

Modeling the Interrelated Impact of Design Decisions, Industry Adoption Incentives, and Government Policies on Solar

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Motivation

How installers discuss cost and approach interactions with the jurisdiction and the utility can affect the installed price of a solar system, yet their importance as a decision-making agent is largely ignored [1]. Understanding the equal importance of installers' and homeowners' decisions on the solar adoption process can provide a more accurate representation and prediction of solar diffusion.



Figure 1. Overview of the stages an installer passes through over the course of a solar installation

“All about lowering cost for the homeowner”

– Barry Cinnamon, Cinnamon Solar

Objectives

1. Combine empirical research on installers and homeowners to create an agent-based simulation modeling their interaction
2. Assess and predict factors, such as incentives (Figure 2) that will influence decisions that may optimize adoption process

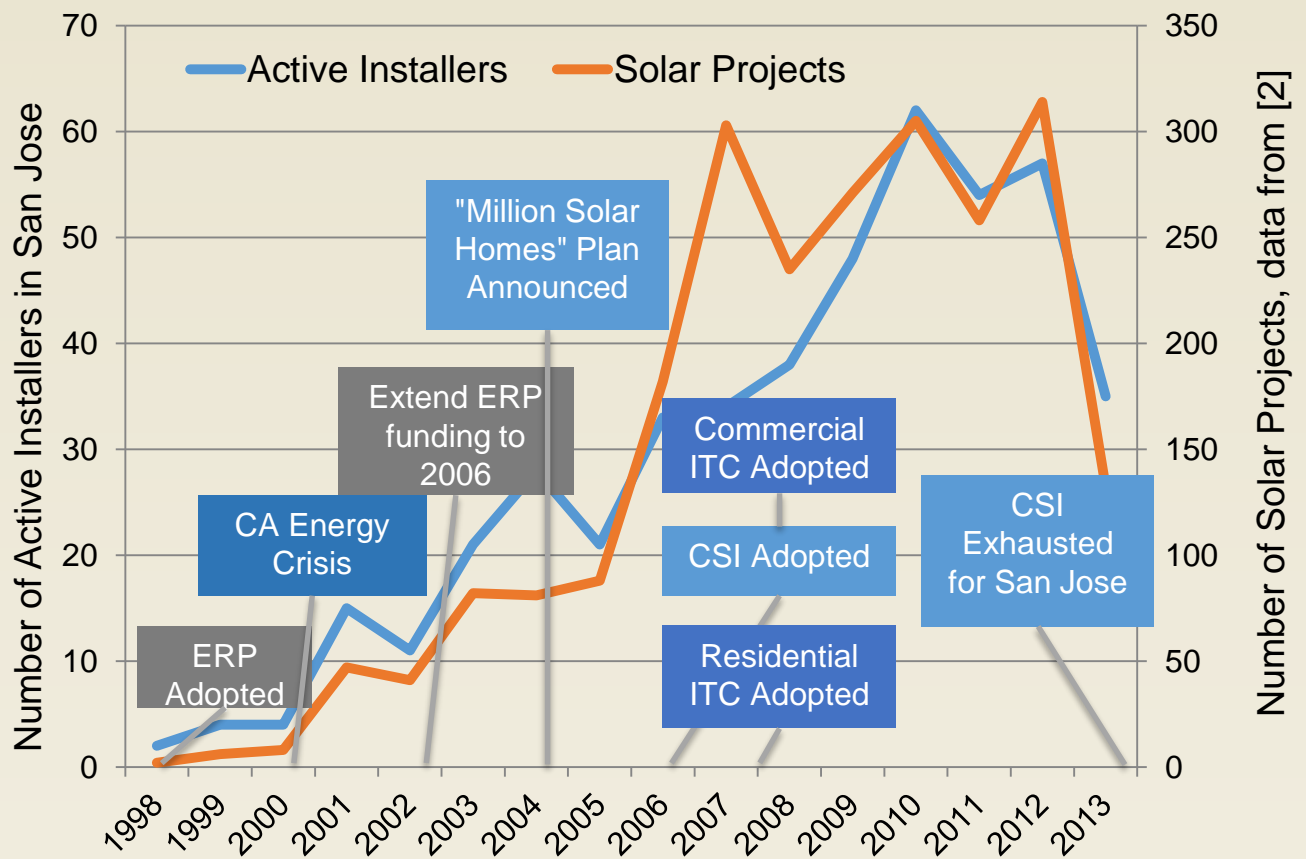


Figure 2. Factor Analysis with incentives as exogenous factor

Conclusions

- Economy of solar drives the rate of adoption
- Economic, government and industry factors affect installer-homeowner interaction

References

- [1] Barbose, G. and Darghouth, N., 2015, "Tracking the Sun VIII: The Installed Price of Residential and Non-Residential Photovoltaic Systems in the United States," Lawrence Berkeley National Laboratory.
- [2] California Solar Initiative, 2015, "CSI Working Data Set", Retrieved from californiasolarstatistics.ca.gov/data_downloads/.