MAKING THE CASE FOR BEHAVIOR-BASED ENERGY EFFICIENCY PROGRAMS: AN ANALYSIS OF FOCUS ON ENERGY'S SAVE TO GIVE PILOT

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INTRODUCTION

In 2016 the Public Service Commission (PSC) of Wisconsin released a Final Decision (Docket 5-FE-102, 5-FE-100) following an investigation into rural customers' access to energy efficiency programs. This investigation found significant barriers to the ability of customers in rural areas to benefit from energy efficiency programs run by Focus on Energy. In 2018 Focus received support from the PSC to use funds for a rural residential behavioral pilot program during the 2019-2022 quadrennium.

These decisions led to the formation of the Save to Give pilot program. This pilot aims to reduce energy usage through interventions grounded in the behavioral sciences using novel approaches to increase end-use customer engagement, education, and satisfaction with their energy utility. Money saved through energy efficient behaviors provides participants with the opportunity to invest in their community through charitable donations to local organizations. Customer satisfaction with this program is of paramount importance as is utility stakeholder satisfaction. A secondary goal of this pilot is to test the efficacy of behavioral strategies and program design on rural Wisconsin customers for possible integration into Focus on Energy's broader portfolio. A third objective is finding measurable savings, but this goal has not been the primary focus of the PSC's guidance or Focus on Energy's execution of the program.

While policies and regulations are often focused on long-term options, such as introducing new, low-carbon energy technologies or creating cap-and-trade markets, behavior change programs can be a cost-effective way to generate rapid energy savings from end-users. Moreover, depending on program structure, these programs may operate almost independently with limited costs incurred by the program administrators and utilities after initial phases while still greatly benefitting ratepayers. Presently, there are a wide range of programs sponsored by utilities across the country.

The Benefits of Energy Efficiency

Energy efficiency programs are crucial in lowering customers' energy bills and reducing the energy load on the grid. Energy efficiency programs have saved more than 160,000 GWh annually nationwide between 2010 and 2016 [1]. Conservation efforts have also been found to be the cheapest means of delivering energy. During the six-year period mentioned above, these programs reduced generation, transmission and distribution costs by approximately $4.1 billion, achieving savings rates at $25/MWh on average. Comparatively, unsubsidized levelized costs of natural gas at the national level ranged from $65-$159/MWh, nuclear at $129-$198/MWh, thin-film utility scale solar at $29-$38/MWh, and the cheapest, wind, at $26-$54/MWh. [2] Figure 1 illustrates the scale of realized cost savings as a result of energy efficiency programs across North American Electric Reliability Corporation (NERC) regions.

Figure 1 Savings by North American Electric Reliability Corporation (NERC) regions. Regions with higher energy savings realized higher overall cost savings. Source: Levin, 2021.

Maintaining or increasing energy efficiency programs provides net benefits in every state and power system operator's electric balancing area. Forecasting to 2030, energy efficiency programs can save between $5.5 billion and $9.7 billion, depending on how aggressive programs are pursued. This would equate to annual savings between $64 - $147 per residential customer. [1] To achieve these savings, energy efficiency programs must diversify programs to scale up non-lighting measures. Part of this transition includes behavioral actions, such as demand-side reductions and load shifting.

Why Behavior is Needed in Energy Efficiency Programs

The electric grid currently operates at low efficiency—approximately 50%—because of reliance on plants to be operating idly to quickly meet peak demand spikes. [3] The impacts of marginal reductions of peak demand, and subsequently eliminating the need for "peaker" plants, are exemplified in the cost savings found in a study commissioned by the State of Rhode Island. [4] While Rhode Island rarely exceeds 1,200 MW of capacity, it is necessary to have infrastructure in place to support up to 2,000 MW during a few peak hours annually. Eliminating the top 1% of demand hours across the course of the year can save the state $23 million, or 9% of total grid-supported energy spending. Cutting back even further and removing the top 10% of peak energy days was forecasted to save $67 million, or 26% of spending.

The purpose of behavioral-based energy efficiency is evident when taking a forward-thinking approach. As discussed previously, the levelized cost of energy (LCOE) of unsubsidized utility scale

solar is now cheaper per megawatt hour than conventional power plants and is declining at a rate of 0.5% a year. [2] However, in order to achieve cost savings and efficiency by avoiding peak periods, demand has to be better synchronized with renewable energy deployment. With the advent of cost-effective storage solutions entering the market, this becomes more feasible. Still, shifting load to ease demand spikes will be imperative to deploy a decarbonized grid at scale.

Human behavior and decision-making is at the heart of all energy use; the switches we turn on, appliances and products we buy, and the times we use all of them matter. Behavior-based programs are not merely a source of trial-and-error methods for utilities to claim savings to meet regulations. In order to be credited with energy savings, programs implemented by utilities must follow specific and rigorous guidelines. Behavior programs, as defined through a series of workshops with investor-owned utilities (IOUs), the California Public Utilities Commission (CPUC), and other interested stakeholders, integrate insights from social and behavioral sciences to enhance impact and garner greater savings. [5] To receive approval from public utility commissions, behavior programs must apply models and approaches grounded in the social and behavioral sciences to reduce energy consumption. Furthermore, the programs must be evaluable, where savings can be quantified through accepted statistical methods that can allow for comparisons to other programs and verifiable claims through independent third parties.

Behavioral programs continue to drive the largest portion of savings relative to spending from utility energy efficiency programs across the nation. California's recent update to the Energy Efficiency Potential and Goals Study affirms this: savings from behavioral programs outweigh other program offerings by a significant margin and are projected to increase year-over-year through 2032. [6] Figure 2 illustrates behavioral program savings in comparison to other California utility residential energy efficiency offerings. It is important to note that access to resources plays a significant role in achieving this level of cost effectiveness, particularly through partnerships with larger utilities and utility data connections. Larger utilities can take advantage of low-cost home energy report administration through bill add-ons or direct sends to customer lists which has been raised as a major barrier for smaller service providers. California benefits from being an early adopter of smart meter technologies that support many behavioral programs. [7]

In the Midwest, Michigan's largest utility was able to generate 65 GWh of savings in 2020 from two of their residential behavioral programs at a rate of $0.07/kWh [8]. These trends are supported by technical economic analyses of behavior-based energy efficiency programs. Kane & Srinivas (2014) found that home energy reports alone can save over 18,000 GWh annually when deployed to their full national potential [9]. Specific to Wisconsin, these programs have the potential to save nearly 300 GWh in the state alone. At the state's median investor-owned utility residential electric rates [10], this would save Wisconsin households over $34.5 million annually.

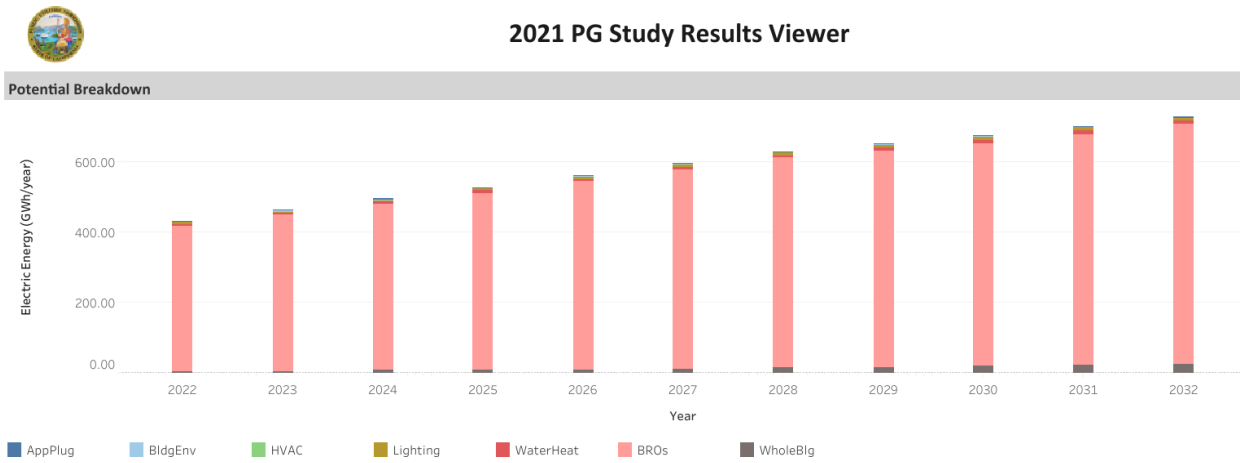


Figure 2 Behavioral programs ("BROs") electric energy savings by year in comparison to other residential efficiency programs. Source: CPUC.CA.gov

Validity of Behavioral Savings Claims

Behavior-based programs sponsored by utilities must follow rigorous structures in order to claim savings. These programs are routinely deployed through randomized control trials, the "gold standard" of research design [11, 12]. This method randomly assigns participants into control and treatment groups after being screened for participation eligibility, with each group typically containing more than 1,000 members. Participants can be automatically enrolled with the choice to not participate in the program (opt-out), or they may be prompted with a choice to join (opt-in). Opt-out programs are useful to gather a greater audience that does not necessarily require the customer to participate, such as Home Energy Reports (HERs). Opt-in programs are useful for cases where automatic enrollment is not an option, examples being hosting courses or performing home energy audits. Savings are then estimated by the difference between a household in the treatment vs. a control group. If data is available before the treatment period, evaluators can estimate savings as a simple difference controlling for pretreatment energy consumption. Using pretreatment data, often a year prior to treatment, yields more precise savings estimates with a smaller standard error.

An alternative design may be a randomized encouragement design (RED), where evaluators randomly assign subjects to a treatment group that receives encouragement to participate in a program but are not automatically enrolled. This is useful for interventions that require participants to opt-in but delaying or denying participation to ensure adequate group sizes is undesirable [11]. RED programs will send encouragements to a treatment group to participate in a program but will not have any efficiency recommendations within the encouragement communications. For example, a program may encourage participants to log into a web portal or app, which then suggests behavioral modifications to save energy. Comparisons are then drawn between the encouragement and non-encouragement groups as well as between those that opted into the program vs. those that did not.

In cases where RCTs or REDs cannot be pursued due to a limited sample size, quasi-experimental methods such as differences-in-differences (DiD) or propensity score matching may be pursued. DiD estimates savings by gathering information about energy use of both treatment and control groups during both the pretreatment and treatment periods. This enables evaluators to obtain less biased estimates, test model assumptions, and include subject fixed effects that account for time-invariant energy use [11]. This technique should be employed as available, regardless of experimental

approach. Propensity score matching is a form of statistical analysis of observational data estimate savings by accounting for covariates that predict receiving the treatment. In the case of behavioral programs, propensity score matching compares households that opt into the program to those that did not but were predicted to and have similar observable characteristics [13]. While more bias is introduced compared to RCTs, these methods have been validated to produce accurate representations of program savings.

Some programs, such as HERs have been tested for many years and are now incorporated into many states' technical reference manuals (TRMs). This process provides a transparent and consistent basis for calculating energy savings generated by energy efficiency programs. Behavioral TRMs generally assume a 1-year measure life, meaning utilities can only claim savings from program participants for the year that they participated in the program. However, some states have recently adjusted TRMs for behavior-based programs after thoroughly analyzing persistence of behavior after the initial program entry. Numerous studies have demonstrated HER program savings tend to increase for many years before leveling off, leading to the conclusion that these programs demonstrate savings beyond the existing one-year measure life [14, 15, 16]. Based on this, Illinois, Connecticut, New Hampshire, and Minnesota all have adopted a measure life for HERs ranging from 2–5 years as of 2019. These TRMs assume various decay rates year-over-year to adjust for temporal impacts of program communications. Illinois, for example, assumes a 20% yearly decay rate, having a fraction of first-year savings persist in future years [17]. Here, if a customer saves 100 kWh in the first year in the program and 150 kWh the next, the utility can attribute 80 kWh of savings from year one out of the total year two reported savings.

Consumer Perceptions of Energy

Consumer perceptions of energy use are not always aligned with actual consumption. Energy usage is not as easy to grasp as other decisions we face on a daily basis; homes do not come with an energy use guide that can aide in our understanding and support the decision-making process or help us comprehend the industry jargon. This leaves a gap between how energy is measured (such as kWh) and how that is translated by customers in estimating personal energy consumption. Meta-analyses of household understandings of energy use from common appliances have discovered recurring trends that lead to false perceptions [18], discussed in greater detail in Box 1. Knowing this, it becomes evident that customers need assistance in understanding their energy use.

Box 1 A case study on heuristics and biases impacting awareness of energy consumption.

Case Study: Behavioral Science in Energy Efficiency

When faced with uncertainty, we often take mental shortcuts, or heuristics, to arrive at decisions or perform behaviors. This may take many shapes, such as relying on experts, previous information, or visual cues. Making decisions based on heuristics in inevitable and allows us to live our daily lives, but with the outcome of biases being introduced. This inherently imperfect mechanism that we have adapted to can be a useful, or unintentionally harmful, leverage point to influence behaviors. A study (n = 505) examining perceptions of common household energy use found significant misalignment with true consumptive values [83]. Participants reported estimated kWh consumption for 9 appliances given a 100-watt bulb's usage as a reference point. Estimates were then compared to actual energy use, as estimated from literature and government agencies. Energy use was consistently underestimated by a factor of 2.8 on average (e.g., estimating a 2,800 W appliance would only consume 1,000 W). A similar study (n = 100) used multiple reference points of a 3 W bulb, 100 W bulb, or a 9,000 W electric furnace to test referential baseline impacts on estimations [84]. Here, perceptions of energy use increase alongside the increase in reference point, with perceptions being the highest with no reference point set, and became more convoluted when participants were asked to convert and approximate in kWh rather than Wh. Still, the pattern of overestimating low-energy use appliances and underestimating high-use counterparts remained intact, regardless of references.

Table 1. Median judgments (watts)

Provided referent	Laptop computer (48)	Stereo (128)	Desktop (140)	Heater (925)	Room AC (1,000)	Dishwasher (1,800)	Dryer (3,400)	Central AC (3,500)	Average (1,368)
3-W LED flashlight bulb	25	23	33	73	78	73	100	150	75
100-W light bulb	200	125	340	500	500	300	500	800	544
9,000-W electric furnace	350	300	500	1,000	2,000	1,200	1,000	6,000	2,188

Actual energy consumption, as reported by Attari et al. (1), in parentheses. AC, air conditioner.

Table from Frederick, Meyer, & Mochon, 2011.

FOCUS ON ENERGY SAVE TO GIVE BEHAVIORAL PILOT

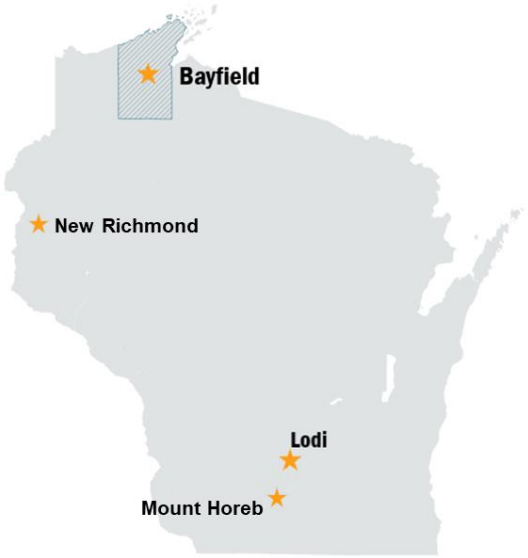
Minnesota Center for Energy and the Environment (CEE) was hired as an implementer to design and run a community-based behavior campaign in rural communities in Wisconsin. CEE recruited potential communities and facilitated a competitive application process, identifying communities that were most like "average" rural communities across Wisconsin using a composite variable

indexing method from Claritas consumer research that included demographic and psychometric data. This allowed for CEE to extrapolate data from this pilot study as a general indication for how much a typical rural Wisconsin community may save from the program.

The program carried little risk as no new hardware was required, and similar past programs demonstrated predictable performance and outcomes. As populations were smaller than ideal amounts to perform a randomized control trial, the program followed a propensity score matching design. Additionally, the implementation of the program leveraged existing data sources to quickly develop customized and self-contained reports.

Chosen community characteristics

MNCEE solicited applications from communities across Wisconsin to participate, ultimately selecting communities with a well-connected and engaged local champion that could dedicate time and resources to the pilot. This individual would serve as the liaison between CEE and the community, and as such had to be a trusted source that could leverage community connections to introduce the pilot and help spread the word. Communities also had to demonstrate a sound understanding of the program in their application and detail levels of effort that influential local actors could commit to. In 2021, Save to Give held campaigns in two Wisconsin Communities, Lodi and Bayfield County, split into two eight-week campaigns. Lodi held the first campaign from January 25 to March 21, and a second June 14 through August 2. Bayfield held their first campaign from April 26 to July 5, with three extra weeks added due to a data issue impacting programs sign ups. The second campaign began September 20 and is scheduled to end November 21 In 2022, Phase II of the Save to Give Pilot continued in two new Wisconsin communities: New Richmond and Mount Horeb. The Phase II communities each had three, one-month-long campaigns. New Richmond held their campaigns in January, March, and October of 2022. Mount Horeb held their campaigns in March, June, and October of 2022.



The City of Lodi, WI is located approximately 25 miles north the state capital and is home to just over 3,000 residents. The median household income is $72,117 and the city has an overall poverty rate of 5.8%. The average age of residents is approximately 40 years old, and educational attainment is nearly evenly spilt across all categories [19]. Lodi Utilities serves just under 1,500 households in the small, 1.7 sq. mile geographic area. The utility currently has 15 megawatts of capacity and employ automatic meter reading devices for remote access to end-user energy consumption.

Bayfield County is home to a population of almost 15,000 residents spread out over 1,477.5 sq. miles and is the northernmost geographic point of the state bordering Lake Superior. The county has a median household income of $56,096 and a poverty rate of 11%. Educational attainment is similarly spread across all categories, though by comparison to Lodi, has more of a concentration attaining a high school degree as the highest level of education [20]. Save to Give partnered with Xcel Energy to administer the behavioral program in Bayfield County. However, Xcel does not have the advanced meter infrastructure in place in Bayfield, which led to additional complexities and resulted in an extended timeline for Pilot launch.

Located in western Wisconsin, the City of New Richmond, WI is home to a population of 10,350 residents. The city has a median household income of $68,034 and a poverty rate of 5.7%. The average age of residents is 38 years old. In New Richmond, 95.8% of residents above age 25 have graduated high school and 27.7% hold a bachelor's degree or higher [21]. New Richmond Utilities was one of the first municipal utilities in Wisconsin, created in 1890. New Richmond Utilities serves over 4,850 customers and operates a community solar garden located within city limits.

The Village of Mount Horeb, WI is located just 45 minutes west of Madison, WI and is home to a population of just over 7,700 residents. The city has a median household income of $81,297 and a poverty rate of 3.7%. The average age of residents is approximately 38 years old. Educational attainment is higher in Mount Horeb than the average in other rural communities, with 99.1% or residents above age 25 holding a high school degree and 47% holding a bachelor's degree or higher [22]. Mount Horeb Utilities has set up most of its 3,600 customers with Advanced Metering Infrastructure (AMI), which gives customers a granular, hourly view of their energy use data.

As described above, Lodi and Bayfield County participated in the first phase of the pilot, while New Richmond and Mount Horeb participated in the second phase. The community cohorts provided relevant context to align how energy choices can result in collective outcomes, while the low barriers to entry promoted broad engagement with residential customers. During Phase I, given continued impacts of the pandemic, sign ups were below the 25% household exposure the program anticipated, with 12% (138) of households in Lodi and 2% (90) of Xcel customers in Bayfield County signing up for the Phase I pilot. Actual percentage of household exposure in Bayfield is likely a conservative estimate as it is hard to delineate which households are being serviced by Xcel Energy in territories with competing utilities that are ineligible to participate in the Save to Give pilot. Phase II saw higher participation by eligible households with New Richmond registering a record 17% (394) of eligible households and Mount Horeb registering 8% (183 households).

Pilot Structure

Save to Give followed an opt-in program design where utilities and CEE conducted coordinated outreach and recruitment to eligible customers through email newsletters, utility bill inserts, as well as social media, local radio, church bulletin, yard sign, and newspaper campaigns. In addition, CEE conducted direct door mailings, s and in person outreach such community workshop events at the local library, as tabling at community events, and door knocking. Community non-profits distributed informational two-pagers, included the campaign in newsletters and Facebook pages, conducted phone campaigns and partnered with local chambers wherever possible to help spread the word. Phase I lacked a formal kickoff event for community members to learn more about the pilot, given constraints presented by the pandemic. However, Phase II had a kick-off in each community: CEE staff marched in the New Richmond holiday parade with a Save to Give float and tabled at Mount Horeb's winter "Scandahoovian" festival, also staffing many of the festival's activities.

The pilot focused on a grass roots approach emphasizing local input to craft the pilot in the community's vision through stakeholder meetings. These meetings discussed marketing tactics in order to reach the broadest audience in the community and which non-profits will help reach participation goals. Community stakeholders also identified which energy saving actions program participants would be willing and most likely to take to support the non-profits. Such actions included turning off lights and unused electronics, switching TVs and computers to low power mode, washing laundry on cold only, and adjusting thermostats according to season among others. Participants could also choose among actions to get credit for participating in other Focus on Energy programs

such as those for home energy audits, energy savings packs, and installing smart thermostats. The stakeholder group selected actions that would be applicable for the seasons in which there would be campaigns. For example, actions such as opening windows overnight to facilitate free cooling were available for summer campaigns and turning down thermostats a few degrees were available in winter. In phase I, communities were limited to a certain number of actions in an attempt to avoid information overload. Based on survey feedback indicating desires for more and diverse energy saving actions, phase II communities were unconstrained in the number of actions they could select. However, seasonally relevant actions were only made available during their applicable campaign.

Community Engagement

Nonprofit leaders, city and utility staff, and CEE staff, conducted hundreds of hours of community engagement over the two phases of the pilot. The engagement efforts recruited residents to participate in pilot and grew the visibility of Save to Give, and energy efficiency generally, in each community. Engagement from leaders, who are trusted messengers, proved to be vitally important. Lodi's Mayor Ann Groves Lloyd hosted monthly YouTube recordings that featured Save to Give during the active donation campaigns to assist with community awareness of the program. Her role as mayor enabled her to be a salient and trusted individual with deep historical ties to the community to foster connections between CEE and residents. The county administrator served as the local leader for Bayfield and had a more limited capacity to engage with the pilot. Still, the administrator handled advertising the pilot through the County's Facebook page and organized two County staff sign up events for Save to Give. A New Richmond nonprofit leader, who was the high school agriculture teacher, invited CEE staff to present at schools, table at football games, and connect with families in students in many other ways. This connection to the schools led to successful outreach events resulting in several sign-ups. CEE staff also formed a strong relationship with the Mount Horeb Chamber of Commerce, whose staff spread word of the challenge through newsletters, social media, and word of mouth and invited Save to Give to table at all of the Village's main community events.

Non-profits were local champions of the program in both communities as they stood to gain from increased program participation. These organizations assisted in motivating people to sign up and familiarize locals with the Save to Give program as a community-oriented initiative. Furthermore, they also served as key sources of guidance and feedback. Nonprofit leaders offered ideas for effective engagement and shared feedback they gathered from their channels to help facilitate program improvements. Results from mid-phase and end-of-phase surveys revealed that most participants joined Save to Give to support a nonprofit, showing that working with trusted and beloved nonprofits was key to pilot success. Because supporting non-profits as a major participation driver was identified early-on, CEE focused a number communication messages on how individual actions could maximize donations. Messages such as "by participating, you can raise up to $100 for your favorite non-profit" were successful particularly for in-person recruitment.

Non-profits served as an engagement differentiator between the Phase I communities; Lodi selected three non-profits, while Bayfield chose seven. Program implementors found broader non-profit participation proved to be difficult to manage marketing and communications efforts. In addition, it was evident that having too many non-profits reduced their motivation for engagement due to the likelihood of having to split the $25,000 community award total several ways. After the initial pilot phase, it was decided that three is a manageable amount while still fostering diverse options and drawing unique audiences for support.

The type, mission, and audience of each nonprofit and community partner also impacted the amount of support they were able to muster for the challenge. Food shelves were effective nonprofits to

partner with because of their visibility, reputation, and high level of support in their communities. In New Richmond, Mount Horeb, and Lodi the local food shelves had the largest number of Save to Give participants sign-ups. In addition, libraries and schools turned out to be highly effective and trusted partners for spreading awareness of the program, thanks to their wide audiences and as places recognized for learning and information. Some places of worship were also helpful in increasing program engagement. CEE implementors noted that dedicated nonprofit volunteers reached out directly to learn about further energy saving opportunities as well as how they could best spread the word about the program.

In-person outreach by CEE staff also proved to be very effective. Where phase 1 had limited in-person engagement due to the pandemic, phase 2 had significant in-person activities. In New Richmond CEE staff attended 37 community events and door knocked over 11 evenings, signing up 275 participants in person and creating a strong presence for Save to Give in the community. In Mount Horeb CEE staff attended 30 community events and door knocked over 7 evenings, signing up over 65 participants in person. In both cases the in-person presence at public events was critical to building awareness, trust, and participation in the Save to Give Challenge. News and connections already spread through relationships and at in person events in these small towns with strong community-pride, so building relationships and being present at events were natural methods of engagement and awareness building.

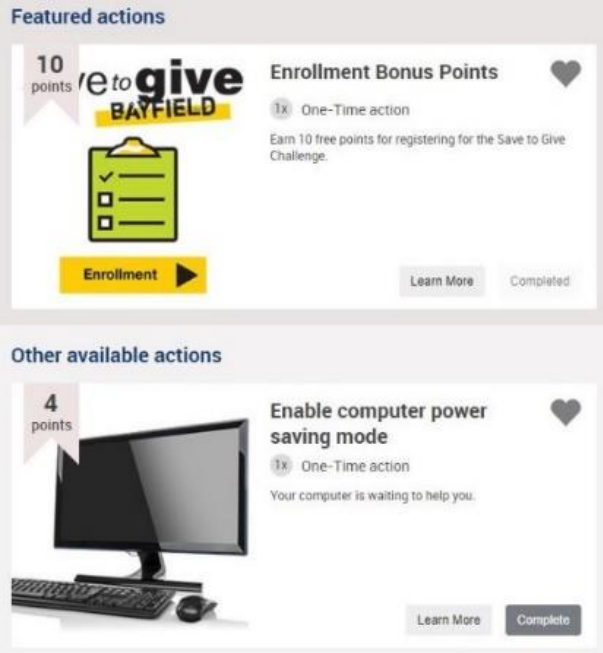


Figure 3 Energy action examples from the MyMeter platform.

MyMeter Digital Engagement Platform

Figure 4 Energy dashboard displaying energy usage within the MyMeter platform.

Throughout these campaigns, customers in all four communities could access their year-round energy data and the Save to Give challenge through their utility portal. Here, participants would report energy saving actions through an interactive feedback platform called MyMeter (see **Error! Reference source not found.**). While utilities had their own methods for marketing energy usage, such as with home energy reports, Save to Give did not explicitly include this in the pilot communities other than energy information being integrated into the engagement platform. The main feature of the Save to Give page on MyMeter was an "actions" page where energy "action tiles" included behaviors that could reduce energy consumption with brief descriptions. The "action tiles" could be flipped over to provide further explanation of the measure, estimated savings, and links to reputable

resources to learn more about the behavior. In some instances, links would also be provided that could demonstrate the behavior. Actions included activities one could complete in the home on a repeated basis such as shutting of power strips or on a one-time basis like turning down the water heater temperature. They also included options to sign up for energy efficiency programs such as energy audits or ordering energy saving packs. To encourage participants to reflect on their energy usage and how to reduce consumption, some energy "action tiles" in Phase II asked participants to do a "MyMeter Energy Use Scavenger Hunt," and find their highest usage day or month from their energy usage history charts. Other phase II actions asked brief questions regarding the highest or lowest recent energy use day or month as a way to prompt participants to practice engaging with the energy use dashboard.

As part of the sign-up process, individuals needed to select a sole non-profit that would benefit from their energy savings and commit to recording their energy saving actions during donation campaigns. Each activity reported in MyMeter had a point-to-dollar ratio based on the difficulty or cost of the behavior. As communities reported actions, they earned donation dollars, which contributed to the cumulative community-wide savings goal as well as non-profit specific amounts. MyMeter also included a leaderboard called the "progress page" to show community progress toward the $25,000 donation goal, proportion raised per non-profit, and individual participant contributions.

Behavioral Interventions

Save to Give employed strategies grounded in the latest behavioral science research on nudges, gamification, norms, and feedback [23, 24, 25, 26] to ensure programmatic success. The interventions in

Table 1 follow various behavior change models as well as psychological concepts of how humans process information to form judgements and make decisions. Detailed explanations of these concepts and common utility programs that incorporate them can be found in the supplementary materials.

Table 1 Behavioral interventions and foundations used in the pilot.

Behavioral Science Concept	Brief Description	Interventions in Pilot	Other Utility Programs
Information-Based	Information-based models draw on psychological research regarding cognitive functioning, motivation, affective states, and psychological well-being with the goal of promoting behavioral modifications without coercion, fear, or guilt.	Feedback, Prompts, Engagement Platform, Procedural Guidance	Home Energy Reports, Integrated Smart Devices
Norm-Based	Social and Norm-based models predict our behavior is dependent on what we learn from injunctive norms (what behaviors are accepted by society and ought to be pursued) as well as from descriptive norms (observing what behaviors are actually taking place). Interventions leverage norms to influence behavior change.	Competition/Gamification, Goalsetting and Commitment, Social Norming, Community-Based Social Marketing, Image, Status and Communication Strategies	Gamified Experiences, Community-Based Programs
Judgements, Heuristics, & Decision Making	Embedded within information-based and norm-based models is how we arrive at decisions, and subsequently how messages can be adjusted to elicit certain expected responses based on behavioral science concepts.	Framing/Reference Dependence, Loss & Extremeness Aversion, Crowding Out	Consideration as part of all strategies

Information-Based Interventions

The behavioral pilot employed several informational techniques to encourage residents to save energy. As mentioned above, participants were able to receive feedback through the MyMeter digital platform. This tool informed users of their energy consumption patterns and displayed targeted actions to reduce household energy use. The presentation of listing specific actions and guidance on how to take on the new behaviors limited choice overload and gave participants the procedural knowledge that would result in successful reductions. The feedback mechanism also served as a nudge for residents, as they would become aware through the visual display when their energy use was higher or lower. Throughout each campaign, CEE sent prompts through mail, email, social media, refrigerator magnets, and MyMeter to encourage households to report actions and continue performing energy-saving behaviors. In Phase II, CEE also sent weekly text reminders to prompt recording actions.

Feedback gives us a sense of how our behavior is contributing to a desired goal. Throughout the intervention, feedback was granted at multiple points to participants. At a broad scale, households gained insights for how their energy use changed on a monthly basis, which provided a reference point to compare aggregate actions. Conversely, reporting energy actions conferred instant gratification to support the behavior by immediately contributing to the non-profit and individual savings goals as seen in **Error! Reference source not found.**. The pilot also provided on-demand procedural feedback for how to perform a behavior by including detailed descriptions and relevant

links on the reverse side of action tiles. Integrating multiple dimensions of feedback delivery is a preferred method to elicit the greatest results for a desired intervention [26].

How, specifically, information is provided will also influence decisions [27]. While considering all possible alternatives and weighing their value makes up a “rational” choice, the expenditures of time and effort far outweigh the benefits of such a decision. As such, we often sacrifice making a perfectly rational choice in favor of an expedited one that will still result in a somewhat favorable anticipated outcome. The highly complex nature of energy related information compels us to this sort of convenience over idealistic decisions. Furthermore, these decisions often have competing objectives amongst the broader environmental, moral, economic, or social landscape. For instance, lowering the thermostat set temperature in the wintertime may sacrifice our comfort, but enhance our financial wellbeing. These choices may not precisely align with our strongest values but more so with the environment in which information has been conveyed.

When faced with complex or conflicting tasks, we rely on heuristics, or shortcuts to form judgements, to reduce the amount of time and effort to reach a conclusion [28]. This adaptive mechanism helps us quickly make sense of environmental signals and information without having to analyze and weigh all possible attributes embodied within the anatomy of a decision. While heuristics are important to maintain the ability to function in an information rich world, reliance on them introduces biases that influence decision outcomes. This exemplifies the importance of properly communicating messages to ensure they are received in the intended manner.

Perhaps most importantly, how messages are constructed and framed have a profound impact on heuristically driven judgements [27, 29]. Alternative frames activate, or prime, different preferences or decision-making strategies. Given that energy consumption is largely abstract, Save to Give provided historical energy baselines as a reference point for energy savings during the competition. This granted participants a more profound understanding of their past usage and how competition behaviors impact that baseline. In structuring the choice options in the MyMeter platform, behaviors with the lowest costs and highest impacts were prioritized to be displayed first. The primacy of these options increases the likelihood of participants pursuing them, which benefits the savings bottom line and gives residents a more profound sense of satisfaction by undertaking impactful behaviors first. Similarly, humans naturally gravitate away from extreme options and have a preference to select more moderate choices. To account for this, energy saving actions in the pilot contained an array of options with varying levels of difficulty or expense. These specifically included extremely simple and challenging options to encourage the moderate, yet still meaningfully impactful, behaviors to be selected.

Decision-makers also place a premium value on avoiding loss over equivalent gains [29]. The negative feelings associated with losing a valued possession, for example, are of greater magnitude than the positive ones of finding an identical one on the street. To make the most of this, outreach emails and energy saving tips were designed to be framed as potential for lost opportunities. For instance, a Facebook Campaign with the slogan "do not leave money on the table" was shared by local nonprofits and the Village of Mount Horeb to motivate participation through loss aversion. This, as a result, generated stronger behavioral responses than conveying a gain in donations for non-profits from reporting actions. Mount Horeb Utilities also sent emails to existing MyMeter users using loss aversion and urgency with messages like "last chance to participate," and "do not leave money on the table." Interestingly, more new sign-ups were generated from emails sent closer to a deadline like the end of a campaign, likely because the urgency and loss aversion were most salient at those times.

Figure 5 Image used in Mount Horeb social media campaign employing loss aversion strategy.

Norm-Based Interventions

Focus on Energy's behavioral pilot employed Community-Based Social Marketing (CBSM) in the approach as an overarching strategy. CBSM is an empirically validated framework to engage a community in collective action toward a common goal by influencing existing social norms [25]. Once a community was selected to participate in the pilot, local stakeholders met with program implementors to discuss how they might encourage neighbors to contribute and how to allocate the money if they win. This way, local decision-makers are able to connect place-based benefits to the financial incentive. For example, Lodi residents selected Reach out Lodi, Inc., a local food bank; Lodi Parent Teacher Organization to support the school district; and Prairie Valley Resale Store, a local thrift store dedicated to supplying necessities to economically disadvantaged or otherwise needy families in the area. In phase II, residents selected causes like the local food shelf, a park playground building initiative, the local historical society, and the local school farming club. In comparison with simply offering individual financial incentives on energy bills, enabling redistribution of finances to local organizations, programs, or projects that are valued in the community demonstrates a realized outcome of behavior change. This provides a more tangible measure of success of the program to the individual while intervening on senses of altruism and intrinsic motivation.

Because in-person engagement efforts were more possible in 2022 than in 2021, CEE staff were able to successfully employ many elements of CBSM in Phase II in New Richmond and Mount Horeb.

In New Richmond, CEE staff knocked doors at over 300 households over 11 evenings. While door knocking, CEE staff not only signed up 64 residents to participate, but also got over 90 residents to place Save to Give lawns signs in their yards simply by asking, “do you mind if I put this sign in your yard to help others learn about the program?” at the end of the conversation. A principle of CBSM is social norming – the proven concept that a person is more likely to take an action if someone they know shows publicly that they are doing that action. On some streets in New Richmond, up to 10 homes had lawn signs, creating a sense that everyone on the block was participating in Save to Give. CEE staff later experienced multiple residents reaching out asking for a lawn sign making statements such as, “my neighbors have a lawn sign, I’d like one too.” Many other residents when asked if they had heard about Save to Give indicated they had seen the lawn signs, showing their familiarity with the existence of the program.

Figure 6 A lawn sign advertising household participation in the campaign to raise awareness.

As denser communities, Lodi, New Richmond, and Mount Horeb had a greater ability to successfully employ elements of CBSM. With a more centralized community identity, the audience was better understood and therefore could have a more profound knowledge of barriers to program entry and how to properly communicate benefits to participation. Moreover, local energy champions who are well-known and trusted members of the community could be deployed. In the case of Lodi, the mayor’s involvement with the pilot was paramount to successful implementation of the CBSM approach. Participating households could display their contributions to the campaign, such as the lawn sign provided by CEE in Figure 8. In New Richmond, a local teacher, who led the participating non-profit school farm, was a key connector not only involving her nonprofit members in outreach activities but also facilitated Save to Give presentations at the school and tabling opportunities at football games, Football games in particular are significant community hub in rural Wisconsin and was a successful venue for driving enthusiasm and sign-ups for the pilot. In Mount Horeb, the food shelf lead was an important connector to church congregations, which allowed for Save to Give inserts in their church bulletins. Other notable champions of Save to Give were the Chamber of Commerce in Mount Horeb, which encouraged Save to Give promotional window signs in area businesses, and the library in New Richmond, which hosted energy workshops and promoted the pilot through physical displays and social media.

Furthermore, actions that impact our comfort and pleasure are more challenging to target, but still necessary to achieve energy saving goals. Increased prioritization of personal gratification, known as hedonic values, result in decreased likelihood the individual is to partake in behaviors that benefit the environment or social welfare [30]. In contrast, those with strong altruistic values are more likely to partake in such actions. By reframing energy conservation as philanthropic and selfless, these hard to change behaviors become more fluid. This association also grants meaningfulness to the behavior, further activating intrinsic motivations and personal norms to partake in environmentally or socially beneficial actions.

The Save to Give pilot took this into consideration when interacting with participants and challenged the community to save energy through a leaderboard, commitments, and emphasizing the socially

beneficial outcomes. These interventions appealed to participants self-image and perceived social status through moral and social dimensions while minimizing emphasis on financial considerations. This strategy kept focus on the altruistic nature of the pilot rather than financial savings, which may activate more pro-social behaviors than self-interested ones [31, 32]. Here, altruism and community aid serve as moderating variables that facilitate the behavior change, while environmental benefits may be viewed as an added value. This way, audiences that are not engaged with pro-environmental beliefs can still be motivated to conserve energy without receiving any direct financial incentive, while those that have such values are further driven to participate.

Another strategy to influence decisions is through getting participants to commit to consistently record energy saving actions. Commitments are a voluntary agreement to adopt a behavior for a limited period of time without extrinsic incentives, secured through a written or verbal pledge. Voluntarily setting a goal encourages individuals to develop attitudes and seek out behaviors that are in alignment with the commitment. Consistency between promises and actions has been identified as an avenue to amplify norms and generate a positive response to normative messaging [33], much more so than incentive-based approaches alone. Commitments are most effective when made to a person or entity a person knows and trusts. Ahead of the third and final donation campaign in New Richmond, one of the nonprofits, Will's Playground, conducted a phone bank. The nonprofit's volunteers called all the Save to Give participants who chose to support Will's Playground to remind them of the start of the campaign and share two simple messages: 1) "By saving energy, you are supporting our work and mission", and 2) "Can we count on you to record your energy saving actions each week of the campaign?" Obtaining the verbal commitment to participate proved to be effective. Participants who supported Will's Playground recorded more energy-saving actions and raised more money than the other New Richmond nonprofit that had a similar number of supporting participants but did not phone bank.

Save to Give implementors helped guide the selected communities in virtual kickoff meetings to highlight the overarching community fundraising goal of $25,000. Progress toward the community target and individual and non-profit contribution toward that goal were tracked within the MyMeter platform. Furthermore, the pilot initiated the strategy with a "foot-in-the-door" technique that asked for a commitment to simply sign up for the program and support the community goal. This primed participants for larger commitments embedded within the engagement platform, which were broken up into three tiers of progressing difficulty or costs and point values. Research by Thaler and Sustein (2008) suggests that by allowing participants to try out new low-cost behaviors first, they are more likely to commit to larger ones in the future [34].

The pilot gamified much of the approach to increase participant interest and engagement with energy saving. Gamification is a strategy that uses elements of game design in real-life context to achieve a behavioral outcome [24]. This plays into both extrinsic and intrinsic motivations to partake in a behavior. Save to Give utilized points, leaderboards, and achievements as reward-based extrinsic motives to garner behavioral support. At the same time, the pilot encouraged users to "play" with different energy actions, explore new ideas, and provide information in an engaging matter to influence intrinsic motives to comply. The novelty and appealing nature of game design draws households to the program, while tying feedback to game performance encourages users to continue and improve energy conserving behaviors.

Outcomes From the beginning, the pilot was designed with 6 key performance indicators (KPIs) with targets. These are listed below along with the outcomes for each community.

KPI	Goal	Bayfield County	Lodi	Mount Horeb	New Richmond
% of eligible households participating*	25%	2% (90)	10% (138)	8% (183)	17% (394)
% of participants who took at least one action*	50%	94% (85)	98% (135)	77% (140)	54% (211)
% of participants reporting participation in at least one other Focus offering*	15%	52% (47)	83% (115)	57% (105)	34% (133)
Energy savings per participant (electric)**	4-8%	2.70%	2.20%	Not available	Not available
Customer Satisfaction	90%	90%	85%	80%	92%
In person engagements	25	25	29	37	48
Donations earned by participants***	$25,000	$,5,519	$10,018	$9,872	$14,380

*Table 2. KPI summary table. *Participant counts are indicated in parentheses. **Energy savings shown are from Cadmus Group's evaluation of phase 1. ***Donations raised was not an original KPI but is nonetheless a valuable metric.*

Participants self-reported their energy-saving actions in the MyMeter platform. They were instructed to record actions that they recently completed, which meant for some actions such as participation in another Focus offering, that could have been within the last several months. For phase 2, recorded actions were compared to Focus participation data for two offerings: energy saving packs and smart thermostats. Table 3 shows the Save to Give participants' engagement with the offerings.

	Offering Ordered Before S2G Participation (Likely not caused by S2G)	Offering Ordered After S2G Participation (Likely caused by S2G)	Total S2G + Offering Coincident 2022 Participation
New Richmond Packs	25	74	99
Mount Horeb Packs	24	51	75
New Richmond Thermostats	2	4	6
Mount Horeb Thermostats	3	4	7

Table 3. Save to Give (S2G) impact on participation in two Focus offerings by count of participants.

Participation data was also analyzed for changes over time. Table 4 shows that more packs were ordered and completed in 2022 in both New Richmond and Mount Horeb than in 2021. The

opposite was true for thermostats, where a drop was seen in participation from 2021 to 2022. For both offerings, participation was strongest in campaign 1 and dropped in subsequent campaigns.

New Richmond Energy Saving Packs				
	January	April	October	Total All months
2021 Total Orders	5	27	29	186
2022 Total Orders	160	36	25	303
Mount Horeb Energy Saving Packs				
	March	June	October	Total All months
2021 Total Orders	8	7	58	192
2022 Total Orders	70	15	20	627

New Richmond Smart Thermostats				
	January	April	October	Total All months
2021 Total Orders	5	7	5	70
2022 Total Orders	4	4	2	27
Mount Horeb Smart Thermostats				
	March	June	October	Total All months
2021 Total Orders	1	1	6	96
2022 Total Orders	8	5	3	29

Table 4. Summary of energy saving packs and smart thermostat participation in phase 2 communities by campaign. Numbers include communitywide participation and not just those also in Save to Give.

Successes

Overall, participation in Phase II was higher than in Phase I, indicating the effectiveness of increased in-person engagement and application of lessons learned from Phase I during Phase II.

Many components lead to the higher participation in Phase II but heightened in-person engagement is one of the primary drivers. The prime example of this was in New Richmond, where 275 of the 394 participants (70%) signed up in-person] at community events or through door knocking. One notable result is that while New Richmond had the highest sign-up numbers, only 211 (54%) participants logged into MyMeter to record energy saving actions, indicating that many people, who signed up never fully engaged. As a comparison, the ratio of sign-ups to participants, who recorded at least one action was 76% or above in the other three communities. Even with the lower percentage of participant engagement in New Richmond, the community still showed the highest total participant engagement among the pilot communities. These phase II results in particular indicate the increased awareness, widespread community engagement, and savings that are possible in a post-pandemic rural behavior change program. Furthermore, the enthusiasm from households that contributed to the community goal has spilled over to generate interest in similar program designs to promote other municipal programs. Initial feedback demonstrates the compatibility of community-based energy programs with the typical rural Wisconsin community.

In all four communities, turning off lights in empty rooms, adjusting thermostats down, and turning off unused electronics were the most popular actions to take. Many participants also increased their

participation in energy efficiency offerings from Focus on Energy, like ordering free energy-saving packs.

The Save to Give Challenge also provided strengthen relations between the utilities and Focus on Energy as utilities experienced benefits toward their own goals. The municipal utilities in Lodi, New Richmond, and Mount Horeb already used MyMeter as a billing platform before participating in Save to Give. Utilities in these communities reported that Save the Give was a beneficial marketing tool for their MyMeter billing platforms both in browser and mobile app forms.

Further success came from boosts in Save to Give offerings. Phase 2 results showed a correlation between Save to Give participation and participation in Focus energy saving pack and smart thermostat offerings. Approximately two-thirds to three quarters of Save to Give household participating in the Focus offerings did so after enrolling in Save to Give indicating that Save to Give may have contributed to participation in the offering [Table 3].

Despite lower overall participation in Phase I due to the challenges of the pandemic, the Phase 1 evaluation of the pilot done by the Cadmus Group shows promising electric savings results among participants. In Lodi, the average participant saved 2.2%, and all participants cumulatively saved 21,917 kWh. In Bayfield the average participant saved 2.7%, and all participants cumulatively saved 17,421 kWh [ADD CADMUS SOURCE]. It should be noted though that given the small number of participants, these results cannot be declared statistically significant. The Cadmus evaluation of Phase II communities will take place in 2023 in order to facilitate the analysis of 12 months of energy use post the final campaign. For comparison, home energy reports, a type of energy behavior change program, yield between 1.2-2.2% savings, indicating that this community-based model for rural communities was effective. [35]

Challenges

While there are successes, some extraneous factors may have limited impacts of the Phase I pilot. For instance, the pilot was designed as an interactive campaign with many in-person elements that could not be carried out due to the pandemic, such as hosting kickoff events, posting flyers in local businesses, and tabling at community events. Instead, the pilot had to quickly pivot to an almost entirely digital campaign kickoff in both communities, marketing through social media, engaging audiences through newspaper ads, and facilitating stakeholder meetings over Zoom. Community-based elements are difficult to achieve in a virtual world, and in-person interactions serve as a constant reminder of community and peer support for the pilot. Furthermore, the lack of in-person interactions and program marketing may have added to confusion over utility integration within the pilot. In Bayfield County, for example, there was initial misunderstanding with Xcel Energy's existing software system and MyMeter. As the two had similar structures, households were confused by which to report actions on and which to pay bills through. Confusion around this issue could have been mitigated if more in-person interactions were able to occur, enabling quicker identification and messaging solutions to address it.

A challenge faced in Phase I was that participation in reporting actions dropped off after about the 4th week of the eight-week campaigns in each community. While the behavior may still have been taking place, the added action of reporting may have become meticulous in an extended period of time. CEE changed the campaign structure in Phase II to a 3-campaign schedule lasting four weeks, rather than the previous 2 eight-week structure to reduce attrition. The Phase II results were positive. In both New Richmond and Mount Horeb, the number of participants recording each week remained relatively constant through all four weeks of each campaign. A notable result in phase II's final

campaigns was the increase in engagement, In New Richmond and Mount Horeb the third campaigns showed the highest number of participants record an action (188 and 149 compared to previous campaign lows of 171 and 130 respectively). The third campaigns' success could be attributed to a combination of the significant pre-campaign 3 marketing efforts and the sense of urgency given the pending conclusion of the Challenge.

All actions were self-reported and thus the program was designed on trusting participants to record accurately. Analysis of participation in Focus energy saving pack and smart thermostat offerings indicate the level of honesty and accuracy of that reporting in Table 5. Some households ordered packs or thermostats but never recorded the action. Others recorded the action without ordering a pack or thermostat. The latter was more prevalent with thermostats, with 6-9x as many recording the action as having placed an order. This could partially be attributed to the program instruction to take credit for actions already completed, meaning that households with existing smart thermostats obtained through Focus or not may have recorded the action.

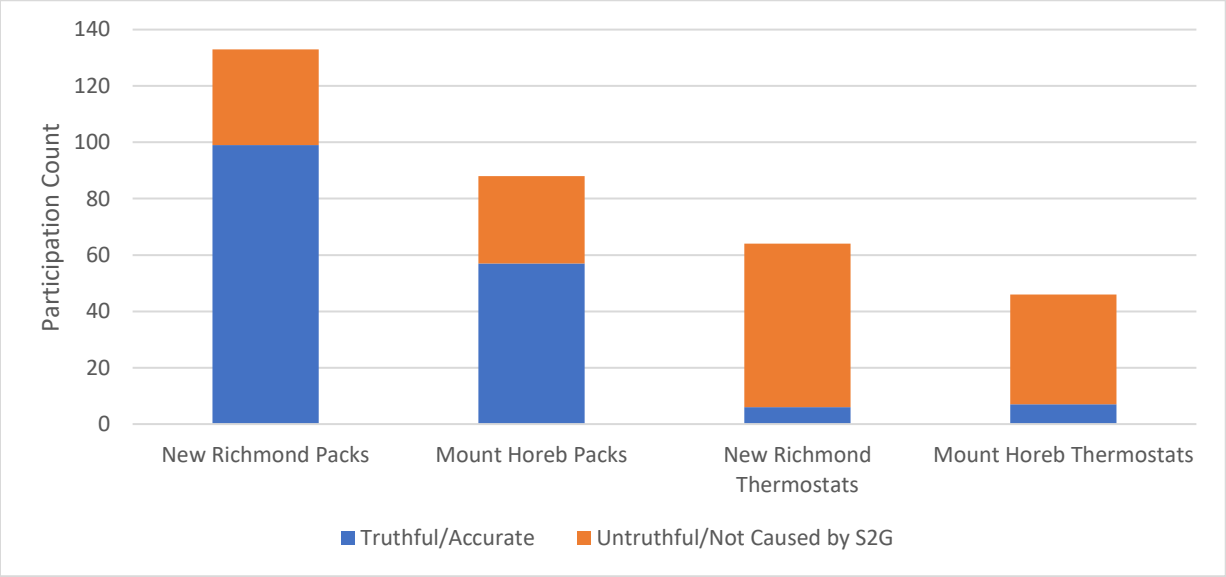


Table 5. Reporting honesty and accuracy of Focus offering actions.

Another key takeaway is establishing a strong, centralized community identity to ensure program success. This was a challenge in Bayfield County, but a success in the other three communities. Working with more defined communities as opposed to counties establishes shared values and ensures program outcomes are salient and meaningful, as the interventions in this pilot become more diluted as the geographic region expands, as shown in Bayfield County. A more focused geography also means less complexity among utility service overlap and non-profit competition to receive donations. Community identity was a top priority in the selection of Phase II communities. In retrospect, New Richmond in particular had a very strong sense of community identity with active and passionate residents, which lead to its success. Both New Richmond and Mount Horeb draw in many people who live in the surrounding area, which meant that nonprofits and CEE staff doing outreach actually had to turn away many people who were interested in participating but did were not customers of the municipal utility because they lived outside the service territory. Overall, a strong community identity activates human desire to witness and actively participate in outcomes rather than passively contribute, thereby eliminating an option to simply write a check to donate to non-profits in place of energy saving actions.

Figure 7 Part of a recruitment post card for the pilot taking place in New Richmond.

LESSONS LEARNED AND FUTURE SUGGESTIONS

Behavior-based energy efficiency programs are a vital component to decarbonizing and maintaining a reliable energy grid. These programs targeting behavior change offer empirically validated savings potential while remaining cost effective. Recognizing this, many states have adopted behavioral programs as part of their energy efficiency portfolio. Still, unlike efficient appliance upgrades, behavioral savings can vary widely. As such, it is important to carefully design and implement programs utilizing models from cognitive and behavioral sciences and evaluate programs based on the guidance and standards discussed earlier in this paper.

Each approach to changing behavior comes with tradeoffs. To limit unintended consequences and maximize savings, program administrators must understand the audience and targeted behaviors prior to implementation. While some interventions have almost become a standard offering from utilities (e.g., HERs), smaller or strategic programs should consider multiple methods to capitalize on savings potential.

Since human behavior is complex, innovative pilots that do not result in significant savings should not be seen as failures, but as learning opportunities. While never the goal, valuable information can still be gleaned from non-significant results. Barriers to change are often hidden rather than outward facing and documenting such obstacles can be the first step in a successful program. Programs resulting in lower-than-expected savings should be reevaluated to determine if best practices were followed, the target audience was well understood, or if a different method should be taken. It is an innate human characteristic to adapt to new circumstances; as such, change is never impossible.

Customer and utility satisfaction were the primary objectives of the Save to Give pilot. As outlined in the supplementary materials, programs following similar methodologies result in greater customer

engagement while reducing strain on utility infrastructure compared to a baseline absent of behavioral initiatives. Overall satisfaction reported by Save to Give participants ranged from 80-92%. Furthermore, over 50% of respondents reported that the Save to Give Challenge made them "more favorable toward my utility." Continued investments in behavior-based programs serve to improve this dynamic. Innovative approaches, such as gamified experiences, allow customers to interact with their utility in ways that is not found in other offerings. Such experiences foster relationship building and greater satisfaction with interactions.

A secondary goal of this pilot was to test the efficacy of behavioral strategies and program design on rural Wisconsin customers. As a harder to reach audience with a greater saturation of less efficient homes, the inclusion of these customers is paramount to the success of Focus on Energy. As exemplified by the New Richmond, Mount Horeb, and Lodi pilots, community engagement can lead to successful behavioral programs. Conversely, the challenges and limited results from Bayfield County demonstrate the geographic specificity in which programs must be pursued. This might suggest communities must have sufficient density to be responsive to community-based program design. Alternatively, success in Lodi and New Richmond may be attributable to the greater presence of community energy champions, an aspect that was less salient in Bayfield County and Mount Horeb. It may also be worth exploring the impact of income on participant interest and engagement in energy behavior change programs as a potential cause of lower participation in Mount Horeb with Regardless, the enthusiastic response from participants and interest in utilizing pilot structure in other aspects to promote community development demonstrates the program's suitability for rural Wisconsin communities.

As significant savings were not a priority objective to this pilot, the results are encouraging. Lodi and Bayfield County saw an average electric saving per participants of 2.2% and 2.7% respectively ADD Cadmus source]. Evaluation of savings results for New Richmond and Mount Horeb were not complete at the time of writing this report and are anticipated in late 2023. The difference in success between the four communities offer valuable insights into how to approach behavioral programs in rural Wisconsin communities. Since great care was taken in selecting the communities, savings discrepancies can largely be attributed to how pieces fit into the program design. While the in-person interactions that are vital to community-based programs were restricted in Phase I, we saw the success that comprehensive in-person engagement brought in phase 2 New Richmond and Mount Horeb. Additionally, strong community pride and active community particularly in Lodi and New Richmond showed what small, rural communities can accomplish when asked to rally around their nonprofits and fellow community members.

The Save to Give Challenge operated as an important recruitment tool for using the energy use engagement and bill payment platform, for taking behavioral actions, and signing up for other Focus on Energy offerings In future campaigns focused on energy savings there is opportunity to leverage real time energy feedback to prompt more actions. In the pilot, only Mount Horeb utility had available near real time data at 15-minute intervals. Given the slower sign-up rate in Mount Horeb, more focus was on recruitment and fewer resources were dedicated to engagement using the near real time energy use data. Once a recruitment threshold is met and participants are engaging with the platform, there is potential to create more actions that drive review and reflection of energy use on more real-time basis and for actions that are responsive to that use to drive energy savings. Furthermore, analysis of phase two participation in Focus offerings showed that there is more to be understood around action reporting accuracy and how the program instructs the recording of actions to facilitate analysis of reporting accuracy.

The Save to Give pilot employed a unique approach to target a similarly exceptional audience. Future success of behavior-based programs is not necessarily dependent on the initial receptiveness of the audience to the idea, but more so instilling proper design and a meticulously crafted methodology. Behavior is at the heart of all energy decisions. As such, it cannot be excluded from the equation when considering the future of efficiency. While remaining within the scientific guidance, new programs should be confidently innovative to optimize, refine, and improve savings potential.

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