to then current market rates;
- Compelling drops in customer acquisition costs, at less than \$90/kilowatt (kW) from a direct program spend perspective and \$135/kW “all-in” costs –



¹ “All-in” costs include direct program spend, estimated CEFIA staff time and incidental market costs reported by participating installers (e.g., postcards, mailing expenses, newspaper inserts, yard signs)

significantly less than both the industry average of \$670/kW (per U.S. Department of Energy analyses) and local installers' estimates at \$250-\$500/kW.

This report identifies the key components of Solarize Connecticut based on this pilot program and lessons learned.

Background



The Solarize model was first created in 2007 in Portland, Oregon, where one enthusiastic homeowner was able to gather other nearby homeowners together to aggregate purchases. The City of Portland and the Energy Trust of Oregon joined in to help support the outreach effort, and the result was a nearly tripling of the number of solar installations expected. This model was later refined with great success by the Massachusetts Clean Energy Center, which provided guidance to CEFIA and SmartPower in bringing the model to Connecticut.

The Solarize Connecticut model includes selecting communities from the Clean Energy Communities program and working with them to identify a competitively chosen solar installer that will provide all solar installations for that community. The installer was required to offer a 5-tiered pricing offer, so that the more customers sign up for Solarize, the more the price continues to drop. Outreach and education are provided by town volunteers

and solar ambassadors, with support from the installer, CEFIA and SmartPower. All contracts must be signed within the 20 weeks of the program in order to qualify for the discounts.

One of the reasons the Solarize model is so successful is that it addresses key barriers to residential solar deployment identified in consumer research:

- 1) **Cost.** Solarize offers a reduced initial price and a tiered pricing model in which the greater the participation, the more the price drops;
- 2) **Reliability.** As a municipal/state-sponsored program, it gives residents confidence to move forward with a pre-selected, pre-approved installer using pre-vetted equipment;
- 3) **Complexity.** Because the pricing and the installer for Solarize campaigns have been screened and competitively selected, the consumer is not overwhelmed with technical details and financial confusion. The Solarize Connecticut program further emphasizes the ease of decision making with our tagline: “Solar. Simple. Together.”;
- 4) **Inertia.** A clear program end date ensures that consumers are motivated to take action, shortening the decision making process.

The key ingredients leading to this success lie in the following formula:

- 1) **Community-sponsored program with municipal buy-in and support.** Town and local volunteers take responsibility for community outreach, giving residents confidence to move forward with the selected installer.
- 2) **Recruitment of local solar champions.** People who have solar are the most passionate and best spokespeople for solar, and the Solarize program created a great opportunity for them to reach out to friends and neighbors by designating them “Solar Ambassadors.”
- 3) **Below market pricing.** It is clear to residents that they are getting a once in a lifetime bargain. Return on investment is more aggressive and solar is accessible to more homeowners when installers can pass savings on to their customers.
- 4) **Visibility.** Lawn signs, banners, events, workshops, social media, and traditional media promote the program, ensuring no one fails to hear about the opportunity.
- 5) **End date.** The campaign end date ensures that prospective customers take action. The last week of the Solarize campaigns across the four pilot communities saw a 40% uptake in sign ups.

Town Leadership Matters

Research shows that town involvement matters to Solarize customers. Therefore having an active and engaged town leader makes a difference in the outcome of a Solarize community. Laura Francis, First Selectman from Durham, provided that kind of leadership during Phase 1. From attending bi-weekly calls, writing op-eds, conducting radio interviews, and being the local face of the program, Laura contributed to the enormous success of Solarize Durham.



“

Durham is very pleased to have been part of the successful pilot program offered by Solarize Connecticut. The model allowed us to reach the lowest price level available, saving residents money and helping the environment. The Solarize Connecticut program was a gratifying community-building experience.

Laura Francis,
First Selectman
Town of Durham

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Project Overview

The Solarize model has three discreet activities for implementation: (1) Selection of the Solarize Communities, (2) Selection of the solar installer for each community and (3) Community education and outreach.

Selection of Communities

Invitations to participate in Solarize Connecticut were sent by CEFIA in the form of a Request for Information (RFI) to all Connecticut Clean Energy Communities, with towns asked to affirm their commitment to the program, identify a municipal representative and volunteer team, develop a marketing and outreach plan and provide information on the town's permitting practices for solar PV.

Ten communities responded to the RFI for Phase I of the pilot and were evaluated based on various criteria including past performance in CEFIA's Clean Energy Communities program, the number of existing solar systems in the community, geographic and demographic characteristics, and the overall quality of the proposal. The program partners ultimately selected four communities: Durham, Fairfield, Portland and Westport.

Selection of Installers

CEFIA issued a Request for Proposals (RFP) to all eligible installers in its Residential Solar Investment Program. Installers were requested to provide a description of their experience and capacity to handle a potentially high volume of installations, a program plan including marketing strategies, details on standard and alternative equipment, pricing for purchase, lease/power purchase agreement or both including pricing contingencies for alternative equipment or unusual circumstances (e.g., mechanical, structural, labor) and plans for sites that are not feasible for PV. With respect to pricing, Installers were required to submit a tiered structure with the following guidelines:

- Tier One contracted: 0-25 kW
- Tier Two contracted: 25-50kW
- Tier Three contracted: 50-150kW
- Tier Four contracted: 150-250kW
- Tier Five contracted: Greater than 250kW

Installers were selected by a town committee based on responses to the RFP as well as in-person interviews. Criteria used in that selection process included experience in Connecticut, customer satisfaction, attractive pricing, availability of financing options, quality of standard equipment and alternative options such as American-made modules, and willingness to meet the special requests of a community. A technical consultant

was provided by program administrators to guide towns in this process. The contracts with installers were between the installer and CEFIA.

The list of communities and their chosen installers for Phase 1 are:

Durham – BeFree Solar	Portland – Real Goods Solar
Fairfield – Astrum Solar	Westport – Encon Solar

Community Outreach Activities

Filling the pipeline with prospective customers is the primary responsibility of each Solarize community. SmartPower and CEFIA worked with towns individually to identify opportunities to raise visibility for the program, communicate with residents, engage local organizations and schools, and attract residents to Solarize workshops. Key events included a kickoff event, solar workshops at libraries, open houses hosted by Solar Ambassadors and early Solarize customers, and tabling at local festival, fairs, farmers markets, holiday events and Election Day polling locations. Media opportunities included press releases, op-ed pieces, letters to the editor, and local radio and television shows. In addition, town websites and town and personal Facebook pages were used to publicize the program and significant events.

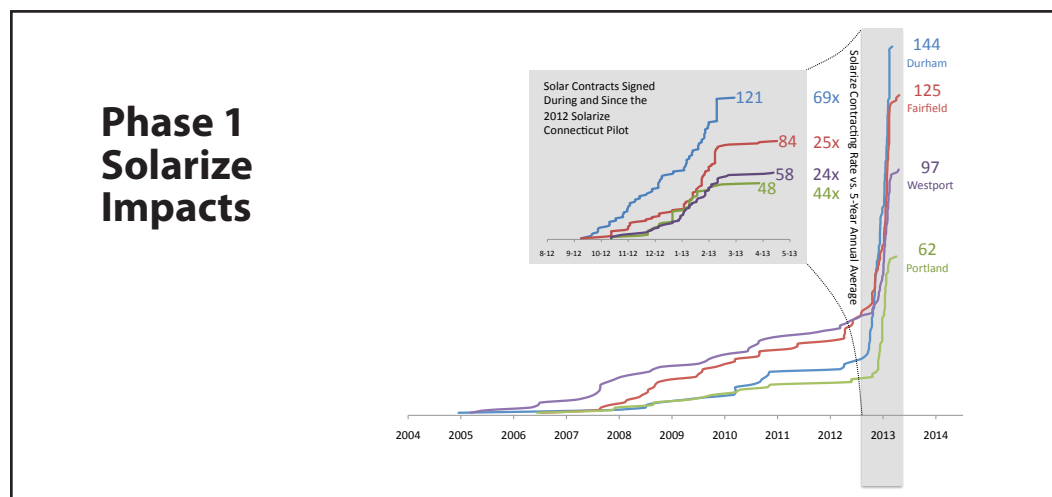
To support the local outreach activities, a Solarize Connecticut brand and campaign website ([www. Solarizect.com](http://www.Solarizect.com)), with customized home pages for each town were created. The website linked to solar installers, and provided updated activities and town events. Templated marketing materials were provided to help the towns and their chosen installer promote the program. Solar installers provided supplemental marketing activities in their communities, such as direct mail, additional flyers and yard signs. Testimonials from Solar Ambassadors were provided on the website and through social media.



The Solarize Portland kick-off event.

Solarize Connecticut Results

The results of the Solarize Connecticut Phase 1 Pilot Project were extremely impressive. While the total number of contracts exceeded expectations, the chart below illustrates how significant the Solarize approach was in increasing the rate of adoption. During the Solarize project towns achieved 24 to 65 times the number of signed contracts for solar PV compared with the rate over the prior 7 years. This level of participation resulted in all the towns reaching the lowest tiered pricing available (Tier 5), further driving down the costs for all residents, regardless of when during the 20-week period they signed a contract. Almost 1,500 people expressed interest in the Solarize Connecticut program and asked for their homes to be evaluated for solar. Approximately 20% of the people who made initial



inquiries about Solarize Connecticut signed contracts for solar during the program period.

One of the goals of the Solarize Connecticut project was to drive down the price of solar by reducing customer acquisition costs for solar installers so that the saving could be passed along to customers. When Solarize Connecticut started in August 2012 the average price of solar in Connecticut was \$5.08/watt. In early January 2013, the average

price in Connecticut had dropped to \$4.80/watt. Nevertheless, the average price for the Solarize projects was less than \$3.70/watt inclusive of adders. Solarize pricing resulting in cost reductions of between 20-30% for homeowners.



The Grovers, Solar Ambassadors in Portland CT

Even comparing Solarize customer costs against a \$5.00/watt average statewide cost of residential solar PV pre-Solarize, homeowners across the four towns would still have saved, on average, about \$7,500. These savings are in addition, of course, to a weighted average

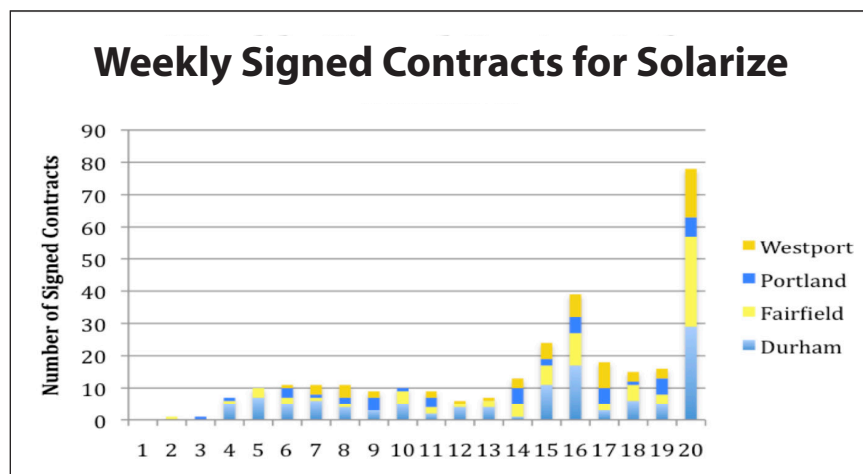
CEFIA incentive per Solarize home of about \$12,500 in ratepayer support. Overall, this pilot initiative saved homeowners across the four communities in excess of \$2 million.

Table 2. *Solarize Connecticut Savings*

Town	Average Customer Savings	Collective Savings (townwide)	Cumulative savings (across four towns)
Durham	\$8,779	\$1,018,364	\$2,214,938
Fairfield	\$5,508	\$402,084	
Portland	\$7,539	\$331,716	
Westport	\$9,074	\$462,774	

Looking at the savings realized in terms of payback time and the levelized cost of energy (“LCOE”)² gives further indication of Solarize’s positive impact. Across three towns, simple payback periods for a solar PV investment were cut almost in half, and for the fourth town (Fairfield), Solarize reduced the payback period by a third. Comparing against the entire market, Solarize cut the average payback period from nearly 11 years to about 6.5 years on average across all four towns.

The chart below shows week-by-week customer acquisition, and highlights the importance of a program end date.



Participant Feedback

Although Solarize Connecticut Phase 1 exceeded expectations with approximately 280 homeowners signing contracts to install solar, one goal of the program was to learn more about participants’ experiences in order to improve the effectiveness of the initiative. At the conclusion of the campaign, customers who signed contracts, as well as prospective

2 Relevant assumptions for payback and LCOE analyses include electricity pricing of \$0.17/kWh with no escalation, a 13% capacity factor for solar PV, a 25-year expected useful life of the system, and 15-year debt financing at 6.49% to pay for post-incentive installed costs

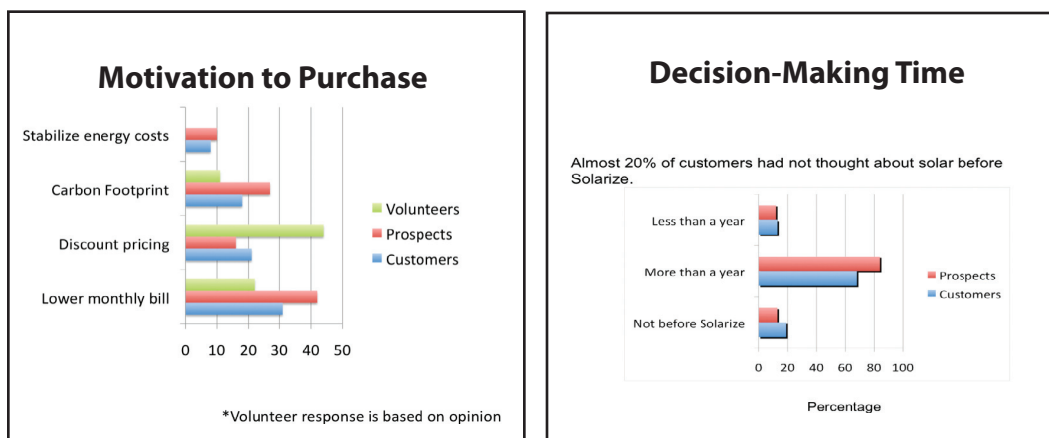


Customer Motivations Vary

Although many solar customers are motivated by the environmental benefits of solar, Solarize research shows that more and more customers are seeing the financial benefits of reducing monthly utility bills and stabilizing costs over time. Because most people already know the environmental benefits, Solarize Connecticut's marketing efforts focus on the savings aspects of going solar and the discounted pricing available through the program. As new financing products from CEFIA and installers have become available, homeowners can reap these savings for little or no money down.

“ I want to help get the word out while there is still time to take advantage of the special Solarize Fairfield pricing. The decision to go solar now was a no-brainer for us because the town did all the vetting. Installing solar panels was easy and affordable, and it is the right thing for our environment. ”

Wendy Lien
Solarize Fairfield's first customer



customers who had expressed interest but did not sign a contract, were surveyed using quantitative methods. Additional information was gained through quantitative surveys of volunteers and town leaders, and qualitative surveys of Solarize installers.

Summary of Findings

Generally, there was strong support for the Solarize model by all surveyed parties. The number of signed contracts attests to the support for this program. All those surveyed agreed that lowering monthly utility bills and the discount offered through Solarize were the most compelling reasons to sign a contract.

For those who did not sign a contract and were not disqualified because of shading or roof orientation issues, the high out-of-pocket costs still presented a barrier.

Newspaper articles, kick off Solarize workshops, and yard signs were the most effective way the program was communicated to both customers and prospects, along with hearing about the program from a **friend or solar customer**. Their town's **support for the program** was also cited as an important element.

One of the most interesting findings was how significantly the Solarize model reduced the time required to make a decision regarding installing solar. Previous research indicated that the average decision time was approximately 1-2 years. Through the first phase of the

Solarize Helps Installers

The Solarize program provides qualified leads to installers, often in a quantity they must gear up for. Kick-off workshops can yield as many as 40 to 60 prospect names. This infusion of customers, along with bi-weekly calls with town volunteers, CEFIA, and SmartPower and weekly reporting on the status of site visits and signed contracts creates a level of accountability that improves installers' internal systems and overall customer service.

As one installer reported, "Solarize made us a better company." As another installer pointed out, "Being part of Solarize increases the prestige of our company."

Solarize Connecticut pilot, almost 20% of customers who signed contracts had not considered solar before the program.

Conclusions and Early Lessons Learned

A number of lessons learned in the first phase of the Solarize Connecticut program have been incorporated into or influenced the second phase of the program. Some of those lessons include:

- Feed the pipeline: This is the most important objective of outreach, because only approximately 20% of those homeowners who express interest are going to qualify after site visits and/or sign a contract. As a result, the larger the turnout for Solarize workshops and follow up outreach, the more success the town will have.
- Identify a key point person for each community. This is the person who will drive activity and “own” the program locally.
- Media outreach should focus on local newspapers.
- Solar open houses should be strategically planned to include high profile and sales opportunities.
- Ensure yard signs and Solarize signage are highly visible.
- Emphasize that early sign ups will receive the same pricing as those who sign up at the end of the program..
- Town leadership and buy-in is important to the success of the program.
- Deadlines matter. Making sure residents know the end date of the program drives sign ups.

In conclusion, the Solarize model is an effective tool in driving down the cost of solar and significantly increasing residential adoption. Communities that demonstrate a commitment to solar, have a strong base of engaged residents, and have engaged leadership are more likely to achieve success with this model.

CEFIA and SmartPower are eager to work with additional Connecticut towns to expand Solarize Connecticut and help make Connecticut a national leader in solar power.

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