Behavioral and Economic Reasons for Homeowners' Reticence to Install Alternative Solar Energy Systems

Maria Coman[1]

Jacqueline Gordon[2]

Katheryn Miller[3]

University of Connecticut:

[1] Agricultural Resource Economics maria.coman@uconn.edu

[2] Business School, Jacqueline.Gordon@business.uconn.edu

[3] Business School, katheryn.miller@uconn.edu

Poster prepared for presentation at the Agricultural & Applied Economics Association 2010 AAEA,CAES, & WAEA Joint Annual Meeting, Denver, Colorado, July 25-27, 2010

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Goals

To evaluate :

a. The reasons for 'rejecting renewables', specifically solar photovoltaic systems (PV)

b. Attitudes about PV regarding specific attributes

c. Identify potential adopter grouping characteristics

NEED

a. Electricity generation from solar energy in the US in 2008 amounted to only .0002% (Savacool, 2009)

b. Total energy generation from renewable sources was 3.1 of total.

c. European countries get 20% instead.

Technical barriers

a. Off-Grid/Stand Alone Systems

b. Net metering; KW need

c. Rebates vs. incentives vs. tax credits; state vs. federal (US Dept of Energy)

Theoretical background

a. Attitude-based decision making

b. Diffusion of innovations (Rogers, 1962)

a. Awareness, Observability, Triability (Labay & Kinear, 1981)

Methods:

1. Focus group (4 participants)
2. Survey development and pretest
3. Survey measurement (online and on paper: 104 respondents)
   1. PV attributes (cost, property value, choices)
   2. Reasons for not purchasing PV

Results:

1. Focus group

i. Concern: Cost & Payback period

ii. Difficulty in getting adequate quote (technical barriers)

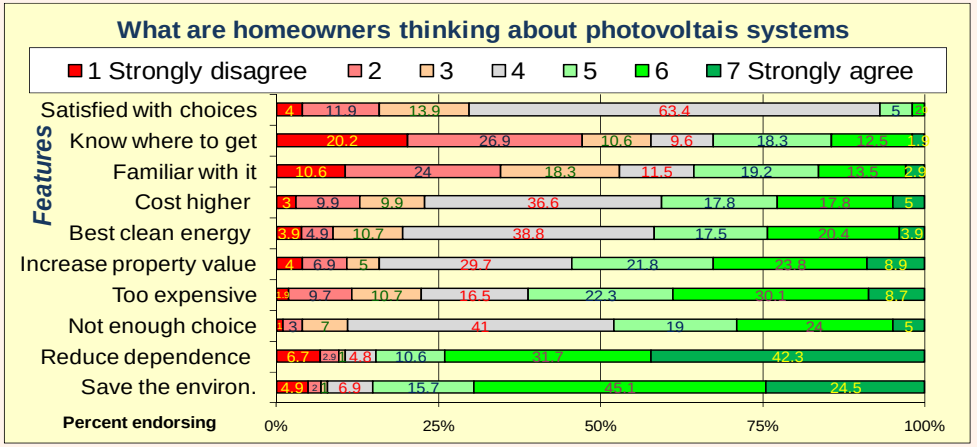
iii. Household adjustments needed

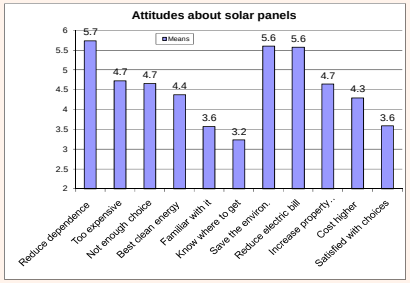
iv. Aesthetics

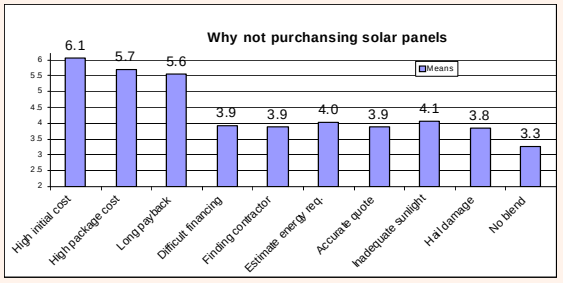
v. "Wait-and-see" attitudes

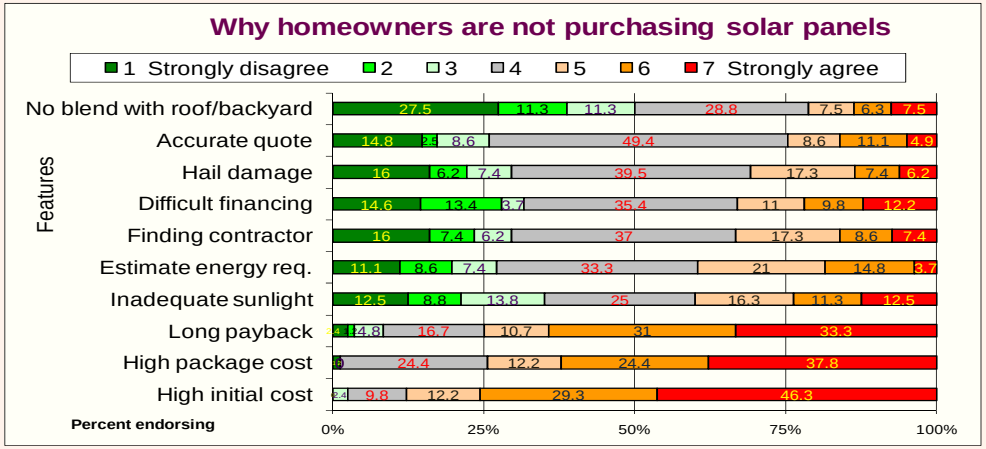
2. Survey results

Strongest barriers: cost; long payback; inadequate sunlight; estimate energy needs; finding a contractor, difficulty financing, getting accurate quote









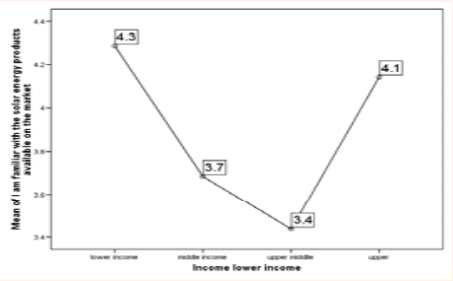
Additional findings:

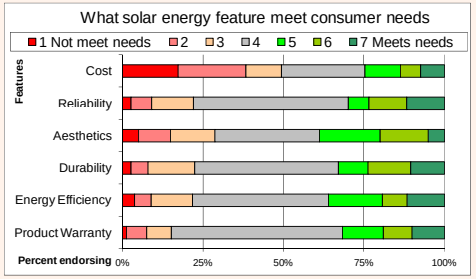
a. Income may be related to knowledge about PV

b. Limited knowledge regarding

a. Partial versus independent energy generation

b. How to find/access incentive programs





Recommendations:

1. Clarification of long term financial benefits in the, for specific existing household sizes, needs, and current energy expenses, combined
2. Offering info on existent financial incentives (like tax credits, or lease programs) and their impact on easing the initial financial burden
3. Special promotions, like free in house estimates, and short informational seminaries

COST: Few sources of info; internet not helpful either;

- In CT for a 10KW system (reduction $200/month in electric bill) costs 60,000USD; CT state rebate 12,000 ; federal tax credit 14,000; + inverter 5,000 ➔ final cost $49,000 (Source: Alteris Renewables presentation in Manchester CT www.alterisinc.com)

- In UK, the cost in 2003 according to Faiers & Neame (2004) was £3,000=$4,500USD (KW not specified).

Literature cited:

Labay, D., & Kinnear, T. (1981). Exploring the consumer decision process in the adoption of solar energy systems. *Journal of Consumer Research, 8(3), 271-278.*

Rogers, E. (1962). *Diffusion of innovations: Free Press.*

Sovacool, B. (2009). Rejecting renewables: The socio-technical impediments to renewable electricity in the United States. *Energy Policy.*

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University of Connecticut