Michigan Energy Waste Reduction and Demand Response 2021 to 2040 Potential Study – Residential Survey

Prepared for:

LARA
MPSC

State of Michigan Public Service Commission

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Residential Survey Overview

The primary objective of this survey is to collect information on customer awareness and willingness to pay for EWR and DR measures from MI residential utility customers. Guidehouse will use the survey results to inform the development of market acceptance and adoption forecasts. Additional secondary research objectives, included in the following table, have been incorporated into the survey to provide datapoints the research team will use to guide calibration of the EWR and DR potential models.

Topic	Survey Questions
Introduction	INTRO1
EWR Awareness	AWARE_EWR_LOW – AWARE_EWR_HIGH
EWR Willingness to Pay	EWR_WILLINGNESS_LOW – EWR_WILLINGNESS_HIGH
DR Awareness	AWARE_DR1 – AWARE_DR_EVBTM
DR Willingness to Participate	DR_WILLINGNESS_TSTAT1 – DR_WILLINGNESS_RES1
COVID-19 Impacts	COVID_EWR – COVID_DR
Recent Energy Use Actions	ACTIONS
Decision Factors	DECISIONS
Barriers	BARRIERS
Demographics	DEM1 – DEM7

Sample Variables

This table presents the sample file variables required for fielding.

Survey Variables	Description	Source
UTILITY	The customer's utility company	Utility tracking data

Sample

This table outlines Guidehouse's sampling techniques.

Topic	Description	Population
Sample size	What is the target number of completes?	500 completes
Stratification	Is the sample stratified?	The sample will be designed to achieve a proportionate mix of customers from each utility and will be stratified by Upper and Lower Peninsula.
Incentives	Any incentives or persuasion techniques?	$15; customers will be offered an incentive through Tango[1] which allows customers to select an e-gift card from a participating retailer or restaurant (including Amazon.com, CVS or Dunkin' Donuts and more) or an online debit card (Visa® or MasterCard®). Customer's may also choose to donate $15 to a charitable organization instead of receiving the gift card.

[1] https://www.tangocard.com/

Invitation Emails

Initial Invitation Email

Dear _____,

The Michigan Public Service Commission (MPSC) is conducting a study to help understand energy decision-making in Michigan and invites you to complete a brief survey. Your responses will help us improve energy-related programs offered by your utility provider that assist residential customers in saving energy and money, and ultimately benefit the environment.

Please take the survey using the link below.

[Insert survey link]

Your participation in this survey is anonymous and voluntary. Your individual answers will remain confidential and reported only in the aggregate. The survey will take about 15 minutes. As a token of appreciation for completing this survey, respondents who complete the survey will be offered a **$15 e-gift or online debit card,** or can choose to donate $15 to a charitable organization.

The survey is being conducted by Guidehouse, on behalf of the MPSC. If you have any questions about this survey or how your responses to this survey will be used, please contact us at Michigan.EnergyStudy@guidehouse.com.

Sincerely,

Michigan Public Service Commission

First Reminder Email

Dear _____,

The Michigan Public Service Commission (MPSC) recently invited you to complete a 15-minute survey to help us improve energy-related programs offered by your utility provider that assist residential customers in saving energy and money, and ultimately benefit the environment.

Please take the survey using the link below.

[Insert survey link]

As a token of appreciation for completing this survey, respondents who complete the survey will be offered a **$15 e-gift or online debit card,** or choose to donate $15 to a charitable organization.

Your participation in this survey is anonymous and voluntary. Your individual answers will remain confidential and reported only in the aggregate.

The survey is being conducted by Guidehouse, on behalf of the MPSC. If you have any questions about this survey or how your responses to this survey will be used, please contact us at Michigan.EnergyStudy@guidehouse.com.

Sincerely,

Michigan Public Service Commission

Second Reminder Email

Dear _____,

The Michigan Public Service Commission (MPSC) recently invited you to complete a 15-minute survey to help us improve energy-related programs offered by your utility provider that assist residential customers in saving energy and money, and ultimately benefit the environment. This survey will be closing on **[Date]**; don't miss out on this opportunity to contribute!

Please take the survey using the link below.

[Insert survey link]

As a token of appreciation for completing this survey, respondents who complete the survey will be offered a **$15 e-gift or online debit card,** or choose to donate $15 to a charitable organization.

Your participation in this survey is anonymous and voluntary. Your individual answers will remain confidential and reported only in the aggregate.

The survey is being conducted by Guidehouse, on behalf of the MPSC. If you have any questions about this survey or how your responses to this survey will be used, please contact us at Michigan.EnergyStudy@guidehouse.com.

Sincerely,

Michigan Public Service Commission

Survey Body

Introduction

INTRO1 In this survey we will ask you about your awareness of different energy-related technologies and utility programs, and decision-making around energy use in your home. If you are not the best person to answer these questions, please ask another member of your household who makes decisions about your energy bills to complete this survey.

EWR Awareness

AWARE_EWR_LOW **[Low Cost Measure Reference Table. ROTATE, 1 MEASURE PER RESPONDENT]**

[low cost measure description_1]. Before today, were you familiar with **[low cost measure_2]?**

1. Yes
2. No

Low Cost Measure Table

Measure	Low Cost Measure Description_1	Low Cost Measure_2
LED Screw-in General Service Lamp	LED screw-in general service lamps are intended to serve general lighting applications by providing an interior or exterior area with overall illumination. These bulbs have a standard (Edison) base.	LED screw-in general service lamps
Advanced Smart (Tier 2) Power Strip	Advanced smart (Tier 2) power strips have a master and switched plug. When the master plug (a TV or PC) is on, the switched outlets are powered on. When the master plug (a TV or PC) is switched off, the switched outlets and peripherals are powered off. In addition, this power strip has a motion sensor, like those for lights, that turns the master switch off if someone leaves the room for an extended period.	advanced smart (Tier 2) power strips
System with Wi-Fi thermostat	A Wi-Fi thermostat lets users remotely modify heating and cooling settings such as setpoints and schedule, or turn the unit on or off, from a mobile device or website.	Wi-Fi thermostats
Occupancy Sensor	An occupancy sensor is a motion detecting device used to detect the presence of a person (or animal) to automatically control lights.	occupancy sensors
Daylighting Control	Daylighting control systems dim indoor lighting in response to interior daylight levels.	daylighting controls
Low-flow Showerhead	A low-flow showerhead uses two gallons or less of water per minute, saving both water and water heating costs with little to no impact on the user.	low-flow showerheads
Low-flow Faucet Aerator	A low-flow faucet aerator can be added to an existing faucet, saving both water and water heating costs with little to no impact on the user.	low-flow faucet aerators

Commented [ED1]: Guidehouse will include a photo in the survey programming for each EWR measure mentioned throughout this section.

AWARE_EWR_HIGH **[High Cost Measure Reference Table. ROTATE, 1 MEASURE PER RESPONDENT] [high cost measure description_1]**. Before today, were you familiar with **[high cost measure_2]**?

1. Yes
2. No

High Cost Measure Table		
Measure	**High Cost Measure Description_1**	**High Cost Measure_2**
Heat Pump Water Heater	Heat pump water heaters use electricity to move heat from one place to another instead of generating heat directly. Heat pump water heaters pull heat from the surrounding air and transfer it -- at a higher temperature -- into a tank to heat water.	a heat pump water heater
ENERGY STAR Mini-split Heat Pump	ENERGY STAR mini-split heat pumps provide both heating and cooling through a single device – a heat pump. Ductless mini-split heat pumps use an indoor unit connected to an outdoor unit via refrigerant lines. Up to 8 indoor units can be attached to one outdoor unit.	an ENERGY STAR mini-split heat pump
Heat Pump Clothes Dryer	A heat pump clothes dryer works as a closed loop system by heating the air, using it to remove moisture from the clothes and then reusing it once the moisture is removed. Heat Pump clothes dryers don't require ventilation, can reduce energy use by at least 28% compared to standard dryers, and dry laundry at low temperatures, so they are gentler on clothes.[2]	a heat pump clothes dryer
Air Sealing	A home that has air sealing performed has been sealed with caulking or spray foam to prevent the passage of air or water vapor into or out of the home.	a home that has had air sealing performed
ENERGY STAR Front-Loading Clothes Washer	ENERGY STAR front-loading clothes washers use a horizontal or tumble-axis basket to lift and drop clothing into the water, instead of rubbing clothes around a central agitator. These also use faster spin speeds to extract more water from clothes, reducing dryer time and energy use.	an ENERGY STAR front-loading clothes washer
ENERGY STAR Clothes Dryer	ENERGY STAR clothes dryers use approximately 20% less energy than standard models and incorporate advanced features that combine less heat with sensor drying to prevent over drying.	an ENERGY STAR Clothes Dryer

[2] Energy Star, https://www.energystar.gov/products/heat_pump_dryer#:~:text=WHAT%20IS%20A%20HEAT%20PUMP,once%20the%20moisture%20is%20removed.&text=Making%20use%20of%20a%20refrigerant,is%20used%20to%20generate%20heat.

High Cost Measure Table		
Measure	**High Cost Measure Description_1**	**High Cost Measure_2**
High Efficiency Storage Tank Water Heaters	High efficiency storage tank water heaters keep water hot and ready for use at all times in insulated storage tanks with capacities ranging from 20 to 80 gallons[3].	a high efficiency storage hot water heater
High Efficiency Tankless Water Heater	High efficiency tankless water heaters, also known as demand water heaters or instantaneous hot water heaters, circulate water through a large coil that is heated only on demand; there is no storage tank continuously maintaining hot water[4].	a high efficiency tankless hot water heater

EWR Willingness to Pay

EWR_WILLINGNESS_LOW Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be **[list these measures with "Low Cost Measure_2" from AWARE_EWR_LOW first]** LED lamps or an advanced smart (Tier 2) power strip.

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved…

[Randomized option choice, hide lettering from respondent:]	Yes (1) **[Radio button, only one response per row]**	No (2) **[Radio button, only one response per row]**	Don't Know / Not Sure (3) **[Radio button, only one response per row]**
a) $100 per year			
b) $75 per year			
c) $40 per year			
d) $25 per year			
e) $20 per year			
f) $15 per year			
g) $10 per year			

[Depending on the response, eliminate answer options not possible and ask the next possible option. Example: The respondent answers No to answer option f) $15 per year. The No response means

[3] https://www.energystar.gov/ia/new_homes/features/waterhtrs_062906.pdf
[4] https://www.energystar.gov/ia/new_homes/features/waterhtrs_062906.pdf

options f) through g) can be removed. Ask the next possible option starting with e) and proceeding through a) until the respondent answers yes.]

EWR_WILLINGNESS_HIGH Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example: obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be **[list these measures with "High Cost Measure_2" from AWARE_EWR_HIGH first]**, high performance insulation and air sealing, ENERGY STAR Mini Split Heat Pump, Heat Pump Clothes Dryer, Heat Pump Water Heater, ENERGY STAR Front-Loading Clothes Washer, etc.

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved…

[Randomized option choice, hide lettering from respondent:]	Yes (1) **[Radio button, only one response per row]**	No (2) **[Radio button, only one response per row]**	Don't Know / Not Sure (3) **[Radio button, only one response per row]**
a) $1,250 per year			
b) $1,000 per year			
c) $500 per year			
d) $330 per year			
e) $200 per year			
f) $250 per year			
g) $200 per year			
h) $125 per year			
i) $100 per year			

[Depending on the response, eliminate answer options not possible and ask the next possible option. Example: The respondent answers No to answer option g) $200 per year. The No response means options g) through i) are can be removed. Ask the next possible option starting with f) and proceeding through a) until the respondent answers yes.]

DR Program Awareness

Next, we have a few questions about your awareness of Demand Response programs that electric utilities offer or could potentially offer to residential customers.

Demand Response programs reward electricity customers for voluntarily agreeing to reduce energy usage during periods of high electricity demand, which helps keep electricity costs down and allows your utility to supply reliable power at a more affordable rate to all customers.

If you sign up for a Demand Response program offered by your utility, the utility would control your air conditioning and/or heating system energy use during high demand periods (referred to as "demand response events") for a limited time, (usually less than 4 hours), by automatically adjusting your thermostat during those periods. Your usage would be controlled only for a certain maximum number of days in a season (say 10 days in the summer). You can opt-out if you are unable to reduce your energy use during these periods.

An electric utility rewards Demand Response program participants by paying a fixed incentive each summer. Additionally, the utility may offer a one-time incentive for enrolling in the program.

Alternatively, you could also be placed on an electricity rate that gives you a discount on your current rate during nights and on weekends, but is more expensive on weekday afternoons. The utility controls your thermostat to reduce your electricity demand during certain critical peak events when electricity is much more expensive.

AWARE_DR_TSTAT Utilities typically control space cooling/heating system energy use during Demand Response events using a smart thermostat. A smart thermostat learns your patterns and offers the ability to control it from anywhere. Does your household use a smart thermostat?

1. Yes
2. No
3. Don't Know/Not Sure

[If UTILITY = DTE]

AWARE_DR_DTE1 Before today, have you heard of the following demand response programs offered by your utility?

[Radio buttons, only one response per row]	Yes, my household **participates** in the program (1)	Yes, but my household **does not** participate (2)	No (3)	Don't Know / Not Sure (4)
a) **Smart Savers Program** that offers customers who own a smart thermostat a $20 incentive at the end of each summer in exchange for allowing DTE to make minor, short-term adjustments to a participant's thermostat to reduce energy use during periods of high demand for electricity. Participants anticipate at least one adjustment, and a maximum of up to 10 adjustments per summer. Peak demand periods for adjustments typically occur on especially hot days. Adjustments will occur on non-holiday weekdays.				
b) **Dynamic Peak Pricing Rate** is an electricity rate which provides a discount on normal rates during night and on weekends (called off-peak periods), with more expensive rates on weekday afternoons (called peak periods). Participants save money by shifting use to off-peak periods. Participants are notified to reduce				

[Radio buttons, only one response per row]	Yes, my household **participates** in the program (1)	Yes, but my household **does not** participate (2)	No (3)	Don't Know / Not Sure (4)
electricity use during critical peak events, when electricity is much more expensive. The events only occur on weekdays from 3 p.m. to 7 p.m. and are limited to a maximum of 14 occurrences (56 hours) per calendar year. The program offers customers a critical peak rate of $0.95/kWh during events, a normal mid-peak rate of $0.092/kWh and an off-peak rate of $0.048/kWh (50% discount from normal rate).				
c) **SmartCurrents Program** offers customers a free smart thermostat and a Dynamic Peak Pricing Rate with a 50% discounted off-peak rate during nights and weekends. DTE controls the thermostat to automatically reduce usage during critical peak events, when electricity prices are much more expensive at 0.95/kWh. The events only occur on weekdays from 3 p.m. to 7 p.m. and are limited to a maximum of 14 occurrences (56 hours) per calendar year.				

[IF UTILITY = CONSUMERS]

AWARE_DR_CONSUMERS1 Before today, have you heard of the following demand response programs offered by your utility?

[Radio buttons, only one response per row]	Yes, my household **participates** in the program (1)	Yes, but my household **does not** participate (2)	No (3)	Don't Know / Not Sure (4)
a) **Peak Power Savers Smart Thermostat Program** that offers customers an enrollment incentive ($75 for current smart thermostat owners and $175 for customers who purchase a new smart thermostat), plus a $25 incentive at the end of each season. Consumers syncs with a participant's Wi-Fi enabled smart thermostat to learn comfort preferences. On select summer and winter days when electricity demand is high, the thermostat will be adjusted to reduce energy usage. These events are limited to				

[Radio buttons, only one response per row]	Yes, my household **participates** in the program (1)	Yes, but my household **does not** participate (2)	No (3)	Don't Know / Not Sure (4)
fourteen in summer and ten in winter and rarely last more than four hours.				
b) **Peak Power Savers – Critical Peak Pricing Program** that gives a discount on standard rates during night and on weekends (called off-peak periods), with more expensive rates on weekday afternoons (called peak periods). Participants save money by shifting electricity use to off-peak periods. Participants are notified to reduce electricity use during critical peak events, when electricity is much more expensive. Participants receive a 33% discount on the off-peak rate over standard rates with a critical peak rate of $0.95/kWh. These events can occur up to 14 times per year on weekdays from June – September from 2-6 p.m.				
c) **Peak Power Savers – Peak Time Rewards Program** that offers customers the opportunity to earn bill credits by shifting energy use to times when costs are lower. Participants are notified on up to 14 select Energy Savings Days during the Summer (June-September) to shift energy away from 2-6 p.m., and there is no penalty if customers are unable to shift. These Energy Savings Days can occur up to 14 times per year on weekdays from June – September from 2-6 p.m.				

AWARE_DR_GENERAL Before today, have you heard of any of the following demand response program type(s) that utilities may offer to customers?

	Yes (1) **[Radio button, only one response per row]**	No (2) **[Radio button, only one response per row]**	Don't Know / Not Sure (3) **[Radio button, only one response per row]**
[If UTILITY IS NOT DTE OR CONSUMERS] a) **Smart Thermostat Bring Your Own Thermostat (BYOT) programs** offer customers who already own a smart thermostat a fixed payment per season (typically $20-$25) for allowing the utility to remotely control the thermostat			

on hot summer and cold winter days, when demand for electricity is highest. The utility may also offer an upfront payment for enrolling in the program. The utility will typically control the thermostat for a limited number of hours per season (could be limited to fourteen in summer and ten in winter with a maximum four-hour duration). The utility may automatically pre-cool or pre-heat the home before an event, and notify participant's in advance of events, with the option to opt-out of events at any time.			
[If UTILITY IS NOT DTE OR CONSUMERS] b) **Critical Peak Pricing programs** in which the utility offers an electricity rate that gives customers discounted electricity prices during off-peak periods, which are usually nights and weekends. Electricity rates are higher during peak periods when electricity demand is high, and customers save money by shifting usage to off-peak periods (nights and weekends). The utility notifies customers to reduce usage during critical peak events when electricity is much more expensive, limited to a maximum number of hours per season or year. The utility may offer customers a free smart thermostat and control it to reduce energy use during critical peak events.			
[If UTILITY IS NOT CONSUMERS] c) **Peak time rebates** offer customers the ability to receive a payment on reduced electricity usage during critical peak periods when electricity demand is high, and consequently electricity is more expensive. Participation is optional, and customers receive an energy payment ($/kWh) based on reduced electricity usage during the event.			

AWARE_DR_EVBTM Finally, before today, have you heard of the below type of demand response program that other utilities may offer to customers?

Program type	Yes (1) **[Radio button, only one response per row]**	No (2) **[Radio button, only one response per row]**	Don't Know / Not Sure (3) **[Radio button, only one response per row]**
a) **Electric Vehicle Load Control programs** are offered to customers who own a plug-in electric vehicle and charge at home. Participants agree to let the utility shift			

Program type	Yes (1) **[Radio button, only one response per row]**	No (2) **[Radio button, only one response per row]**	Don't Know / Not Sure (3) **[Radio button, only one response per row]**
charging from periods of high demand to periods of lower demand (nights or weekends) in exchange for an upfront payment, plus an ongoing participation payment from the utility.			
b) **Behind-the-meter battery programs** are offered to customers with on-site behind-the-meter battery storage systems (e.g., a battery charged by an on-site solar system). Participants agree to let the utility control the charging and discharging of the battery during events when electricity demand is the highest, in exchange for an upfront payment and/or an ongoing participation payment from the utility.			

DR Willingness to Participate

[If respondent doesn't already participate in a smart thermostat program (AWARE_DR_DTE1_a IS NOT = 1 and AWARE_DR_CONSUMERS1_a IS NOT = 1)]

DR_WILLINGNESS_TSTAT1 Next, if your utility offers a(n) **[Thermostat DR Option]** program that **[Thermostat Option Description]**.

How likely would your household be to participate in this type of program if you received a **[Incentive Detail]**?

1. Not at all likely
2. Slightly likely
3. Somewhat likely
4. Very likely
5. Extremely likely
6. Not sure/don't know

Thermostat DR Option	Thermostat Option Description	Incentive Detail
a) **[If customer already has a smart thermostat (AWARE_DR_TSTAT = 1)]** Smart Thermostat BYOT	offers customers who already own a smart thermostat a fixed payment per season (typically $20-$25) for allowing the utility to remotely control the thermostat on hot summer and cold winter days when demand for electricity is highest. The utility may also provide an upfront incentive for signing up in the program.	one-time $75 sign-up bonus plus $25 per season you participate

Thermostat DR Option	Thermostat Option Description	Incentive Detail
(Bring Your Own Thermostat)	The utility will control the participant's thermostat for a limited number of hours per season (limited to fourteen in summer and ten in winter with maximum four-hour duration). The utility may automatically pre-cool or pre-heat the home before an event and notify participants in advance of event, with the option to opt-out of events at any time.	
b) **[If customer DOES NOT already have a smart thermostat (AWARE_DR_TSTAT = 2)]** Energy Efficiency and Smart Thermostat BYOT (Bring Your Own Thermostat)	offers customers who do not already have a smart thermostat an incentive payment to purchase one through an energy efficiency program. The utility then offers a BYOT demand response program in which customers receive a fixed payment per season (typically $20-$25) for allowing the utility to remotely control the thermostat on hot summer and cold winter days when demand for electricity is highest. The utility will control the thermostat for a limited number of hours per season (could be limited to fourteen in summer and ten in winter with maximum four-hour duration). The utility may automatically pre-cool or pre-heat the home before an event and notify participants in advance of events, with the option to opt-out of events at any time	one-time discount of up to $175 for the purchase of a smart thermostat, and $25 per season you participate (paid at the end of each season) in the BYOT demand response program

[If customer already has a smart thermostat (AWARE_DR_TSTAT = 1) and DR_WILLINGNESS_TSTAT1 IS NOT = 6)]

DR_WILLINGNESS_TSTAT2 How likely would your household be to participate in a smart thermostat BYOT program if you received…

	Not at all likely (1)	Slightly likely (2)	Some-what likely (3)	Very likely (4)	Extremely likely (5)	Not sure/ don't know (6)
[Lower incentive amount if DR_WILLINGNESS_ TSTAT1 = 4 or 5]						

	Not at all likely (1)	Slightly likely (2)	Some-what likely (3)	Very likely (4)	Extremely likely (5)	Not sure/ don't know (6)
a) a one-time **$50** sign-up bonus, plus **$25** per season you participate?						
[Higher incentive amount if DR_WILLINGNESS_ TSTAT1 <4] b) a one-time **$100** sign-up bonus, plus **$25** per season you participate?						

[If customer DOES NOT already have a smart thermostat (AWARE_DR_TSTAT = 1) and DR_WILLINGNESS_TSTAT1 IS NOT = 6)]

DR_WILLINGNESS_TSTAT3 How likely would your household be to participate in a smart thermostat BYOT program if …

	Not at all likely (1)	Slightly likely (2)	Some-what likely (3)	Very likely (4)	Extremely likely (5)	Not sure/ don't know (6)
[Lower incentive amount if DR_WILLINGNESS_ TSTAT1 = 4 or 5] a) the utility were to offer a **$150 rebate** on a smart thermostat for signing up in the demand response program, plus **$25** per season you participate?						
[Higher incentive amount if DR_WILLINGNESS_ TSTAT1 <4] b) the utility were to offer **$200 rebate** on smart thermostat for signing up in the demand response program, plus **$25** per season you participate?						

[If customer does not already participate in this program type (AWARE_DR_DTE1_b IS NOT = 1 and AWARE_DR_CONSUMERS1_b IS NOT = 1)]

DR_WILLINGNESS_CPP1 Next, consider if your utility offered a Critical Peak Pricing Program in combination with your Time-of-Use (TOU) rate, with discounted electricity prices during night and on weekends (called off-peak periods) and higher rate on weekday afternoons (called peak periods). Participants save money by shifting energy use to off-peak periods. Participants are notified to reduce energy use during critical peak events, when electricity is much more expensive. Critical peak events are restricted and can only occur on

weekdays, typically from 3 p.m. to 7 p.m. and would be limited to certain maximum occurrences and hours (e.g., 14 occurrences and 56 total hours) per calendar year.

How likely would your household be to participate in this type of critical peak pricing program if you received a **40% discount on your off-peak rate** with a **critical peak price that is approximately 8 times** your normal on-peak TOU rate?

1. Not at all likely
2. Slightly likely
3. Somewhat likely
4. Very likely
5. Extremely likely
6. Not sure/don't know

[If DR_WILLINGNESS_CPP1 IS NOT = 6]

DR_WILLINGNESS_CPP2 How likely would your household be to participate in a critical peak pricing program if you received…

	Not at all likely (1)	Slightly likely (2)	Some-what likely (3)	Very likely (4)	Extremely likely (5)	Not sure/ don't know (6)
[Lower incentive amount if DR_WILLINGNESS_CPP1 = 4 or 5] a) a **30% discount on your off-peak rate** with a **critical peak price that is approximately 10 times** your normal on-peak TOU rate?						
[Higher incentive amount if DR_WILLINGNESS_CPP1 <4] b) a **50% discount on your off-peak rate** with a **critical peak price that is approximately 6 times** your normal on-peak TOU rate?						

DR_WILLINGNESS_RES1 Finally, if your utility offered a(n) **[Residential DR Option]** program that **[Residential DR Option Description].**

How likely would your household be to participate in this type of program?

1. Not at all likely
2. Slightly likely
3. Somewhat likely
4. Very likely
5. Extremely likely
6. Not sure/don't know

Residential DR Option [Randomized option choice, hide lettering from respondent:]	Residential DR Option Description
a) Electric Vehicle (EV) Load Control	offers customers who own a plug-in electric vehicle and charge at home an upfront payment, plus an ongoing participation payment in exchange for allowing the utility to shift charging from periods of high demand (typically weekday afternoons) to nights or weekends
b) Behind the Mater (BTM) Battery Control	offers customers with on-site behind-the-meter battery storage systems (e.g., a battery charged by an on-site solar system) an upfront payment and/or an ongoing participation payment in exchange for allowing the utility to control the battery charging and discharging during events when electricity demand is the highest (typically weekday afternoons)

COVID-19 Impacts

COVID_EWR How has the COVID-19 pandemic impacted your household's decision-making around energy efficiency upgrades? We are…

1. Much ***less*** likely to pursue energy efficiency upgrades
2. Slightly ***less*** likely to pursue energy efficiency upgrades
3. Just as likely to pursue energy efficiency upgrades (i.e., there has been little or no impact)
4. Slightly ***more*** likely to pursue energy efficiency upgrades
5. Much ***more*** likely to pursue energy efficiency upgrades

COVID_DR How has the COVID-19 pandemic impacted your household's decision-making around demand response programs? We are…

1. Much ***less*** likely to pursue demand response participation
2. Slightly ***less*** likely to pursue demand response participation
3. Just as likely to pursue demand response participation (i.e., there has been little or no impact)
4. Slightly ***more*** likely to pursue demand response participation
5. Much ***more*** likely to pursue demand response participation

Recent Energy Use Actions

ACTIONS Which of the following **energy-efficient** products have you installed in the last 12 months, if any? Please select all that you have installed.

> **[Pipe in responses to awareness questions for high and low-cost measures respondent is aware of.]**

Decision Factors

DECISIONS How important are the following factors in **driving the decisions you make about energy-consuming equipment** in your home? Please rank each factor on a scale of 1 to 5 with 1 being “not at all important” and 5 being “very important”. **[Randomize response options.]**

1. Desire to test new technologies
2. Environmental issues such as climate change, pollution and waste
3. Reduce the need for additional power plants and support grid reliability
4. Financial considerations (ability to earn investment money back quickly though energy bill savings)
5. The amount of money the measure will save me
6. Support my community and/or state’s energy initiatives
7. Advanced features or settings like Internet connectivity, remote control from a tablet or smartphone, etc.

Barriers

BARRIERS Which of the following factors are likely to **prevent** your household from taking action on the way you consume energy in your home, including installation of energy-efficient equipment or participation in demand response programs? Please rank each factor on a scale of 1 to 5 with 1 being “not at all likely” and 5 being “extremely likely”. **[Randomize response options.]**

1. Limited information about costs and benefits
2. Ability to find a skilled and/or trusted equipment installers
3. Potential for disruption during equipment install
4. Lack of access to energy efficient products in local stores
5. I have limited time, attention or ability to search out information about energy efficient technology or utility demand response programs
6. Lack of trust in the available information
7. The upfront cost of technologies or equipment
8. Limited or no access to financing options like a credit card, store credit account, or loan to purchase the new appliance/measure
9. Price of the higher efficiency model

Demographics

DEM1. Including yourself, how many people lived in your home during the past 12 months?

1. Number of people: _____
2. 13 or more
3. Prefer not to answer

DEM2. In what year were you born?

1. Year born (1900-1999): _____
2. Don't know
3. Prefer not to answer

DEM3. Which of the following best describes your home?

1. Single-family detached home
2. Single-family attached home such as townhouse or row house
3. Apartment or condominium
4. Mobile (manufactured) home
5. Other, please specify:

DEM4. Approximately how many square feet is your residence?

1. Less than 1,000 sq. ft.
2. Between 1,000 and 1,999 sq. ft.
3. Between 2,000 and 2,999 sq. ft.
4. Between 3,000 and 3,999 sq. ft.
5. Between 4,000 and 4,999 sq. ft.
6. Greater than 5,000 sq. ft.
7. Don't know

DEM5. What is the last grade of school you completed?

1. Grade school or less (1–8)
2. Some high school (9–11)
3. Graduated high school (12)
4. Vocational/technical school
5. Some college (1–3 years)
6. Graduated college (4 years)
7. Post graduate education
8. Don't know
9. Prefer not to answer

DEM6. How would you describe your race or ethnicity?

1. Caucasian (or White)
2. African American (or Black)
3. Arab American
4. Latino (or Hispanic)
5. Asian descent
6. Native American/Indian

7. Other, please specify: _____
8. Don't know
9. Prefer not to answer

DEM7. Would you please tell me what your total family income was in 2020 before taxes and including Social Security or other payments?

1. Less than $10,000
2. $10,000 to just under $20,000
3. $20,000 to just under $30,000
4. $30,000 to just under $40,000
5. $40,000 to just under $50,000
6. $50,000 to just under $60,000
7. $60,000 to just under $70,000
8. $70,000 to just under $80,000
9. $80,000 to just under $90,000
10. $90,000 to just under $100,000
11. $100,000 to just under $150,000
12. $150,000 or more
13. Don't know
14. Prefer not to answer

Close

This concludes the survey. The Michigan Public Service Commission thanks you for your participation in this survey. If you have any questions about the survey or how your responses will be used please reach out to us at Michigan.EnergyStudy@guidehouse.com.