

# The Influence of Novel Behavioral Strategies in Promoting the Diffusion of Solar Energy

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 Solar Energy Evolution and Diffusion Studies (SEEDS)

## SOFT COSTS

### GOAL

To better understand what drives people to adopt rooftop solar photovoltaic systems and to provide guidance to policymakers and business leaders on designing clean energy policies that are more accessible, cost-effective, and successful at driving clean energy adoption.

### PARTNERSHIP

Researchers from Yale and NYU have partnered with SmartPower and the Connecticut Clean Energy Finance and Investment Authority to examine how well a variety of novel behavioral strategies work in accelerating solar diffusion and why:

- Which strategies are most cost-effective?
- To what extent are the strategies scalable?
- How persistent are the effects from behavioral strategies?

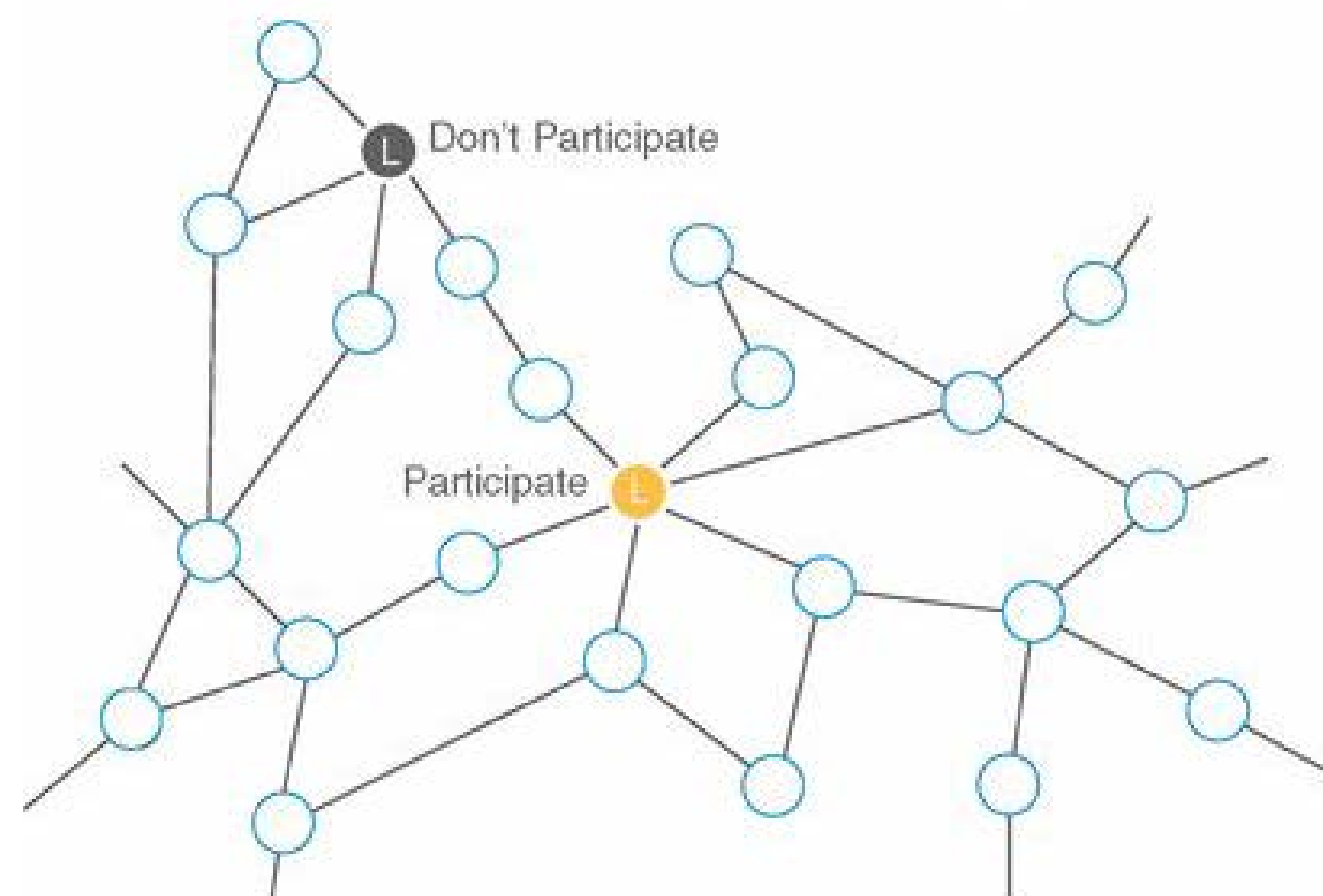
### OUTREACH

Solarize is a community based program that leverages social interaction to promote the adoption of solar through a group pricing scheme. To date, three rounds of Solarize campaigns lasting 12 - 20 weeks have been completed in Connecticut, with a total participation of 30 towns.

### The Solarize model aims to leverage social interactions

In Solarize CT, volunteer residents (“Solar Ambassadors”) coordinate community outreach around the Solarize campaign. The ambassadors reach out to friends, family, and community organizations who in turn spread the word to members and other friends. Solar information diffuses using existing social networks.

Leaders are informed and make a decision on participation.



Banerjee, A. et al., 2013, “The Diffusion of Microfinance,” Science, 341(6144)

### RESULTS

**Cumulative Solar Growth:** All Solarize CT Phase 1 & 2 towns have at least doubled their total number of residential solar PV systems. The maximum percent increase in total number of systems was 504% and the average percent increase among Phase 1 towns was 282%.

**Additionality:** 20% of households who installed solar through Phase 1 Solarize CT said that they had never previously considered solar.

Regression analysis demonstrates that the Solarize CT program **increases installations by about 0.5 additional installations per block group per month.**

	(1) PSM	(2) PSM	(3) PSM Caliper <sup>1</sup>	(4) CEC controls <sup>2</sup>
<b>Solarize CT during</b>	0.522*** (0.0772)	0.522** (0.173)	0.521** (0.173)	0.509** (0.170)
<b>Solarize CT post</b>	0.0250 (0.0168)	0.0250 (0.0346)	0.0260 (0.0349)	-0.00492 (0.0161)
<b>Block-group fixed effects</b>	Yes	Yes	Yes	Yes
<b>Year-month dummies</b>	Yes	Yes	Yes	Yes
<b>Demographic controls</b>	Yes	Yes	Yes	Yes
<b>Huber-White robust s.e.</b>	Yes	No	No	No
<b>Cluster-robust s.e. by town</b>	No	Yes	Yes	Yes

Standard errors in parentheses  
 \* p<0.05, \*\* p<0.01, \*\*\* p<0.001  
<sup>1</sup>For this regression, a 0.001 caliper was used during propensity score matching to ensure close matches.  
<sup>2</sup>CEC stands for Clean Energy Communities, a separate CT incentive program for energy conservation and renewable energy. These towns were used as a proxy for environmental awareness/concern.



### What was the single most important reason for the decision to install solar (% respondents)?



### OUTCOMES

- Publishing a series of academic papers detailing the effectiveness, cost effectiveness, and scalability of a variety of novel behavioral strategies
- Creating a “Guidebook” for policymakers and business leaders interested in designing accessible and effective clean energy initiatives
- Developing a predictive social network model for understanding future solar diffusion with and without Solarize programs

### Cumulative Solar Growth in Solarize CT Towns

