

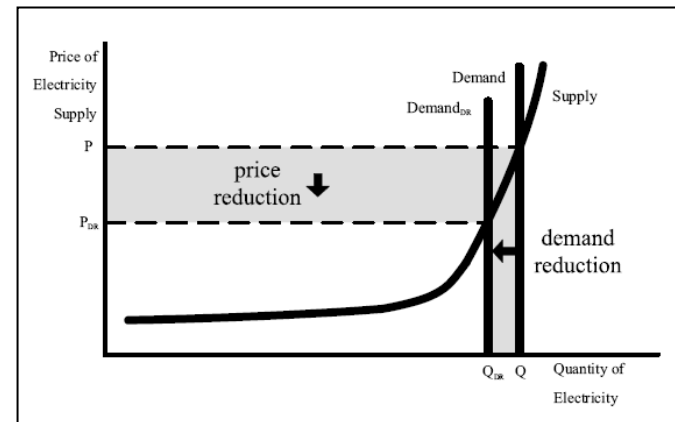
## Research Overview

### Goals

- To model demand response with relation to the Pecan Street Inc. smart grid demonstration project
- Focus on the impact of pricing signals on customer behavior, solar insolation on PV, energy storage, etc.

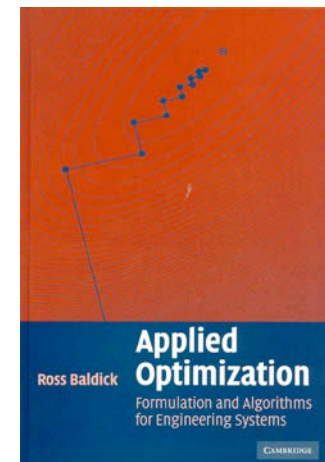
### Home Energy Optimization

- Current goal: to develop models that utilize PV and energy storage to minimize peak energy consumption
- Start with model of individual residence
- Formulation of model using applied optimization framework (EE 380N-Baldick)
- Future work includes hierarchical framework, weather forecasting for PV



Demand Response- Electricity price reduction as an output of decreased load

Figure Credit: Pecan Street Inc.



# *Power To/From the People*

*Akshay Sriprasad*

## Coursework Highlights

### Green Technology Policy & Law (Fall '11)

- Seminar-style with weekly discussion on pertinent green technology topics
- Course composition: twelve law students, one chemical engineering Ph.D.
- 25 page paper: Opportunity for extension into publication

### Modern Control (Spring '11)

- Group project: used optimal control framework to model a TES

### Numerical Methods in Optimization (Spring '11)

- Programmed optimization algorithms
- Crash-course in MatLab

### Future Work

- Energy Technology & Policy (Edgar)
- Modern Control Theory (Smart Grid Focus)



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## Interdisciplinary Experience

### UUMC Audit

- Practical experience working in a team to tackle tangible goals
- Hands-on analysis of customer energy consumption data

### Summer 2011 in Munich!

- An invaluable learning experience
- Interfacing with industry and academia
- Insight from cultural divide (energy etc)

