

**PUBLIC INPUT  
ON  
SAN JUAN COUNTY  
RENEWABLE ENERGY NEEDS**

Presented to  
**San Juan County Renewable Energy Cooperative**

by  
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## 1. Summary

Many island residents were positive about the possibility of a renewable energy cooperative, although generating power locally was not their highest priority. Producing more renewable energy locally ranked fourth in importance as a function of a renewable energy cooperative for respondents, after education, pricing leverage, and design support.

Respondents place some value on producing power locally. The mean maximum monthly premium that respondents would pay for Green Power generated in the San Juans was \$25.20, compared to \$19.50 for mainland Green Power.

Just over 50% of all respondents selected “yes” when asked whether they would be “interested in investing in incremental generating capacity in the San Juans, as a member of a renewable energy cooperative”. Most would invest less than \$1,000, but taking the midpoint of each range, the responses would reflect a possible total one-time investment from our survey respondents of \$216,000. While our respondents are only a fraction of the overall population, so that greater investments might be anticipated from the broader population, it should be noted that people who were *planning to implement specific conservation measures in the future* were more inclined to invest than those who had implemented those measures today. Investment intent may include an element of wishful thinking.

There were major concerns about affordability, return on investment, and getting more information on options for the Coop. There were also thoughtful letters questioning the wisdom of generating power outside current utilities – an issue that was not addressed directly within the survey.

The prospect of generating energy locally arouses a number of other concerns including;

- fears of environmental degradation locally,
- rejection of solar, wind etc in favor of nuclear power
- affordability, and
- lack of good information about renewable options.

Renewable energy, as a topic, is less central to islanders’ thinking than either parks and land bank issues, or affordable housing.

Respondents found solar and wind power as most desirable; these were also the sources that the most respondents felt knowledgeable about. Just 14% of respondents currently subscribe to Green Power; The most often reported conservation practice was making a conscious effort to reduce electricity use. However, 73% had installed compact fluorescent lighting, many planned to replace worn-out appliances with efficient ones eventually, and 10% who are current non-subscribers planned to purchase OPALCO Green Power.

## 2. Methodology

The objective of the study was to gauge community interest in investing in an energy cooperative and in specific options for renewable energy, as the basis for developing longer term objectives and plans for the cooperative.

To do this, we developed a mail survey probing attitudes, behaviors and intentions around renewable energy use. Content was based on information from the community members who have come together to plan the cooperative, with some input from current and past OPALCO management. The survey was mailed to 3690 households on the major San Juan islands, in proportion to each island's population, using a randomized sample drawn from a commercial list which provided unique names and addresses for both residents and businesses in the County.

Lopez	572
Orcas	1248
San Juan	1870

A copy of the survey annotated with summary data, and of the cover letter, is provided as Appendix A.

Data was entered by volunteers into a data entry grid generated by Marketing Resources. Data was analyzed by a variety of accepted statistical and reporting methods. Note that with a paper survey it is not possible to force complete answers for every question, leading to some "missing data"; unless otherwise stated, the percentages reported are based on the number of people who responded to a specific question, rather than the total number responses we received.

We encouraged additional comments, and got plenty. The tone of most comments was positive rather than negative – for the most clearly classifiable, positive comments outnumbered negative by at least 2:1. Typical comments associated with specific topics are included in the body of the report, and substantive marginal comments, as well as the invited "additional comments", are provided as Appendix B.

## 2. Responses

We received 348 usable responses, or a 9% response rate.

This was much lower than for comparable recent mail surveys in the San Juans:

<u>Sponsoring Organization</u>	<u>Response rate</u>
San Juan County Parks	23%
OPAL	18%
Community Land Trusts of San Juan County	18%
Renewable Energy Cooperative	9%

While some of the disparity is probably because the name recognition for the sponsoring organization is low, the inference is that renewable energy, as a topic, is much less central today to islanders' thinking than either parks and land bank issues, or affordable housing. Recipients who currently rent their homes might also have felt less engaged with the topic as presented.

The response rate was highest for Lopez, at 14%.

Island	Sent	Responses	Percent
Lopez	572	81	14%
Orcas	1248	108	9%
San Juan	1870	150	8%
Overall	3690	339	9%

96% of the respondents were year-round residents. 92% of them responded just for their household, 2% just for their business, and 6% for both a household and a business. 68% came from households with two adults, about 23% of all households had juveniles at home.

Household includes juveniles <18 y.o.

Number of adults	Yes		No		Total	
1	13	4%	70	22%	83	26%
2	52	16%	167	52%	219	68%
>2	9	3%	13	4%	22	7%
	74	23%	250	77%	324	100%

Responding households had a mean of 2.24 people per household, compared to 2.19 for the county as a whole.

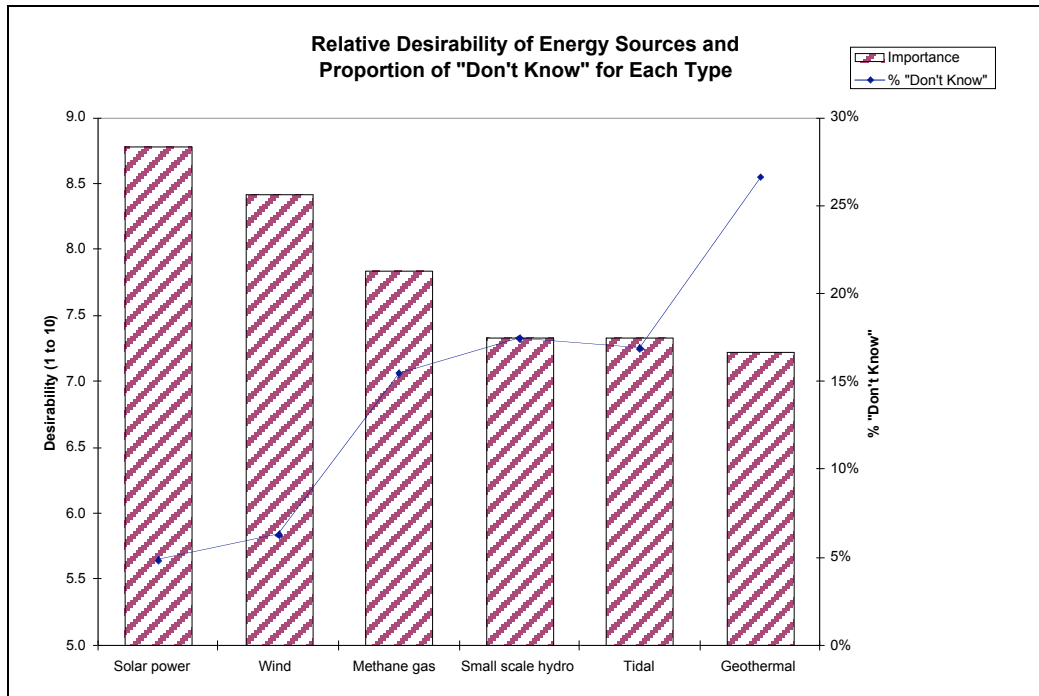
96% of our respondents were currently on the grid. The mean current power consumption for business respondents was 20,500 kWh for 16 respondents; this number was greatly influenced by a single response of 180,000 kWh. Less than a third of households reported their usage; the mean for households was about 9,000 kWh.

76 respondents reported an intent to invest in on-site power generation, with a mean investment of \$2,600 within a year and \$7,450 in 3 to 5 years.

### 3. Desirability of different sources

Respondents found solar and wind power as most desirable; these were also the sources that the most respondents felt knowledgeable about. 27% of the respondents did not choose to rate the desirability of geothermal, the lowest rated option, either not answering the question or choosing "don't know".

Exhibit 1:



Some respondents saw a conflict between Green Power generation and environmental concerns:

*I have environmental impact concerns*

*(Tidal, wind) Not in an ecologically pristine area or marine reserve!*

*(Tidal, wind) Too much intrusion on environmental appearance. Both are ugly and intrusive*

*(Wind) Death of birds.*

There was a small but expressive pro-nuclear lobby:

*I suggest that nuclear-generated power would be a cost effective way of reducing our dependence upon fossil fuels and fish-killing dams*

*Waste of time and money -- build nuclear*

*Green power not economical; waste of OPALCO & community effort. What we need is more nuclear power*

*Nuclear or Hydrogen power makes sense. Most of your alternatives are either impractical or just silly.*

Some of our respondents showed specific knowledge of energy alternatives:

*What about a penstock from Mountain Lake? New technology may reduce (payback time) to . . . new sputter technology has reduced the cost of solar voltaic by 1/7. First production scheduled for delivery in Feb 07*

*Please check Windaus Turbines of Ontario re: vertical windmills - 50% more efficient than conventional horizontal designs. Also there is a company that has developed flexible mats for tidal generation!*

*Get smart and join hands with San Juan County and Snohomish PUD and construct tidal power gates in San Juan Channel.*

*How about a centrally located Bio-diesel plant? With the Co-op mentality we could buy wholesale materials and produce fuel in large-scale facility.*

#### 4. Use of OPALCO Green Power

Just 14% of respondents currently subscribe to Green Power; 46% said they needed more information, and 26% do not plan to subscribe. A couple of respondents added notes that they had subscribed to Green Power previously, but stopped for economic reasons.

The largest proportion of respondents needed to know more before deciding whether to subscribe, and some respondents had never heard of the program.

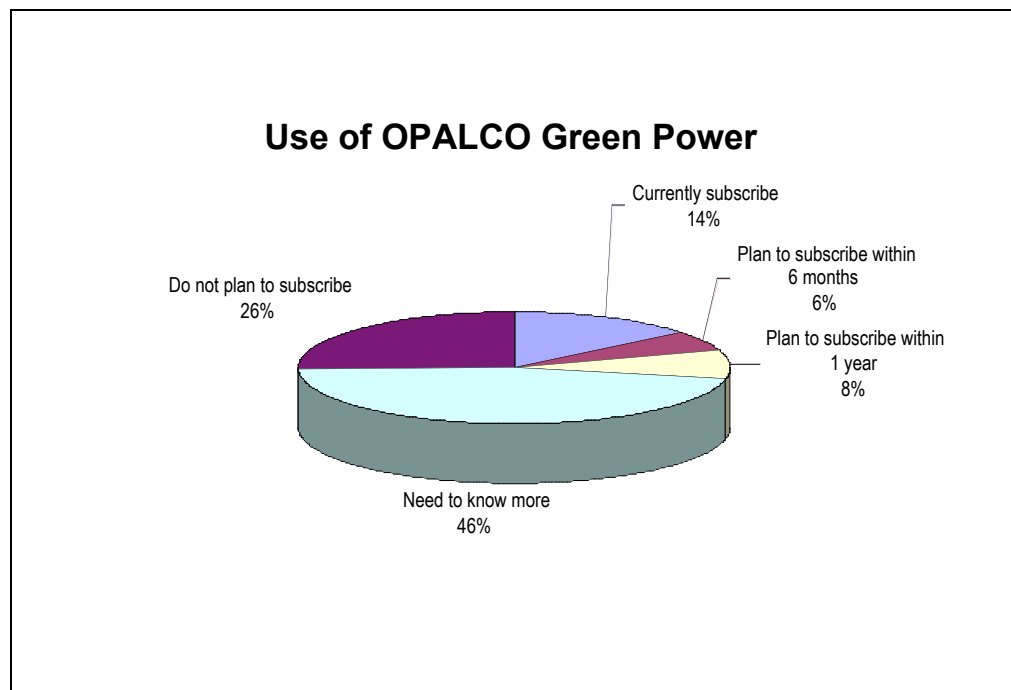
*First I have heard about it. Why keep it a secret?*

*Did we miss this offer?*

*OPALCO has check-off for Project PAL (assistance to low income), but no easy way to sign up for Green Power on their bill. They should do better.*

Of current subscribers, 58% provided estimates of their usage but the numbers were too hard to interpret to analyze. In this area, as in others, respondents had little ability to give quantitative estimates of current power use with any accuracy.

Exhibit 2:



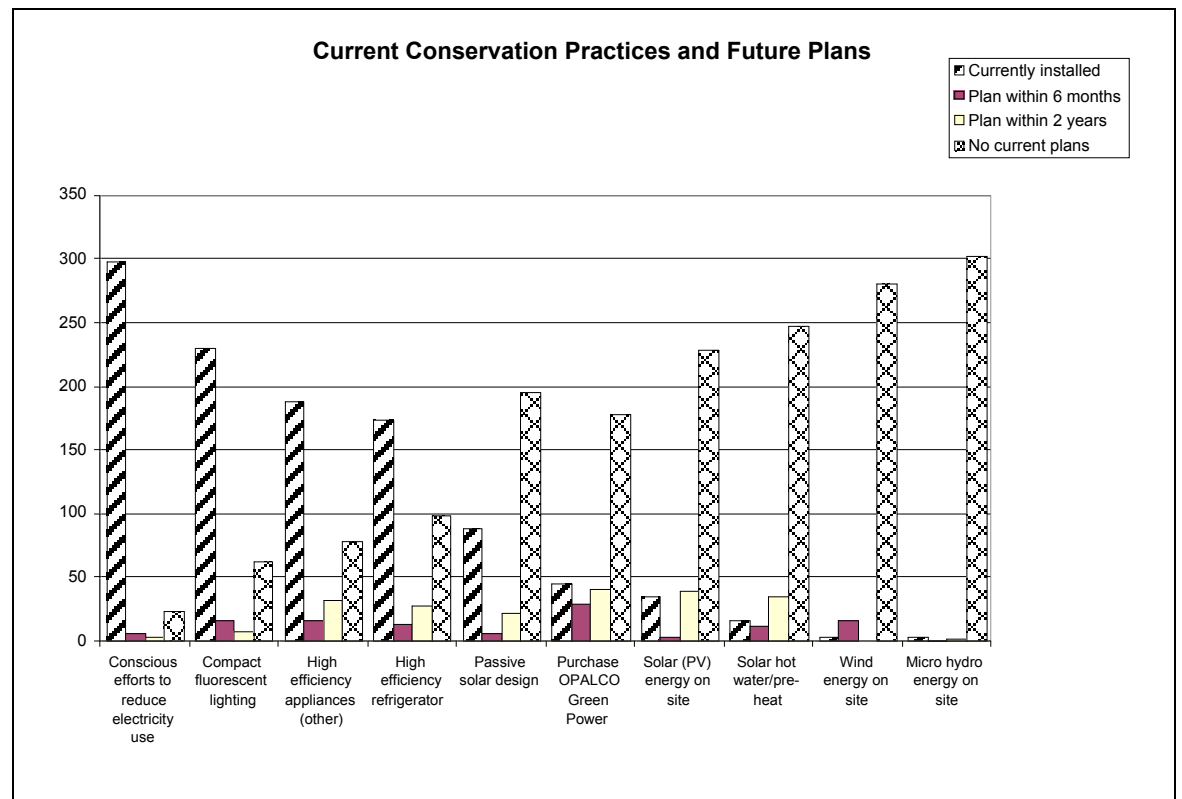
#### 5. Renewable Energy and Conservation

The most often reported conservation practice was making a conscious effort to reduce electricity use. However, 73% had installed compact fluorescent lighting, many planned to replace worn-out appliances

with efficient ones eventually, and 10% planned to purchase OPALCO Green Power

	Currently installed	Plan to implement within 6 months	Plan to implement within 2 years	No current plans
Conscious efforts to reduce electricity use	298	90%	6	2%
Compact fluorescent lighting	230	73%	16	5%
High efficiency appliances (other)	189	60%	16	5%
High efficiency refrigerator (ENERGY STAR)	174	55%	14	4%
Passive solar design	89	28%	7	2%
Purchase Green Power through OPALCO	45	15%	30	10%
Solar energy (photovoltaic cells) on site	36	12%	4	1%
Solar hot water/pre-heat	17	5%	12	4%
Wind energy on site	3	1%	17	6%
Micro hydro energy on site	3	1%	1	0%

Exhibit 3:



## 6. Function of a renewable energy cooperative

Producing more renewable energy locally ranked fourth in importance as a function of a renewable energy cooperative for respondents, after education, price improvements, and design support.

Function	Importance (1 = low)
Educating people on energy issues	9.09
Getting better prices on energy components for coop members, through greater buying power	8.85
Providing skilled design support	8.65
Producing more renewable energy locally	8.54
Providing skilled installation support	8.46
Performing research and development on renewable energy	7.87

In supporting education, respondents wrote:

*Advice as to vendor to use for solar would be helpful*  
*Educating local residents (like me) about renewable energy options is needed*  
*Having local expertise to help us understand if solar or wind would work on our site would be great*  
*Educate me. Suggest a community forum on renewable energy*  
*Can't answer without comparative analysis supplied*  
*Not informed enough to say*  
*Want to know more*  
*I need education about the options to local vs. mainland generated Green Power*  
*We are perfect examples of why education is important. The questions I left blank are "don't knows"*

## 7. Preference for Power Generated Locally

We probed the strength of the preference for locally generated Green Power over mainland Green Power in two ways, asking how much of a monthly premium respondents would pay, and the relative effects of price and location.

The mean maximum monthly premium for Green Power generated in the San Juans was \$25.20, compared to \$19.50 for mainland Green Power. The proportion of people willing to spend an extra \$21 to \$60 was much greater for San Juans power, as shown in Exhibit 4 below

The greater likelihood of buying San Juan over Mainland was similar to the greater likelihood of a 4c per kWh vs. a 8c premium. Note that the differences between source locations are about the same at either price point – the price factor and the location factor are contributing independently of each other. See Exhibit 5 below.

Exhibit 4: Maximum monthly surcharge, Mainland vs SJC

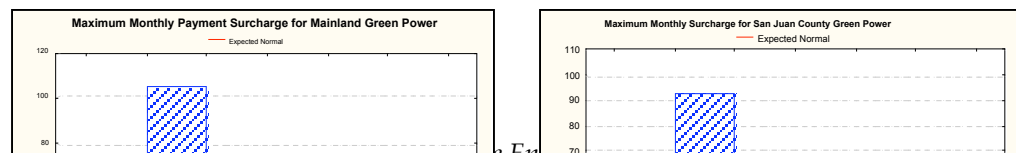
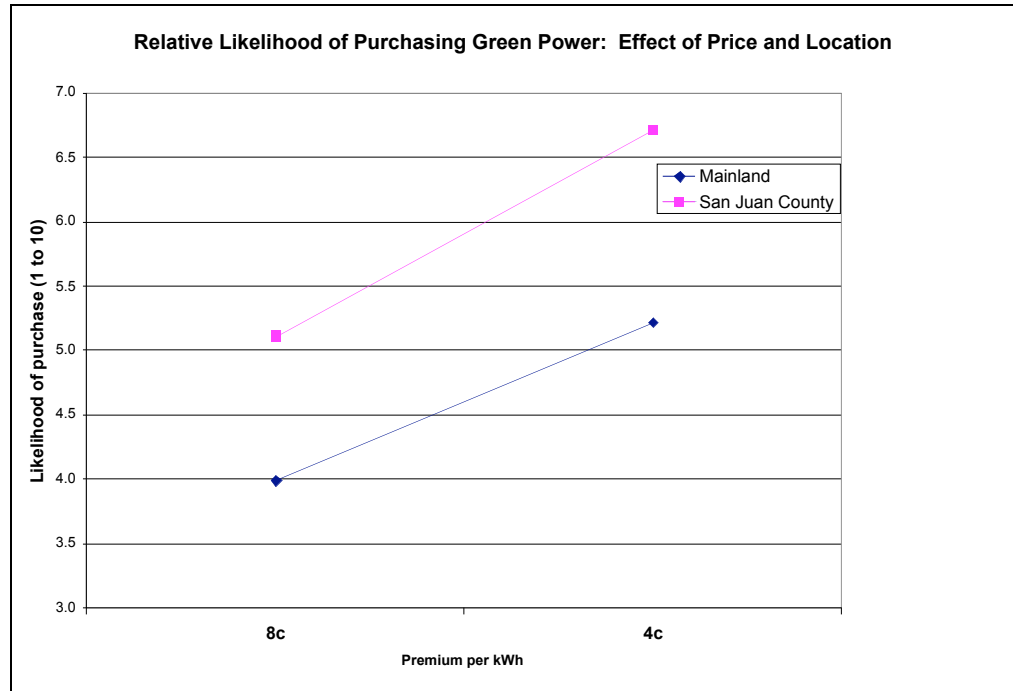


Exhibit 5:



While most respondents favored San Juans power over mainland power, a few were skeptical or hostile:

*I would imagine that siting (and permitting) for on-island renewable energy may be a big hurdle*

*If you people don't consider BPA hydro "renewable" you're out of your f---ing minds*

*Buy Brown Island (and) install coal fired plant to meet electrical needs of all islands.*

## 8. Investment in Incremental Generating Capacity in the San Juans

Just over 50% of all respondents selected "yes" when asked whether they would be "interested in investing in incremental generating capacity in the San Juans, as a member of a renewable energy cooperative". Most would invest less than \$1,000, but taking the midpoint of each range, the responses would reflect a possible total investment of \$216,000.

	Number	%	Midrange	Total
Less than \$500	69	44%	\$250	\$17,250
\$500 to \$999	35	22%	\$750	\$26,250
\$1,000 to \$2,499	30	19%	\$1,750	\$52,500
\$2,500 to \$4,999	14	9%	\$3,750	\$52,500

\$5,000 to \$9,999	5	3%	\$7,500	\$37,500
\$10,000 up	3	2%	\$10,000	\$30,000
Total	156			\$216,000

A total of 18 respondents specified an annual investment estimating a mean of \$350 per year.

The two most prevalent reasons for not investing were affordability and a need for more or better information on specific proposals.

*Don't know how much I am able to afford although the concept of renewable energy is very interesting and worthwhile supporting.*

*Please do nothing to increase rates involuntarily for our working families*

*So a person making 10 bucks an hour could be looking at 4 hours a week for Green Power? Sorry, I forgot where I was*

*We feel very supportive of Green Power production but are currently struggling to make ends meet*

*Missing is "economic and environmental benefit" all you present is SPEND. Just another elitist group feathering their nests and pockets*

*When Green Power costs the same or less I will be interested!*

*Am on a limited income and need more information and pay-off*

*It seems photovoltaic panels would be the only possibility, but need to know much more about feasibility and costs*

*The idea of alternatives being automatically more expensive makes no sense to me.*

## 9. Differences between potential investors and others

There were several significant differences ( $p < 0.05$ ) between respondents who expressed an intent to invest in the coop, and non-investors.

### a. Location

Respondent who lived on Lopez were less likely to plan to invest, than those on Orcas or San Juan. This may be related to the higher visibility of the Coop on Lopez – a higher proportion of all Lopez residents responded, so that more of the less engaged might have been inclined to respond.

Lopez Island	38%
Orcas Island	53%
San Juan Island	55%

### b. Current Renewable Use

The groups who were most inclined to invest, were those who were planning to implement conservation measures in the future, NOT those that were doing so today. This is clear for Green Power use (Exhibit 6) but also holds true of many other forms of conservation/renewable use. Specifically, for each of the types of usage in Exhibit 7, a higher proportion in the "Plan to implement within 2 years" category

plans to invest, than in the “currently installed” category. This may reflect a vigorous commitment to change in many areas, or it may reflect a degree of wishful thinking.

Exhibit 6:

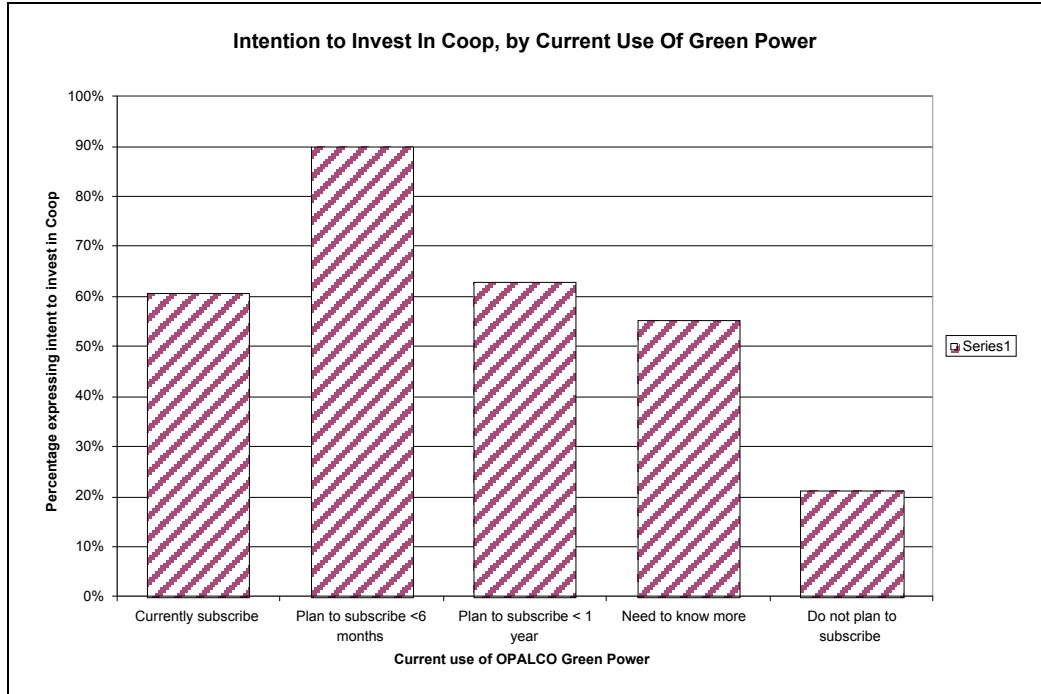
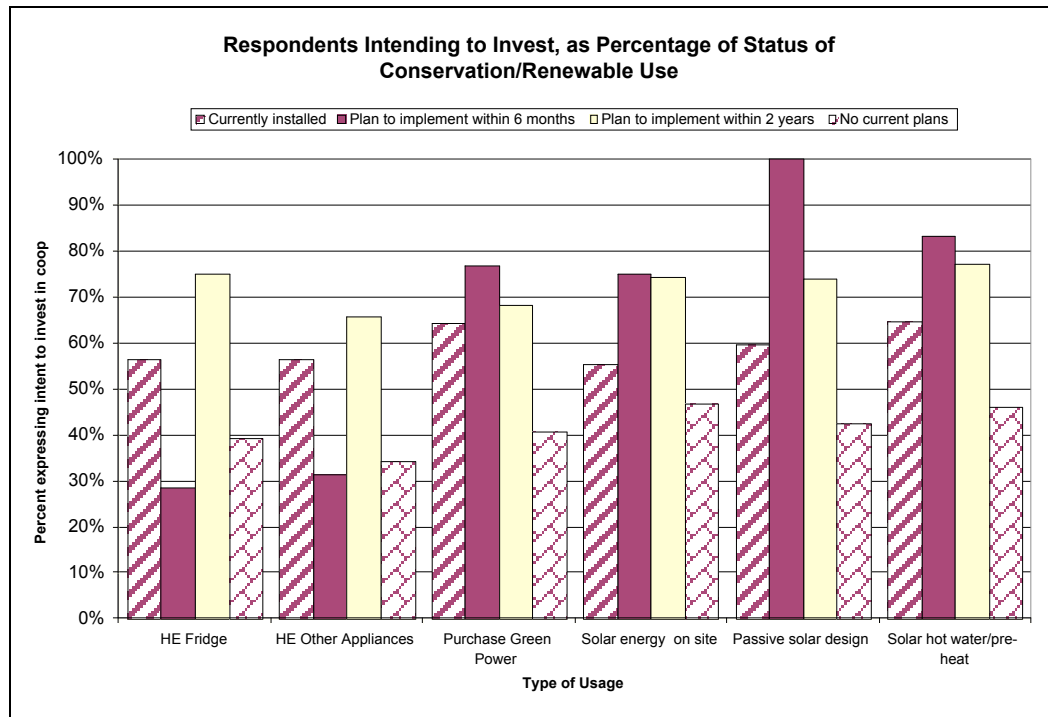


Exhibit 7:



Non-investors were gave less favorable ratings on most issues than possible investors on most issues, but rankings were very similar. For

example, in Exhibit 8 below, both investors and non-investors ranked solar as most desirable as a source, followed by wind and methane.

Exhibit 8:

