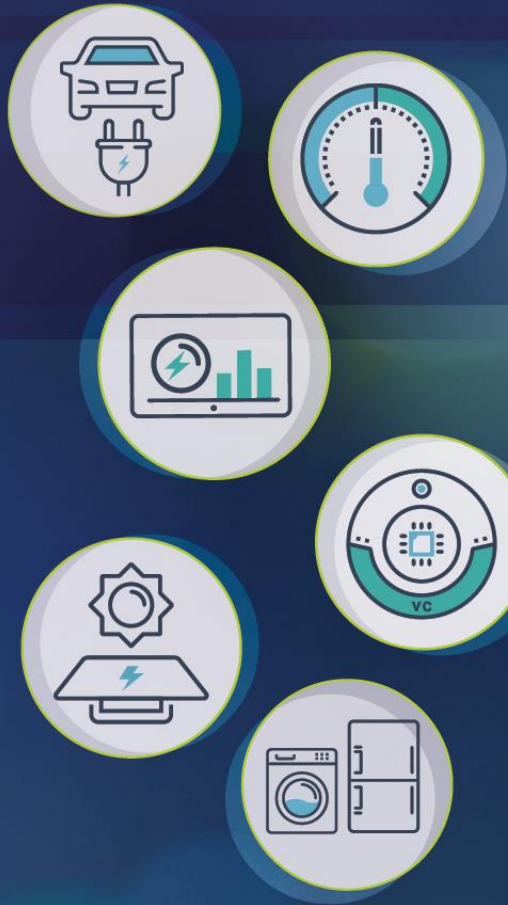


Consumers and the Future of Energy



SMART
ENERGY
CONSUMER
COLLABORATIVE



2020 State of the Consumer Report

9:45 a.m. – 10:30 a.m.

2020 State of the Consumer Report



Patty Durand

President & CEO
Smart Energy Consumer Collaborative



Norma McCarthy

Customer Engagement Specialist
NB Power Corporation

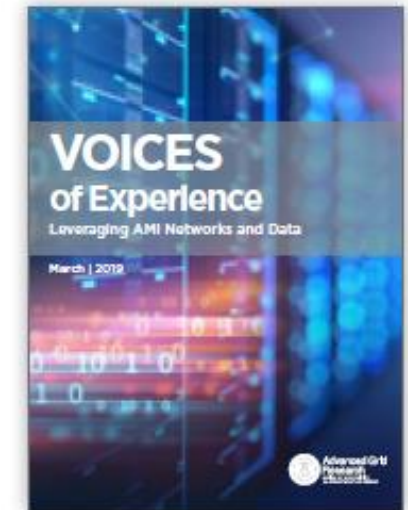
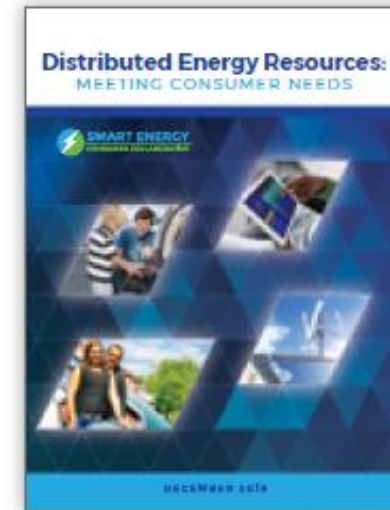
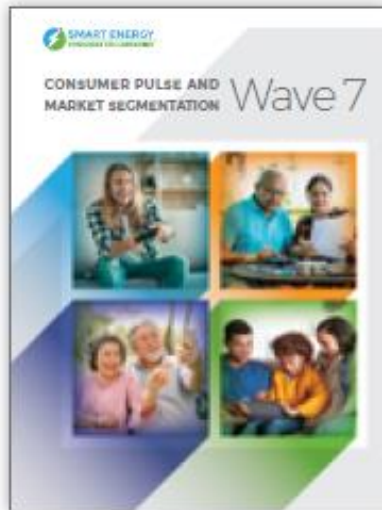
2020 State of the Consumer Report



GOAL: Synthesize the findings from 2019 studies, case studies on consumer programs in North America, and the consumer-focused parts of a U.S. Department of Energy report on how electricity providers are leveraging smart meters.

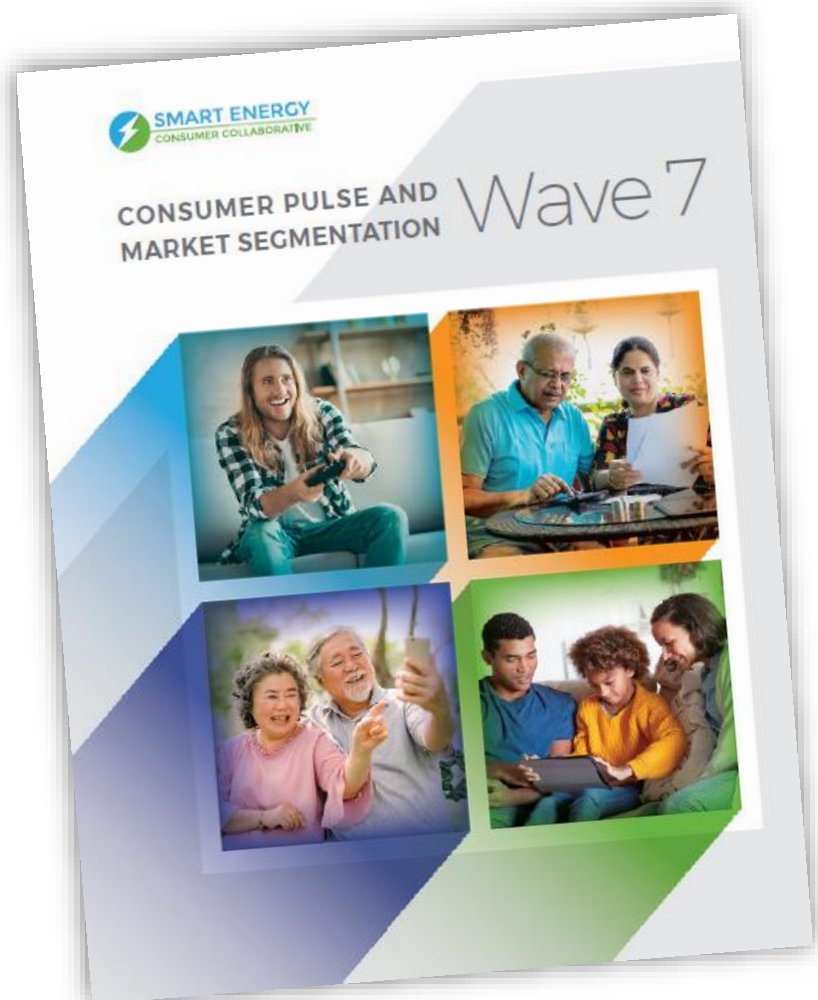
What Did We Research in 2019?

SECC worked with its members to craft a research agenda for 2019, and the “2020 State of the Consumer” report summarizes the 2019 findings.



Consumer Pulse and Market Segmentation

– Wave 7



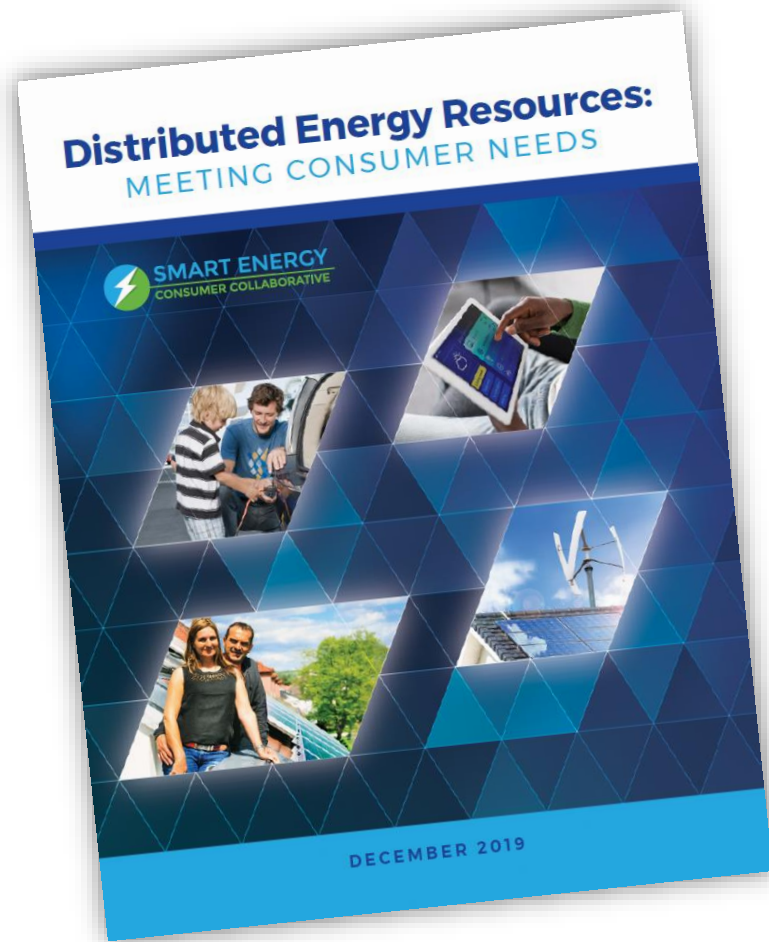
GOAL: To update SECC's longitudinal study of consumer knowledge, attitudes and behaviors around energy and segmentation framework to keep pace with energy industry and societal changes.

Rate Design: What Do Consumers Want and Need?



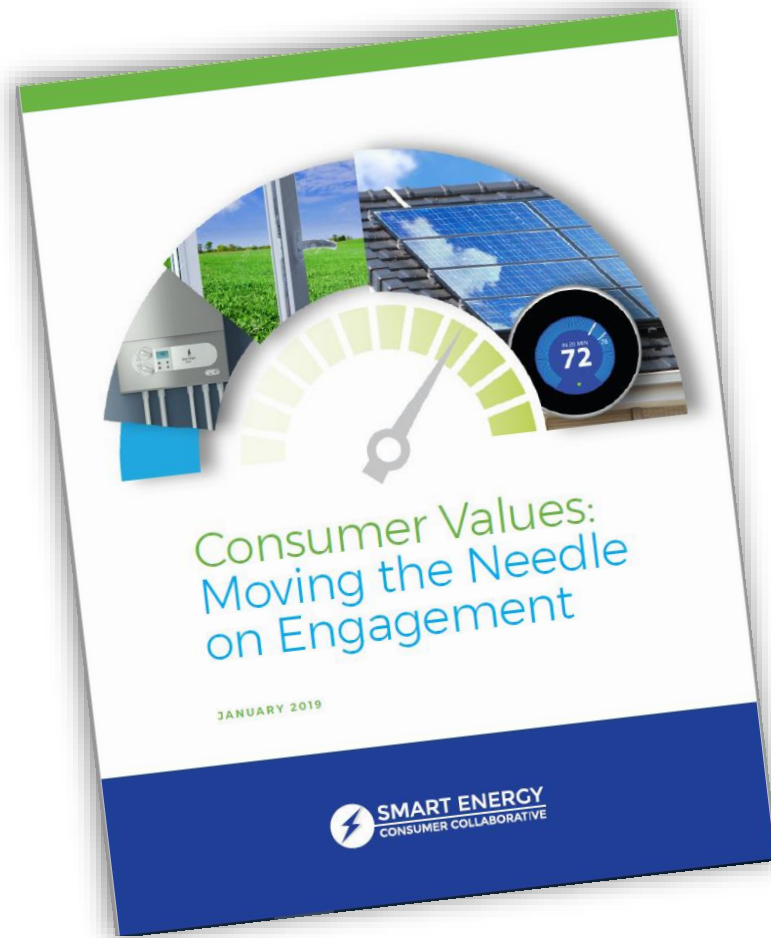
GOAL: To better understand the preferences of residential consumers and SMBs on a wide range of alternative rates & related programs (i.e., TOU, real-time pricing, peak time rebates).

Distributed Energy Resources: Meeting Consumer Needs



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

Consumer Values: Moving the Needle on Engagement



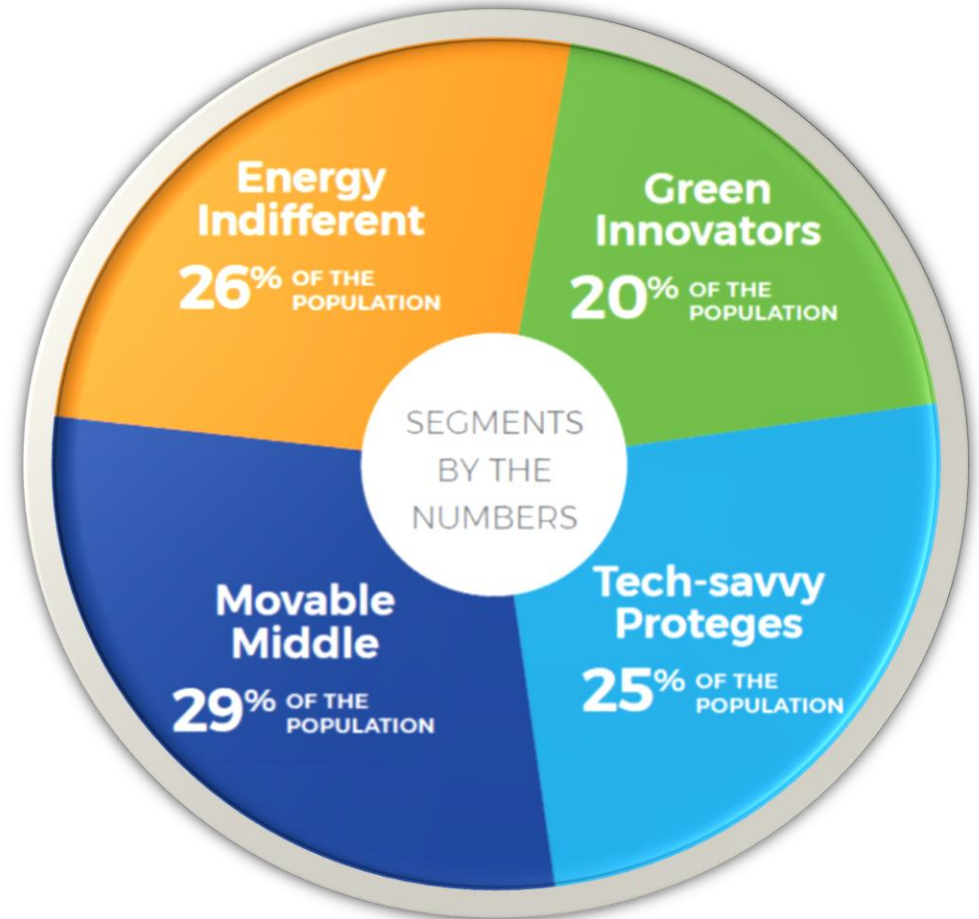
GOAL: To help industry stakeholders understand “selectively engaged” energy consumers more deeply and, by so doing, meet their needs more consistently and effectively.

Theme One

Consumers are more ready than ever to engage in energy.

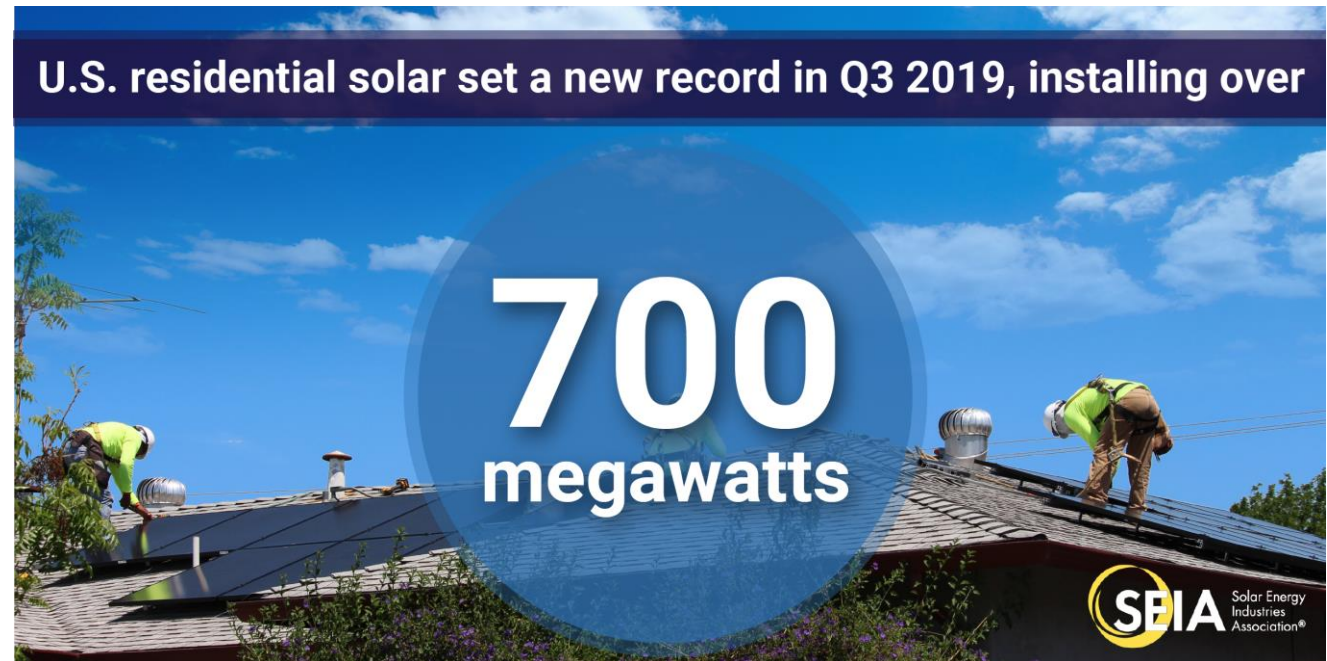
How Is Sustainability Valued Today?

- Green Innovators and Tech-savvy Proteges have characteristics similar to old Green Champions segment.
- While Green Champions comprised 30% of consumers, the two new segments represent 45%.
- Tech-savvy Proteges score right behind Green Innovators in metrics like the importance of environmental benefits.













How Fast Is Fast?

- U.S. installed 2.6 GW of solar PV capacity in Q3 2019 to reach 71.3 GW of total capacity.
- New rooftop solar installed every 12 minutes!
- Residential solar best quarter in history in Q3.
- Utility-scale solar pipeline now stands at a record 45.5 GW.



Is There Interest in Time-Varying Rates?

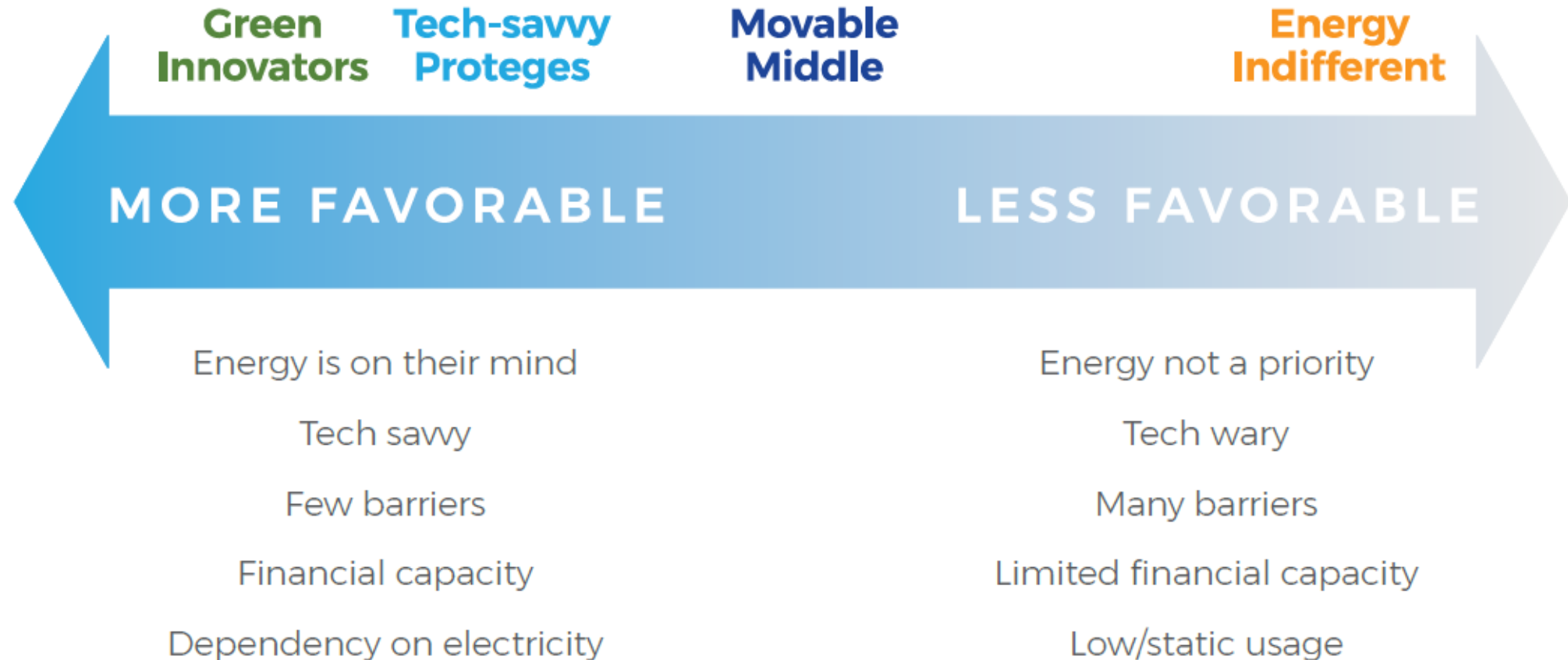
- The majority of consumers prefer a time-varying rate when given the option in a conjoint analysis.
- Green Innovators and Tech-savvy Protégés exhibited the highest levels of preference at 68% and 62%.
- Movable Middle and Energy Indifferent have higher-than-expected interest.

Relative Rate Preference	Green Innovators (n=278)	Tech-savvy Protéges (n=392)	Movable Middle (n=262)	Energy Indifferent (n= 206)	Total (n=1138)
Alternative Rate	68% 	62% 	46% 	45% 	57% 
Standard Rate	32% 	38% 	54% 	55% 	43% 

Theme Two

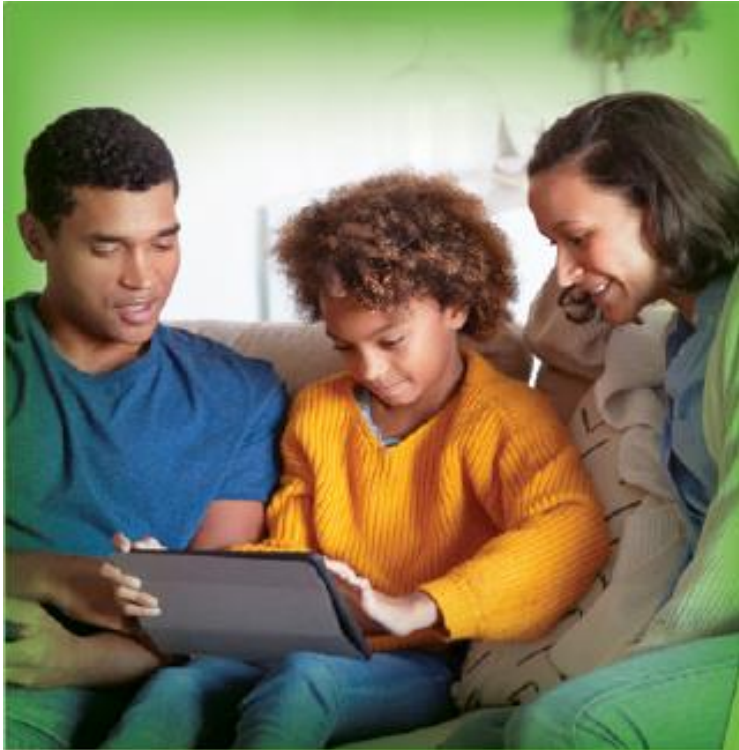
Segmentation remains essential in a digital world.

New Consumer Segmentation Framework



The Green Innovators

Energy Perspective: Strongly value sustainability and lead the way in saving energy with technology.



- **Energy efficiency is very important to them.**
- **Top two reasons to be energy-efficient:**
 - **Money I can save**
 - **Environmental benefits**
- **Own smart devices**
 - **Smart thermostat (21%)**
 - **Smart speaker (30%)**

The Tech-savvy Proteges

Energy Perspective: Receptive to changing energy habits and using technology to do so, but need to be shown how to do it without sacrificing comfort.



- **Energy efficiency is important, but not at the expense of their technology or comfort.**
- **Have the highest average energy bills.**
- **Most likely to frequently be in contact with their energy provider.**

The Movable Middle

Energy Perspective: Not complete rejectors of saving energy and face few barriers; use technology, but not dependent upon it.



- **Not tuned-out but not highly engaged – they’re the center of the bell-shaped curve in almost every way.**
- **Values and beliefs are in line with national averages.**
- **Motivated by saving money and have slightly below average energy bills.**

The Energy Indifferent

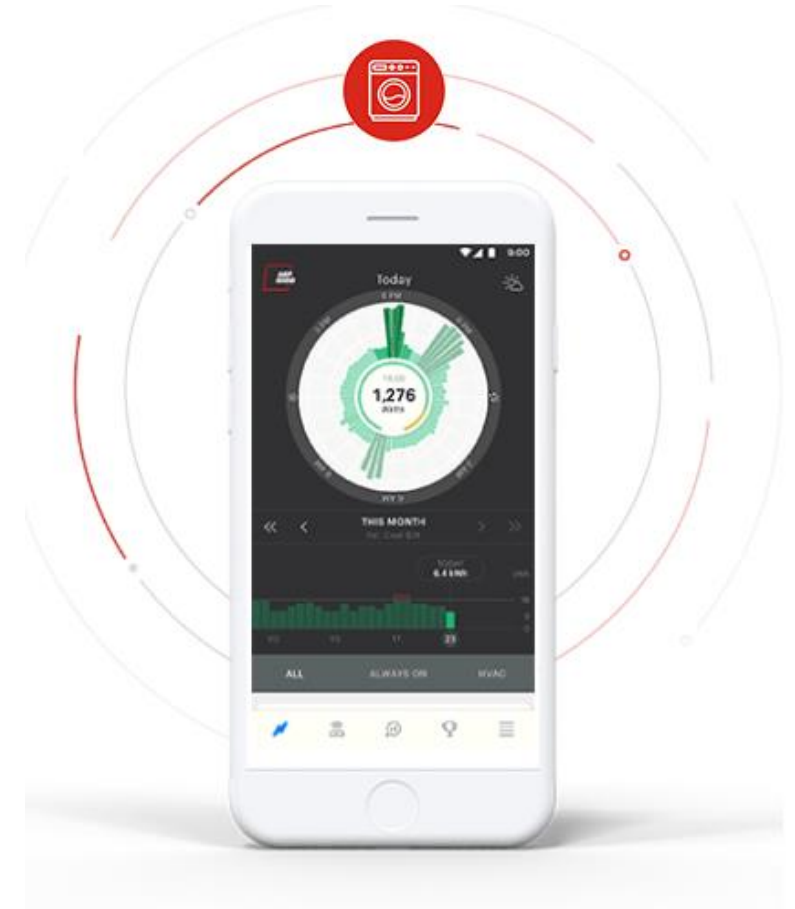
Energy Perspective: Rejectors of environmental concern and saving energy; keep their energy needs simple and want to be left alone.



- **Traditionalists at heart.**
- **Lowest technology ownership rates.**
- **Half believe climate change concerns are overblown.**

Case Study: AEP Ohio & Smart Home

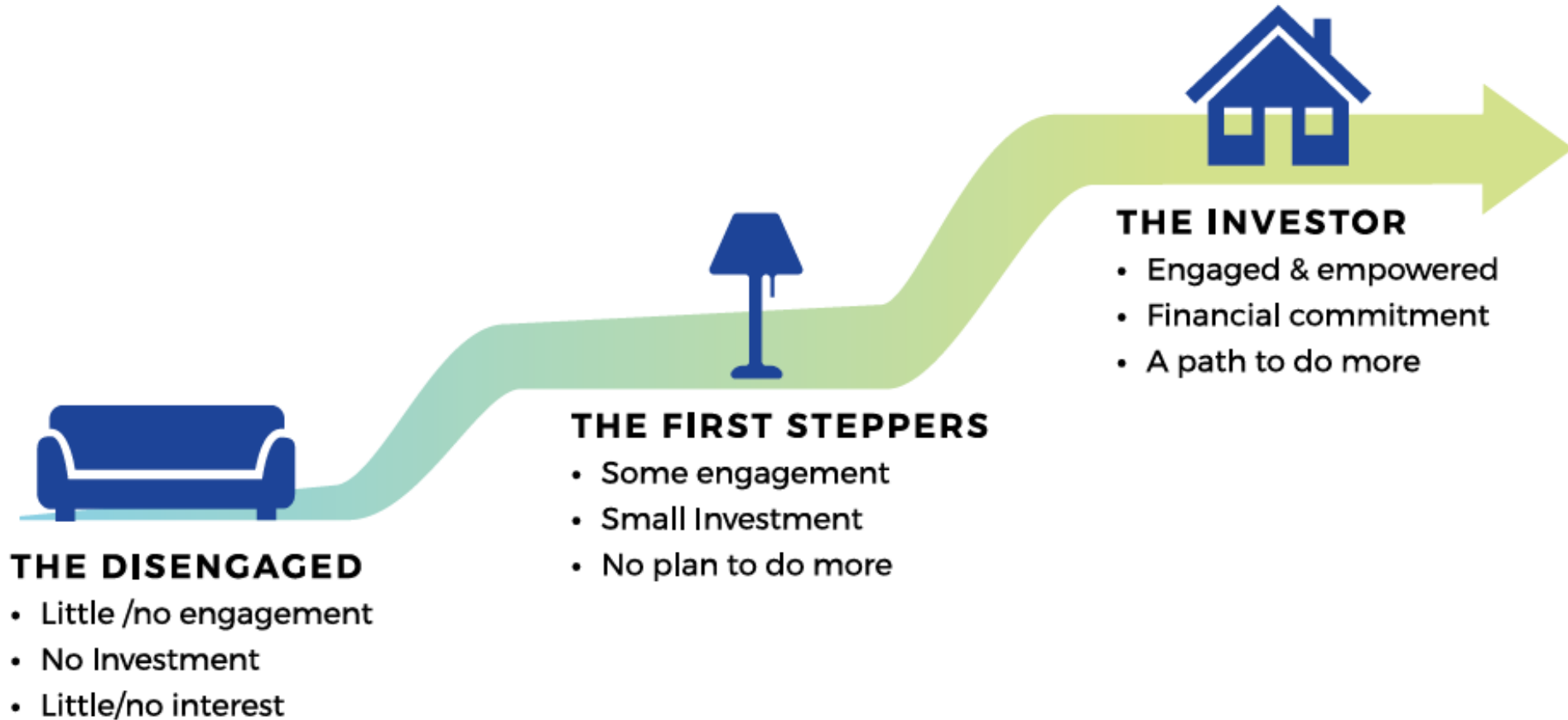
- With AMI rollout, AEP Ohio launched engagement programs.
- Consumers have detailed info on their usage and control of smart home devices.
- High consumer interest ~100 MW in residential demand capacity reduction this year.



Theme Three

Energy engagement is fundamentally a journey for both society and individuals.

Moving Beyond Transactional Approach



Where Are We Going?

The era of transaction services is over and the age of the relationship journey is here.

- ❑ **Personalize and contextualize services** – requires listening and a willingness to get to know consumers “one-on-one”.
- ❑ **Help consumers meet *their* goals** first and foremost – developing a win-win opportunity starts here.
- ❑ **Empower consumers to control their journey** – as consumers move along, they will do it at their pace and on their path. Help them make smart choices.

Start Small and Help!

The Energy Engagement Journey



THE DISENGAGED

- Little /no engagement
- No Investment
- Little/no interest

1. **Customer satisfaction is fundamental.** The more satisfied a consumer is with their provider, the more likely they are to engage.
2. **Make energy-related actions easy and barrier-free.** Consider automatic enrollment, instant rebates/buy-downs and lighting kits.
3. **Open an additional communication channel.** Leverage any vehicle that can engage a consumer more often than a monthly bill and deliver personalized messages and offers this way.

Theme Four

Consumer expectations are shaping the future.

Digital Expectations Cross Generations

- Today's consumers want more options, more personalization and more innovation.
- For consumers of all generations and segments, technology is now a core component of daily life.
- Experiences with Netflix, Amazon, banks, Lyft and others impact expectations for electricity providers and energy technology generally.

amazon.com



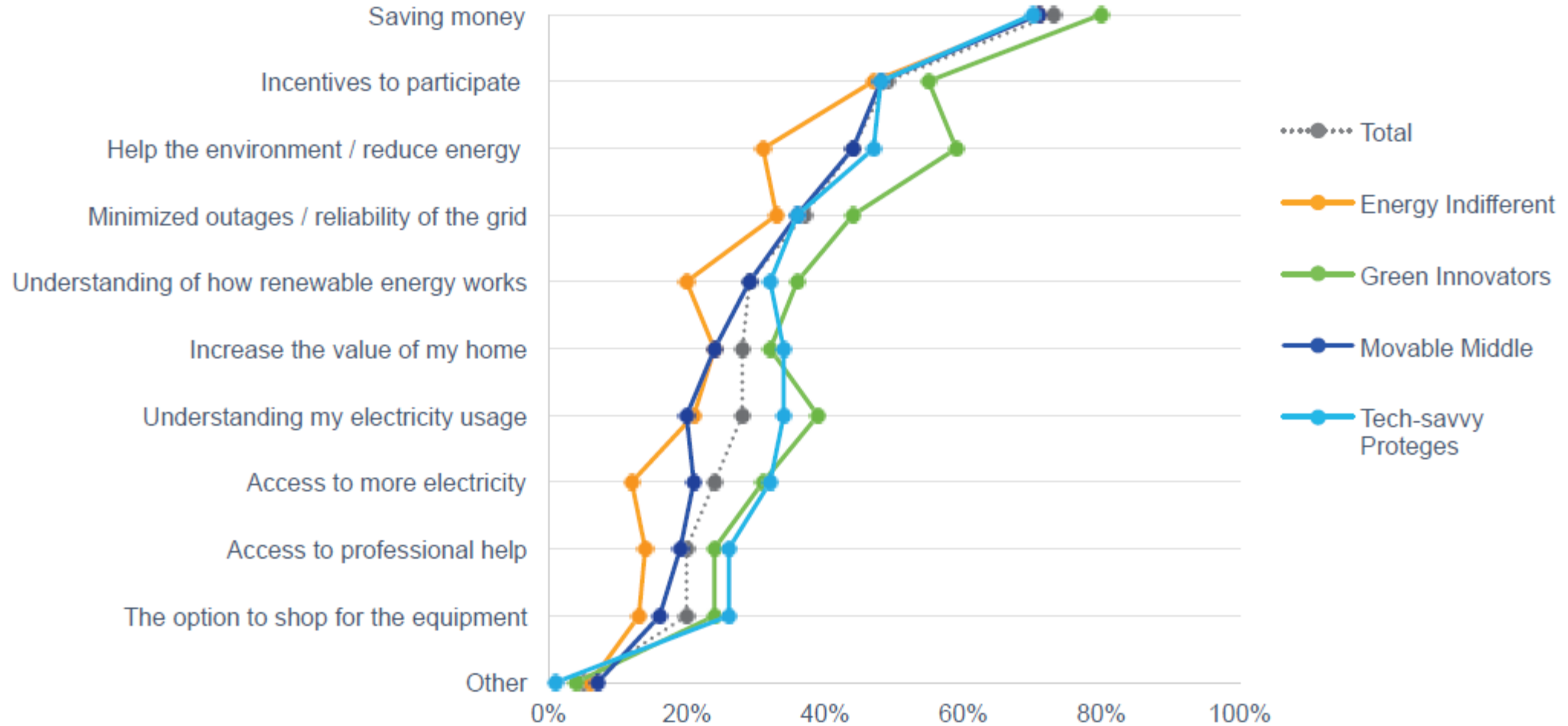
lyft



CHASE

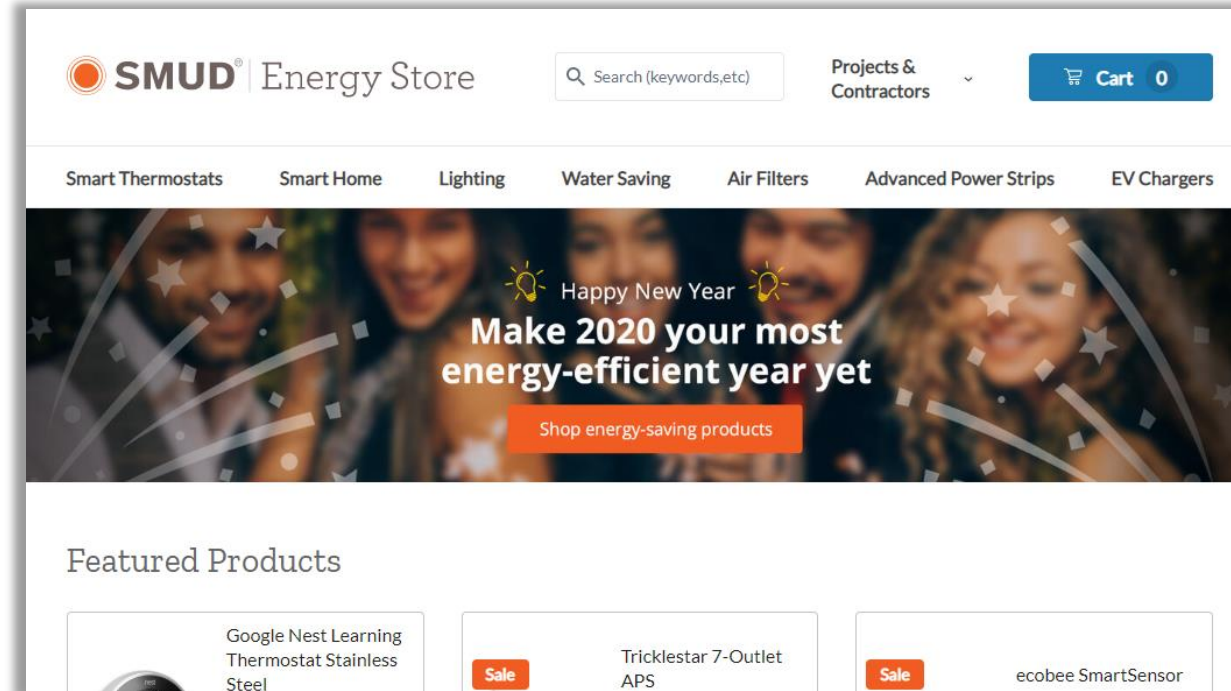


What Are Consumers' Expectations for DERs?



Case Study: SMUD Energy Store

- SMUD used segmentation, customer research and technology to launch successful e-commerce marketplace.
- Digital platform with energy-saving and smart home products, instant rebates and education.
- Through Sept. 2019, the site had about 500,000 visitors and a customer satisfaction rate of 91 percent.







































Theme Five

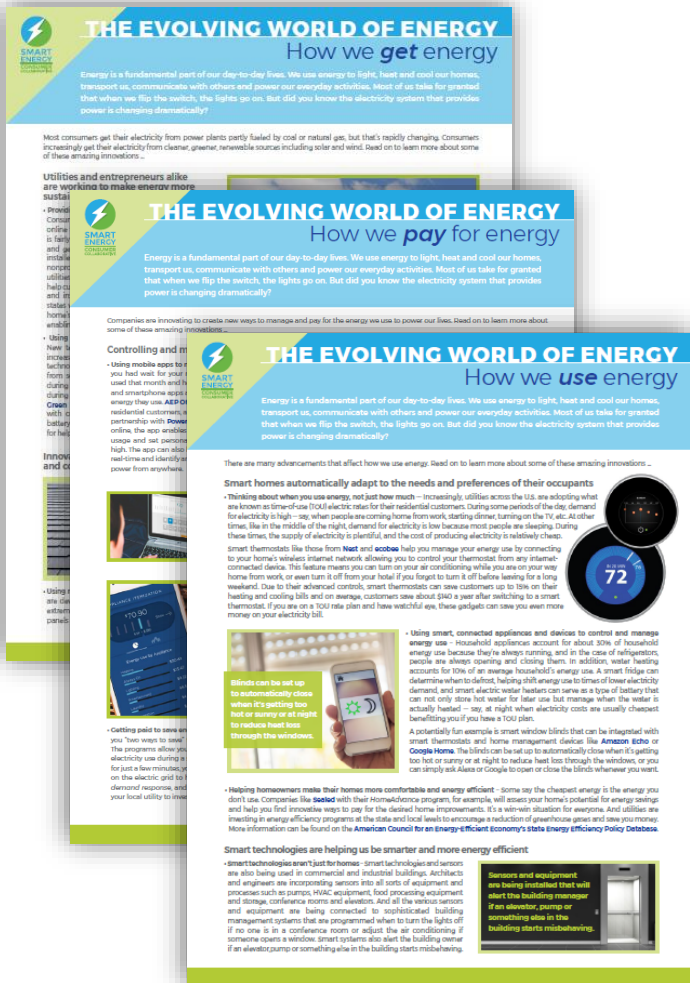
Education remains a clear, strategic opportunity to increase energy engagement.

Do Consumers Understand Energy? (No)

Residential Awareness of Rate Plans by Segment

Electric Rate Plan Type	Green Innovators (A) (n=278)	Tech-savvy Proteges (B) (n=392)	Movable Middle (C) (n=262)	Energy Indifferent (D) (n=206)
Flat	71% 	61% 	62% 	62% 
Time-of-Use	40% 	37% 	33% 	33% 
Tiered Progressive	20% 	20% 	20% 	20% 
Variable Peak Pricing	18% 	21% 	15% 	19% 
Demand Pricing	14% 	13% 	15% 	11% 
Real-Time Pricing	18%  D	14% 	15% 	9%  A
Tiered Regressive	7% 	8% 	9% 	4% 
Electric Vehicle Rate	9% 	5% 	4% 	4% 
None	13%  B C E	23%  A	25%  A	23%  A

SECC's Education Resources



THE EVOLVING WORLD OF ENERGY

How we get energy

Energy is a fundamental part of our day-to-day lives. We use energy to light, heat and cool our homes, transport us, communicate with others and power our everyday activities. Most of us take for granted that when we flip the switch, the lights go on. But did you know the electricity system that provides power is changing dramatically?

Most consumers get their electricity from power plants partly fueled by coal or natural gas, but that's rapidly changing. Consumers increasingly get their electricity from cleaner, greener, renewable sources including solar and wind. Read on to learn more about some of these exciting innovations.

THE EVOLVING WORLD OF ENERGY

How we pay for energy

Energy is a fundamental part of our day-to-day lives. We use energy to light, heat and cool our homes, transport us, communicate with others and power our everyday activities. Most of us take for granted that when we flip the switch, the lights go on. But did you know the electricity system that provides power is changing dramatically?

Companies are innovating to create new ways to manage and pay for the energy we use to power our lives. Read on to learn more about some of these exciting innovations.

THE EVOLVING WORLD OF ENERGY

How we use energy

Energy is a fundamental part of our day-to-day lives. We use energy to light, heat and cool our homes, transport us, communicate with others and power our everyday activities. Most of us take for granted that when we flip the switch, the lights go on. But did you know the electricity system that provides power is changing dramatically?

There are many advancements that affect how we use energy. Read on to learn more about some of these amazing innovations...

Smart homes automatically adapt to the needs and preferences of their occupants

Thinking about when you use energy, not just how much – increasingly, utilities across the U.S. are adopting what are known as time-of-use (TOU) electric rates for their residential customers. During some periods of the day, demand for electricity is high – say, when people are coming home from work, starting dinner, turning on the TV, etc. At other times, like in the middle of the night, demand for electricity is low because most people are sleeping. During these times, the supply of electricity is plentiful, and the cost of producing electricity is relatively cheap.

Smart thermostats like those from Nest and ecobee help you manage your energy use by connecting to your home's wireless internet network, allowing you to control your thermostat from any internet-connected device. This feature means you can turn on your air conditioning while you are on your way home from work, or even turn it off from your hotel if you forget to turn it off before leaving for a long weekend. Due to these advanced controls, smart thermostats can save customers up to 10% on their heating and cooling bills and, on average, customers save about \$140 a year after switching to a smart thermostat. If you are on a TOU rate plan and have a smart thermostat, these gadgets can save you even more money on your electricity bill.

Using smart, connected appliances and devices to control and manage energy use

Household appliances account for about 30% of household energy use because they're always running, and in the case of refrigerators, people are always opening and closing them. In addition, water heating accounts for 10% of an average household's energy use. A smart fridge can determine when to defrost, helping shift energy use to times of lower electricity demand, and smart electric water heaters can serve as a type of battery that can not only store hot water for later use but manage when the water is actually heated – say, at night when electricity costs are usually cheapest benefiting you if you have a TOU plan.

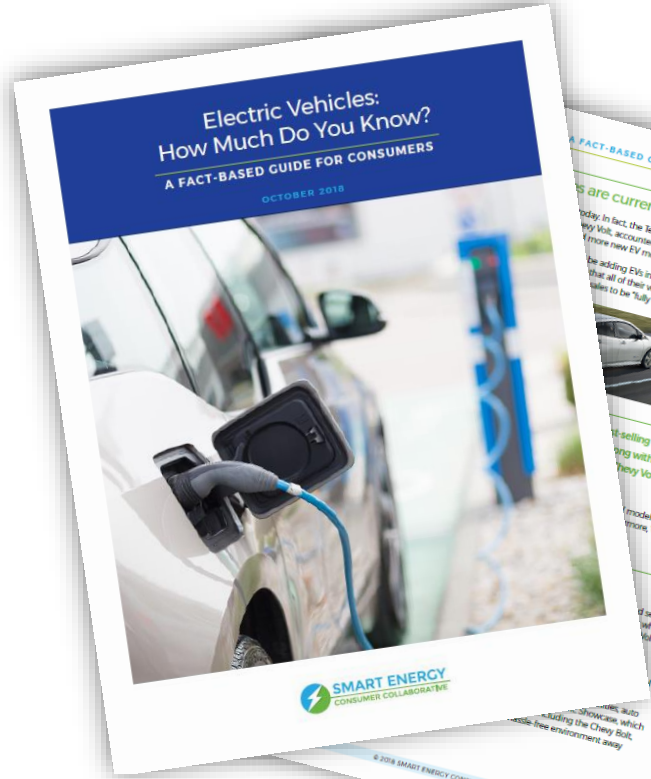
A potentially fun example is smart window blinds that can be integrated with smart thermostats and home management devices like Amazon Echo or Google Home. The blinds can be set to automatically close when it's getting too hot or sunny or at night to reduce heat loss through the window, or you can simply ask Alexa or Google to open or close the blinds whenever you want.

Helping homeowners make their homes more comfortable and energy efficient

Some say the cheapest energy is the energy you don't use. Companies like iSee with their HomeAdvisor program, for example, will assess your home's potential for energy savings and help you find innovative ways to pay for the desired home improvements. It's a win-win situation for everyone. And utilities are investing in energy efficiency programs at the state and local levels to encourage a reduction of greenhouse gases and save you money. More information can be found on the American Council for an Energy-Efficient Economy's State Energy Efficiency Policy Database.

Smart technologies are helping us be smarter and more energy efficient


Smart technologies aren't just for homes. Smart technology and sensors are also being used in commercial and industrial buildings. Architects and engineers are incorporating sensors into all sorts of equipment and processes such as pumps, HVAC equipment, food processing equipment, and storage, conference rooms and elevators. And all the various sensors and equipment are being connected to sophisticated building management systems that are programmed when to turn the lights off if no one is in a conference room or adjust the air conditioning if someone opens a window. Smart systems also alert the building owner if an elevator pump or something else in the building starts misbehaving.



Electric Vehicles: How Much Do You Know?

A FACT-BASED GUIDE FOR CONSUMERS

OCTOBER 2018



SMART ENERGY CONSUMER COLLABORATIVE



FACT-BASED GUIDE FOR CONSUMERS

Are EVs currently around today?

In fact, the Tesla Model S is the best-selling plug-in hybrid vehicle, accounting for over 50 percent of EV sales. More new EV models are introduced.

Adding EVs into their vehicle line-ups in that all of their vehicles will have an electric range of at least 100 miles by 2025.

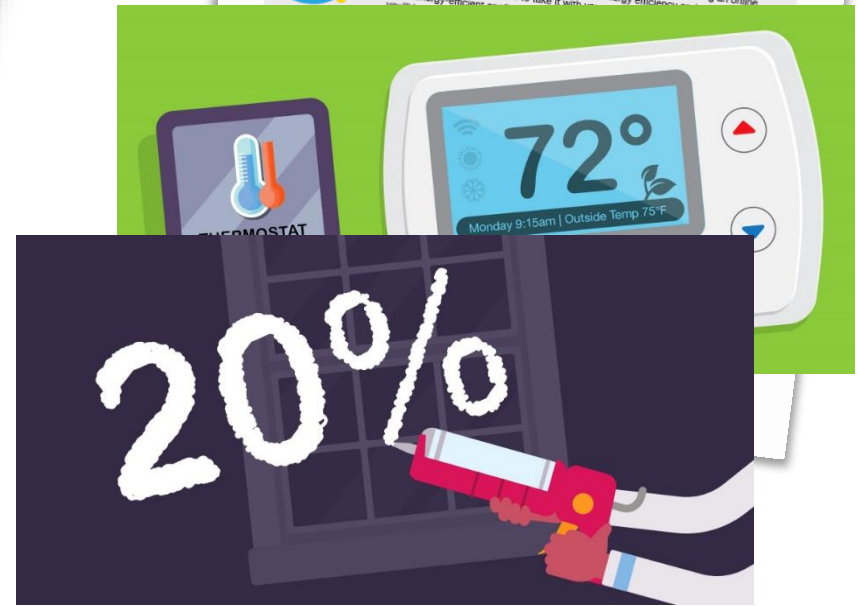


Accessible to You:

Tips to Save Energy While Renting

Brought to you by Professor Energy and the Smart Energy Consumer Collaborative

If you're renting an apartment or a house, you may feel that there aren't many things you can do to reduce your home's energy use and save money on your monthly bills. Despite possible limitations from your landlord or building manager, there's still quite a bit that you can do to cut back your energy use. These tips will help transform your home into an energy-efficient space without breaking the rules of your lease.



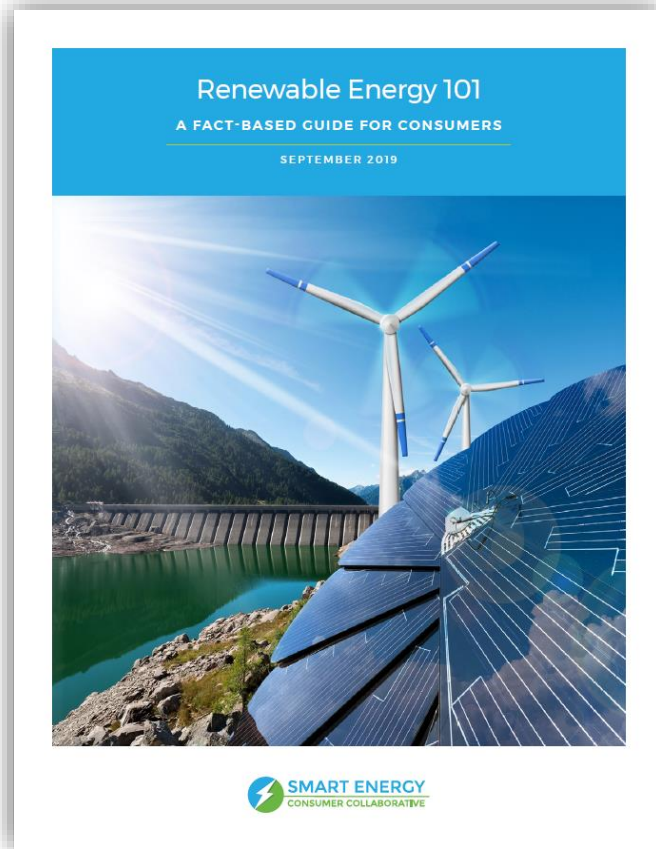
20%

SMART ENERGY CONSUMER COLLABORATIVE

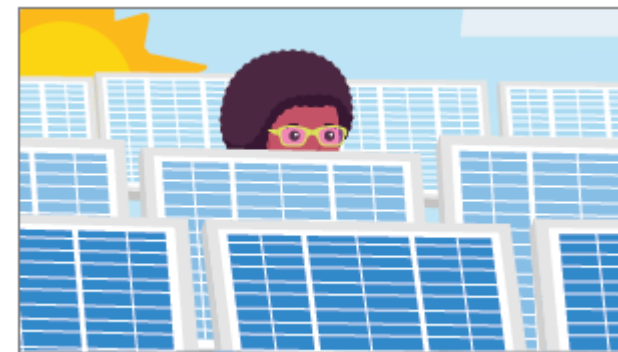
Consumers and the Future of Energy

New: Renewable Energy Toolkit

Guidebook



Video, Social Media Clips & Images



Webinar: Community-Based Education



- SECC's Feb. 27 webinar will focus on community-based strategies for outreach and education.
- Presentation will cover approaches to grassroots education and the results of a study on these efforts.
- Register now at smartenergycc.org.



What Have Learned About Consumers?

1. Consumers are more ready than ever to engage.
2. Segmentation remains essential.
3. Energy engagement is a journey.
4. Consumer expectations are shaping the future.
5. Education remains a strategic opportunity to increase energy engagement.



Shediac, N.B. Smart Energy Community Project



the power of possibility
débordant d'énergie



For 100 years, NB Power has been a part of the fabric of New Brunswick, Canada.

The provincial electric utility also has one of the most diverse generation fleets in North America, with 40% renewable energy and 74% non-emitting generation, as of
March 31, 2019.

Over 2,600 energy experts provide reliable, safe and sustainable energy for over 400,000 direct and indirect customers every day.



A photograph of two women walking a black dog on a sidewalk in front of a house with solar panels. The house has a blue roof and white siding. The scene is outdoors with trees and a blue street lamp visible.

**The future of energy is
changing.**

**Customers expect more
from their utility**



Énergie NB Power

the power of possibility
débordant d'énergie

They want more
choice, control and
convenience



the power of possibility
débordant d'énergie

The Town of Shediac is helping us shape that future in New Brunswick.

The town is part of a four-year federally funded research project to understand how New Brunswickers can use energy in the future.



the power of possibility
débordant d'énergie



A family of four is walking on a grassy hill. The father is carrying a baby in a blue carrier, the mother is carrying a yellow shopping bag, and a young boy is walking to the right. In the background, there is a white lighthouse with a red roof. The sky is overcast.

Shediac had an existing vision to be a leading smart energy community in New Brunswick



Énergie NB Power

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débordant d'énergie

It's an opportunity to
build
off of some unique
assets and forward-
thinking attitudes in
the community



What does the Shediac Smart Energy
Community Project involve?

*Federal and Municipal building
retrofits*

Residential Energy Management

*New Brunswick's First Community
Solar Farm*



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Partnerships and investments
in new energy solutions
build a stronger and more
resilient power grid



The New Brunswick flag, featuring a blue canton with a yellow five-pointed star, a white field, and a red field, is flying on a flagpole against a blue sky with light clouds.

**And help build capacity in
communities to
be a part of a low-carbon and
sustainable energy future for
New Brunswick**



Énergie NB Power

the power of possibility
débordant d'énergie

A young boy in green shorts is running through a water play structure consisting of several large, colorful arches (blue, grey, and green) over a wet, reflective surface. The scene is set outdoors at dusk or dawn, with a man pushing a stroller and other people visible in the background. The text "Thank you" is overlaid in white on the image.

Thank you