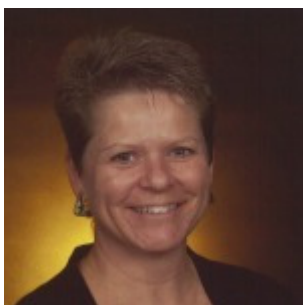


SGCC Research Brief WEBINAR SERIES

Consumer Driven Technologies

October 25, 2016

Speakers



Bridget Meckley, Research Coordinator at
Smart Grid Consumer Collaborative



Gomathi Sadhasivan, Senior Consultant at
DNV GL & SGCC Research Committee
Chair



Ronny Sandoval, Director of Grid
Modernization, Environmental Defense
Fund

Housekeeping

- You will receive a copy of the slides & a link to the research
 - To the email you used to register
- You can ask questions as we go along
 - Simply type into the question box, as we will explain or raise questions during the Q&A
- We will answer all the questions submitted
 - If we are unable to get to all the questions, they will be answered individually after the presentation

Questions & Audio

- If this is what you see – Click on the orange arrow to expand your dashboard.
- In order to ask questions over the phone, please log in with your **Audio Pin**
- Click on the + sign to open up the questions box.
- Use the Questions box at any time to type questions.
- You can ask questions as we go along.
- Yes, you will receive the slides & link to the research after the webinar.




The screenshot shows a GoToWebinar window with the following sections:

- Attendee List (2 | Max 1001):** Includes tabs for 'Attendees (1)' and 'Staff (1)'. Under 'Attendees (1)', there is a list titled 'NAMES - ALPHABETICALLY' with one entry: 'Steve Williams (Me)'. Below the list is a search bar.
- Audio:** Contains telephone dial-in information: 'Dial: +1 (415) 655-0059', 'Access Code: 455-587-097', and 'Audio PIN: 57'. A red box below states: 'If you're already on the call, press #57# now.' with a link 'Problem dialing in?'.
- Questions:** A text area with the message: 'Welcome to SGCC's presentation of Smart Grid Home Area Network Standards. The webinar will begin shortly.' Below the text area is a label '[Enter a question for staff]' and a 'Send' button.
- Footer:** Displays 'SGCC Peer Connect: Smart Grid HAN Standards', 'Webinar ID: 812-622-206', and the 'GoToWebinar' logo.

Agenda



Background



Confirmations



New Insights



Perspectives on the wider solar & EV marketplace



Question and Answer Session

Why did we do this research?

Consumer Driven Technologies sought to understand consumer experiences and attitudes towards solar PV and EV technologies.



The survey of 1,571 respondents (including an oversampling of current solar and EV adopters) collected information on:

- Awareness
- Perceptions of adopters and non-adopters
- Interest
- Importance of various benefits
- Level of agreement with barriers/misconceptions
- Preferred entities to provide ancillary services around these technologies
- Preferred type of solar (residential, community and green power plans)
- Value ascribed to grid services

Knowledge and interest in solar & EVs by policy environment



Using the annual state-by-state report card from the Interstate Renewable Energy Council (IREC) to assess the policy environment, we classified states as those with “advanced” interconnection and net metering policies (in blue) and those without



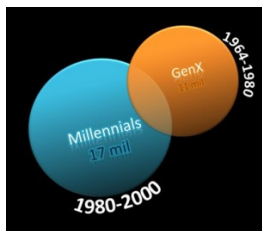
Demographic and segmentation findings fell along expected lines



Higher income consumers are 10 percentage points more likely to be interested in solar and twice as likely to be interested in EV's than their complement



Men are 32% more likely to express interest in solar and 60% more likely to be interested in EV's than women



Those under 45 are almost twice as likely to be interested in solar and 3 times more likely to be interested in EVs



Green Champions, 30% of the consumer population nationwide, are the most interested in solar and EVs.

Status Quo, 18% of the consumer population nationwide, show the least interest.

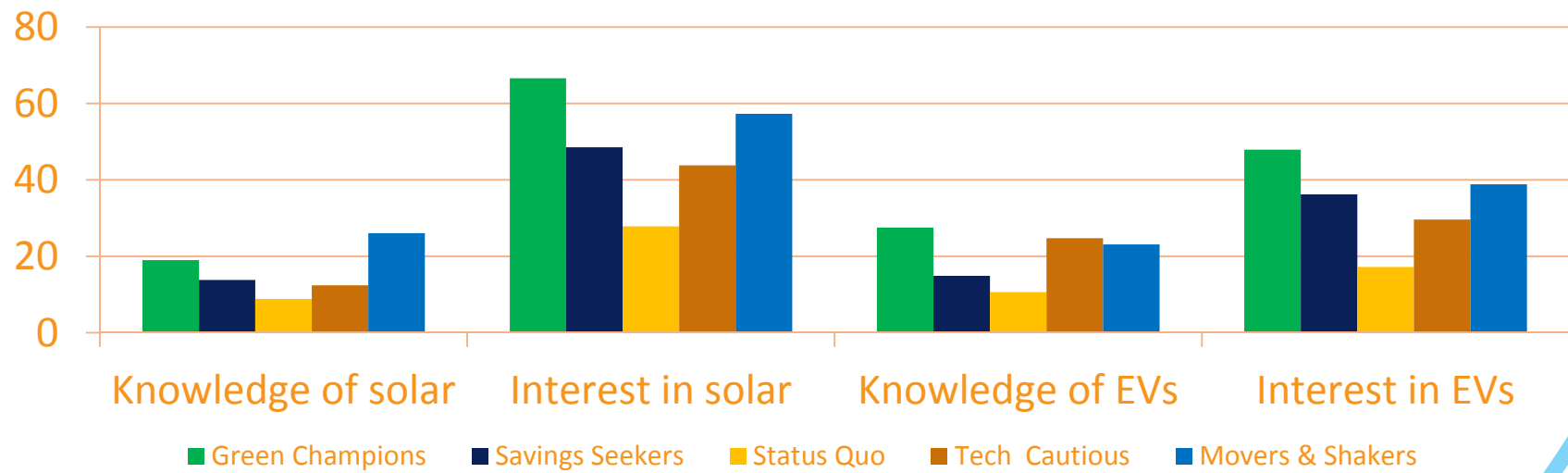


And again, we find that who you are matters more than where you live

Complete understanding of & interest in solar/EVs by policy environment

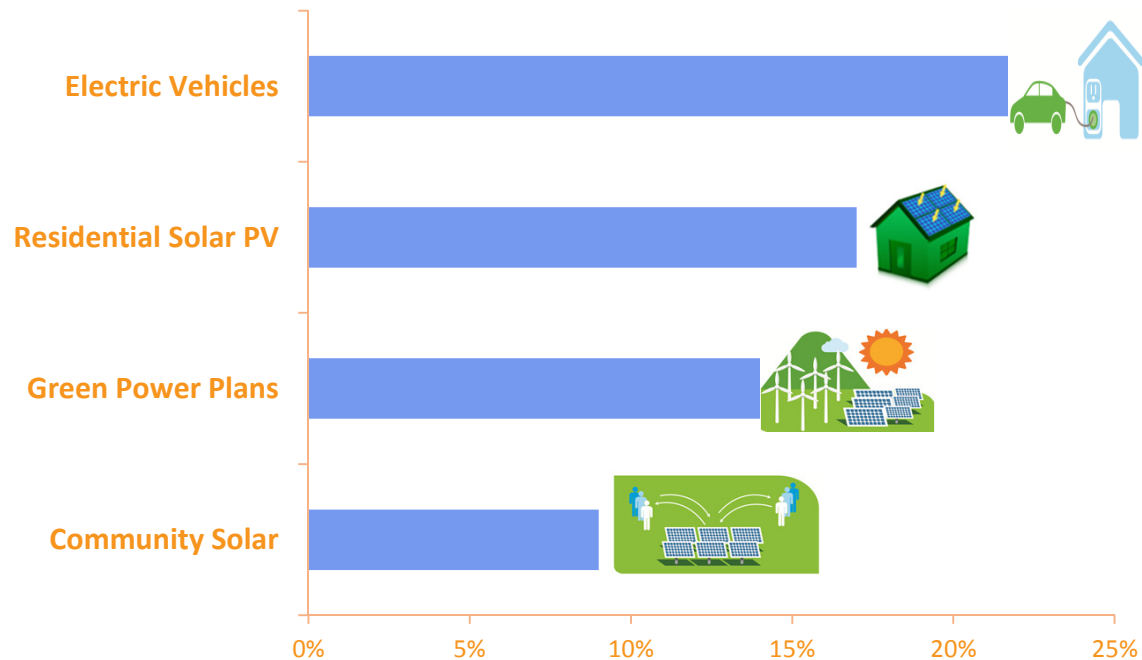
Complete understanding of...				Very Interested in...			
Solar		EVs		Solar		EVs	
Advanced	Other	Advanced	Other	Advanced	Other	Advanced	Other
17%	16%	23%	20%	54%	51%	38%	35%

Complete understanding of & interest in solar/EVs by SGCC segment



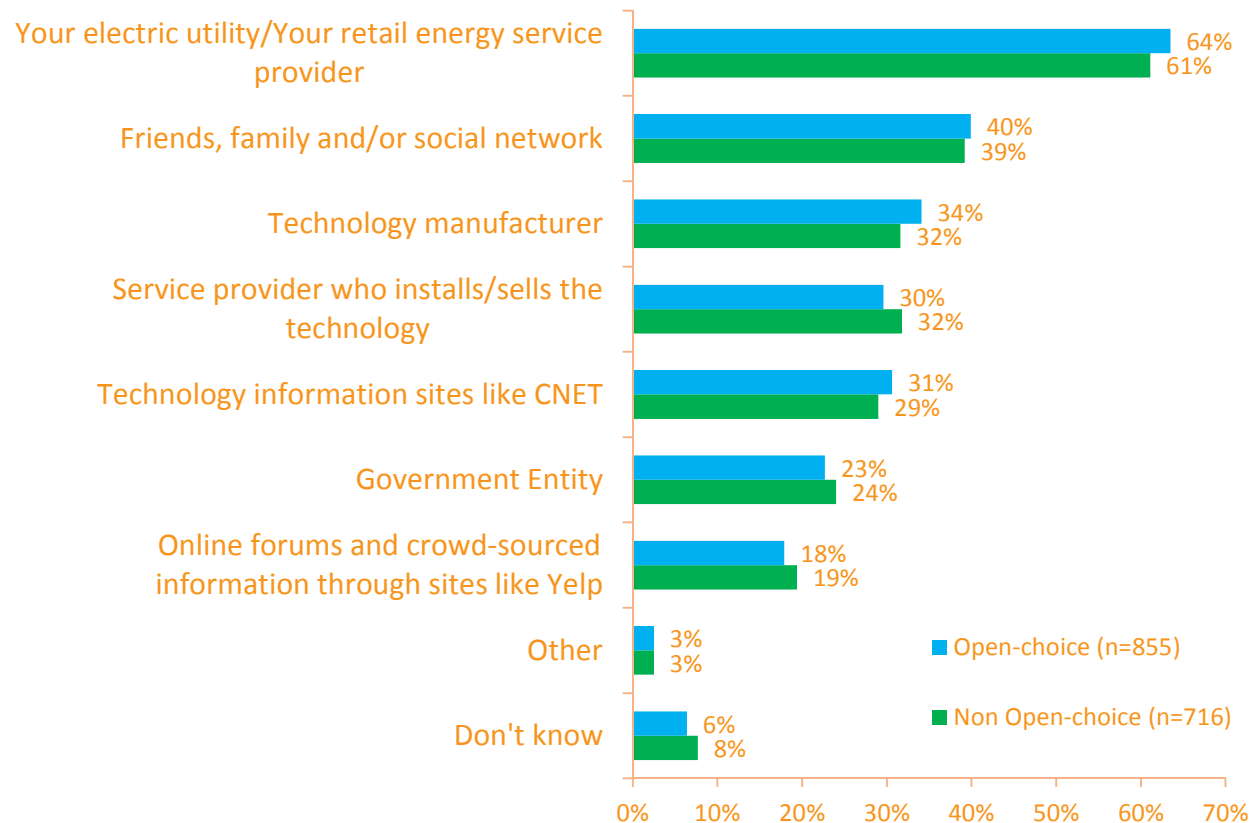
Overcoming the knowledge gap remains Job #1 for the industry

Complete understanding of these technologies remains below 25%.



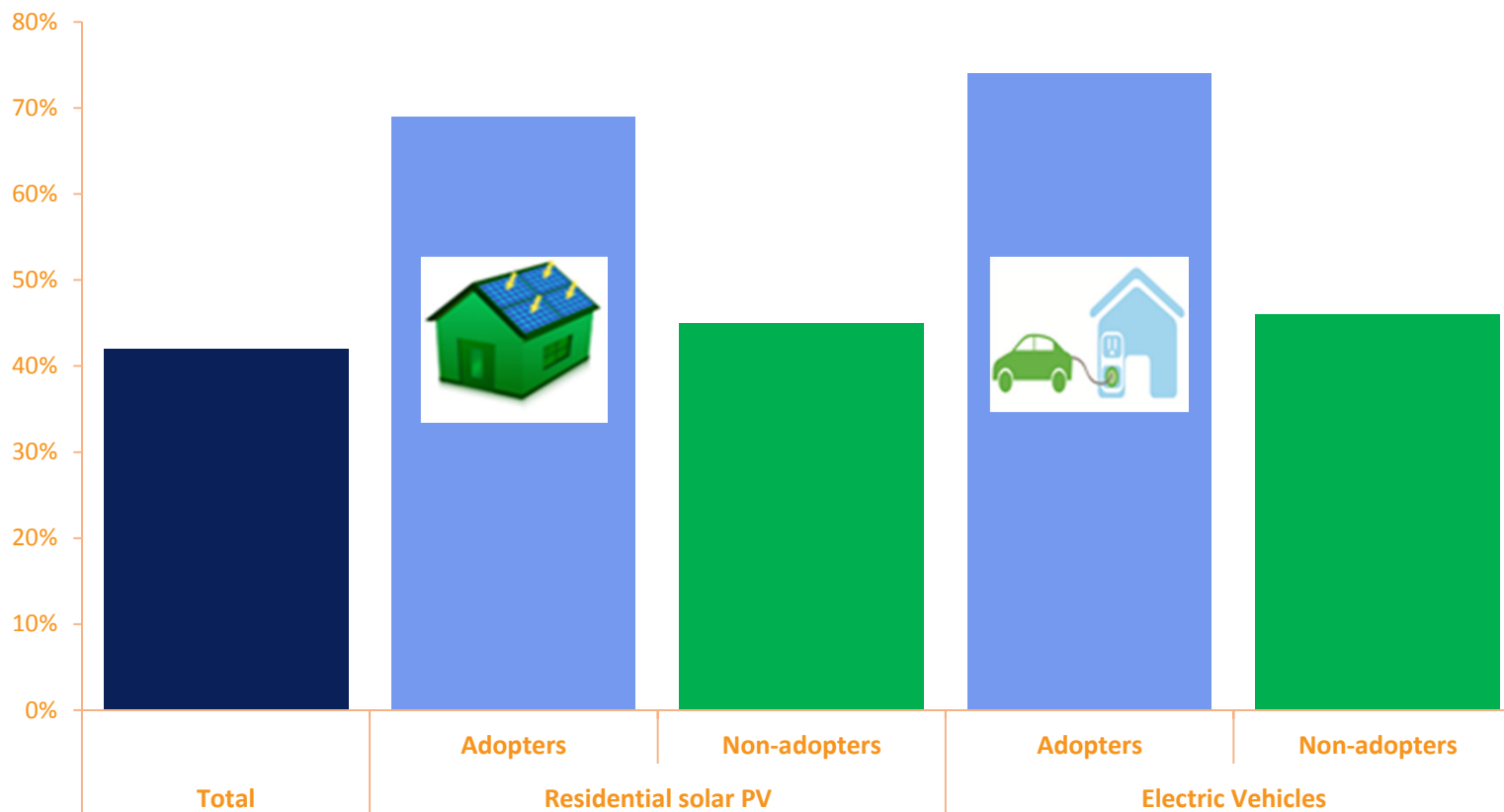
Consumers rely on their electricity provider for accurate information

Consumers seek information about solar and EVs from a variety of sources, but one of the most common is their electricity provider.



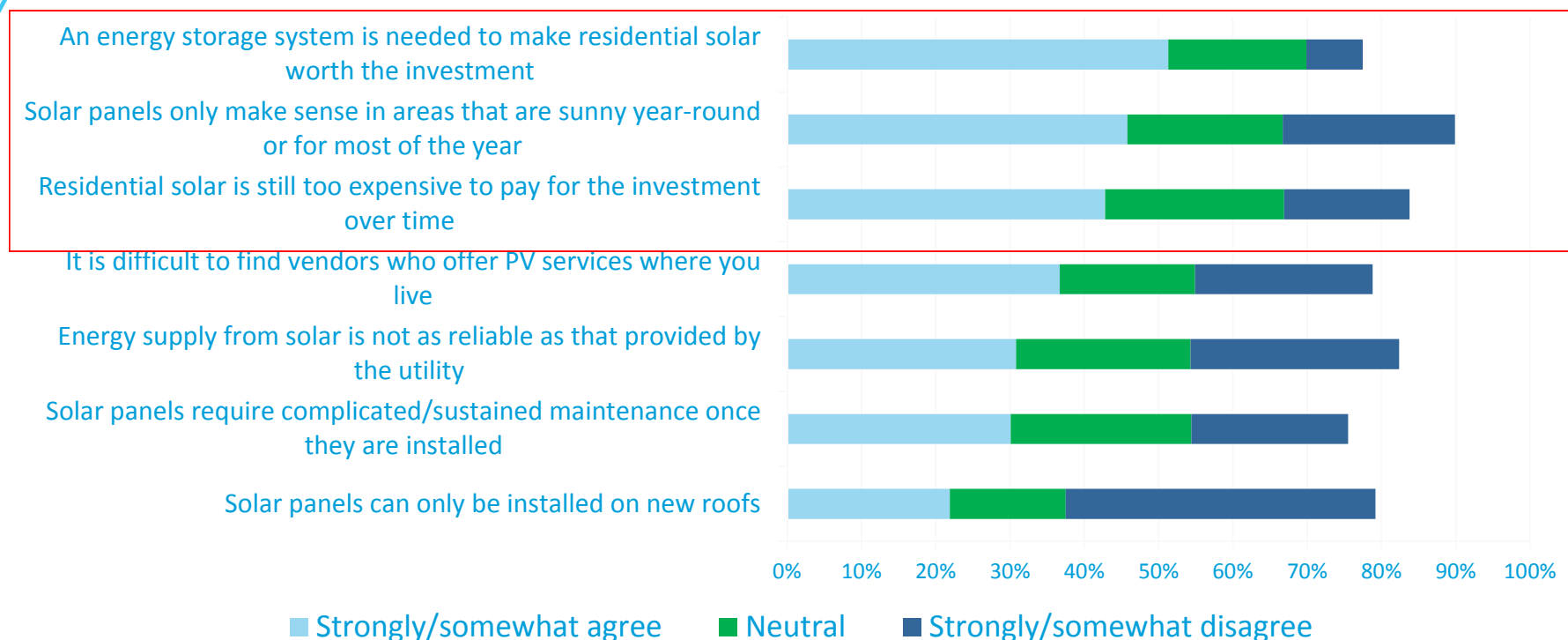
*In fact, utility involvement increases
the likelihood that consumers will adopt*

**Consumer more likely to adopt due to utility
involvement/endorsement**



There are barriers to solar adoption

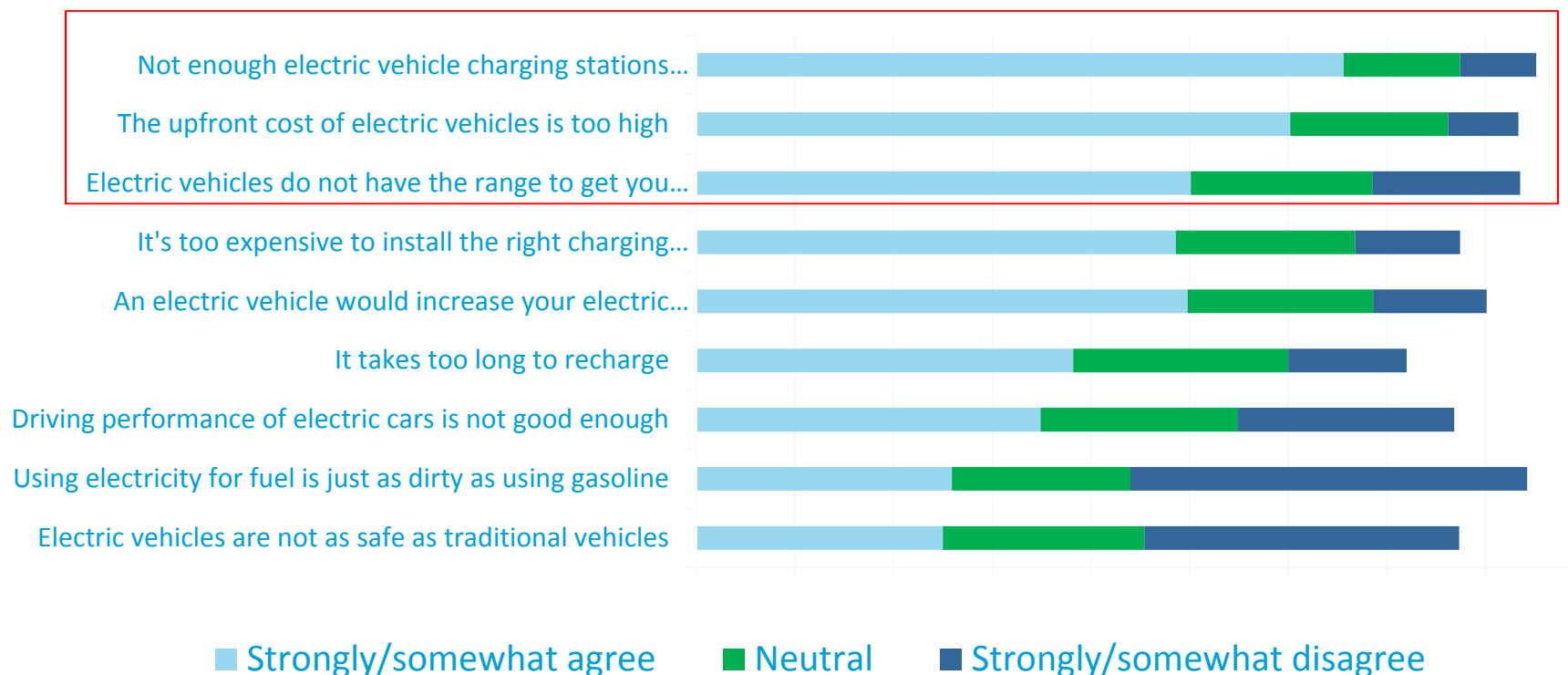
With solar, 2 of the top 3 barriers revolve around financial concerns...



...But falling prices and the availability of leasing and PPA options helps address these financial barriers

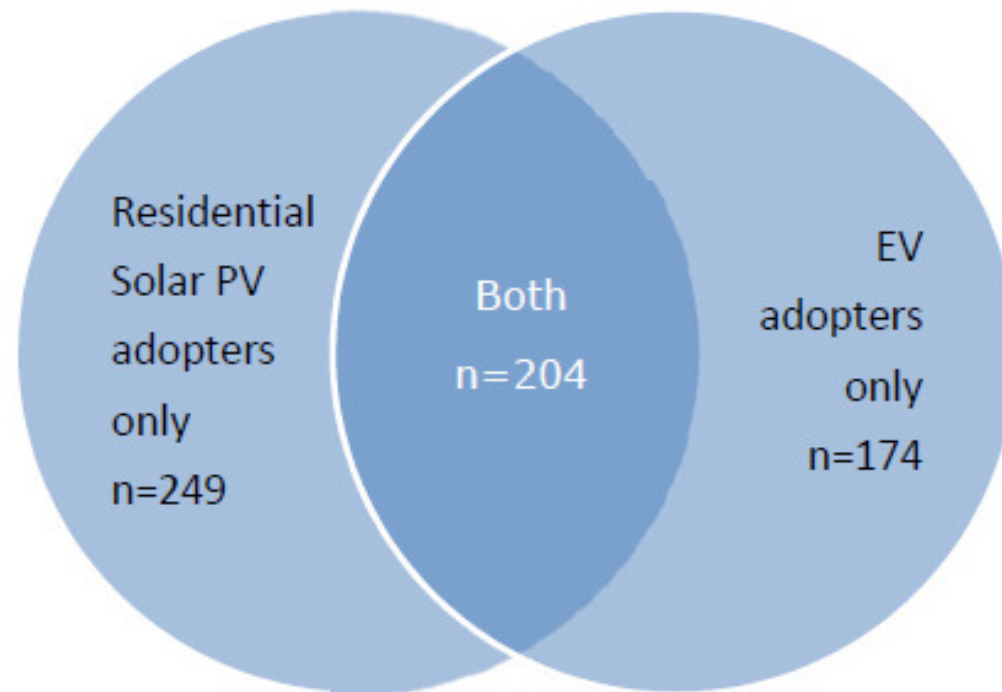
There are also barriers to EV adoption

With EVs, the barrier is not only initial cost, but also driving range and environment in which to operate the vehicle...

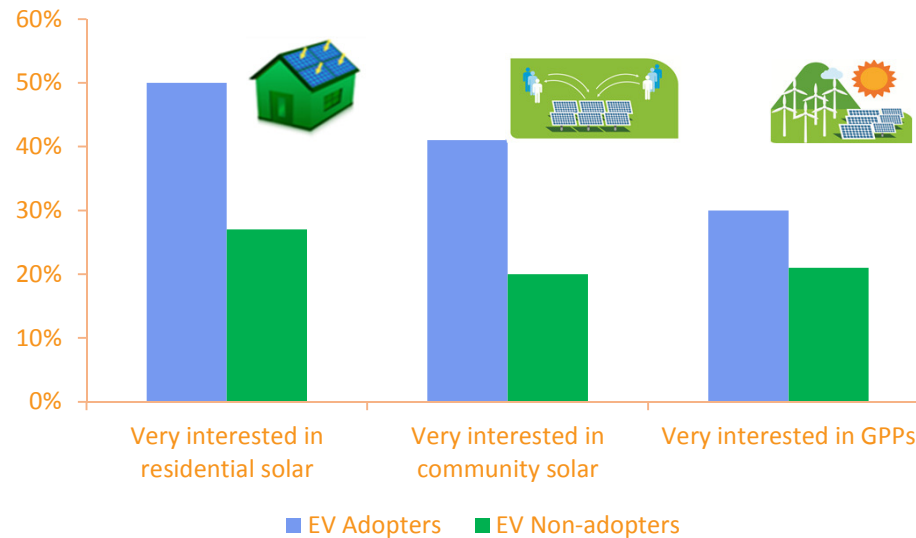


...**But** the introduction of EVs with a more affordable price point coupled with a longer driving range is beginning to address these concerns

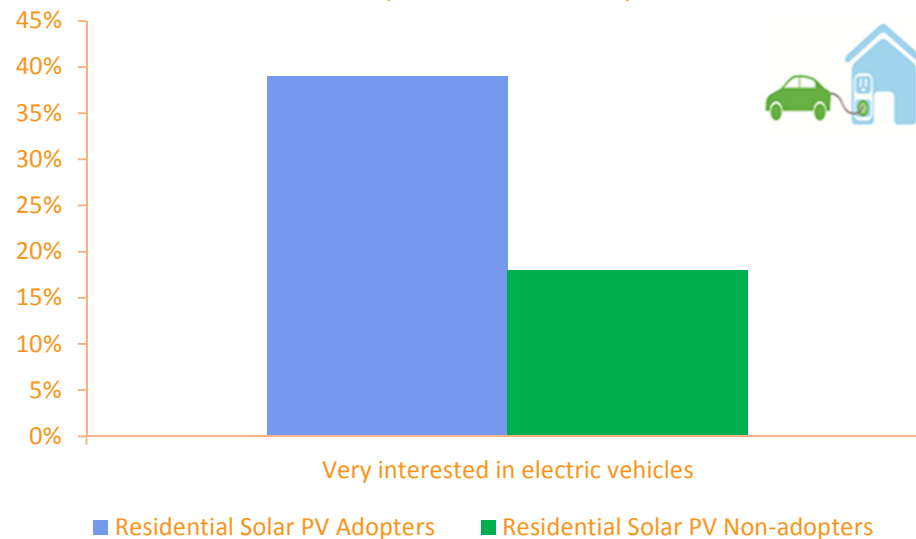
Roughly half of consumers who have solar or EV technology have both



Adoption of solar or an EV covaries with interest in the other



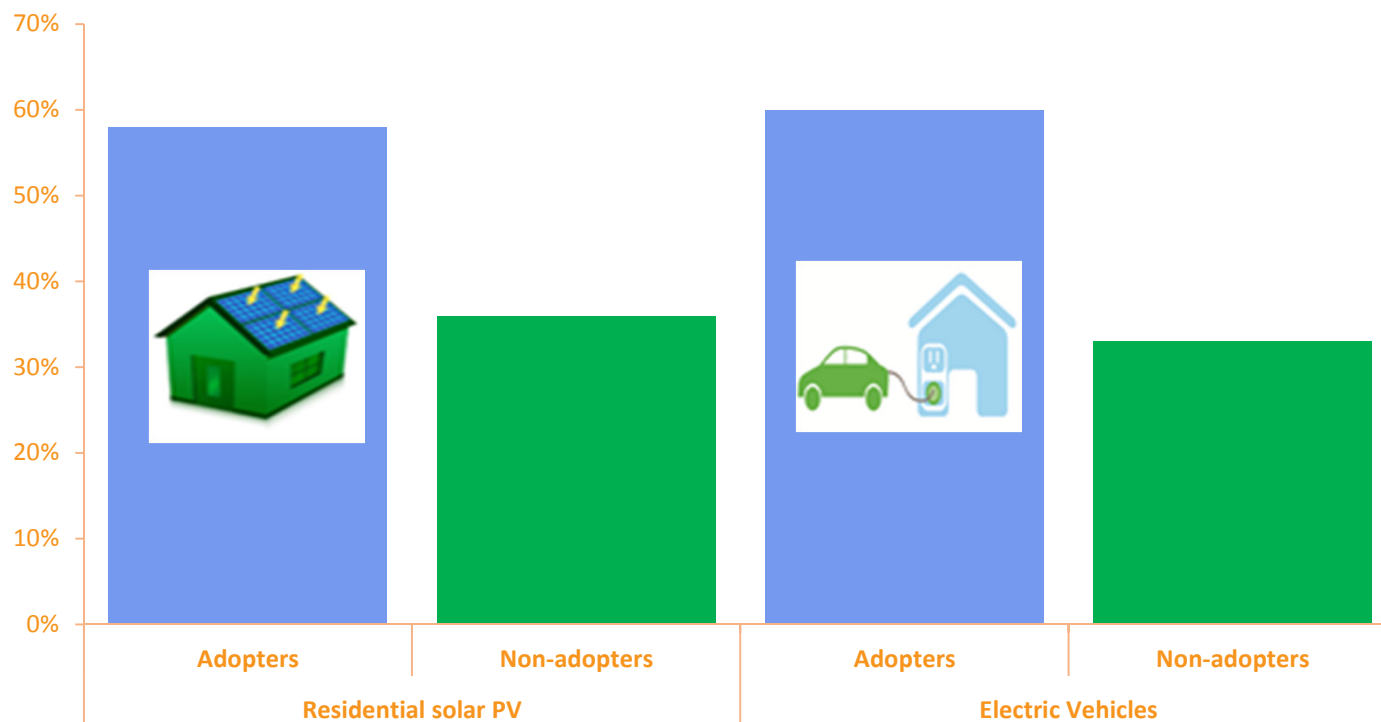
If you're an EV adopter, you're far more interested in adopting solar than someone without an EV



If you already have solar, you're twice as likely to be interested in an EV than someone without solar

Consumers recognize the value of a grid connection

While almost 40% of our respondents agreed with the notion of going “off-the-grid with solar power alone”, adopters of solar and EVs are convinced about the value of retaining their connection to the grid, demonstrated by their willingness to pay \$25 or more monthly for backup power.



For ancillary services, consumers want to eliminate the middle man

Preferred service providers for residential solar PV

(n=583)	Utility/ Retail Energy Service Provider	Solar equipment suppliers/ installers	Government Entity	Family/ Friends/ Others	Do not need help with this service
Objectively advise you on which types of panels are best for my situation	40%	61%	18%	18%	5%
Help educate you about financing	38%	51%	33%	17%	8%
Assist in installation costs	34%	37%	44%	10%	7%
Provide recommendations on trusted vendors	35%	37%	25%	35%	7%
Assist in installation process	33%	68%	14%	10%	4%
Provide equipment/ hardware	36%	70%	14%	6%	3%

Preferred service providers for EVs

(n=577)	Utility/ Retail Energy Service Provider	Electric Vehicle Retailer	Government Entity	Family/ Friends/ Others	Do not need help with this service
Assist in installation of charging infrastructure in your driving area	39%	56%	26%	13%	5%
Provide free/subsidized electricity for charging your electric vehicle	41%	42%	39%	10%	5%
Provide charging equipment/hardware for your home	47%	59%	21%	11%	5%
Objectively advise you on which type of vehicle is best for your situation	27%	56%	20%	28%	7%
Help educate you about financing	27%	58%	30%	14%	10%
Provide recommendations on trusted vendors	31%	42%	27%	32%	6%

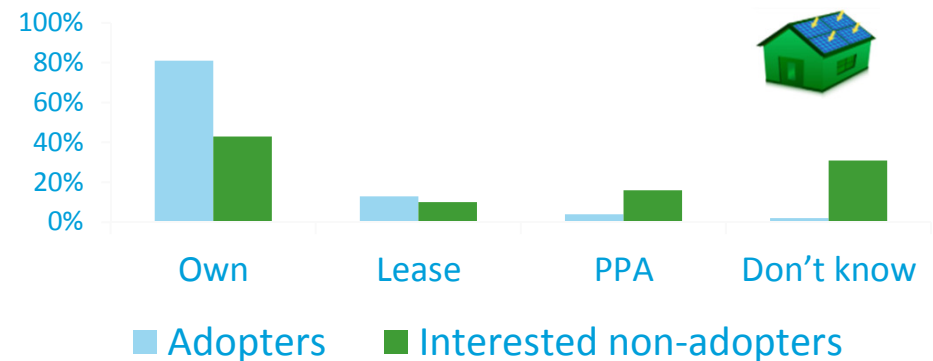
Perspective from Ronny Sandoval, EDF

- EDF interest in this research
- Initial questions and survey results
 - Market implications
 - Policy implications
- Next Steps
- What might this mean for our approach to clean energy technologies?

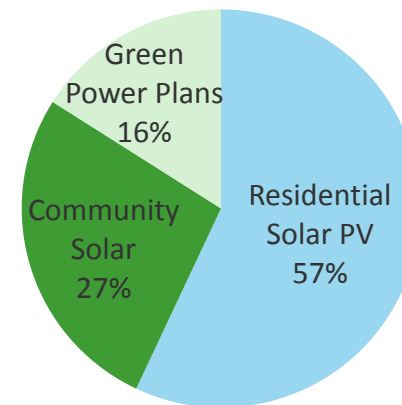
Perspective on these insights about solar PV

- Lack of consumer understanding of the benefits of solar power and high initial costs remain the most important barriers
- The market has addressed the latter barrier:
 - ✓ installed costs per kW of PV systems have decreased by over 50% in the past 10 years and is expected to continue to decline.
 - ✓ The average levelized per kWh of residential solar electricity is now \$0.122, roughly equal to the average retail residential electric rate.
 - ✓ Leases, PPAs, and shared ownership models (like community solar) further reduce cost barriers.
- The complexity of these alternatives will require even greater consumer education and promotional efforts to achieve scale.

Acquisition model for solar

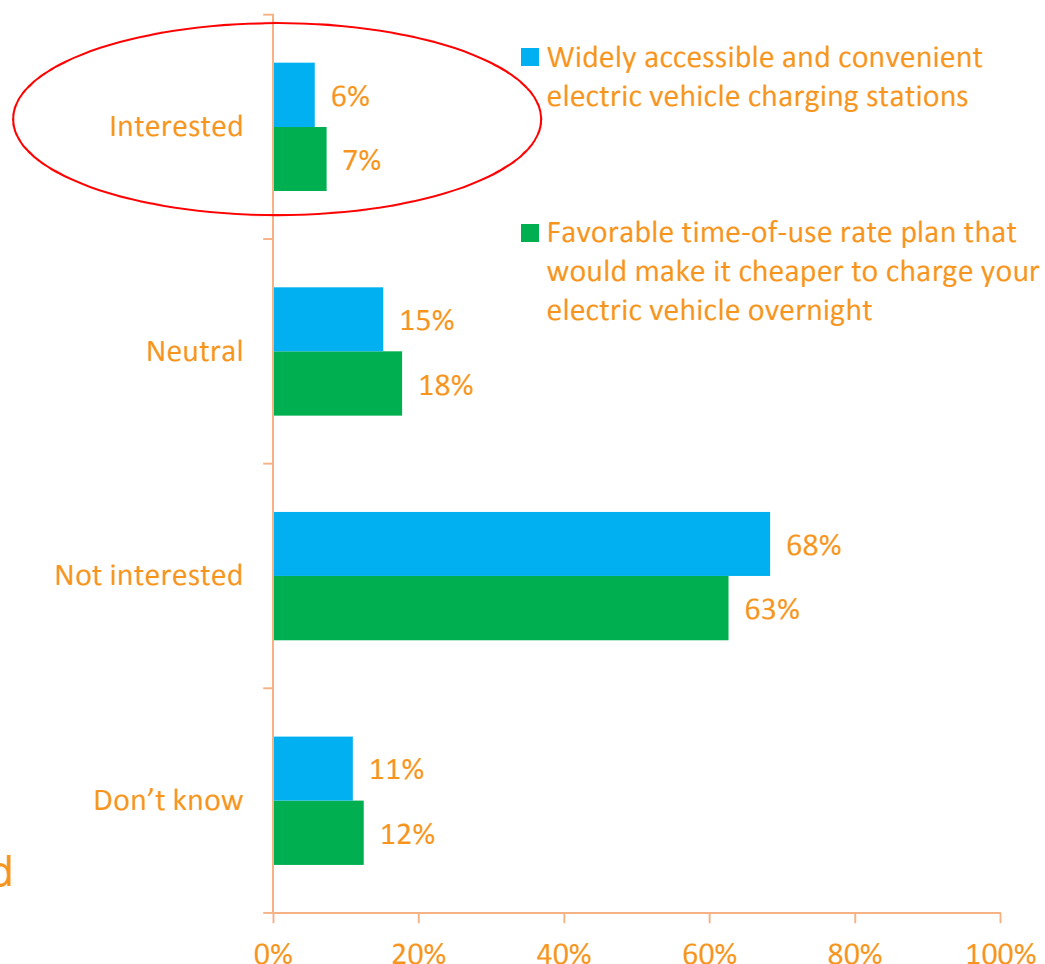


Most preferred solar option



Perspective on these insights about EVs

- Market poised for growth – some estimate 22% EV penetration by 2025 from less than 3% today
- However, range anxiety is real
 - ✓ Small minority (6%-7%) swayed by prospects of widely accessible charging infrastructure or favorable time-of-use rates
 - ✓ Points to a **yet unmet consumer need** with the product/technology itself – improved range at a competitive price
- As foundational barriers such as cost and range are reduced, improvements to infrastructure and favorable rates will be important and likely not be dwarfed by other larger consumer concerns



Questions

