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

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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)

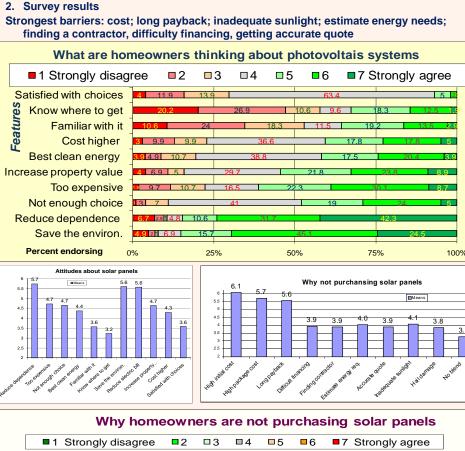
Methods:

- 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:

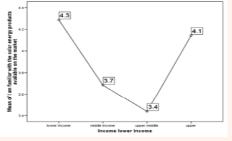
1. Focus group

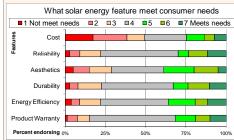
- i. Concern: Cost & Payback period
- ii. Difficulty in getting adequate quote (technical barriers)
- iii. Household adjustments needed
- iv. Aesthetics
- v. "Wait-and-see" attitudes



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:

- Clarification of long term financial benefits in the, for specific existing household sizes, needs, and current energy expenses, combined
- 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*.

Project completed for *Marketing Research*, Fall 2009, under prof. Joseph Pancras guidance

University of Connecticut

No blend with roof/backyard Accurate quote 26 86 Features Hail damage Difficult financing Finding contractor Estimate energy reg. Inadequate sunlight Long payback High package cost High initial cost 2.4 9.8 Percent endorsing 0% 50% 25% 75% 100%