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Law Clinic

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Via E-Filing

Ms. Lisa Felice
Executive Secretary
Michigan Public Service Commission
7109 West Saginaw Highway
Lansing, MI 48917

RE: MPSC Case No. U-21534

Dear Ms. Felice:

Please find enclosed the Accompanying Exhibits DAO-137 to DAO-163 (Part 5 of 5) for the Direct Testimony of Justin Schott on Behalf of Soulardarity and We Want Green, Too, along with proof of service for electronic filing in the above-referenced matter. Please do not hesitate to contact me with any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark N. Templeton".

Mark N. Templeton, *pro hac vice*
6020 S. University Avenue
Chicago, IL 60637
Phone: (773) 702-9611
Email: templeton@uchicago.edu

xc: Parties to Case No. U-21534



Center for Energy and Environmental Policy Research

Social Norms and Energy Conservation

by
Hunt Allcott

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Social Norms and Energy Conservation

Hunt Allcott
MIT and NYU

October 10, 2009

Abstract

This paper evaluates a large-scale pilot program run by a company called OPOWER, previously known as Positive Energy, to mail home energy use reports to residential utility consumers. The reports include energy conservation information as well as social comparisons between a household's energy use and that of its neighbors. Using data from a randomized natural field experiment at 80,000 treatment and control households in Minnesota, I estimate that the monthly program reduces energy consumption by 1.9 to 2.0 percent relative to baseline. In a treatment arm receiving reports each quarter, the effects decay over the months between letters and increase again upon receipt of the next letter. I provide evidence to suggest that at least some of this effect is because consumers' attention is malleable and non-durable. I show that "profiling," or using a statistical decision rule to target the program at households whose observable characteristics predict larger treatment effects, could substantially improve cost effectiveness in future programs. The results provide additional evidence that non-price "nudges" can substantially affect consumer behavior.

JEL Codes: C44, D03, L94, Q41.

Keywords: Social norms, attention, energy demand, randomized field experiments, statistical treatment rules, profiling.

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1 Introduction

Climate change has emerged as one of the most pressing issues of the early 21st century, and many consider energy efficiency to be a promising approach to reducing energy demand and thus abating greenhouse gas emissions. Historically, economists and policymakers have had the intuition that relative prices are the primary driver of adoption of energy efficient technologies and behaviors. As a result, subsidies for energy efficient capital goods draw the vast majority of federal and state energy efficiency funding (Gillingham, *et al*, 2006).

Perhaps spurred by an increasing general interest in behavioral economics, there has been a recent surge in the appeal of non-price interventions that "nudge" consumers to conserve energy. Non-price interventions are typically inexpensive to implement relative to subsidies, and as demonstrated by Bertrand, *et al*, (2010) in the context of consumer finance, carefully-crafted psychological cues can have effects on consumer behavior that are comparable to large changes in relative prices¹. A principal challenge, however, is to craft interventions that are scalable and have large effects in a representative population.

This paper econometrically evaluates a large-scale energy conservation program run by a company called OPOWER, previously known as Positive Energy, for an electric utility in Minnesota. The OPOWER program is implemented as a randomized controlled natural field experiment, allowing an unbiased estimate of average treatment effects in the eligible population. The treatment involves mailing to residential consumers Home Energy Reports with two principal features. The first feature is an Action Steps Module that provides information, specifically targeted to each household, on strategies to conserve energy. The second is a Social Comparison Module that details the household's electricity consumption and compares it to that of its one hundred nearest geographical neighbors in houses of comparable size.

This social comparison feature was motivated by academic work showing that normative comparisons can significantly affect individual behavior. Empirical work by psychologists and political scientists has shown that information on social norms can induce people to conserve energy (Goldstein, Cialdini, and Griskevicius 2008), vote (Gerber and Rogers 2009), or stop littering (Cialdini, Reno, and Kallgren 1990). This social influence literature has developed alongside work by economists on social learning² and conditional cooperation in the private provision of public goods³.

The effects of Positive Energy's program are of practical interest for two reasons. First, independent estimates of the energy use reductions caused by the Home Energy Reports are important

¹For their study, Bertrand, *et al*, partnered with one of the largest banks in South Africa to offer new loans to existing clients, via letters that varied both the interest rate offer and other psychological cues. They varied the number of different potential loans that were presented (to test whether greater choice could overload decision-making), how the interest rate was compared to some market benchmark, the race and gender of the person in a photo on the offer letter, the expiration date of the offer, whether the offer is combined with a promotional giveaway, and whether the letter mentions suggested uses for the loan. Consistent with economic theory, they found that consumers that had been offered lower interest rates were much more likely to take up the loans. They also found, however, that any one psychological cue could affect takeup by almost as much as a one to two percentage point change in the monthly interest rate. See Allcott and Mullainathan (2009a and 2009b) for further discussion of applications of non-price approaches to energy conservation suggested by recent research in psychology and economics.

²This literature includes Banerjee (1992), Beshears, *et al*, (2009), Conley and Udry (Forthcoming), Duflo and Saez (2002, 2003), Foster and Rosenzweig (1995), Mobius, Niehaus, and Rosenblat (2005), and others. In these settings, agents make a choice under uncertainty and draw inference from others' behavior because others may have distinct and useful information.

³Recent work on conditional cooperation includes Fischbacher, Gächter, and Fehr (2001), Shang and Croson (2004), Frey and Meier (2004), Alpizar, Carlsson, and Johansson-Stenman (2008), and others. These studies demonstrate that people are more likely to contribute to public goods when informed that others are contributing more.

per se. The program has been covered in the New York Times (Kaufman 2009), the Atlantic (Tsui 2009), National Public Radio, and other popular media outlets. It has been introduced at 20 utilities, including six of the largest ten in the United States, and by the end of 2009 nearly two million households will be involved nationwide. Other utilities are considering adopting the program, and credible documentation of the magnitude of its effects will affect the disposition of millions of dollars in potential investment.

Second, the success or failure of the OPOWER program is also of more conceptual interest. Whether this program is perceived as successful will influence whether future energy efficiency programs are influenced by findings from behavioral science and evaluated via randomized controlled trials⁴. If the program has economically significant effects, it would be a remarkable illustration of the effectiveness of non-price interventions compared to the existing large rebates for energy efficient durables.

The point estimates of the Average Treatment Effect (ATE) of OPOWER's monthly Home Energy Reports for the households served by this Minnesota utility range from a 1.9 to a 2.0 percent reduction in electricity consumption relative to the control group. The 95 percent confidence intervals in the four primary specifications span a range from 1.52 to 2.31 percent. Because of the large sample size and randomized control group, the estimated ATEs are highly robust to alternative specifications of fixed effects and control variables. The effects appear to vary depending on the envelopes in which they are delivered, the time elapsed since the beginning of the treatment, and the season.

The point estimate of the cost effectiveness of the existing Minnesota program is 5.25 cents of program cost per kilowatt-hour saved. This number, which could differ substantially by geographic region and by the scale of the program⁵, compares favorably to the price-based approaches of traditional energy efficiency programs. A principal general-interest result of this analysis is the demonstration that a low-cost, non-price intervention - simply sending a letter - can significantly affect consumer behavior. This adds to the growing empirical literature on the power of behavioral interventions, or "nudges," in a variety of domains, including Bertrand, *et al*, (2010), Benartzi and Thaler (2004), Ashraf, Karlan, and Yin (2006), and others.

The experiment was designed to test the efficacy of the overall treatment, not to provide evidence on the mechanisms underlying the effects. The existing data do provide suggestive evidence, however, of several behavioral issues at play. Program households were randomly assigned to groups that would receive Reports every month versus every quarter. Interestingly, the Quarterly group treatment effects decay in the months between receiving Reports, then increase again with the receipt of the next Report, then decay again. The decay is economically significant, as it constitutes almost half of the treatment effect. Survey evidence indicates that an important result of the Reports is to increase day-to-day energy conservation behaviors, such as turning off lights and unplugging appliances, that households *already knew* could save energy. This suggests that the decay in the Quarterly group is the result of a cycle in which receiving a letter reminds or motivates the

⁴OPOWER's Home Energy Reports are but one example of a wide variety of energy efficiency programs that utilities operate to satisfy regulatory requirements, including information campaigns, energy audits and weatherization, and rebates for purchasing energy efficient durable goods such as lightbulbs, air conditioners, and water heaters. The causal effects of these programs are typically estimated using the "deemed savings approach": multiply the number of participants by ex-ante "engineering estimates" of the energy savings per participant relative to some counterfactual. While those in industry have long questioned the accuracy and precision of deemed savings and other approaches (e.g. Nadel and Keating (1991)) and are aware of the conceptual benefits of randomized controlled trials, there is no consensus on how the effects of energy efficiency programs should be measured.

⁵Allcott and Mullainathan (2009a, 2009b) calculate a cost effectiveness of 2.9 cents/kilowatt-hour for a nationwide OPOWER program using a simple profiling rule.

household to change behaviors, the attention fades over time, and it is re-engaged upon receiving the next quarter's Report.

The attention channel would be consistent with part of the "Focus Theory of Normative Conduct" in psychology, which originally motivated OPOWER's social comparisons (Cialdini, Reno, and Kallgren 1990). One element of this theory applies bounded attention to social norms, arguing that social norms affect behavior only when at top of mind and suggesting that this attention can dissipate over time. This effect would also be similar to the "Two Steps Forward, One Step Back" dynamic in consumer credit, where credit card fees remind consumers to avoid triggering fees in the future, but that reminder effect decays over months (Agarwal, Driscoll, Gabaix, and Laibson 2006). More generally, the suggestion of bounded and malleable attention is consistent with a growing theoretical and empirical literature in economics, including Chetty, Looney, and Kroft (2009), Finkelstein (2009), Gabaix and Laibson (2006), and others.

Econometric results also show that households that were high energy consumers before the treatment conserve substantially more than households whose baseline consumption was low. This is consistent with models in which low-consumption households have higher marginal costs of energy conservation or are already better informed. Alternatively, this finding is also consistent with one of the chief concerns in providing information on social norms: while individuals worse than the norm may improve, a "boomerang effect" might cause those better than the norm to regress (Clee and Wicklund 1980, Ringold 2002).

This finding of heterogeneous treatment effects also implies that "profiling," or targeting future treatment toward units with highest Conditional Average Treatment Effects, could raise the Average Treatment Effect on the Treated and thus improve the program's cost effectiveness. The final section of the paper builds on this insight to develop a statistical treatment rule under which a decisionmaker who wishes to treat some share of the population in a future program allocates treatment to maximize the expected treatment effect. The routine draws on a recently-growing literature⁶ on using the results of randomized experiments to develop statistical decision rules for future treatments. Dehejia (2005), for example, shows that a program that would not be implemented based on examining the ATE alone would increase welfare if implemented in subgroups that have higher Conditional Average Treatment Effects. I show that if the OPOWER program were to be administered to half of the eligible population, profiling would improve its cost effectiveness by a factor of two relative to random assignment. This demonstration of the potential usefulness of profiling is an additional general-interest economic result of the present analysis.

This paper proceeds by providing background on OPOWER's pilot experiment in Minnesota. Section 3 details the econometric strategy, and Section 4 presents results. Section 5 details the statistical treatment rule and gains from profiling, and Section 6 concludes.

2 Experiment Overview

2.1 Motivating Literature

Social scientists have long been aware that social norms can affect individual behavior. There is a large experimental literature in psychology that shows that providing people with information on social norms can have powerful influence (Cialdini 2003, Goldstein, Cialdini, and Griskevicius 2008, Gerber and Rogers 2009, Cialdini, Reno, and Kallgren 1990). This could occur for a number

⁶This literature includes Berger, Black, and Smith (2000), Dehejia (2005), Graham, Imbens, and Ridder (2009), Hirano and Porter (2006), Imai and Strauss (2009), and Manski (2004, 2009)

of reasons. We might emulate the norms of high status people to signal high status (Veblen 1899, Pesendorfer 1995). We might conform to customs due to social penalties for noncompliance (Akerlof 1980). We might follow a subgroup norm to signal horizontal type (Levy 1959, Wernerfelt 1990) or because of intrinsic utility from conforming to an identity (Akerlof and Kranton 2000). We might conform to a norm of prosocial behavior to signal benevolent underlying preferences (Bernheim 1994) or to otherwise receive social acclaim (Becker 1974). Finally, we might follow others because their choices are informative when we have imperfect information (Banerjee 1992). The explanations for conformity depend most importantly on whether the action taken is observed or unobserved and whether we are considering consumption of private goods or private provision of public goods.

There are three pathways through which information on neighbors' electricity consumption would most likely affect a household's quantity of electricity demanded. First, the Reports could induce households to conserve if individuals derive utility from being shown to be more frugal than their neighbors. Second, because some externalities, primarily from power plant greenhouse gas emissions, are not internalized in electricity prices, many consumers perceive that energy conservation helps provide a public good (more moderate global climate). A literature on "conditional cooperation," including Alpizar, Carlsson, and Johansson-Stenman (2008), Axelrod (1984), Cialdini (2003), Fischbacher, Gächter, and Fehr (2001), Frey and Meier (2004), and Shang and Croson (2004), has shown that people are more likely to contribute to public goods when informed that others are contributing.

Third, the information in the Home Energy Reports may facilitate social learning, as in Conley and Udry (Forthcoming), Duflo and Saez (2002, 2003), Foster and Rosenzweig (1995), Mobius, Niehaus, and Rosenblat (2005), and other applications. Electricity costs the average household about \$1000 per year, but households may not be very knowledgeable about the amount of electricity they consume or what factors influence consumption. Given this uncertainty, new information on neighbors' consumption might induce the household to re-optimize around the level of household energy services or the efficiency with which energy input is transformed into energy services. For example, a household that learns that comparable households are using much less energy might infer that they themselves have low-cost opportunities to conserve.

All of these channels suggest that revealing the social norm should affect high consumption households more than low consumption households. Importantly, the second and third channels suggest that learning that they consume less than normal would induce low consumption households to conserve *less*. This has been called the "boomerang effect" (Clee and Wicklund 1980, Ringold 2002). In a pilot study of electricity conservation that influenced the design of OPOWER's Home Energy Reports, Schultz, Nolan, Cialdini, Goldstein, and Griskevicius (2007) found that revealing the social norm did indeed cause low consumption households to increase consumption. Their solution was to add "injunctive social norms," which label others' behavior as good or bad, along with the "descriptive social norms," which simply describe others' behavior.

There is also a large body of existing work on how information provision and behavioral interventions can induce households to conserve energy. Giving consumers feedback on their consumption, providing information on energy savings opportunities, comparing their use to their neighbors' use, facilitating public or private goal setting, and structuring commitment devices have caused households to reduce energy consumption by 5-20 percent. Abrahamse, et al, (2005), Darby (2006), Fischer (2008), Shippee (1980), and Stern (1992) provide reviews of this literature. Many of these approaches, however, have been tested only in the lab, or in field experiments with small or unrepresentative groups. Furthermore, even if effective in field experiments, many of these academic

interventions have been too labor-intensive to be used as a large-scale energy efficiency program.

OPOWER intentionally designed its pilot programs to exploit this existing body of knowledge. While the randomization into treatment and control will allow an unbiased estimate of the overall effect of the Reports, because the entire Treatment group received the social comparisons, historical consumption information, and energy efficiency tips, it will not be possible to determine what aspect of the Reports drives that treatment effect. As in Benartzi and Thaler (2004), I can evaluate the overall efficacy of the program motivated by behavioral science, but I cannot test more refined hypotheses about the channels through which the program works. Although popular media outlets have concluded it is the peer comparison feedback in particular that reduces households' electricity usage, the treatment arms of the pilot program itself provide no evidence that this is actually true. What's interesting about the OPOWER pilot experiments is that they take an existing body of scientific knowledge and test whether they are effective at scale, in a natural field experiment in the general population.

2.2 Experimental Design

As of October 2009, OPOWER is operating pilot projects for utilities in California, Minnesota, Washington, Illinois, Colorado, and Virginia. This paper evaluates their program at an electric utility called Connexus Energy, which serves customers in seven counties in central Minnesota near Minneapolis and St. Paul⁷. Minnesota's New Generation Energy Act of 2007 requires that utilities run conservation programs that reduce energy demand by 1.5 percent each year. Although in many states, utilities have little financial incentive to reduce their own sales, such Energy Efficiency Resource Standards have been the primary reason why utilities have contracted with OPOWER.

Connexus Energy has approximately 96,000 households in its service territory. The households eligible for the Connexus Energy pilot experiments were those with a full one year of electricity bill history as of January 2009, as historical consumption data were required to construct the social comparisons. From the 78,492 eligible households, approximately half (39,217) were randomized into a Treatment group, which would receive Home Energy Reports, and the rest were randomized into a Control group, which would not. Some utility staff were automatically enrolled in the reports and are therefore excluded from the analysis. The experiments are still ongoing.

The Reports are several-page letters with two key components. The first, which is illustrated in Figure 9.1 and appears at the top of the letter's first page, is the Social Comparison Module. This compares the household's electricity consumption over the past twelve months to the mean of its comparison group and the 20th percentile. In an attempt to address the potential boomerang effect, the "Efficiency Standing" on the right side of the Social Comparison Module adds injunctive messages: it labels low- and moderate-consumption households as "Great" and "Good" and adds "smiley face" emoticons.

The Report's second key component is the Action Steps Module. As illustrated in Figure 9.2, this suggests both changes to the household's stock of energy-using durable goods and to the use of that capital stock. These suggestions are targeted to different households based on historical energy use patterns and demographic characteristics. For example, households whose energy use was relatively high the previous summer were more likely to receive suggestions to purchase new energy efficient air conditioners.

⁷Positive Energy carries out internal statistical evaluations, and independent evaluations of their pilot programs in Puget Sound and Sacramento are carried out by Ayres, Raseman, and Shih (2009) and Violette, Provencher, and Klos (2009).

The mechanics of the billing and report mailing process are as follows. The utility sends a worker to read each household's electricity meter approximately once per month, records the consumption over the period, and sends the consumer its monthly bill. Meanwhile, the meter readings are sent electronically to OPOWER, where each household's social comparison is computed. The Home Energy Report is printed by an outside contractor, sent via U.S. Mail, and at some point is opened at the household. The time between meter reading and the arrival of the Report is typically about three weeks. For almost all households, the first round of Reports were constructed after each household's meter reading in January 2009, although a small handful of households were randomized into Treatment and Control groups over the next few months. Sixty percent of Treatment group households were randomly assigned to receive the letters after every monthly meter reading, while 40 percent received them only once a quarter⁸.

2.3 Data and Baseline Characteristics

I observe the 1,540,403 electricity bills for all Treatment and Control households between January 2008 and August 2009, including the date of meter reading and consumption between that reading and the previous. I also observe OPOWER's social comparison information for every household, including whether they were rated as "Below Average," "Good," or "Great," and how far they were from the cutoffs to be in each of the other categories. I observe both the social comparisons that the Treatment group did receive and what the Control group would have received. For each billing period, I also observe the number of Heating Degree-Days or Cooling Degree-Days, which are correlated with the amount of electricity that should be required to keep a house at a comfortable temperature⁹.

Table 8.1 displays the baseline observable characteristics for the Treatment and Control group. Baseline Usage, which is the average across all meter reads in 2008, is 27.7 kilowatt-hours per day for both the Treatment and Control groups. For households ever in the "Great," "Good," or "Below Average" groups, average Baseline Usage is 16.5, 25.0, and 40.7 kilowatt-hours per day, respectively. Although the household sizes are similar by construction, the "Great" group is poorer, has fewer household members, and has houses that are worth less.

For context, consider that a medium-sized (75 watt) lightbulb used four hours each day consumes 0.3 kilowatt-hours. A typical window air conditioner running at its highest setting for five hours uses 5 kilowatt-hours. As illustrated in Figure 9.3, heating and cooling are the primary uses of household electricity in the United States: over half of annual electricity consumption is for refrigerators, air conditioners, and space and water heating. In the most recent available data,

⁸Two other variations in the treatment should be noted. After the second Report, the normative messaging was made more "Gentle" for a randomly selected half of the Treatment group. In the "Gentle" condition, the "Below Average" efficiency group no longer saw that there were "Great" and "Good" categories; they instead simply see the message that "You used more than average - Turn the report over to find ways to save." Positive Energy also experimented with sending different envelope types. Because the different envelope types and "Gentle" treatment do not have sharp economic interpretation, and because the estimated effects of these treatments are not substantially different, the treatment effects presented in this paper combine the different envelopes and the Gentle and non-Gentle treatments into one Average Treatment Effect.

⁹More precisely, Heating Degree-Days is the sum, over all of the days in the billing period, of the maximum of zero and the difference between the day's average temperature and 65 degrees. A day with average temperature 95 has 30 HDDs, while a day with average temperature 60 has zero HDDs. Cooling Degree-Days is the sum, over all the days in the billing period, of the maximum of zero and the difference between 65 degrees and the day's average temperature. A day with average temperature 95 has zero CDDs, while a day with average temperature 60 has five CDDs.

computers, televisions, and lighting combined account for only 15 percent of electricity use (US Energy Information Administration 2001).

Connexus has provided demographic data for each account number in the dataset¹⁰, including characteristics of the house (Age, an indicator for Gas Heat, Value, an indicator for Rental, Single Family, and Square Footage) and of the occupants (Age of household head, Household Size, and Income). On Baseline Usage, as well as on all other observable characteristics, the Treatment and Control groups are strikingly well-balanced. One of the ten baseline characteristics, the age of the head of household, is statistically different with 90% confidence; the Treatment and Control averages differ by less than 0.2 years. As would be expected in a randomized experiment, an F test fails to reject that the two groups are identical on observables.

2.4 Attrition

The pilot program experienced two forms of attrition, account closure and opting out. Consumers close accounts when they move to a different house; 1.25 and 1.24 percent of Treatment and Control households, respectively, close accounts during the first six months of 2009. Households that close accounts tend to be younger, use less electricity, and have lower incomes, but are statistically indistinguishable on other observed characteristics. There is no statistical difference between the Treatment and Control groups in either the rate of account closure or the correlations between account closure and observable characteristics. The accounts that closed after Treatment began are included in the base specifications during the period when their consumption is observed, although excluding them has no discernible influence on the results.

The second form of attrition is by households that asked to opt out of receiving the Home Energy Reports. In the first six months of 2009, 247 households (0.6 percent of the Treatment group) opted out, likely because they perceived the reports as undesired junk mail. These consumers are statistically different: they are slightly older, have lower incomes, use less electricity, and are less likely to live in single family homes. Although they opted out of receiving Reports, their electricity bills are still observed.

3 Empirical Strategy

3.1 Average Treatment Effects

This section details the straightforward approach to estimate the Population Average Treatment Effect of the Home Energy Reports in the population of eligible households. Simply put, the preferred specification will estimate energy consumption as a function of whether the household is assigned to treatment, conditional on other controls, after removing household fixed effects.

To arrive at that specification, I begin with the standard Rubin Causal Model (Rubin 1974, Imbens and Wooldridge 2009). Each household i has two *potential outcomes* for the energy consumption outcome for the meter read t : one if it were assigned to the Treatment group ($T_i = 1$) and one if it were assigned to the Control ($T_i = 0$). Of course, only one of those outcomes can actually be observed:

¹⁰ Any missing observations were imputed using conditional mean imputation.

$$Y_{it} = Y_{it}(T_i) = Y_{it}(0)(1 - T_i) + Y_{it}(1)(T_i) = \begin{cases} Y_{it}(0) & \text{if } T_i = 0 \\ Y_{it}(1) & \text{if } T_i = 1 \end{cases} \quad (1)$$

The quantity of interest is the Average Treatment Effect, $\tau = E[Y_{it}(1) - Y_{it}(0)]$. The "treatment" here is defined as "being mailed the Home Energy Reports or actively opting out." As discussed above, some Treatment households opted out, so the treatment is not simply "being mailed the Home Energy Reports." An alternative potential estimand would be the Intent-to-Treat (ITT) Effect of being sent the Report, for the population that did not opt out; this is simply my ATE divided by the fraction of the population that did not opt out. Since that fraction is very close to 1, the ATE and ITT Effect differ only by a negligible amount. The treatment is also not "opening Home Energy Reports." It is difficult to measure letter open rates, and thus it would be difficult to estimate that second form of ITT Effect.

I define the treatment effect in this way because it is a useful estimand from a policy perspective. OPOWER, and the utilities that contract with them and policymakers that regulate them, want to know the aggregate electricity conservation possible from applying the program to a population. For the population from which the experimental households were drawn, this quantity of interest can be derived simply by multiplying the ATE by the population size¹¹.

Each household has a different meter reading schedule. Let $t \in \{t_{\min}, \dots, t_{\max}\} = \{-12, -11, \dots, 0, 1, 2, \dots\}$ index bill numbers beginning one year before the treatment began; for each household, each bill number is associated with a particular day, month, and year. Most of the first set of Reports were sent in mid-January, immediately after a meter read at time t_{i0} . As I will show, little substantive or statistical effect is observed until the second meter reading after the January round. All meter reads t more than 40 days after t_{i0} , which for nearly all households is simply the second subsequent monthly meter read, are therefore considered "post-treatment."

The variable P_{it} is a post-treatment indicator variable for household i 's meter reading at date t . Denote by Y_{it} the average daily electricity consumption for period ending at t . So that this can later be interpreted as a percentage change, the variable is normalized by control group consumption in the post-period. The variable Q_i denotes whether household i was assigned to the Quarterly group, in either Treatment or Control state. Random assignment to Treatment and Control implies that unobservable factors ε_{it} that influence electricity consumption are uncorrelated with T and Q . This allows an unbiased estimate of the ATE for both the Monthly and Quarterly Groups with the following equation:

$$Y_{it} = (\tau + \tau_Q Q_i) \cdot T_i P_{it} + \beta \cdot P_{it} + \mu_{my} + v_i + \varepsilon_{it} \quad (2)$$

This specification includes month-by-year dummy variables μ_{my} and household fixed effects v_i ; alternative arrangements of fixed effects and controls will also be presented. This is estimated in OLS using the standard fixed effects estimator, using Huber-White ("robust") standard errors, clustered by household. As discussed by Bertrand, Duflo, and Mullainathan (2004), these standard errors are consistent in the presence of any correlation pattern in the errors ε_{it} within household over time.

¹¹To determine cost-effectiveness, the cost estimates must be adjusted to account for the fact that some households will opt out.

3.2 Decay of Effects in Quarterly Group

After estimating the Average Treatment Effects, I move to an empirical test of whether these effects decay in the Quarterly group over the three bills observed in each quarter. Intuitively, we would like to test whether the Quarterly group conserves more on the first and second bills after receiving a Report (the second and third bills after the one on which the report was based) compared to on the third bill of the quarter. This must control for bill-to-bill (i.e. month-to-month) variation in the average treatment effect in the Monthly group, which could be driven by seasonal weather changes. I estimate the following equation:

$$Y_{it} = Q_i T_i P_{it} \cdot (\tau_{Q12} B_{12it} + \tau_Q) + \sum_{b=t_{\min}}^{t_{\max}} 1(t=b) \cdot \{\beta_{1b} T_i + \beta_{2b}\} + v_i + \varepsilon_{it} \quad (3)$$

The variable B_{12it} is an indicator for whether bill t is the first or second bill after receiving a Report. The first term compares the treatment effects τ_{Q12} in the Quarterly group when $B_{12it} = 1$ to the baseline quarterly treatment effect τ_Q . If the treatment effects decay, τ_{Q12} will be more strongly negative (or less positive) than τ_Q . The second term of the equation controls for underlying treatment effects and consumption levels for each bill number, ranging from $t_{\min} = -12$ at the beginning of the data to the most recent bill observation $t_{\max}$.

4 Results

4.1 Treatment Effects

Table 8.2 presents the estimates of the Average Treatment Effect in the eligible population. The top row is the ATE for the Monthly group, while the second row is the difference between that and the Quarterly group ATE. The first specification is the simple unconditional difference-in-differences estimator. The latter four primary specifications include different configurations of fixed effects, month-by-year dummies, and weather controls; specification III is the exact specification detailed in the Empirical Strategy section. The point estimates of ATEs center around negative 1.9-2.0 percent and 1.5 percent for the Monthly and Quarterly treatments, respectively, and are not statistically different between the five specifications.

Table 8.3 displays two "alternative approaches" to evaluating these pilot programs. The first two columns reflect the approach that would need to be taken if the program did not have a randomized experimental control group. These specifications use only the Treatment group data and implement a difference estimator to estimate the treatment effect. The first column is a simple before-after comparison, without accounting for weather or season, and the results are not encouraging: $\hat{\tau}$ differs from the experimental estimate by almost an order of magnitude. After including fourth-order polynomials in Heating and Cooling Degree-Days and 12 month-of-year dummies in the second column, however, the estimated treatment effect is -2.53 percent. This is comparable to but still statistically different from the experimentally-estimated effect with more than 95 percent confidence.

Perhaps the clearest way to emphasize the possible bias from time-varying unobservables is to replicate this regression with the Control group only. In this placebo regression, we expect to see

no effects of the treatment. The third column of table 8.3 shows that we estimate a statistically-significant treatment effect on the control group of -0.57 percent. These results underscore the importance of randomized experimentation when results must be measured with precision. Related to the discussion of Lalonde (1986) and Dehejia and Wahba (1999), however, the approximate similarity of the experimental and non-experimental results does suggest that observable time and weather covariates are useful in this setting in controlling for effects on the outcome variable that may be correlated with treatment.

The fourth specification in Table 8.3 presents a cautionary tale about using the logarithmic function. It replicates Specification III from Table 8.2, except after logging the dependent variable. In principle, both coefficients are interpreted as percents and should be comparable. In practice, the estimated Monthly and Quarterly ATEs in the log specification are 36 and 23 percent lower, respectively, than in the comparable specification in levels. This difference is both economically significant, in that it would make a noticeable difference in the estimated cost effectiveness, and statistically significant. This difference between the percentage ATEs in logs and levels is relatively constant across (unreported) different specifications, and it is not driven by the 307 observations of the dependent variable that are equal to zero.

Intuitively, this difference is driven by Jensen's Inequality. The treatment effect of interest is the average reduction in kilowatt-hours resulting from the program. The percent changes reported in Table 8.2 are that quantity, normalized by Control group consumption in the post-treatment period to generate a percent change. The log specification is fundamentally different: it is the average of the percent reductions across households, instead of the percent of baseline that the average reduction represents. It turns out that the percentage treatment effect is larger (in absolute value) for households with higher consumption, and substantially higher for the most consumptive households. Taking the log of the household's consumption, and then taking the average across households, understates the ATE (in absolute value) relative to taking the average change in level across households and then normalizing into a percent.

4.2 Decay of Effects in Quarterly Group

Figure 9.4 illustrates the estimated Average Treatment Effect on meter reads over time, separately for the households receiving quarterly and monthly reports. The omitted meter read, number 0, is the meter reading t_{i0} upon which the first reports were based, which was in January or the first few days of February. For the 12 reads before that, the treatment and control group consumption levels are substantively and statistically identical. This is still the case on the first meter read after t_{i0} . By the second meter read, however, there is a noticeable Average Treatment Effect. That affect grew between February and August, perhaps both because the response to the Reports may grow in the early phases of the program and because the effects may be stronger in the summer months.

Although the standard errors are wide, the figure suggests that the Quarterly group's ATE is higher in month 2, the first meter read where we would expect to see effects from a Report generated from the month 0 meter read, and then decays in months 3 and 4. A second quarterly report was generated from meter read number 3, and the Quarterly group's treatment effect again increases (in absolute value) in months 5 and 6. The point estimate then decreases again in absolute value in month 7.

Table 8.4 presents the formal econometric test, described in the Empirical Strategy section, of whether the effects are stronger for the first two meter reads after receiving a Report (2, 3, 5, and 6) relative to the third (meter reads 4 and 7). Specification I includes separate dummies for the

first (and second) bill after receiving the report, which on the graph are reads 2 and 5 (and 3 and 6). Specification II is identical to Specification I except that it combines the dummy variables for the first and second bills.

In this latter specification, the effect of a Quarterly Report relative to the Monthly Report for the first or second bill after the report arrives is -0.15%. The baseline Quarterly variable, which captures the relative effect in the third bill of the quarter, is 0.56%. This is a difference of 0.71%, which is economically substantial: it is nearly half of the Quarterly group's treatment effect. The results for Specification I similarly show that the ATEs for the first and second bills after receiving a Report are stronger than the effect in the third bill of the quarter; they are different with better than 95 percent confidence in a two-sided test.

Three factors could explain this result. First, the information contained in the Reports - or gathered in response to the Reports - has value that varies by season. OPOWER targets a set of between 100 and 200 tips to households, and while some have effects that would vary negligibly by season ("Buy an energy efficient refrigerator"), others are capital stock or usage changes that are fundamentally seasonal ("Replace your heater" or "Cover your pool"). Second, perceiving oneself as a "frugal" consumer of energy could enter consumers' utility functions directly, and one could model that the marginal utility of conservation could depend on how recently a Report arrived. Third, the Reports could remind households of opportunities that they already knew about to conserve energy, and that reminder effect could decay over time due to bounded attention.

OPOWER has collected surveys of the treatment group in one of their pilot programs that provide some further evidence on this issue. Treatment group households were asked to self report what they had changed as a result of receiving the Home Energy Reports. Some of the reported effects were indeed seasonal changes to household capital stock, including weather-stripping windows, improving insulation, or servicing the air conditioner. Many of the most frequently reported changes, however, were day-to-day usage behaviors: turning off lights, unplugging electronics, adjusting thermostats, and closing window blinds. Importantly, these behaviors are activities that most consumers likely *already knew* could save them energy¹².

With these data, it is not possible to definitively parse out the information and attention explanations. If day-to-day behavior changes constitute a substantial portion of the treatment effects, however, it is more likely that the decays in the Quarterly group ATEs are part of a cycle in which the Reports remind or motivate households to conserve, and this attention decays over time.

4.3 Effects as a Function of Baseline Usage

Figure 9.5 illustrates the treatment effects by deciles of the distribution of baseline usage, again normalized by Control group average consumption in the post-treatment period. These effects range from almost zero for the bottom two deciles of baseline usage to 6.4 percent in the top ten percent. In general, the more electricity a household used before the treatment, the more that it conserved post-treatment. This could be because the most consumptive households had low-cost energy conservation opportunities, and the tips contained in the Reports made them aware of this. This result is also consistent with the "boomerang effect" model, under which previously

¹²OPOWER is gathering further evidence on both information and behaviors using an improved survey of both treatment and control groups, and these results can be formally presented in the next revision of this paper to strengthen this argument.

low-consumption households might not conserve - or might even consume more - after receiving information that they are less consumptive than their peers.

Some readers may have noticed that the design of the normative categorizations could allow the use of a Regression Discontinuity design to estimate their causal relative effects. Those households just below the cutoff between being categorized "Good" and "Great" are in the limit identical to those households just above, but they received different normative categorizations. This provides a natural experiment that could allow the estimation of the relative effects, for households near the cutoff, of being in the three different categorizations. In practice, the Regression Discontinuity estimator does not offer enough power to either estimate a statistically significant effect of the categorizations or to compute a "tightly-estimated zero" by rejecting reasonably small hypothesized effects. See Appendix 7.1 for more details.

5 Profiling and Cost Effectiveness

Regardless of the mechanism that drives the variation in treatment effects across households with different baseline usage, the heterogeneity in treatment effects as a function of an observable characteristic suggests that there could be substantial gains from targeting the program towards the most responsive households. Furthermore, because we observe a larger set of household characteristics that might be correlated with the treatment effect, a more comprehensive approach to "profiling" could be useful. My approach builds on the literature detailing the use of existing information on heterogeneous treatment effects to allocate future treatments. This literature dates to Wald's (1950) work on statistical decision theory and has grown recently with work by Berger, Black, and Smith (2000), Dehejia (2005), Graham, Imbens, and Ridder (2009), Hirano and Porter (2006), Imai and Strauss (2009), and Manski (2004, 2009).

Compared to much of the recent literature, the present problem is straightforward, as the objective function will be unambiguous and the decisionmaker can be modeled as risk-neutral. I focus on perhaps the simplest case of profiling: the OPOWER program is to be allocated to a given proportion of the population, and we want to target the program such as obtain the largest expected treatment effect¹³ conditional on the information from a previous randomized trial. The decision variable is which subset of its customer population, defined by observable characteristics, will be assigned to treatment.

The constraint of targeting less than the entire population could arise because the electric utility has limited resources to treat its entire customer base. It could also arise if the Energy Efficiency

¹³While we would in principle want to maximize welfare, the utility in practice minimizes cost from its own perspective, with no consideration for the change in consumer welfare. Given that costs are constant across individuals, minimizing the cost of achieving a given reduction is equivalent to maximizing the expected treatment effect of treating a given number of people. In designing this system, regulators presumably hope that the solutions to the cost minimization and welfare maximization problems are similar. One example of why this distinction can be important is the case of rebates for energy efficient appliances. If these rebates are entirely inframarginal (an example of what energy industry analysts call the "free rider problem," not to be confused with the traditional free rider problem in the provision of public goods), their cost effectiveness would be infinite. Given that inframarginal rebates are simply transfers, the efficiency losses in the simplest model would be zero.

In practice, and in this analysis in particular, this simplification must be made because while it is easy to observe electricity consumption, it would be quite costly to observe the actions that households take in response to the Reports. It is possible, for example, that the Reports induce some households to buy more energy efficient lightbulbs or appliances. Since the change in treatment group demand for these other goods is unobserved, we cannot compute welfare. This concern is quite general in evaluating energy efficiency programs; one resulting benefit here is that focusing on cost effectiveness keeps this analysis consistent with a previous body of work.

Resource Standard, the state regulation requiring a given amount of energy conservation relative to baseline, could be satisfied by treating only a portion of the population with the Home Energy Reports. As discussed earlier, state-level Energy Efficiency Resource Standards are the primary reason why utilities contract with OPOWER to reduce the demand for their product.

The decisionmaker seeks a statistical treatment rule $\delta : \mathcal{X} \rightarrow \{0, 1\}$ that maps individuals with characteristics X to the treated or control states for a future OPOWER program. Denote by Δ the space of possible treatment rules. The scalar $\delta_i = \delta(X_i) \in \{0, 1\}$ is the choice of treatment for individual i with characteristics X_i . The decisionmaker has information Θ from the existing randomized experiment in a representative sample of larger population $\mathcal{P}$. Recall that, as defined earlier in the paper, the heterogeneous Conditional Average Treatment Effect $\tau(X_i)$ is typically less than zero, meaning that we wish to assign treatment to units with expected treatment effects that are more negative.

The utility's objective is to maximize the expected (negative) treatment effect conditional on the information from the past experiment, given that they are to treat H households from the population:

$$\max_{\delta \in \Delta} E \left[\sum_{i \in \mathcal{P}} -\tau(X_i) \cdot \delta_i | \Theta \right] \quad s.t. \quad \sum_{i \in \mathcal{P}} \delta_i = H \quad (4)$$

Imagine ordering the households in the population by expected treatment effect conditional on their X_i . Denote by R^* the H th-strongest expected treatment effect. Given the assumption of no spillovers between treatment units, the optimal statistical decision rule collapses to assigning OPOWER treatment to the H households with expected treatment effects more negative than R^* :

$$\delta_i^* = 1(E[-\tau(X_i)|\Theta] \geq -R^*) = 1(\widehat{-\tau(X_i)} \geq -R^*) \quad (5)$$

While recent related applications such as Dehejia (2005) and Imai and Strauss (2009) have used Bayesian estimators to construct a distribution of possible outcomes, I use the frequentist approach more familiar to program evaluation in economics. As suggested in the first line of the above equation, I use the heterogeneous Conditional Average Treatment Effects estimated in OLS, $\widehat{\tau_i(X_i)}$ to construct $E[\tau(X_i)|\Theta]$. A remaining challenge is to determine which conditioning variables will be used to estimate the heterogeneous treatment effects and to assign future treatment. Including a large set of conditioning variables could allow treatment to be targeted at smaller subgroups that might have particularly large treatment effects. In a finite sample, however, including a larger set of covariates increases the likelihood of overfitting, which could cause the program to be targeted at groups that idiosyncratically appeared to have large treatment effects only in the experimental data.

Appendix 7.2 details a procedure, based on the work of Imai and Strauss (2009), to determine the optimal set of conditioning variables Z^* . I first define the set of possible conditioning variables Z , which are the observed demographics X plus all interactions and squares of the continuous demographic variables. I then place these potential conditioning variables in order of "prescriptiveness," which refers to the amount by which conditioning on each individual increases the expected

ATE of a future program. Third, I use cross-validation to generate out-of-sample predictions of the expected ATE while adding progressively less-prescriptive variables to the set of conditioning variables. Fourth, I select the set of conditioning variables that has the largest expected ATE.

This procedure indicates that the optimal set of conditioning variables in this application Z^* actually has only one element: the household's pre-program baseline electricity usage. Conditioning on additional variables causes the model to overfit, reducing the future expected ATE.

5.1 Profiling and Cost Effectiveness: Results

Table 8.5 presents the results of heterogeneous treatment effects regressions for the entire sample, as in Step 2a. The covariates are normalized to mean zero, standard deviation 1, meaning that a one standard deviation increase in Baseline Usage is associated with an increase in the ATE (in absolute value) of 1.73 to 2.12 percentage points. The first specification interacts the treatment indicator with the optimal Z^* , the baseline consumption variable.

The second and third regressions represent two alternative "rules of thumb" or selecting prescriptive variables. The second column interacts the treatment indicator variable with all ten available demographic characteristics. Conditional on the other interactions, houses with gas heat have higher treatment effects in absolute value, while houses with larger square footage have lower treatment effects. No other observable characteristics are statistically significantly associated with the strength of the treatment effect. The third column interacts the treatment indicator only with the three characteristics on which the treatment effect varies with 95 percent confidence in the first specification. The final column is simply the homogeneous treatment effect estimation, where the treatment effect represents the combination of Monthly and Quarterly treatment arms.

Table 8.6 presents the expected ATEs $\tilde{\tau}(\delta_Z(X))$ when treatment is assigned to one half of the population based on three sets of conditioning variables Z : the optimal set Z^* and two "rule of thumb" conditioning procedures. These ATEs, which pool the effects from the Quarterly and Monthly groups and are computed via the cross validation procedure discussed in Appendix 7.2, are compared to assigning to treatment the entire population or a randomly selected sample thereof. The table shows that profiling doubles the ATE for the treated half of the population. This is remarkable: energy efficiency programs, as well as job training programs, health interventions, and any number of other programs, devote continual effort to incrementally improve their efficacy. These results show that profiling can immediately double the expected average impact.

Interestingly, the expected treatment effects on the treated populations are very similar across the three profiling procedures. In this particular application, the "rules of thumb" for determining covariates on which to condition assignment are nearly as useful as the optimal rule.

The table's second row displays the average annual electricity bill savings for the treated group under the four different assignment mechanisms, based on Connexus Energy's average residential electricity price¹⁴. The average household saves \$18 per year on electricity bills as a result of the changes caused by being sent monthly Home Energy Reports.

Using the ATE for the program to date and an estimate of cost per letter sent, I find that the cost effectiveness of the existing Connexus program is 5.25 cents per kilowatt-hour saved. This compares reasonably well to recent point estimates of the average cost of other utility energy efficiency programs, which range from 4.7 to 13.3 cents per kilowatt-hour in a study by Auffhammer,

¹⁴This is available from <http://www.connexusenergy.com/resrates.htm>.

Blumstein, and Fowlie (2008)¹⁵ and from 1.6 to 3.3 cents per kilowatt-hour in a study by Friedrich, *et al.* (2009)¹⁶. As shown in Table 8.6, using profiling to target treatment at the most responsive half of the population would cut the cost per kilowatt-hour in half, to 2.68 cents-kilowatt-hour¹⁷.

The reader should bear in mind that the ATE, and therefore the cost effectiveness, could vary substantially across utilities and geographic areas, by electricity demand, as determined by season and the mildness of the weather, and as a function of the duration the program has been in effect. For a nationwide rollout of the Home Energy Reports, Allcott and Mullainathan (2009a, 2009b) calculate a somewhat better cost effectiveness, given that program costs would be lower at scale. Some utilities also report that the program affects customer satisfaction, an additional effect that this calculation does not consider. Finally, it is important to re-emphasize that we do not observe how the program changes households' choice of energy services such as comfort from heating and cooling, nor do we observe how their expenditures change for energy-using goods. As a result, we can say little about the welfare effects of the intervention.

6 Conclusion

This paper evaluates the effects of the OPOWER Home Energy Reports, which give households feedback on past energy consumption, compare them to their neighbors, and provide energy conservation tips. The program is a remarkable departure from traditional energy efficiency programs in that it is designed with direct insight from behavioral science and is implemented using randomized controlled trials. The perceived success or failure of these pilot programs will directly affect millions of dollars of future investment and will more generally influence how future energy efficiency programs are designed and evaluated.

I find that the Average Treatment Effect in the population of eligible Minnesota households is between 1.9 and 2.0 percent below baseline. In the group receiving quarterly Reports, this effect decays somewhat in the months between Reports, either because the information decays seasonally or because the attentional effects of a Report decay over time. I also show that the intervention's effects are strongest for households that have highest baseline consumption. This is consistent with (but not causal evidence of) a "boomerang effect" in which learning the social norm can fail to motivate households with low baseline consumption or even cause them to increase consumption.

Although the OPOWER experiment was carried out in a specific domain and requires a general-interest reader to digest some institutional detail, this analysis has two important and generalizable economic implications. First, the analysis adds to a recently-growing appreciation of how "profiling," the targeting of social programs with heterogeneous treatment effects toward individuals with high expected effects, can improve a program's welfare implications. If a utility were limited to

¹⁵I write "point estimate" because there are various forms of uncertainty around this comparison, including not just the statistical uncertainty in the point estimate conditional on the data, but also uncertainties such as regarding the durability of energy savings, the generalizability across different regions, and the quality of the underlying data used to compute the costs of these other programs.

¹⁶The Friedrich, *et al.* (2009) analysis is based on electric utilities' estimates of cost effectiveness, which are typically based on the "deemed savings" measurement approach. Many analysts believe that these estimates could be biased toward zero.

¹⁷Note that this example is not a reasonable basis for an argument to limit the application of the program: given the low cost of Positive Energy's program, even applying the program households where the treatment effect is smaller than the median can be more cost effective than some existing alternative programs. This does, however, show that if the program must be limited to some subset of the population due to budget constraints, there are gains to targeting it towards the most responsive subset.

implementing the OPOWER program for half of its residential population, I estimate that profiling could make the program twice as cost effective.

Second, this analysis adds to recently-growing appreciation of how non-price interventions can affect consumer behavior. Economists in general, and energy efficiency program managers in particular, have historically focused on how prices and subsidies affect demand. The idea that simply sending a letter - a treatment that has no effect on relative prices and may have limited effects on information sets - can cause measurable changes in demand is remarkable. From the utility's perspective, the cost effectiveness of the OPOWER program compares favorably to the traditional large subsidies for energy efficient durable goods. Perhaps the most important conclusion, therefore, is that some combination of information, attention, and social norms can cause substantive changes in consumer behavior at population scale.

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7 Appendices

7.1 Regression Discontinuity

In this Appendix, which need not be included for publication, I briefly discuss a Regression Discontinuity specification that could in principle be used to estimate the relative effects of the different normative categorizations Social Comparison Module in the Home Energy Reports. These effects should be observed two meter reads after the meter read upon which the categorization was based.

In keeping with the tradition of graphical analysis of RD designs (Lee and Lemieux 2009, Imbens and Wooldridge 2009), Figure 9.8 illustrates the treatment group's consumption as a function of distance from the household-specific comparison group's mean consumption, which is the cutoff between being categorized as "Good" vs. "Below Average." The Usage variable on the y-axis, which as before is normalized by Control group post-treatment consumption, is residual of degree-day polynomials and month-by-year controls, but not of household fixed effects. The line is upward sloping, as households that consume less compared to their peers on a given bill also tend to have lower residual usage on future bills. Figure 9.9 is the analogous illustration near the 20th percentile of the household-specific comparison group, which is the cutoff between being categorized as "Great" vs. "Good."

What's apparent from both graphs is that the two-sided 95 percent confidence interval around any estimated effects at this bandwidth is approximately four percent of Control group post-treatment consumption, which is more than double the overall ATE from the Reports. Any differences in ATEs from being placed in one or the other normative category, however, would likely be much smaller. I attempted the RD estimation including household fixed effects and other controls to reduce residual variance, and also added data from one of OPOWER's other pilot programs. This does not sufficiently reduce the variance around the estimated RD treatment effect to estimate a statistically significant effect of the categorizations or to compute a "tightly-estimated zero" by rejecting reasonably small hypothesized effects.

7.2 Variable Selection

This Appendix details the procedure for selecting a vector of observables and interactions to condition on when estimating $\tau_i(X_i)$ in the profiling procedure. The discussion of this problem and my approach to addressing it draw heavily on previous work by Imai and Strauss (2009) and, somewhat less directly, on Gunter, Zhu, and Murphy (2007).

While there is a large literature on how to select "predictive" variables that are correlated with the outcome, there is no consensus on the choice of "prescriptive variables" that help assign units to treatment. Predictive variables are by definition correlated with the outcome and therefore may be useful for reducing residual variance, i.e. improving the efficiency of the estimator. However, if a predictive variable has the same correlation with the outcome in treatment and control, meaning that it is not correlated with the treatment effect, this variable would not be useful for generating a statistical decision rule.

Most fundamentally, a powerful prescriptive variable is one that increases the efficacy of the targeted program in a future implementation when profiling is conditioned on that variable. Intuitively, one approach to choosing the set of prescriptive variables is to try conditioning on all possible covariates and subsets thereof, generating assignment rules based on each potential set of covariates, then running a future program based on that assignment rule and measuring the effects. Because these theoretical future programs differ only in the rules used to assign treatment, the future program with the highest ATE is the one with the best assignment rule.

The actual approach is designed to mimic that process, while addressing two concerns. First, we of course cannot try many different future implementations. We can, however, mimic that process with the data from the existing program: we can partition the data, use the "first" part to generate the treatment rule and the "second" part to test its efficacy. If we then reverse the partition - use the "second" part to generate the treatment rule and the "first part" to test efficacy, we will have then exploited all of the data available while still cross-validating the assignment mechanism outside of the sample that generated it.

A second problem with the intuitive approach is that it would be very computationally intensive to try all possible sets of covariates. Instead, using a procedure developed by Imai and Strauss (2009), we can rank the individual covariates based on their "prescriptiveness." In this context, "prescriptiveness" means how much conditioning and assigning based on that one covariate increases the expected treatment effect relative to random assignment of treatment.

Imagine ordering the variables from most to least prescriptive. Beginning with the most prescriptive variable, one can progressively add the next-most prescriptive variable to the set of conditioning variables. Conditioning assignment on additional covariates should for some time increase the future treatment effect of the future targeted program, but the overfitting effect will eventually dominate and the future treatment effect will decrease. This procedure of sequentially adding variables in order of prescriptiveness ensures that we have the most prescriptive set of variables at the apparent maximum. This ordering procedure simplifies the problem from one of selecting the optimal *set* of covariates to selecting the optimal *number* of covariates. Because of the ordering, the optimal number will also tell us the optimal set (Imai and Straus 2009).

7.2.1 Specifics of the Variable Selection Algorithm

The goal is to select the optimal set of covariates Z^* , drawn from some set of possible covariates $\mathcal{Z}$, such that a statistical treatment rule conditioning on Z^* maximizes the expected treatment effect in a future implementation of the program. The variables Z are functions of household observable characteristics X . Denote by $\delta_Z(X)$ the treatment rule using variables Z , and denote by $\tilde{\tau}(\delta_Z(X))$ the expected treatment effect of a future program using that rule. Consistent with the maximization problem introduced above, that treatment effect is conditioned on including some set of people such that the minimum treatment effect is above some threshold R^* . For simplicity, in this part of the problem, I assume that $\tilde{\tau}(\delta_Z(X))$ reflects the treatment effect when one-half of the population is to be treated. The maximization problem is:

$$Z^* = \arg \max_{Z \in \mathcal{Z}} E[-\tilde{\tau}(\delta_Z(X)) | \Theta] \quad (6)$$

Following Imai and Strauss (2009), I implement a four-step procedure.

Step 1: Define the possible set of prescriptive variables. In principle, the possible set of prescriptive variables $\mathcal{Z}$ could be all levels of interactions of the 10 observable household characteristics, plus polynomial series of the continuous variables. To speed computation, I use only the variables themselves, interactions of each pair, and squares of the continuous variables. This gives a set $\mathcal{Z}$ of $J = 62$ possible covariates, which are indexed $j = 1, \dots, J$.

Step 2: Order the set of variables by prescriptiveness. In this step, the set of J possible covariates is ordered by "prescriptiveness": the amount by which conditioning on that one variable Z_j increases the expected future treatment effect $\tilde{\tau}(\delta_{Z_j}(X))$.

For each of the J possible covariates Z_j , the procedure is:

Step 2a: Use the entire dataset to estimate the average treatment effect, combining Monthly and Quarterly treatment arms, and the amount by which the ATE changes with a change in Z_j :

$$Y_{it} = (\tau_0 + \tau_1 \cdot Z_j) \cdot T_i P_{it} + \beta \cdot P_{it} + \mu_{my} + v_i + \varepsilon_{it} \quad (7)$$

Step 2b: For both the Treatment and Control groups, fit each individual i 's $\widehat{\tau(X_i)} = \hat{\tau}_0 + \hat{\tau}_1 \cdot Z_{ji}$ from the above regression.

Step 2c: Treatment rule $\delta_{Z_j}(X)$ assigns treatment to the one-half of households with the most negative fitted treatment effects.

Step 2d: Using the half of the original randomized Treatment and Control groups assigned to treatment by this potential rule, estimate the treatment effect $\tilde{\tau}(\delta_{Z_j}(X))$.

After computing these expected average treatment effects for each Z_j , these effects are ordered from the largest negative treatment effect to smallest. This gives a new ordering of the set $\mathcal{Z}$ from most to least prescriptive, such that $-\tilde{\tau}(\delta_{Z_j}(X)) \geq -\tilde{\tau}(\delta_{Z_{j+1}}(X)), \forall j$. The double solid line in Figure 9.6 illustrates this ordering for $j = 1, \dots, 62$. The most prescriptive variable is Baseline Usage, followed by interactions of Baseline usage with the Single Family and Rent indicator variables.

Step 3: Determine the expected ATE for each combination of prescriptive variables.

For each combination of prescriptive variables with effectiveness greater than or equal to that of j , cross validation is now used to predict the expected treatment effect of profiling on that combination in assigning treatment for a future program. First, the sample is randomly divided into $K = 5$ subsets for K-fold cross validation.

For each value of j from 1 to J , which are now ordered from most to least prescriptive, the procedure is:

Step 3a: Define $Z_{1,\dots,j}$ as the set of variables such that $-\tilde{\tau}(\delta_{Z_i}(X)) \geq -\tilde{\tau}(\delta_{Z_j}(X))$. This set contains all the variables, including j , that have at least as prescriptive as j . For each of the K cross-validation sets, estimate the heterogeneous treatment effects equation using the $K - 1$ "training sets" excluding k . In set k , which is out of sample, then determine the treatment rule $\delta_{kZ_{1,\dots,j}}(X)$.

Step 3b: After using cross validation to determine the treatment rule $\delta_{Z_{1,\dots,j}}(X)$ for all Treatment and Control observations in the data, then use the original randomization into Treatment and Control to estimate the ATE for those units that would be assigned to treatment, $\tilde{\tau}(\delta_{Z_{1,\dots,j}}(X))$.

Step 4: Determine the optimal number of variables. The single solid line appearing on the lower portion of Figure 9.6 illustrates the $\tilde{\tau}(\delta_{Z_{1,\dots,j}}(X))$ computed via cross validation when profiling based on an increasing number of covariates Z . The optimal set of covariates Z^* is determined by the point on that line with the largest (negative) treatment effect:

$$j^* = \arg \max_j E[-\tilde{\tau}(\delta_{Z_{1,\dots,j}}(X))|\Theta] \quad (8)$$

In this case, the most negative treatment effect is at the far left of Figure 9.6, meaning that $j^* = 1$. In this application, the optimal statistical treatment rule assigns treatment based only on Baseline Usage.

8 Tables

8.1 Baseline Household Characteristics

	<i>Treatment</i>	<i>Control</i>	<i>T-C</i>	<i>Great</i>	<i>Good</i>	<i>Below Av</i>
<i>Mean:</i> Baseline Usage (kwh/day)	29.74	29.69	0.053	16.52	25.04	40.67
<i>SD (and SE):</i>	(16.44)	(16.17)	(0.117)	(8.05)	(9.68)	(17.89)
Consumer Age	49.98	49.82	0.161	52.57	50.05	48.45
	(12.18)	(12.18)	(0.087)*	(12.99)	(12.34)	(11.38)
1(Gas Heat)	0.92	0.92	-0.0013	0.94	0.93	0.90
	(0.28)	(0.27)	(0.0020)	(0.24)	(0.25)	(0.30)
Household Size	2.61	2.62	-0.010	2.23	2.57	2.84
	(1.22)	(1.23)	(0.009)	(1.07)	(1.18)	(1.28)
House Age	31.57	31.40	0.166	32.07	30.99	31.59
	(28.03)	(27.96)	(0.200)	(28.06)	(27.68)	(28.24)
House Value	393.9	394.7	-0.792	369.6	385.5	414.5
	(139.4)	(139.4)	(0.995)	(121.7)	(132.6)	(150.6)
Income (1000s)	86.18	86.19	-0.010	75.59	84.42	92.85
	(37.86)	(37.60)	(0.269)	(33.52)	(36.48)	(39.52)
1(Rent)	0.022	0.023	0.000	0.019	0.023	0.024
	(0.14)	(0.14)	(0.001)	(0.11)	(0.14)	(0.15)
Single Family	0.96	1	-0.001	0.97	0.96	0.95
	(0.21)	(0)	(0.001)	(0.18)	(0.20)	(0.22)
Square Footage	1660	1659	1.41	1614	1637	1703
	(454)	(449)	(3.22)	(442)	(441)	(464)
<i>F-Test p-Value</i>			0.384			
1(Account Closed)	0.012	0.013		0.023	0.011	0.010
	0.11	0.11		0.15	0.10	0.10
Number of Households	39217	39275		14,055	33,016	30,913
Number of Bill Obs	769299	771083		276,922	650,671	609,982

*, **, ***: Different from zero with 90%, 95%, and 99% confidence, respectively.

"Number of Households" by normative categorization reflects the number of treatment or control households that were at any point in that category. The sum of these numbers across the three categories therefore is greater than the number of households in the experiment.

8.2 Treatment Effects

	I	II	III	IV	V
T x Post	-0.0152 (0.0045)***	-0.0192 (0.0019)***	-0.0191 (0.0019)***	-0.0197 (0.0018)***	-0.0189 (0.0019)***
T x Quarterly x Post	-0.0019 (0.0055)	0.0045 (0.0024)*	0.0045 (0.0024)*	0.0044 (0.0022)**	0.0043 (0.0024)*
Post	-0.0919 (0.0022)***	-0.0841 (0.0011)***	-0.0453 (0.0058)***	-0.0870 (0.0050)***	-0.0058 (0.0058)
Degree-Day Polynomial					Yes
Month x Year Dummies			Yes	Yes	Yes
House Fixed Effects		Yes	Yes		Yes
House x Month Fixed Effects				Yes	
Observations (thousands)	1,540	1,540	1,540	1,540	1,540
R ²	0.0041	0.0041	0.0453	0.0000	0.0485
F Statistic	4159	4284	7053	3391	3018

*, **, ***: Different from zero with 90%, 95%, and 99% confidence, respectively.

Dependent variable is the household's average daily electricity consumption (kilowatt-hours), normalized by average control group consumption in the Post period.

8.3 Alternative Empirical Approaches

	Treatment Only	Treatment Only	Control Only	In Logs
T x Post				-0.0122 (0.0016)***
T x Quarterly x Post				0.0009 (0.0021)
Post	-0.1033 (0.0015)***	-0.0253 (0.0017)***	-0.0057 (0.0016)***	-0.0430 (0.0039)***
Quarterly x Post	0.0045 (0.0024)*	0.0043 (0.0024)*	-0.0045 (0.0023)**	-0.0373 (0.0009)***
Degree-Day Polynomial		Yes	Yes	
Month Dummies		Yes	Yes	
Month x Year Dummies				Yes
House Fixed Effects	Yes	Yes	Yes	Yes
Observations (thousands)	769	769	771	1540
R ²	0.0047	0.0479	0.0484	0.0553
F Statistic	3675	1249	1252	13362

*, **, ***: Different from zero with 90%, 95%, and 99% confidence, respectively.

Dependent variable for the first three specifications is the household's average daily electricity consumption (kilowatt-hours), normalized by average control group consumption in the Post period. For the fourth specification, it is the log of that value.

8.4 Decay of Quarterly Treatment Effects

	I	II
T x Quarterly x Post	0.0056 (0.0034)	0.0056 (0.0034)
T x Quarterly x Post (1st Bill)	-0.0009 (0.0032)	
T x Quarterly x Post (2nd Bill)	-0.0021 (0.0024)	
T x Quarterly x Post (1st or Second Bill)		-0.0015 (0.0025)
Degree-Day Polynomial		
T x Bill Number Dummies	Yes	Yes
Bill Number Dummies	Yes	Yes
House Fixed Effects	Yes	Yes
Observations (thousands)	1,456	1,540
R ²	0.0431	0.0431
F Statistic	3795	3883

*, **, ***: Different from zero with 90%, 95%, and 99% confidence, respectively.

Dependent variable is the household's average daily electricity consumption (kilowatt-hours), normalized by average control group consumption in the Post period.

8.5 Heterogeneous Treatment Effects

	I	II	III	IV
T x Post	-0.0172 (0.0015)***	-0.0168 (0.0014)***	-0.0172 (0.0015)***	-0.0173 (0.0016)***
T x Post x Baseline Usage	-0.0173 (0.0036)***	-0.0212 (0.0039)***	-0.0209 (0.0038)***	
T x Post x Consumer Age		-0.0018 (0.0015)		
T x Post x Gas Heat		-0.0063 (0.0024)***	-0.0061 (0.0024)**	
T x Post x Household Size		0.0020 (0.0017)		
T x Post x House Age		0.0004 (0.0016)		
T x Post x log(House Value)		-0.0012 (0.0015)		
T x Post x log(Income)		-0.0009 (0.0019)		
T x Post x 1(Rent)		-0.0006 (0.0014)		
T x Post x Single Family		-0.0003 (0.0013)		
T x Post x Square Footage		0.0053 (0.0019)***	0.0043 (0.0017)**	
Post	-0.0470 (0.0060)	-0.0438 (0.0060)***	-0.0447 (0.0060)***	-0.0453 (0.0058)***
Month x Year Dummies	Yes	Yes	Yes	Yes
House Fixed Effects	Yes	Yes	Yes	Yes
Post x (X Variable) Controls	Yes	Yes	Yes	-
Observations (thousands)	1,540	1,540	1,540	1,540
R ²	0.0040	0.0041	0.0040	0.0453
F Statistic	8506	4769	7216	7374

*, **, ***: Different from zero with 90%, 95%, and 99% confidence, respectively.

Dependent variable is the household's average daily electricity consumption (kilowatt-hours), normalized by average control group consumption in the Post period.

The ATE represents combination of Monthly and Quarterly groups.

Specification I: Optimal set of conditioning variables Z^* : Baseline Usage only.

Specification II: "Rule of thumb" conditioning variables: All observed demographic variables

Specification III: "Rule of thumb" conditioning variables: Only demographic variables statistically significantly associated with the treatment effect.

Specification IV: No conditioning variables.

8.6 Profiling and Cost Effectiveness

Assignment Mechanism	<i>All</i>	<i>I</i>	<i>II</i>	<i>III</i>
Expected ATE (percent)	-0.0173 (0.0016)	-0.0338 (0.0033)	-0.0322 (0.0032)	-0.0328 (0.0032)
Electricity Bill Savings (dollars/household-year)	18.42 (1.74)	36.05 (3.49)	34.32 (3.44)	34.89 (3.45)
Cost Effectiveness (cents/kwh saved)	5.25 (0.50)	2.68 (0.26)	2.82 (0.28)	2.77 (0.27)
Percent of Households Assigned Same as II	0.497	0.678		
Percent of Households Assigned Same as III	0.497	0.690	0.717	

ATE is in percent of Control group usage in the post-treatment period.

The ATE represents combination of Monthly and Quarterly groups.

Assignment Mechanism "All": Assign to treatment all households, or a randomly-selected subset.

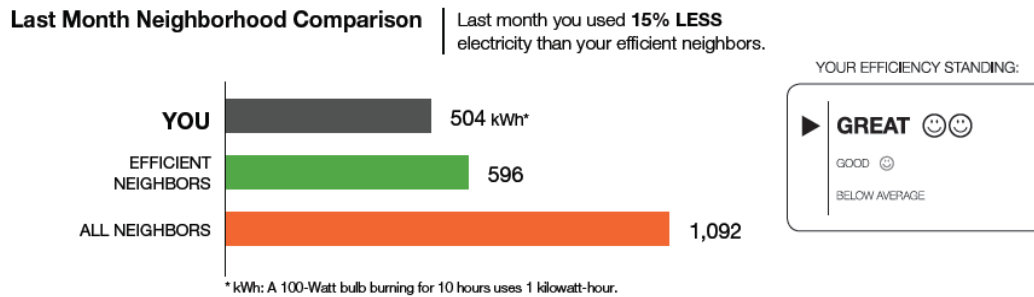
Assignment Mechanism I: Optimal set of conditioning variables Z^* : Baseline Usage only.

Assignment Mechanism II: "Rule of thumb" conditioning variables: All observed demographic variables

Assignment Mechanism III: "Rule of thumb" conditioning variables: Only demographic variables statistically significantly associated with the treatment effect.

9 Figures

9.1 Home Energy Reports: Social Comparison Module



9.2 Home Energy Reports: Action Steps Module

Action Steps | Personalized tips chosen for you based on your energy use and housing profile

Quick Fixes
Things you can do right now

☐ **Adjust the display on your TV**
New televisions are originally configured to look best on the showroom floor—at a setting that's generally unnecessary for your home.

Changing your TV's display settings can reduce its power use by up to 50% without compromising picture quality. Use the "display" or "picture" menus on your TV: adjusting the "contrast" and "brightness" settings have the most impact on energy use.

Dimming the display can also extend the life of your television.

SAVE UP TO \$40 PER TV PER YEAR

Smart Purchases
Save a lot by spending a little

☐ **Install occupancy sensors**
Have trouble remembering to turn the lights off? Occupancy sensors automatically switch them off once you leave a room—saving you worry and money.

Sensors are ideal for rooms people enter and leave frequently (such as a family room) and also areas where a light would not be seen (such as a storage area).

Wall-mounted models replace standard light switches and they are available at most hardware stores.

SAVE UP TO \$30 PER YEAR

Great Investments
Big ideas for big savings

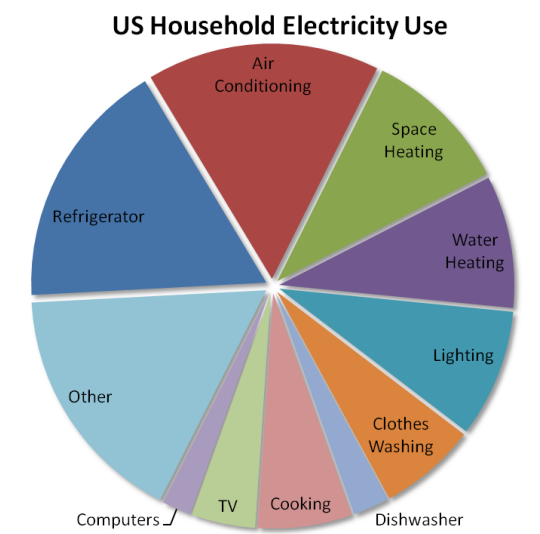
☐ **Save money with a new clothes washer**
Washing your clothes in a machine uses significant energy, especially if you use warm or hot water cycles.

In fact, when using warm or hot cycles, up to 90% of the total energy used for washing clothes goes towards water heating.

Some premium-efficiency clothes washers use about half the water of older models, which means you save money. SMUD offers a rebate on certain washers—visit our website for more details.

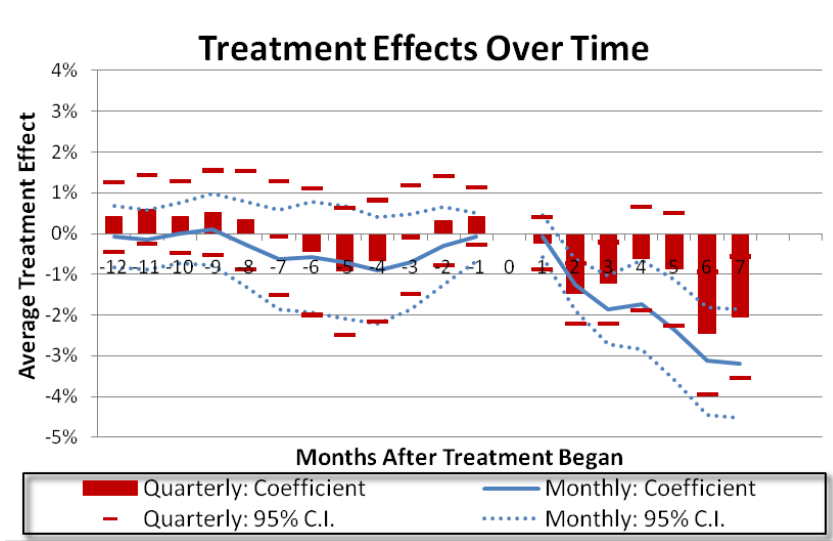
SAVE UP TO \$30 PER YEAR

9.3 US Household Electricity Use

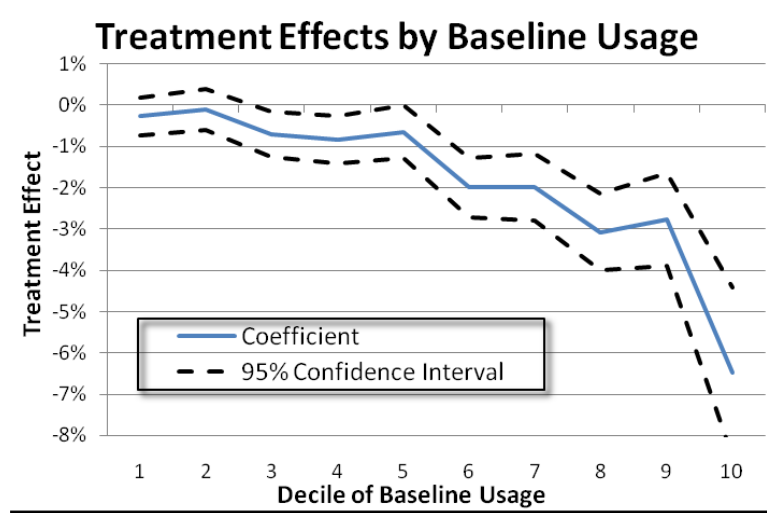


Source: US national average from 2001 Residential Energy Consumption Survey (US Energy Information Administration 2001).

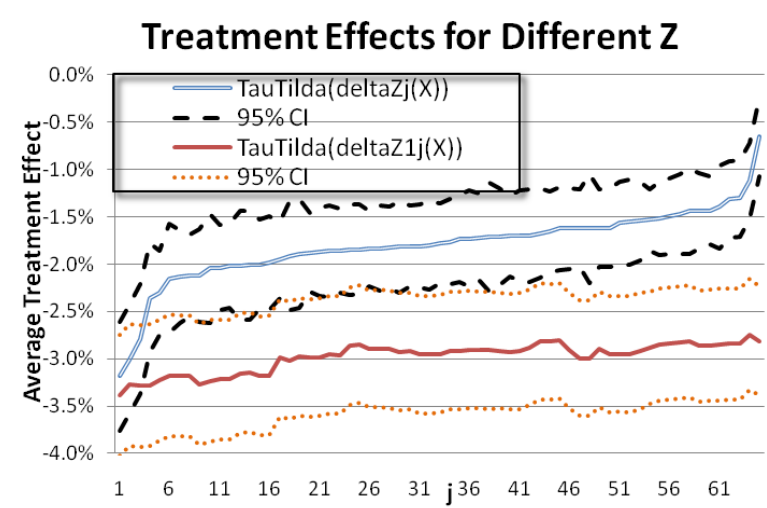
9.4 Treatment Effects Over Time



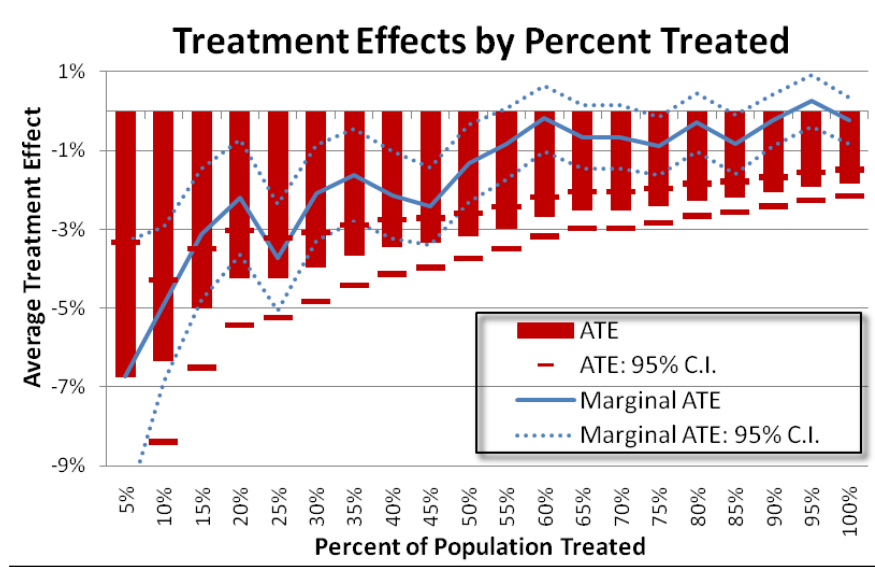
9.5 Treatment Effects by Decile of Baseline Usage



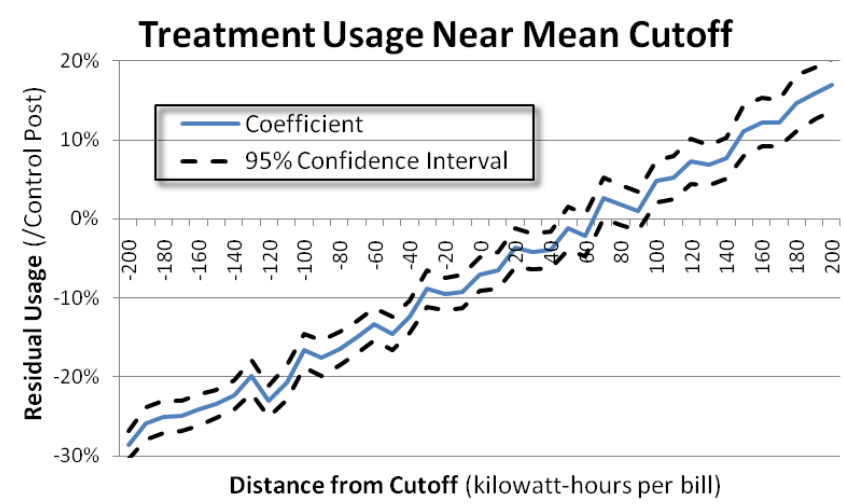
9.6 Profiling: Treatment Effects for Different Z_j



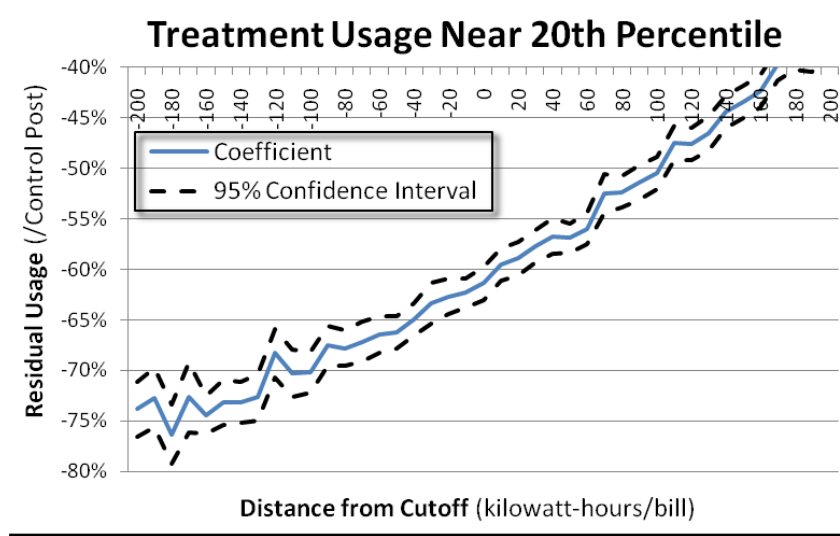
9.7 Gains from Profiling



9.8 Treatment Group Near Mean Comparison Cutoff



9.9 Treatment Group Near 20th Percentile Cutoff



Evaluation of the U.S. Department of Energy's Weatherization Assistance Program: Impact

Results

Bruce Tonn*, Erin Rose, Beth Hawkins

Three3, Inc. 520 W. Summit Hill Drive, Suite 1101, Knoxville, TN 37902

btonn@utk.edu

roseem@ornl.gov

hawkinsba@ornl.gov

*Corresponding author.

Abstract

This paper presents the results of two impact evaluations of the U.S. Department of Energy's Weatherization Assistance Program (WAP). This comprehensive weatherization program provides grants to U.S. states, which then provide grants to local weatherization agencies to weatherize income-eligible low-income homes. The program treats single family and mobile homes, and multifamily buildings in all climate zones. The impact evaluations focused on Program Years (PYs) 2008 and 2010. The latter fell during the American Recovery and Reinvestment Act (ARRA) period. The program supported the weatherization of 98,000 units in PY 2008 and 332,000 units in PY 2010. It is estimated that the program saved 2.3 trillion Btus in PY 2008 and 7.6 trillion Btus in PY 2010. These savings achieve \$420 million in energy cost savings with respect to PY 2008 and \$1.2 billion in savings in PY 2010. Environmental and health and household related benefits add \$267 million and \$1.2 billion and \$694 million and \$3.8 billion of co-benefits to the energy cost savings benefits. The average total benefit per unit weatherized in PY 2008 is \$22,000 versus an average total cost of \$4,700. These results for PY 2010 are \$20,000 and \$6,800, respectively.

Keywords: low-income weatherization, energy savings, emissions reductions, health benefits, cost-effectiveness

1.0 Introduction

This paper presents impact results from two evaluations of the U.S. Department of Energy's Weatherization Assistance Program (WAP). One is known as the retrospective evaluation and focused on WAP Program Year 2008. The other is known as the ARRA Period evaluation and focuses on one Program Year, 2010, that falls within the American Recovery and Reinvestment Act of 2009 (ARRA)

time frame. Reported below are estimated energy savings, non-energy benefits, and cost effectiveness for those two program years.¹

Briefly, WAP was created by Congress in 1976 under Title IV of the Energy Conservation and Production Act. The purpose and scope of the Program as currently stated in the Code of Federal Regulations (CFR) 10 CFR 440.1 is “to increase the energy efficiency of dwellings owned or occupied by low-income persons, reduce their total residential energy expenditures, and improve their health and safety, especially low-income persons who are particularly vulnerable such as the elderly, persons with disabilities, families with children, high residential energy users, and households with high energy burden.” (Code of Federal Regulations, 2011)²

WAP provides grants, guidance, and other support to Grantees: weatherization programs administered by each of the 50 states, the District of Columbia, territories and several Native American tribes. The Grantees, in turn, oversee a network of 900+ local weatherization agencies (Subgrantees): community action agencies, nonprofit organizations, and local government agencies that are eligible to receive weatherization funding from DOE. These weatherization agencies qualify eligible households, assess their homes’ energy efficiency opportunities, install energy-saving measures, and inspect the work. The work performed includes air sealing, insulation upgrades, furnace repair/replacements, and other dwelling-specific measures found to be cost-effective, as well as home improvements needed to ensure the health and safety of household occupants. The work is done at no cost to the eligible participants. WAP weatherizes single-family homes (SF), mobile homes (MH) and multifamily buildings, both small (2-4 units) (SMF) and large (5+ units) (LMF) buildings, regardless of home heating fuel (e.g., natural gas (NG), electricity, fuel oil). WAP procedures are adaptable to all climate zones.³

In February 2009, the U.S. Congress passed and the President signed ARRA (also referred to as the Recovery Act) into law. Included in the hundreds of billions of dollars of programs, initiatives, and investments was \$5 billion for WAP. Annually, this funding represents about six times more per year

¹ Tonn et al. (2014c) and Tonn et al. (2015a) are reports that summarize all aspects of the retrospective and ARRA period evaluations, respectively. All reports from the evaluations can be found at: <http://weatherization.ornl.gov>

² For a comprehensive treatment of the population eligible for WAP, please see Carroll et al. (2014b).

³ To learn more about WAP through a series of case studies, please see Tonn, Rose and Hawkins (2014a).

than Congress had been typically appropriating for WAP. The huge increase in funding was based on the assumption that weatherization was a ‘shovel ready’ program, capable of quickly ramping up production and, most importantly given a major goal of ARRA, employing significant numbers of individuals to weatherize low-income homes. The national weatherization network was given approximately three years to spend these funds.

Preparations for what came to be known as the retrospective evaluation were well underway by the time ARRA was passed. It was decided to also evaluate WAP as administered during the Recovery Act for several reasons. One was to meet the accountability and transparency goals for efforts funded by ARRA. Also, the Recovery Act also included several provisions specifically related to WAP and it was decided that an evaluation could provide insights into the impacts and effects of those provisions on the program. The most important provisions in the Recovery Act pertaining to WAP are these:

- The income eligibility threshold for the program was raised from 150% of the Federal Poverty Level to 200%, though the 60% or less of the state medium income threshold remained the same;
- The average DOE funding that could be spent per weatherized unit was raised from \$2,500 to \$6,500; and
- WAP Grantees and Subgrantees had to adhere to the provisions of the Davis-Bacon Act with respect to prevailing wages and paperwork reporting.

Section 2.0 presents descriptive statistics about the number, types and locations of units weatherized using WAP funds during the program years of interest and presents a summary of DOE and leveraged funds expended (Section 2.1). Also described in this section is how WAP was similar and dissimilar in PYs 2008 and 2010 and how these factors may have influenced program outcomes. Section 3.0 presents the impact results, beginning with a summary of the research design (Section 3.1), then the energy savings impacts (Section 3.2), with summaries of the non-energy impacts (Section 3.3), and cost-effectiveness estimates (Section 3.4). The paper concludes in Section 4.0 with observations about program operation and effectiveness.

2.0 WAP During the Recovery Act

2.1 Production and Funding⁴

During the ARRA period, WAP's funding and production levels were unprecedented. Figure 1 presents the number of units weatherized by quarter the national weatherization network using DOE funds from 2008 through 2014. One can see that the production supported by ARRA funds spiked in the fourth quarter of 2011 at 90,000 units. In entire PY 2008, WAP only supported the weatherization of 98,000 units. The figure also shows that units weatherized with formula funds (i.e., normal Congressional appropriations) declined to fall below pre-ARRA levels. Ramp up and ramp down of employment in low-income weatherization matches these curves.

[Figure 1]

Table 1 documents the number and types of units weatherized in PY's 2008 and 2010. Most of the units weatherized by WAP are owner occupied, single family site built homes. The program has been increasing its efforts to weatherize units in large multi-family buildings and the buildings themselves. Some progress along those lines is seen in PY 2010. Table 2 indicates in which climate zones homes were weatherized in PYs 2008 and 2010 (see Figure 2 for the map of climate zones used in this research). There is a much bigger difference in where homes were weatherized during the Recovery Act than what types of homes were weatherized. This is because according to the WAP authorizing legislation, the funding formula used to distribute WAP funding to the Grantees changes when the annual appropriation exceeds \$275 million to allocate a higher percentage of funding to hot climate states. The hot humid states of the U.S. Southeast were particular beneficiaries of this formula change. Weatherizing more homes in the hot climates also increases the percentage of home heating with electricity and decreased the number heated with fuel from PY 2008 to PY 2010.

Table 4 summarizes funding received by the Grantees and Subgrantees in PY 2010 and PY 2008 for low-income weatherization. The Congressional appropriation for WAP in PY 2008 was \$236 million.

⁴ A more complete characterization of WAP during the Recovery Act can be found in Tonn, Rose and Hawkins (2015c).

This funding was used to leverage another \$486 million in non-DOE funding. Most of the leveraged funding came from states deciding to allocate some of their Low Income Home Energy Assistance Program (LIHEAP) funding to low-income weatherization.⁵ State public benefit funds and utility companies were other important sources of leveraged funding. \$224 million of the leveraged funding was braided with DOE/WAP funding to weatherize homes. Generally, the leveraged funding invested in DOE homes followed DOE/WAP guidelines, but this is not always the case. The remaining leveraged funding was spent in whatever ways dictated by the source of the leveraged funding. The two evaluations reported on herein only included homes that had DOE weatherization funds invested in them.

2.2 Recovery Act Influences on Program Impacts

In many ways, WAP during the Recovery Act resembled WAP as implemented just before the Recovery Act in PY 2008. For example, WAP did not change appreciably during the Recovery Act period with respect to these characteristics:

- Frequency of use of various diagnostic procedures (e.g., blower door tests were used with the same frequency).
- Approaches to and topics covered for client education purposes (e.g., most client education was again delivered during the in-home audit and the most popular topics were thermostat usage, insulation and lighting).
- Approaches for weatherization measure selection (e.g., frequency of Subgrantees using priority lists versus computerized audits was about the same).
- Measures installed (e.g. air sealing was again the most frequently installed measure).
- Use of various training venues (e.g., National Weatherization Program Conference was again a preferred training option).

⁵ LIHEAP is also a federal program, though administered by the U.S. Department of Health and Human Services.

- Weatherization program marketing efforts were at the local level (e.g., mailings to clients, radio ads were most popular again).
- Leveraged funding was approximately the same (\$700 million in PY 2010 versus \$600 million in PY 2008) though available leveraged funding per unit was substantially lower.

In some ways, though, WAP as implemented during the Recovery Act was different. For example, the income eligibility requirements were adjusted from being 150% of the federal poverty level to 200% and the average amount of DOE funds that could be invested in a home was increased from \$2500 to \$6500. In part because of these changes, households that received weatherization services had higher incomes and fewer vulnerable individuals in residence. Because more homes were weatherized in the hot climates, on average the homes that were weatherized were smaller, newer, less likely to use bulk fuels (e.g., fuel oil), and were more likely to use supplemental fuels (e.g., electric space heaters).

The Grantees and Subgrantees were under an enormous amount of pressure to ramp-up their programs. Among the challenges faced by Grantees and Subgrantees were these:

- Davis-Bacon Act provisions delayed production ramp-up and increased operations and administrative costs for the Subgrantees.
- Federal and Grantee oversight increased for Subgrantees, which, increased administrative costs.
- Both Grantees and Subgrantees had to deal with increased media and political attention focused on their weatherization programs.
- Subgrantees were faced with rapidly increasing and training the new workforce.
- In part, because of these challenges and increased costs, the estimated cost effectiveness of the program during the ARRA period was lower than estimated for the retrospective period.

Before discussing the program's energy savings estimates, it is important first to summarize factors encountered by the national weatherization network during the ARRA period that could have led to differences in energy savings and cost effectiveness observed during the retrospective evaluation.

- An inexperienced weatherization workforce may have missed some energy savings opportunities.
- More units were weatherized in hot climates where per unit energy savings are generally lower.
- Increased costs reduced the number of measures that could pass SIR test.
- The average number of major measures installed per unit was lower in the ARRA period than in the retrospective, thereby reducing average energy savings potential.
- Increased oversight in some cases may have increased work quality, which, in turn, may have increased energy savings.

Additionally, one could argue that many factors impacted cost effectiveness of the national WAP, including:

- Davis Bacon increased weatherization costs through increases in wages for weatherization staff and administrative costs for manpower for to handle the extra paperwork.
- Increased oversight increased administrative costs.
- Drags on administration efficiency were caused by bureaucratic reorganization, organizational attention to ramp-up and ramp-down processes, and media and political scrutiny.
- Economies of scale attributable to larger programs were reported by some Subgrantees.

3.0 Estimates of WAP Impacts

3.1 Research Design⁶

⁶ The plans for the retrospective and ARRA period evaluations of WAP are found in Ternes et al. (2007) and Tonn et al. (2011).

WAP was implemented by close to 900 Subgrantees in PY 2008 and 1000 Subgrantees in PY 2010. A probability proportional to size (PPS) sampling approach was used to randomly select 400 agencies in PY 2008 to provide information on homes weatherized in PY 2008 and for a comparison group, homes weatherized in PY 2009.⁷ Size was measured by DOE funding received by the agencies in PY 2008. This approach was augmented by two additional parameters. One, at least one Subgrantee in every state was included in the sample. Two, the largest Subgrantee in terms of funding was included in the sample with a probability of 1.0. The same approach was used to create the sample of Subgrantees for PY 2010. New Subgrantees in PY 2010 were added to the pool for possible selection.⁸

The sampled Subgrantees were asked to provide lists of units weatherized for each year under study and the following year. To build the sample of units for energy analyses of single family (SF), mobile home (MH), and small multi-family buildings (SMF) approximately one-third of the units from each list submitted by a Subgrantee were randomly selected to be in the energy savings analysis sample. Then, the Subgrantees were asked to provide NG and/or electric utility account information for the sampled units. The evaluation team then contacted the requisite NG and electric utilities to collect the billing histories. Bills were collected for periods of 12 months pre-weatherization and 12 months post-weatherization. For the PY 2010 analyses, the SMF units have been grouped with the SF homes into a site built homes (1-4 units) category. This was done because from a building science perspective the units in SMF buildings behave, are weatherized, and respond to weatherization in the same manner as SF homes. A PRISM-focused approach was used to screen billing histories for analysis and estimate energy savings.⁹

With respect to the retrospective period analysis, 379 out of 395 Subgrantees returned clients lists (96%). From those lists, a total of 22,134 units were sampled with the intention of collecting natural

⁷ We believe that homes weatherized the following year provides an excellent control group. Subgrantees have substantial waiting lists (642 in PY08 and 544 in PY10) and homes wait many months for weatherization services (27 months in PY08 and 18 months in PY10). This steady pipeline of homes in the queue suggests that the characteristics of homes weatherized do not change much from one PY to the next.

⁸ One major difference between PY 2008 and PY 2010 is that 450 Subgrantees were included in the sample. The sample size is larger because the project team needed to include all Subgrantees that received Sustainable Energy Resources for Consumers (SERC) grants (~92) in the sample so that billing histories for homes that received weatherization and SERC technologies could be collected as part of the national billing history collection process.

⁹ PRISM stands for Princeton Scorekeeping Method. For more information, see <http://www.marean.mycpanel.princeton.edu>

gas and electric utility bills. Table 5 presents the beginning sample sizes and attrition for billing histories for SF, MH, and SMF units.

With respect to the ARRA period analysis, 438 out of 448 Subgrantees returned clients lists (98%). From those lists, a total of 39,115 units were sampled with the intention of collecting natural gas and electric utility bills. Table 6 presents the beginning sample sizes and attrition for billing histories for SF, MH, and LMF units for PY 2010.

About 25 percent of weatherized homes are heated with delivered fuels—fuel oil, propane, kerosene, and wood. An oil metering study was implemented in seven states in the Northeastern United States during the 2010/2011 heating season to help estimate energy savings attributable to weatherizing homes that use fuel oil. The study involved installing devices to track heating system operation in 52 treatment homes and 35 comparison group homes. The results of this study were used to estimate fuel oil savings in both retrospective and ARRA period homes. Energy savings in homes heated with propane and kerosene were assumed to be similar to natural gas energy savings in homes heated with natural gas. Electricity savings in these homes were also assumed to be similar to electricity savings in homes heated with natural gas (Blasnik 2014d).

Large multi-family buildings (LMF) were handled differently. In PY 2008, the project team was only able to collect billing histories for LMF weatherized in New York City, though it should be noted that this was the first time that billing history analysis was done on such a large number of low-income LMF buildings. The sample of LMF buildings started at 243, with 13,467 units, weatherized during PYs 2007, 2008 and 2009. After visiting all 243 buildings, 223 met the criteria for inclusion in the study and the team was able to collect information on 223 of these buildings. The Evaluation Team attempted to collect building-level heating fuel information (both natural gas and fuel oil), common area electric data, and unit-level electric data for all eligible buildings. The response rates by fuel type were:

- Fuel Oil Data - Fuel oil companies furnished data for 50 of the 101 buildings that used fuel oil as a main heating fuel (50%).
- Natural Gas Data – Gas companies furnished data for 72 of the 90 buildings that used natural gas as a main heating fuel (80%).
- Common Area Electric Data – Electric companies furnished common area electric data for 152 of the 220 buildings (69%).
- Unit-Level Electric Data – Electric companies furnished unit-level electric data for 53 of the 220 buildings (24%); those buildings included 629 of the 12,128 units in eligible buildings.

On a positive note, NYC accounted for one-third of LMF units weatherized in PY 2008. Billing histories were sufficient to estimate energy savings for 3,764 units in LMF buildings heated with natural gas, 1,738 units in buildings heated with fuel oil. Common area electricity bills were collected for 147 accounts and 251 separate apartment units. Gross rather than net energy savings were estimated for the LMF sector.

A national occupant survey instrument was developed and administered, in part, to assess changes in household energy behaviors post-weatherization. The approximately 45 minute phone survey also contained a set of questions that pertained to health, safety and well-being. The occupant survey was conducted in two phases. In phase 1, a random sample of households close to receiving their energy audits were surveyed, along with a random sample comparison group of households that had been weatherized one-year previously. In phase 2, these same households from both groups were sampled one year to eighteen months later. The survey was implemented as follows:

- From the subset of 400 Subgrantees mentioned above, 220 were randomly sampled to participate in the occupant survey;

- In 2010, these Subgrantees were asked to furnish lists of single family and mobile homes scheduled for audits at the time of the request and for lists of types of homes weatherized one year previously;¹⁰
- Homes were randomly selected from aggregated lists for the treatment and comparison groups;
- A computer-assisted telephone survey (CATI) was implemented, with a 70% response rate;
- The samples sizes for the treatment (pre-weatherization) and comparison homes (one year post-weatherization) were 665 and 803, respectively; and
- These same homes were re-surveyed in 2013, yielding 398 responses from the treatment homes and 430 from the comparison homes.¹¹

Lastly, it should be noted that 290 households surveyed to be part of the pre-weatherization treatment group had not had their homes weatherized by the time they were contacted to be part of the client satisfaction portion of the occupant survey. It is assumed that weatherization was deferred for these homes.

3.2 Estimated Energy Savings¹²

Table 7 presents the aggregate and per unit energy savings estimates by house type for PYs 2008 and 2010. One can see that the substantial increase in the number of units weatherized more than tripled the total energy savings achieved in the site built home sector. On the other hand, for many of the reasons cited above, the energy savings per unit decreased somewhat from 2008 to 2010 in the site built category, from 29.3 MMBtu to 26.6 MMBtu. The unit savings for the MH category increased somewhat during the ARRA period. The LMF savings per unit dropped when buildings outside of

¹⁰ Households living in large multi-family buildings were not included in the survey because weatherization of these buildings is quite different. For example, as LMF weatherization job that replaced an old central boiler and a similarly old central hot water heater may not include many if any measures in the individual units.

¹¹ For more information on the national occupant survey, see Retrospective Evaluation report Carroll et al. (2014a).

¹² Documentation for the energy savings and cost effectiveness estimates by housing type can be found in Blasnik et al. (2014a, 2014b, 2014c, 2014d) for the retrospective evaluation and Blasnik et al. (2015a, 2015b) and Carroll et al. (2015a) for the ARRA period evaluation. All of these reports report confidence intervals for energy savings by fuel type and other variables.

New York City were added to the sample.¹³ For comparison purposes, the per unit natural gas savings for weatherized site built homes in PY 1989 was 17.6 MMBtu (Brown et al. 1994).

Figure 3 presents the estimated energy savings for site built homes for five program years, 2007 to 2011 by climate zone. The first panel presents NG savings for homes heated with NG. The second panel presents estimated electricity savings for those homes. The third panel presents electricity savings in homes heated by electricity. Estimated energy savings were only done nationally for PYs 2007, 2009, and 2011. Net energy savings are presented for every year except the last, PY 2011, which are gross energy savings.

Overall, the pattern of results meets expectations. The percentage of energy savings is higher for NG in NG heated homes than for electricity in homes heated with electricity. Baseload electricity savings are lower than NG savings as a percentage in homes heated with NG. NG savings are quite a bit lower in homes located in the hot-dry climate zone. Energy savings are higher in the cold climate zone than in the very cold climate zone for homes heated with NG because it is assumed that the latter are built tighter than the former. As hypothesized in the previous section, energy savings in site built homes dropped from 2008 to 2010, possibly due to many factors associated with the Recovery Act period. But then again, the savings rebounded in PY 2011, possibly due to the national weatherization network meeting the challenges of the Recovery Act period. Additionally, electricity saved in homes heated with NG and homes heated with electricity were higher in the Recovery Act years than in PY 2008. The national averages for energy savings in the three panels cluster around 17%, 7.5%, and 10.5%, respectively. For comparison purposes, the previous national evaluation of WAP estimated natural gas savings in homes heated with natural gas to be 13% (Brown et al. 1994) and a meta-evaluation of evaluations done by states between 1993 to 2005 estimated savings at 23% (Schweitzer 2005).

¹³ To clarify, the retrospective evaluation's large multifamily impact study only had billing data for buildings weatherized in New York City (See Blasnik et al. 2014c).

A topic frequently addressed by energy program evaluators is the rebound effect (Greening et al. 2000; Galvin 2014). The evaluations collected four sets of data that suggest that there is a negligible rebound effect. This is surmised from these findings:

- A nationally representative sample of 500 homes treatment and comparison monitored for temperature during a heating season as part of a larger national Indoor Air Quality study found that the indoor temperature increased only 0.27oF post-weatherization (Pigg et al. 2014). These monitored temperature results are consistent with the findings of several other studies done over the years (e.g., Ternes et al. 1991; Levins and Ternes 1994; McCold et al. 2008);
- The evaluation team visited over 100 homes flagged as having saved more or less energy than estimated and found with respect to the latter that household demographic changes, changes in supplemental heating, and repair or replacement of non-functioning heating systems explained the findings. Homes that did change their thermostat settings lowered them in the winter because their homes were more efficient (Pigg 2014);
- The national occupant survey asked respondents about thermostat setting in the day and night during winter and summer and there were no statistical significant differences from pre- to post-weatherization (Tonn et al. 2015b); and
- The same survey inquired about a large number of energy behaviors and no pattern was found to indicate that the households changed their behaviors to increase or decrease energy use (Tonn et al. 2015b).

Table 8 presents estimates of the energy cost savings by housing type by program year. The SF and SMF estimates have been combined in PY 2008 for this analysis and as mentioned previously are referred to collectively as site-built homes. The decrease in dollars saved per site built homes from PY 2008 to PY 2010 is expected given the factors identified above in Section 2.2. The dollars saved per MH weatherized did not change appreciably from one period to the next. The large decrease in the average energy costs savings per unit in the LMF sector is explainable: a very large percentage of

weatherized LMF buildings in New York City use very expensive fuel oil for their heating fuel. This expensive energy source is rarely used outside of the Northeast.

3.3 Non-Energy Benefits

In addition to producing energy savings and energy cost savings, a sizable set of non-energy benefits can be attributable to low-income weatherization. Figure 4 illustrates the framework developed to organize the assessment of non-energy benefits. The framework has three main categories: societal benefits, ratepayer benefits, and household benefits. Investments in weatherization create direct societal economic benefits (i.e., produce jobs and income multiplier effects). Reductions in energy use resulting from physical changes in the home result in environmental benefits (e.g., reductions in the emissions of harmful air pollutants), which are included in the societal bucket. Weatherization, through energy cost savings, directly impacts household income. Health and safety measures, combined with improvements in disposable income, impact the health and well being of household members (e.g., by reducing instances of thermal stress, reducing asthma symptoms and increasing households' ability to afford prescriptions). Improved health outcomes can lead to societal benefits through decreases in expenses to public and private medical insurance plans. Ratepayers can benefit from decreases in subsidies to Percentage of Income Payment Programs (PIPPs), for example. The balance of this section addresses: emissions benefits, and household health and other household-related benefits.¹⁴

3.3.1 Emissions Reductions

One benefit of WAP is that reducing the amount of energy used in clients' homes reduces the emissions associated with the production and consumption of energy. Values for emissions reductions are estimated for: carbon, particulate matter, sulfur dioxide, nitrogen oxide, and volatile organic compounds. The environmental emissions benefit estimation procedure involves four steps:

1. Energy Usage Reductions (State-Level) – The program evaluation estimated energy savings per weatherized unit for each type of energy used in clients' homes (e.g., NG, electricity) for each building type (i.e., SF, MH, and MF).

¹⁴ For an estimation of the macro-economic impacts of WAP expenditures in PY 2008, please see Burton and Bray (2014).

2. Quantity of Avoided Emissions (State-Level) – Published data sources were used to estimate the avoided greenhouse gases, sulfur dioxide, nitrogen oxide and particulate matter emissions associated with the energy usage reductions for each type of energy. The analysis developed estimates of the average avoided emissions per housing unit at the state level and the aggregate avoided emissions per state.
3. Value of Avoided Emissions (State-Level) – The dollar value of avoided greenhouse gas emissions was computed using guidance from Office of Management and Budget (OMB) and sulfur dioxides, nitrogen oxides, particulate matter, and volatile organic compounds was computed using the Air Pollution Emission and Policy Analysis Model (APEEP) as recommended by the National Research Council (NRC) in their 2010 Report to Congress.¹⁵ The analysis developed estimates of the average emissions benefit per housing unit at the state level and the aggregate emissions benefit per state.
4. National Averages and Aggregates – Using the state-level data, the analysis developed a weighted average avoided emissions and benefits per housing unit served by the program and aggregate avoided emissions and benefits for the overall program. The avoided emissions are expressed as avoided CO₂ equivalents in metric tons, and average short tons of avoided for SO_x, NO_x, PM, and VOCs.

One important reason for developing estimates at the state level in Steps 1 and 2 is because environmental emissions rates for electricity generation vary by region. The valuation procedure done in Step 3 was conducted at the state level because the APEEP model estimates damages at the county level based on pollution sources and population. In addition, this approach furnishes data that can be useful to states for their own planning purposes. The lifetime CO₂ emissions reductions are over 7 million metric tons and over 17 thousand short tons for criteria pollutants in PY 2010, as indicated in Table 9.

¹⁵ National Research Council, 2010. Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use. The National Academies Press, Washington, DC. It should be noted that since this research was conducted, the discount rate to estimate the social cost of carbon has increased from 3% to 7%.

Table 9 also presents the results of monetizing the present value of environmental emissions benefits by emissions type and housing type.¹⁶ The present value of these benefits for units weatherized in PY 2010 is \$645,000,000. This and the individual values by housing type and emissions type are about three to four times higher than the estimates for PY 2008 because of the higher number of units weatherized in PY 2010. These results are sensitive to the value of a metric ton (CO₂) or short ton of emissions reduced. For example, the value of a short ton of SO₂ emissions reduced is much higher than the value for a metric ton of CO₂ (i.e., \$38 versus \$95,000), primarily because studies that monetize the values of reductions of the criteria pollutants incorporate the human health benefits related to reducing exposures to outdoor air pollutants. The monetary values associated with reducing the criteria air pollutants by weatherizing LMF buildings are relatively larger because these buildings generally are located in areas with higher population densities and therefore, relatively speaking, more individuals benefit from the reduced emissions.

3.3.22 Health and Household-Related Non-Energy Benefits¹⁷

As described in Sect. 3.1, WAP recipients were surveyed pre- and post-weatherization. Numerous questions in the survey pertained to health, budget, and other related issues (Liddell and Morris 2010; IEA 2014; Howden-Chapman et al. 2008; Gilbertson et al. 2012). Table 10 presents descriptive statistics for a selected set of health-related questions. Results presented in the first three rows indicate that weatherization reduced asthma symptoms and accompanying visits to emergency departments and hospitals of the main respondents. That weatherization can reduce asthma symptoms is not unexpected because many routine weatherization measures can produce this co-benefit (Krieger 2010). For example, air sealing a home can reduce the infiltration of outdoor allergens as well as insects and other pests. Insulating homes makes homes them comfortable to live in in the winter and summer. In some cases, occupants are less likely to need medical assistance post-weatherization

¹⁶ See Carroll et al. (2014c) and Carroll and Bausch (2015) for more information on the environmental emissions benefits study.

¹⁷ A comprehensive discussion of the health benefits of low-income weatherization and the survey results is found in Tonn et al. (2014b).

because now their homes are not too hot or too cold.¹⁸ General reports of physical and mental health improved post-weatherization due to a multiple of influences of weatherization (e.g., more comfortable, less drafty homes; less infiltration of outdoor noise into the home (Brink 2013)).

Fuel poverty is an issue facing low-income homes in the U.S. (Hernandez 2013; Power 2006) and internationally (Boardman 2010; Ormandy 2009). The survey contained several questions pertaining to the household's budget. As indicated in Table 11, weatherization reduced the frequency of difficult budget tradeoffs, though did not eliminate budget problems. For example, many fewer households found it difficult to pay their energy bills post-weatherization though over 50% reported still facing this issue post-weatherization. Fewer households faced tradeoffs involving food and being able to afford prescriptions.

Monetization of health and household-related benefits provides a way to combine these benefits with the energy cost savings and emissions benefits to develop a fuller picture of the total benefits versus costs of WAP. Twelve categories of health and household-related benefits were monetized as part of this evaluation.¹⁹ They are listed in Table 8. Here are several points to be considered with respect to these estimates:

- The methodologies used to estimate these benefits are based on a national survey of occupants (with a comparison group) and data collected on measures installed in homes by WAP, and on cost estimates for medical treatment were mined from national medical databases²⁰;
- Household benefits are limited to financial benefits accruable directly to the households;

¹⁸ Thermal stress from heat is forecast to increase due to climate change, all things being equal (Wu et al. 2014).

¹⁹ Methodologies used to generate the monetary estimates listed in Table 3.10 can be found in Tonn et al. (2014b).

²⁰ Hospitalization and emergency department costs were retrieved from an online database provided by the Department of Health and Human Services (DHHS) sponsored by the Agency for Healthcare Research and Quality (AHRQ). These data were collected through the Medical Expenditure Panel Survey (MEPS). The costs for a physician office visit were retrieved from a collection of databases sponsored again by AHRQ referred to as the Healthcare Cost and Utilization Project (HCUP).

- Financial benefits due to improved health, for instance, that benefit health insurance plans (e.g., Medicaid and Medicare) are accrued to society in this framework;
- The value of lives saved is considered societal;
- The benefits are accruable immediately (e.g., weatherizing a home can immediately begin to protect occupants from thermal stress);²¹ and
- The present values are calculated over a ten-year time frame using the 2013 discount rate published by OMB.²²

Table 12 presents the estimates of the monetary value for twelve non-energy benefits for households residing in single family and mobile homes.²³ These estimates are grouped into three tiers according to the strength of the methodologies and data underlying the estimates. Tier 1 estimates can be considered to have the least amount of uncertainty, followed by the Tier 2 and Tier 3 estimates. The per unit estimates are the same as reported for PY 2008; however, the aggregate total for the WAP program accounts for the number of units weatherized in PY 2010 to capture the valuation of non-energy benefits for WAP during the ARRA period, which was nearly \$4 billion.

The highest benefit accrues from preventing instances of thermal stress from exposure to extreme cold indoor temperatures. This benefit has a high value because in a few cases, weatherization can prevent thermal stress that can lead to death and preventing a death was valued at \$7.5 million in this analysis. Preventing deaths also weighed heavily in the benefits estimated for preventing other instances of thermal stress (i.e., from exposure to extreme hot indoor temperatures), CO poisoning, and home fires.

²¹ Impacts that may take many years to be realized are not included in this analysis.

²² The discount rates were taken from OMB Circular A-94 Appendix C, 2013 OBM Real Treasury interest rates (See <https://www.whitehouse.gov/sites/default/files/omb/assets/a94/dischist.pdf>). An exception was made for installing CO monitors, where present value was calculated over a 5-year period as the lifespan of CO monitors generally remains effective for an average of five years.

²³ SMF and LMF homes were not included in these analyses because clients living in these types of homes were not included as part of the national occupant survey and because weatherization of LMF buildings focuses more on central heating and water heating systems and common areas and less on individual units, which is hypothesized to have a very different impact on health and household-related non-energy benefits.

3.4 Cost-Effectiveness Estimates

Table 13 presents a summary of the cost-effectiveness analyses by housing type for PY 2010 and PY 2008. The present values of the energy cost savings were calculated based on expected measure lifetimes, U.S. Energy Information Administration (EIA) estimates of future energy prices, and OMB discount rates for 2013. Only total measure installation costs are included in these analyses. The largest difference in cost-effectiveness between PY 2008 and PY 2010 falls in the LMF building category. In this category, the PY 2010 analyses include LMF outside of NYC. The large reduction in the percentage of LMF in the PY 2010 sample that heat with fuel oil explains the preponderance of the difference in savings to investment ratios for this sector. As noted above, the formula used to allocate WAP ARRA funds to the Grantees increased the proportion of funds flowing to hot climate regions of the U.S. Since these regions do not use expensive fuel oil and offer lower energy savings per unit, the lower SIRs for single family and mobile homes in PY 2010 are not unexpected. Under these assumptions, overall the programs benefit-cost ratio was 1.59 in PY 2008 and 0.98 in PY 2010.

Table 14 presents a summary of the total program benefits and costs for WAP for PY 2010 for all weatherized units. The average cost per unit weatherized is \$6,812, which includes all funding leveraged to invest in DOE units and all programmatic costs (i.e., measure costs, administrative costs, training and technical assistance). The average energy cost savings is \$3,681. Because numerous households whose homes were weatherized participate in utility administered PIPPs that are subsidized by ratepayers, approximately 22% of the energy cost savings accrue to ratepayers. The combined present value of the energy and non-energy benefits per unit is approximately \$22,000.²⁴ Accounting for the units weatherized in PY 2010, the total present value of the benefits exceeds \$5.7 billion. It should be noted that there are uncertainties in all of these estimates. However, the total estimates are conservative in several manners. First, the health and household-related benefits do not

²⁴ This study assumes there is no free-rider issue. In other words, none of the households whose homes were weatherized would have undertaken weatherization without WAP. This assumption is justified given that all homes in the program are low-income and the national occupant survey documents problems these households have in paying everyday bills. It should be noted that these estimates also do not include spillover benefits, despite the fact that spillover was documented by the Social Network Study (Rose et al. (2015b)).

take into account subjective benefits enjoyed by households with respect to comfort, improved health and other factors. Second, these non-benefits were not estimated for the large multifamily component of WAP.

Lastly, numerous other non-energy benefits were not monetized by the evaluation, including potential health impacts of refrigerator replacement (i.e., as related to the prevention of food poisoning), health benefits attributable to minor home repairs (e.g., reducing trips and falls), increased home value resulting from the value of the weatherization investments, reduced interest payments on late payments of utility bills, reduced forced mobility, reduced emissions of heavy metals, improvements in national security, and the value of free training provided to weatherization staff. Ratepayer benefits not addressed include: lower bad debt write-off, reduced carrying costs on arrearages, fewer notices and customer calls, fewer emergency gas service calls, reduced transmission and distribution costs, and reduced peak electricity demands.

4.0 Conclusion and Policy Implications

WAP is an energy-efficiency program created to benefit low-income households in the United States. Its funding supports the weatherization of single family, mobile and multifamily buildings (from small to the very large in places like New York City) in all climate zones across the country. The impact results presented herein indicate that WAP is effective at saving energy, though its effectiveness varies by house type, climate zone, and heating fuel type. It is also evident that WAP produces substantial co-benefits for households and society. These co-benefits are very important to garner continued support for low-income energy efficiency programs nationwide because often these programs are not as cost effective, strictly speaking, as non-low income and commercial and industrial programs.

A unique opportunity was presented to evaluate WAP under two quite different situations. The retrospective evaluation considered a program that had been operating in approximately the same fashion at approximately the same funding level for about the previous decade. The ARRA period evaluation was conducted during a time of unprecedented funding and production and under different

regulatory guidelines. The impact analyses showed that the program saved substantially more energy and benefitted many more low-income households during the latter period but at a cost of reduced cost effectiveness, though even during the ARRA period the combined benefits exceeded the combined costs.

The program is quite adept at weatherizing the most typical homes that come into the program, single family homes heated with natural gas. More progress is needed to improve energy savings in mobile homes, which can, in part, be addressed through continuing to improve training and technical assistance with respect to this home type. The large multifamily sector is an altogether different challenge. Building types differ greatly as do approaches for weatherization (e.g., weatherizing a large multifamily building with 10+ stories that has central heating and hot water is much different than weatherizing a sprawling garden apartment complex). WAP also needs to gain property owner contributions to the weatherization effort, a process that takes time and patience.

There is no lack of future research directions. For example, it would be valuable to know how persistent energy savings are over time. Also, as indicated, numerous co-benefits were not included in this impact analysis. With respect to estimating health benefits, consideration could be given to conducting a ‘big data’ study that would link databases of weatherization recipients and appropriate comparison homes to their use of Medicaid, Medicare, and other health insurance. Future research project should also involve the direct collaboration of the health care sector and agencies that have human health missions.

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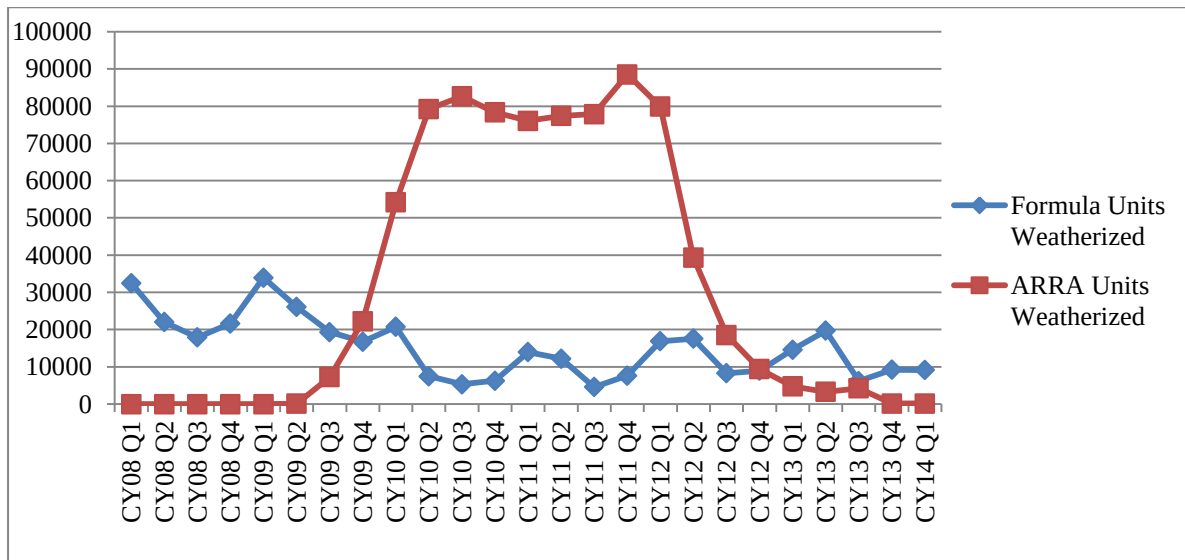


Figure 1. Units Weatherized With WAP Funds During the Recovery Act Period

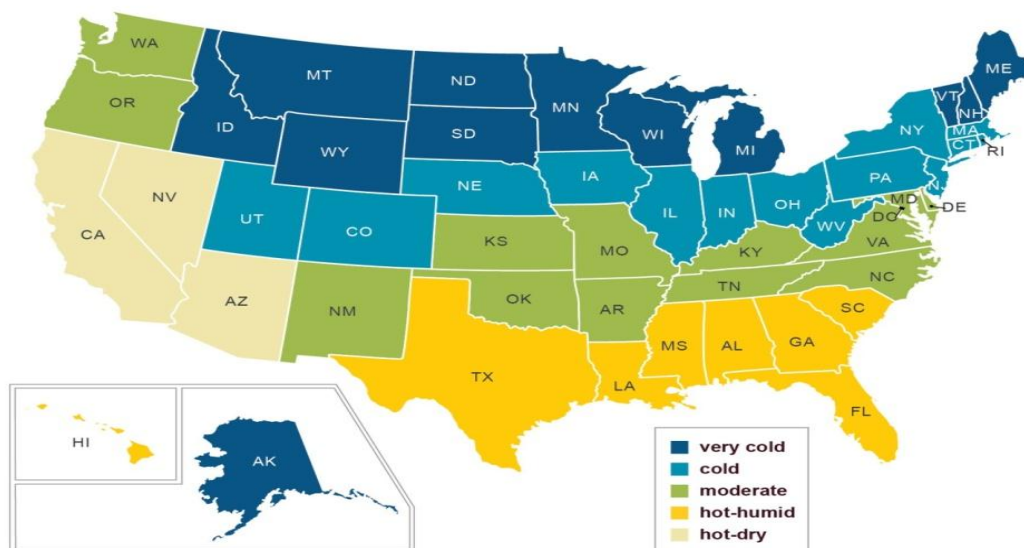


Figure 2. Climate Zones

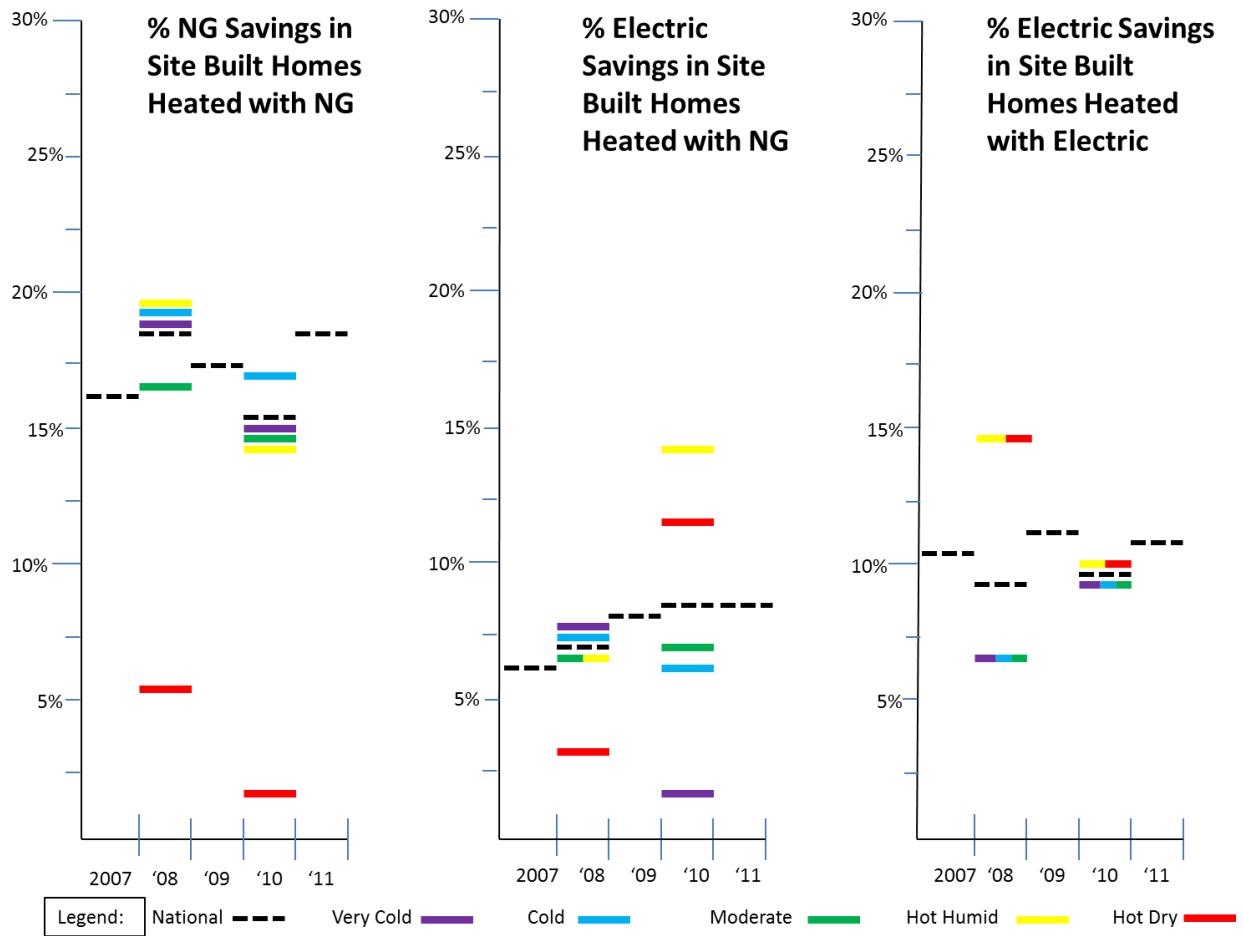


Figure 3. Estimated Energy Savings by House Type, Heating Fuel Type, and Climate Zone

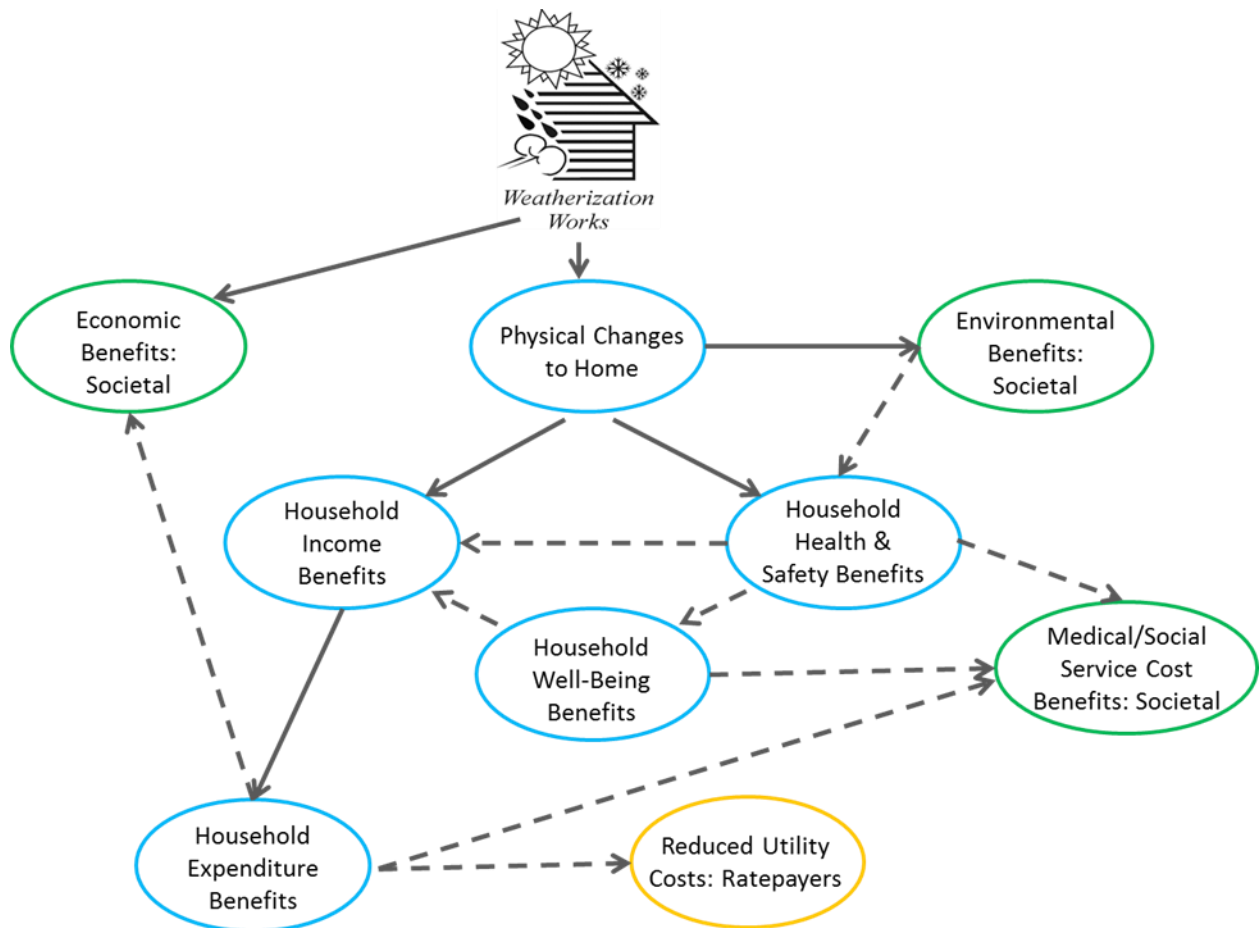


Figure 4. Framework for Understanding Non-Energy Benefits (solid lines represent direct, or first-order, pathways; dotted lines represent indirect, or second-order, pathways)

Table 1. Weatherized Units in Program Years 2008 and 2010 by Housing Type				
Housing Type	2008 Units	2008 by %	2010 Units	2010 by %
Site Built Homes (1-4 units)	62,835	64%	215,445	65%

Mobile Homes	17,754	18%	48,267	14.5%
Large Multi-family Units (5+)	17,376	18%	68,153 ²⁵	20.5%
Total	97,965	100%	331,865	100%

Table 2. Weatherized Units in Program Years 2008 and 2010 by Climate Zone

Climate Zone	2008 Units	2008 by %	2010 Units	2010 by %
Very Cold	24,749	25%	58,584	18%
Cold	42,233	43%	127,386	38%
Moderate	18,794	19%	56,006	17%
Hot/Humid	6,390	7%	55,157	17%
Hot/Dry	5,799	6%	34,732	10%
Total	97,965	100%	331,865	100%

Table 3. Weatherized Units in Program Years 2008 and 2010 by Heating Fuel Type (%)

Heating Fuel Type	All Units PY 2008	Single Family PY 2008	Mobile Home PY 2008	All Units PY 2010	Single Family PY 2010	Mobile Home PY 2010
Natural Gas	58%	60%	35%	56%	62%	31%
Electric	17%	14%	35%	25%	19%	40%
Fuel Oil	14%	14%	10%	9%	9%	7%
Propane	9%	9%	18%	8%	8%	18%
Other	3%	3%	2%	2%	2%	3%

Table 4. DOE and Leveraged Weatherization Funding in PY 2010 and PY 2008 (\$ millions)

	2010				2008			
	Grantees		Sub-grantees		Grantees		Sub-grantees	
	N	\$	N	\$	N	\$	N	\$
DOE	51	\$2,008	-	-	51	\$236	-	-
LIHEAP	43	\$401	5	\$1	46	\$319	11	\$3
State Public Benefit	5	\$46	52	\$19	8	\$83	50	\$9
Other State Programs	6	\$37	104	\$21	10	\$31	145	\$27
Utilities	13	\$24	268	\$94	14	\$21	174	\$52
PVE and Other Fed. Programs	8	\$10	78	\$17	9	\$12	90	\$30
Program Income, In-kind, Non-profit, 3rd Party, Other	3	\$22	171	\$14	4	\$20	106	\$6
Total		\$2,548		\$167		\$722		\$128

²⁵ Excluded in this number are multifamily units that were reported weatherized about which the evaluation team had no information and it also excludes weatherized shelters.

State Retained	\$138	\$50
Pass Through to Subgrantees	\$2,409	\$672
Total Program Funding	\$2,715	\$850
Amount Spent on DOE units	\$2,316	\$460
Number of DOE units	340,158	97,965

Table 5. Samples Sizes and Attrition in Billing Histories PY 2008

Sampled Units	Single Family Site Built 11,328			Mobile Homes 2,957			Small Multifamily Buildings 1,171		
	NG/NG	Elect/NG	Elect/Elect	NG/NG	Elect/NG	Elect/Elect	NG/NG	Elect/NG	Elect/Elect
Utilities Providing Data	428 (74%)	310 (72%)	428 (74%)	243 (76%)	124 (69%)	243 (76%)	74 (70%)	59 (69%)	74 (70%)
Starting Sample	7,547	7,547	1,111	1,245	1,245	819	793	793	NA
No Usage Data	2,831	2,987	492	567	610	124	132	165	
Available Insufficient Data/Poor Model	1,531	1,414	327	256	298	68	378	361	
Fit/Outlier									
Total Usable Sample Cases	3,185	2,725	292	422	337	260	283	267	
Non- Sampled Cases	313	266	14	194	156	16	0	0	
Total Usable Cases	3,498	2,991	306	616	493	276	283	267	

Table 6. Samples Sizes and Attrition in Billing Histories PY 2010

Sampled Units	Single Family Site Built 27,330			Mobile Homes 5632			Large Multifamily Buildings 6,134		
	NG/NG	Elect/NG	Elect/Elect	NG/NG	Elect/NG	Elect/Elect	NG/NG	Elect Baseload	FO/FO
Utilities Providing Data	373 (82%)	289 (84%)	373 (82%)	251 (70%)	137 (86%)	251 (70%)	120 (86%)	77 (85%)	31 (66%)
Starting Sample	16,985	16,985	5,317	1896	1896	2499	4,376	4,879	400
No Usage Data	7,005	7,053	2,800	818	876	1312	2,782	2,495	100
Available Insufficient Data/Poor Model	3,387	2,660	1,225	372	325	491	540	1,164	216
Fit/Outlier									
Total Usable Sample Cases	6,593	7,272	1,292	706	695	696	1,054	1,220	84
Non-	0	0	0	0	0	0	58	336	9

Sampled Cases									
Total Usable Cases	6,593	7,272	1,292	706	695	696	1,112	1,556	83

Table 7. Estimated Energy Savings by House Type for PY 2008 and 2010

Program Year/Home Type	2008	2008	2010	2010
	Total MMBtu Saved	MMBtu/ Unit Saved	Total MMBtu Saved	MMBtu/ Unit Saved
Site Built Homes (1-4 units)	1,8400,000	29.3	5,730,000	26.6
Mobile Homes	284,000	16.0	790,000	16.4
Large Multi-family	144,000 (NYC LMF)	26.9	1,086,554	15.9
Total	2,268,000		7,609,628	

Table 8. Summary of Energy Cost Savings by House Type and Program Year

	2008	2008	2010	2010
	Total \$ Saved	\$ Saved/ Unit	Total \$ Saved	\$ Saved/ Unit
Site Built (1-4 units)	\$331,300,000	\$5,200	\$963,000,000	\$4,468
Mobile Homes	\$54,200,000	\$3,053	\$143,000,000	\$2,957
Large Multifamily	\$34,500,000 (NYC LMF)	\$6,460 (NYC LMF)	\$117,000,000	\$1,710
Total	\$420,000,000		\$1,223,000,000	

Table 9. Emissions Reductions Attributable to WAP for PY 2008 and PY 2010

	Thousands of Metric (CO ₂)/Short Tons (lifetime of measures)					Monetized Benefit (PV millions 2013 dollars)					Total Monetized Benefit (millions \$)
	CO ₂	SO ₂	NO _x	PM	VOC	CO ₂	SO ₂	NO _x	PM	VOC	
PY 2008											
Single Family	1633	2.2	1.3	0.08	.05	\$62	\$59	\$11	\$4	\$0.4	\$136
Mobile Homes	302	0.4	0.2	0.02	.009	\$12	\$10	\$2	\$0.7	\$0.05	\$25
Small Multifamily	132	0.2	0.1	.006	.004	\$5	\$3	\$1	\$0.3	\$0.04	\$9
Large Multifamily	178	0.4	0.1	.005	.003	\$7	\$68	\$5	\$2	\$0.1	\$82
Total -- Aggregate	2246	3.3	1.8	0.1	0.07	\$85	\$139	\$19	\$8	\$0.6	\$252
PY 2010											
Single Family*	5583	7.9	4.4	0.3	0.2	\$213	\$194	\$37	\$15	\$1.3	\$460

Mobile Homes	888	1.6	0.7	0.06	0.02	\$34	\$34	\$4	\$3	\$0.1	\$75
Large Multifamily	912	1.0	0.7	0.03	0.03	\$35	\$58	\$11	\$4	\$0.6	\$109
Total -- Aggregate	7382	10.5	5.8	0.4	0.2	\$282	\$287	\$52	\$22	\$2	\$645

* Single-family category includes the small multifamily building category in PY 2010.

Table 10. Selected Health and Safety Impacts of Low-Income Weatherization

Health & Safety Impact	Pre-Wx	Post-Wx	Change
Asthma Symptoms (< 3 months since last) (%yes)	70.5%	58.7%	-11.8%
Asthma Emergency Department Visits (%yes)	15.8%	4.3%*	-11.5%
Asthma Hospitalizations (%yes)	13.7%	10.6%	-3.1%
Kept home at unsafe temperature past year (1=almost every month, 4=never)	3.69	3.91***	0.22
Medical attention too hot (%yes)	2.4%	1.5%*	-0.9%
Medical attention too cold (%yes)	3.2%	1.5%	-1.7%
Number of days previous month physical health not good	10.3	5.4***	-48%
Number of days previous month mental health not good	7.1	3.7***	-48%
Number of days previous month did not get enough rest or sleep	11.7	6.6***	-44%

*** p<.001; ** p <.01; * p<.05

Table 11. Selected Household Budget Impacts of Low-Income Weatherization

Trade Offs	Pre-Wx	Post-Wx	Change
How hard is it to pay your energy bills (1= very hard, 5= not at all hard)	2.18	2.88***	0.70
How often not purchased food to pay energy bills past year (1= every month, 3= every few months, 6= never)	5.00	5.23**	0.23

How often not paid energy bills to purchase food past year (1= every month, 3= every few months, 6= never)	5.31	5.55**	0.24
Household member went without food (past 4 weeks) (%yes)	7%	5%	-2%
Worried household members wouldn't have nutritious food (past 4 weeks) (%yes)	23%	18%**	-5%
Received food stamps or WIC assistance past year (%yes)	56%	50%	-6%
Needed to see doctor but could not because of cost (%yes)	32%	24%**	-8%
Household members had trouble paying medical bills) (1= yes, 0= no)	.41	.32**	-9%
Household member needed prescription medicines but couldn't afford (1= yes, 0= no)	.33	.22***	-11%
How often didn't fill prescription/took less to pay utility bill (1=every month, 3= every few months, 6= never)	5.28	5.51**	0.23

*** p<.001; ** p <.01; * p<.05

Table 12. Present Value of Per Unit and WAP Program Health-Related Benefits of Weatherization

	Total	Total (Value of Life Excluded)	Tier 1		Tier 2		Tier 3	
			Societal	Household	Societal	Household	Societal	Household
Asthma	\$2,009	-	\$1,852	\$157				
Thermal Stress-Cold	\$3,911	\$172	\$3,892	\$19				
Thermal Stress-Heat	\$870	\$85	\$855	\$15				
Food Assistance		-						
Reduction	\$832		\$832					
Reduction in Missed Days at Work	\$201	-	\$40	\$161				
CO poisoning	\$154	\$7			\$153	\$1		

Improve ment in Prescrip tion Adheren ce	\$1,929	-				\$1,929			
Reducti on in Use of Short- Term Loans	\$71	-			-		\$71		
Home Fires	\$831	\$175					\$768	\$63	
Increase d Producti vity at Work		-						-	
Due to Improve d Sleep	\$1,813						\$1,813		
Increase d Producti vity at Home		-					-		
Due to Improve d Sleep	\$1,329							\$1,329	
Reducti on in Low- Birth Weight Babies from Heat-or- Eat Dilemm a	\$198						\$198		
Total by Tiers (Present Value Per Unit)	\$14,148	-	\$7,471	\$352	\$2,082	\$72	\$2,779	\$1,392	
Total by Tiers (Present Value WAP Progra m)	\$1,136,883,221	-	\$600,333,094	\$28,295,957	\$167,310,541	\$5,766,863.04	\$223,324,724.16	\$111,878,910.72	
			\$628,629,051		\$173,077,404		\$335,176,766		

Table 13. Energy Cost Savings, Efficiency Measure Costs, and Cost-Effectiveness by Building and Fuel Type (2013 Dollars)

	PY 2008			PY 2010		
	PV Energy Cost Savings	Measure Costs	Savings to Investment Ratio (90% C.I)	PV Energy Cost Savings	Measure Costs	Savings to Investment Ratio
Single Family*	\$5,337	\$3,096	1.72 (1.35 - 2.26)	\$4,468	\$3,990	1.12 (0.82 - 1.53)
Mobile Home	\$3,053	\$2,961	1.03 (0.83 - 1.32)	\$2,957	\$3,737	0.79 (0.66 - 0.97)
Small Multifamily	\$4,618	\$2,878	1.60 (1.23 - 2.16)	--	--	--
Large Multifamily**	\$6,460	\$3,336	1.82 (2.32 - 5.33) ⁺	\$1,996	\$2,976	0.67 (0.55 - 0.84)
All types	\$4,890	\$3,070	1.59	\$3,681	\$3,745	0.98

* SF category includes SMF in PY 2010

** LMF category only includes buildings weatherized in New York City in PY 2008

+ Buildings heated with fuel oil.

Table 14. Total Benefits and Costs for WAP PY2008 & PY 2010

	Present Value Per Unit PY 2008	Present Value Program PY 2008	Present Value Per Unit PY 2010	Present Value Program PY 2010
Energy Cost Savings	\$4,890*	\$420,000,000	\$3,681	\$1,233,000,000
Accrued to Households	\$3,814	\$327,800,000	\$2,872	\$962,000,000
Accrued to Ratepayers	\$1,075	\$92,000,000	\$809	\$271,000,000
Environmental & Water Benefits	\$3,118	\$266,945,000	\$2,130	\$694,000,000
Emissions Tier 1	\$2,932	\$252,000,000	\$1,944	\$645,000,000
Water Savings Tier 3	\$186	\$14,945,000	\$186	\$49,000,000
Health & Household-related Benefits**	\$14,148	\$1,137,000,000	\$14,148	\$3,731,000,000
Tier 1	\$7,823	\$657,000,000	\$7,823	\$2,156,000,000
Tier 2	\$2,154	\$174,000,000	\$2,154	\$570,000,000
Tier 3	\$4,171	\$335,000,000	\$4,171	\$1,100,000,000
Total Benefits	\$22,156	\$1,852,945,000	\$19,959	\$5,753,000,000
Total Costs ¹	\$4,695	\$481,000,000	\$6,812	\$2,320,000,000
DOE	\$2,295	\$235,000,000	\$5,926	\$2,018,400,000
Leveraged Funds	\$2,400	\$246,000,000	\$886	\$301,600,000

* – Excludes LMF outside of NYC

** – Excludes LMF

Highlights

- This paper presents estimates attributable to the Weatherization Assistance Program
- Energy savings were estimated by home type and climate zone
- Environmental emissions and health and household non-energy impacts were estimated
- The total benefits attributable to WAP are greater than the total program costs

DAAO Workpaper JS 5 - Customer Late Fees

Description: This workpaper is an adaptation of discovery response DAAODE-1.1 - 1.5 provided by J.E. Sparks. Columns F&G and rows 19&20 added by Witness Schott are highlighted in bold. No original formatting or data from the discover response has

Michigan Public Service Commission
DTE Electric Company
Customer Service

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Discovery Request DAAODE-1.1 - 1.5
Witness J.E Sparks
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Electric Residential Customers

Columns F&G Added

Billing Year	Customer Type*	Number of Customers	Reconnect Fees**	Late Fees**	Late Fee Percentage	Per customer	Bill Doc Total Sales (kWh)	Bill Doc Amount Excl Tax	Service Charge	Power Supply Charge	Distribution Charge	Bill Doc Tax Amount
2021	LI	149,740	\$439,680	\$4,902,463	2.3%	\$ 32.74	1,247,037,135	\$211,261,023	\$14,045,676	\$119,662,702	\$77,552,645	\$12,128,316
2022	LI	153,379	\$801,160	\$5,818,833	2.8%	\$ 37.94	1,214,277,574	\$208,145,778	\$14,414,713	\$119,809,599	\$73,921,466	\$12,638,571
2023	LI	160,946	\$604,160	\$6,623,751	3.2%	\$ 41.16	1,135,213,626	\$206,907,055	\$16,597,629	\$119,178,582	\$71,130,844	\$12,874,966
2021	Non LI	1,834,183	\$919,580	\$9,427,742	0.3%	\$ 5.14	15,136,465,100	\$2,725,317,826	\$173,160,977	\$1,442,587,548	\$1,109,569,301	\$114,779,865
2022	Non LI	1,838,520	\$1,415,580	\$10,609,248	0.4%	\$ 5.77	14,594,741,273	\$2,694,212,173	\$175,262,686	\$1,430,156,944	\$1,088,792,543	\$114,159,329
2023	Non LI	1,840,589	\$1,387,260	\$10,784,018	0.4%	\$ 5.86	13,384,788,565	\$2,645,366,629	\$197,044,912	\$1,402,790,319	\$1,045,531,399	\$113,006,694
Totals (added from original)			\$5,567,420	\$48,166,054								
Total late + reconnection fees, 2021-2023				\$53,733,474								

*LI defined as customers having an active low income profile (at or below 200% FPL) at any time during the corresponding billing year

**Reconnect and Late Fees dataset are fees that were assessed and not necessarily collected

Surcharges are included in the power supply and distribution charge

DAAODE-1.1 - 1.3					DAAODE-1.4	
	Number of Customers	Bill Doc Total Sales (kWh)	Bill Doc Amount Excl Tax	Avg. Use per month (kWh)		Avg. Bill (excluding tax)
LI	160,946	1,135,213,626	\$206,907,055	587.8		107.13
Non LI	1,840,589	13,384,788,565	\$2,645,366,629	606.0		119.77
Total	2,001,535	14,520,002,191	\$2,852,273,684	604.5		118.75
Percent LI	8.0%					

Michigan Public Service Commission
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Electric Residential Customers

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Total	2,001,535	14,520,002,191	\$2,852,273,684	604.5	118.75

NOVEMBER 18, 2021

FACT SHEET: Biden Administration Deploys American Rescue Plan Funds to Protect Americans from Rising Home Heating Costs; Calls on Utility Companies to Prevent Shut Offs This Winter

*Unprecedented Funding and Partnerships with State, Local and Tribal
Governments to Protect Vulnerable Homeowners and Renters*

Today, the Biden-Harris Administration called on states, localities and tribes to plan early and coordinate across programs to effectively use historic American Rescue Plan resources to address home energy costs this winter. The White House also called on utility companies that receive public dollars to prevent devastating utility shut-offs this winter and help expedite the delivery of unprecedented federal aid.

The American Rescue Plan provides critical resources that states, localities and tribes can use to address home energy costs:

- **More than doubling available Low Income Home Energy Assistance Program (LIHEAP) funding:** The recent average annual funding for LIHEAP is \$3-4 billion, which typically serves 5 million households. The American Rescue Plan provided an additional \$4.5 billion available until September 2022.
- **Delivering Emergency Rental Assistance—unavailable in previous winters—to help cover utility bills:** First established last December—and provided an additional \$21.5 billion in funding by the American Rescue Plan—Emergency Rental Assistance (ERA) programs provide help with past-due utility bills or ongoing assistance with energy costs to help distressed renters avoid shut-offs and keep current on expenses. Even as most programs were just beginning to ramp up between January and June 2021, grantees made over 200,000 payments to support households with utility arrears and over 140,000 prospective utility payments.
- **Providing state, local and tribal governments additional resources to help energy-burdened middle-class families, including through the \$350 billion State & Local Fiscal Recovery Fund:** States and localities have the flexibility to use Fiscal Recovery Funds to help deliver energy relief to families, including for middle-class households that may not be eligible for programs directed to the lowest income consumers.

Today the White House called on Utilities and Energy Providers to Commit to Proactively Use Their Resources to Help

The Administration welcomed initial commitments from seven major utility companies including **DTE Energy, Eversource, Green Mountain Power, National Grid, NorthWestern Energy, Portland General Electric** and

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Vermont Gas, as well as the delivered fuel trade association **NEFI**, that all agreed to the following:

- **Identify Eligible Recipients:** Many utility companies already offer programs to help families in need. Utilities should proactively identify those who may be eligible for public benefits, such as LIHEAP and ERA, using financial hardship and other customer data. In order to help identify and prequalify customers for benefits, utilities can also use third-party data – such as whether a home is rented or owned and which census tract it is in – and data through partnership with government agencies including income or proxies, like eligibility for other programs. For example, in Connecticut, utilities are using third-party data to prequalify and contact customers, and share the results with state agencies to expedite energy assistance payments.
- **Directly Screen and Notify Potentially Eligible Recipients:** Utilities and energy providers should inform customers of energy assistance programs, screen customers for benefits eligibility, and facilitate referrals to available benefits programs prior to any shut-offs.
- **Expedite Assistance to Vulnerable Households:** Energy providers should be critical partners by proactively working to establish the processes and data-sharing relationships needed to speed benefits to their eligible customers as quickly as possible. For example, in Michigan, utilities work in partnership with the state to receive bundled payments on behalf of many customers at once, speeding processing and helping benefits quickly reach their customer's accounts. In South Carolina, utility companies receive a bulk payment from the state prior to the full satisfaction of application and documentation requirements that they can use to apply benefits to customers quickly.
- **No Shutoffs for Customers Applying for Financial Hardship Assistance:** Beyond state or local shut-off moratoria requirements, when utility companies are notified that a customer is applying for financial hardship assistance, including energy assistance benefits, they should commit to restore service or delay shut-off. For example, in Michigan, once a household applies for ERA utility benefits, the utility company places a hold on utility shut off. Utilities should also commit to provide at least 30 days' notice to all customers before a shut-off.
- **Facilitate Assistance to Delivered Fuel Customers:** In order to expedite benefits, providers of delivered fuels should commit to proactively notify families in distress of how to contact a state and local agency for assistance. Fuel providers with capacity should set up processes to facilitate referrals with customer permission. Fuel providers should prioritize deliveries to households approved for benefits, particularly where providers receive direct deposits credited to customer accounts prior to or immediately following delivery. Fuel providers with capacity should go even further by agreeing to deliver fuels to approved households through deferred payment or budgeting agreements.

Today the Administration also called on States, Localities and Tribes to:

Prepare Early to Distribute Expanded LIHEAP to More Families

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- **Strong and Effective Winter Plans**: The Administration is providing technical assistance to LIHEAP grantees to speed up state and local planning and program implementation for winter.
- **Quick and Automatic Distribution of Benefits**: HHS is urging grantees to consider expediting payments to households that have benefitted from LIHEAP in previous years and simplifying eligibility verification. This option will not be appropriate for all grantees, but some states have already shown it can work. For example, Maine and New York are providing automatic payments to households who have received benefits in the past.
- **Expanded Outreach to Newly Eligible Households**: HHS is urging grantees to consider additional outreach to households who need energy assistance for the first time this year. A significant number of households receive LIHEAP year after year, but as a result of the economic disruption of the pandemic and rising energy prices additional households are expected to need help. These households may be unfamiliar with how to access benefits, and grantees can help these families access the unprecedented LIHEAP resources available as well as refer to other benefits.
- **Coordination between LIHEAP, ERA and Other Programs**: Given differences in eligibility, HHS and Treasury are clarifying how grantees of LIHEAP and ERA can coordinate to quickly provide benefits to eligible households. Coordination ensures support can reach a greater number of households, including those who do not qualify for LIHEAP due to their household incomes, people on fixed incomes, the elderly, and others in need. These best practices include coordinating outreach to households, establishing regular communication with program leaders and energy providers, streamlining intake, and referring across programs as appropriate. For example, rental households not fully served by LIHEAP could be referred to ERA, and homeowners could be referred to LIHEAP. Where available, the Homeowners Assistance Fund may be able to serve middle-class homeowner households.

Use Emergency Rental Assistance to Aid Renters with Utility Costs

- **Provide Forward-Looking Assistance to Low-income Renters Facing High Energy Costs**: The Treasury Department is encouraging grantees to take advantage of the flexibility to provide forward-looking utility assistance payments over the next several months to low-income families facing high heating costs, including for those renters who rely on delivered fuels to heat their homes. ERA grantees may also cover arrears and related fees for utility bills dating back to the start of the pandemic.
- **Lower Burdens and Speed Assistance to Distressed Renters Through Collaboration between ERA Program Administrators and Utility Providers**: The Administration is facilitating cooperation between state and local governments and utility providers to identify customers at risk of energy insecurity and confirm household eligibility. To support this effort, the Treasury Department has issued guidance encouraging grantees to establish data sharing agreements and bulk payment methods with utility providers.

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FACT SHEET: Biden Administration Deploys American Rescue Plan Funds to Protect Americans from Rising Home Heating Costs; Calls on Uti...

- *Expedite Payments Through Partnerships with Non-Profits to Prevent the Loss of Utility Services:* When the rapid delivery of a payment could reasonably be necessary to prevent the loss of utility services, Treasury has provided grantees flexibility to partner with nonprofit organizations for the purpose of making immediate payments while a household's application is still being processed.
- *Increased Home Heating Costs Can Qualify Income-Eligible Households for Needed Assistance this Winter:* The Treasury Department is clarifying that elevated energy costs may be a form of COVID-19-related hardship that puts distressed renters at-risk of housing instability qualifying them for assistance with their utilities. Households can self-attest to experiencing both a COVID-related hardship and risk of housing instability based on significant increases in their home heating costs.

Use All Available Tools to Help Working and Middle-Class Families

- *State and Local Fiscal Recovery Fund Can Help Families Ineligible for Other Support:* States, localities and tribes can tap the \$350 billion allocated by the American Rescue Plan to provide additional relief on home heating costs, particularly to middle-class households. For example, Louisville has supported a utility relief fund that provides residents who have fallen behind on gas or electric bills a one-time credit of up to \$1,000.
- *\$10 Billion Homeowners Assistance Fund to help Distressed Homeowners Keep Up with Utility Bills:* Treasury is encouraging states, tribes and territories to utilize funds from this American Rescue Plan program to help cover home energy costs or prevent the loss of utilities this winter, including for hard-pressed middle-class families.
- *\$1 Billion Pandemic Emergency Assistance Fund:* The American Rescue Plan also created a new fund for states, territories and tribes of which a substantial portion remains and is available to provide cash or utility-specific assistance to needy families.

The Administration also Highlighted Additional Financial Support Helping Hard-Pressed Families with Energy Costs:

- *1/3 of Families Using Child Tax Credit for Utility Bills:* Thanks to the American Rescue Plan, the families of more than 61 million children are receiving expanded monthly Child Tax Credit payments up to \$300 per child and nearly a third used it to pay for utilities –including home energy costs – between July and October 2021.
- *Weatherization Assistance to Reduce Energy Costs:* The bipartisan Infrastructure Investment and Jobs Act invests a historic \$3.5 billion in the Department of Energy's Weatherization Assistance Program, reducing energy costs for more than 700,000 low-income households by increasing the energy efficiency of their homes.
- *\$100 million to Cover Rent and Utilities in Hard-Hit Rural Areas:* The American Rescue Plan is providing financial support through September 2022 to over 26,000 overburdened rural households living in multi-family housing financed by the U.S. Department of Agriculture.

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- *Preventing Families from Choosing “Heat or Eat”*: More low-income children and families face hunger when energy prices rise during winter as higher home heating costs eat up family budgets. The Biden-Harris Administration increased Supplemental Nutrition Assistance Program (SNAP) benefits on October 1 by an average of \$36.24 per month, which will help to prevent this cruel tradeoff between heat and food this winter.

###

utility	date	disconnections
Electric	1/1/2020	19907
Electric	2/1/2020	19339
Electric	3/1/2020	11898
Natural Gas	1/1/2020	618
Natural Gas	2/1/2020	1121
Natural Gas	3/1/2020	1003
Electric	4/1/2020	NA
Electric	5/1/2020	NA
Electric	6/1/2020	NA
Natural Gas	4/1/2020	NA
Natural Gas	5/1/2020	NA
Natural Gas	6/1/2020	NA
Electric	7/1/2020	507
Electric	8/1/2020	3642
Electric	9/1/2020	9997
Natural Gas	7/1/2020	0
Natural Gas	8/1/2020	0
Natural Gas	9/1/2020	639
Electric	10/1/2020	14392
Electric	11/1/2020	672
Electric	12/1/2020	252
Natural Gas	10/1/2020	928
Natural Gas	11/1/2020	142
Natural Gas	12/1/2020	1
Electric	1/1/2021	10049
Electric	2/1/2021	9818
Electric	3/1/2021	22977
Natural Gas	1/1/2021	366
Natural Gas	2/1/2021	1197
Natural Gas	3/1/2021	2129
Electric	4/1/2021	19017
Electric	5/1/2021	21860
Electric	6/1/2021	18485
Natural Gas	4/1/2021	1899
Natural Gas	5/1/2021	1877
Natural Gas	6/1/2021	2274
Electric	7/1/2021	13180
Electric	8/1/2021	9148
Electric	9/1/2021	15606
Natural Gas	7/1/2021	1881
Natural Gas	8/1/2021	1785
Natural Gas	9/1/2021	2218
Electric	10/1/2021	7020
Electric	11/1/2021	17270
Electric	12/1/2021	13757
Natural Gas	10/1/2021	1660

Natural Gas	11/1/2021	931
Natural Gas	12/1/2021	487
Electric	1/1/2022	17365
Electric	2/1/2022	19243
Electric	3/1/2022	22132
Natural Gas	1/1/2022	812
Natural Gas	2/1/2022	1157
Natural Gas	3/1/2022	2659
Electric	4/1/2022	19431
Electric	5/1/2022	20641
Electric	6/1/2022	19887
Natural Gas	4/1/2022	1450
Natural Gas	5/1/2022	1911
Natural Gas	6/1/2022	2118
Electric	7/1/2022	18108
Electric	8/1/2022	20476
Electric	9/1/2022	19640
Natural Gas	7/1/2022	2071
Natural Gas	8/1/2022	2075
Natural Gas	9/1/2022	1600
Electric	10/1/2022	14515
Electric	11/1/2022	13359
Electric	12/1/2022	9183
Natural Gas	10/1/2022	1417
Natural Gas	11/1/2022	421
Natural Gas	12/1/2022	525
Electric	1/1/2023	18129
Electric	2/1/2023	8083
Electric	3/1/2023	15618
Natural Gas	1/1/2023	852
Natural Gas	2/1/2023	965
Natural Gas	3/1/2023	745
Electric	4/1/2023	17725
Electric	5/1/2023	13247
Electric	6/1/2023	21450
Natural Gas	4/1/2023	1555
Natural Gas	5/1/2023	1674
Natural Gas	6/1/2023	1358
Electric	7/1/2023	18841
Electric	8/1/2023	19887
Electric	9/1/2023	19451
Natural Gas	7/1/2023	828
Natural Gas	8/1/2023	503
Natural Gas	9/1/2023	1217
Electric	10/1/2023	18027
Electric	11/1/2023	14285
Electric	12/1/2023	6362

Natural Gas	10/1/2023	855
Natural Gas	11/1/2023	930
Natural Gas	12/1/2023	389
TOTAL		717121

customer_grp	date	enrollments
total	1/1/2020	419
total	2/1/2020	400
total	3/1/2020	332
low_income	1/1/2020	315
low_income	2/1/2020	311
low_income	3/1/2020	257
seniors	1/1/2020	119
seniors	2/1/2020	95
seniors	3/1/2020	84
total	4/1/2020	230
total	5/1/2020	144
total	6/1/2020	105
low_income	4/1/2020	167
low_income	5/1/2020	91
low_income	6/1/2020	63
seniors	4/1/2020	57
seniors	5/1/2020	43
seniors	6/1/2020	35
total	7/1/2020	88
total	8/1/2020	74
total	9/1/2020	71
low_income	7/1/2020	48
low_income	8/1/2020	28
low_income	9/1/2020	24
seniors	7/1/2020	31
seniors	8/1/2020	29
seniors	9/1/2020	29
total	10/1/2020	58
total	11/1/2020	80
total	12/1/2020	138
low_income	10/1/2020	16
low_income	11/1/2020	26
low_income	12/1/2020	71
seniors	10/1/2020	26
seniors	11/1/2020	45
seniors	12/1/2020	57
total	1/1/2021	205
total	2/1/2021	226
total	3/1/2021	206
low_income	1/1/2021	124
low_income	2/1/2021	162
low_income	3/1/2021	145
seniors	1/1/2021	80
seniors	2/1/2021	62
seniors	3/1/2021	52
total	4/1/2021	107

total	5/1/2021	105
total	6/1/2021	82
low_income	4/1/2021	79
low_income	5/1/2021	75
low_income	6/1/2021	53
seniors	4/1/2021	24
seniors	5/1/2021	24
seniors	6/1/2021	21
total	7/1/2021	64
total	8/1/2021	54
total	9/1/2021	46
low_income	7/1/2021	40
low_income	8/1/2021	31
low_income	9/1/2021	23
seniors	7/1/2021	17
seniors	8/1/2021	16
seniors	9/1/2021	16
total	10/1/2021	43
total	11/1/2021	97
total	12/1/2021	117
low_income	10/1/2021	20
low_income	11/1/2021	47
low_income	12/1/2021	69
seniors	10/1/2021	16
seniors	11/1/2021	50
seniors	12/1/2021	47
total	1/1/2022	242
total	2/1/2022	293
total	3/1/2022	301
low_income	1/1/2022	159
low_income	2/1/2022	198
low_income	3/1/2022	170
seniors	1/1/2022	70
seniors	2/1/2022	80
seniors	3/1/2022	114
total	4/1/2022	282
total	5/1/2022	234
total	6/1/2022	195
low_income	4/1/2022	141
low_income	5/1/2022	108
low_income	6/1/2022	83
seniors	4/1/2022	128
seniors	5/1/2022	114
seniors	6/1/2022	105
total	7/1/2022	153
total	8/1/2022	121
total	9/1/2022	101

low_income	7/1/2022	59
low_income	8/1/2022	42
low_income	9/1/2022	34
seniors	7/1/2022	88
seniors	8/1/2022	74
seniors	9/1/2022	60
total	10/1/2022	82
total	11/1/2022	337
total	12/1/2022	952
low_income	10/1/2022	26
low_income	11/1/2022	232
low_income	12/1/2022	766
seniors	10/1/2022	48
seniors	11/1/2022	104
seniors	12/1/2022	181
total	1/1/2023	1256
total	2/1/2023	1305
total	3/1/2023	961
low_income	1/1/2023	997
low_income	2/1/2023	1033
low_income	3/1/2023	731
seniors	1/1/2023	232
seniors	2/1/2023	233
seniors	3/1/2023	196
total	4/1/2023	690
total	5/1/2023	525
total	6/1/2023	425
low_income	4/1/2023	497
low_income	5/1/2023	355
low_income	6/1/2023	269
seniors	4/1/2023	143
seniors	5/1/2023	121
seniors	6/1/2023	107
total	7/1/2023	332
total	8/1/2023	275
total	9/1/2023	237
low_income	7/1/2023	188
low_income	8/1/2023	144
low_income	9/1/2023	103
seniors	7/1/2023	83
seniors	8/1/2023	75
seniors	9/1/2023	55
total	10/1/2023	214
total	11/1/2023	149
total	12/1/2023	270
low_income	10/1/2023	77
low_income	11/1/2023	102

low_income	12/1/2023	184
seniors	10/1/2023	47
seniors	11/1/2023	47
seniors	12/1/2023	46

MPSC Case No: U-21291

Requester: FLO

Question No.: FLODG-1.9

Respondent: J. E. Sparks

Page: 1 of 1

Question: 9. What is the finest geographic resolution of data that has been aggregated about customer arrearages that DTE possesses for each of the years 2022 and 2023? Examples of units of geographic resolution include zip code, census tract, census block group, and circuit. Please provide this data, organized by number of residential customers and amount (in dollars) of customer arrearages.

Answer: The Company does not track arrears by zip code, census tract, census block group, and circuit.

Attachment: None

MPSC Case No: U-21534

Requester: DAAO

Question No.: DAAODE-1.36

Respondent: A. Willis

Page: 1 of 1

Question: 36. When DTE develops its rate requests, what analyses, if any, does it conduct in order to identify the affordability gap (i.e., the amount of money consumers pay for electricity over 3% of their income)?

Answer: To my knowledge, DTE conducts no such analysis.

Attachment: *None*

MPSC Case No: U-21534

Requester: DAAO

Question No.: DAAODE-1.28

Respondent: J. Sparks

Page: 1 of 1

Question: 28. For all DTE Electric customers receiving the RIA credit, please provide the percentage of those customers that make late payments, receive shutoff notices, and have their electricity shutoff by DTE in the format of the table below. If percentages are not available, please provide the number of customers.

RIA CREDIT	Late Payment Percentage	Shutoff Notice Percentage	Shutoff Percentage
2020			
2021			
2022			
2023			

Answer: DTE Electric objects for the reasons that the request is unduly burdensome, overly broad, seeks excessive detail, and seeks information that has not been compiled and is not kept in the ordinary course of business in the format requested. Subject to and without waiving its objection, the Company would respond as follows:

RIA CREDIT	Late Payment Percentage	Shutoff Notice Percentage	Shutoff Percentage
2020	N/A	N/A	N/A
2021	68.95	76.77	38.27
2022	78.83	86.29	46.26
2023	77.51	84.71	41.75

Note: Customer may have made a late payment, shut off notice or disconnect at any time from the time of receiving the credit thru 2023. Customers may also appear in multiple years.

Attachment: None

Title: Distribution of the Total Population by Federal Poverty Level (above and below 200% FPL) | KFF

Timeframe: 2022

Location	Under 200%	200%+	Total	Footnotes
United States	0.283	0.717	1	1
Alabama	0.352	0.648	1	
Alaska	0.251	0.749	1	
Arizona	0.296	0.704	1	
Arkansas	0.376	0.624	1	
California	0.274	0.726	1	
Colorado	0.221	0.779	1	
Connecticut	0.218	0.782	1	
Delaware	0.217	0.783	1	
District of Columbia	0.232	0.768	1	
Florida	0.302	0.698	1	
Georgia	0.299	0.701	1	
Hawaii	0.235	0.765	1	
Idaho	0.288	0.712	1	
Illinois	0.263	0.737	1	
Indiana	0.292	0.708	1	
Iowa	0.26	0.74	1	
Kansas	0.282	0.718	1	
Kentucky	0.35	0.65	1	
Louisiana	0.384	0.616	1	
Maine	0.258	0.742	1	
Maryland	0.218	0.782	1	
Massachusetts	0.219	0.781	1	
Michigan	0.29	0.71	1	
Minnesota	0.222	0.778	1	
Mississippi	0.399	0.601	1	
Missouri	0.296	0.704	1	
Montana	0.304	0.696	1	
Nebraska	0.263	0.737	1	
Nevada	0.304	0.696	1	
New Hampshire	0.172	0.828	1	
New Jersey	0.217	0.783	1	
New Mexico	0.367	0.633	1	
New York	0.287	0.713	1	
North Carolina	0.303	0.697	1	
North Dakota	0.238	0.762	1	
Ohio	0.292	0.708	1	
Oklahoma	0.357	0.643	1	
Oregon	0.274	0.726	1	
Pennsylvania	0.264	0.736	1	
Rhode Island	0.236	0.764	1	
South Carolina	0.317	0.683	1	
South Dakota	0.277	0.723	1	
Tennessee	0.316	0.684	1	
Texas	0.318	0.682	1	
Utah	0.225	0.775	1	
Vermont	0.241	0.759	1	
Virginia	0.239	0.761	1	
Washington	0.223	0.777	1	
West Virginia	0.369	0.631	1	
Wisconsin	0.252	0.748	1	
Wyoming	0.277	0.723	1	
Puerto Rico	0.698	0.302	1	

Notes

The American Community Survey did not release the 1-year estimates for 2020 due to significant disruptions to data collection brought on by the coronavirus pandemic.

Data may not sum to totals due to rounding.

The U.S. Census Bureau's poverty threshold for a family with two adults and one child was \$23,556 in 2022. This is the official measurement of poverty used by the Federal Government, and the measure used for most poverty-based data presented on State Health Facts. The Department of Health and Human Services (HHS) produces sir

Data include the civilian noninstitutionalized population in the United States.

Sources

KFF estimates based on the 2008-2022 American Community Survey, 1-Year Estimates.

Footnotes

1. US total excludes Puerto Rico.

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

Ameren Illinois Company	:	
d/b/a Ameren Illinois	:	
	:	23-0067
Proposed general increase in rates and	:	
revisions to other terms and conditions	:	
of service. (tariff filed January 6, 2023)	:	

ORDER

November 16, 2023

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spread to more of Ameren's low-income customers under Staff's proposal. PIOs' two-tier proposal is based on the SMI, which does not allow the Company to utilize existing programs (i.e. LIHEAP and PIPP) to streamline administrative processes and minimize costs as directed in the Low-Income Discount Rate Study Report. Staff's proposal strikes an appropriate middle ground between using existing processes and innovating to provide more benefits to customers who need it most.

Staff further argues that the Commission should approve Staff's proposed reporting requirements (5) and (6). Staff Ex. 14.0 (COR) at 22; *see also* Staff Ex. 14.0, Sch. 14.06 at 4-5. Staff proposes reporting requirements (5) and (6) to obtain data on Staff's proposed Tier 3 customers. If the Commission approves Staff's three-tiered proposal for Rider LICA eligibility, Staff also recommends the Commission approve these additional reporting requirements.

Staff recommends the Commission adopt Staff's proposed Rider LICA for the purpose of recovering LICs associated with the Company's low-income discount program. Staff Ex. 14.0, 22; *see also* Staff Ex. 14.0, Sch. 14.06 at 1. The AG proposes that the recovery mechanism for the program costs be a volumetric charge. AG Ex. 8.00 at 33. Staff supports Rider LICA, as presented in Staff Schedule 14.06, because it is consistent with the cost recovery mechanisms Staff supports for other large gas utilities in Illinois.

Staff notes that the Company offers to submit a compliance filing to reflect the Commission's Final Order. Staff does not object to the Company's proposal to provide a draft for feedback following the Commission's Final Order. However, Staff objects to the Company filing a compliance Rider LICA tariff more than 30 days before its effective date because doing so could confuse customers by leading them to believe that the low-income discount program is available before it becomes effective. In other words, the Company's proposal does not take into consideration the time required to implement the low-income discount program. Therefore, Staff recommends that the Commission direct the Company to file a final version of Rider LICA no more than 30 days before Rider LICA's effective date.

c. AG's Position

The AG asks the Commission to approve the low-income discount rate proposed by PIO witness Schott, as modified by AG witness Larkin-Connolly, because it provides the most equitable and effective discount for low-income ratepayers.

Mr. Larkin-Connolly testified that both Staff's proposal and PIOs' proposal were improvements to Ameren's proposal, but ultimately supported PIOs' proposal, with some modifications. AG Ex. 8.00 at 16-17. Specifically, Mr. Larkin-Connolly recommended that the low-income discount be based on FPL, rather than SMI, that costs be recovered on a per-therm basis (rather than through a fixed charge), and that the discount be split into five tiers, consistent with the low-income discount program proposed by Legal Action Chicago ("LAC")/Community Organizing Family Issues ("COFI") witness Colton in the ongoing rate cases for Nicor, Peoples Gas, and North Shore. *Id.*; AG Ex. 8.00 at 18: Table 3; *see also* AG Init. Br. at 61.

While Ameren and Staff's proposals offer fixed discounts, regardless of usage, the AG's modified PIO proposal applies a percentage of the total bill that correlates the

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discount with the customers' income, providing a discount that reflects need. In addition, because the discount applies to the entire bill (not just the customer charge), the AG contends that their proposal benefits all low-income customers, regardless of usage. The AG argues that their modified PIO proposal would provide a meaningful discount to *all* low-income customers, rather than the subset of low-income, low-usage customers. AG Ex. 8.00 at 25-26. According to the AG, this discount, coupled with its proposed residential rate design could lead to a meaningful bill reduction for all low-income customers, and all residential customers generally, except for the highest usage customers. In combining these two proposals, the AG avers that the Commission could ensure that Ameren's rate design is consistent with the state's clean energy policies (e.g., ensuring that those who use more natural gas pay more), while protecting high-usage, low-income customers who may have higher bills due to larger families or inefficient housing.

Mr. Larkin-Connolly found that this proposal would result in approximately a \$0.0258 per therm charge. *Id.* at 30. For a median usage residential customer, who uses 745 therms per year, this would result in approximately \$19.25 per year in charges. *Id.* at 30.

In addition, the AG argues that the recovery of these costs from both residential and non-residential customers is justified because commercial and industrial customers may have employees or customers who would be eligible for these discounts, and local businesses would also benefit from the increased affordability of gas services because low-income households will have more financial security and might have more disposable income available to spend on other goods and services. *Id.* at 31-32. The AG asks the Commission to approve their modified PIO low-income discount program, coupled with their proposed rate design, to ensure transformational change for low-income customers at a reasonable cost to other ratepayers. See AG Ex. 8.00 at 11.

The AG also requests the Commission adopt certain reporting requirements proposed by the Staff, to track the progress of the program. Staff Ex. 5.0 at 33-34.

The Company suggests the Commission adopt its proposal, which would (1) only allow customers with incomes up to 200% of the FPL to participate in the low-income program, (2) only apply the discount to the delivery portion of customers' bills, and (3) collect the costs of the program through a monthly fixed charge. The AG refutes each of the Company's suggestions.

First, the AG argues that the Commission should adopt the 300% FPL eligibility threshold proposed by the AG and Staff. Ameren proposes that the Commission cap eligibility at the income limit for LIHEAP and PIPP participation (currently 200% FPL). The AG asserts that its proposal incorporates more customers than Ameren's proposal by design. The record evidence shows that Ameren's ratepayers are struggling to pay their bills. For example, in March 2023, 1,995 residential Ameren customers had payment agreements that failed (38% of those who had DPAs as of the beginning of the month), while only 639 customers completed their DPAs during that month. AG Ex. 4.00 at 8. A total of 86,165 (12%) residential customers were assessed late payment fees or charges in March. *Id.* According to the AG, "when evaluating proposals for a low-income discount program, the focus should first be on the potential effectiveness of the program to improve

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affordability for low-income customers, and then the corresponding bill impacts of program costs on other customers.” AG Ex. 8.00 at 20 (emphasis in original). The AG maintains that expanding income eligibility beyond 200% FPL is preferable because a higher eligibility threshold would provide a meaningful benefit to a greater number of struggling ratepayers. AG witness Larkin-Connolly found that the cost of the program for the medium-usage residential household that consumes 745 therms per year would be around \$19.25 per year, which the AG asserts is justified given the transformational support the discount would provide to low-income households in Ameren’s service territory. *Id.* at 30-31.

Ameren claims that it would not be able to leverage existing programs and processes if the Commission were to adopt the AG’s proposal. The AG argues that this is a misleading argument because the Company would still be able to use LIHEAP and PIPP to verify the incomes of customers up to 200% FPL. According to the AG, AIC would just need to allow customers from 201% FPL to 300% FPL to self-certify their eligibility. Ameren argues that this process would “provide no accountability” for those customers, but the AG argues that AIC provides no evidence to demonstrate the likelihood that customers would abuse the program—or that the auditing process proposed by Staff would not minimize or outright eliminate this concern. The AG asks the Commission to approve their proposed discount rate with an income eligibility limit of 300% FPL.

Second, the AG asks the Commission to reject the Company’s suggestion to only apply the discount to the delivery portion of customers’ bills and adopt the recommendation by the AG and PIO to apply the low-income discount to participating customers’ entire bills. The AG and PIO recommend that the low-income discount apply as a percentage of participating customers’ entire bills because this would provide a more significant benefit to low-income customers without overburdening other ratepayers. Ameren and Staff proposed fixed dollar discounts applied only to the delivery portion of customers’ bills. Ameren complains that the AG and PIOs’ proposals do not align with Conclusion Number 2 in the Low-Income Discount Rate Study Report, which placed certain parameters on the low-income discount programs that utilities should propose. However, the AG highlights that the Low-Income Discount Rate Study Report noted that its conclusions were “tentative” and stated it would open a separate docket to consider broader issues related to low-income discounts. See AIC Ex. 1.0R at 16, *citing* the Low-Income Discount Rate Study Report at 63. The AG avers that the Low-Income Discount Rate Study Report was not the Commission’s final word on discount rates, but a first step toward enacting low-income discounts. The AG adds that the Commission did not address the issues that other parties could raise, nor did it limit what type of programs the Commission could consider in a docketed proceeding or adopt in an evidentiary proceeding like this one. The AG iterates that nothing in the Low-Income Discount Rate Study Report or the Act limits the Commission’s authority to adopt a discount program that applies to customers’ entire bills.

Third, the AG asks the Commission to adopt their proposed volumetric per-therm recovery mechanism, and to reject the Company’s suggestion to collect the costs of the program through a monthly fixed charge. Ameren complains that the AG’s proposal does not align with Conclusion Number 3 in the Low-Income Discount Rate Study Report,

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which states that “[a]ll such utility low-income discount rate proposals should include a cost recovery mechanism that is consistent with Illinois law and Commission practice.” AIC Init. Br. at 182–183. The Company claims that its proposal of a monthly fixed charge is consistent with the fixed Energy Assistance Charge used to collect supplemental LIHEAP and PIPP funds. *Id.* The AG disagrees. The AG argues that nothing in the Act or the Low-Income Discount Rate Study Report mandates that the low-income discount rate must, or even should, be collected in the same manner as the Energy Assistance Charge or through a fixed charge. The AG argues that its proposal to collect the costs of the program through a volumetric charge is a better approach because it spreads the cost over more units, which limits the impact on low-use customers and is most consistent with the State’s clean energy and affordability goals, including Governor Pritzker’s proposal in his *Chicago Sun Times* op-ed, in which he recommended policies where customers who use more gas pay more. See AG Ex. 4.00.

Ameren further complains that the AG’s proposal “would have significant bill impacts for GDS-4 customers” who would potentially “see a monthly Rider LICA charge between \$704 and \$54,724” under the AG’s proposal. AIC Init. Br. at 183. But the AG points out that—as shown in the surrebuttal testimony of Ameren witness Kilhoffer — this group of customers uses an average of 1,488,862 therms per month in Ameren’s Rate Zones I and II, and an average of 2,121,104 therms per month in Ameren’s Rate Zone III. AIC Ex. 43.0 at 17. As a result, these customers’ average monthly bills under Ameren’s proposed rates (without including Rider LICA) would be \$1,789,714 in Rate Zones I and II and \$2,557,587 in Rate Zone III. *Id.* The AG notes that using their estimated \$0.0258 per therm charge, Rate Zones I and II customers would pay \$38,129 per month toward the low-income discount, while Zone III customers would pay \$54,724 per month toward the low-income discount, both amounting to about 2% of the customers’ average monthly bill. *Id.* The AG adds that Ameren indicated that only 20 customers fall into this category (3 in its Rate Zone I, 9 in Rate Zone II, and 8 in Rate Zone III). AG Cross Ex. 2. By Ameren’s own estimate, the AG’s proposed discount could benefit as much as 37% of Ameren’s residential customer class. According to the AG, that the Company’s 20 highest-use customers might be required to pay an additional 2% toward the program is not a tenable ground for the Commission to reject the AG’s proposed per therm charge.

For the reasons set forth by the AG, the AG asks the Commission to adopt its modified PIO low-income discount. The AG avers that its modified proposal, along with its proposed rate design, and other recommendations are most consistent with the state’s emphasis on rate affordability, are supported by the findings in the Commission’s low-income discount report, and will result in cost-based, equitable, and affordable rates for both low-income and non-low-income residential customers.

d. PIOs’ Position

PIO propose a 60% discount to the lowest-income customers (below 30% SMI), and a 20% discount to customers between 30% and 60% of SMI. AG Ex. 8.00 at 16.

PIO note that the fundamental difference between the proposals offered in this proceeding is that PIO and the AG’s proposals are designed to ensure all gas bills are affordable for Ameren’s customers, whereas the limited nature of Staff and the Company’s proposals are not. Importantly, whereas the PIO and AG’s proposals would

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apply a discount to a customer's total bill, Staff's and the Company's proposals would apply a discount only to delivery charges. PIO state that Ameren's low-income customers struggle to pay their bills under existing rates, and the Company's proposed rate increase — coupled with the impacts of electrification—will make it even tougher for low-income customers to do so in the future (even if the Commission were to adopt PIOs' recommended disallowances and reduced customer charge). PIO thus assert that Ameren's low-income customers require a robust discount to make their gas bills affordable, not a band-aid. For that reason, the Commission should adopt the PIOs' proposed low-income discount rate, or the AG's proposal in the alternative.

PIO note AG witness Larkin-Connolly's testimony: "the objective in designing the new low-income discount program should be to provide benefits that do not only just provide some support to low-usage low-income ratepayers, but also make gas services more affordable for all low-income customers." AG Ex. 8.00 at 25-26. Despite this directive that the low-income discount rate ensures affordability, the Company proposes a low-income discount rate that falls well-short of this objective.

PIO witness Schott testified a household is "energy insecure" if it pays more than 3% of its gross household income on its gas bills. PIO Ex. 4.0REV at 4. PIO note that Ameren has a high prevalence of energy insecure customers in its service territory with 854 of its 901 zip codes having a median income at or below 60 % SMI for a household of two. PIO Ex. 2.0 at 6. Energy insecurity disproportionately impacts low-income households, Black and Hispanic households, and households with children. PIO Ex. 2.0 at 5. When energy insecure individuals are unable to pay their bills, they risk disconnection, which can lead to a series of negative effects. PIO Ex. 2.0 at 6.

PIO assert that, given the risks of disconnection, an effective low-income discount rate should seek to make gas bills affordable by limiting customers' total gas bill payments to 3% of household income. PIO maintain that Ameren's proposal, however, does not meet these criteria. The bill savings that Ameren proposes to offer would still leave households below 30% SMI with a gas burden of 7.5%, 2.5 times higher than the threshold for affordability. PIO Ex. 4.0REV at 7. The proposals from the Company and Staff fail to produce the discounts needed to make the lowest income customers energy secure because their discount is a flat dollar amount and only discounts delivery charges. PIO Ex. 4.0REV at 7. The steepest discounts under the Ameren and Staff proposals would leave the lowest income customers with gas burdens of 7.1% and 8.3%, respectively, more than double the 3% energy security threshold. PIO Ex. 4.0 at 7. PIO argue that Ameren and Staff's proposals only produce energy security for wealthier customers who, by definition, will have more disposable income to pay for their gas bills than the lowest income customers.

PIO assert that Ameren and Staff's proposals are also not likely to substantially reduce disconnections because they will not make gas bills affordable for Ameren's low-income customers. Monthly data from May to November 2022 shows that 94% of Ameren's customers on DPAs failed to successfully complete their DPAs. PIO Ex. 2.0 at 6-7. During this same period, Ameren issued 202,175 disconnections notices and executed 36,511 disconnections. PIO Ex. 2.0 at 7. PIO explain that, in fact, Ameren (including its Missouri and Illinois affiliates) ranks among the most aggressive utilities in the country when it comes to disconnections — Ameren ranked fifth in the country for

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most disconnections last year (data through October) and increased disconnections by 3,750% in 2022. PIO Ex. 2.0 at 7. Between 2020 and 2021, Ameren accelerated disconnections six times faster than any other gas utility in the country. PIO Ex. 2.0 at 7. PIO note that Ameren now proposes a weak discount that will continue to leave many of lowest income customers at risk for disconnection.

In its rebuttal testimony, the Company states it is planning its SARP pilot to provide further assistance to its low-income customers and proposes a \$1 million customer assistance program to assist customers until SARP is active. Ameren Ex. 16.0 at 29. PIO assert that while those programs may be helpful to those customers who are able to participate, the availability of those programs should not substitute for a comprehensive low-income discount rate that helps make bills affordable for Ameren's customers. They maintain that Ameren has not demonstrated the SARP and a \$1 million customer assistance program, in tandem with its proposed low-income discount rate, will comprehensively address its customers' energy burdens. PIO Ex. 4.0REV at 3. For example, the Company has not explained how the programs would affect disconnections and proposes no enrollment cap or goal. PIO Ex. 4.0REV at 3. One-time bill assistance would also not address the root causes of energy insecurity in Ameren's service territory—growing rates over time. In contrast, PIO recommend a low-income discount specifically designed to ensure customers do not spend more than 3 % of their household income on gas bills.

PIO thus request that the Commission adopt PIOs' proposal, or the AG's proposal in the alternative. PIOs' proposal would provide significant savings for the 34% of Ameren customers who are below 60% of SMI. PIO Ex. 4.0REV 5. PIOs' proposal also significantly reduces the risk of disconnection by providing steep bill discounts for customers toward the lower-end of the income scale.

PIO further explain that the Commission has the authority to adopt PIOs' low-income discount rate pursuant to Section 9-241. While the Commission's Low-Income Discount Rate Study Report concludes discounts "are applicable only to the delivery service charges", nothing in Section 9-241 limits the Commission's discretion to flat rate discounts or discounts that apply only to delivery charges. Importantly, the PIO and the AG have shown in this proceeding that a discount that applies only to delivery service charges—like Ameren's and Staff's proposals—would not ensure affordable gas bills for Ameren's low-income customers.

In his testimony, Ameren witness Bodi argued that a discount structured as a percentage of a customer's total bill would reduce that customer's incentive to conserve energy. Ameren Ex. 30.0 at 17; Ameren Ex. 46.0 at 6. However, PIO propose to apply the discount to the total gas bill, meaning that fixed and volumetric charges would decrease by the same percentage. PIOs' proposal would simply scale the same ratio of fixed to volumetric charges (i.e., the total bill) downward to correspond with a customer's income level, which is wholly appropriate in the interest of advancing equity. PIO maintain that given the affordability crisis Ameren's low-income customers already face, and the acute affordability pressures that Ameren's proposed rate increase, coupled with accelerating electrification and gas price volatility, will impose those low-income customers, the Commission should adopt a discount rate that helps Ameren's most vulnerable customers achieve affordability.

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e. Commission Analysis and Conclusion

The Commission's Low-Income Discount Rate Study Report directed certain electric and gas utilities to offer a tariffed low-income discount rate. Accordingly, AIC proposed its Rider LICA with this rate case filing. With the fully developed record, there are currently four low-income discount rate proposals for the Commission's consideration.

AIC proposes a two-tiered, fixed amount discount system based on LIHEAP/PIPP eligibility, wherein any customer whose income does not exceed 200% of federal poverty level would receive a monthly \$10 credit. For any customer whose household income is 50% or less of the LIHEAP qualifying metric (e.g., 100% of the FPL), the fixed monthly credit would increase to \$20. Staff's proposal modifies AIC's proposed Rider LICA, creating a third tier, proposing different fixed amounts that should apply to each tier, and allowing third tier customers to self-report their eligibility for the program. Under Staff's proposal, Rider LICA would provide a \$30 fixed credit to the lowest income customers, a \$20 fixed credit to customers between 100%-200% of the FPL, and a \$10 fixed credit to customers between 200%-300% of the FPL.

PIO propose a two-tiered discount system based on SMI rather than FPL, wherein the lowest-income customers (below 30% SMI) would receive a 60% discount, and customers between 30% and 60% of SMI would receive a 20% discount. Importantly, PIO propose this discount would apply to the customer's entire bill, rather than only to delivery charges, as AIC and Staff propose.

The AG's proposal is a modified version of PIOs' proposal that is based on FPL rather than SMI. Moreover, the AG's proposal includes five tiers, as opposed to PIOs' two tiers. The Tiers consist of 0-50% of FPL for Tier 1, 50%-100% of FPL for Tier 2, 100%-150% of FPL for Tier 3, 150%-200% of FPL for Tier 4, and 200%-300% of FPL for Tier 5. The discounted amounts for eligible Ameren customers are Tier 1: 75%; Tier 2: 55%; Tier 3: 25%; Tier 4: 10% and Tier 5: 5%. Both the AG and PIO advocate for a discount that is a percentage to be applied to the entire bill, rather than to just the delivery charges.

After thoroughly considering the four proposals, the Commission adopts the AG's proposal and directs the Company to implement it by October 1, 2024. In reviewing the record, the Commission concludes that the AG's proposal is consistent with the Commission's report to the General Assembly on low-income rates and would provide significant discounts to low-income customers, while mitigating the adverse impacts to non-participants. The Commission's study report "tentatively" recommended that low-income programs should apply to delivery services only, pending specific proposals in a formalized proceeding. See ICC, Low-Income Discount Rate Study Report to the Illinois General Assembly, at 8-9, 62-63 (Dec. 15, 2022). The record evidence on the total bill discount presented by the AG and PIO swayed the Commission to alter that determination and approve the AG's proposed full bill discount. The Commission recognizes applying the discount to the entire bill will increase the amount to be paid by non-eligible customers, but also notes this program introduces potential utility system benefits and encourages the Company to prioritize energy efficiency programming to reduce bills overall.

The Commission finds that the AG's five-tiered system is more expansive than both AIC's two-tiered system and Staff's three-tiered system and will provide more

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targeted relief to the lowest-income customers. Significantly, the AG's proposal will benefit low-income customers who are not LIHEAP or PIPP eligible, while AIC's proposal will not. The AG's proposal also appropriately leverages the existing LIHEAP processes to determine eligibility for Rider LICA while allowing a fifth tier of customers to self-certify for eligibility. The Commission finds that this both reduces the administrative costs of the program and increases the program's effectiveness in delivering credits to eligible customers. Accordingly, the Commission concludes the AG's proposal will provide the transformative support necessary for Ameren's lowest-income customers to achieve an affordable energy burden.

The Commission adopts the AG's recommendation for customers to self-report Tier 5 eligibility and for the Company to annually audit LIQCs enrolled for Tier 5 discounts to verify eligibility. The audit will provide future information regarding the success or potential misuse of the program going forward. The Commission understands the Company's concerns regarding misuse of this program. However, considering the newness of this program, and the lack of any direction or process for customers to challenge being removed from the program, the Commission does not approve the Company's request that ineligible customers should be removed from the program as a result of the audit. Depending on the results of the audit as presented in a future rate case proceeding, or another applicable proceeding, the Commission may revisit or revise this decision. The issue of misuse and self-reporting should be discussed in the LIDR workshops described below.

As the Commission approves the AG's five-tiered proposal for Rider LICA eligibility, the Commission further approves Staff's recommended reporting requirements (5) and (6). They will require AIC to collect and report data on processing time for Tier 5 eligibility from initial request to approval under each of the options available to customers requesting the Tier 5 credit (online, by phone, or by mail), and a detailed description of the sampling technique used to verify eligibility of Tier 5 discounts/credits using the 5% threshold specified in the tariff and results of the review/audit including, but not limited to, the number of customers within the 5% of customers sampled that were unable to meet the income requirement or the income verification requirement. The Commission adopts the AG's proposed discount and Staff's proposed Rider LICA (as presented in Staff Schedule 14.06 but adjusted to reflect the Commission's approval of the AG's discount) for the purpose of recovering LICs associated with the Company's low-income discount program because it is consistent with the cost recovery mechanisms Staff supports for other large gas utilities in Illinois.

While the Commission adopts the AG's Rider LICA proposal in this proceeding, the Commission directs Staff to work with the Company and stakeholders to commence workshops no later than January 15, 2026, to further consider the questions raised in this docket and the Low-Income study report, including but not limited to:

- (1) should Rider LICA, or another cost recovery mechanism, be limited to residential customers only;
- (2) should the LIDR program incorporate seasonal differences in costs to customers and enable the Company to discount either the distribution

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charge or the whole bill depending on the maximum potential discount to eligible customers;

- (3) should additional low-income levels be added to the program;
- (4) should the Commission consider approving a uniform LIDR program across all regulated gas utilities in Illinois;
- (5) is customer self-reporting income sufficient;
- (6) what other income reporting methods could be used in determining customer eligibility; and
- (7) what effect the approved LIDR has on the AGS market and issues of competitive neutrality.

Staff shall present a report to the Commission 60 days after the workshops conclude synthesizing the workshops and any recommended steps the Commission or the Company should take going forward.

While the Commission expects the AG's proposal to increase affordability across eligible customers, the Commission anticipates the Company could realize system benefits associated with reduced collections and customer service-related costs. The LIDR could also reduce uncollectibles and related disconnections tied to arrearages. In order to capture these various savings that could benefit all customers, AIC will need to track the LIDR's utility system impacts. AIC, Staff, and stakeholders shall use system savings information when evaluating and estimating the value LIDR provides for the Company. The Commission intends these system savings to be quantified and incorporated into Rider LICA reconciliations to adjust the under-recovery amounts consistent with AIC's realized LIDR-related system benefits. For the system savings to be included in future Rider LICA reconciliations, the Commission directs AIC to track the following information (to the extent possible):

- (1) the dollar amount of uncollectibles costs that have been reduced on an annual basis subsequent to the implementation of the AG LIDR;
- (2) the dollar amount of credit and collections costs, and any other Company costs that have been reduced on an annual basis subsequent to the implementation of the AG LIDR;
- (3) the aggregated Tier 1 (0%-50% FPL) and Tier 2 (51%-100% FPL) customer billing and arrearage data from the two years prior to LIDR implementation to assess how LIDR impacts the customer and utility system benefit analysis (prioritizing past data from only Tier 1 and Tier 2 now, but eventually tracking this information for all tiers as the discount program matures);
- (4) how AIC has marketed the availability of the LIDR to populations who might qualify for the discount;
- (5) what improvements can be made in those marketing efforts to reach more eligible customers; and
- (6) other information Staff identifies as needed for incorporating system savings into a Rider LICA reconciliation.

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AIC shall present a report with the above information to the Commission within twelve months from the date the LIDR goes into effect and every year thereafter. The report shall clearly document the level of reduced uncollectibles, credit, and collections costs, and any other reduced Company costs attributed to the LIDR. After the initial report, Staff will review and make a recommendation to the Commission as to when such system savings should be included in the Rider LICA reconciliation accounting.

The Company shall have 60 days after the Final Order is entered to develop a final estimated timeline to make the necessary changes to its system. The Company must implement these changes and its LIDR program by October 1, 2024. The report must include, but shall not be limited to the following: 1) identification of specific system changes necessary to implement the LIDR program; 2) any logistical, IT, or system barriers to implementing the program; 3) how the system changes to accommodate the LIDR program are prioritized among other existing IT and/or system upgrades and changes; and 4) implementation timelines for each discount tier, if they vary. The Commission believes that implementing the program by October 1, 2024, is imperative to ensure that Ameren's most financially vulnerable customers receive assistance as the 2024/2025 winter heating season begins. The Commission further requires the Company to submit status reports to the Commission every three months after the date of this Order until the discount program is fully implemented. These status reports shall be filed as compliance filings in this docket.

5. Rider PGA

a. AIC's Position

AIC's Rider PGA is the long-established mechanism for the recovery of all costs for gas supply services without markup. Ameren Ex. 13.0 at 4. AIC proposed no changes to Rider PGA in its direct case, which, as it relates to Rider PGA, only proposed to remove PGA revenues and PGA expenses from the test year revenues and expenses as discussed in Section IV.A.1 and in Schedule C-2.1. However, Ameren Illinois addresses PIOs' recommendation that the Commission direct the Company to propose a risk-sharing mechanism in the Company's "fuel cost adjuster docket" to provide an incentive for the Company to control the costs of gas supply. PIO Ex. 1.0 at 91.

AIC contends PIO conceded that this proposal is inappropriate to consider in the current case by recommending that it be discussed in the "fuel cost adjuster docket." *Id.* AIC further posits that it is not clear in which "docket" the Company would propose such a risk-sharing mechanism. While PIO referred to "the Company's fuel cost adjuster docket," Ameren Illinois explains that the only docket (other than a rate case) in which the Commission addresses Rider PGA is the annual reconciliation proceeding provided for by Section 9-220(a) of the Act and the language of the Commission-approved tariff. See 220 ILCS 5/9-220(a); Ill. C. C. No. 2, 2nd Revised Sheet No. 23.010. According to Ameren Illinois, given the clearly defined scope of the Commission's review in the Rider PGA reconciliation proceeding, that proceeding is not an appropriate setting in which to "thoughtfully develop[] a risk-sharing proposal for the fuel cost adjuster" as suggested by PIO. PIO Ex. 1.0 at 91.

AIC urges the Commission to reject PIOs' proposal on its merits. PIO suggest that a change to Rider PGA is needed because there is no incentive in Rider PGA "to minimize

Summary of State Utility Shut-off Moratoriums

States and utilities moved quickly to suspend utility shut-offs due to nonpayment as low-income households struggle with the loss of income due to illness and job loss as a result of COVID-19 pandemic. State-mandated suspensions on utility shut-offs due to nonpayment as a result of COVID-19 are now in place in 29 states and the District of Columbia. Four states issued moratoriums that have recently expired: Kansas, Michigan, Mississippi, and Montana. Utilities in the other 17 states have issued voluntary moratoriums.

Note: This is a list of all utility actions that NEADA is aware of at the time of release. Questions: Please contact Mark Wolfe: mwolfe@neada.org or Cass Lovejoy: Clovejoy@neada.org. Please send additions or updates with source documentation to Elizabeth Eagles: eeagles@neada.org.

Statewide suspensions (29 states & D.C.):

- *State-ordered Suspensions of Gas, Electric, and Water (29 states & DC):* Alaska, Arkansas, California, Colorado, Connecticut, District of Columbia, Hawaii, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, Wisconsin, Wyoming
- *Expired State-ordered Suspensions of Gas, Electric, and Water (4 states):* Kansas, Michigan, Mississippi, Montana
- *State-ordered Suspensions of Telecom (13 states & DC):* Alaska, California, District of Columbia, Hawaii, Indiana, Kentucky, Louisiana, Maine, Maryland, New Hampshire, Pennsylvania, Vermont, Washington, Wyoming
- *Expired State-ordered Suspensions of Telecom (2 states):* Kansas, Montana

States without suspensions/with voluntary suspensions (17 states):

- *States Without Mandatory Suspensions (17 states):* Alabama, Arizona, Delaware, Florida, Georgia, Idaho, Minnesota, Missouri, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, Oregon, South Dakota, Utah, West Virginia
Note: Though these states have no official moratorium, all 17 of them have some form of voluntary moratorium which varies depending on the state and the specific utility provider
- *Voluntary Individual Utility Suspensions (50 states):* The Edison Electric Institute (EEI) has announced that all its member companies will voluntarily suspend disconnections in response to the pandemic. A full list of EEI member utilities is available [here](#). The American Gas Association (AGA) has announced that its member companies are committed to working with state public utility commissions to “appropriately suspend disconnecting customers from their natural gas service.” A full list of AGA members is available [here](#).

The calendar of moratorium expiration dates are as follows:

Table 1: State-ordered Utility Shut-off Moratoriums on Gas, Electric, and Water

Moratorium end date	Count of states	States
Expired	4	Kansas, Michigan*, Mississippi, Montana
27-Jun	1	Illinois
30-Jun	2	Indiana, Hawaii
1-Jul	2	Iowa**, Maryland
12-Jul	1	Colorado***
17-Jul	1	Rhode Island
25-Jul	1	Wisconsin
28-Jul	1	Washington
29-Jul	1	North Carolina
30-Jul	1	New Mexico
31-Jul	1	Vermont
31-Aug	2	Virginia, Texas
15-Nov	1	Alaska
Until end of emergency or further announcements	14	Arkansas, California, Connecticut, Kentucky, Louisiana, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, South Carolina, Tennessee, Wyoming
Until 15 days after end of emergency	1	District of Columbia
States without state-ordered moratorium	17	Alabama, Arizona, Delaware, Florida, Georgia, Idaho, Minnesota, Missouri, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, Oregon, South Dakota, Utah, West Virginia
Total	51	

*Only had a shutoff moratorium on water

**Municipal utilities/electric cooperatives resumed disconnections on May 28; investor-owned utilities rate-regulated by IUB resume disconnections on July 1

***Executive order waves reconnection fees and orders payment assistance plans

Table 2: Proportion of U.S. Population Covered by Gas, Electric, and Water Moratoriums

	# of U.S. population	% of U.S. population
With state-ordered moratorium	220,956,276	67.3%
Without state-ordered moratorium/ with expired moratorium	107,283,247	32.7%



LARA MPSC

Low-Income Energy Policy Board

Low-Income Energy Policy Board

The Low-Income Energy Policy Board (LIEP Board) was formed after the Commission's directive to establish an advisory committee ([Case No. U-20757 order](#)) to guide and coordinate the work of the Energy Affordability and Accessibility Collaborative ([EAAC](#)) and Energy Waste Reduction Low-Income Workgroup ([EWR-LI](#)). It broadens participation of historically marginalized communities and coordinates efforts with the Governor's task forces to develop cohesive policies across state agencies. The LIEP Board functions to cross-pollinate policy and provide coordination, communication, decision making, and planning that is informed by the work of the EAAC and EWR-LI subcommittees.

The purpose of the LIEP Board is to guide the process of assessing energy affordability and accessibility holistically, especially through linking energy waste reduction services and energy assistance programs. It does this by focusing on three policy pillars including: Customer Centered Engagement & Coordination, Affordability & Customer Protections, and Low-Income Energy Waste Reduction With an overarching goal of **reducing the number of households with unsustainable energy burdens**, the LIEP Board has embraced the following values:

- We value affordability and inclusion in policy actions that create measurable impact.
- We achieve positive outcomes that impact home energy security, health, housing, and a healthy climate.
- We build solutions through collaboration and diversity of representation, input, experience, and knowledge.
- We act with respect, transparency, and integrity.

Low-Income Energy Policy Summit

The Commission also approved a low-energy policy summit which was held November 3, 2022. To encourage additional stakeholder input into these strategies, the MPSC held virtual report-out sessions on January 17 and 19, 2023. Thank you to those who provided comments and feedback.

[Plenary Session Recording](#)

[Affordability and Customer Protections slide deck](#)

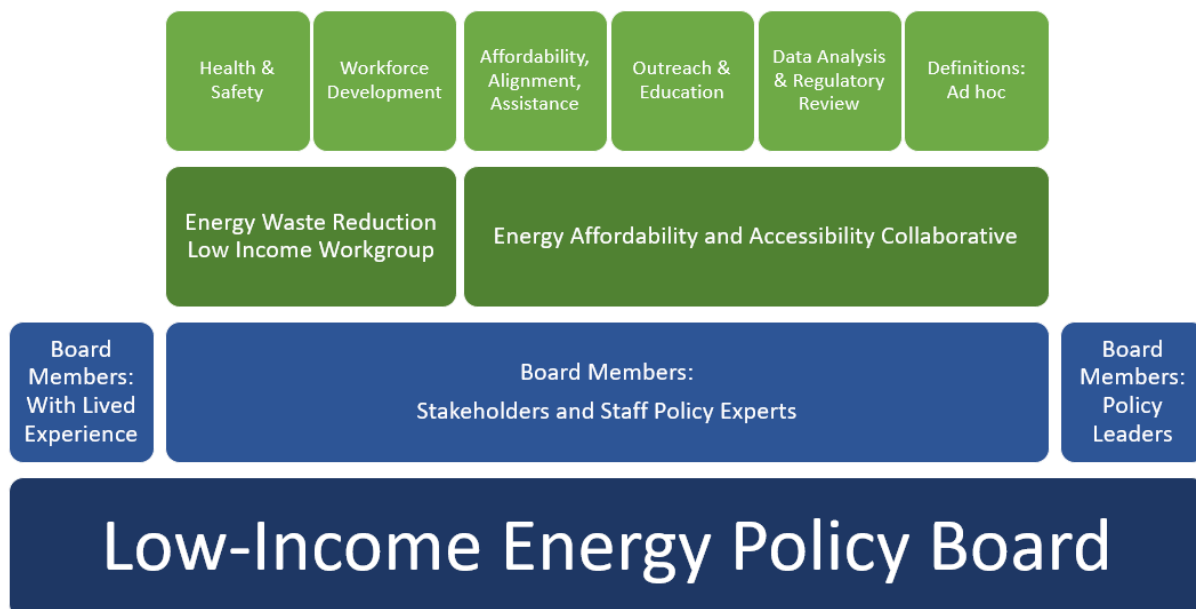
[Affordability and Customer Protections Session Recording](#)

[Customer Centered Engagement and Coordination Strategies slide deck](#)

[Customer Centered Engagement and Coordination Strategies Session Recording](#)

[Energy Waste Reduction and Weatherization Strategies slide deck](#)

[Energy Waste Reduction and Weatherization Strategies Session Recording](#)



Board Members

Led by:

- Armstrong, Anne – MPSC, EAAC leader
- McNeally, Andrew – Energy Efficiency Program Administrator, Upper Peninsula Power Company (UPPCO)

Centered on stakeholder leaders of the EWR Low-income Steering subcommittee and EAAC subcommittees:

- Bunch, Rick – 5 Lakes Energy; Michigan Municipal Association for Utility Issues (MI-MAUI)
- Blizman, Alexis – Ecology Center
- DuBose, Briana – EcoWorks Detroit
- Kushler, Martin – ACEEE (American Council for an Energy Efficient Economy)
- Leahy, Patrick – SEMCO Energy Gas Company
- Grieco, Kasey – Superior Watershed
- Parker, Briana – Elevate
- Randall, Wende – Kent County Essential Needs Task Force (ENTF)

Inclusive of those with lived experience:

- Gant-Jordan, Synia
- Touré, Marie

Enhanced with policy leaders from agencies and task forces:

- Connolly, Cory – Department of Environment, Great Lakes, and Energy
- Denson-Sogbaka, Nicole – Department of Health and Human Services
- Eubanks, Rachael A. – Department of Treasury
- Guilfoyle, Jeff – Department of Treasury
- Hammoud, Hassan – Michigan Association of United Ways and Michigan 2-1-1
- Rose, Kelly – Michigan State Housing Development Authority
- Sasy, Ninah – Department of Health and Human Services -Social Determinants of Health Strategy

- Schoenow, Kris – Bureau of Community Action and Economic Opportunity, Department of Health and Human Services”
- Slaughter, Derrell – National Resource Defense Council; Governor’s Council on Climate Solutions

Supported by Commission staff resource experts:

- Braunschweig, Elaina – Analyst, Regulated Energy Division
- Curtis, Jamie – Grant Administrator, Michigan Energy Assistance Program
- Forist, Christina – Manager, Compliance and Investigation Section
- Gould, Karen – Manager, Energy Waste Reduction
- Holley - Voelker, Reka – Manager, Communications Section
- Jones, Shatina – Diversity, Equity, and Inclusion Officer
- Rittenhouse, Amy – Communications Specialist
- Thelen, Jake – Departmental Specialist, Compliance and Investigation Section
- Wilkins, Mary – Departmental Specialist, Customer Assistance Division

Meeting Dates

The regular cadence of meetings takes place on the fourth Monday of the month from 10:00 -11:30 AM. Meetings will be conducted via teleconference unless otherwise stated. Please find remote access information for upcoming meetings on our [calendar of events](#).

December 4, 2023

[Agenda](#) | [Presentation](#) | [Recording](#)

September 25, 2023

[Agenda](#) | [Presentation](#) | [Recording](#)

August 28, 2023

[Agenda](#) | [Presentation](#) | [Recording](#) | [Intersectionality of Housing and Weatherization/EWR Presentation](#) | [Intersectionality of Housing and Weatherization/EWR Recording](#)

July 24, 2023

[Agenda](#) | [Presentation](#) | [Recording](#) | [Energy Equity Gap Presentation](#)

June 26, 2023

[Agenda](#) | [Presentation](#) | [Recording](#) | [Equity and Reliability Panel Discussion](#)

May 22, 2023

[Agenda](#) | [Presentation](#) | [Recording](#)

April 24, 2023

[Agenda](#) | [Presentation](#) | [Recording](#) | [MI Healthy Climate Plan Recording](#)

March 27, 2023

[Agenda](#) | [Presentation](#) | [Recording](#) | [Energy and the Social Determinants of Health Presentation](#)

February 27, 2023

[Agenda](#) | [Presentation](#) | [Energy Equity Framework Presentation](#) | [Energy Equity Framework Recording](#)

January 30, 2023

[Agenda](#) | [Presentation](#)

December 5, 2022

[Agenda](#) | [Presentation](#)

November 28, 2022

No Meeting

October 24, 2022

[Agenda](#) | [Presentation](#)

September 26, 2022

Working Session

August 22, 2022

[Agenda](#) | [Presentation](#)

July 25, 2022

[Agenda](#) | [Recording](#) | [Presentation](#)

June 27, 2022

[Agenda](#) | [Recording](#) | [Presentation](#)

May 23, 2022

[Agenda](#) | [Recording](#) | [Presentation](#)

April 29, 2022 Kickoff

[Agenda](#) | [Recording](#) | [Presentation](#) | [Minutes](#)

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Page 7 of 7

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MPSC kicks off implementation of changes made to Michigan's energy laws in 2023

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Affordability, Alignment, and Assistance Subcommittee 10/3/2023

Elaina Braunschweig (MPSC—Rates and Tariff) Braunschweig@michigan.gov

Jamie Curtis (MPSC—MEAP administrator) CurtisJ14@michigan.gov

Kasey Grieco (SWP MEAP Grantee—Asst. Program Manager) kgrieco@superiorwatersheds.org



*Meeting presentations, recordings, and materials are shared on the EAAC website in the [AAA section](#)

Agenda

1

**Review
Subcommittee
Charge and Goals**

2

**Objective 2:
Consumers
Energy
Presentation on a
Low-Income Cost-
of-Service-Study
Subclass**

3

**Discussion/Q & A
on the
Presentation**

4

Next Steps

Overarching Charge of the Energy Policy Board

1

The overall goal of the work of the EAAC is to define and ensure energy affordability, accessibility, and security/self-sufficiency in collaboration with the EWR-LI and the LIEPB (its advisory organization) as stated by the Commission through Case No. U20757.

2

To build on these directives, the LIEPB set their primary purpose as “guiding the process of assessing energy affordability and accessibility holistically, especially through linking EWR services and energy assistance programs.”

3

They set as their overarching goal “to reduce the number of households with unsustainable energy burdens.” All work of the Board, EAAC, and EWR-LI Workgroup flowed from this purpose and goal.

Shared Goals of the Subcommittee



To promote energy affordability.



To support program alignment for ease of access and use, effectiveness of administration, and evaluation.



To evaluate and improve systems of energy assistance.

Guiding Principles

The ideal system/program design should achieve this while also:

- **Ensuring equitable distribution** in the access to, use of, and outcomes from energy affordability and assistance policies/programs
- **Centering impacted community priorities** and participation in policy/program development, accountability, and assessment
- **Treating customers with dignity**, enabling them to live comfortably, and not penalizing customers for an inability to pay their bills
- **Coordinating and communicating clearly** with relevant state agencies to integrate state policy goals, including those related to healthy homes and climate change

Proposed 2023-2024 AAA Charge p. 58— Awaiting Commission Approval

Initiate a stakeholder discussion of DTE's report on the enrollment of customers in the LIA credit program and submit a report and recommendations to the Commission.

Discuss the LIA/RIA enrollment assignment, enrollment cap, and best use/program pairings.

Evaluate the feasibility of a low-income customer subclass in the Cost-of-Service-Study (COSS)

Develop a proposal for an energy affordability standard and how the standard can be integrated into the regulatory environment.

Evaluate and make recommendations regarding PIPPs. (2024)

Objective 2

Evaluate the feasibility of a low-income customer subclass in the Consumers Energy Electric Cost-of-Service Study ("COSS")

Purpose of this Presentation

- ❑ The AAA has been reviewing ways to fulfill MCL 460.11 (2), which authorizes low-income rates (Appendix 1), by means of analyzing the current RIA and LIA credits.
- ❑ Another directive from the Commission was to evaluate the feasibility of a Consumers Energy cost-based low-income electric cost of service study, which is relevant to the above legislation.
- ❑ After this presentation, we will have outlined different possibilities to fulfill this legislation and can make an informed recommendation to the Commission on RIA/LIA credit reform.

Consumers Energy Low Income COSS

Overview for EAAC, AAA Subcommittee
October 3, 2023

Agenda

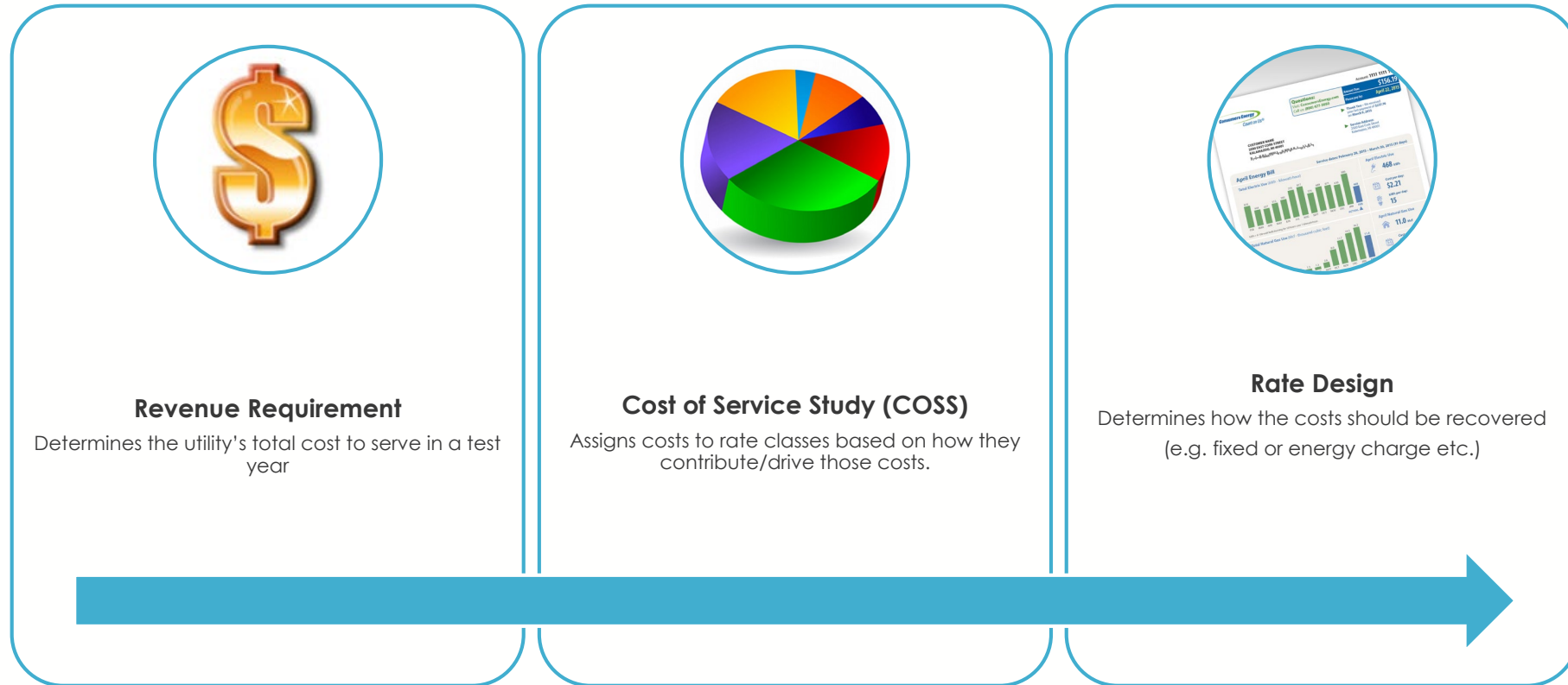
- 1) Background
- 2) Ratemaking Process
- 3) Study Design
- 4) Study Results
- 5) Summary of Key Findings

Background

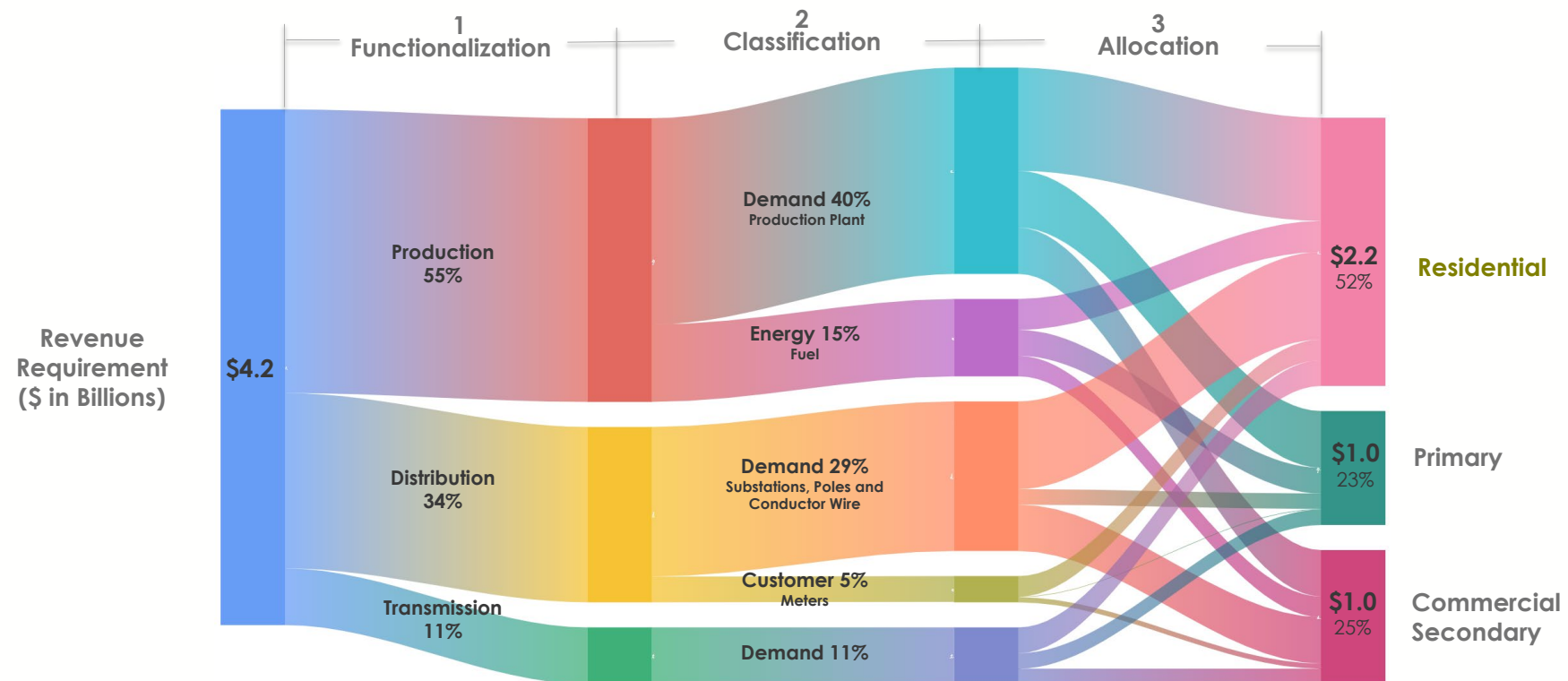
“The Commission agrees with the ALJ that all parties made valid points and ultimately the Commission agrees that a COSS with a low-income customer subclass may be beneficial and recommends the company include a low-income customer subclass in the COSS for the EAAC in Case No. U-20757, but does not require it for the company’s next general electric rate case.”

Case No. U-20963 December 22, 2021 Final Order (Page 402-403)

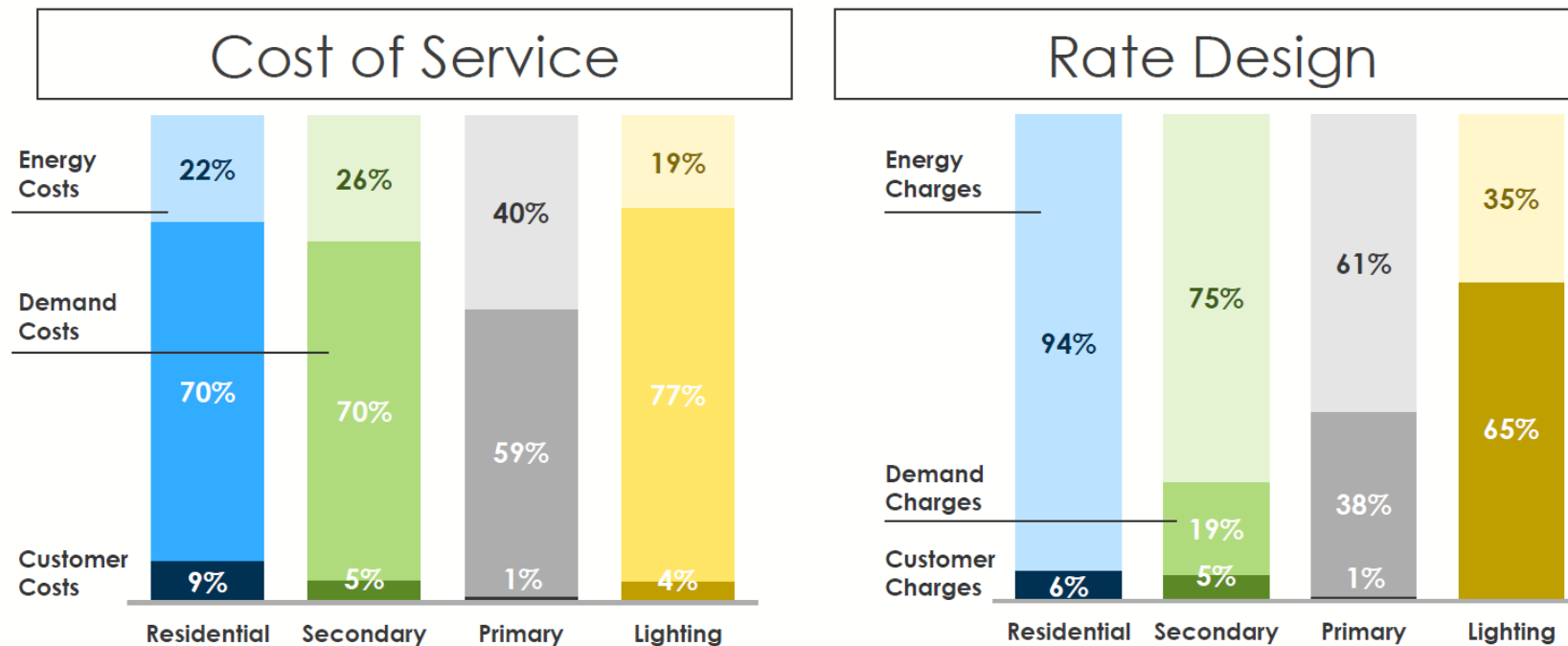
Ratemaking Process



What is a COSS?



Differences exist in how costs are allocated in the COSS and how rates are designed



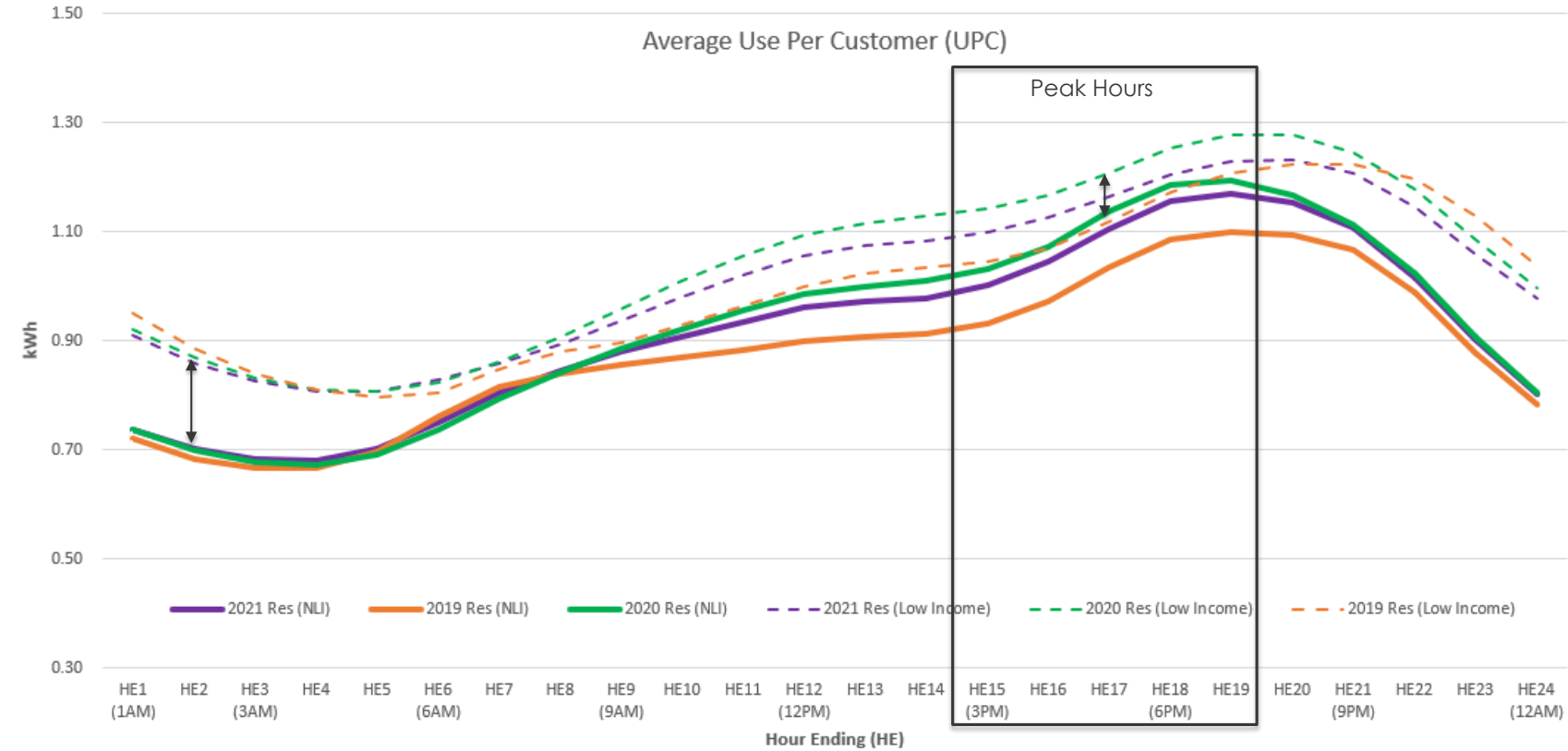
Residential Rate Design

- Four residential rate options – RSP, RSH, RPM, RSM
 - **Summer Peak (RSP)** is the default rate with summer on-peak period, 2pm-7pm
 - **Smart Hours (RSH)** has the same on-peak period as RSP, but year round
 - **Nighttime Savers (RPM)** is the same as RSH, but adds a super off-peak period from 11pm-6am
 - **Non-Transmitting Meters (RSM)** is the former default rate and is now used for smart meter opt-out or non-transmitting locations
- Life Line Credits – senior citizen and low-income monthly credits
 - \$30/month for Low-Income Assistance Credit (LIAC) and \$8/month for Residential Income Assistance (RIA) credit
 - \$11.5M total (as filed) for low-income credits in pending case allocated to all rate schedules using the total COSS results

Low Income COSS: Study Design

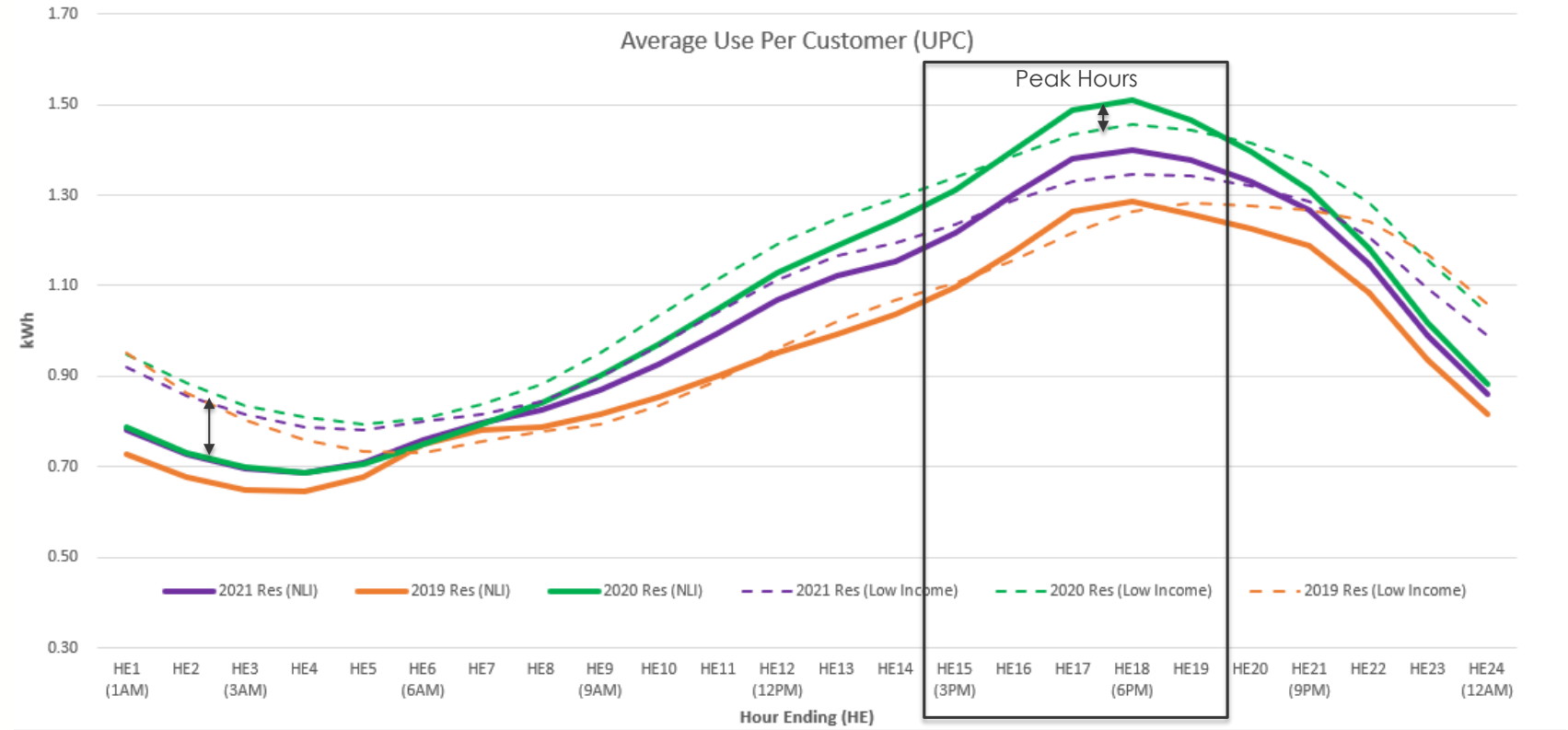
- Started with COSS filed in Case No. U-21389
 - Load Study Years: 2019-2021
 - Test Year: March 1, 2024 - February 28, 2025
- Worked with Load Study Vendor (DNV) to develop Load Profiles (2019-2021) for Residential Low Income and Non-Low Income (NLI).
- Low Income defined as customers taking RIA or LIAC

Load Study Results: Total



* Non-Low Income (NLI)

Load Study Results: Summer Weekday



* Non-Low Income (NLI)

Load Study Results: Key Allocators

Production	Primary Cost Type	Non-Low Income				Low Income				VAR
		2019	2020	2021	AVG	2019	2020	2021	AVG	
4CP Demand	75% Production (Generation) Capacity	6.8	7.5	7.1	7.1	6.3	7.1	6.6	6.7	-7%
Total Energy	25% Production (Generation) Capacity	7,703	8,138	8,024	7,955	8,787	9,157	8,899	8,948	12%
12CP Demand	Transmission Expense	15.6	16.9	16.7	16.4	16.4	17.5	17.2	17.0	4%
Seasonal Energy	Fuel and Purchased Power Expense									
Off-Peak Hours (Summer)		1,393	1,468	1,483	1,448	1,530	1,590	1,566	1,562	8%
On-Peak Hours (Non-Summer)		2,403	2,467	2,452	2,441	2,819	2,856	2,797	2,824.2	16%
Off-Peak Hours (Non-Summer)		2,504	2,535	2,527	2,522	3,018	2,999	2,953	2,990	19%
Critical On-Peak Hours (Summer)		405	496	455	452	399	489	447	444.9	-2%
Mid-Peak Hours (Summer)		997	1,172	1,108	1,092	1,023	1,223	1,135	1,127	3%
Distribution										
Customer	Meter/Service Plant & Customer Service Expense	1,563,438	1,558,119	1,545,479		47,882	71,911	97,163		
Class Peak	Nearly all Other Distribution Plant and Exp	2.1	2.4	2.2	2.2	2.0	2.1	1.9	2.0	-11%
SIMD	NOT USED	5.7	6.0	6.6	6.1	5.9	5.8	6.3	6.0	-2%

Summary of COSS Results

Filed U-21398

	Total Residential	Non-Low Income	Low Income		
Distribution: Demand Related Cost	\$ 929,150	\$ 874,068	\$ 52,321		
Distribution: Customer Related Cost	\$ 179,947	\$ 168,633	\$ 11,274		
Production Cost	\$ 1,190,785	\$ 1,112,273	\$ 76,461		
Total Cost (000)	\$ 2,299,882	\$ 2,154,974	\$ 140,057		
Full Service MWH Sales	12,559,141	11,698,027	861,114		
Customers	1,662,850	1,557,791	105,059		
MWH Use Per Customer	7.553	7.509	8.196		
				Annual	Monthly
Total Cost Per Customer	\$ 1,383	\$ 1,383	\$ 1,333	\$ 50	\$ 4
Total Cost Per MWH	\$ 183	\$ 184	\$ 163	\$ 22	\$ 2
				LIAC Credit (Per Customer)	\$ 360 \$ 30
				RIA Credit (Per Customer)	\$ 96 \$ 8

Low Income COSS: Rate Design

- Used proposed rate design in pending case
- Designed low income RSP rate
- Removed low income credits from Non-Low Income rate design
- No impact for the Non-Low Income Customer
 - \$125/month average bill under proposed rates and low income COSS
- \$5/month lower average bill for the Low Income Customer than the average residential customer (excluding credits)
 - \$120/month average bill with low income COSS
- With proposed rates, the average Low Income Customer bill is \$135/month (excluding credits)
 - Higher average total energy consumption for low income customers offsets slightly lower on-peak usage

Key Findings & Conclusions

- Low Income customers are larger energy users but consume less during summer peak times.
- COSS results (and resulting rates) could materially change based on chosen allocators and load study results.
- The Company does not believe that COSS should be the basis for determining low Income credits.

Appendix: Acronyms

COSS: Cost of Service Study

RD: Rate Design

RIA: Residential Income Assistance

RSP: Residential Summer On-Peak Basic Rate

LIAC: Low Income Assistance Credit

LI: Low-Income

NLI: Non-Low Income

TOU: Time of Use rates

Appendix: MCL 460.11

460.11 Establishment of electric rates; establishment of eligible low-income customer or senior citizen customer rates; public and private schools, universities, and community colleges rate schedules.
Sec. 11.

(1) Except as otherwise provided in this subsection, **the commission shall ensure the establishment of electric rates equal to the cost of providing service to each customer class.** In establishing cost of service rates, the commission shall ensure that each class, or sub-class, is assessed for its fair and equitable use of the electric grid. If the commission determines that the impact of imposing cost of service rates on customers of an electric utility would have a material impact on customer rates, the commission may approve an order that implements those rates over a suitable number of years. The commission shall ensure that the cost of providing service to each customer class is based on the allocation of production-related costs based on using the 75-0-25 method of cost allocation and transmission costs based on using the 100% demand method of cost allocation. The commission may modify this method if it determines that this method of cost allocation does not ensure that rates are equal to the cost of service.

(2) Notwithstanding any other provision of this act, the commission may establish eligible low-income customer or eligible senior citizen customer rates. Upon filing of a rate increase request, a utility shall include proposed eligible low-income customer and eligible senior citizen customer rates and a method to allocate the revenue shortfall attributed to the implementation of those rates upon all customer classes. As used in this subsection, "eligible low-income customer" and "eligible senior citizen customer" mean those terms as defined in section 10t.

Reminders Before our Discussion



Use the raise hand function
in Teams to speak



Be respectful of diverse
input



Voice dissent in a
productive and respectful
manner

Next Steps



Next Meeting:

Discuss how today's presentation impacts our current objectives.



Data:

RIA/LIA data collection will soon take place to support recommendations to the Commission.



Goals:

We are currently working on directives that have been directed to the EAAC through Commission orders.



Leadership:

Come to us with any concerns or ideas!

Appendix 1: Authorizing Legislation: MCL 460.11 (2)

“Notwithstanding any other provision of this act, the commission may establish eligible low-income customer or eligible senior citizen customer rates. Upon filing of a rate increase request, a utility shall include proposed eligible low-income customer and eligible senior citizen customer rates and a method to allocate the revenue shortfall attributed to the implementation of those rates upon all customer classes. As used in this subsection, ‘eligible low-income customer’ and ‘eligible senior citizen customer’ mean those terms as defined in [section 10t](#).”

RIA Enrollment Process

MDHHS: Customer at or below 150% FPL applies for and receives a SER after receiving a past due energy bill notice.

Treasury: Customer at or below 110% FPL fills out the supplemental tax form to receive the HHC

Customer info and bill payment assistance amount is sent to the customer's utility to apply a payment/credit to their bill.

All SER/HHC customers with participating utilities automatically receive additional RIA bill reduction equal to the amount of the monthly service charge (~\$5-\$16) for the next 12 months.

• After 12 months, the customer will need to either receive a new SER/HHC or self-attest to being income-eligible to continue receiving the credit.

For select utilities, a limited number of company-selected customers are chosen to receive the LIA instead of the RIA to provide greater payment assistance (\$30-\$40/month).

RIA Self-Attestation Process

Customer reaches out to their participating utility and requests the RIA.

Participating utilities are required to offer a self-attestation form and may request eligibility proof.

- 150% or below the FPL, Medicaid, SNAP, SER, HHC, MEAP

Approved customers with participating utilities receive RIA bill reduction equal to the amount of the monthly service charge (~\$5-\$16) for the next 12 months.

- After 12 months, the customer will need to either receive a SER/HHC or self-attest to being income-eligible to continue receiving the credit.

For select utilities, a limited number of company-selected customers are chosen to receive the LIA instead of the RIA to provide greater payment assistance (\$30-\$40/month).

Key Takeaways:

- ❑ Anyone who is identified as eligible for the RIA receives it
- ❑ RIA eligibility determination is simple if a customer already applied for and received SER or HHC.
 - Data release/privacy prevents auto-enrollment for Medicaid and SNAP recipients.
 - Some SER applicants are RIA-eligible but not SER-eligible
- ❑ Utility personnel costs are greater when RIA/LIA customer eligibility is confirmed through self attestation.
 - Self-attestation increases accessibility and decreases customer application burden
 - Many customers do not want utilities to hold personal data
- ❑ How are customers being notified when their RIA is about to expire? And do they know how to handle that?

Category	Pain Point/Inefficiency	Recommendation/Proposed Solution	Current Status: Already exists/In process/Needs implementation	Mechanism for Change i.e. policy, legislative, administrative rules
Accessibility	Asset limits for SER creates a system of households that are denied, yet still may be eligible for other programs.	Capture denied SER households and refer them to RIA and EWR; how can MEAP be leveraged for this purpose without SER eligibility	Partially in December Report	MEAP/DHHS process
Accessibility	A lot of additional information/documentation required for DHHS application			
Accessibility	"Home energy assessment" might be an intimidating term for customers	Changing the term "home energy assessment" to "energy insight report" can increase uptake—less intimidating	Utilities have not noticed difference in uptake. Recommendation is likely unnecessary.	Utilities
Accessibility	Different forms of assistance have different applications	Standard application for assistance	Brought up at Policy Board Summit—have to see where this recommendation would lie	Low-Income Energy Policy Board: DHHS and Treasury need coordination. Need attestation form at end of SER, Medicaid, and SNAP applications
Accessibility	Some people are embarrassed of their homes or do not trust someone to enter to perform a home energy assessment	Utilities handle virtual assessments for EWR since some people are not comfortable with others in their home	December Report 2022	Process change--division of labor
Accessibility	Customers and Energy Assistance providers may not know how to access assistance or what is available. The utilities work from a list of those who receive other public benefits. Not all low-income households actively seek out public benefits, leaving the potential for missing low-income households who need the assistance and are eligible to receive credits.	Utilities should advertise assistance options on their website in a uniform fashion with a link to the MPSC assistance page	December Report 2022	Website reworking
Accessibility	Customers with disabilities are not properly accommodated or given all protections they need especially during power outages. Some of these issues are related to landlords			
Accessibility	Reaching underserved communities	In outreach group's priorities	In outreach group's priorities	
Accessibility	utility credits (mostly LIA) do not have equity framework, but could. Currently given to those receiving APPs or used to subsidize MEAP		U-20836 Commission order decision	
Accessibility	Customers denied SER have found it difficult to find resources they need or instructions on what to do after the denial	MI Bridges should have a more specialized resource site/information about what to do after a SER denial based on the reason for the customer's denial. Ensure MEAP grantee referral is one option.	December Report 2022	
Affordability	Arrearage management			
Affordability	Fixed payment programs		Already exists: APPs and PIPP pilots. Constrained by funding	
Affordability	Streamline design			
Affordability	Customers with medical equipment cannot always qualify for APPs because they cannot reduce usage under a certain point	Need more flexibility in program requirements for customers who have to have higher usage for medical equipment. Need to also get MEAP grantees to put these customers on other assistance	PIPP In progress--Staff	
Affordability	Need more forms of propane assistance	Staff has met with the MI propane association to coordinate better		
Alignment	Difficulty in identifying and auto-referring across programs to benefit low-income energy assistance programs.	Align the income eligibility for the different programs		Legislative
Alignment	FPL is antiquated method of determining need. Newer data suggests using Area Median Income or ALICE criteria.	FPL/AMI/ALICE – aligning criteria	In progress--Staff	Some legislative. Few programs allow AMI
Eligibility	Household income fluctuates and is not always representative of income households readily have available consistently.	Eligibility lookback periods (90 days, 30 days, others 3 months)	Already exists for SER--DHHS projects next month of income instead of just looking back and have no categorical eligibility. HHC is based on tax year and is more restrictive. Needs more discussion	HHC would have to have a non-tax return option

Eligibility	"Prevention may cost less than assisting in crisis". Requiring households to be in crisis means that households may sacrifice other basic needs to pay for energy. These households, while averting a utility crisis, is now slipping through the safety net of services designed to protect basic needs. Additionally, from a self-sufficiency perspective, crisis is the worst time to engage households in longer term prevention.	Eligibility prior to crisis	Discussions among Staff	Either legislative change, reallocating more funds to prevention, or invasive to privacy
Eligibility	Households in Michigan have high energy burdens (greater than 6% of household income). Many Asset Limited Income Constrained Empoloyed (ALICE) households can't afford utilities.	Expanding what defines low-income; opportunity for going further		Legislative
Eligibility	Verficiation Simplification			
Eligibility	Customers who are on protection plans accrue high arrears and are not allowed to receive a SER, since the are not at risk of shutoff	DHHS should redefine crisis for their energy programs (SER & MEAP) to include critical care or medical hold customers with accruing arrears or those with documented health and safety EWR deferrals.	December Report 2022	
Eligibility		Consider HHC approval for MEAP eligibility	December Report 2022	
Eligibility		Define crisis within DHHS to be income-based instead of crisis-based		DHHS
Eligibility	Customers with old bills or no billing history cannot always qualify for assistance and MEAP grantees struggle to assist these customers.	Assist customers with old bills or no billing history to obtain housing and new utilities at a new address by considering a client (not a concurrent customer) eligible for assistance with establishing service per a documented referral from the Housing Assessment and Resource Agency (HARA – per MSHDA criteria).		
Process	Customers and Energy Assistance providers do not know about or how to enroll in utility credits, which limits accessibility.	1. improve website information and link to MPSC Get Help page. 2. Notify MEAP grantees of utility credits and MPSC assistance website. 3. When DHHS provides utilities with a list of SER/HHC recipients, they should provide a second list of confirmed income-qualified customers (≤150% FPL) who were denied SER for non-income reasons (and refer those customers to MEAP grantees). And/or add a standardized utility self-attestation form to the end of Medicaid, SNAP, and SER applications (or after the approval stage) to facilitate a more automatic RIA enrollment for Medicaid and SNAP and for those who may be approved for SER (or are income qualified) but did not receive a payment so they do not appear in utility systems as income-qualified.	December Report 2022	Training caseworkers and customer service reps to triage customers better-- give them a better roadmap of assistance options
Process	Utilities and MEAP grantees cannot see if each other have performed EWR services/outreach to a customer, which can lead to wasted, overlapping efforts	Need central platform between MEAP and utilities to see services performed/assistance offered to a customer	December Report 2022	IT upgrades
Process	Non-MEAP/SER/HHC customers are not receiveing EWR outreach	Customers who self-attest to RIA should receive an EWR referral and be treated the same as SER & HHC recipients (from a utility perspective) in terms of outreach and services offered where applicable.	December Report 2022	Process change
Process	Sometimes those in need wait until they are in crisis to seek out access to low-income programs, since they may not know about non-crisis assistance.	Proactive outreach to past recipients by MEAP grantees and utilities	December Report 2022	Process change
Process	MEAP grantees and other agencies are not aware of all protection and assistance offerings	MPSC website		Need to notify 211 and MEAP grantees of new website
Process	How do we increase uptake of EWR services?	Schedule customers in crisis for EWR right on the phone—or institute an online scheduler	December Report 2022	Process change
Process	Some caseworkers might not be passionate about EWR being effective, and if they don't believe in its effect, then they might not convince customers of its importance	Train caseworkers/staff to believe in EWR—can increase quality of referrals. Have them do an energy assessment on their home or see one happen	December Report 2022	Process change
Process	Debt is being sold to collection agencies. This is unregulated. Look into cost benefit of this--Jackson Koeppel/Gloria Lowe with Soulardarity			
Process	People need to be able to monitor their usage to manage it	Apps to track usage		

Process	People have to wait for their SER to expire after 30 days and reapply just to get energy/EWR services through SER because getting the energy assistance is often dependent on paying co-pays for other services -----angela sterner and Kasey Mcneally	Eliminate co-pays for non-income reasons for SER denial & don't make energy-assistance co-pays dependent on water, roof, window or other co-pays if the bills are separated out. Try to eliminate co-dependency within SER	December Report 2022	DHHS
Process	EWR referrals are sometimes made to the incorrect utility	There is an issue with MEAP/utility communication when referring EWR services to the correct utility/place. There is a training opportunity to collect as much information about an appliance/EWR need as possible potentially with a questionnaire checklist, so the referral is made correctly		
Process	SER interview scheduling is slow and doesn't assist customers fast enough	Communicate/track the approval stage better and allow customers to choose their appointment time	December Report 2022	

Recommendations based on the following categories:

- a.Short-term policies or procedures that can be put into place within the next 3-6 months that will help those in poverty to help access programs that can benefit them;
- b.Medium- and – longer term policies or procedures that can help to positively affect the ALICE rate within the next 6-18 months. These may include longer term goals that need legislative approval; and

Level of Difficulty to Change	Timeframe for Completion - Short-term, Medium-term or Long-term	Specific timeframe (in months)	Next Steps	Budget Costs	Potential Barriers/Challenges to Implementation	Potential Positive Impacts
Low						Improved access to all benefits low-income households may be eligible for.
low						
Medium						
Not difficult						Potential to ensure 100% of low-income households take advantage of this credit.
High						Low-income households have improved access to beneficial programs.
High--SER was chosen to use 150% FPL instead of 60% AMI to align with MEAP for a streamlined design. Would have to change other legislation for other programs						"more inclusive" access to low income programs for ALICE families that fall off the benefits cliff and are put into a cycle of crisis after crisis, without being eligible for assistance.
-----					Requires legislative change? Resources to implement	More accurate reflection of household financial instability and the need for utility assistance programs.

High					Federal requirements.	"May reduce costs"; May result in fewer disconnections
High					Limited funding and assuring that assistance goes to the households that need it most	Expanded eligibility
Low						Potential to ensure 100% of low-income households take advantage of this credit.
Medium					Funding	
low						
Medium					Staff capacity issues	
Low						
MEdium					Changing opinions or level of caring can be difficult	

[illegible]

[illegible]

[illegible]

Program	Avg Annual Households Served 2019-2021	Avg Annual Funding	Cost per customer	Benefit per customer
LIHEAP	340,000	\$164,000,000.00	10% DHHS administrative and planning costs	
<i>LIHEAP-State Emergency Relief</i>	80,000	39%		\$879.00
<i>LIHEAP-Home Heating Credit</i>	290,000	39%		\$183.00
<i>LIHEAP-Weatherization</i>	500-1,500	7%		15-40% reduction in fuel usage
MEAP (2022)	56,047	\$50,000,000.00	\$892.11	
<i>MEAP One-time</i>	17,075	\$15,746,475.68		\$922.19
<i>MEAP Assurance 16 (LIHEAP)</i>	43,000	\$5,000,000.00	\$116.28	Services provided
<i>MEAP APP</i>	30,153	\$24,904,921.71		\$825.95
RIA	233,000 accounts	Uncapped	unknown	\$8-15 per month equal to the monthly customer charge
LIA	78,000 accounts	apped based on utility	unknown	\$30-40 per month
PIPP Pilots		1.5 million CE		
Winter Protection Program		N/A		
Shut-off Protection Program		N/A		
Medical Emergency Shut-off Protection		N/A		
Critical Care Shut-off Protection		N/A		
Winter Senior Protection Program		N/A		
Military Protection Plan		N/A		

Income Threshold	Crisis Needed?	Authorizing Legislation/Order/More information	Process (Easy - Challenging)
		LIHEAP Statute and Regulations Energy Policy Act of 2005	
150%	Yes		Somewhat easy; barriers include additional eligibility documentation requirements
110%	No		Somewhat challenging-requires submission of a tax form and issued as an energy draft
200%	No		Referrals are provided to every SER recipient; but capacity to provide wx is limited and deferrals are common
		PA 615 of 2012 and PA 95 of 2013 and U-17377	Easy; need SER approval
150%	Yes		Easy; need SER approval
150%	No (currently yes)		Easy; need SER approval
150%	Yes		Easy; need SER approval
150%, Medicaid, SNAP	No	PA 3 Section 460.10t-11 and Orders	Medium. Easy for SER & HHC recipients. Unclear
150%, Medicaid, SNAP	No	PA 3 Section 460.10t-11 and Orders	Challenging. Lack of clarity and transparency. No
150% CE 200% DTE	No	PA 3 Section 460.10t-11 and Orders	Challenging. Customers chosen. Can't choose

[illegible]

*Incomplete utility data was removed from this sheet in order to not affect calculated percentages. Calculated percentages reflect reality, but totals don't necessarily include all utilities.

Data Request	Combined				Electric				Natural Gas			
	FY18 - C	FY19 - C	FY20 - C	FY21 - C	FY18 - E	FY19 - E	FY20 - E	FY21 - E	FY18 - NG	FY19 - NG	FY20 - NG	FY21 - NG
Non-Governmental Agency Assistance:												
Total number of customers who received at least one agency payment (non-APP)	3,618	15,353	27,942	42,211	679	8,979	20,615	26,528	2,939	6,374	7,327	15,683
Late payment 1-12 billing months after payment	2,792	13,015	21,357	31,305	537	7,797	15,501	21,689	2,255	5,218	5,856	9,616
Late payment 13-24 billing months after payment	1,966	9,690	17,337	15,751	389	5,814	12,526	11,428	1,577	3,876	4,811	4,323
Shutoff notice 1-12 billing months after payment	2,490	8,659	15,390	25,118	360	5,050	11,640	17,997	2,130	3,609	3,750	7,121
Shutoff notice 13-24 billing months after payment	1,760	6,070	13,330	11,798	274	3,660	9,866	8,455	1,486	2,410	3,464	3,343
Affordable Payment Plans (MEAP or non-MEAP; e.g. CARE, LSP, MAP, and/or EASE):												
Total number of customers who received at least one APP payment	45,014	56,136	21,671	20,850	33,917	38,185	13,254	10,269	11,097	17,951	8,417	10,581
Total number of APP customers who completed the plan without defaulting for non-payment	33,111	44,438	18,676	16,667	23,696	30,517	11,416	9,354	9,415	13,921	7,260	7,313
Total number of APP customers who successfully completed the plan who then sustained service (not been disconnected) for 12 billing months post-APP graduation without receiving any energy assistance	4,545	15,342	#VALUE!	#VALUE!	3,770	10,691	2,738	#VALUE!	775	4,651	#VALUE!	#VALUE!
Total number of APP customers who successfully completed the plan who then sustained service (not been disconnected) within 13-24 billing months post-APP graduation without receiving any energy assistance	10,634	21,542	#VALUE!	#VALUE!	9,612	16,715	#VALUE!	#VALUE!	1,022	4,827	#VALUE!	#VALUE!
Total number of APP customers who successfully completed the plan who then sustained service (not been disconnected) for 12 billing months post-APP graduation with support (e.g. SER, HHC, MEAP, or utility credits)	9,481	12,298	4,785	#VALUE!	8,480	9,648	2,827	#VALUE!	1,001	2,650	1,958	#VALUE!
Total number of APP customers who successfully completed the plan who then sustained service (not been disconnected) within 13-24 billing months post-APP graduation with support (e.g. SER, HHC, MEAP, or utility credits)	3,632	5,908	#VALUE!	#VALUE!	2,811	3,546	#VALUE!	#VALUE!	821	2,362	#VALUE!	#VALUE!
Total number of APP customers who successfully completed the plan but have since been disconnected due to nonpayment	635	1,199	882	71	416	650	549	31	219	549	333	40
State Emergency Relief:												
Total number of customers who received an SER payment	2,039	54,167	164,086	145,792	152	30,917	91,462	83,620	1,887	23,250	72,624	62,172
Late payment 1-12 billing months after payment	1,659	46,415	120,507	117,500	149	27,293	68,184	68,303	1,510	19,122	52,323	49,197
Late payment 13-24 billing months after payment	1,198	34,254	94,193	62,796	144	20,160	52,966	36,412	1,054	14,094	41,227	26,384
Shutoff notice 1-12 billing months after payment	1,579	33,031	93,284	98,905	131	19,313	53,700	57,612	1,448	13,718	39,584	41,293
Shutoff notice 13-24 billing months after payment	1,154	20,726	75,686	46,564	138	12,293	42,531	26,412	1,016	8,433	33,155	20,152
Home Heating Credit (HHC):												
Total number of customers who received an HHC payment	22,537	126,328	166,322	119,035	530	39,212	34,099	25,405	22,007	87,116	132,223	93,630
Late payment 1-12 billing months after payment	12,068	91,933	97,390	69,473	294	31,427	26,697	19,550	11,774	60,506	70,693	49,933
Late payment 13-24 billing months after payment	11,212	75,226	91,914	38,919	218	25,425	23,210	10,944	10,994	49,801	68,704	27,975
Shutoff notice 1-12 billing months after payment	9,319	37,186	38,176	29,988	231	13,789	10,747	8,379	9,088	23,397	27,429	21,609
Shutoff notice 13-24 billing months after payment	8,433	27,154	44,546	16,287	140	10,511	11,323	4,248	8,293	16,643	33,223	12,039
BIA/LIA Recipients												
Total number of customers who received the benefits who were not also enrolled for receiving HHC or SER. This includes customers who self-					NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED
Energy Waste Reduction:												
Total number of assistance recipients (SER, HHC, or utility credits) who received EWR referrals					NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED
Total number of those EWR referrals that resulted in EWR services being performed for that household					NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED	NOT TRACKED
In terms of shutoff for residential customers only (including low-income and non-low-income):												
Total quantity of residential customers	559,003	3,824,229	6,969,563	7,033,108	155,586	1,767,043	3,806,724	3,836,161	403,417	2,057,186	3,162,839	3,196,947
Total quantity of customers who were shut off (include double-counted customers if they were shut off more than once)					#VALUE!	111,159	133,339	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
The average cost of shutoff (for the utility) per shut off customer (including costs related to late payment, call costs, notices, reconnection costs etc.)					#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
(Note: Average costs for shutoffs that are customers' pre-shutoff costs, not including fees related to shut off (deposits, late fees, other reconnection fees))					#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Average customer cost relating to shutoff paid by the customer (including any assistance)					#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
What quantity of residential customers are identified as low-income (150% FPL or less)?	27,111	308,651	555,365	559,719	2,845	136,176	347,258	361,923	24,266	172,475	208,107	197,796
Total quantity of unique residential customers who made at least one late payment in the year	232,893	2,037,961	3,240,751	3,102,603	52,390	970,829	1,862,785	1,795,660	180,503	1,067,132	1,377,966	1,306,943
Of those in the above line, how many are identified as low-income (150% FPL or less)?	15,778	199,082	366,548	362,063	2,302	91,475	230,289	236,667	13,476	107,607	136,259	125,396
Total quantity of residential bills in the year:	6,377,189	45,733,466	69,796,266	78,261,169	957,769	20,599,673	39,161,762	45,677,584	5,419,420	25,133,793	30,634,504	32,583,585
Total quantity of residential bills in the year that were paid late.	1,048,352	8,080,724	13,471,477	13,530,313	268,968	3,893,703	7,499,951	7,777,598	779,384	4,187,021	5,971,526	5,752,715
Of those in the above line, how many are identified as low-income (150% FPL or less)?	81,525	904,673	1,697,477	1,818,415	15,108	430,668	995,872	1,150,793	66,417	474,005	701,605	667,622
Total quantity of unique residential customers who received a shutoff notice in the year.	132,711	816,685	1,030,627	1,208,653	20,694	396,558	647,517	788,133	112,017	420,127	383,110	420,520
Of those in the above line, how many are identified as low-income (150% FPL or less)?	15,321	119,182	197,594	239,075	1,673	60,011	136,187	173,614	13,648	59,171	61,407	65,461
Total quantity of residential bills in the year that led to a shutoff notice.	371,060	2,056,668	2,272,109	3,153,128	83,285	1,040,947	1,436,600	2,114,394	287,775	1,015,721	835,509	1,038,714
Of those in the above line, how many are identified as low-income (150% FPL or less)?	45,011	301,044	407,386	636,578	8,190	156,158	280,651	466,386	36,821	144,886	126,735	170,192
Program Overlap within the same fiscal year:												
SER + MEAP	618	23,342	30,064	36,648	243	13,417	16,694	20,956	375	9,925	13,370	15,692
SER + HHC	589	11,264	25,182	15,079	44	5,239	11,195	6,892	545	6,025	13,987	8,187
SER + MEAP + HHC	152	5,600	5,855	4,597	40	2,660	2,638	2,167	112	2,940	3,217	2,430

*narrative responses can be found in the 10/10/22 AAA meeting presentation

% Res customers who are LI:
% Res customers who made late payments:
% of the above customers who are LI:

% of res bills paid late:
% of the above customers who are LI:
% of res customers who received a shutoff notice
% of the above customers who are LI:
% of total res bills that led to a shutoff notice:
% of the above customers who are LI:

Combined				Electric				Natural Gas			
FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21
77.17%	84.77%	76.43%	74.16%	79.09%	86.84%	75.19%	81.76%	76.73%	81.86%	79.92%	81.31%
54.34%	63.11%	62.05%	37.31%	57.29%	64.75%	60.76%	43.08%	53.66%	60.81%	65.66%	27.56%
68.82%	56.40%	55.08%	59.51%	53.02%	56.24%	56.46%	67.84%	72.47%	56.62%	51.18%	45.41%
48.65%	39.54%	47.71%	27.95%	40.35%	40.76%	47.86%	31.87%	50.56%	37.81%	47.28%	21.32%

COMBINED				Electric				Natural Gas			
FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21
73.56%	79.16%	86.18%	79.94%	69.86%	79.92%	86.13%	91.09%	84.84%	77.55%	86.25%	69.11%
13.73%	34.52%	#VALUE!	#VALUE!	15.91%	35.03%	23.98%	#VALUE!	8.23%	33.41%	#VALUE!	#VALUE!
32.12%	48.48%	#VALUE!	#VALUE!	40.56%	54.77%	#VALUE!	#VALUE!	10.86%	34.67%	#VALUE!	#VALUE!
28.63%	27.67%	22.08%	#VALUE!	35.79%	31.62%	24.76%	#VALUE!	10.63%	19.04%	26.97%	#VALUE!
10.97%	13.29%	#VALUE!	#VALUE!	11.86%	11.62%	#VALUE!	#VALUE!	8.72%	16.97%	#VALUE!	#VALUE!
1.52%	2.70%	4.72%	0.43%	1.76%	2.13%	4.81%	0.33%	2.33%	3.94%	4.59%	0.55%

COMBINED				Electric				Natural Gas			
FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21
81.36%	85.69%	73.44%	80.59%	98.03%	88.28%	74.53%	81.68%	80.02%	82.25%	72.05%	79.13%
58.75%	63.24%	57.40%	43.07%	94.74%	65.21%	57.91%	43.54%	55.86%	60.62%	56.77%	42.44%
77.44%	60.98%	56.85%	67.84%	66.18%	62.47%	58.71%	68.90%	76.74%	59.00%	54.51%	66.42%
56.60%	38.26%	46.13%	31.94%	90.79%	39.76%	46.50%	31.59%	53.84%	36.27%	45.65%	32.41%

COMBINED				Electric				Natural Gas			
FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21
53.55%	72.77%	58.56%	58.36%	55.47%	80.15%	78.29%	76.95%	53.50%	69.45%	53.46%	53.32%
49.75%	59.55%	55.26%	32.70%	41.13%	64.84%	68.07%	43.08%	49.96%	57.17%	51.96%	29.88%
41.35%	29.44%	22.95%	25.19%	43.58%	35.17%	31.52%	32.98%	41.30%	26.86%	20.74%	23.08%
37.42%	21.49%	26.78%	13.68%	26.42%	26.81%	33.21%	16.72%	37.68%	19.10%	25.13%	12.86%

COMBINED				Electric				Natural Gas			
FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21	FY18	FY19	FY20	FY21
5%	8%	8%	8%	2%	8%	9%	9%	6%	8%	7%	6%
42%	53%	46%	44%	34%	55%	49%	47%	45%	52%	44%	41%
7%	10%	11%	12%	4%	9%	12%	13%	7%	10%	10%	10%
16%	18%	19%	17%	28%	19%	19%	17%	14%	17%	19%	18%
8%	11%	13%	13%	6%	11%	13%	15%	9%	11%	12%	12%
24%	21%	15%	17%	13%	22%	17%	21%	28%	20%	12%	13%
12%	15%	19%	20%	8%	15%	21%	22%	12%	14%	16%	16%
6%	4%	3%	4%	9%	5%	4%	5%	5%	4%	3%	3%
12%	15%	18%	20%	10%	15%	20%	22%	—	14%	15%	16%

Combined				Electric
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Data Request	Oct. 1, 2017- Sept 30, 2018	Oct. 1, 2018- Sept 30, 2019
State Emergency Relief (Energy-related, non-furnace)		
Total number of energy-based SER applications including denials		
Total number of unique energy-based SER cases		
Total number of energy-based State Emergency Relief cases	can get on trend report for fy20-22	
Total number of SER recipients who sought SER assistance in two consecutive fiscal years		
List of top 10 denial codes with the number of associated denied applications for each denial code		
Home Heating Credit		
Total number of households receiving the Home Heating Credit		
Total number of households who received HHC but not SER		
Total number of households who received an SER payment and an HHC payment		
Total number of households receiving any type of LIHEAP Assistance		
MI Bridges (for SER customers)		
Total number of households selecting referral for energy waste reduction/weatherization services		
Total number of households selecting referral for self-sufficiency services		
MEAP		
APPs--default and come back for SER following year	Don't know how we would collect this	
What do customers think of assistance after receiving it?/Are there glaring areas for improvement?		
MEAP EWR Referrals vs. EWR service performed--whatever data you have on this		
customers who received HHC, SER, and MEAP (if this data exists)		
customers who received SER but not MEAP		

[illegible]

[illegible]



SER Data for June 2022

	June 2020	June 2021	June 2022	Average
# of SER Applications Received	10,670	13,897	31,065	18,544
# of Approved Applications	6,613	6,506	19,2096	10,805
Approval Rate	62.80%	47.76%	62.97%	57.84%

1



SER Data for July 2022 MEAP Workgroup

	October-June FY 20	October-June FY 21	October-June FY 22	Average
# of SER Applications Received	185,973	179,377	261,638	190,452
# of Approved Applications	105,251	102,836	165,317	113,663
Approval Rate	57.16%	56.02%	63.47%	58.88%

2

Affordability, Alignment and Assistance Subcommittee Kick-Off

Tanya Paslawski (5 Lakes Energy) tanya@5lakesenergy.com

Amy Bandyk (CUB Michigan) amy.bandyk@cubofmichigan.org

Jamie Curtis (MPSC—MEAP administrator) CurtisJ14@michigan.gov

Elaina Braunschweig (MPSC—Rates and Tariff) Braunschweige@michigan.gov



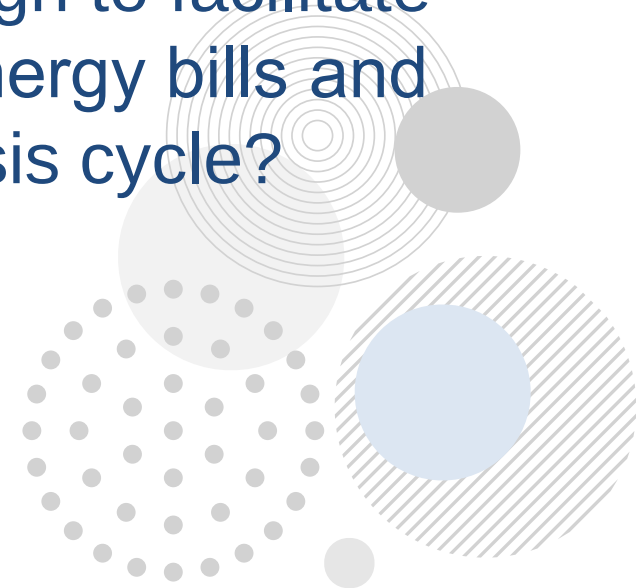
Meeting Overview

- Introductions
- Guiding question and subcommittee charge
- 2021 Timeline and logistics
- Suggested research topics and outputs
- Next steps and group goals
- Assign tasks and review next steps
- Questions and suggestions for other resources (*parking lot*)



Guiding question

What is the best system/program design to facilitate customers' sustainably paying their energy bills and avoiding the crisis-assistance-crisis cycle?

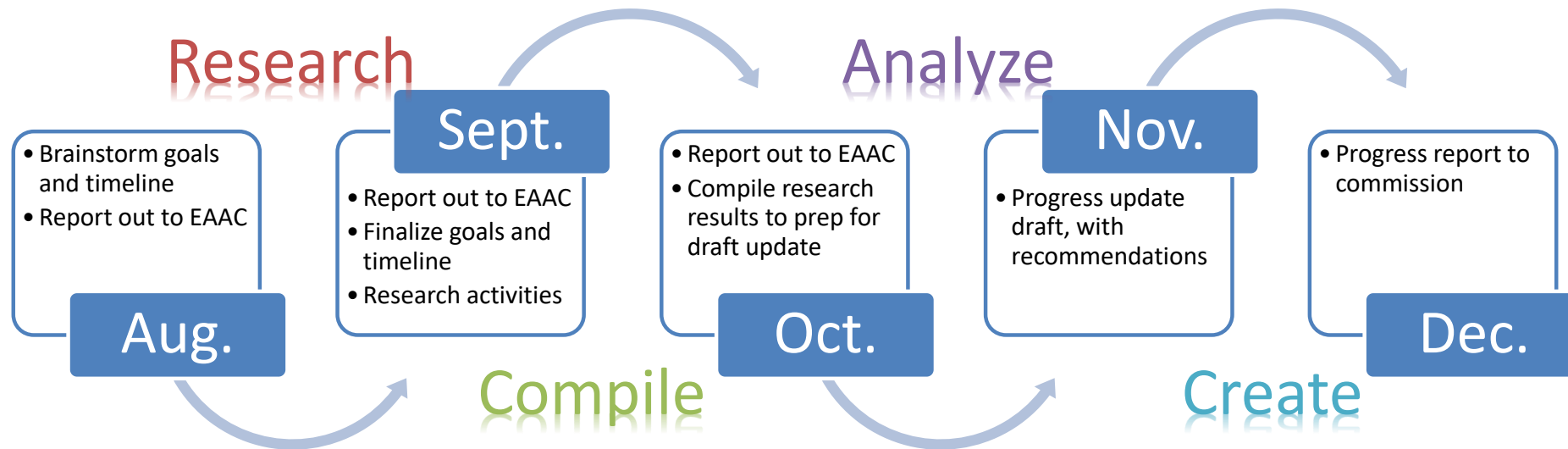


Subcommittee Charge

- *Streamlining and making more accessible* existing energy assistance programs
 - Improving upon existing energy assistance plans
- *Researching* next generation affordable payment plans
- *Analyzing* collections processes and disconnections
- *Integrating* with EWR, weatherization, and rate design



Projected 2021 Timeline



Beyond 2021

December 2022: Submit updated report with recommendations

2023: Continue collaborative as necessary and finalize work

Logistics

- File-sharing medium
- Best form of communication between meetings
- Delegating/check-ins
- Frequency and date/time of meetings
 - Does the 2nd Thursday of the month work well?



Suggested Research Topics

- Research

- Affordable Payment Plans (APPs)

- Work with MEAP Workgroup to understand MEAP APPs, including APP designs, metrics and the move toward energy security
 - Update on MEAP APP pilots (propane and below 20% FPL)
 - Update on 1st cohort of 2-year MEAP APP 'graduates'
 - Streamlining program design
 - Additional options

- Percentage of Income Payment Plan (PIPP)

- Other states' experiences
 - National research
 - Options for financing, including through the rate setting process such as with the Low-Income Assistance Credit

- Eligibility criteria, funding and application processes

- Energy assistance, low-income EWR programs and energy protections
 - Implications of expanding energy assistance/protections eligibility to 200% FPL

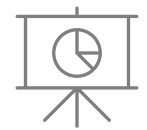
- Accessibility

- Collections processes and disconnections



Suggested Outputs

- Develop
 - Best practices for payment plan pilots (APP and/or PIPP)
 - Recommendations for:
 - Types of assistance plans for different customer groups (e.g. low-fixed income)
 - Streamlining the application process across funding streams (including EWR and energy protections)
 - Tying low-income EWR programs to energy assistance and customer protections



Next Steps and Group Goals



Four colored chevron arrows pointing down, each followed by a rounded rectangular box for notes:

- Red chevron arrow
- Green chevron arrow
- Purple chevron arrow
- Teal chevron arrow

Assign tasks and review next steps

Task	Name	Timeframe

Suggestions/more info/resources on...



Affordability, Alignment, and Assistance Subcommittee

Elaina Braunschweig (MPSC—Rates and Tariff) Braunschweige@michigan.gov

Jamie Curtis (MPSC—MEAP administrator) CurtisJ14@michigan.gov

Agenda

1.

**Goals
Progress
And
Timeline
Review**

2.

**Progress Survey
Results**

3.

Discussion

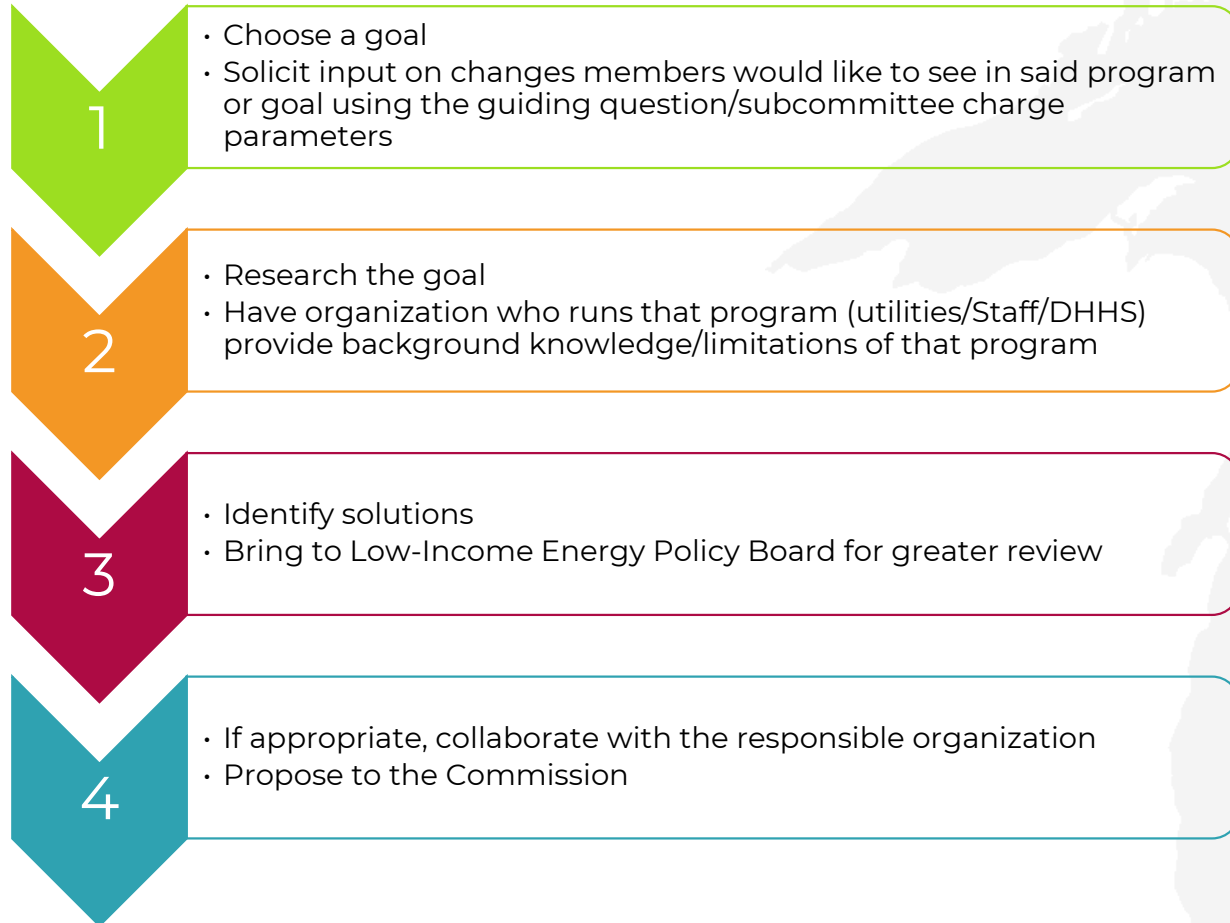
4.

**Next Steps
And Updates**

Potential topics for 2023

- ☐ Wrap up streamlining current assistance
- ☐ Why rates increase—special session with broader group?
- ☐ Topics sent to the EAAC from Commission Orders
- ☐ Reduce crisis cycling

Goals Structure



Progress

Goal: customer journey

- 20757 report coming Q1 2023
- Finalizing work Q1 2023

Goal: Do our assistance programs work?

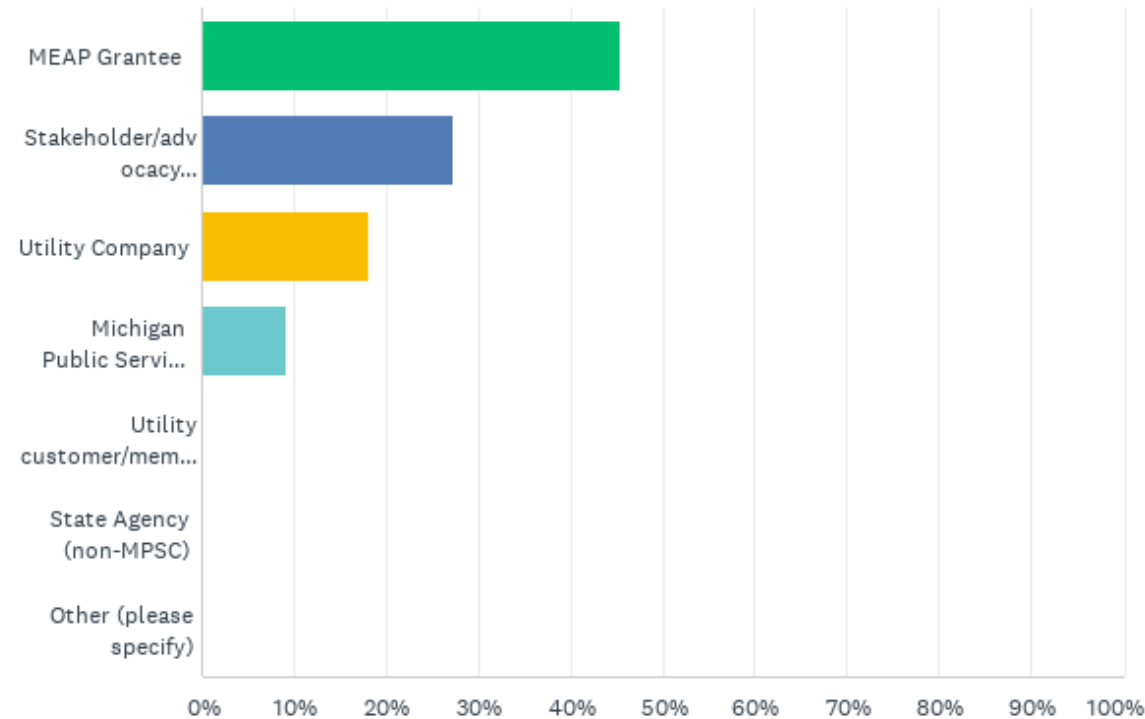
- Data collected
- Recommendations sent to policy board
- improve system coming 2023?

Progress Survey Results

If you participated in the Low-Income Energy Policy Board Summit, did your experience there affect how you would respond to the progress survey?

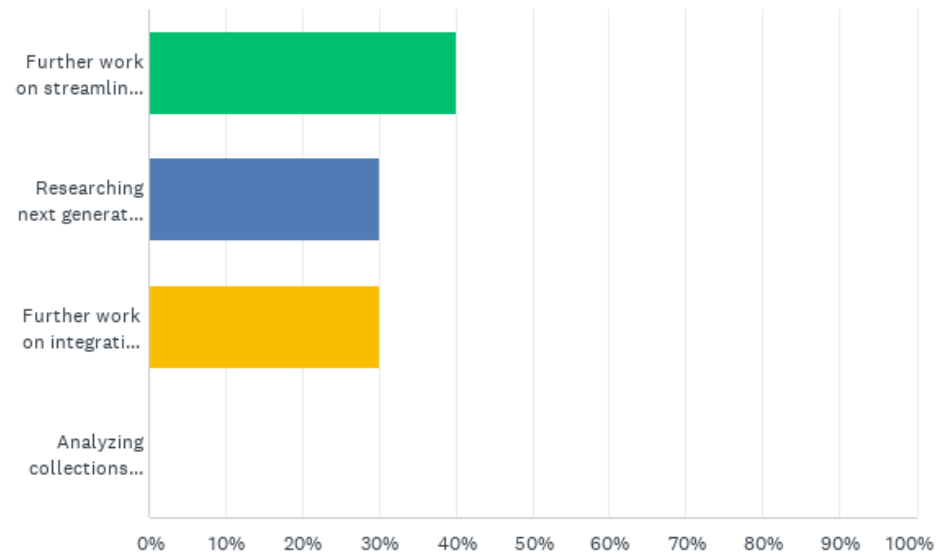
Survey Results: Question 1

Q1 What affiliation best describes your representation in this subcommittee?



Survey Results: Question 2

Q2 Select one of the following topic areas in the AAA subcommittee charge that the AAA should focus on in the coming year*: *Note this list includes items the subcommittee has already addressed: EWR integration recommendations and streamlining/improving accessibility of existing energy assistance programs, but please select if you feel the work is incomplete and provide additional context in the following question.



Survey Results: Question 3

Q3 What specifically about that focus area would you like to see improvement on ?

Answered: 8 Skipped: 3

#	RESPONSES	DATE
1	Connecting households with the available funding more easily	11/1/2022 12:20 PM
2	SER is still challenging and confusing to many who need to access it.	10/24/2022 4:01 PM
3	No comments at this time.	10/24/2022 10:50 AM
4	1. monitoring and tracking EWR/weatherization status of households receiving energy assistance; 2. increasing funding and provision of EWR/weatherization services to households receiving energy assistance	10/13/2022 10:03 PM
5	Affordability is key to most households and those who struggle typically are not just going through a hard time, rather the rates are just unaffordable and will remain that way for multiple years for that customer.	10/13/2022 3:42 PM
6	Collaboration between MEAP Grantees and utility companies with energy waste reduction services.	10/13/2022 2:38 PM
7	Customer's ability to be approved for SER when in need, but not currently past due. We force customers that do need help to create an emergency to get SER and into MEAP.	10/10/2022 4:24 PM
8	Affordability for all. Energy usage measuring (in-home/per plug). decrease tariffs required by utility, or consider these 'charges' as a whole. rate securities, lock in plans (like propane has).	10/10/2022 1:45 PM

Survey Results: Question 4

Q4 What presenters/education would you like to see to understand complexities of energy affordability (or other topics you're interested in)?

Answered: 5 Skipped: 6

#	RESPONSES	DATE
1	A presentation from EWR providers and some type of document we can use to steer households in the right way	11/1/2022 12:20 PM
2	1. Customer(s) explaining their energy affordability journey 2. Participants defining their ideal energy assistance programs 3. Someone from Civilla could present to the AAA subcommittee (and the Outreach & Education subcommittee) about the Project Cohere pilot.	10/24/2022 10:50 AM
3	1. Utilities to present on how they are increasing efforts to get EWR/weatherization services to households receiving energy assistance; 2. State government representative to present how they are taking advantage of federal funding opportunities for home energy efficiency and weatherization services (e.g., from the IRA and the Infrastructure legislation)	10/13/2022 10:03 PM
4	What other state's utilities are doing to manage the affordability. Bringing in those experts and comparing them to what our utilities are doing would be helpful.	10/13/2022 3:42 PM
5	Why is electric so expensive? How do the investors make money/how much? What is the elimination of coal going to do to the natural gas rate?	10/10/2022 1:45 PM

Survey Results: Question 5

Q5 Is there additional data you believe we need to analyze energy affordability? Are there important questions related to this committee's charge that could be answered through data analysis? If so, what are those questions?

Answered: 6 Skipped: 5

#	RESPONSES	DATE
1	Defining affordable energy is a tough one. There are so many factors that are part of this.	11/1/2022 12:21 PM
2	Not at this time.	10/24/2022 10:50 AM
3	Collect data on whether and to what extent households receiving energy assistance are (a)being referred to, and (b) actually receiving EWR and weatherization services.	10/13/2022 10:06 PM
4	Which customers are getting on affordable payment plans and keeping up with those programs. Are those customers getting EWR services? Are the ones that are receiving EWR having an easier time keeping up with the payment plans?	10/13/2022 3:49 PM
5	If the programs in place are not working for low income-maybe offer them to middle class. These individuals are more likely to need just a little help to get back on their feet. The data appears to suggest low income need a different type of support. Let's make energy affordable- and keep that rate.	10/10/2022 1:50 PM
6	I think there is already a lot of data and sometimes it is overwhelming to try to process all at once.	10/10/2022 1:43 PM

Survey Results: Question 6

Q6 Share any thoughts, questions, or comments on the data that has been collected and shared so far:

Answered: 3 Skipped: 8

#	RESPONSES	DATE
1	Presentations have been very thorough. The survey result presentations are vey helpful.	10/13/2022 3:49 PM
2	it seems to focus mostly on low income and EWR. I don't believe these topics are granular and feel bigger data would show a different picture. Data showing energy users compared to energy users would show who our audience more dynamically. Then programs could be developed for each layer based on energy use.	10/10/2022 1:50 PM
3	I agree seeing it in a graph would be helpful.	10/10/2022 1:43 PM

Survey Results: Question 7

Q7 OtherProvide any feedback any comments or feedback on the subcommittee's work so far:

Answered: 4 Skipped: 7

#	RESPONSES	DATE
1	I think this is a big undertaking. It seems like the attendance has dwindled at the meetings more recently. Maybe send out an invite to improve participation and attendance. This may bring some fresh ideas to the table.	11/1/2022 12:22 PM
2	I appreciate that this effort is being made.	10/13/2022 10:06 PM
3	Great job thus far!	10/13/2022 3:49 PM
4	Thank you for your expertise and willingness to ask for feedback.	10/10/2022 1:50 PM

AAA Commission Charge

- ❑ Look at all aspects of energy affordability including:
 - **streamlining** and making more **accessible** existing energy assistance programs
 - ❑ 2021-2022
 - researching next generation **affordable payment plans**
 - ❑ Tentatively 2023
 - analyzing **collections** processes
 - ❑ Potentially 2023
 - integration with **EWR** and weatherization, and rate design
 - ❑ EWR 2022

Moving Forward

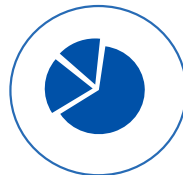
- ❑ Staff has requested an extension for the 20757 2022 report
 - To incorporate results from the summit & follow-up
- ❑ Recommendations to the Commission will be based on discussions at the LIEPB September meeting and Summit
- ❑ Awaiting Commission direction to see which ideas/goals will affect the AAA work going forward

Next Steps



Next Meeting:

Determined based on today's meeting feedback



Data:

Crisis cycling data is complete and will be uploaded on the [website](#) in the data and goals tracker. Feel free to choose different graphs to best view it



Goals:

Goalsetting for 2023



Leadership:

Working on education around why rates increase

Affordability, Alignment and Assistance Subcommittee

Tanya Paslawski (5 Lakes Energy) tanya@5lakesenergy.com

Amy Bandyk (CUB Michigan) amy.bandyk@cubofmichigan.org

Jamie Curtis (MPSC—MEAP administrator) CurtisJ14@michigan.gov

Elaina Braunschweig (MPSC—Rates and Tariff) Braunschweige@michigan.gov



Meeting Overview

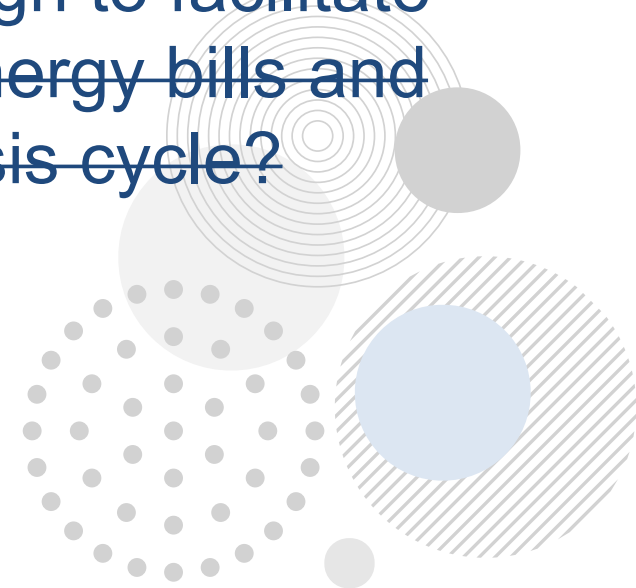
- Guiding question and subcommittee charge
- Meeting structure/roadmap
- Survey results
- Addressing concerns
- Finalize goals
- Assign tasks/research topics

*Slides and materials will be shared by email after the meeting



Guiding Question

~~What is the best system/program design to facilitate customers' sustainably paying their energy bills and avoiding the crisis-assistance-crisis cycle?~~



Guiding Statement

End the crisis-assistance-crisis cycle by centering energy *affordability* and facilitating customers sustainably affording their energy bills by providing all households with uninterrupted *access to affordable, sufficient* energy in an *efficient, healthy, and sustainable* manner.

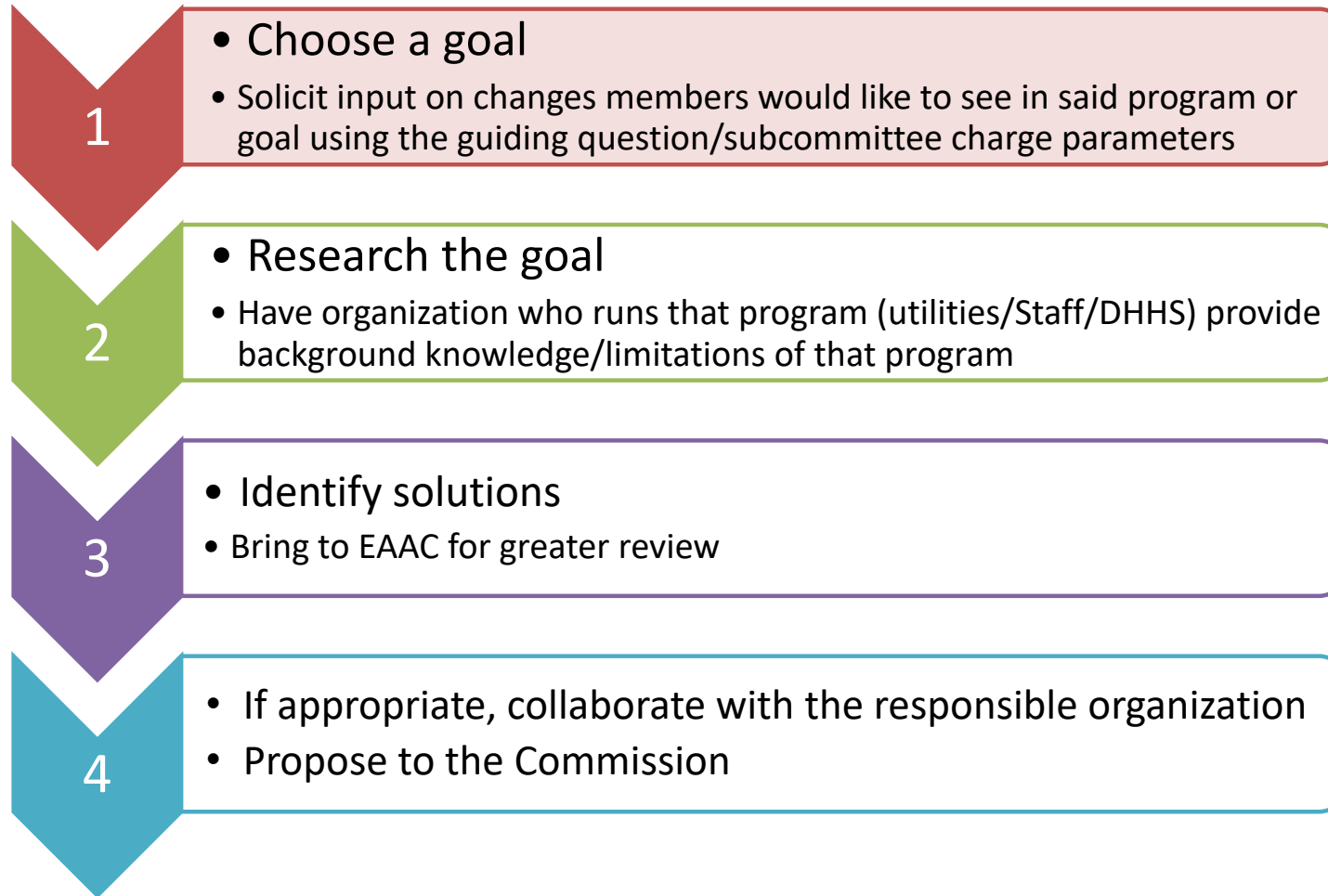


New Guiding Principles

- *This ideal system/program design should achieve this while also:*
 - **Ensuring equitable distribution** in the access to, use of, and outcomes from energy affordability and assistance policies/programs
 - **Centering impacted community priorities** and participation in policy/program development, accountability, and assessment
 - **Treating customers with dignity**, enabling them to live comfortably, and not penalizing customers for an inability to pay their bills
 - **Coordinating and communicating clearly** with relevant state agencies to integrate state policy goals, including those related to healthy homes and climate change



Logistics: Meeting Structure

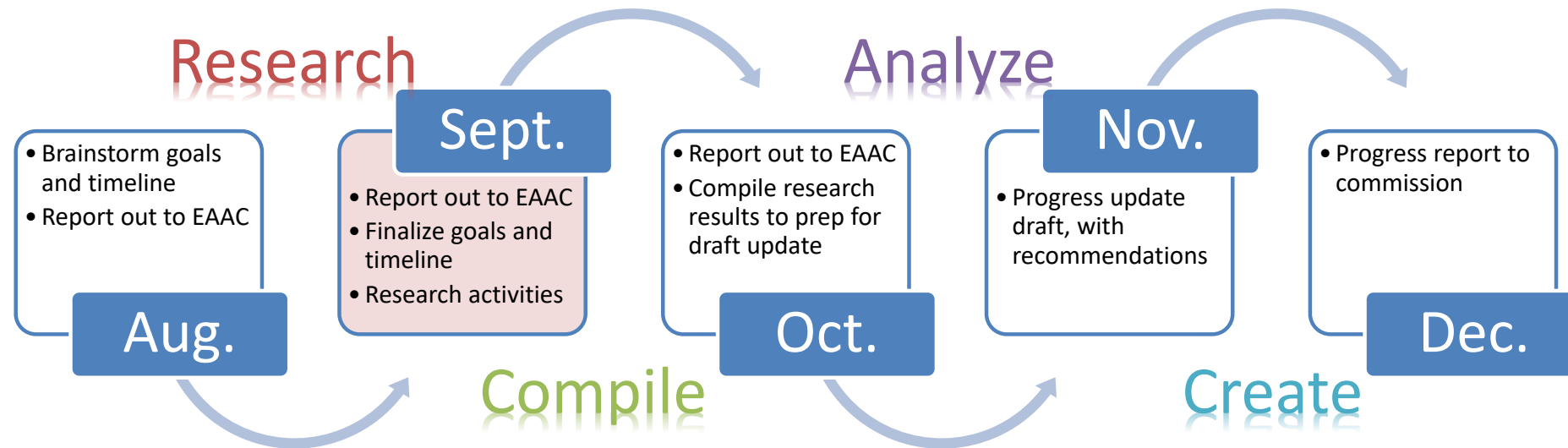


Logistics

- File-sharing medium
 - Website https://www.michigan.gov/mpsc/0,9535,7-395-93307_93312_93320-566302--,00.html
- Delegating/Communication
 - Research/project groups organized by leadership
- Frequency and date/time of meetings
 - After each meeting we will send out a follow-up email with current projects



Projected 2021 Timeline



Beyond 2021

December 2022: Submit updated report with recommendations

2023: Continue collaborative as necessary and finalize work

Survey Results: Priority List

Rank the following areas of focus for prioritization in the December report:

Answered: 28 Skipped: 0



Survey Results: Priority List

What specifically do you want to see changed?

- Eligibility process for low-income programs
 - Delve into ideas from last meeting. E.g.:
 - Automation of the process
 - Look at Cohere pilot
 - Automatic enrollment by the utility company (utility collect data and enroll those who are eligible)
 - Proactively identify customers who are falling behind before it gets to the point of emergency
 - Standardize eligibility so that programs interact with each other
 - Standardize a screening tool and application process
 - Align state and federal program requirements
 - More flexible and understandable
 - Shared databases for identification of LI households
 - Create a secure portal for customers to upload documentation
 - Look at ongoing assistance that doesn't require yearly eligibility verification
 - Increased coordination when a customer qualifies for one program, including energy waste reduction upgrades
 - Review customer journey maps
 - Provide flexibility in eligibility
 - Take into account certain expenses (other bills, debt), medial issues/equipment



Goals from last meeting → Project List

Accessibility

(Mostly addressed through outreach group and guiding principles i.e. equity)

- Customer journey

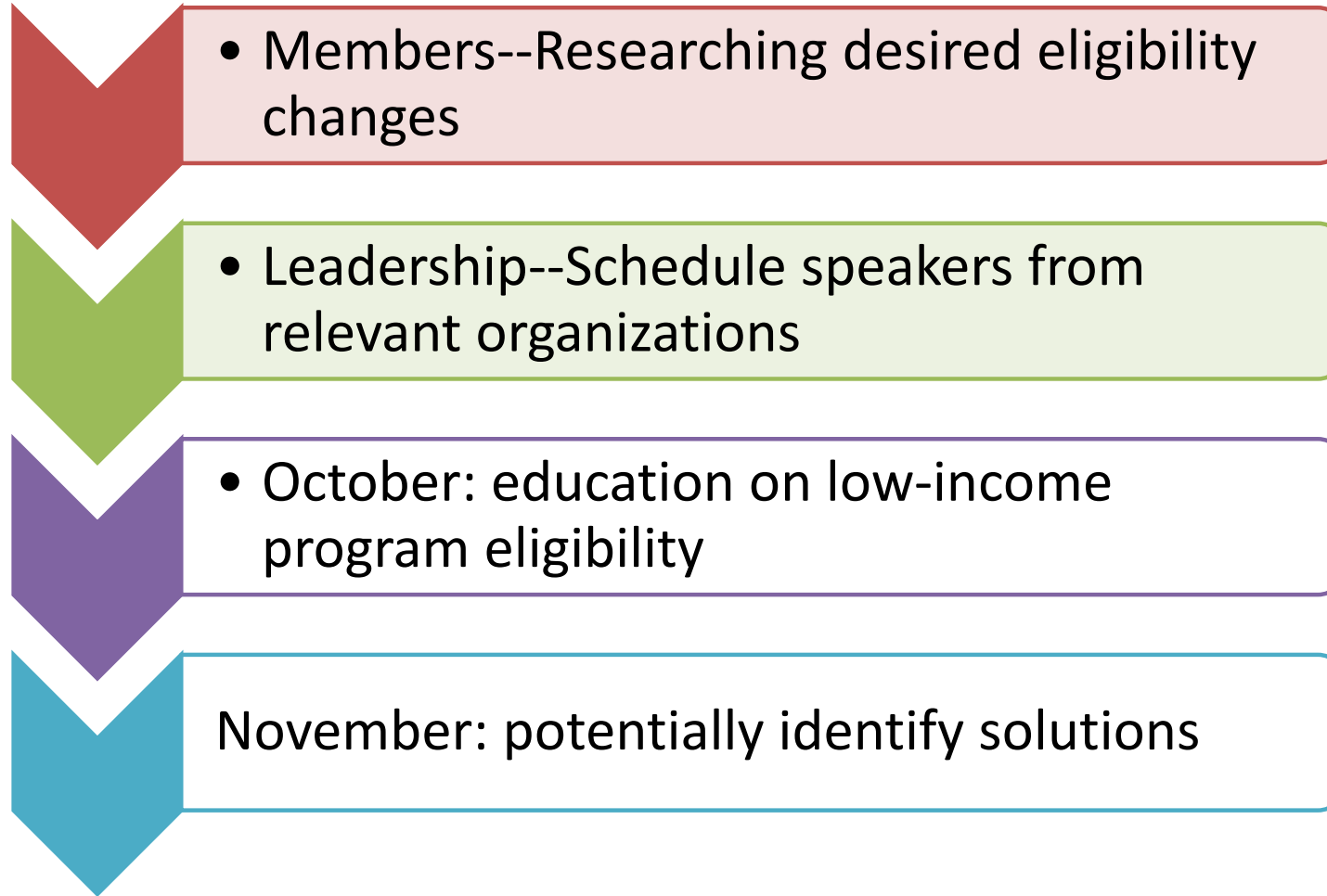
Eligibility

- How verification and collection (works with accessibility)
- Not having to be in crisis to get assistance
 - Avoid policies and program designs that include punitive measures that penalize customers for their inability to pay
- Simplify/expedite process
- Streamline design
- Make more flexible and understandable
- Should be as AUTOMATIC as possible
- Implications of expanding eligibility to 200% FPL
- Critical care---**came out in survey. Please contact leadership or extrapolate in the Google doc about your concerns**

Affordability

- Arrearage management (payment plans, late fees, debt forgiveness)
- Work with MEAP workgroup
 - Update APP pilots
- Financing options for PIPPs and credits
- Can EWR programs be tied to property values?
- Renewable generation and efficient resource opportunities

Next Steps



Assign Research

Task	Name	Timeframe
Research other states' programs (NEUAC)	Tom Page, Anne Armstrong	
Customer journey mapping (utility)	Maria Christian	
Customer journey mapping (human services org)	Wende Randall, Niki Fanjoy, Heather Kapustka	
Customer journey mapping (2-1-1)		

Monthly Totals Summary

Public Utility Name	Service Type	Year of Reporting Period	Month of Reporting Period	Customer Type	(1) Customer Count	(2) Customers Receiving Disconnect Notice	(3) Customers Disconnected for Non-Payment	(4) Customers Reconnected (Fully Paid or w/ DPA)	(5) New DPA Count
Ameren IL	Electric	2024	March	Non-Residential	186,687	3,316	665	563	76
				Residential	1,063,041	24,637	0	281	27,624
				Total:	1,249,728	27,953	665	844	27,700
	Gas	2024	March	Non-Residential	68,426	2,166	361	287	55
				Residential	744,812	17,336	0	170	19,526
				Total:	813,238	19,502	361	457	19,581
Aqua IL	Sewer	2024	March	Non-Residential	2,477	87	4	2	23
				Residential	31,028	1,275	223	120	601
				Total:	33,505	1,362	227	122	624
	Water	2024	March	Non-Residential	5,339	210	8	1	23
				Residential	59,386	2,907	361	289	1,052
				Total:	64,725	3,117	369	290	1,075
ComEd	Electric	2024	March	Non-Residential	369,132	0	0	0	1
				Residential	3,706,345	0	0	0	6,577
				Total:	4,075,477	0	0	0	6,578
Consumers Gas	Gas	2024	March	Non-Residential	627	0	1	0	0
				Residential	4,605	457	9	5	2
				Total:	5,232	457	10	5	2
IL American Water	Sewer	2024	March	Non-Residential	4,894	160	9	6	3
				Residential	78,747	3,079	279	215	515
				Total:	83,641	3,239	288	221	518
	Water	2024	March	Non-Residential	21,096	473	31	20	8
				Residential	273,460	7,055	1,005	744	1,593
				Total:	294,556	7,528	1,036	764	1,601
IL Gas	Gas	2024	March	Non-Residential	6,397	32	0	0	0
				Residential	8,122	400	33	19	0
				Total:	14,519	432	33	19	0
Liberty Utilities	Gas	2024	March	Non-Residential	2,002	0	0	1	1
				Residential	19,250	0	0	32	87
				Total:	21,252	0	0	33	88
MidAmerican Energy	Electric	2024	March	Non-Residential	10,869	192	8	9	14
				Residential	73,240	3,168	121	68	1,061
				Total:	84,109	3,360	129	77	1,075
	Gas	2024	March	Non-Residential	5,306	172	1	0	13
				Residential	60,338	2,826	8	4	947
				Total:	65,644	2,998	9	4	960
Mt. Carmel Public Utility	Electric	2024	March	Non-Residential	904	95	0	1	0
				Residential	4,372	594	18	8	45
				Total:	5,276	689	18	9	45
	Gas	2024	March	Non-Residential	367	36	0	0	0
				Residential	3,039	450	7	4	32
				Total:	3,406	486	7	4	32
Nicor Gas	Gas	2024	March	Non-Residential	195,420	3,574	570	356	441
				Residential	2,085,091	25,401	0	155	17,727
				Total:	2,280,511	28,975	570	511	18,168
North Shore Gas	Gas	2024	March	Non-Residential	13,538	324	19	13	31
				Residential	151,731	161	0	3	973
				Total:	165,269	485	19	16	1,004
Peoples Gas	Gas	2024	March	Non-Residential	73,620	3,116	54	44	296
				Residential	822,490	11,421	0	61	13,373
				Total:	896,110	14,537	54	105	13,669

Monthly Totals Summary

Public Utility Name	Service Type	Year of Reporting Period	Month of Reporting Period	Customer Type	(6) Customers Under Existing DPA (1st of month)	(7) Customers Completing DPA	(8) Failed Pay Agreements Count	(9) Customers Renegotiating DPA	(10) Customers w/ Late Payment Fee/Charges
Ameren IL	Electric	2024	March	Non-Residential	81	3	49	0	20,064
				Residential	49,662	1,270	17,108	229	121,524
				Total:	49,743	1,273	17,157	229	141,588
	Gas	2024	March	Non-Residential	57	2	29	0	8,574
				Residential	34,457	890	11,777	162	84,346
				Total:	34,514	892	11,806	162	92,920
Aqua IL	Sewer	2024	March	Non-Residential	17	6	10	0	651
				Residential	1,318	78	528	0	13,942
				Total:	1,335	84	538	0	14,593
	Water	2024	March	Non-Residential	29	13	23	0	1,092
				Residential	2,101	140	908	0	20,651
				Total:	2,130	153	931	0	21,743
ComEd	Electric	2024	March	Non-Residential	2	0	0	0	0
				Residential	93,519	80	3	518	1
				Total:	93,521	80	3	518	1
Consumers Gas	Gas	2024	March	Non-Residential	0	0	0	0	53
				Residential	15	1	1	0	713
				Total:	15	1	1	0	766
IL American Water	Sewer	2024	March	Non-Residential	13	2	1	1	577
				Residential	2,548	283	51	202	11,749
				Total:	2,561	285	52	203	12,326
	Water	2024	March	Non-Residential	25	3	1	2	2,424
				Residential	8,100	868	193	598	46,830
				Total:	8,125	871	194	600	49,254
IL Gas	Gas	2024	March	Non-Residential	0	0	0	0	0
				Residential	0	0	0	0	0
				Total:	0	0	0	0	0
Liberty Utilities	Gas	2024	March	Non-Residential	4	0	1	0	0
				Residential	618	5	5	5	0
				Total:	622	5	6	5	0
MidAmerican Energy	Electric	2024	March	Non-Residential	25	4	14	0	469
				Residential	2,054	120	843	6	4,156
				Total:	2,079	124	857	6	4,625
	Gas	2024	March	Non-Residential	20	4	11	0	257
				Residential	1,852	108	753	6	3,226
				Total:	1,872	112	764	6	3,483
Mt. Carmel Public Utility	Electric	2024	March	Non-Residential	0	0	0	0	95
				Residential	59	14	30	0	585
				Total:	59	14	30	0	680
	Gas	2024	March	Non-Residential	0	0	0	0	36
				Residential	40	11	23	0	451
				Total:	40	11	23	0	487
Nicor Gas	Gas	2024	March	Non-Residential	568	17	332	0	30,462
				Residential	27,094	62	10,133	0	394,981
				Total:	27,662	79	10,465	0	425,443
North Shore Gas	Gas	2024	March	Non-Residential	29	1	20	1	2,122
				Residential	2,331	62	483	7	21,819
				Total:	2,360	63	503	8	23,941
Peoples Gas	Gas	2024	March	Non-Residential	594	27	203	3	16,504
				Residential	30,798	732	7,321	122	216,097
				Total:	31,392	759	7,524	125	232,601

Monthly Totals Summary

Public Utility Name	Service Type	Year of Reporting Period	Month of Reporting Period	Customer Type	(11) Customers Under Existing MPA (1st of month)	(12) Customers Completing MPA	(13) Customers Enrolling in New MPA	(14) Customers Renegotiating MPA	(15) Customers w/ Required Deposit
Ameren IL	Electric	2024	March	Non-Residential	0	0	0	0	12,249
				Residential	386	10	100	0	88,965
				Total:	386	10	100	0	101,214
	Gas	2024	March	Non-Residential	0	0	0	0	6,280
				Residential	245	5	72	0	60,724
				Total:	245	5	72	0	67,004
Aqua IL	Sewer	2024	March	Non-Residential	0	0	0	0	0
				Residential	0	0	0	0	0
				Total:	0	0	0	0	0
	Water	2024	March	Non-Residential	0	0	0	0	0
				Residential	9	0	11	0	0
				Total:	9	0	11	0	0
ComEd	Electric	2024	March	Non-Residential	0	0	0	0	47,159
				Residential	690	0	20	0	432,098
				Total:	690	0	20	0	479,257
Consumers Gas	Gas	2024	March	Non-Residential	0	0	0	0	0
				Residential	0	0	0	0	0
				Total:	0	0	0	0	0
IL American Water	Sewer	2024	March	Non-Residential	0	0	0	0	0
				Residential	27	1	0	0	0
				Total:	27	1	0	0	0
	Water	2024	March	Non-Residential	0	0	0	0	0
				Residential	84	3	0	0	0
				Total:	84	3	0	0	0
IL Gas	Gas	2024	March	Non-Residential	0	0	0	0	0
				Residential	0	0	0	0	0
				Total:	0	0	0	0	0
Liberty Utilities	Gas	2024	March	Non-Residential	0	0	0	0	73
				Residential	0	0	0	0	831
				Total:	0	0	0	0	904
MidAmerican Energy	Electric	2024	March	Non-Residential	0	0	0	0	71
				Residential	7	0	1	0	646
				Total:	7	0	1	0	717
	Gas	2024	March	Non-Residential	0	0	0	0	55
				Residential	5	0	1	0	564
				Total:	5	0	1	0	619
Mt. Carmel Public Utility	Electric	2024	March	Non-Residential	0	0	0	0	16
				Residential	0	0	0	0	216
				Total:	0	0	0	0	232
	Gas	2024	March	Non-Residential	0	0	0	0	4
				Residential	0	0	0	0	116
				Total:	0	0	0	0	120
Nicor Gas	Gas	2024	March	Non-Residential	0	0	0	0	2,096
				Residential	94	0	46	0	45,096
				Total:	94	0	46	0	47,192
North Shore Gas	Gas	2024	March	Non-Residential	0	0	0	0	163
				Residential	6	0	0	0	3,000
				Total:	6	0	0	0	3,163
Peoples Gas	Gas	2024	March	Non-Residential	0	0	0	0	2,009
				Residential	179	2	17	2	20,186
				Total:	179	2	17	2	22,195

Monthly Totals Summary

Public Utility Name	Service Type	Year of Reporting Period	Month of Reporting Period	Customer Type	(16) Customers w/ New or Increased Deposit	(17) Customers w/ Reduced or Forgone Deposit	(18) Customers w/ Returned Deposit	(19) Customers Past Due >30 days w/ DPA (1st of month)	(20) Amount Past Due >30 days w/ DPA (1st of month)
Ameren IL	Electric	2024	March	Non-Residential	682	5	577	110	\$334,136.58
				Residential	5,381	456	3,510	58,727	\$26,286,725.83
				Total:	6,063	461	4,087	58,837	\$26,620,862.41
	Gas	2024	March	Non-Residential	345	2	349	88	\$91,229.79
				Residential	3,373	301	2,310	41,111	\$13,772,801.80
				Total:	3,718	303	2,659	41,199	\$13,864,031.59
Aqua IL	Sewer	2024	March	Non-Residential	0	0	0	8	\$63,627.74
				Residential	0	0	0	661	\$347,196.29
				Total:	0	0	0	669	\$410,824.03
	Water	2024	March	Non-Residential	0	0	0	31	\$108,223.53
				Residential	0	0	0	1,937	\$756,288.47
				Total:	0	0	0	1,968	\$864,512.00
ComEd	Electric	2024	March	Non-Residential	1,788	1,791	1,532	0	\$0.00
				Residential	23,686	12,094	6,655	93,551	\$30,015,954.97
				Total:	25,474	13,885	8,187	93,551	\$30,015,954.97
Consumers Gas	Gas	2024	March	Non-Residential	0	0	0	0	\$0.00
				Residential	0	0	0	0	\$0.00
				Total:	0	0	0	0	\$0.00
IL American Water	Sewer	2024	March	Non-Residential	0	0	0	13	\$7,955.87
				Residential	0	0	0	2,548	\$760,271.83
				Total:	0	0	0	2,561	\$768,227.70
	Water	2024	March	Non-Residential	0	0	0	25	\$39,927.66
				Residential	0	0	0	8,100	\$2,063,885.82
				Total:	0	0	0	8,125	\$2,103,813.48
IL Gas	Gas	2024	March	Non-Residential	0	0	0	0	\$0.00
				Residential	0	0	0	0	\$0.00
				Total:	0	0	0	0	\$0.00
Liberty Utilities	Gas	2024	March	Non-Residential	4	0	2	3	\$1,343.71
				Residential	37	0	3	287	\$32,818.73
				Total:	41	0	5	290	\$34,162.44
MidAmerican Energy	Electric	2024	March	Non-Residential	8	0	2	25	\$7,629.00
				Residential	42	3	48	2,054	\$399,916.00
				Total:	50	3	50	2,079	\$407,545.00
	Gas	2024	March	Non-Residential	7	0	2	20	\$5,299.00
				Residential	39	3	46	1,852	\$311,108.00
				Total:	46	3	48	1,872	\$316,407.00
Mt. Carmel Public Utility	Electric	2024	March	Non-Residential	0	0	2	0	\$0.00
				Residential	2	0	2	56	\$13,825.55
				Total:	2	0	4	56	\$13,825.55
	Gas	2024	March	Non-Residential	0	0	4	0	\$0.00
				Residential	3	0	2	32	\$5,201.68
				Total:	3	0	6	32	\$5,201.68
Nicor Gas	Gas	2024	March	Non-Residential	2	0	40	568	\$827,916.98
				Residential	0	0	442	27,094	\$10,229,981.14
				Total:	2	0	482	27,662	\$11,057,898.12
North Shore Gas	Gas	2024	March	Non-Residential	0	0	2	19	\$7,898.00
				Residential	0	0	48	1,977	\$622,292.00
				Total:	0	0	50	1,996	\$630,190.00
Peoples Gas	Gas	2024	March	Non-Residential	0	0	18	418	\$838,227.00
				Residential	0	0	284	26,299	\$11,271,440.00
				Total:	0	0	302	26,717	\$12,109,667.00

Monthly Totals Summary

Public Utility Name	Service Type	Year of Reporting Period	Month of Reporting Period	Customer Type	(21) Customers Past Due >30 days w/o DPA (1st of month)	(22) Amount Past Due >30 days w/o DPA (1st of month)
Ameren IL	Electric	2024	March	Non-Residential	2,870	\$1,174,926.32
				Residential	82,018	\$38,554,180.20
				Total:	84,888	\$39,729,106.52
	Gas	2024	March	Non-Residential	1,105	\$604,799.05
				Residential	54,728	\$16,284,582.28
				Total:	55,833	\$16,889,381.33
Aqua IL	Sewer	2024	March	Non-Residential	191	\$131,542.95
				Residential	4,460	\$762,792.61
				Total:	4,651	\$894,335.56
	Water	2024	March	Non-Residential	655	\$708,462.37
				Residential	12,879	\$1,632,167.70
				Total:	13,534	\$2,340,630.07
ComEd	Electric	2024	March	Non-Residential	23,076	\$47,729,206.58
				Residential	333,937	\$101,062,642.65
				Total:	357,013	\$148,791,849.23
Consumers Gas	Gas	2024	March	Non-Residential	6	\$2,900.89
				Residential	124	\$6,846.87
				Total:	130	\$9,747.76
IL American Water	Sewer	2024	March	Non-Residential	0	\$0.00
				Residential	21	\$13,001.48
				Total:	21	\$13,001.48
	Water	2024	March	Non-Residential	0	\$0.00
				Residential	86	\$43,518.74
				Total:	86	\$43,518.74
IL Gas	Gas	2024	March	Non-Residential	0	\$0.00
				Residential	0	\$0.00
				Total:	0	\$0.00
Liberty Utilities	Gas	2024	March	Non-Residential	412	\$-157,872.64
				Residential	4,877	\$-180,991.15
				Total:	5,289	\$-338,863.79
MidAmerican Energy	Electric	2024	March	Non-Residential	606	\$114,986.00
				Residential	8,058	\$1,077,020.00
				Total:	8,664	\$1,192,006.00
	Gas	2024	March	Non-Residential	256	\$142,665.00
				Residential	6,486	\$832,189.00
				Total:	6,742	\$974,854.00
Mt. Carmel Public Utility	Electric	2024	March	Non-Residential	36	\$3,705.09
				Residential	170	\$33,399.74
				Total:	206	\$37,104.83
	Gas	2024	March	Non-Residential	12	\$1,150.85
				Residential	144	\$16,772.10
				Total:	156	\$17,922.95
Nicor Gas	Gas	2024	March	Non-Residential	8,912	\$7,291,589.86
				Residential	173,352	\$66,007,553.54
				Total:	182,264	\$73,299,143.40
North Shore Gas	Gas	2024	March	Non-Residential	690	\$367,111.00
				Residential	11,110	\$3,340,789.00
				Total:	11,800	\$3,707,900.00
Peoples Gas	Gas	2024	March	Non-Residential	7,355	\$16,099,507.00
				Residential	138,870	\$99,629,705.00
				Total:	146,225	\$115,729,212.00

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PROPOSED DECISION

Agenda ID #16988 (REV. 1)

Quasi- Legislative

12/13/18 Item 25

Decision **PROPOSED DECISION OF COMMISSIONER GUZMAN ACEVES**
(Mailed 10/30/2018)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to
Consider New Approaches to
Disconnections and Reconnections
to Improve Energy Access and
Contain Costs.

Rulemaking 18-07-005

**DECISION ADOPTING INTERIM RULES TO REDUCE RESIDENTIAL
CUSTOMER DISCONNECTIONS FOR CALIFORNIA-JURISDICTIONAL
ENERGY UTILITIES**

R.18-07-005 COM/MGA/avs

PROPOSED DECISION (REV. 1)

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**DECISION ADOPTING INTERIM RULES TO REDUCE RESIDENTIAL
CUSTOMER DISCONNECTIONS FOR CALIFORNIA-JURISDICTIONAL
ENERGY UTILITIES**

Summary

This decision adopts interim rules applicable to California-jurisdictional gas and electric utilities and are designed to reduce the number of residential customer disconnections and to improve the reconnection processes for disconnected customers. Customers' access to electric and gas service is critical to their economic and social stability and well-being. The Commission has implemented policies and procedures to reduce gas and electric utility service disconnections; however, the rate of customer disconnections continues to rise. Accordingly, the instant rulemaking has been instituted with the goal of developing policies and rules to reduce the statewide level of gas and electric service disconnections for nonpayment by residential customers.

This decision adopts interim rules to take effect immediately on an emergency basis to provide rapid relief while we consider longer term solutions. We apply these interim rules to large investor owned gas and electric utilities in California. We impose a goal for limiting disconnections to 2017 recorded levels per utility. We also modify the existing rule prohibiting disconnections during extreme weather conditions. The utilities currently must not disconnect residential customers during extreme weather conditions based on a 24-hour look-ahead. Today's decision extends this look-ahead period from 24 to 72 hours to provide greater customer protection from being disconnected when weather impacts are the most severe. In identifying vulnerable customers to be protected against disconnection, we shall include any household on medical baseline or life support and for customers age 65+ as defined in Decision 16-09-016 for senior citizens.

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We leave this proceeding open to consider additional policies, rules, and regulations to address issues to reduce the rate of customer disconnections.

1. Factual Background

On September 28, 2017, Governor Brown signed Senate Bill (SB) 598 (Hueso 2017) into law. SB 598 acknowledges that disconnections of gas and electric utility customers have been rising and notes the public health impacts in terms of hardship and stress resulting from disconnections, especially among vulnerable populations.¹

California's electric and natural gas investor-owned utilities (IOUs) each have differing procedures and protocols pertaining to disconnection for failure to timely pay for service and as well as differing procedures for reconnection. Some aspects of disconnection and reconnection processes occur pursuant to Commission-adopted rules and policies. Other aspects are voluntary and are not enforced by Commission rules at all. Although the impetus for disconnection, repayment options, and reconnection times, differ across the IOUs, the ramifications of disconnection for customers can be far-reaching. The compounding effects of disconnection include disruption of the customer's normal daily activities (*e.g.* potentially, the ability to maintain employment,) as well as broad public health and social impacts associated with lack of electric and gas service.

Among other things, SB 598 requires the Commission to develop rules, policies or regulations with a goal of reducing the statewide disconnection rate of

¹ The Commission's Policy and Planning Division (PPD) also issued a paper in December 2017 finding that, aside from a brief slowdown in 2010, disconnections have been rising. Since 2011, the number of disconnections has steadily increased from the paused state in 2010.

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gas and electric utility customers by January 1, 2024. The Commission is also required to analyze the impacts on disconnection rates of any utility rate increases in each utility's general rate case. SB 598 also sets forth circumstances under which a customer shall not be disconnected for nonpayment, including a customer receiving a medical baseline allowance, a customer (or member of their household) receiving hospice care, customer dependence on life-support equipment, or the presence of medical conditions requiring electric and natural gas service to sustain life or prevent deterioration of the medical condition.

Through the instant rulemaking, we intend to implement specific requirements in SB 598. We also intend to analyze the current disconnection paradigm more broadly to determine if more effective structures or policies can be adopted to reduce disconnections, reduce costs and improve the disconnection process across utilities. Through the instant rulemaking, we intend to undertake a comprehensive assessment of the root causes of (or events that correlate with) residential customer disconnections while also evaluating the rules, processes and procedures regarding disconnections and reconnections at both a statewide and utility specific level.

The scope of this rulemaking will build upon previous measures adopted in Rulemaking (R.) 10-02-005 to reduce disconnection rates during the Great Recession through improved customer notification and education. Decision (D.) 10-07-048 adopted interim actions to reduce disconnections before the 2010-2011 winter season. D.10-12-051 approved a settlement agreement to address disconnection practices of the major IOUs.

1.1. Procedural Background

On July 20, 2018, the Commission instituted the instant rulemaking to consider new approaches to disconnections and reconnections to improve energy

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access across California's electric and gas investor-owned utilities. A prehearing conference (PHC) was held on August 15, 2018. The *Assigned Commissioner's Phase 1 Scoping Memo and Ruling and Request for Comments on a Proposed Pilot Program* (Scoping Memo) issued on September 13, 2018.

This rulemaking names as respondents the four largest electric and natural gas investor-owned utilities (IOUs). However, disconnections also occur within the service territories of small and multi-jurisdictional utilities under our jurisdiction. As such, the small and multi-jurisdictional gas and electric corporations are also respondents.² California community choice aggregators (CCA) are not identified as respondents because CCA disconnections are managed by the interconnecting utility. However, CCA participation in this proceeding has been encouraged.

The Scoping Memo identified two phases for this rulemaking. Phase 1 is to adopt policies, rules or regulations with a goal of reducing, by January 1, 2024 or before, the statewide level of residential gas and electric service disconnections for nonpayment. Phase II will take a broader approach to the evaluation of residential natural gas and electric disconnections with the goal of determining if the disconnection rate can be reduced through broader reforms and new preventive approaches.

² The smaller IOUs named as respondents are: Southwest Gas Company, Liberty Utilities (CalPeco Utilities) LLC, Bear Valley Electric Service, a division of Golden State Water Company, PacifiCorp, Alpine Natural Gas Operating Company, West Coast Gas Company, Inc. We realize that the smaller IOUs may have unique issues that the larger utilities do not have. Therefore, we will address what policies should be implemented by the smaller IOUs in a separate phase of Phase I of this proceeding. However, we encourage the smaller IOUs to be proactive in their efforts to reduce service disconnections in their service territories while the Commission further develops this proceeding.

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The Scoping Memo provided notice and opportunity to comment on the planned adoption of interim rules to reduce the rate of disconnections. As set forth in Section 4.1 through 4.3 of the Scoping Memo, the parties were provided the opportunity to comment on these proposed interim measures. Reply comments were also served. The utilities were directed to be prepared to implement adopted interim measures as quickly as possible.

Opening Comments were filed on September 18, 2018, by Pacific Gas and Electric Company (PG&E), the Public Advocates Office at the CPUC (The Public Advocates Office, Formerly the Office of Ratepayer Advocates or ORA),³ Center for Accessible Technology and the National Consumer Law Center (CforAT and NCLC), Southern California Edison Company (SCE), The Utility Reform Network (TURN), collectively, by Bear Valley Electric Service, a division of Golden State Water Company, Liberty Utilities (CalPeco Electric) LLC (Liberty CalPeco), and PacifiCorp dba Pacific Power (collectively, the California Association of Small and Multi-Jurisdictional Utilities (CASMU), the Coalition of California Utility Employees (CUE), GRID Alternatives (GRID), San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (SoCalGas), Utility Consumers' Action Network (UCAN), and Southwest Gas Corporation (SWG) also filed opening comments. Reply comments were filed on September 24, 2018.

No evidentiary hearings were held. The basis for this decision is the record developed through the above-referenced filed comments.

³ At the time of filing its comments, the Public Advocates Office was identified by its previous name, the Office of Ratepayer Advocates.

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2. Preliminary Issues to be Resolved

2.1. Interim Rules versus Pilot Program Characterizations

In the Scoping Memo, the interim measures being considered were defined as a “Pilot Program.” The Center for Accessible Technology and National Consumer Law Center (CforAT and NCLC) argue, however, that the interim measures proposed in the Scoping Memo are not pilot programs as typically defined by the Commission. CforAT and NCLC describe the proposals as interim mechanisms, interim protections, and interim rules. The Public Advocates Office supports the use of CforAT and NCLC proposed terminology, arguing that the temporary measures, as described in the Scoping Memo, are inconsistent with the Commission’s previous definition of pilots.

2.1.1. Discussion

We agree with the terminology proposed by the parties for purposes of characterizing our interim rules as adopted herein. We conclude that using the terminology “Pilot Program” is not the most descriptive of the actions we adopt herein. We shall hereafter refer the measures being adopted herein as interim rules, rather than as the “Pilot Program.”

2.2. Applicability of Interim Rules to Smaller Utilities

CASMU asks that the smaller California-jurisdictional utilities not be made subject to the interim rules being adopted here. CASMU notes that each of its member utilities has less than 50,000 customers in California and serves in rural and/or mountainous regions of the state. CASMU argues that given the small customer base of its members, their utility planning effort and participation in Commission proceedings is more limited compared to large IOUs.

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Given the small size of the customer base, CASMU argues that it is relatively more difficult and/or disproportionately more burdensome, for customers of these small utilities to absorb new program costs, with cost sharing or cost subsidization among or across customers. CASMU argues that implementing these interim rules would create a disproportionate cost burden for the smaller customer base. CASMU also argues that SB 598 exempted CASMU members from the requirements of that enacted statute. For these reasons, CASMU argues that its members should be excluded from the requirements of the interim rules being enacted in this decision.

The Public Advocates Office, however, interprets the scope of the Commission's interim rules to be statewide, although the Scoping Memo does not specify the population to be covered.

2.2.1. Discussion

Although SB 598 only requires the Commission to adopt rules for the four major electric and gas utilities, we recognize that customer disconnection concerns affect utility customers statewide. However, we also recognize that the smaller IOUs may have unique circumstances that the other larger IOUs do not face. Therefore, we will not apply these interim rules to the smaller IOUs at this time. However, we will evaluate what procedures shall be applied to the smaller IOUs in a separate and distinct phase of this proceeding. However, since disconnections are a statewide concern, we encourage the smaller IOUs to actively work on appropriate solutions while we further develop the record concerning the unique issues that may impact the smaller IOUs.

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2.3. Memorandum Account Treatment of Costs

PacifiCorp initially proposed a memorandum account be established for recovery of incremental additional costs incurred by utilities in connection with the implementing these interim rules. PacifiCorp argues that in addition to enabling utilities to recover incremental costs related to this program, a memorandum account would serve as means of tracking and recording cost data that can be used to develop the final requirements that emerge from this proceeding. However, as discussed in section 2.2.1, the smaller IOUs are being exempted from the interim rules for the time being and any rules pertaining to the smaller IOUS will be conducted in a separate phase of this proceeding. Therefore, PacifiCorp's argument is currently moot.

PG&E and SCE both requested that the Commission allow them to establish a memorandum account in their opening comments, which were filed on November 19, 2018. We will discuss this request in Section 2.3.1, below.

2.3.1. Discussion

PG&E and SCE failed to show in opening comments that the interim rules will result in any incremental costs to them. We decline to authorize memorandum account recovery of incremental costs relating to incremental costs that may be incurred in connection with implementing the interim rules adopted herein. We are not persuaded that incremental costs associated with implementing these rules are of such significance as to warrant authorization of memorandum account treatment. We note that SB 598 requires the Commission to analyze the impacts on disconnection rates of any utility rate increases in each utility's general rate case. For the limited purposes of the interim rules adopted herein, however, we find insufficient basis to institute memorandum account treatment of costs at this time. Also, we are not persuaded that the proposal is

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sufficiently defined as to how to segregate the specific costs that would be eligible for memorandum account treatment, and how such costs would be distinguished from other costs typically incurred in the course of business. Given our goal of implementing these rules quickly, we have insufficient basis to approve all of the terms and conditions that would apply to a memorandum account and decline to grant such a request at this time.

2.4. Reporting Requirements on Arrearages

CforAT and NCLC note that utilities currently collect monthly data on arrearages and disconnections for quarterly reports and recommends that utilities provide reports on arrearages each month that an interim disconnections cap is in place. CforAT and NCLC note that in R.10-02-005, struggling households experienced increased arrearage amounts following a limitation of residential disconnections for non-payment.

The Public Advocates Office agrees that monthly reporting of arrearages would help parties assess the impact of each of the interim measures. For the duration of the interim measures, the Public Advocates Office believes that all IOUs should be required to file in this proceeding the arrearage data on a monthly basis.

2.4.1. Discussion

We conclude that it is acceptable for the large investor-owned utilities⁴ to report on arrearages and disconnections on a monthly basis as suggested by CforAT, NCLC and the Public Advocates Office. We require all respondent utilities to report on arrearages and disconnections on a monthly basis for the

⁴ PG&E, SCE, SDG&E, SoCalGas.

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duration of the interim measures.⁵ An updated version of the data reporting template as provided in the September 12th ruling in this proceeding is attached to this decision (Appendix B). The large IOUs are required to submit the information requested in the updated template on a monthly basis. This requirement supersedes the quarterly reporting requirement from the September 12th ruling. Monthly reports should be filed and served on the 20th of each month (or the next business day thereafter).

3. Adopted Interim Rules

We adopt the interim rules set forth below to reduce the rate of customer disconnections. These rules shall remain in effect pending a subsequent Phase I decision or until the Commission directs otherwise. These rules are adopted based on the proposal that appeared in preliminary form in the Assigned Commissioner's Scoping Memo. These rules: (a) prohibit disconnection of designated vulnerable customers and (b) prevent disconnections during prescribed extreme weather events. This decision also adopts a goal of limiting the rate of disconnections to 2017 levels. We have considered parties' comments in response to the Scoping Memo, and have made adjustments, as appropriate, in adopting these interim rules.

3.1. Limiting Disconnection Rates to 2017 Recorded Levels

To ensure no further increases in disconnections occur, and that a path towards reductions is ensured, the Scoping Memo proposed to establish a disconnection rate cap for each IOU at the IOU's 2017 disconnection rate.

⁵ This requirement does not apply to small, multi-jurisdictional utilities such as Southwest Gas or any other entity not included in the Commission's reporting requirements under Pub. Util. Code 910.5.

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Parties generally support the proposal to establish a disconnection rate cap set at each of the IOUs' respective 2017 disconnection rates. Several IOUs and other parties, however, express concern regarding risks and unintended consequences of establishing a disconnection rate cap across all customers. SCE argues that disconnection rate cap could provide arbitrary and unnecessary relief to customers not at high risk of being disconnected and potentially ignore customer behavior leading to disconnection of service. PG&E expressed concerns regarding potential of unintentional consequences of a disconnection cap, including: (1) higher balances for customers subject to disconnection; (2) shifting of costs to other customers due to nonpayment; and (3) potential gaming as the cap is reached.

SDG&E and SoCalGas request that any disconnect cap be analyzed before implementation, or, if the Commission decides to move forward with a cap, it be set at 3.95% for SDG&E and 2.4% for SoCalGas. This represents an *increase* from 2017 levels. SoCalGas and SDG&E argue that the caps set at 2017 levels would penalize them for positive performance, depriving them of flexibility in managing disconnections.

SDG&E and SoCalGas also question why 2017 data should be used for capping disconnections, other than that it represents the most recent year. They argue that disconnection rates can be affected by weather, economic, and other conditions, all of which should be considered when adopting a cap.

TURN advocates quick implementation of the interim protections for residential customers to prevent further increases.

SCE and PG&E both propose to limit the disconnection rate cap to only Phase 1 of this proceeding. TURN argues that the pilot shall last for the duration

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of this proceeding, or until annual targets for reduced disconnections are adopted.

SCE proposes to apply the disconnection rate cap only to vulnerable customer populations instead of to all residential customers. TURN responds, however, that SB 598 mandated reductions in disconnections for *all* residential customers by 2024, not just vulnerable customers.

TURN expressed concerns that because disconnections have been increasing, and this proceeding could take a prolonged period to resolve, interim protections are necessary to prevent further increases in disconnections. Otherwise, the Commission could potentially be mandating a reduction from a higher level of disconnections and end up with the same or higher disconnection levels compared to when SB 598 was passed.

The Public Advocates Office supports immediate adoption of the interim measures but agrees with the IOUs that the proposed measures raise questions about implementation that could result in inconsistent application across IOU service territories, and unintended consequences.

CforAT and NCLC note the risks of increased arrearages, and state that imposing a hard cap without additional guidance would eliminate the ability of both the Commission and utilities to directly target relief to those customers most in need. SWG supports aspects of the disconnection rate cap pilot, but questions how the disconnection rate cap would be calculated or implemented.

The parties made various comments about the disconnection cap in their comments on the proposed decision. For the most part, the parties accept using the 2017 rates to set the interim disconnection cap, with the only exception being SDG&E and SoCalGas.

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SCE warns in its comments that there may be unintended consequences as a result of the disconnection cap and advises that the Commission should gather more data before implementing the cap. PG&E requests that there be a delay in implementing the cap until the first full month following adoption and that the monthly cap should be based on PG&E's monthly customer account population, which may fluctuate from month to month. SDG&E and SoCalGas strongly oppose the cap and allege it is unfair because they have the lowest number of disconnections for 2017. SDG&E contends that preventing any disconnections for a month could likely lead to higher arrearages for some customers and this will be difficult to pay off and thus make reconnections more difficult for them.

CforAT and NCLC support the use of an absolute cap, but recommends that it not become effective until January 2019 since the utilities do not disconnect customers during the holidays. UCAN suggests that the cap should be set at 95 percent of the 2017 levels. TURN opposes any modification of the cap, but proposes allowing SDG&E a three-month grace period to implement the cap. GRID supports the use of a cap and recommends that the Commission require utilities to minimize disconnections of certain categories of vulnerable customers as they manage disconnections under the cap.

3.1.1. Discussion

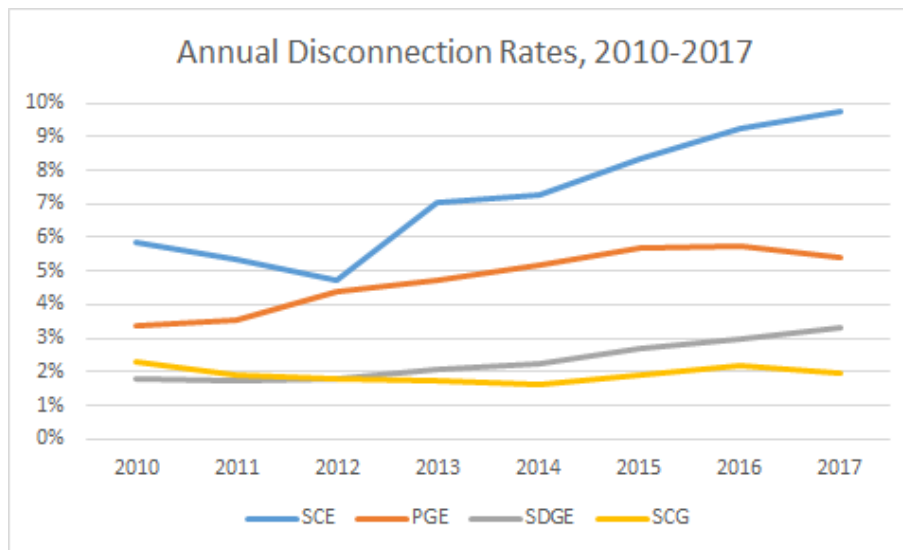
We shall require each of the large IOUs to set a goal of limiting residential customer disconnections to the rate of disconnections recorded in 2017. While the ruling proposed a hard cap on disconnections at 2017 levels, this decision adopts a soft cap or goal to limit disconnections to 2017 levels. A separate phase of the proceeding will address the appropriate goal for the smaller IOUs.

We deny requests to postpone implementation of this goal until further vetting and workshops occur. To stem the rising incidence of disconnections,

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immediate implementation of the goal is needed to offer customers some form of immediate relief. Disconnection rates have been rising in the large IOUs since the Commission began tracking disconnection rates in 2010. As the below chart shows, the disconnection rates of SCE and SDG&E have increased over the years, while SoCalGas's annual disconnection rates remain relatively steady around 2%. PG&E also shows an overall growing trend in disconnections despite the disconnection rate declining slightly last year.



Source: Data were compiled by the Energy Division, based on the Quarterly Disconnect Data Reports submitted by IOUs as a requirement of R.10-02-005.

We recognize that other metrics besides 2017 data arguably might be used to establish the goal, as certain parties propose. On balance, however, we conclude that 2017 recorded levels provides a more straightforward, metric that can be implemented quickly. Since 2017 is the most recent year for which we have complete data, encouraging the large IOUs to limit disconnections to 2017 rates will help curb the rising disconnection rate. This decision aims to implement immediate interim relief, which includes limiting the number of

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customers experiencing disconnection. We therefore adopt 2017 data as the basis for utilities to establish their goals.

We adopt a goal, rather than a hard cap, for the large IOUs due to concerns expressed in comments about the unintended consequences of a hard cap. These consequences include higher arrearages for those who avoid disconnection as a result of a cap and the possibility of ratepayers who are current on their energy bills subsidizing those who are behind on their energy bills. Under existing rules and policies that differ across IOUs, some customers incur large amounts of arrearages before disconnection, while other customers are disconnected when their debt to the utility is relatively low. As this decision offers the large IOUs more flexibility by establishing a goal rather than a hard cap, we direct the large IOUs to use that flexibility to manage disconnections in a way that limits the number of customers experiencing disconnection while also minimizing the growth of arrearages. Hard caps and reductions will be deliberated in Phase I of this proceeding.

To establish the goal, Appendix A of this decision sets forth 2017 disconnection data per utility. Specifically, each utility shall calculate an absolute number (as opposed to a percentage) that will be its goal for the maximum number of disconnections in its service territory. To calculate the absolute number, the utilities shall apply the 2017 disconnection percentages to their residential populations when this decision goes into effect. The calculation of the absolute number should be included in the IOUs' first monthly report of 2019. Until or unless ordered otherwise by this Commission, large IOUs should endeavor to keep the number of disconnections implemented for each subsequent year below the annual disconnection goal.

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If any of the large IOUs exceed the annual disconnections goal, within 60 days that IOU must file a report with the Commission explaining:

- 1) why the utility is exceeding the goal,
- 2) what steps were taken by the utility to manage disconnections to remain below the goal, and
- 3) why those steps were insufficient in limiting disconnections to the established goal.

The report must also be served to the service list of this proceeding. Establishing reporting requirements for the large IOUs if they exceed the goal, in addition to the reporting requirements in Section 2.4.1, will hold the large IOUs accountable as they manage their disconnection rates. The reporting requirement will remain in effect for as long as the disconnection goal remains in effect.

We deny SCE's request to limit the disconnection cap only to vulnerable customer populations. As noted by TURN, the Commission is required by SB 598 to develop policies, rules, or regulations to reduce residential disconnections by January 1, 2024 for *all* residential customers, not just vulnerable customers. SB 598 created a separate section of the Pub. Util. Code Section 779.3, to address additional protections specifically for vulnerable customers. We thus shall impose the disconnections goal such that it applies to all residential energy customer disconnections.

We also deny the request of SDG&E and SoCalGas to set their disconnection caps at 3.95% and 2.4% respectively. We find no justification to deviate from 2017 recorded levels in setting the goal. Although SDG&E claims it has the lowest disconnection rate among the major electric utilities, it has increased its monthly residential disconnections from 1,795 per month in 2010 to 4,248 per month in 2018, a 137% *increase*. SDG&E is now seeking to increase its

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disconnection levels even further. However, we recognize that implementing this goal immediately for SDG&E may severely limit their ability to disconnect customers for nonpayment. Therefore, we agree with the recommendation of TURN and will grant SDG&E a three-month grace period to manage its disconnections. The goal for the remaining covered utilities shall be effective January 1, 2019.

SDG&E's 2018 residential disconnections are already projected to be 0.37% higher than 2017 levels. SDG&E seeks authority to *further increase* its disconnection rate by another 0.27%. SoCalGas requests to increase its disconnection rate to 2.4%, even though it is only currently trending at 2.1% for 2018. We deny this request. SDG&E's disconnection goal is set at 2017 recorded levels.

The goal for limiting residential customer disconnections for large IOUs will remain in effect until the end of Phase 1 of this proceeding and no later than 18 months from this decision. Setting a definitive timeframe for the disconnection goal provides certainty that reforms will take place in a timely manner to address some of the causes of high rates of disconnections. This proceeding will consider and adopt policies to ensure that customers having difficulty paying their energy bills receive interventions to help manage their bills and prevent disconnection. The policies developed at the close of Phase 1 will go beyond the interim rules created in this decision, as the Commission complies with its statutory requirement to reduce the disconnection rate by 2024.

3.2. Limiting Disconnections of Vulnerable Customers

In addition to explicitly requiring an overall reduction in disconnection rates, SB 598 created protections for vulnerable customers for whom disconnection would be life-threatening. Specifically, SB 598 prohibits gas or

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electrical corporations from disconnecting customers who utilize a medical baseline allowance, are financially unable to pay, agree to a payment plan, and either are under hospice care, on life-support equipment, diagnosed with a life-threatening condition that makes electricity service medically necessary.

In line with SB 598 protections, the Scoping Memo similarly proposed to ban disconnections of vulnerable customers, defined as customers who qualify for medical baseline and/or are above 65 years old, as long as the customer agrees to a payment plan. As noted in SB 598, customer disconnections are a public health issue, and impact the elderly, and people with physical disabilities, and with life-threatening medical conditions.

In filed comments, certain parties suggested changes to the definition of “vulnerable customers” for purposes of protections from disconnection. Suggested changes were offered mostly by UCAN and GRID. UCAN recommends that in addition to customers who qualify for medical baseline and/or are above 65 years old, the category of “vulnerable customers” also include members of a household under the age of 10, or those who do not qualify for medical baseline but can show proof of serious illness. GRID also requests to expand the definition of “vulnerable customers: to include: low income households, households with children, households of color, households where English is not the primary language spoken, physically disabled customers, and tribes.

SCE does not currently collect or track all of the data described by UCAN and GRID, and claims that gathering the information would require extensive effort, and be overly intrusive. SCE recommends that before early interventions or rapid relief is adopted, a consensus definition of “vulnerable customers” be determined in the Phase 1 workshop. SCE argues that some suggested

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definitions such as “households with children” and “households of color,” are vague and could cause confusion and implementation problems.

PG&E supports the proposal to suspend disconnection of vulnerable customers if the customer agrees to a payment plan. PG&E’s customers with life-support equipment and receiving medical baseline allotments are currently afforded this benefit. PG&E would support extending this protection to those over age 65 who self-identify as vulnerable. PG&E already offers payment plans to all qualifying customers and has a process for customers to self-identify as being vulnerable. PG&E, however, requests more time to modify its current process to allow for self-identification by customers age 65 or older. On a going forward basis, PG&E suggests coordinating consistent policies among the IOUs through workshops and provision for time to implement adopted changes.

SDG&E and SoCalGas are generally amenable to the disconnection protections proposed for “vulnerable customers” in the Scoping Memo, but oppose expansions as to who should qualify. They argue that such changes are not appropriate because: (1) they do not maintain information to redefine the group, (2) acquiring the information would be intrusive and difficult, and (3) the category would encompass a substantial portion of customers, and potentially even a majority. They argue that if the proposed changes are to begin imminently, it would be impossible for them to be sufficiently tested, analyzed, or implemented.

Because SDG&E and SoCalGas do not generally request or maintain age data for all customers, they express concern over being directed to actively seek out age information from all customers. They argue that such efforts may prove difficult, seem overly intrusive, and invite certain customers to abuse the system.

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They therefore request that the Commission clarify that there will be no affirmative duty on the utilities to ask customers their age.

Because some of the demographic data described by GRID and UCAN would be self-reported by customers, SCE agrees with SoCalGas/SDG&E that it may invite abuse. If additional data collection is necessary, SCE argues that more time and funding may be needed for system modifications. SCE requests that before the definition of “vulnerable customers” is expanded, it should be vetted in Workshop 1 so that unintended consequences can be avoided.

In comments on the proposed decision, CUE, GRID, PG&E, SCE, and CforAT and NCLC expressed support for the protections for vulnerable customers. PG&E expresses concern about its ability to disconnect vulnerable customers who fail to comply with the offered payment plan. SCE requests that the protections go into effect on January 7, 2019 to allow for time to train customer service representatives to request age information during final calls before disconnection. SDG&E and SoCalGas argue that their existing protections are as stringent as those in the proposed decision.

CforAT and NCLC recommends specific guidelines on the type of payment plan utilities must offer to those customers. CforAT and NCLC are concerned that customers will accept whatever payment plan is offered to them, even if they cannot afford the payment plan provided, in order to avoid disconnection in the near term. CforAT and NCLC propose that utilities be required to offer vulnerable customers payment plans spread over at least four months.

3.2.1. Discussion

For purposes of interim rules prohibiting disconnections of vulnerable customers, we shall adopt the following. The utilities shall not disconnect

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customers for nonpayment who qualify for medical baseline and/or are above 65 years old, as long as the customer agrees to a payment plan offered by the utility. The utility is required to offer the vulnerable customer a payment plan with a duration of at least four months. Customers may select a payment plan of a shorter duration if they choose, but the utility must offer a payment plan of at least four months' duration to any vulnerable customer at risk of disconnection. For the purpose of applying this requirement, we define senior citizens as any permanent member of a household, age 65 or older, in any income bracket, consistent with the criteria in D.16-09-016.⁶ The utilities shall not disconnect a customer if anyone in the household meets that definition.

We shall not require the utility to make affirmative inquiry of every residential household as to whether eligible vulnerable customers reside there. If the utility has discussions with the customer over the telephone or in person with an employee of the utility prior to disconnection, the utility shall have a duty to inquire if there is anyone in the household who meets the age 65+ parameters for senior citizens as adopted herein.

In the event that an individual 65 or over fails to successfully complete a payment plan of at least four months' duration, the utility may proceed with disconnection assuming that none of the other interim prohibitions apply. However, we encourage the IOUs to try and work with the customer to ensure that adequate opportunities are provided for a customer 65 or over to resolve any payment delinquencies. For example, IOUs are encouraged to offer vulnerable customers payment plans that exceed the four-month minimum established in this decision.

⁶ See D. 16-09-016, Section 2.1.2, Finding of Fact 3, and Ordering Paragraph 1.

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We decline to expand the alternative definitions of vulnerable customers such as that proposed by UCAN and GRID. Before considering adoption of such expanded definitions, further examination is warranted regarding the implications and the practicalities of implementation. In further stages of this proceeding, we may consider these proposals to redefine the definition of vulnerable customers in further detail.

The IOUs also indicated in their comments on the proposed decision that they would need additional time to implement changes to their systems to gather information concerning the age of a customer. We will allow the IOUs until close of business on December 21, 2018 to implement the changes regarding whether an individual 65 or older resides in the household.

3.3. Temperature-Related Limitations on Disconnections

The Scoping Memo proposed that energy IOUs not be allowed to disconnect customers when the 72-hour National Weather Service forecast predicts temperatures above 100 degrees or below 32 degrees. This proposed protection recognizes that disconnections are a public health issue, particularly when temperatures are extreme. Lost access to energy services on extremely hot or cold days can be life threatening for some populations, including infants, children, and the elderly. To protect customers from disconnection due to nonpayment during periods of extreme temperatures this winter, we establish thus immediate, interim temperature limitations on disconnections.

In filed comments, certain parties seek clarification and/or modifications to the Scoping Memo proposal regarding temperature limits on disconnections. Other parties, while generally supportive of the temperature limitations, suggested alternative approaches that differ from certain existing IOU disconnection policies. UCAN recommends that temperature protections ban

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disconnections during weather conditions that are ten or more degrees above or below average for a period of in excess of three days. SDG&E and SoCalGas are open to exploring these limitations, but believe UCAN's proposal does not appear sufficiently developed at this time.

The IOUs generally support the temperature limitation concept, but note that their temperature-based limitations on disconnections differ somewhat from the approach described in the Scoping Memo. PG&E uses an internal comprehensive meteorological forecast for its service territory. Forecasts are updated daily and disconnects are suspended for all communities when the daily forecast predicts temperatures at or above 100 degrees, and at or below 32 degrees. PG&E proposes continued use of its current process rather than adoption of the National Weather Service forecast approach.

PG&E also claims that time would be required to make technological enhancements and new controls to apply its current daily forecast approach to a 72-hour window. PG&E argues that such changes would be best evaluated and addressed through workshops. PG&E thus requests permission to continue implementing its current severe temperature disconnection policy without change at this time.

SCE believes that the proposal to suspend disconnections during extreme weather should be delayed until after Phase 1 workshops. SCE requests the Commission include examination and analysis of this and other pilot proposals in the Workshop 1, where thorough discussion and vetting on the design and impacts of implementation can be conducted.

TURN argues that protections from disconnection for residential customers during extreme temperatures should be implemented as soon as possible. PG&E, SDG&E, and SoCalGas have already implemented protections

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during extreme weather and support continuation of such protection. SCE is the only major IOU that has not yet implemented these protections for residential customers. The CforAT, NCLC, and the Public Advocates Office state that as many as half of the states in the United States already have policies on residential disconnections during periods of extreme temperatures.

The Public Advocates Office states that elimination of customer disconnections during weather events could result in higher arrearages for customers than those seen in a typical month. The Public Advocates Office believes there could be unintended consequences if the IOUs move away from current policies for temperature-based disconnections to the process described in the Scoping Memo. The Public Advocates Office recommends that the IOUs be allowed to use their current processes for the interim measures, and that subsequent workshops as necessary, can address ways to refine interim measures, as appropriate.

In comments on the proposed decision, CUE and CforAT and NCLC support the temperature protections. SCE states that it will change its existing policy to comply with the interim temperature protection, and PG&E and SDG&E and SoCalGas reiterated their request for a grace period for implementing the temperature protections.

3.3.1. Discussion

For purposes of the interim rules, we shall require that the energy IOUs cannot disconnect residential electricity customers when temperatures above 100 degrees⁷ or below 32 degrees are expected based on a 72-hour look-ahead period. This limitation draws on existing PG&E practice, which prevents

⁷ The limitation on disconnections above 100 degrees does not apply to gas providers

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disconnection of utility customers when temperatures on a given day exceed 100 degrees or are below 32 degrees.

In their comments, the major IOUs argued that they would need more time to implement technological enhancements to comply with the proposed 72-hour weather forecast disconnection measure. We recognize that requiring the utilities to rely upon the National Weather Service model referenced in the Assigned Commissioner's Scoping Memo could require some additional implementation time to the extent that it differs from their existing temperature disconnection policy. Accordingly, to address this concern, we shall permit each utility to continue to use its own internal weather monitoring systems rather than the National Weather Service model. Additionally, we will allow the utilities until close of business on December 21, 2018, to implement the 72-hour look-ahead. By doing this, we address some of the IOUs' concerns regarding implementation lead time, while still providing protections before the weather becomes too extreme. We therefore will require the adopted interim rules calling for a 72-hour look-ahead period to take effect no later than close of business on December 21, 2018. This rule must be applied in assessing extreme weather conditions before disconnection occurs. The first workshop of 2019, and subsequent workshops as necessary, shall address ways to refine the interim measures, as appropriate, consistent with best practices.

4. Comments on Proposed Decision

The proposed decision in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on November 16, 2018, by Department of Community Services and Development. Comments were also filed on

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November 19, 2018 by Grid Alternatives, CforAt and NCLC, CUE, PG&E, PacifiCorp, SDG&E and SoCal Gas, SCE, BVES-Liberty CalPeco and Southwest Gas. Reply comments were filed by PG&E, TURN, SDG&E and SoCalGas, SCE, BVES-Liberty Calpeco, UCAN, CforAt and NCLC, and Grid Alternatives. As appropriate, we have addressed the relevant comments in this decision.

5. Assignment of Proceeding

Pursuant to Public Utilities Code Section 1701.4 and Rule 13.2 Commissioner Martha Guzman Aceves is the assigned Commissioner and the Presiding Officer. Gerald F. Kelly is the assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. The Commission opened R.18-07-005 pursuant to SB 598, in order to address disconnection rates across California's electric and gas investor-owned utilities.
2. The Commission seeks to adopt policies and rules that reduce disconnections and improve reconnection processes and outcomes for disconnected customers.
3. As noted in SB 598, residential electric and gas disconnections are on the rise and create public health impacts, especially on vulnerable populations, causing tremendous hardship and undue stress, including increased health risks to vulnerable populations, as well as overreliance on emergency services and underutilization of preventive programs.
4. Rulemaking 18-07-005 calls for a comprehensive assessment of the root causes of (or events that correlate with) residential customer disconnections while also evaluating the rules, processes and procedures regarding disconnections and reconnections at both a statewide and utility specific level.

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5. The assigned Commissioner's Ruling in R.18-07-005 laid out a plan to establish interim rules to provide quick relief to address the continuing increase in disconnection. The Assigned Commissioner's Scoping Memo and Ruling proposed to: (a) limit the rate of disconnections to the 2017 levels, (b) prohibit the disconnection of specifically defined categories of vulnerable customers and (c) prevent disconnections during certain seasonal events.

6. SB 598 mandated protections for vulnerable customers for whom disconnection would be life-threatening.

7. Lost access to energy services on extremely hot or cold days can be life threatening for some populations, including infants, children, and the elderly.

8. There shall be no memorandum account treatment of costs that may be incurred in connection with complying with this decision.

Conclusions of Law

1. The parties in this proceeding have had a reasonable opportunity to comment on the Assigned Commissioner's Scoping Memo, including the interim rules proposed therein, which form the basis for this decision.

2. Given the continuing rise in the rate of residential customer disconnections throughout the service territories of California-jurisdictional utilities, it is reasonable to take quick action to adopt the interim rules set forth below while the Commission considers longer-term solutions as outlined in the Assigned Commissioner's Scoping Memo.

3. Due to the unique circumstances confronting smaller utilities, It is reasonable to conduct a separate phase concerning interim rules for the smaller IOUs.

4. Recorded levels of disconnections by each of the California-jurisdictional energy utilities during 2017, as set forth in Appendix A, form an appropriate

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basis to establish a goal of reducing disconnection levels pending further Commission action in this proceeding.

5. The interim rules adopted in this decision recognize the intent and directives set forth in SB 598, as described in Rulemaking 18-05-007.

6. In line with the provisions of SB 598, it is reasonable to impose restrictions prohibiting disconnections of vulnerable customers defined as customers who qualify for medical baseline, life support and/or are above 65 years old, as long as the customer agrees to a payment plan.

7. It is reasonable to require that utilities offer vulnerable customers a payment plan of at least four months' duration.

8. It is reasonable to prohibit the energy utilities covered by the interim rules adopted in this decision from disconnecting residential electricity customers when temperatures above 100 degrees or below 32 degrees are expected based on a 72-hour look-ahead period. For this purpose, it is reasonable to allow each utility to use its own existing in-house weather forecasting processes.

9. It is reasonable to prohibit gas utilities covered by the interim rules adopted in this decision from disconnecting gas service when the temperature falls below 32-degrees on a 72-hour look-ahead period.

10. The interim rules set forth below should be adopted and made effective no later than close of business on December 21, 2018.

11. The goal of limiting disconnections to 2017 levels shall be effective January 1, 2019 for all covered IOUs, with the exception of SDG&E, who will be granted a three-month grace period prior to implementing the goal.

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O R D E R

1. The interim rules set forth below are hereby adopted in order to reduce residential customer disconnections and to improve reconnection processes. These interim measures shall become effective as set forth below.. The rules shall apply to the four large Investor Owned Utilities as follows: Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas and Electric Company, and Southern California Gas Company. Pursuant to these interim rules, each of these utilities shall comply as follows:

- (a) Effective January 1, 2019, each respective utility shall set a goal of limiting residential customer disconnections using the recorded 2017 percentage of each respective utility. Disconnections implemented for each subsequent year must remain below the interim annual disconnection goal. The utilities shall use an absolute number for the interim annual disconnection goal. To calculate the absolute number, the utilities shall apply the 2017 disconnection percentages to their residential populations when this decision goes into effect. The recorded 2017 disconnection percentages to be used are set forth in Appendix A of this decision. No later than 5 business days from the mailing of this order, the utilities shall file their goal as calculated with their current residential customer population. The adopted disconnection rate goal shall remain in effect for the duration of Phase 1 of this proceeding or until annual targets for reduced residential disconnections have been adopted to ensure no further increases. The calculated goals shall be filed by a Tier 1 Advice Letter. SDG&E shall be granted a three month grace period for the goal.
- (b) Effective no later than close of business December 21, 2018, residential customers shall not be disconnected for nonpayment if they qualify for medical baseline and/or are above 65 years old, as long as the customer agrees to a payment plan. The Respondent Utility must offer a payment plan of at least four months' duration to the customer; the

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customer is free to select a shorter payment plan period, but must be offered a payment plan of at least four months' duration by the Respondent Utility. For the purpose this requirement, senior citizens are defined as any permanent member of a household, age 65 or older, in any income bracket, consistent with Decision 16-09-016 criteria for purposes of applying Public Utilities Code Section 745. If anyone in a household meets that definition, the household's service may not be disconnected. The Respondent Utility is not required to make affirmative inquiry of every residential household as to whether eligible vulnerable customers reside there. If the Respondent Utility has discussions with a residential customer prior to disconnection, however, that Utility shall have a duty to inquire if anyone in that household meets the age 65+ parameters for senior citizens adopted herein.

- (c) Residential customers shall not be disconnected when temperatures above 100 degrees or below 32 degrees are forecasted based on a 72-hour look-ahead period. Each utility may continue to use its own internal weather monitoring systems for meeting this requirement.

2. Liberty Utilities, Southwest Gas Company, Bear Valley Electric Service, a division of Golden State Water Company, PacifiCorp, Alpine Natural Gas Operating Company, and West Coast Gas Company, Inc. will be included into a separate phase of this proceeding designed to establish similar interim rules at a later time in this proceeding.

- 3. If any of the large IOUs exceed the annual disconnections goal, within 60 days of exceeding the goal that IOU must file and serve a report with the Commission explaining:
 - a. why the utility is exceeding the goal,
 - b. what steps were taken by the utility to manage disconnections to remain below the goal, and

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- c. why those steps were insufficient in limiting disconnections to the established goal.

4. The request for a memorandum account to recover the incremental costs associated with complying with these adopted interim rules is denied.

5. If any of the rules adopted herein require changes to a utility's tariff, that utility shall promptly file an advice letter to implement such changes within 30 days of this decision. Provided that the changes are of a ministerial nature, a Tier 1 advice letter filing is acceptable for this purpose.

6. All respondents are directed to file monthly reports of specific disconnection data as specified in Appendix B, or in a form otherwise approved by the Energy Division. The first monthly report shall be filed on the 20th of the month following the mailing of this order and further reports filed the 20th of each month (or the next business day) thereafter until the interim protections have ended or further direction is provided.

7. Rulemaking 18-05-007 shall remain open for subsequent proceedings pursuant to the Assigned Commissioner's Scoping Memo.

This order is effective today.

Dated _____, at San Francisco, California.

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APPENDIX A – Disconnection Data

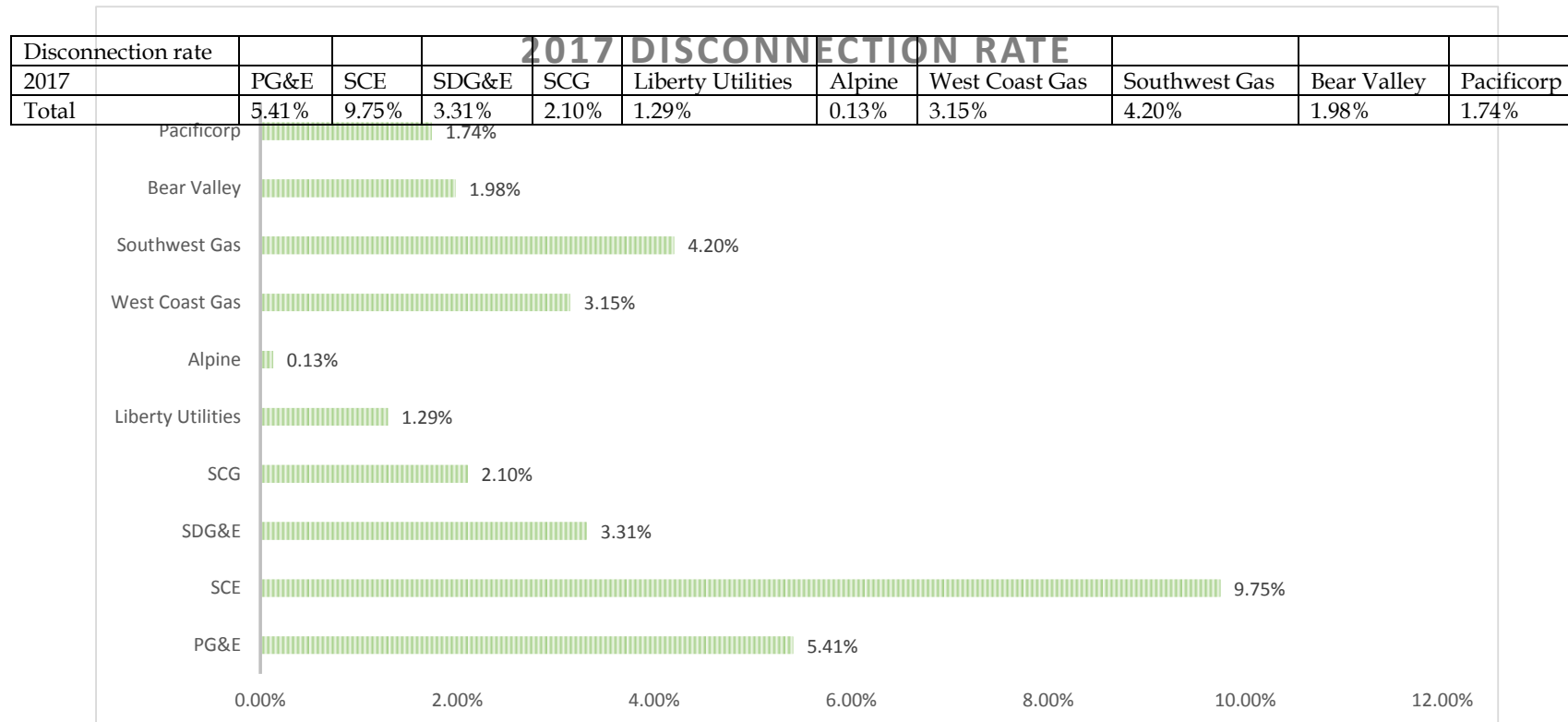
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APPENDIX B – Reporting

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(REV. 1)

ATTACHMENT A



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(REV. 1)

ATTACHMENT B
Reporting

Quarterly reporting on disconnections and arrearages

Each monthly report after the first should include prior months data until the end of the calendar year.

Section 1 - Payment arrangements and bill assistance

Number of customers requesting bill assistance					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers with ongoing payment plans					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers receiving payment extension of <30 days					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers with 3 month payment arrangements					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers with 3 month+ payment arrangements					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

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Month	Number of customers who were connected with outside bill payment assistance from organizations (IOU/Local Service Provider)	Number of customers who received outside bill payment assistance from organizations (IOU/Local Service Provider)

*Please break this amount down by customer group if the information is available.

Section 2 - Broken payment arrangements

Number of customers with late or broken 3 month payment arrangements					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers with late or broken 3 month+ payment arrangements					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Section 3 – Arrearages

Number of customers in arrears					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers 31-60 days in arrears					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers 61-90 days in arrears					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

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Number of customers 91-120 days in arrears					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers 121+ days in arrears					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of accounts paid 100% within 30 days from statement date					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of accounts paid 50-99% within 30 days from statement date					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of accounts paid <50% within 30 days from statement date					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Total Dollar amount of Residential Accounts in Arrears – Month

Number of Days	All Balances	% of total outstanding
31-60 days		
61-90 days		
91-120 days		
121-150 days		
151-179 days		
180+ days		
Total outstanding receivables		

Total Dollar amount of non-CARE/FERA accounts in Arrears – Month

Number of Days	All Balances	% of total outstanding
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31-60 days		
61-90 days		
91-120 days		
121-150 days		
151-179 days		
180+ days		
Total outstanding receivables		

Total Dollar amount of CARE accounts in Arrears - Month

Number of Days	All Balances	% of total outstanding
31-60 days		
61-90 days		
91-120 days		
121-150 days		
151-179 days		
180+ days		
Total outstanding receivables		

Total Dollar amount of FERA accounts in Arrears - Month

Number of Days	All Balances	% of total outstanding
31-60 days		
61-90 days		
91-120 days		
121-150 days		
151-179 days		
180+ days		
Total outstanding receivables		

Total Dollar amount of Medical Baseline accounts in Arrears - Month

Number of Days	All Balances	% of total outstanding
31-60 days		
61-90 days		
91-120 days		
121-150 days		
151-179 days		
180+ days		
Total outstanding receivables		

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Total Dollar amount of Residential accounts in Arrears by amount owed – Month

Amount owed	All Balances	% of total outstanding
<\$500		
\$1000 - \$500		
\$2000-1000		
>\$2000		
Total outstanding receivables		

Total Dollar amount of non-CARE/FERA accounts in arrears by amount owed – Month

Amount owed	All Balances	% of total outstanding
<\$500		
\$1000 - \$500		
\$2000-1000		
>\$2000		
Total outstanding receivables		

Total Dollar amount of CARE accounts in arrears by amount owed – Month

Amount owed	All Balances	% of total outstanding
<\$500		
\$1000 - \$500		
\$2000-1000		
>\$2000		
Total outstanding receivables		

Total Dollar amount of FERA accounts in arrears by amount owed – Month

Amount owed	All Balances	% of total outstanding
<\$500		
\$1000 - \$500		
\$2000-1000		
>\$2000		
Total outstanding receivables		

Total Dollar amount of Medical Baseline accounts in arrears by amount owed – Month

Amount owed	All Balances	% of total outstanding
<\$500		
\$1000 - \$500		

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\$2000-1000		
>\$2000		
Total outstanding receivables		

Total number of accounts in arrears by amount owed – Month

Amount owed	Non CARE/FERA	CARE	FERA	Medical Baseline	Total
<\$200					
\$500-\$200					
\$1000-\$500					
\$2000-1000					
>\$2000					

Section 4 – Disconnection/termination

Number of customers experiencing disconnection for non-payment					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Out of those disconnected in the month please show those for whom it is their 2 nd or more disconnection that year					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers reconnected within 24 hours					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers reconnected within 24-48 hours					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers reconnected within 48-72 hours					
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Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers reconnected within 72+ hours					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Section 5 – Security Deposits

Number of customers with security desposits					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Section 6 – Notices

Number of customers who received an initial disconnection notice (15 day or similar)					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Number of customers who received a secondary disconnection notice (48 hour or similar)					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

Section 7 – Basic information

Number of active customer accounts in IOU territory					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

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Number of customers involuntarily returned to utility service from CCA					
Month	Non CARE/FERA	CARE	FERA	Medical Baseline	Total

*Please list this information by CCA if possible.

- A list of zip codes within the IOU territory by disconnection rate for that month, descending, Excel format
- A list of zip codes within the IOU territory by total number of disconnections for that month, descending, Excel format (if providing this information would violate customer confidentiality, please blank the affected zip codes for submission to the service list and provide the confidential version to Energy Division)

Section 8 – Interim measures information

- **Please include the calculation for the annual disconnection goal.**
- **Please list any instances in the last quarter in which your utility has invoked temperature related limits on disconnections.**
- **Please list the average amount owed of customers who were disconnected in the previous month.**

(End of Attachment B)

Conclusions of Law

1. The parties in this proceeding have had a reasonable opportunity to comment on the Assigned Commissioner's Scoping Memo, the Workshop Reports, Staff Proposals and assigned ALJ rulings, which form the basis for this decision.

2. Previously, there was a rise in the rate of residential customer disconnections throughout the service territories of California-jurisdictional utilities. In D.18-12-013, the Commission adopted various interim rules which helped to reduce the number of disconnections. Therefore, it is reasonable to adopt and make permanent some of the interim rules as set forth in D.18-12-013 and as modified by this decision.

3. Because the smaller IOUs may have unique circumstances and other challenges, it is appropriate to apply these rules only to the larger IOUs.

4. Phase 1A of this proceeding should be conducted later to determine which rules shall apply to the smaller IOUs.

5. The rules adopted in this decision recognize the intent and directives set forth in Senate Bill 598, as described in the Order Instituting Rulemaking for this proceeding.

6. In line with the provisions of SB 598, it is reasonable to impose restrictions prohibiting disconnections of customers who qualify for medical baseline , if the customer agrees to a payment plan.

7. It is reasonable to prohibit the energy utilities from disconnecting residential electricity customers when temperatures above 100 degrees or below 32 degrees are expected based on a 72-hour look-ahead period. For this purpose,

harder for it—or that women are paid less because they deserve less? Do we have the audacity to point to housekeepers with skin peeling from chemicals or berry pickers who can no longer stand up straight or the millions of other poor working Americans and claim that they are stuck at the bottom because they are lazy? “I’ve worked hard to get where I am,” you might say. Well, sure. But we know that untold numbers of poor people have worked hard to get where they are, too.³⁷

Even in our personal lives, we see people getting ahead not because of their gumption and effort but because they are tall or attractive or know a guy or received a fat inheritance. A brilliant coworker is passed over for a promotion, while someone with dimmer lights is given the corner suite. A family falls on hard times after a gutting medical diagnosis or a car crash. Our lives are tangibly impacted in countless ways—not only by things beyond our control but also by the relentless irrationality of the world. Every day we confront the capriciousness of life, the unfair, stupid ways our future is determined by background or chance.

Most of us believe that working hard helps us get ahead—because of course it does—but most of us also recognize that advantages flow from being white or having highly educated parents or knowing the right people. We sense that our bootstraps can be pulled up only so far, that self-help platitudes about grit and self-control and putting in the hours is fine advice for our children, but it’s no substitute for a theory of how the world works. For as long as there has been poverty alongside great wealth, the winners have cultivated rationalizations for that arrangement. *Those who remain poor haven’t tried hard*

enough. Welfare creates long-term dependency. Expanding opportunity to the poor is an act of destruction, leading to socialism and tyranny. Such propaganda was repeated not because these ideas persuaded us but because they organized us, allowing us to avoid a more painful truth, which is that our lives are interlaced with the lives of the poor.³⁸ But these old tropes and stereotypes are dying. We’ve seen through them. Most Democrats and most Republicans today believe that poverty is caused by unfair circumstances, not by a lack of work ethic.³⁹

This brings us to the third possible explanation for why we accept the current state of affairs: We like it.

It’s the rudest explanation, I know, which is probably why we cloak it behind all sorts of justifications and quick evasions. But as the civil rights activist Ella Baker once put it, “Those who are well-heeled don’t want to get un-well-heeled,” no matter how they came by their coin. Frankly, tax breaks are nice to have if you can get them. In 2020, the mortgage interest deduction allowed more than 13 million Americans to keep \$24.7 billion. Homeowners with annual family incomes below \$20,000 enjoyed \$4 million in savings, and those with annual incomes above \$200,000 enjoyed \$15.5 billion. Also in 2020, more than 11 million taxpayers deducted interest on their student loans, saving low-income borrowers \$12 million and those with incomes between \$100,000 and \$200,000 \$432 million. In all, the top 20 percent of income earners receives six times what the bottom 20 percent receives in tax breaks. Money granted by bizarre government subsidies is still money, and once we have it, we prefer to keep it.⁴⁰

Help from the government is a zero-sum affair. The big-

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gest government subsidies are not directed at families trying to climb out of poverty but instead go to ensure that well-off families stay well-off. This leaves fewer resources for the poor. If this is our design, our social contract, then we should at least own up to it. We should at least stand up and profess, *Yes, this is the kind of nation we want*. What we cannot do is look the American poor in the face and say, *We'd love to help you, but we just can't afford to*, because that is a lie.

CHAPTER 6

HOW WE BUY OPPORTUNITY

IN THE EARLY AUGHTS, BEFORE THE FINANCIAL CRISIS, OUR newspapers announced that the country was entering a Second Gilded Age. In October 2007, *The New York Times Magazine* ran a cover featuring a gold-plated manhole cover, as if New Yorkers were shitting money. That narrative was incomplete, of course, but it contained a blunt truth that Americans today seem bent on avoiding: that many of us are rich.¹ Colossally rich. In 2020, Americans bought more than 310,000 new powerboats. We spent over \$100 billion on our pets and over \$550 billion on leisure travel—down from \$723 billion the previous year, owing to COVID-19. Our cars are bigger than everyone else's in the world. Our homes are, too. You could fit three newly built English homes into the average new American home. More than one in eight American families own property besides their primary residence, including second homes and timeshares.²

We are much richer than citizens of other countries, including other wealthy ones, and we're much richer than our forebearers. And yet, the dominant mood among the Ameri-

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neada.org

Winter and COVID-19 Utility Shut-off Moratoriums - NEADA.ORG

Scott Dukart

8–10 minutes

If this was a normal year, 40 states would have implemented some form of utility shutoff moratoriums during the winter months to protect customers from losing their home heating when the temperature drops. Under normal circumstances, these policies can be difficult to track since they vary between states. This year, the addition of temporary shutoff moratoriums put in place to protect customers affected by the pandemic has muddied the waters even further. As spring approaches and many winter moratoriums end, millions of utility customers are finding themselves unprotected by moratoriums for the first time in over a year. This is a list of all utility actions and state-mandated moratoriums that NEADA is aware of at the time of release. Please contact Mark Wolfe (mwolfe@neada.org) or Cass Lovejoy (clovejoy@neada.org) with questions and Elizabeth Eagles (eeagles@neada.org) with additions or updates with source documentation.

1. **How many people were covered by COVID moratoriums on utility shutoffs?**

Over the summer and into the fall of 2020, a patchwork of states implemented temporary moratoriums to prevent shutoffs for customers affected by the pandemic. Some moratoriums were

extended beyond their initial end dates to coincide with annual winter shutoff moratoriums that many states implement every year to protect customers during cold winter months. Others were allowed to expire.

Table 1. Population covered by COVID-19 moratoriums, Jul. – Oct. 2020

	31-Jul	31-Aug	30-Sep	31-Oct
Population covered	184,944,156	155,527,034	138,112,481	131,102,944
% of U.S. covered	56%	48%	42%	40%

2. Projected population covered by utility moratoriums January 31 – April 30, 2021

The number of people protected from utility shutoffs is projected to decrease as annual winter moratoriums begin to expire in March and April of 2021. There are three types of state moratoriums currently at play: 1) emergency COVID-19 moratoriums that were first implemented in the spring and summer, 2) annual date-based winter moratoriums that cover all customers for a set period of time, and 3) temperature-based winter moratoriums, which only prevent utility shut-offs when the temperature drops below a certain threshold. Table 2 shows the actual and projected number of people covered by COVID-19/date-based winter moratoriums. We have combined these because they provide guaranteed coverage for a set time period. Table 3 shows the actual and projected number of people covered by temperature-based winter moratoriums, which only provide temporary protection during cold snaps.

Table 2. Projected population covered by COVID-19/date-based

utility moratoriums, January – April 2021

	31-Jan (actual)	28-Feb (actual)	31-Mar (projected)	30-Apr (projected)
Population covered	185,786,993	185,786,993	174,061,751	107,094,655
% of U.S. covered	57%	57%	53%	33%

Table 3. Projected population covered by temperature-based utility moratoriums, January – April 2021

	31-Jan (actual)	28-Feb (actual)	31-Mar (projected)	30-Apr (projected)
Population covered	104,354,835	104,354,835	93,737,412	51,665,872
% of U.S. covered	32%	32%	29%	16%

3. Active Moratoriums

The intersection of COVID and annual winter moratoriums complicates matters significantly. Some states that had COVID moratoriums in place extended them until winter date-based moratoriums went into effect. Others let theirs lapse for a month or more before winter set in. Some states that would normally have temperature-based moratoriums are still operating under COVID shutoff bans that protect customers regardless of the weather. And then there are states that do not normally have an annual winter shutoff moratorium, some of which have ongoing COVID moratoriums, while others either never had any or let them expire. A full list of COVID and winter shutoff moratoriums, including start and end dates, can be found at the bottom of the page.

Type of moratorium	Count	States
No active COVID-19 or winter moratorium	11	Alaska, Florida, Georgia, Idaho, Indiana, Kentucky, Louisiana, North Dakota, Oregon, Utah, West Virginia
Active annual winter moratorium (no additional COVID protection)	10	Alabama ⁺ , Arizona ⁺ , Michigan, Minnesota, Missouri ⁺ , Nebraska, Nevada ⁺ , Oklahoma ⁺ , South Dakota, Wyoming ⁺
Moratoriums that will expire between March and July of 2021	27	Arkansas, California, Colorado, Connecticut, Delaware ⁺ , Hawaii, Illinois ⁺⁺ , Iowa ⁺⁺ , Kansas ⁺⁺ , Maine, Maryland ⁺ , Massachusetts, Mississippi*, Montana ⁺⁺ , New Hampshire*, New Jersey*, New Mexico, North Carolina*, Ohio*, Pennsylvania*, Rhode Island*, South Carolina ⁺ , Tennessee ⁺ , Texas ⁺ , Vermont, Washington, Wisconsin
Indefinite COVID moratoriums	3	DC, New York, Virginia

⁺ States that only have temperature-based winter moratoriums.

*States with an unprotected gap between COVID-19 moratoriums and winter moratoriums.

When do COVID-19 and winter utility moratoriums start and end in each state?

	COVID-19 Start Date	COVID-19 End Date	Winter Start Date	Winter End Date	Temperature based?
Alabama					≤32° F
Alaska	4/9/20	11/15/20			
Arizona					≤32° F
Arkansas	4/10/20	5/3/21	11/1/20	3/31/21	≤32° F
California	3/16/20	6/30/21			
Colorado	3/20/20	6/12/21			
Connecticut	3/12/20	10/31/20	11/1/20	5/1/21	
Delaware	3/24/20	11/1/20	11/15/20	4/15/21	≤20° F
DC	3/17/20	15 days after emergency			≤32° F
Florida					
Georgia			11/15/20	3/15/21	≤32° F
Hawaii	3/27/20	3/31/21			
Idaho			12/1/20	2/28/21	
Illinois	3/18/20	8/1/20	12/1/20	3/31/21	≤32° F
Indiana	3/19/20	8/14/20 (protections till 10/14/20)	12/1/20	3/15/21	

Iowa	3/13/20	7/1/20	11/1/20	4/1/21	≤20° F
Kansas	3/16/20	5/31/20	11/1/20	3/31/21	≤35° F
Kentucky	3/16/20	11/6/20			
Louisiana	3/13/20	7/16/20			
Maine	3/16/20	11/1/20	11/15/20	4/15/21	
Maryland	3/16/20	11/15/20	11/1/20	3/31/21	If 72 hr. forecast is ≤32° F
Massachusetts	3/13/20	7/1/21	11/15/20	3/15/21	
Michigan			11/1/20	3/31/21	
Minnesota			10/15/20	4/15/21	
Mississippi	3/15/20	6/14/20	12/1/20	3/31/21	
Missouri			11/1/20	3/31/21	≤32° F
Montana	3/30/20	6/30/20	11/1/20	4/1/21	≤32° F at 8an or in forecast
Nebraska			11/1/20	3/31/21	
Nevada					≤20° F
New Hampshire	3/17/20	7/15/20	11/15/20	3/31/21	
New Jersey	10/15/20	6/30/21	11/15/20	3/15/21	
New Mexico	3/19/20	Large IOUs (>100,00 meters) under moratorium	11/15/20	3/15/21	

		until 5/14/21 followed by 90-day transition period. Water utilities and smaller gas and electric under moratorium until 3/20/21 with 45-day transition period.			
New York	3/13/20	180 days after emergency or 3/31/21	11/1/20	4/15/21	<32° F
North Carolina	3/31/20	8/31/20	11/1/20	3/31/21	
North Dakota					
Ohio	3/13/20	4/1/20	10/20/20	4/15/21	
Oklahoma			11/15/20	4/15/21	≤32° F day, ≤20° F night
Oregon					
Pennsylvania	3/13/20	11/9/20 if above	12/1/20	3/31/21	

		300% FPL			
Rhode Island	3/17/20	7/17/20 (11/1/20*)	11/1/20	4/30/21	
South Carolina	3/16/20	5/15/20	12/1/20	3/31/21	Forecast ≤32° F for 45 hrs.
South Dakota			11/1/20	3/31/21	
Tennessee	3/31/30	8/29/20			<32° F
Texas	3/26/20	8/31/20, (9/30/20*)			≤32° F
Utah			11/15/20	3/15/21	
Vermont	3/18/20	Ended 10/15/20, then on 12/22/20, was extended through 3/31/21	11/1/20	3/31/21	≤10° F, ≤32° F for elderly
Virginia	3/16/20	Ended 10/5/20, then on 11/18/20, was extended until 60 days after emergency			
Washington	3/19/20	7/31/21	11/1/20	3/31/21	

West Virginia					
Wisconsin	3/13/20	11/1/20	11/1/20	4/15/21	
Wyoming			11/1/20	4/30/21	≤32° F

*Extended moratorium for qualified low-income customers

Note: the above table is only meant to provide a generalized summary of temperature-based moratoriums, which in some states, have a number of caveats and further age/income restrictions. For a comprehensive list of temperature-based moratoriums, visit <https://liheapch.acf.hhs.gov/Disconnect/SeasonalDisconnect.htm>

BACKGROUND

Since 2012, California law has declared that every person in the state has a right to clean, safe, and affordable drinking water. And, it is incontrovertible that the lack of electrical power puts residents at an extreme disadvantage and potential risk of harm.

Low-Income communities and communities of color such as South LA, East Los Angeles, portions of the San Fernando Valley, and the Harbor are disproportionately impacted by high utility burdens, arrearages, and water or power shut-offs.

Our own data shows that majority Black and LatinX communities were nearly 2.5 and 2 times, respectively, more likely to experience shutoffs than majority white communities. Black and Latino-majority communities also generally experience the longest shut-off durations.

These impacts are exacerbated by the ongoing economic and climate crisis, as seen with the recent heat storms that spread across the City. Utility burden and shut-offs are symptoms of broader structural and systemic disparities, such as redlining and lack of economic and community development, that have created and reinforced inequality.

Against this backdrop, LADWP has made a commitment to equity and seeks to ensure baseline protections for its customers as we work to achieve utility debt relief, affordable rates, a just clean energy transition, and better customer service. Notably, as part of its commitment, LADWP participated in the US Water Alliance's Preventing Shutoffs for Low-Income Households pilot project in partnership with SCOPE and South LA community members, which included extensive analysis of utility shut-off data, community impacts, and recommended strategies to discontinue utility shutoff as a debt collection practice with respect to low-income customers.

A review of customer bill paying patterns before, during and after the COVID shutoff moratorium revealed that low income customers continued to pay their utility bills at a rate equal to or higher than the overall customer base. And, based on its review of publicly available data, researchers from the UCLA Luskin Center for Innovation and UCLA Institute of the Environment currently supporting the Department's LA 100 Equity Strategies effort concluded that service shut off of low-income customers is not plausibly justified as a revenue recovery imperative.

At our September 27, 2022, Board Meeting, LADWP staff shared plans to restart shut-offs for residential non-discount customers in May 2023 and residential discount customers in September 2023 in addition to efforts to develop and deploy a range of programs intended to offer more robust support for economically vulnerable customers.

**MOTION TO DISCONTINUE SHUT-OFFS AS AN ACCOUNT
MANAGEMENT/COLLECTION TOOL FOR CUSTOMERS ENROLLED IN LADWP
EZ-SAVE AND LIFELINE DISCOUNT PROGRAMS**

**I move that the Board of Water and Power Commissioners instruct the
Department to:**

1. Discontinue collection-related water and power shutoffs aimed at low-income residential customers enrolled in LADWP EZ-SAVE, Lifeline and related assistance programs; and continue to ramp up efforts to secure utility debt relief, improve affordability, pursue equitable decarbonization efforts, provide comprehensive customer service, and increase pathways to family-sustaining union jobs at LADWP.
2. Prioritize customers who would have been at risk of disconnection prior to the adoption of this motion for a “Customer Consultation” as part of the Department’s recently adopted program.
3. Discontinue water and power shutoffs for all customers during extreme weather events. [Implementation of this provision should be set to localized climate conditions in the City of Los Angeles and approved by this Board at a future meeting].
4. Increase marketing and communication efforts, with a combination of both paid and earned media, directed at targeted customers/communities to meaningfully increase awareness and enrollment in EZ-SAVE, Lifeline and related programs, including but not limited to “level pay” and report to the Board semi-annually on results.
5. Through the Office of Diversity, Equity, and Inclusion, develop and implement sustainable partnerships with community-based organizations to meaningfully leverage and enhance communication and outreach efforts to targeted customers/communities regarding LADWP programs related to both debt relief and sustainability and report to the Board annually on results. CBO’s serving on the Equity Strategies Steering Committee should be prioritized for partnership consideration.
6. Explore the feasibility of adopting a policy to extend additional shutoff protections to small commercial customers and customers in the top 20% highest scoring census tracts under CalEnviroScreen 4.0.

When using these data, please cite: Sanya Carley and David Konisky, 2023, "Utility Disconnections

For questions about these data, please email: enjab@indiana.edu

Date and Time of Download: 05/02/2024 22:47:47

State	Cold-based protections	Date-based protections	Temperature-based protections
Alabama	Yes	No	Yes
Alaska	No	No	No
Arizona	No	No	No
Arkansas	Yes	No	Yes
California	Yes	No	Yes
Colorado	Yes	No	Yes
Connecticut	Yes	Yes	No
Delaware	Yes	Yes	Yes
District of Columbia	Yes	No	Yes
Florida	No	No	No
Georgia	Yes	Yes	Yes
Hawaii	No	No	No
Idaho	Yes	Yes	No
Illinois	Yes	Yes	Yes
Indiana	Yes	Yes	No
Iowa	Yes	Yes	Yes
Kansas	Yes	Yes	Yes
Kentucky	Yes	Yes	No
Louisiana	Yes	No	Yes
Maine	Yes	Yes	Yes
Maryland	Yes	Yes	Yes
Massachusetts	Yes	Yes	No
Michigan	Yes	Yes	No
Minnesota	Yes	Yes	No
Mississippi	Yes	Yes	No
Missouri	Yes	No	Yes
Montana	Yes	Yes	Yes
Nebraska	No	No	No
Nevada	Yes	No	Yes
New Hampshire	Yes	Yes	No
New Jersey	Yes	Yes	Yes
New Mexico	Yes	Yes	No
New York	Yes	Yes	No
North Carolina	Yes	Yes	No
North Dakota	No	No	No
Ohio	Yes	Yes	No
Oklahoma	Yes	No	Yes
Oregon	Yes	No	Yes
Pennsylvania	Yes	Yes	No
Rhode Island	Yes	Yes	No
South Carolina	Yes	Yes	No
South Dakota	Yes	Yes	No
Tennessee	No	No	No
Texas	Yes	No	Yes
Utah	No	No	No
Vermont	Yes	Yes	Yes
Virginia	No	No	No
Washington	Yes	Yes	No
West Virginia	Yes	No	Yes
Wisconsin	Yes	Yes	No
Wyoming	Yes	Yes	Yes

When using these data, please cite: Sanya Carley and David Konisky, 2023, "Utility Disconnections

For questions about these data, please email: enjlal@indiana.edu

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State	Heat-based protections	Date-based protections	Temperature-based protections
Alabama	No	No	No
Alaska	No	No	No
Arizona	Yes	No	No
Arkansas	Yes	No	Yes
California	Yes	No	Yes
Colorado	Yes	No	Yes
Connecticut	No	No	No
Delaware	Yes	Yes	Yes
District of Columbia	Yes	No	Yes
Florida	No	No	No
Georgia	Yes	No	No
Hawaii	No	No	No
Idaho	No	No	No
Illinois	Yes	No	Yes
Indiana	No	No	No
Iowa	No	No	No
Kansas	No	No	No
Kentucky	No	No	No
Louisiana	Yes	No	No
Maine	No	No	No
Maryland	Yes	No	Yes
Massachusetts	No	No	No
Michigan	No	No	No
Minnesota	Yes	No	No
Mississippi	Yes	No	No
Missouri	Yes	Yes	Yes
Montana	No	No	No
Nebraska	No	No	No
Nevada	Yes	No	Yes
New Hampshire	No	No	No
New Jersey	Yes	No	Yes
New Mexico	No	No	No
New York	No	No	No
North Carolina	No	No	No
North Dakota	No	No	No
Ohio	No	No	No
Oklahoma	Yes	No	Yes
Oregon	Yes	No	No
Pennsylvania	No	No	No
Rhode Island	Yes	No	No
South Carolina	No	No	No
South Dakota	No	No	No
Tennessee	No	No	No
Texas	Yes	No	No
Utah	No	No	No
Vermont	No	No	No
Virginia	No	No	No
Washington	Yes	No	Yes
West Virginia	No	No	No
Wisconsin	Yes	No	No
Wyoming	No	No	No

When using these data, please cite: Sanya Carley and David Konisky, 2023, "Utility Disconnections Dashboard," Energy Justice Lab

For questions about these data, please email: enjab@indiana.edu

Date and Time of Download: 05/02/2024 22:47:47

State	Young Individuals	Medical Condition Individuals	Elderly People	Individuals with Disabilities	Military Veterans
Alabama	No	No	No	No	No
Alaska	No	Yes	Yes	Yes	No
Arizona	No	Yes	No	No	No
Arkansas	No	Yes	Yes	Yes	No
California	No	Yes	No	No	Yes
Colorado	No	Yes	No	No	No
Connecticut	No	Yes	No	No	No
Delaware	No	Yes	No	No	Yes
District of Columbia	No	Yes	No	No	No
Florida	No	No	No	No	No
Georgia	No	Yes	No	No	No
Hawaii	No	No	No	No	No
Idaho	Yes	Yes	Yes	No	No
Illinois	No	Yes	No	No	Yes
Indiana	No	Yes	No	No	No
Iowa	No	Yes	No	No	Yes
Kansas	No	No	No	No	No
Kentucky	No	Yes	No	No	No
Louisiana	No	Yes	No	No	Yes
Maine	No	Yes	No	No	No
Maryland	No	Yes	No	No	No
Massachusetts	Yes	Yes	Yes	No	No
Michigan	No	Yes	Yes	No	Yes
Minnesota	No	Yes	No	No	No
Mississippi	No	Yes	No	No	No
Missouri	No	Yes	No	No	No
Montana	No	Yes	Yes	Yes	No
Nebraska	No	Yes	No	Yes	No
Nevada	No	Yes	Yes	Yes	No
New Hampshire	No	Yes	No	No	No
New Jersey	No	Yes	No	No	No
New Mexico	No	Yes	No	No	No
New York	No	Yes	Yes	Yes	No
North Carolina	No	No	Yes	Yes	No
North Dakota	No	Yes	Yes	Yes	No
Ohio	No	Yes	No	No	Yes
Oklahoma	No	Yes	Yes	Yes	No
Oregon	No	Yes	No	No	No
Pennsylvania	No	Yes	No	No	No
Rhode Island	Yes	Yes	Yes	Yes	No
South Carolina	No	Yes	No	No	No
South Dakota	No	Yes	No	No	No
Tennessee	No	Yes	No	No	No
Texas	No	Yes	No	No	No
Utah	No	Yes	No	No	No
Vermont	No	Yes	Yes	No	No
Virginia	No	Yes	No	No	No
Washington	No	Yes	No	No	No
West Virginia	No	No	No	No	No
Wisconsin	Yes	Yes	Yes	Yes	No
Wyoming	No	Yes	No	No	No

When using these data, please cite: Sanya Carley and David Konisky, 2023, "Utility Disconnections Dashboard," Energy Justice Lab

For questions about these data, please email: enjab@indiana.edu

Date and Time of Download: 05/02/2024 22:47:47

State	Must a utility provide written notice?	Must a utility attempt in-person notification?	Must a utility attempt notice by phone?	Minimum number of days' notice prior to shutoff
Alabama	Yes	No	No	5 days
Alaska	Yes	Yes	Yes	15 days
Arizona	Yes	No	Yes	10 days
Arkansas	Yes	No	No	5 days
California	Yes	No	No	10 days
Colorado	Yes	Yes	Yes	12 days
Connecticut	Yes	No	No	13 days
Delaware	Yes	No	Yes	3 days
District of Columbia	Yes	No	No	15 days
Florida	Yes	Yes	No	5 working days
Georgia	Yes	No	No	5 days
Hawaii	Yes	No	No	5 days
Idaho	Yes	Yes	Yes	7 days
Illinois	Yes	No	Yes	10 days
Indiana	Yes	No	No	14 days
Iowa	Yes	Yes	Yes	12 days
Kansas	Yes	No	Yes	10 days
Kentucky	Yes	No	No	10 days
Louisiana	Yes	No	No	5 days
Maine	Yes	Yes	Yes	14 days
Maryland	Yes	Yes	Yes	14 days
Massachusetts	Yes	Yes	Yes	3 days
Michigan	Yes	No	Yes	10 days
Minnesota	Yes	Yes	No	5 days
Mississippi	Yes	No	No	5 days
Missouri	Yes	No	Yes	10 days
Montana	Yes	Yes	Yes	20 days
Nebraska	Yes	No	No	7 working days
Nevada	Yes	Yes	No	10 days
New Hampshire	Yes	Yes	Yes	14 days
New Jersey	Yes	Yes	No	10 days
New Mexico	Yes	No	No	15 days
New York	Yes	Yes	Yes	15 days
North Carolina	Yes	Yes	Yes	10 days
North Dakota	Yes	Yes	No	10 days
Ohio	Yes	Yes	No	14 days
Oklahoma	Yes	No	No	10 days
Oregon	Yes	Yes	Yes	15 days
Pennsylvania	Yes	No	No	10 days
Rhode Island	Yes	No	Yes	10 days
South Carolina	Yes	No	No	10 days
South Dakota	Yes	No	No	10 days
Tennessee	Yes	No	No	7 days
Texas	Yes	No	No	10 days
Utah	Yes	No	No	10 days
Vermont	Yes	Yes	Yes	14 days
Virginia	Yes	No	No	10 days
Washington	Yes	No	Yes	8 days
West Virginia	Yes	No	No	10 days
Wisconsin	Yes	Yes	No	10 days
Wyoming	No	Yes	Yes	7 days

Low-Income Programs

We understand the importance of energy in your life, and our goal is to keep your services turned on. Throughout the year, we work with government agencies and community organizations to offer payment assistance to income-qualified residents.

If you are behind on your energy bill, we will work with you to discuss payment plan options or direct you to [energy assistance agencies](#) in your area. For more information, contact us at **(800) 477-4747**.

How to Apply

[This video](#) describes which documents and information you will need to provide when applying for energy assistance.

Federal Poverty Guidelines

To receive specific types of energy assistance, we allow your income to be at or above a certain percentage of the [Federal Poverty Guidelines](#).

Number of Household Members	2023-2024 Federal Poverty Guidelines
1	\$14,580
2	\$19,720
3	\$24,860
4	\$30,000
5	\$35,140
6	\$40,280
7	\$45,420
8	\$50,560
Add \$5,140 for each additional household member.	

Income Eligibility

Based on your income, you could qualify for energy assistance or a payment plan to help pay your past-due balance or current bill.

Within the table below, determine the number of members in your household and then your monthly or yearly income. Then decide if you might qualify for a specific type of energy assistance or payment plan.

Type of Energy Assistance	Home Heating Credit	SER ¹ LSP ² THAW ³ MCA ⁴ Salvation Army RIA Credit	Shutoff Protection Plan
Number of Household Members	Annual Income	Monthly Income	Monthly Income
1	\$16,038	\$1,823	\$2,430
2	\$21,692	\$2,465	\$3,287
3	\$27,346	\$3,108	\$4,143
4	\$33,000	\$3,750	\$5,000
5	\$38,654	\$4,393	\$5,857
6	\$44,308	\$5,035	\$6,713
7	\$49,962	\$5,678	\$7,570
8	\$55,616	\$6,320	\$8,427
For each additional person add	\$5,654	\$643	\$857

¹State Emergency Relief

²Low-Income Self-Sufficiency Plan

³The Heat and Warmth Fund

⁴Michigan Community Action

Some non-profit agencies may provide assistance to households with a higher income level than listed above. Contact the specific agency for details.

You can also call United Way of Southeastern Michigan at 211 or (844) 211-4994 or United Way of Jackson County at (517) 741-0202.

⌵ Affordable Connectivity Program (ACP)

⌵ Earned Income Credit

⌵ Energy Efficiency Assistance Program

⌵ Federal – Earned Income Tax Credit

⌵ The Heat and Warmth Fund

⌵ Home Heating Credit

⌵ Lifeline

⌵ Michigan 2-1-1

⌵ Michigan Community Action

⌵ Michigan Homeowner Assistance Fund (MIHAF)

⌵ Michigan Veterans Trust Fund Emergency Grant Program

Residential Income Assistance Credit

If you are below 150% of the federal poverty level, you may qualify for a \$8.50 per month credit on your electric account and/or a \$13.50 per month credit on your gas account.

To determine eligibility for the Residential Income Assistance credit, the following documentation is required for income verification and can be submitted using our **Document Submission Portal**. Allow for 48 -72 hours for processing of documentation.

1. Identification for all members of the household who are 18 years or older including the DTE account holder (Valid ID and Social Security Cards are both required):
 - Valid Michigan or government-issued photo ID (Driver's License, City-Issued Photo ID, State ID, Passport, etc). Note: Due to COVID and delays in renewing licenses, etc, IDs that expired after February 2020 will be accepted at this time.
 - Social Security Cards for all members in the household regardless of the age including the DTE account holder.
2. Proof of income for all members of the household 18 years or older including the DTE account holder (choose from one of the following):
 - Two (2) most recent copies of paychecks or pay stubs. Pay stubs greater than 60 days old will not be accepted.
 - Unemployment compensation benefit check stubs or benefit statements
 - SSI Statement for current year
 - MDHHS Benefit Letter
 - Copy of HHC Energy Draft for current year. Note: We will accept a copy of an HHC Energy Draft if gas is with another utility provider.

If qualified and enrolled, income must be verified every 12 months to continue receiving the credit.

⌵ The Salvation Army

⌵ State Emergency Relief Program

⌵ Wayne County – Foreclosure Prevention

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **DTE
ELECTRIC COMPANY** for authority to
increase its rates, amend its rate schedules
and rules governing the distribution and
supply of electric energy, and for
miscellaneous accounting authority

Case No. U-21534

ALJ Sally Wallace

PROOF OF SERVICE

I, Mark N. Templeton, certify that an electronic copy of the Accompanying Exhibits DAO-137 to DAO-163 (Part 5 of 5) for the Direct Testimony of Justin Schott on Behalf of Soulardarity and We Want Green, Too was served on the following on July 26, 2024.

Name/Party	E-mail Address
Administrative Law Judge Hon. Sally Wallace	wallaces2@michigan.gov
DTE Electric Company Jon P. Christinidis Paula Johnson-Bacon John A. Janiszewski Andrea E. Hayden Breanne K. Reitzel	jon.christinidis@dteenergy.com paula.bacon@dteenergy.com john.janiszewski@dteenergy.com andrea.hayden@dteenergy.com breanne.reitzel@dteenergy.com mpscfilings@dteenergy.com
Michigan Attorney General Joel King	ag-enra-spec-lit@michigan.gov kingj38@michigan.gov
Michigan Public Service Commission Staff Monica M. Stephens Amit T. Singh Heather M.S. Durian Michael J. Orris Lori Mayabb	stephensm11@michigan.gov singha9@michigan.gov durianh@michigan.gov orrism@michigan.gov mayabbl@michigan.gov
The City of Ann Arbor, Michigan Municipal Association for Utility Issues Valerie Jackson Valerie J.M. Brader	valeriejackson@rivenoaklaw.com valerie@rivenoaklaw.com
Electrify America, LLC Jennifer A. Morante Stephen Bright	jmorante@grsm.com steve.bright@electrifyamerica.com

Michigan Environmental Council, Citizens Utility Board of Michigan, Natural Resources Defense Council, Sierra Club Christopher M. Bzdok Tracy Jane Andrews Breanna Thomas	chris@tropospherelegal.com tjandrews@tropospherelegal.com breanna@envlaw.com
Michigan Energy Innovation Business Council, Institute for Energy Innovation, Advanced Energy United, The Foundry Association of Michigan, and Energy Michigan, Inc. Laura A. Chappelle Justin K. Ooms Timothy J. Lundgren	lochappelle@potomacclaw.com jooms@potomacclaw.com tlundgren@potomacclaw.com
The Ecology Center, The Environmental Law & Policy Center, Union of Concerned Scientists, and Vote Solar Nicholas Wallace Daniel Abrams Alondra Estrada Carolyn Boyce	nwallace@elpc.org dabrams@elpc.org astrada@elpc.org cboyce@elpc.org MPSCdocket@elpc.org
The Kroger Company Kurt J. Boehm Jody Kyler Cohn Justin Bieber Michael L. Kurtz	kboehm@bkllawfirm.com jkylercohn@bkllawfirm.com jbieber@energystrat.com
Local 223, Utility Workers Union of America (UWUA), AFL-CIO Benjamin King	bking@michworkerlaw.com
Association of Businesses Advocating Tariff Equity (ABATE) Stephen A. Campbell	scampbell@clarkhill.com
EVgo Services, LLC Nikhil Vijaykar Michael G. Oliva	nvijaykar@keyesfox.com moliva@fosterswift.com
Great Lakes Renewable Energy Association (GLREA) Don L. Keskey Brian W. Coyer	donkeskey@publiclawresourcecenter.com bwcoyer@publiclawresourcecenter.com
International Transmission Company Courtney F. Kissel Richard J. Aaron Olivia R.C.A. Flower Hannah E. Buzolits	ckissel@dykema.com raaron@dykema.com oflower@dykema.com hbuzolits@dykema.com

Michigan Cable Telecommunications Association Sean P. Gallagher	sgallagher@fraserlawfirm.com
PROTEC (The Michigan Coalition to Protect the Public Rights of Way) Michael J. Watza	mike.watza@kitch.com
Walmart, Inc. Melissa M. Horne	mhorne@hcc-law.com
Soulardarity and We Want Green, Too Amanda Urban Mark Templeton Jacob Schuhardt Sam Heppell Madison S. Wilson	t-9aurba@lawclinic.uchicago.edu templeton@uchicago.edu jschuhardt@uchicago.edu heppell@uchicago.edu madisonswilson@uchicago.edu aelc_mpssc@lawclinic.uchicago.edu

The statements above are true to the best of my knowledge, information, and belief.

UNIVERSITY OF CHICAGO LAW SCHOOL
ABRAMS ENVIRONMENTAL LAW CLINIC
Counsel for Soulardarity and
We Want Green, Too

Date: July 26, 2024

Sincerely,



Mark N. Templeton, *pro hac vice*
6020 S. University Avenue
Chicago, IL 60637
Phone: (773) 702-9611
Email: templeton@uchicago.edu