Consumers and the Future of Energy

Distributed Energy Resources: How Do We Meet Consumers' Needs?

1:00 p.m. – 2:00 p.m.

Moderator

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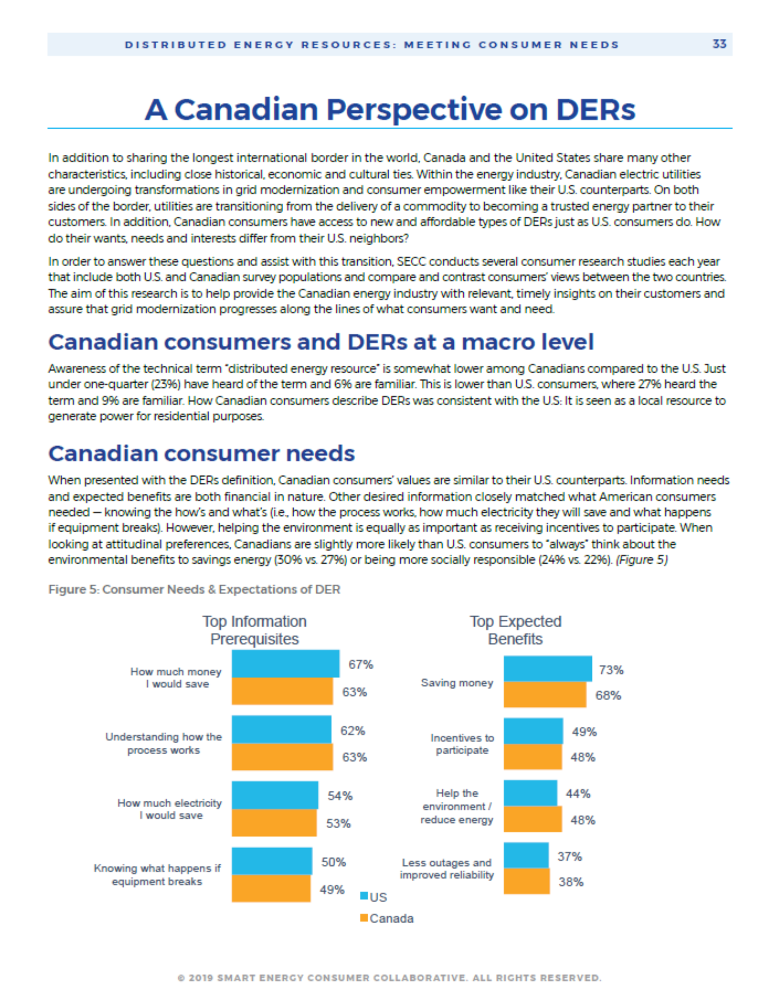
Distributed Energy Resources: Meeting Consumer Needs Report



A Canadian Perspective on DERs

In addition to sharing the longest international border in the world, Canada and the United States share many other characteristics, including close historical, economic and cultural ties. Within the energy industry, Canadian electric utilities are undergoing transformations in grid modernization and consumer empowerment like their U.S. counterparts. On both sides of the border, utilities are transitioning from the delivery of a commodity to becoming a trusted energy partner to their customers. In addition, Canadian consumers have access to new and affordable types of DERs just as U.S. consumers do. How do their wants, needs and interests differ from their U.S. neighbors?

In order to answer these questions and assist with this transition, SECC conducts several consumer research studies each year that include both U.S. and Canadian survey populations and compare and contrast consumers' views between the two countries. The aim of this research is to help provide the Canadian energy industry with relevant, timely insights on their customers and assure that grid modernization progresses along the lines of what consumers want and need.

Canadian consumers and DERs at a macro level

Awareness of the technical term "distributed energy resource" is somewhat lower among Canadians compared to the U.S. Just under one-quarter (23%) have heard of the term and 6% are familiar. This is lower than U.S. consumers, where 27% heard the term and 9% are familiar. How Canadian consumers describe DERs was consistent with the U.S: It is seen as a local resource to generate power for residential purposes.

Canadian consumer needs

When presented with the DERs definition, Canadian consumers' values are similar to their U.S. counterparts. Information needs and expected benefits are both financial in nature. Other desired information closely matched what American consumers needed – knowing the how's and what's (i.e., how the process works, how much electricity they will save and what happens if equipment breaks). However, helping the environment is equally as important as receiving incentives to participate. When looking at attitudinal preferences, Canadians are slightly more likely than U.S. consumers to "always" think about the environmental benefits to savings energy (30% vs. 27%) or being more socially responsible (24% vs. 22%). *(Figure 5)*

Figure 5: Consumer Needs & Expectations of DER

GOAL: To provide deep insights to industry stakeholders on consumer knowledge, motivations, barriers and experiences with DER technologies and programs

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Defining DERs

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How are DERs defined?

Any resource on the distribution system that produces electricity and is not otherwise included in the bulk electric system. Demand-side management is also considered a DER in the context of this research.

DERs were introduced in the survey to consumers as:

- Solar panel(s) on a home or property
- Small wind turbines on a home
- A home energy management system
- Demand response programs
- Battery storage
- Community microgrids
- Community solar panels
- Small wind turbines in a community
- Energy storage in a community

A blend of qualitative and quantitative research was conducted with consumers across the US and Canada:

- Seven in-depth interviews with consumers who have DERs
- n=1,500 U.S. consumers survey fielded online
- Oversample of those who ever had one or more DER technologies (n=613)
- Separate sample of n=543 Canadian consumers

Finding #1

To grow awareness of DERs, providers must build a bridge between technologies, people and possibilities

Home Solar is the DER flagship across all demos, segments and regions

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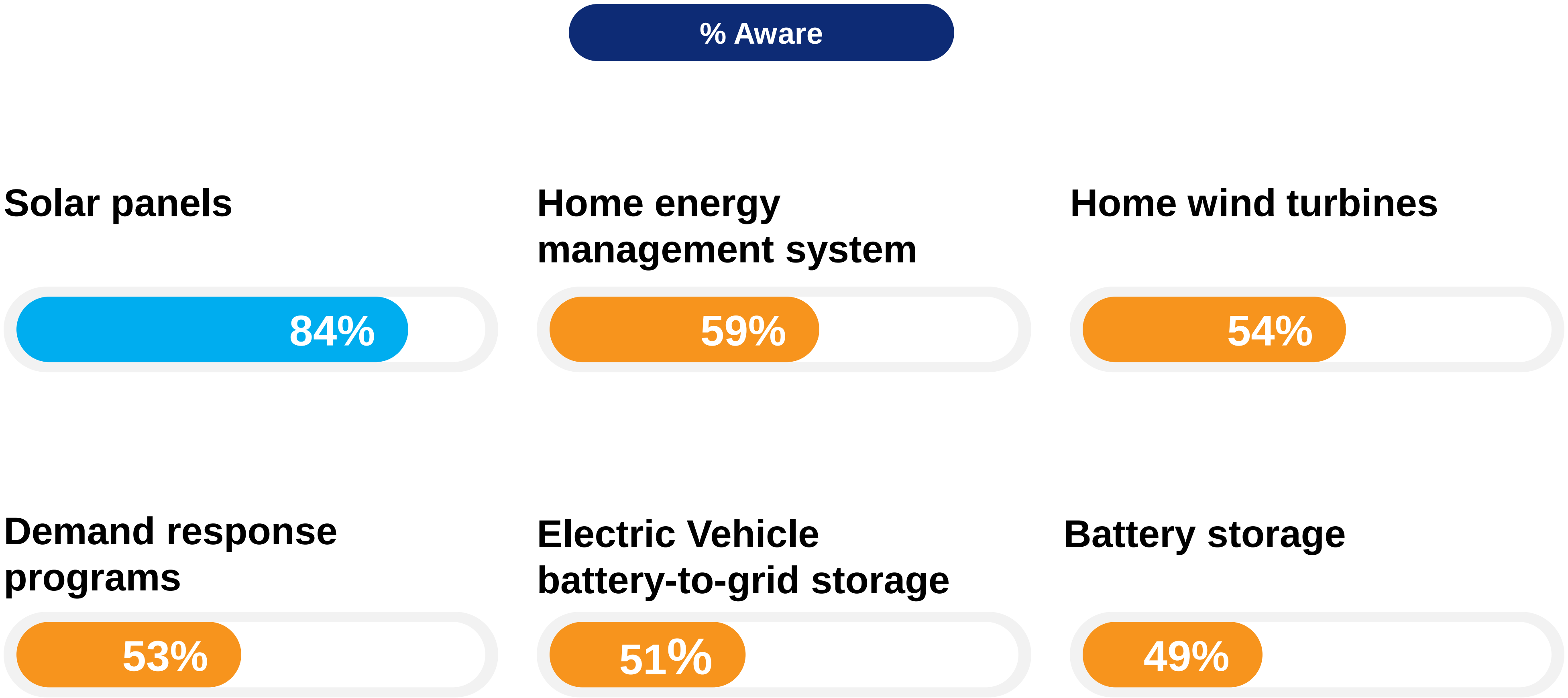
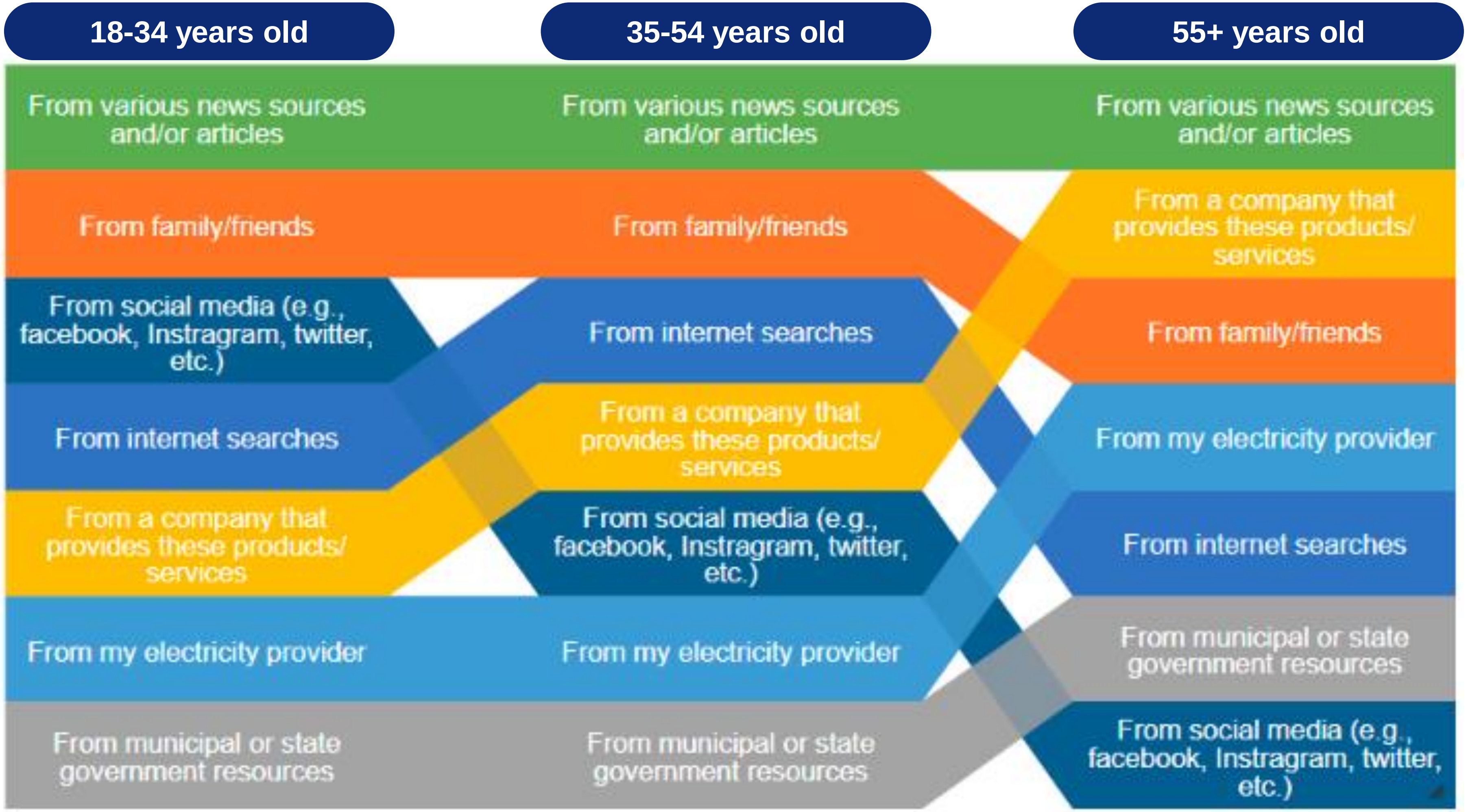


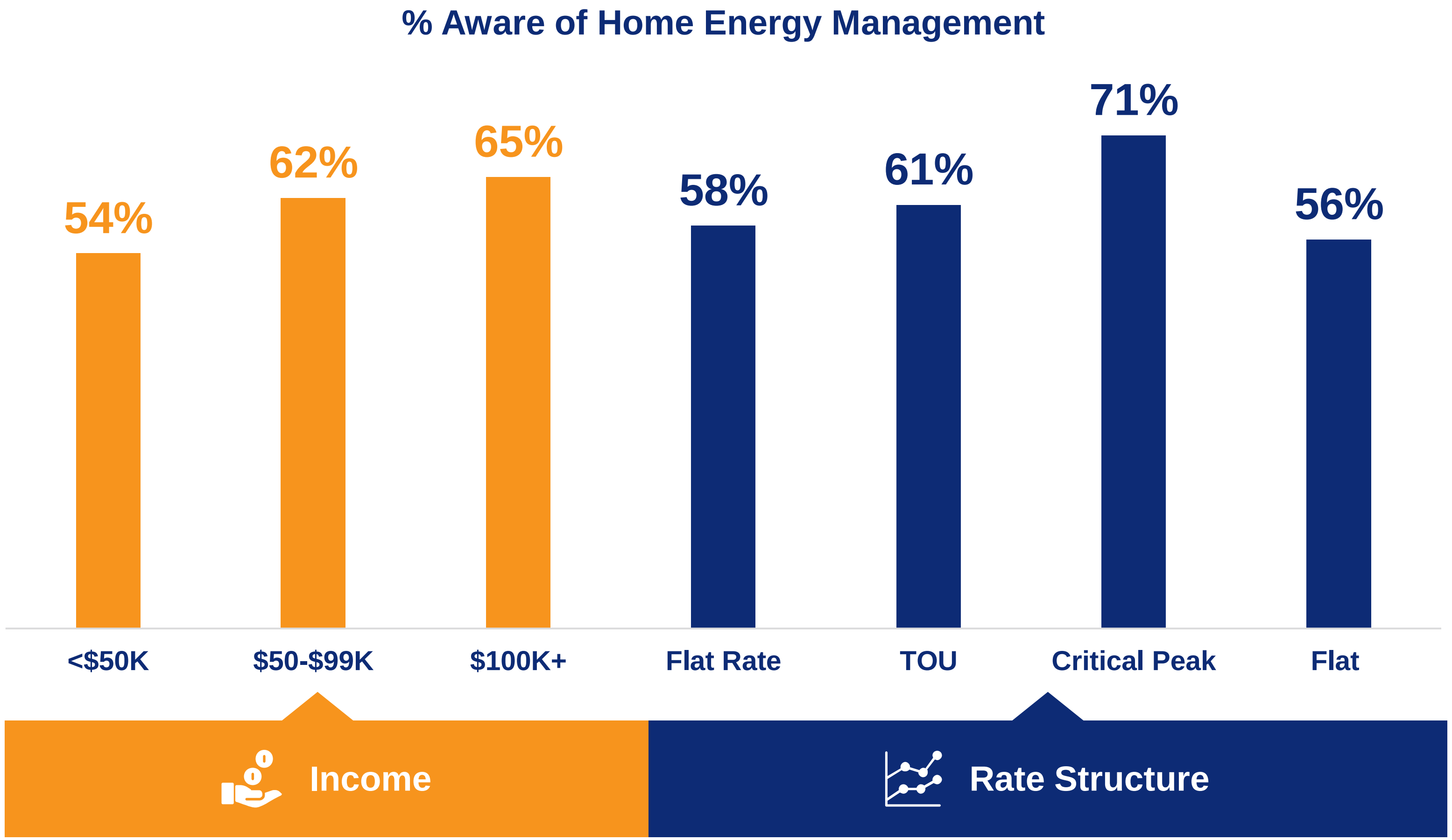
Sources of info about Home Solar differ by generation



Base: Aware of Solar; n=1,253

Question Wording: Where did you hear about each of these products and/or services? Home Solar

Unlike Home Solar, there are demographic differences in awareness of Home Energy Management



The same pattern holds for DR programs.

These differences represent great opportunities for targeting communications

Barriers to Demand Response vary by age, further reinforcing the opportunity for targeted outreach

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Clearly emphasizing the financial return on DR will resonate across age groups. For young people, it is important to break down perceptions of ease of registration

	18-34	35-54	55+
I don't trust that the estimated savings are going to save me money	29%	24%	29%
I do not think it will result in net savings for my investment	13%	15%	22%
My community does not have access to this	8%	15%	9%
I don't know what the payback period is for my investment	8%	12%	11%
I am not sure who to contact	10%	11%	4%
The process is too long/complicated	13%	6%	4%
I do not want to spend money upfront/could not find a lease option	10%	7%	5%
It would take too long for this investment to payback	5%	5%	8%
Other	15%	22%	20%

Finding #2

The two most addressable target segments perceive different benefits and have different information needs

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Data for the U.S. general population weighted to the consumer segments from SECC's *Consumer Pulse and Market Segmentation – Wave 7* report

SEGMENT NAME	PERSPECTIVE ON ENERGY	IMPORTANCE OF EE IN THE HOME	% OF CONSUMER MARKET
Green Innovators	Strongly value sustainability and lead the way in saving energy with technology	High	20%
Tech-savvy Proteges	Receptive to changing energy habits and using technology to do so, but need to be shown how to do it without sacrificing comfort	Med/High	25%
Movable Middle	Not complete rejectors of saving energy and face few barriers; lack interest in technology	Med	29%
Energy Indifferent	Rejectors of environmental concern and saving energy; keep their energy needs simple and want to be left alone	Low	26%

By leveraging SECC's segmentation to isolate rejectors, awareness building efforts can be streamlined

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The segmentation works!

Summary of DER Rejectors (have *not* heard of and would *not* consider using / purchasing)	Green Innovators	Tech-savvy Proteges	Energy Indifferent	Movable Middle
Small wind turbines on your home	25%	21%	39%	30%
Demand response programs	19%	21%	35%	36%
A home energy management system	15%	14%	26%	27%

Green Innovators and Tech-Savvy Proteges perceive differential benefits in DERs

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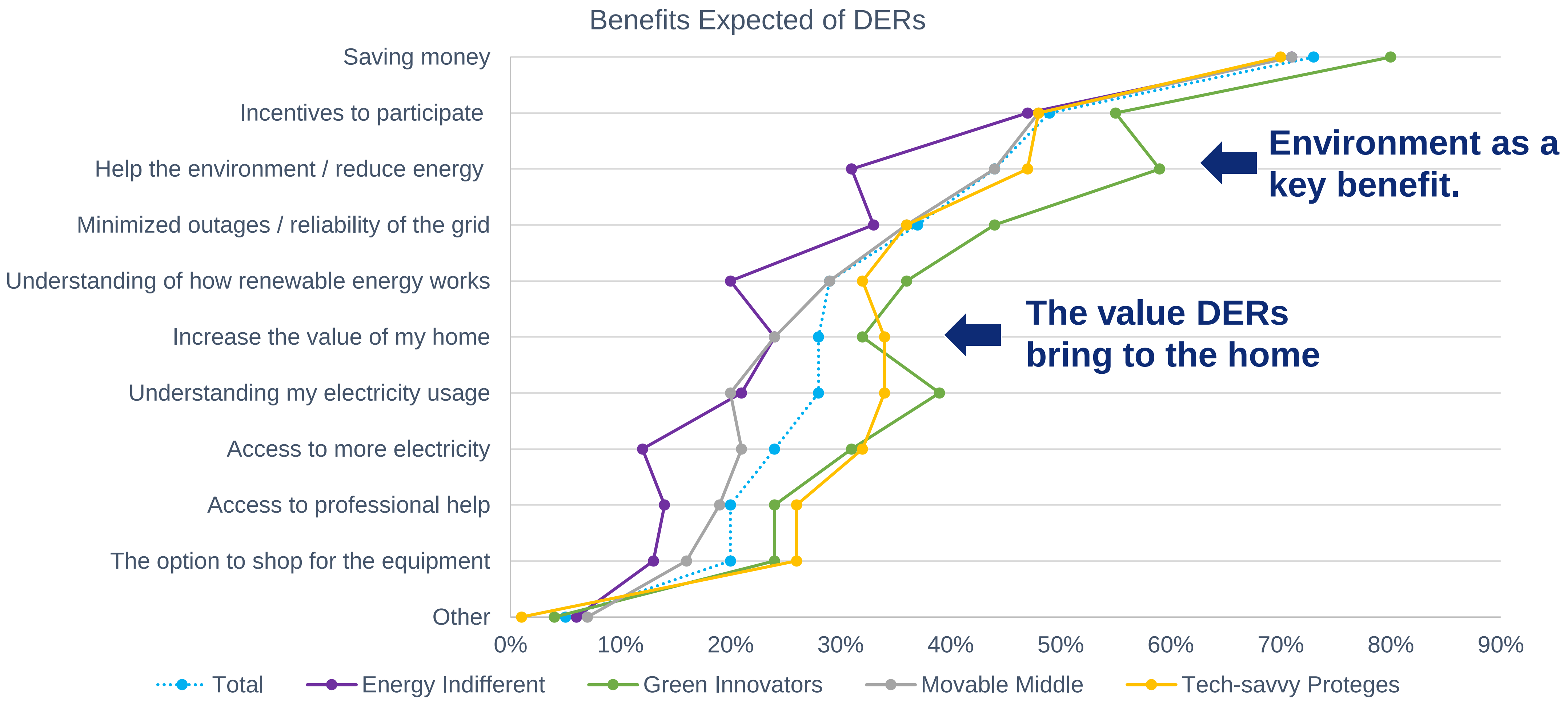
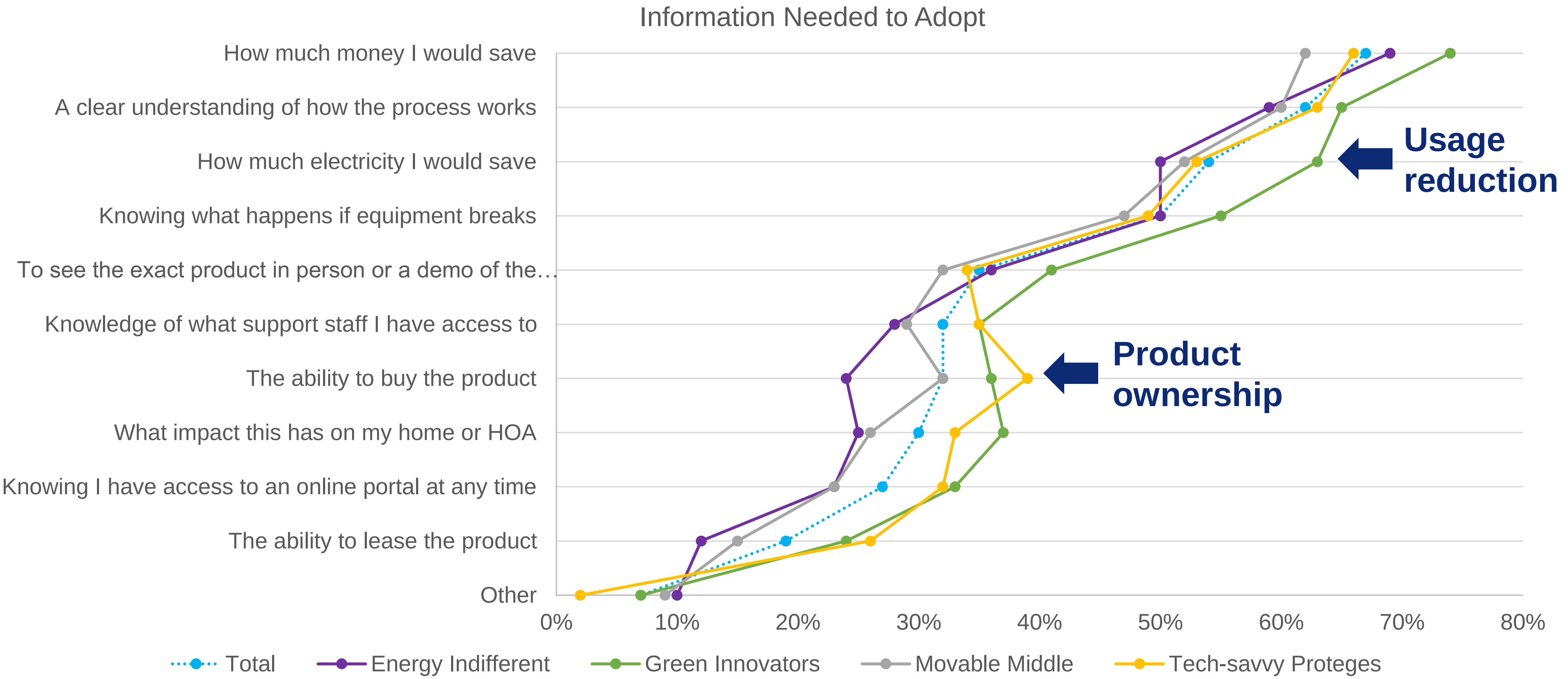


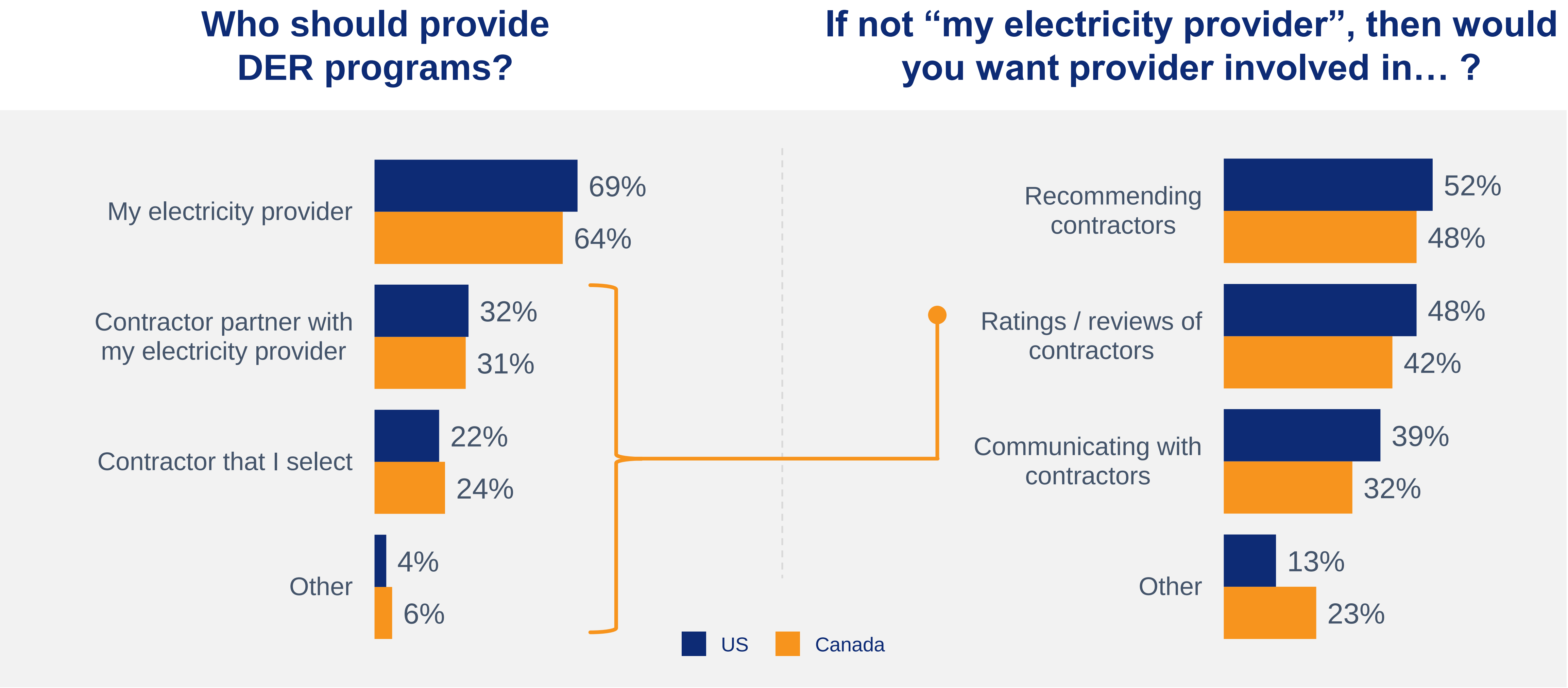
Green Innovators want info on environmental benefits, but also the financial return



Finding #3

Consumers expect electricity providers
to be involved in the DER journey

Most consumers feel that their electricity provider should provide DER services



Although providers' involvement is expected, word of mouth plays a key role

Empowering DER users as advocates makes good sense as an awareness building strategy

"someone my husband worked with found out about the rebate and had them installed. He got a $200 referral for doing it. And we went ahead and got about it. Her and her husband have referred 4 or 5 people now."

- Solar Adopter, Qualitative Interview

"My son-in-law is knowledgeable about this type of stuff, he helps us on what to do and how to think about it."

- Solar Adopter, Qualitative Interview

Most consumers in the US and Canada feel that no involvement from providers is a deal breaker

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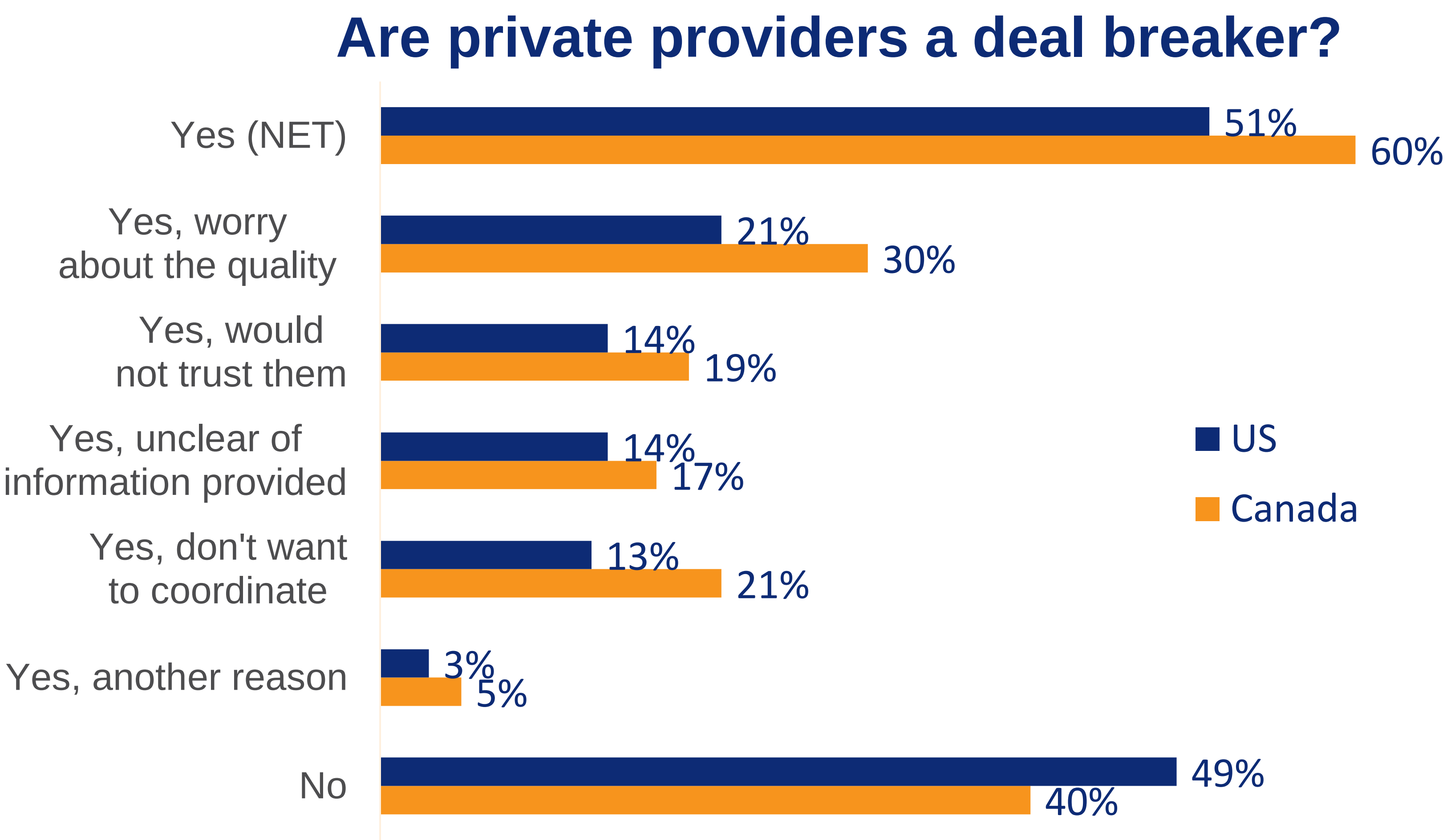
Quality and trust are key reasons that consumers want energy providers involved.



Finding #4

When experiences and expectations do not match, consumers cancel their DER programs

Nearly half of those with DERs currently see them as working out 'very well'

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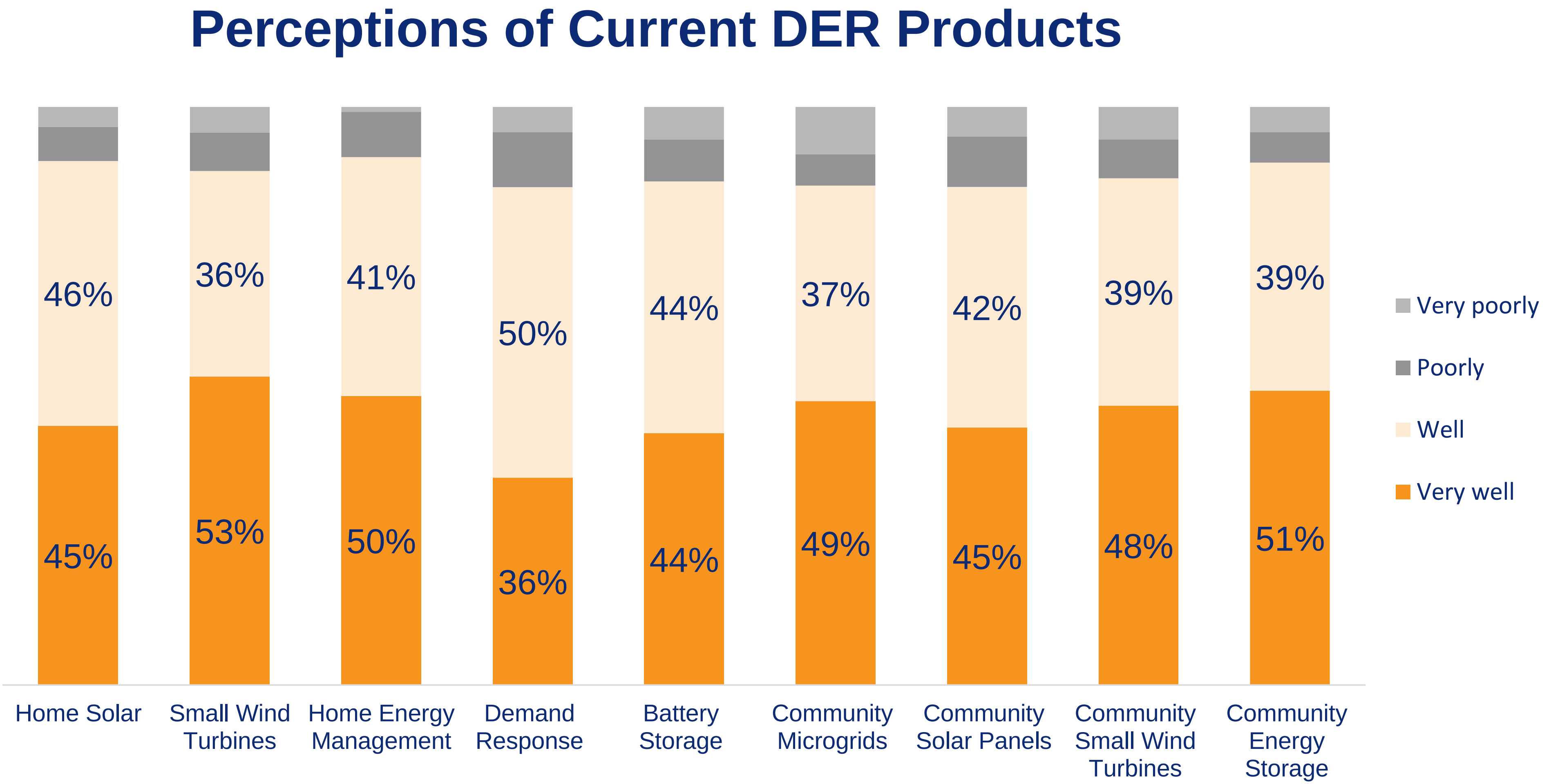
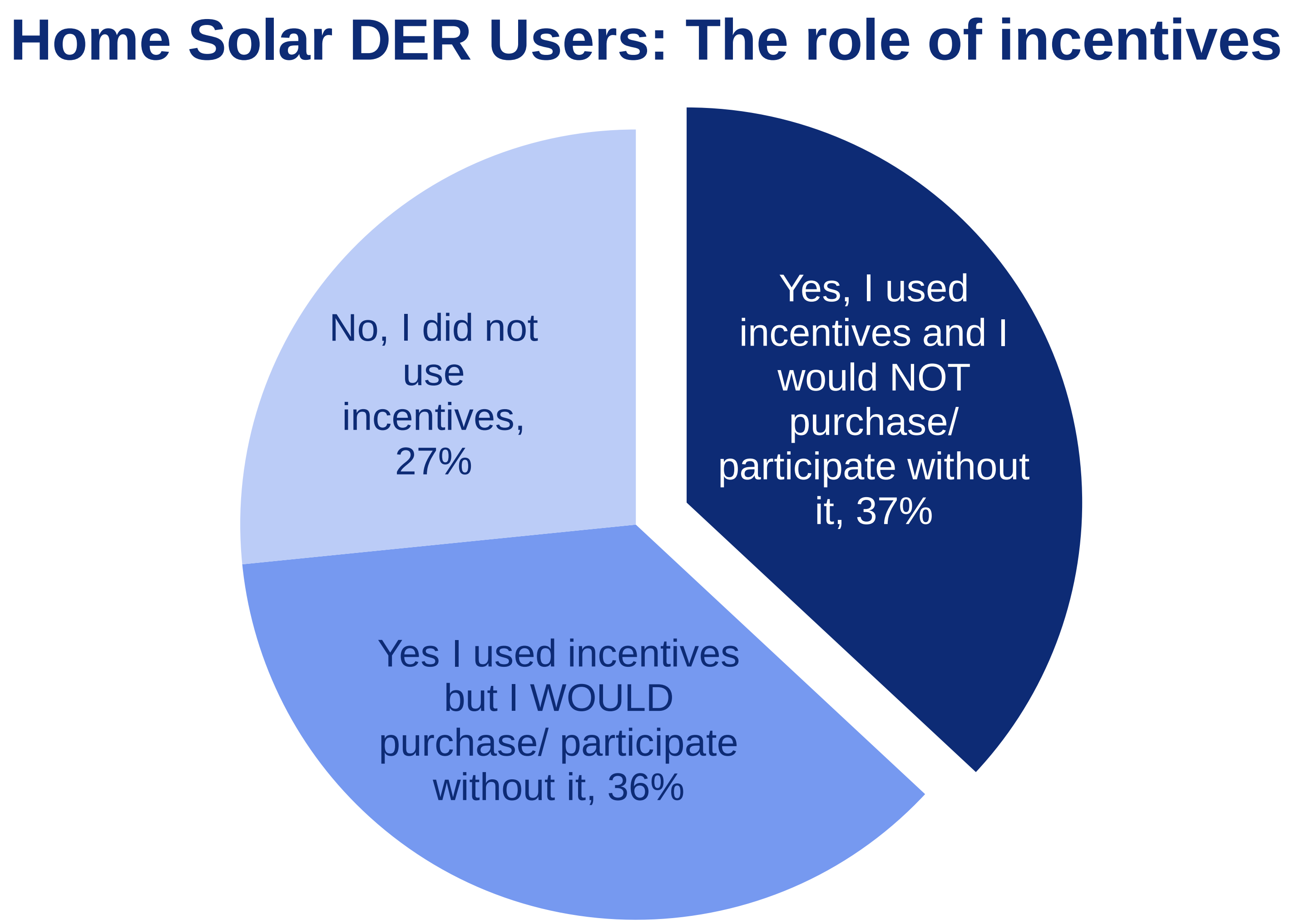
Opportunity to empower consumers as advocates.



Incentives are key



The same reasons that motivates consumers also drive them to leave DERs…cost.

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Setting expectations about costs both for installation, and long term will help to mitigate negative customer experiences with DERs.

Financing or pay-as-you-go programs can also help address consumer needs short and long term.

REASON FOR NO LONGER USING DERS (OPEN END)	
Expensive/high cost of material/installation/maintenance	18%
Lack of interest	13%
Already using it/considering it	11%
Can't install it/not available where I live/program was cancelled/they stopped offering it	9%
Have chosen better options/alternatives	8%
Moved to another place/state	6%
Inconvenient/no advantage to using them	6%
Not familiar with them/need more information	4%
Not convinced it is a good money saver	3%
They malfunction/don't work well	3%
Poor durability/quality/easily damaged	1%
Don't like them/had them removed	1%
No time/hassle of installing it/too much work require	1%
Other	4%
Nothing	4%
Don't know/NA	11%

The environment plays a slightly larger role for Canadians whereas Americans are more price sensitive

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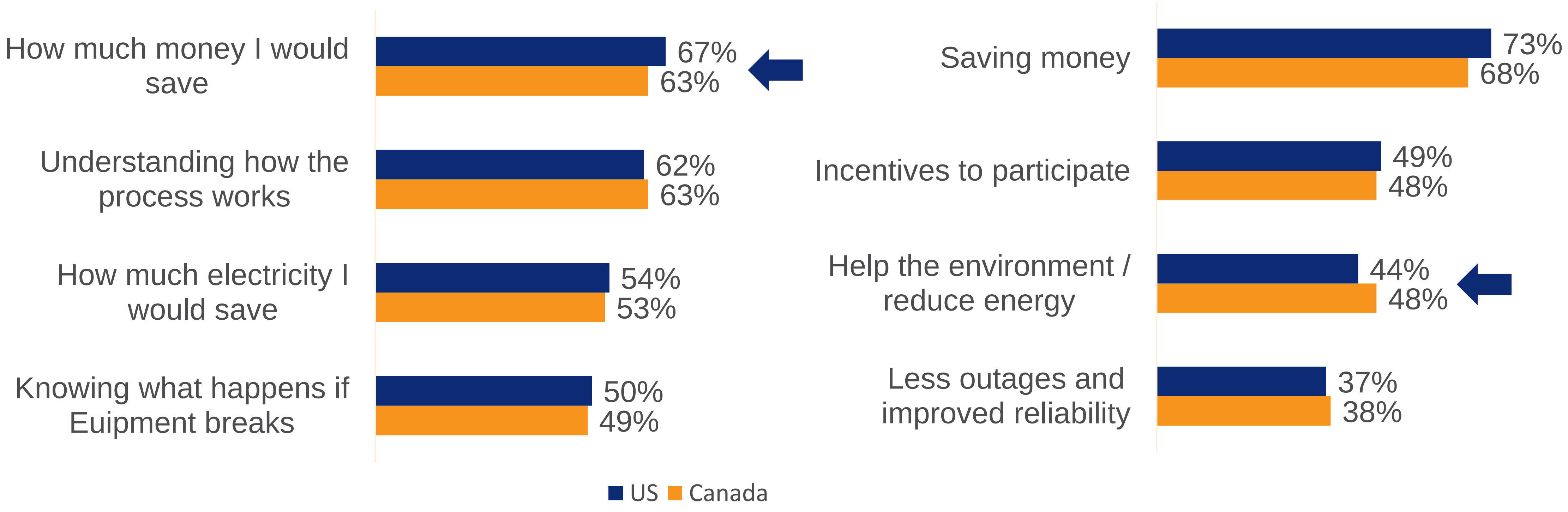
Top Information Needs

Top Expected Benefits



Recap of Key Findings

1. Awareness building is best accomplished by filling-in information gaps along the purchase journey
2. The two most addressable target segments perceive different benefits and have different information needs
3. The electricity provider is a linchpin of DER adoption
4. Properly setting expectations upfront, especially around cost, will help mitigate DER turnover
5. Engagement in US and Canada is more similar than not, but with nuances in the environment and price

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