WHITE PAPER • MAY 2021

Advancing the Modern Energy Consumer

REAL-WORLD EXAMPLES FOR SECC'S 2021 STATE OF THE CONSUMER THEMES

SMART ENERGY CONSUMER COLLABORATIVE

Introduction

The Smart Energy Consumer Collaborative (SECC) is dedicated to helping smart energy stakeholders — including consumer advocates, electricity providers, technology companies and regulatory agencies — better understand residential and small business energy consumers across the United States and Canada. This involves exploring consumers' views related to grid modernization and their energy consumption and leveraging these insights to better serve consumers.

To clarify consumer motivations, expectations and behaviors, SECC conducted three surveys in 2020[1] — including a multimedia qualitative study — on beneficial electrification, smart home technologies, lower-income consumers and other important topics. With the *2021 State of the Consumer* report[2], published in March 2021, SECC synthesized the findings from these studies — along with a white paper that examines industry views related to beneficial electrification, case studies of low-income energy programs and parts of a U.S. Department of Energy report[3] on Advanced Metering Infrastructure (AMI) — into six key themes.

THEME ONE	**Consumers are making the connection between smart energy and slowing climate change.**
THEME TWO	**Consumers across all segments are interested in smart energy-enabled products.**
THEME THREE	**Lower-income consumers are keenly interested in smart energy and the environment.**
THEME FOUR	**Consumers need more education on how to assess a program or technology.**
THEME FIVE	**Consumers look to their energy providers for support as they deal with the impact of COVID-19.**
THEME SIX	**Consumer education and engagement are essential to realizing the promise of beneficial electrification and advanced technologies such as AMI.**

This white paper explores those six themes and how they help stakeholders deliver the value of smart energy programs, products and services into the hands of consumers by illustrating impactful, real-world examples. Examples are sourced primarily through SECC's case studies and the Best Practices Awards program[4] and highlight electricity providers from across the United States and Canada, including investor-owned utilities, municipal utilities and utility cooperatives.

1 Access past SECC's research reports at www.smartenergycc.org/research/.

2 Access SECC's *2021 State of the Consumer* report at https://smartenergycc.org/2021-state-of-the-consumer-report/.

3 The Department of Energy's report can be found at https://www.smartgrid.gov/documents/voe_series/voe-ami-in-review-informing-the-conversation.

4 Learn more about SECC's award program at https://smartenergycc.org/2021-best-practices-awards-results/.

THEME ONE:

Consumers are making the connection between smart energy and slowing climate change.

Recent shifts to cleaner energy generation are resonating with many consumers. As the *2021 State of the Consumer* report notes, consumers in all segments identify with the statement "Electricity is becoming cleaner and more renewable every day." Paired with efforts across the country to educate consumers regarding what they can do to help the environment through their own actions, smart energy technologies are already playing a key role for a cleaner energy future.

Ameren Illinois

STUDENT ENERGY EDUCATION KIT

- Encourages fifth and sixth grade students to become Energy Ambassadors.
- Students tasked with hands-on activities to track water and energy consumption before and after installation of energy-saving equipment.
- More than doubled the reach of energy efficiency message beyond the 7,500 annual program participants to an estimated 19,425 consumers.

Many electricity providers have had success engaging some of their future consumers on the importance of energy efficiency through education and energy toolkits. **Ameren Illinois'** Student Energy Education Kit encourages fifth and sixth grade students to become Energy Ambassadors in their homes and communities. Empowered with an energy kit and educational videos (or live training when possible), participants were tasked with hands-on activities to track water and energy consumption before and after installation of energy-saving equipment, such as LED lightbulbs. This program more than doubled the reach of its energy efficiency message beyond the 7,500 annual program participants to an estimated 19,425 consumers in their communities.

As consumers transitioned to remote work and school in 2020, the energy usage typically seen in commercial buildings, schools and offices shifted to consumers' homes. To assist homeowners and help to balance the grid, **Con Edison**[5] paired smart meters with Logical Buildings' mobile app, SmartKit AI, to encourage participation in energy-saving activities during times of high demand in exchange for rewards. Consumers enroll via Con Edison's consumer portal and provide permission to share their AMI data with Logical Buildings. The SmartKit AI app sends consumers a push notification when Con Edison triggers an energy conservation event, and consumers can use the app's energy concierge guidance to take actions to reduce energy consumption to participate in the event and earn rewards. Actions included adjusting thermostats, shutting off lights or avoiding running the dishwasher. By pairing the AMI data with the SmartKit AI tools, the consumer and utility are both able to get real-time insights into how actions at home can help reduce consumption during peak energy times while financially rewarding participants. The program saw averages of 2.5 kW reduced per event — and nearly $300 earned per participant through the demand response programs — with a 200% performance factor.

Con Edison

INVESTMENTS IN SMART GRID TECHNOLOGIES

- Paired smart meters with Logical Buildings' mobile app, SmartKit AI, to encourage participation in energy efficiency activities in exchange for rewards.
- Real-time insights into how actions at home can help reduce consumption during peak energy times.
- Averages of 2.5 kW reduced per event — and nearly $300 earned total — per participant.

5 Con Edison received one of SECC's Best Practices Awards in April 2021 for their investments in smart grid technologies. Learn more in the *2021 Best Practices Guide* at www.smartenergycc.org/2021-best-practices-guide/.

Austin Energy

AUSTIN DRIVES ELECTRIC DEALERSHIP PROGRAM

- One-stop-shop website includes a listing of local EV inventory for sale, federal, state and local incentives, EV electric rates and a charging station map, as well as EV facts and FAQs.
- Spans automakers and compiles a range of resources in one place for consumers in the Austin area.
- Over 43,000 users have visited the website, and nearly 6,000 new EVs have been sold since the launch.

Consumers are increasingly developing an understanding of beneficial electrification and its environmental impacts in the transportation sector. According to a recent *Consumer Reports* study[6], 72% of consumers agreed or strongly agreed that widespread electric vehicle (EV) use will help reduce air or climate pollution. This report also identified some of the barriers keeping consumers from adopting electric vehicles. To help overcome these obstacles, some utilities have built resources to support consumers in their analysis of EV options. **Austin Energy**[7] has built a robust consumer guide, which spans automakers and compiles a range of resources in one place for their local consumers. The one-stop-shop website includes a listing of local EV inventory for sale, federal, state and local incentives, EV electric rates and a charging station map, as well as EV facts and FAQs. The site has seen over 43,000 users, and nearly 6,000 new EVs have been sold in Austin Energy's service territory since the launch of the initiative.

Not only are consumers connecting smart energy and slowing climate change, but organizations across the country are working to educate and empower consumers to take action to positively impact the environment. This multifaceted approach will be key as consumers are demanding a higher standard from their energy provider of the future.

6 Consumer Reports' *"Electric Vehicles and Fuel Economy: A Nationally Representative Multi-Mode Survey"* can be accessed at https://article.images.consumerreports.org/prod/content/dam/surveys/Consumer_Reports_Electric_Vehicles_Fuel_Economy_National_August_2020.

7 Austin Energy received one of SECC's Best Practices Awards in April 2021 for their Austin Drives Electric Dealership Program. Learn more in the *2021 Best Practices Guide* at www.smartenergycc.org/2021-best-practices-guide/.

THEME TWO:

Consumers across all segments are interested in smart energy-enabled products.

The growth in renewable projects, advancements in technology and electrification solutions are fueling interest in smart energy-enabled products across all consumer segments. Now, more than ever, electricity providers have a responsibility to produce and deliver energy to all of their customers in a manner that is reliable, affordable and increasingly clean.

SECC recently surveyed consumers[8] to identify differences between lower-income White, Black and People of Color households around energy-related interests, concerns and behaviors. The results found that People of Color have a strong interest in smart energy technology, significantly stronger than White people. However, upfront costs and lack of information are barriers faced more often by People of Color.

Not surprisingly, interest is high in saving money on energy bills across all consumer segments, and smart energy products have the power to do that.

Duke Energy conducted a smart home pilot[9] project in 33 homes located in Charlotte's North End Smart District, a diverse, up-and-coming center for economic activity and job growth that is made up of eight neighborhoods. The objectives of the one-year pilot were to determine what devices participants used, ease of use, customer satisfaction, ability to create skills using Alexa to drive energy efficiency behavior through voice recognition, and use of the Duke Energy-branded app.

Each household was outfitted with an Amazon Echo Dot, featuring Alexa Voice Command, and various smart devices, including a thermostat, smoke detector, lightbulbs and plugs. The one-year kickstart program tested how the devices affect energy use in each household. With the new smart technology, consumers were able to save on the cost of electricity without even thinking about it. Those who saw the greatest energy savings came from residents who adjusted their thermostats while they were away and used Alexa routines like "goodbye" and "daily schedules." In addition, those who were on a tight budget were made more aware of what their bill would be the following month and could plan ahead. Participants learned how they could take steps to reduce costs, such as lowering their thermostats when they were away from home.

Duke Energy

SMART HOME PILOT

- Includes 33 homes to determine what devices participants used, customer satisfaction, ability to create energy efficiency skills using Alexa and use of the Duke Energy-branded app.
- Tested how the devices affect energy use in each household.
- Participants learned how they could take steps to reduce costs.

8 Access SECC's *Racial Disparities Among Lower-Income Energy Consumers* paper at https://smartenergycc.org/racial-disparities-among-lower-income-energy-consumers-white-paper/.

9 Learn more about Duke's smart home pilot project at https://illumination.duke-energy.com/articles/how-technology-can-ease-the-energy-burden-for-people-in-need.

National Grid

WELCOME HOME CAMPAIGN

- Provided qualified, low-income residential consumers with a free Google Nest Thermostat E.
- Approximately 5,000 targeted consumers were notified of the opportunity to increase savings.
- Saved 117,679 kWh or $12,450 in annual avoided energy costs.

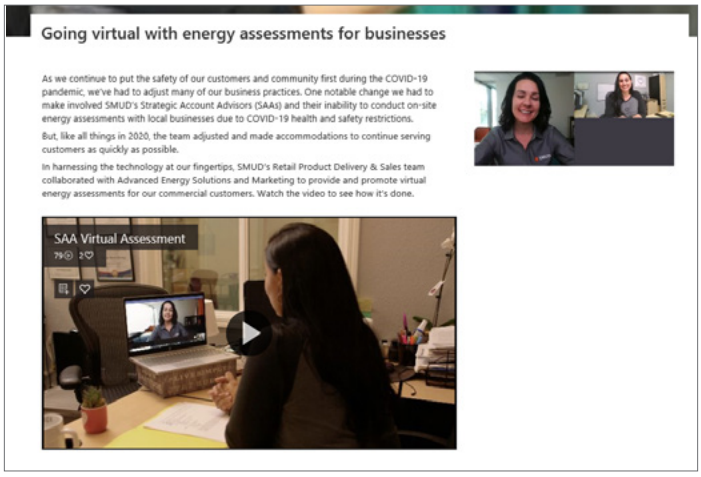
National Grid created a campaign titled "Welcome Home" to reduce energy usage and increase savings by providing qualified, low-income residential consumers with a free Google Nest Thermostat E when they moved into a new home. They worked with Fannie Mae to determine which consumers qualified in their database. Together, these companies determined who to market the energy assistance program to, resulting in approximately 5,000 targeted consumers who were notified of the opportunity to increase savings. Ultimately, National Grid incentivized, shipped and delivered over 500 Nest thermostats to low-income consumers, who on average could save between $131 and $141 each year just by upgrading their current thermostat. In the end, the campaign saved 117,679 kWh or $12,450 in annual avoided energy costs or 117,491 annual avoided CO2 emissions.

Providing energy savings opportunities to small and medium businesses (SMBs), especially since this segment experienced considerable economic hardship due to the COVID-19 pandemic, has the chance to make a significant impact on their ability to survive financially. **Sacramento Municipal Utility District (SMUD)**, a community-owned electric utility that serves the greater Sacramento, California area, did just that through their Virtual Energy Assessment (VEA) platform. These virtual assessments provided the opportunity to discover energy-saving opportunities as well as behavioral change recommendations. Not only did these assessments provide a safe environment for energy efficiency upgrades, but they allowed these businesses to see the benefits of interval data and identify problem areas. SMUD has been able to perform several VEAs a week with an eye on continually increasing that number as the interest grows.

Sacramento Municipal Utility District

VIRTUAL ENERGY ASSESSMENT PLATFORM

- Opportunity for small and medium businesses to save during the COVID-19 pandemic.
- Virtual assessments to discover energy-saving opportunities as well as behavioral change recommendations.
- Utilized interval data to identify problem areas and opportunities to save.



It's more important than ever for electricity providers to provide accessible intelligent tools and devices to help consumers make smart energy choices and save money. These investments will provide benefits today and in the years to come.

THEME THREE:

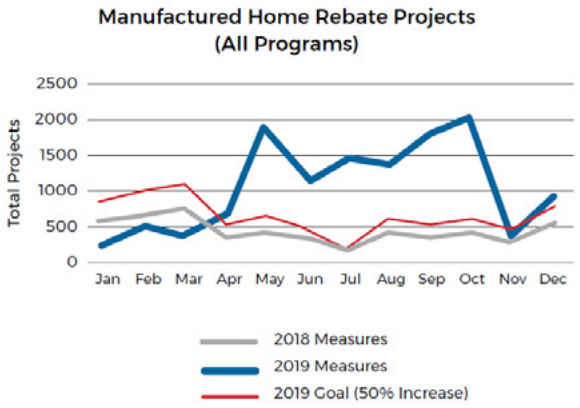
Lower-income consumers are keenly interested in smart energy and the environment.

In 2020, the COVID-19 pandemic and the resulting financial crisis forced the issue of energy burdens into the spotlight in an unprecedented way. Electricity providers and consumer advocates were called upon to not only provide immediate relief to struggling consumers, but also explore ways to alleviate costs more permanently for lower-income consumer segments, which have historically lacked access to programs and incentives to help them save money.

When it comes to making decisions about energy, most consumers are influenced foremost by cost regardless of their income bracket. On this point, lower-income consumers are no different from their wealthier counterparts. It would be a mistake, however, for utilities, advocates and implementers seeking to encourage energy conservation among lower-income consumers to assume that saving money is the only motivator worthy of their attention. SECC research shows that lower-income consumers also care about comfort, ease of use and protecting the environment. It is access — not attitude — that differentiates lower-income consumers from consumers with more disposable income.[10]

Puget Sound Energy (PSE)[11], a provider who serves more than 1.1 million electric consumers in Washington state, has a consumer base with over five percent of consumers who live in manufactured homes, and an estimated 41% of these live at or below 200% of the federal poverty level. The area's manufactured homes were identified as a disproportionately hard-to-reach consumer segment, but one with considerable energy efficiency potential. Targeting these homes for efficiency upgrades/programs became a priority for the company, but reaching these homes would require a reevaluation of PSE's portfolio of programs.

In 2019, PSE worked with stakeholders on a research study to better understand the manufactured home market in its service area and identify new opportunities to provide cost-effective energy efficiency services. In response, the utility developed a multichannel education campaign to move consumers up the ladder of engagement from awareness to project completion. This campaign included a special webpage, direct mailings and signage (in both English and Spanish) in Community Action Partner locations. The energy efficiency services being offered included home energy reports and assessments, weatherization efforts, smart thermostat offerings and even fully replacing four homes with more energy-efficient options. The results were beyond encouraging: The campaign resulted in a 54% increase in participation, translating to a 199% increase in kWh savings. The following year, PSE set out to replicate this initiative with all of its income-eligible consumers.



Puget Sound Energy

MANUFACTURED HOME INITIATIVE

- Targeted manufactured homes for efficiency upgrades/programs.
- Offerings included home energy reports and assessments, weatherization efforts, smart thermostat offerings and even the full replacement of four homes with more energy-efficient options.
- Resulted in 54% increase in participation, translating to a 199% increase in kWh savings.

10 Access SECC's *Understanding Lower-Income Consumers and the Smart Energy Future* research at https://smartenergycc.org/understanding-lower-income-consumers-and-the-smart-energy-future-report/.

11 A case study on PSE's manufactured home initiative can be downloaded at www.smartenergycc.org/2020-puget-sound-energy-case-study/.

Tennessee Valley Authority (TVA)[12], a public utility serving an estimated four million low-income residents, partnered with its member power companies to offer high-impact home energy upgrades to qualified homeowners. This program, Home Uplift, aimed to reduce the energy burden for participants. In partnership with EPB, the municipal utility serving the Chattanooga area, 400 homes received energy-efficient upgrades, such as duct replacement, water heater and pipe insulation, wall insulation, HVAC cleaning and tuning, and window and door replacements. As a result of the program, these homes are saving on average 5,206 kWh each year.

SECC research has shown lower-income consumers with high energy burdens are concerned about protecting the environment, and the energy savings from these home upgrades translate to 1,472 metric tons of carbon avoided per year. This has the equivalent environmental impact to 1.6 million pounds of coal not being burned, which is a significant benefit for lower-income consumers on top of the $500 per home per year savings.

Tennessee Valley Authority

HOME UPLIFT PROGRAM

- Teamed up with its member power companies to provide high-impact home energy upgrades to qualified homeowners.
- Energy efficiency upgrades included duct replacement, water heater and pipe insulation, wall insulation, HVAC cleaning and tuning, windows and door replacement and more.
- Energy savings translate to 1,472 metric tons of carbon equivalent avoided or the environmental impact equal to 1.6 million pounds of coal not being burned.

Through its Low-Income Program, **Mississippi Power** offers free home energy audits, energy savings tips and free energy efficiency items to consumers. Working with local community leaders, churches and low-income advocacy groups, the company identifies and targets specific neighborhoods, helping to save on costs and overcome consumer skepticism — one of the most significant barriers encountered. Program staff have also increased participation — from 865 consumers in 2018 to 1,135 in 2019 — by encouraging participants to spread the word to neighbors, family and friends. This method is particularly successful in small towns where the entire population falls within the program's income requirements. The utility provides these consumers with no-cost education about energy efficiency, LED bulbs and installation of blown-in fiberglass attic insulation. After servicing nearly 5,000 homes in the past six years, these efforts have saved 5.8 million in kWh.

Mississippi Power

LOW-INCOME PROGRAM

- Offered free home energy audits, energy savings tips and free energy efficiency items to consumers.
- Participation increased from 865 lower income consumers in 2018 to 1,135 in 2019.
- Provided energy efficiency services to 5,000 homes in the past six years saving 5.8 million kWh.

Like the population at large, low-income energy consumers demonstrate a range of attitudes and motivations when it comes to their energy behaviors. Although the energy burden of low-income consumers is generally higher than that of other consumers, program designers and implementers should not ignore non-cost-related benefits when designing and marketing programs aimed at this population segment. Most importantly, attention should be paid to designing programs that overcome barriers to adoption. Successful programs employ multiple education channels to get the word out, focus on building trust and reduce or remove the upfront costs of energy-saving investments.

12 TVA received one of SECC's Best Practices Awards in April 2021 for their Home Uplift program. Learn more in the *2021 Best Practices Guide* at www.smartenergycc.org/2021-best-practices-guide/.

THEME FOUR:

Consumers need more education on how to assess a program or technology.

Back in 2009 when American Recovery and Reinvestment Act (ARRA) grants were being awarded to fund utilities' smart grid investments, the energy industry was abuzz about how smart meter data would forever change the way consumers viewed energy usage. Real-time data from smart meters would provide consumers with unprecedented insights.

In-home display devices were once considered the next big thing, leveraging real-time smart meter data to provide energy usage insights at the kitchen counter. However, these devices were phased out with the lack of actionable insights and emergence of smartphones. Home Energy Reports fared better by compelling individuals to save energy by showing them how their energy usage compared to their neighbors. Now, more insights through better data and cost-based analytics enables utilities to carry an ongoing dialogue with consumers on energy program options. This allows them to accurately assess how energy-related products, programs and actions can affect their energy usage.

One of the nation's largest electric utilities, delivering power to 15 million people, **Southern California Edison (SCE)**[13] is transitioning its residential consumers to time-of-use (TOU) rates. SCE is utilizing an online rate tool from GridX, an awareness campaign and other strategies to improve consumers' understanding of TOU rates. At the start of the COVID-19 pandemic, SCE had approximately 455,000 consumers on a TOU rate and played a proactive role in encouraging other consumers who may benefit on the rates to enroll. As SCE saw an upward trend of visits to the Rate Plan Comparison Tool, an increase from 34,000 residential visits in year one to almost 145,000 in year three through their partnership with GridX, consumers were reviewing their rate analysis and making rate changes based on their results.

SUCCESSFUL LOGINS TO RATE COMPARISON TOOL FOR RESIDENTIAL CUSTOMERS

Southern California Edison

TIME-OF-USE RATE OFFERINGS

- Utilized an online rate tool from GridX, an awareness campaign and other strategies to improve consumers' understanding of TOU rates.
- At start of COVID-19 pandemic, SCE had approximately 455,000 consumers on a TOU rate.
- Increased visits on Rate Plan Comparison Tool by four times over three years.

13 A case study on SCE's shift to TOU rates can be downloaded at www.smartenergycc.org/2020-southern-california-edison-case-study/.

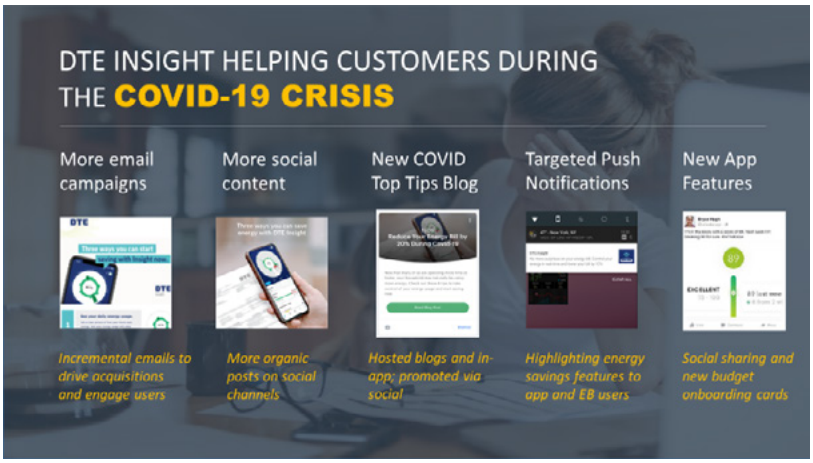
Austin Energy recently launched their Residential Solar Education program with the goal of establishing a well-informed solar consumer base and providing consumers with the resources to make the best decisions about their solar investments. The utility put together a 30 to 45-minute solar consumer education module as prerequisite for eligibility for the residential solar rate and incentive program. The module takes the consumer through fundamentals of solar technology, key considerations about whether solar is the right choice for them, information about rebate and incentive programs and other details. By putting the power of information in the hands of the consumer, it streamlined the process. Austin Energy was able to reduce project lifecycle times for incentivized solar installations from approximately 115 days to 60 days, improving the customer experience for consumers who were interested in solar energy.

Austin Energy

RESIDENTIAL SOLAR EDUCATION PROGRAM

- Goal of establishing a customer base that's well informed about rooftop solar.
- 30 to 45-minute solar consumer education module as prerequisite for eligibility for the residential solar rate and incentive program.
- Reduced project lifecycle times for incentivized solar installations from approximately 115 days to 60 days.

DTE Energy, a Detroit-based energy company serving about 2.2 million electric customers partnered with Powerley to develop the home energy management solution DTE Insight. The offering gave their consumers access to energy usage information, budget management features and personalized insights. Through the Insight app, consumers could order an Energy Bridge, enabling real-time energy management, and access real-time energy visualizations, individualized appliance breakdowns and personalized energy alerts and advice. Consumers could also attach smart devices to the Energy Bridge — such as smart thermostats, plugs and lightbulbs — to see device-level consumption and automate the home for even greater efficiency. Ultimately, it left consumers engaged through a roughly 50% increase in visits to the energy advisor tool and more informed with energy scores rising 55%.



DTE Energy

DTE INSIGHT OFFERING

- Partnered with Powerley to develop a home energy management solution that gave consumers access to energy usage information, budget management features and personalized insights.
- Consumers could order an Energy Bridge for access to real-time energy visualizations, individualized appliance breakdowns and personalized energy alerts and advice.
- Roughly 50% increase in visits to the energy advisor tool, and energy scores rose by 55%.

The days of the utility treating its customer as a transactional relationship are coming to an end. The proliferation of choices, driven by clean energy sources, complex rate plans and behind-the-meter technologies, are fostering an ongoing dialogue with consumers.

THEME FIVE:

Consumers look to their energy providers for support as they deal with the impact of COVID-19.

2020 forced a new paradigm in response to the global COVID-19 pandemic. Governments, businesses and individuals were all forced into change; governments mandating safety protocols, businesses shifting operations to more safely serve consumers and individuals adapting to behavioral changes and new working conditions. No industry was left unaffected, and consumers turned to service providers for proactive solutions. With a history of responding quickly to natural disasters and serving as a partner to their consumers, many electric providers led efforts in their communities to offer flexible financial solutions, while also connecting consumers with innovative products and services to further encourage energy efficiency.

North Carolina's 26 electric cooperatives, the community-based electricity providers for 2.5 million residents across 93 of North Carolina's 100 counties, worked locally to support consumer-members, employees and their local communities. Cooperatives provided community support through millions of dollars of donations to local charities, food banks and COVID-19 relief organizations, as well as direct financial support to members experiencing financial hardships. **North Carolina's Electric Cooperatives**, the wholesale power provider and trade association for 26 distribution cooperatives, and four of its member cooperatives were poised to launch a new demand response program called Connect to Save prior to the pandemic. This program was established to centralize demand response and is anchored in the mass deployment of smart thermostats. Although the cooperatives knew they could face headwinds launching during the pandemic, they pressed forward, recognizing this as an opportunity to connect members with a new way to control energy costs during a financially uncertain time. The program invites members to sign up for a Google Nest or ecobee smart thermostat for as little as $25, receive free professional installation and an annual $50 incentive in exchange for allowing Connect to Save to call on the thermostats for demand response.

North Carolina's Electric Cooperatives

CONNECT TO SAVE

- Demand response program to provide smart technology to help control energy costs.
- Consumers could sign up for a Google Nest or ecobee smart thermostat for as little as $25, receive free professional installation and an annual $50 incentive for demand response control.
- Provided community support through millions of dollars of donations to local charities, food banks and COVID-19 relief organizations, as well as direct financial support to members experiencing financial hardships.

Alliant Energy

MY ACCOUNT DIGITAL CONSUMER EXPERIENCE PLATFORM

- Aimed to help consumers become energy efficient and provide greater service flexibility and convenience.
- Consumers were able to customize their bill payment terms without needing to contact customer service representatives.
- More than 4,000 custom payment arrangements in the first two weeks alone.

Alliant Energy, a Midwest energy company that provides electric and natural gas services to more than 1.3 million consumers throughout Iowa and Wisconsin, launched My Account, a digital consumer experience platform. This software aimed to help consumers become energy efficient and provide greater service flexibility and convenience. As businesses adjusted to consumer needs during the start of the COVID-19 pandemic, My Account allowed Alliant Energy to actively respond to and assist consumers by offering custom payment arrangements. Through the digital portal, Alliant consumers are able customize their bill payment terms without needing to contact customer service representatives. In the first two weeks alone, more than 4,000 custom payment arrangements were registered by Alliant Energy, aiding consumers with significant financial hardships due to the pandemic.

Consumers Energy

VIRTUAL ENERGY COACHING INITIATIVE

- An over-the-phone consultation service offering to small and medium businesses.
- Received over 12,000 consumer calls and performed 400 virtual assessments.
- Small Business Trade Ally Program included 100 local businesses that could "Get to Free" with up to $30,000 in free energy efficiency equipment installed by a local contractor.

As small and medium businesses were disproportionally affected by the impacts of the societal shutdown, **Consumers Energy**[14], an investor-owned utility serving nearly two-thirds of Michigan's population, put a greater emphasis on providing assistance to these businesses by launching several initiatives to help save money. Virtual Energy Coaching, an over-the-phone consultation service, was launched in April as a direct response to the pandemic. Consumers Energy received over 12,000 consumer calls and performed 400 virtual assessments. They also sent over 1,400 $100 gift cards that led to 100 in-person assessments later in the summer when safety practices allowed more direct contact.

Additionally, the utility's Small Business Trade Ally Program announced that 100 local businesses could "Get to Free" with up to $30,000 in free energy efficiency equipment installed by a local contractor, supporting both the business receiving services and local contractors needing work. The program also launched a free thermostat initiative later in the year as part of the comprehensive plan for Consumers Energy to supply these businesses with free energy efficiency equipment.

We know from SECC's research that consumers expect assistance from their providers as they continue to deal with the unprecedented impacts of the COVID-19 pandemic. These timely adaptations by providers during the COVID-19 pandemic are a snapshot of the ways stakeholders collaborated and built partnerships to assist consumers in weathering the financial struggles of the pandemic.

14 Consumers Energy received one of SECC's Best Practices Awards in April 2021 for adapting its portfolio to help small businesses safely save energy and money during the COVID-19 pandemic. Learn more at www.smartenergycc.org/2021-best-practices-guide/.

THEME SIX:

Consumer education and engagement are essential to realizing the promise of beneficial electrification and advanced technologies such as AMI.

Like other areas of our society, the energy industry has been significantly impacted by technological advances over the last decade or more. From renewable generation and AMI infrastructure behind the meter to consumer-driven smart home technology and electrification in front of the meter, utilities and their consumers have had to respond to rapid changes in energy consumption.

While this presents tremendous opportunities for utilities to expand their services and programs, it also raises a significant hurdle: How do you empower consumers to take full advantage of grid modernization?

Clearly, consumer engagement and education will be essential. For example, SECC research has revealed strong consumer interest in electric and hybrid vehicles and home electrification, suggesting that more consumers could be brought on board with education framed around their unique motivations[15].

One key step is giving customers more information about their energy usage. **AEP Ohio**'s Non-Residential Customer Engagement Solution provides small business customers with access to their usage, savings recommendations and other helpful tools on the utility's website. Through the use of embedded widgets, customers can compare monthly or weekly energy use reports, identify kWh usage in 15-minute intervals and calculate kW demand to better understand what devices or machinery are using the most energy within their business.

This program places all the benefits of advanced metering at the consumer's fingertips, demonstrating the value of AMI and helping businesses benefit from detailed energy use data. Six months after launching the program, AEP Ohio saw a 117% increase in total logins. The enhanced usage charts were viewed more than 900,000 times, and more than 4,000 consumers downloaded detailed usage-over-time reports that can be used for further analysis.

AEP Ohio

NON-RESIDENTIAL CUSTOMER ENGAGEMENT SOLUTION

- Provided small businesses with access to their usage, savings recommendations and other helpful tools on the utility's website.
- Small businesses could compare monthly or weekly energy use reports, identify kWh usage in 15-minute intervals and calculate kW demand.
- Saw an 117% increase in total logins with more than 4,000 consumers who downloaded detailed usage-over-time reports.

15 Access SECC's *Beneficial Electrification: The Voice of the Consumer* report at https://smartenergycc.org/beneficial-electrification-the-voice-of-the-consumer-report/.

The **Tennessee Valley Authority (TVA)** is also helping business consumers take a closer look at their energy use — literally. TVA's EnergyRight Business & Industry program utilizes Vuzix Virtual Glasses so consumers can show inspectors around a facility via augmented reality. With Vuzix, TVA can facilitate a virtual energy audit for up to 10 remote people at a time, allowing participants to control a laser pointer and circle items within the glasses' view, share screens and documents, take photos and record the inspection.

While the remote program was initially a response to COVID-19 restrictions on in-person audits, the benefits have extended beyond the expected savings in time and travel. By using augmented reality glasses, consumers take an active role in the inspection process, gaining a deeper understanding of the equipment they are helping inspect. TVA has received positive feedback, with reports that the new process helps consumers feel more informed and engaged.

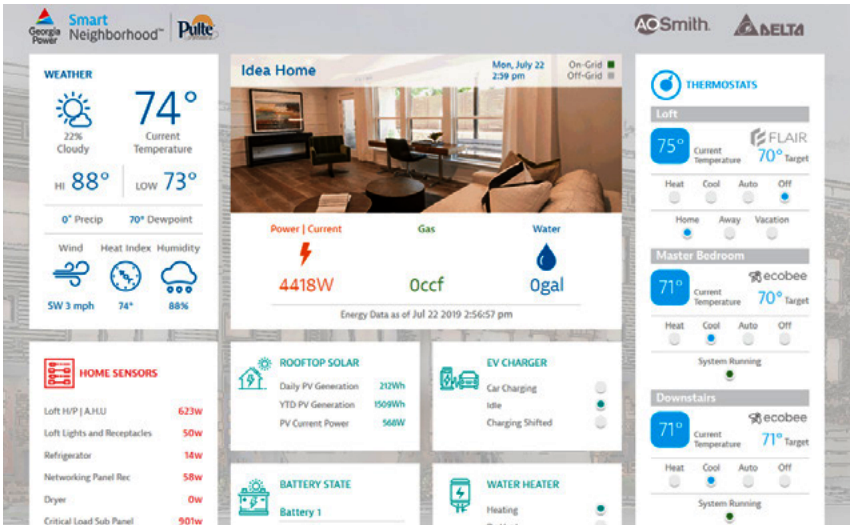
Tennessee Valley Authority

ENERGYRIGHT BUSINESS & INDUSTRY PROGRAM

- Closer look at businesses' energy use with Vuzix Virtual Glasses, which allow the customer to "show" inspectors around a facility via augmented reality.
- Facilitated a virtual energy audit for up to 10 remote people at a time and allowed for closer inspection.
- Allowed consumers to take an active role in the inspection process, gaining a deeper understanding of the equipment they are helping inspect.

Southern Company, through its operating companies Georgia Power and Alabama Power, is enlisting consumer involvement through its Smart Neighborhood initiative, a testbed pilot program. Thanks to the research and development project, consumers in neighborhoods in Atlanta and Birmingham are benefiting from improved resiliency, increased use of distributed energy resources and lowered operating costs. The project has also given researchers valuable insight as the company continues to evaluate microgrids, residential battery storage and rooftop solar.

The Smart Neighborhood initiative is demonstrating how homeowners may interact with energy in the future. In Georgia, where four neighborhood participants have an electric vehicle, data shows that at-home EV charging is more than offset by the rooftop solar array. In Alabama, Smart Neighborhood homes achieved a Home Energy Rating Score of 45, resulting in a 35% decrease in annual energy consumption compared to similarly sized homes in the state.



Southern Company

SMART NEIGHBORHOOD PILOT INITIATIVE

- Selected neighborhoods in Atlanta and Birmingham to benefit from improved resiliency, increased use of distributed energy resources and lowered operating costs through testbed elements.
- Researchers given access to evaluate microgrids, residential battery storage and rooftop solar.
- Demonstrates how homeowners may interact with energy in the future.

Consumers are increasingly interested in taking control of their energy use and incorporating new technologies to make their homes more comfortable and efficient. As these examples show, energy utilities will play a critical role in engaging consumers and activating this interest. With these educational efforts, the industry can empower consumers to take full advantage of the modern grid and become smarter energy consumers.

Conclusion

By making smart energy information widely available and providing thought leadership to the energy industry, SECC strives to help energy stakeholders engage consumers and transition from a commodity provider to an energy services partner. Equipped with the themes and real-world examples provided in this white paper, electricity providers can take that a step further by moving consumers along a continuum of engagement, education and participation.

The smart energy industry and consumers are on a journey together, navigating tremendous change and weighing exciting new opportunities. Consumers are ready to take the next step no matter their income level or segment. With the right tools and education, they can start to fully take advantage of smart energy technology or programs that meet their interests. It is the job of power industry stakeholders to help consumers understand how a smart energy ecosystem benefits them — whether the benefits are financial, reduced environmental impact or increased reliability.

Please join the Smart Energy Consumer Collaborative as we take the journey toward understanding consumers and assisting energy industry stakeholders to engage and empower their customers. For more information, please visit www.smartenergycc.org.

SMART ENERGY
CONSUMER COLLABORATIVE

Working for consumer-friendly, consumer-safe smart energy

SECC's mission is to serve as a trusted source of information on consumers' views of grid modernization, energy delivery and usage, and to help consumers understand the benefits of smart energy.

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