bidgely

ADOPTION OF TIME OF USE (TOU) RATES:

Enhance The Value of Your Customer Experience (CX) Platform

THE TOU OPPORTUNITY

The momentum behind time-of-use (TOU) and other time-varying rates is accelerating on multiple fronts, driven in large part by widespread electrification and renewable energy adoption.

In fact, 365 U.S. utilities[1] are currently offering at least one form of time-varying rate to residential customers, and 25-35% of households are expected to be enrolled in one by 2030[2]. TOU rates are evolving from the exception to the rule.

The industry has come to recognize that when consumers receive price signals that accurately reflect electricity supply and demand, they are more likely to choose to reduce or shift their energy usage or to generate their own power to offset their demand. These behavioral changes are essential to achieving decarbonization progress.

That's why utilities are turning to TOU rate design to help ease grid strain — especially strain due to rising EV and building electrification — defer transmission upgrades, and enable dynamic load flexibility to help manage the variability of renewable energy supply.

On the customer side, a growing number of EV drivers have begun to seek TOU rates as a means to significantly reduce their charging-related energy costs. Other customers are choosing to install solar, battery storage, and smart electric appliances to take advantage of TOU rates to lower their bills.

Simultaneously, regulators are actively encouraging — and in some cases mandating — the implementation of TOU rate plans.

Beyond decarbonization and grid flexibility, TOU rates can have a significant impact on customer-utility relationships at the highest level. Energy pricing has historically been the most significant contributor to customer experience (CX). As the industry embraces customer-centric business reforms, pricing must evolve as well — allowing personalization to fit customers' energy use profiles. While rates will always need to reflect system costs, future-ready rate design must weigh CX as an equal input.

In spite of these high-value reasons for change, the shift from flat, volumetric rates to time-varying residential rate structures is complex, particularly as utilities are increasingly under pressure to educate consumers about opt-out TOU plans or recruit customers into opt-in TOU plans on tight timelines.

When executed well, the transition from traditional rate structures to TOU rates improves system utilization, reduces peak demand, and provides an opportunity for consumers to save money by empowering them to take charge of their energy costs. That ability to save money and have more control over when their energy is used translates into a much better CX.

When implemented poorly, changing rate structures can inadvertently lead to confusion and bill increases — which undermine CX and consumer trust in the utility. Consumers have paid a flat rate per kilowatt-hour for decades, and the transition to time-based rates can be complicated.

Fortunately, artificial intelligence (AI) can make the difference between a CX stumble and success. Data-driven marketing strategies not only improve ***how*** and ***what*** to communicate about these changes to customers but also enhance ***who*** to target for new TOU rate plans.

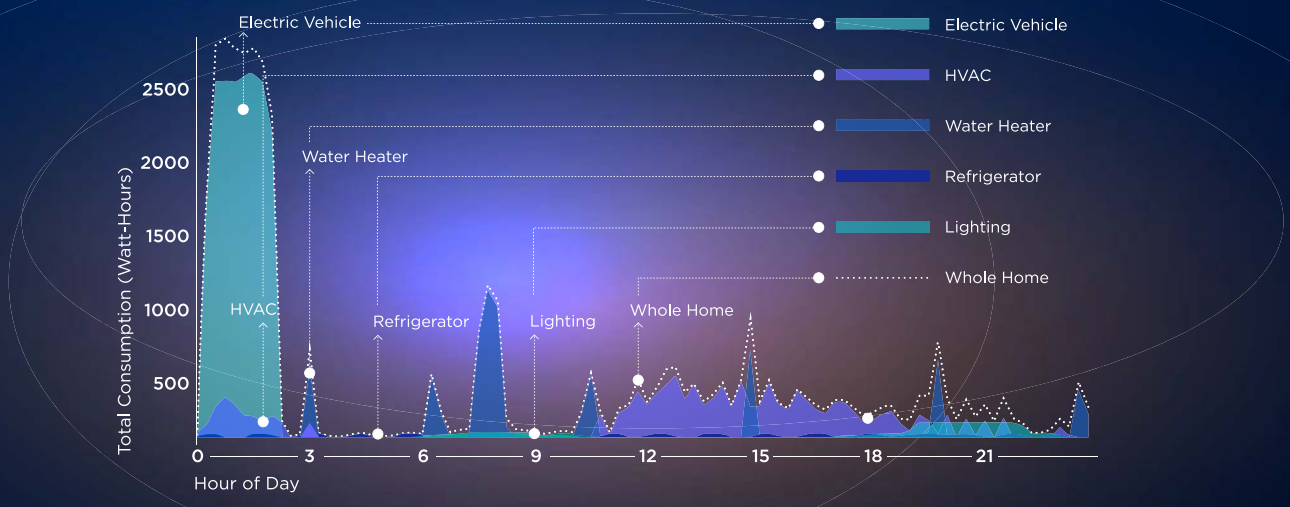
[1] As reported in 2019 EIA Form-861
[2] "Best Practices in Tariff Design," Brattle Group, 2021

CX-ORIENTED RATE DESIGN IS THE FUTURE

Energy customers today are increasingly multi-dimensional, bringing their energy needs, values, and distributed energy resources (DERs) to the utility. Fortunately, AI-enabled meter data analytics are surfacing greater insights into customer usage patterns, enabling utilities to granularly define customer segments and price-differentiated periods. As a result, rate structures can now be tailored to a wider variety of customers with distinct demand profiles. This approach ensures that all customers, those with both flexible and inflexible usage, can transition to time-varying rates successfully.

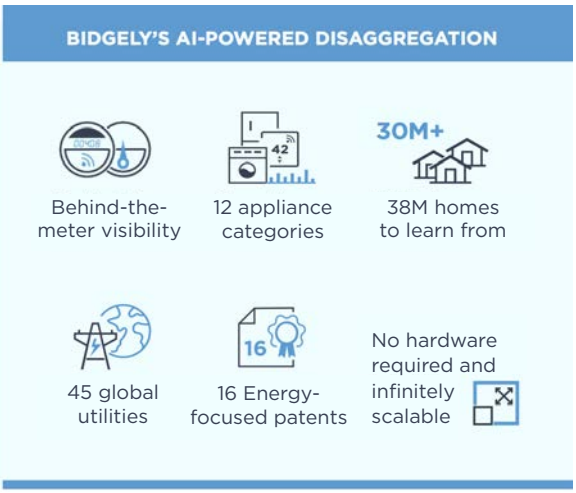
So too is rate design changing. Historic rate design has relied on sampling less than one percent of a customer population and on statistical modeling. However, sophisticated AI-powered rate design based on load disaggregation provides visibility into consumer usage patterns at both the whole-home and appliance levels.

Appliance-level, behind-the-meter energy intelligence gives utilities a greater understanding of the unique segments that exist within a customer population, including individual customers' time of use, usage patterns, and cost to serve.



The most sophisticated and successful TOU programs provide a menu of rate options and price signals that allow individual customers to adopt price structures best suited to their unique and varied needs.

A data-driven design process also allows utilities to determine the impacts of time-differentiated rates before customer rollout, estimating billing impacts to ensure no customers will be unfairly impacted.



BEST PRACTICES FOR CUSTOMER-CENTRIC, DATA-DRIVEN TOU ENGAGEMENT

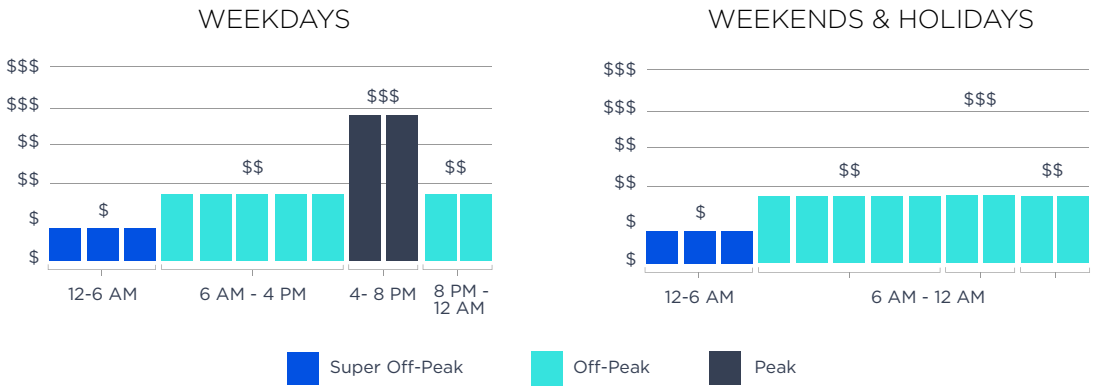
1. Get ready for opt-out rates

The industry continues to debate whether an opt-in or opt-out TOU rate structure will ultimately produce the best outcomes.

Voluntary opt-in programs have historically been favored because they give customers choice. However, as opt-in programs have in most cases attracted limited customer enrollment, a growing number of regulators are now approving time-varying rate programs that require those who do not want to participate to opt out. Such is true in California, Colorado, Michigan, Hawaii, Ontario, and most recently, Missouri.

In fact, Missouri's new auto-enrollment TOU program will serve as an industry litmus test for the effectiveness of the most aggressive electric-rate overhaul. New TOU rates in the state's default program are 5x higher between 3 and 7 p.m. on weekdays than off-peak periods, and weekend off-peak rates are ~50 percent lower than legacy rates.

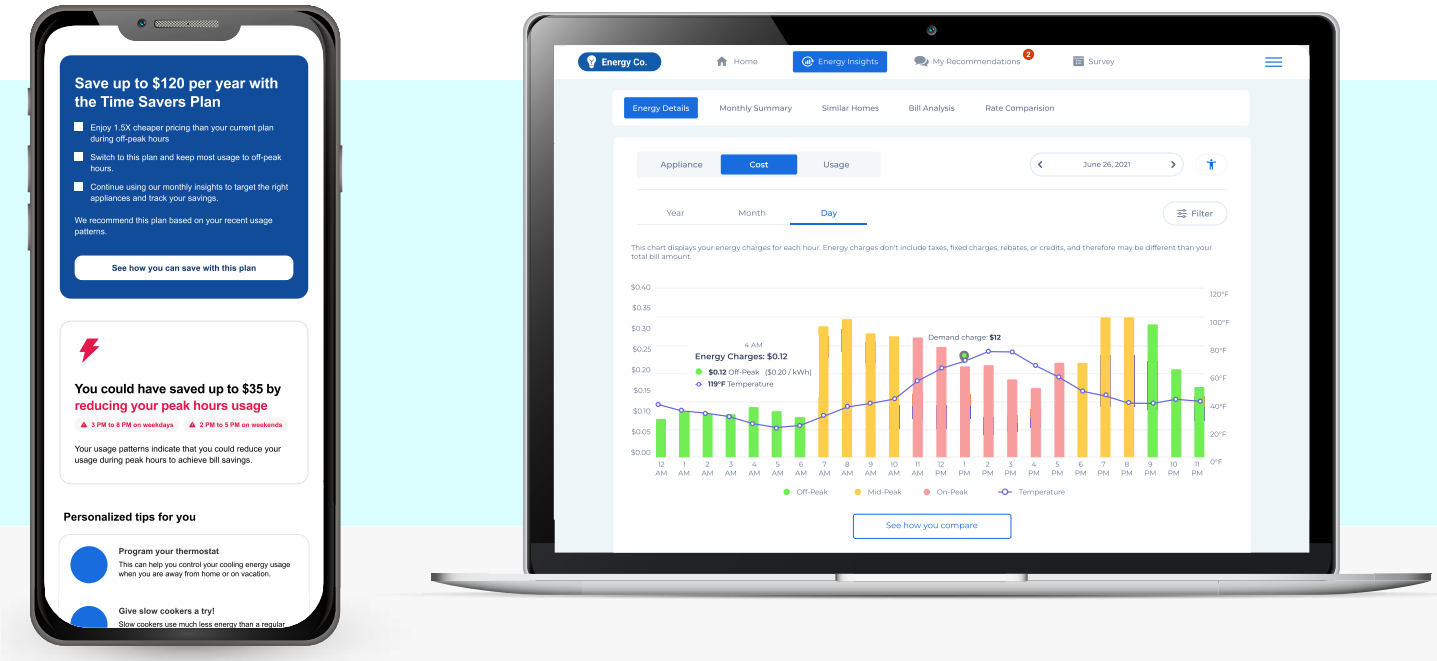
From a CX impact perspective, neither Ameren nor Evergy was in favor of large peak and off-peak price differentials, but both Missouri utilities are now tasked with their rapid implementation.



2. Leverage Behind-The-Meter Energy Intelligence: Delivering Enhanced CX With Integrated TOU Rate Adoption

Whether a utility is seeking to improve participation in opt-in programs or smooth the rollout of default rates, behind-the-meter energy intelligence improves CX, and by extension, the full range of utility outcomes. The greater the number of engaged customer participants, the greater the gains in peak demand reduction, grid resiliency, and cost to serve.

AI-powered, customer-specific insights make it possible for utilities to better achieve customer buy-in with more effective marketing and education campaigns. Data-driven personalization of every consumer's TOU rate journey delivers a more positive CX at every step — from general awareness to enrollment, and through long-term coaching and support.

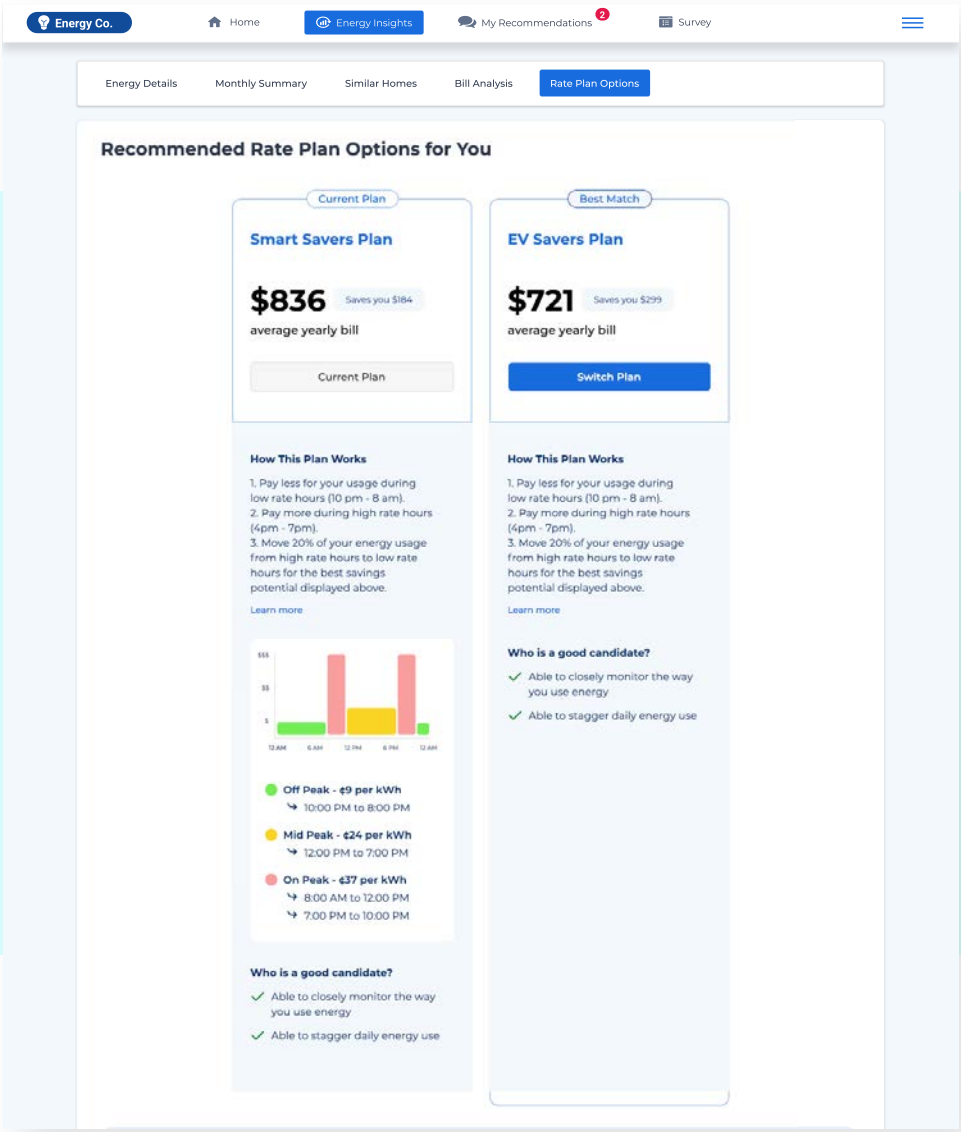


TOU Promotion educates customers about potential savings through other rate options, in the context of their personal energy use, and provides a seamless experience for customers to transition to a TOU rate.

TOU Coaching: appliance-specific use insights across every hour of the day lets customers "see" their use and understand its impact on their energy costs — so they can make informed energy decisions that maximize the benefit of their TOU rate.

Promoting and recommending the adoption of TOU rates requires that customers understand not only the mechanics of a TOU rate and how it works but also, 1) how, based on their unique historical load and consumption habits, they have the potential to save money vs. their current rate and 2) whether achieving the promised savings will require changes in their current energy consumption.

Customers are more likely to opt into a time-varying rate plan when the advantages of doing so are explained in specific and relevant terms — such as with an estimate of their expected savings based on their unique energy usage and appliance ownership.



Similarly, customers are less likely to opt out or protest new rates when they receive personalized coaching about how to realize the greatest benefit and avoid any potential pitfalls. One-on-one engagement makes ongoing recommendations more effective.

For example, explaining to customers how much energy they are using during peak periods on an appliance-by-appliance basis provides very precise information that they can act upon to avoid high bills.

Providing specific advice about how to optimize their energy use behaviors and appliance usage yields a better CX and greater trust in the utility as an advisor.

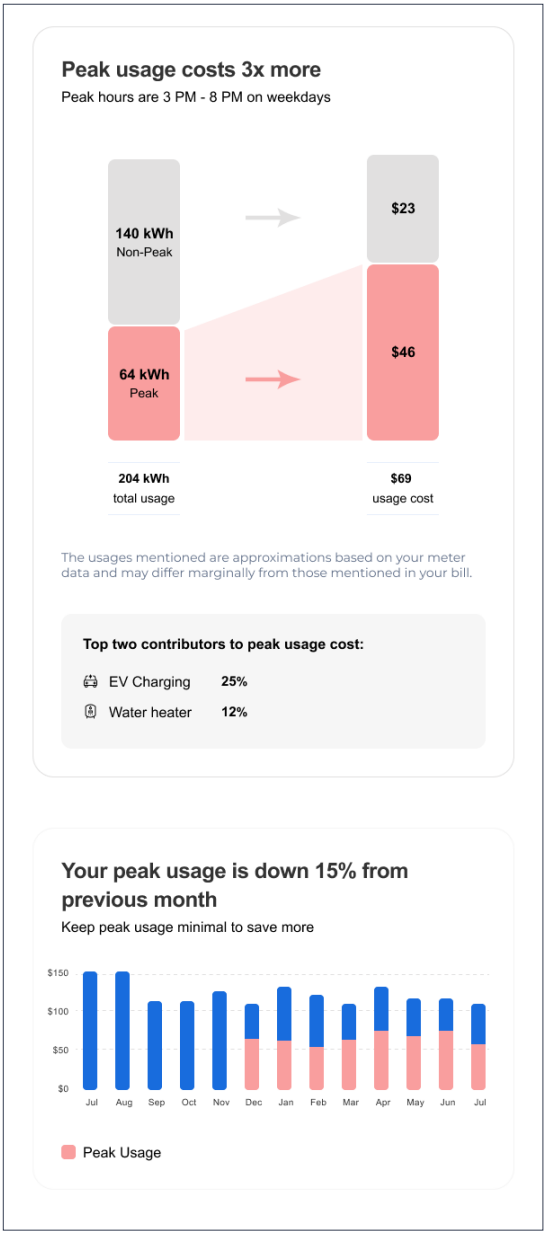
3. Flex and evaluate

The transition to TOU rates is an outcome-driven strategy that requires a significant change in long-standing customer behaviors. As such, it's essential to leverage energy use data to assess in near-real-time how customers are responding to new prices from both a behavioral and CX perspective. Are the new rates producing the intended results?

For example, how is appliance usage changing? How do customers' energy costs compare with their previous baselines? How do their usage and costs compare to their peers in relevant customer segments? Has a customer adopted solar and/or battery storage to maximize TOU benefits? How are load curves evolving at the substation, transformer, and territory-wide level?

The answers to these questions and more lie within household energy use data that can provide the granular detail necessary to optimize the CX associated with each customer's rate journey, while also informing utility decision-makers with an aggregated, bottom-up view of the grid. The result is an ability to continuously fine-tune TOU rate design to move customers and the utility closer to the outcomes they value most.

Maximizing the CX and grid potential of TOU rates today will also serve as an essential bridge to more sophisticated time-varying and real-time pricing in the future.

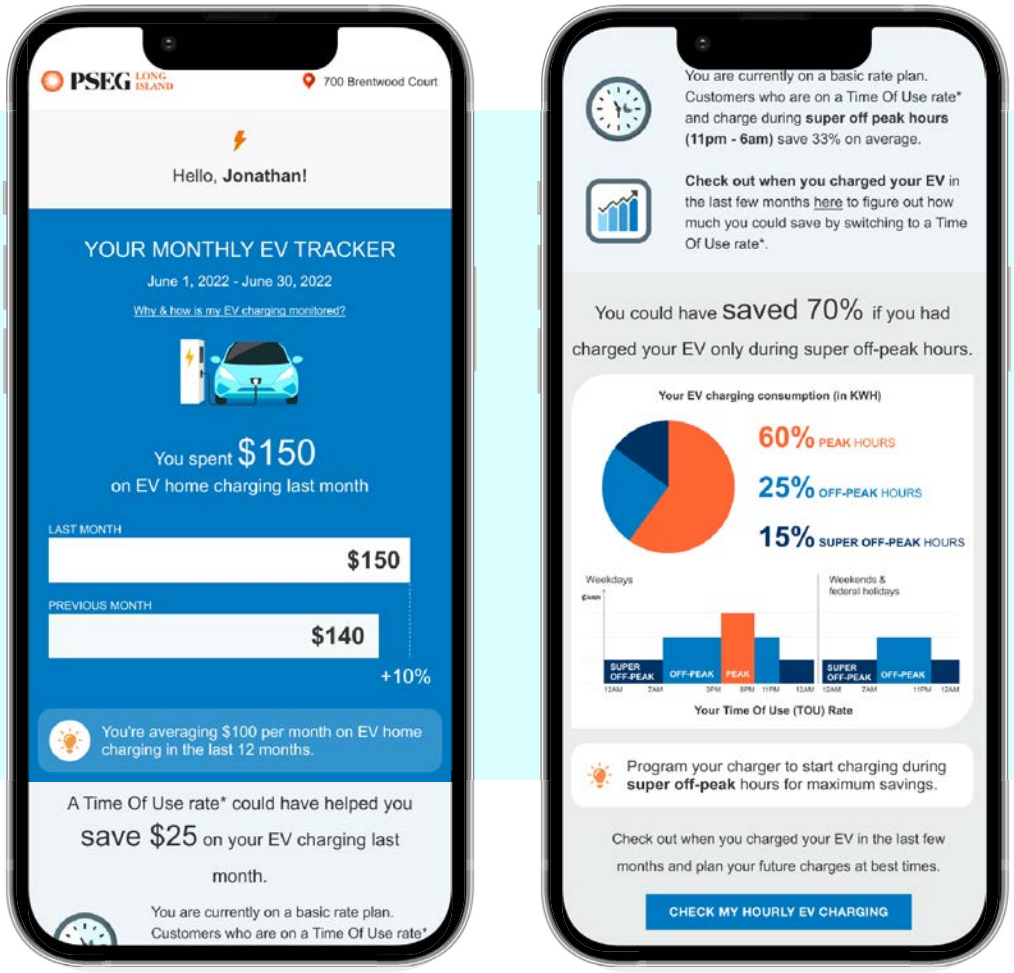


TOU + CX SUCCESS IN PRACTICE

In 2022, Bidgely partnered with PSEG Long Island to deploy a disaggregation-powered EV Time-of-Day (TOD) engagement program.

The unparalleled accuracy of Bidgely's AI-powered EV detection allowed the utility to leverage its smart meter data to pinpoint more than 16,000 EV owners within its service territory.

PSEG Long Island then leveraged Bidgely's behind-the-meter targeting ability to build a unique EV profile for each EV owner. These customer insights empowered the utility to target the ideal customers for each of its TOU rates, as well as to deliver personalized email alerts that provide customers with rate education and hour-by-hour breakdowns of their charging behavior to encourage behavioral load shifting and a positive rate experience.



As a result, the utility successfully enrolled 2,000 new customers in its TOU rate and successfully encouraged them to shift 90 percent of their charging to off-peak hours. In addition, the program has achieved above industry-average customer satisfaction ratings of 75 percent (through positive "Thumbs Up" responses from email alerts) and realized 32 percent email engagement.

EMPOWERING PROGRESS

Learn more about leveraging AI to optimize TOU adoption through CX by visiting bidgely.com/solutions/flex-demand/.

See TOU customer journeys in action at demo.bidgely.com.

Be sure to check out other publications in our EmPOWERing Progress Series:

- How Behind-the-Meter Intelligence and Targeting Can Change the Utility Calculus of Widespread Heat Pump Adoption
- EV Preparedness Starts with EV Intelligence
- Leveraging Behind-the-Meter Intelligence to Better Inform and Achieve Clean Energy Plan Targets
- Grid and Customer Convergence: Leveraging Energy Intelligence to Achieve Business Transformation