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April 1, 2021

Ms. Lisa Felice
Executive Secretary
Michigan Public Service Commission
7109 West Saginaw Highway
P.O. Box 30221
Lansing, MI 48909

Re: Case No. U-18351 - In the matter, on the Commissions own motion, regarding the regulatory reviews, revisions, determination and/or approvals necessary for Consumers Energy Company to comply with Section 61 of 2016 PA 342.

Dear Ms. Felice:

Included for electronic filing in the above-captioned case, please find **Consumers Energy Company's 2021 Semi-Annual Voluntary Green Pricing Report**. This is a paperless filing and is therefore being filed only in PDF. I have enclosed a Proof of Service showing electronic service upon the parties.

Sincerely,

Digitally signed by
Gary A. Gensch, Jr.
Date: 2021.04.01
14:08:28 -04'00'

Gary A. Gensch, Jr.

cc: Hon. Martin D. Snider, Administrative Law Judge
Attachment 1 to Proof of Service

CONSUMERS ENERGY

2021 Semi-Annual Voluntary Green Pricing Report

Case No. U-18351

April 1, 2021

Consumers Energy

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Executive Summary

Pushing Forward

In 2020, Consumers Energy Company ("Consumers Energy" or the "Company") grew our product portfolio with the approval of our new Renewable Energy Credit ("REC") options, the addition of our income-qualified Sunrise option to our Solar Gardens Pilot ("Solar Gardens") program, and the expansion of our Large Customer Renewable Energy Pilot program ("LC-REP"). This broader list of options demonstrates our commitment to providing our customers with the flexibility they need to meet their sustainability goals.

In 2021, we are committed to the triple bottom line of people, planet and prosperity, and the progress and expansion of our voluntary green pricing options is a key component of a more sustainable Michigan.

Offering renewable energy products to our customers reflects our commitment to Michigan energy law PA 342, adopted in 2016. Section 61 of PA 342 directs electric providers to offer customers the opportunity to participate in a Voluntary Green Pricing ("VGP") program. This semi-annual VGP report is consistent with the Michigan Public Service Commission's ("MPSC" or the "Commission") Oct. 5, 2018 Order in Case No. U-18351 requiring Consumers Energy to file a semi-annual report on its VGP programs and the Green Generation program. Updates to this report will be filed by April 1 and October 1 of each year.

The programs included in this April 2021 report are the Green Generation program, Solar Gardens, LC-REP and the new REC program. This report first discusses the current program portfolio, including aggregate energy supplied year to date and environmental benefits, before providing additional insights into the individual programs through December 2020.

This report also discusses the research into the perception and preferences income-qualified customers have regarding renewable energy that concluded in 2020, and the final report is attached as an appendix. The new reporting requirements from the Sept. 24, 2020 order in Case No. U-20649 are included in this April 2021 report.

Benefits

The benefits of Consumers Energy's VGP programs and Green Generation program can be measured by customer satisfaction and the environmental contribution they have made. Customer satisfaction for the Solar Gardens program was measured in late 2020 through a Company administered survey, and the findings are included in this report. For programs through December 2020, Table 1 below illustrates the high impact environmental benefits of our VGP and Green Generation programs.

Table 1 - Environmental Benefits Total 2005-2020**

Environmental Benefits (2005 - 2020)

	Program Total MWhs	kWh	Miles driven by Average* Passenger Vehicle
Green Gen	1,099,339	1,099,338,577.08	1,993,498,000
Solar Gardens	22,424	22,423,844.00	40,096,000
Large Customer	325,432	325,432,157.20	573,976,000
Grand Total	***1,447,195***	***1,447,194,578.28***	***2,607,570,000***

* *https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

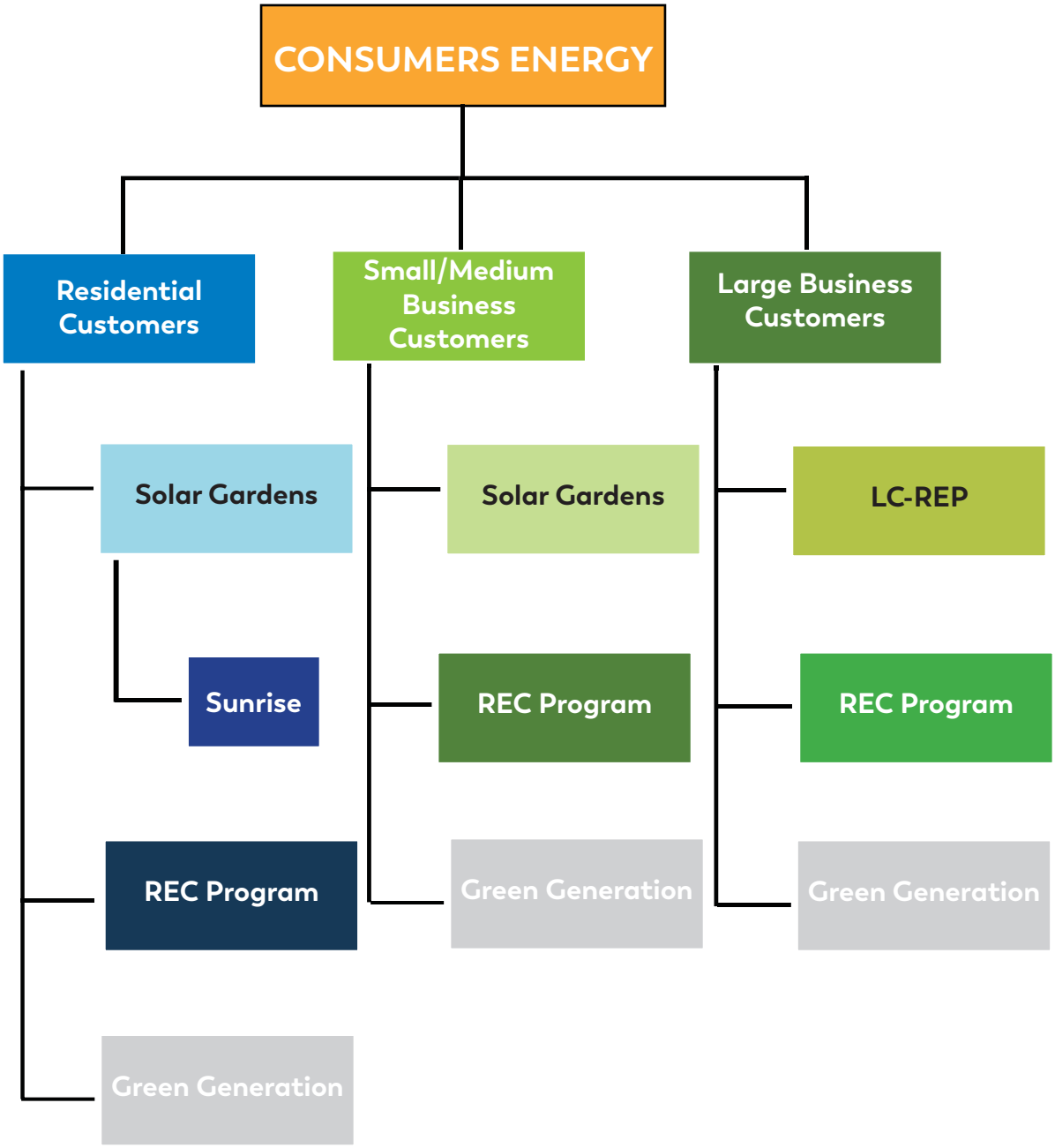
Greater than three tons recycled per baby born in Michigan last year.

Greater than driving Earth's orbit four times around the sun

Equivalent to more than two trees per resident of our entire state.

VGP Program Summary

Consumers Energy currently offers two VGP programs: Solar Gardens and the LC-REP program. A new REC program, with four options, became available to customers in January 2021.



GREEN GENERATION

Two primary drivers launched the Green Generation program in 2005. First, the Green Generation program was a response to early customer interest in renewable energy programs and second, the development of RECs created a mechanism to track and retire the renewable energy attributes of the renewable supply in the program. Customers chose to either subscribe to blocks of 150 kWh for a low cost or matched 100% of their electric use to participate. Since that time, the program increased to over 20,000 customers at its peak in 2016 and 2017. The program was closed to new customer enrollments on April 5, 2019.

Through December 2020, the Green Generation program provided 14,499 customers with 77,995 MWh of subscriptions to match their energy use with renewable energy. As the Green Generation program is closed to new enrollments, there are no marketing activities.

Green Generation costs through December 31, 2020 primarily reflect renewable energy supply costs and administration costs. Renewable energy supply for 2020 has been procured from four facilities which include two biomass landfill facilities, one wind farm, and one hydro resource at a cost of $5,615,616 for the year through December 2020. No RECs were required for the program in 2020 beyond those supplied through existing contracts. Power Supply Cost Recovery ("PSCR") funding has been applied to the energy supplied by the facilities to account for electricity added to the grid and credited the program $3,339,299 for the same period. Total costs for administration for 2020 were $118,024.

From Dec. 31, 2019 to December 31, 2020 participation declined by 2843 customers. However participation declined 1748 from November to December alone, which suggests the bulk of these were seasonal fluctuations rather than customers leaving the program. As a reminder, the month to month participation varies due to whether an account has energy use in a given month that the program matches. Otherwise, attrition has been consistent with past years, primarily due to customer "move-outs" causing cancellations versus customers leaving the program voluntarily.

The newly available Michigan REC program provides an alternative for Green Generation customers who choose to participate in a new program rather than continue their Green Generation participation.

"I've been pleased with the Solar Gardens Program and am glad to be a subscriber."

- Consumers Energy Solar Gardens Customer

SOLAR GARDENS

The Solar Gardens program began accepting applications in November 2015 with the construction of two solar power generating facilities totaling 4 MW. The two Solar Gardens facilities, one located at Western Michigan University and one located at Grand Valley State University, began commercial operation in 2016. In its Sept. 24, 2020 order in Case No. U-15805, the Commission approved Consumers Energy's application of Aug. 4th, 2020 requesting ex parte review and approval of a contract related to the development of a third Solar Gardens facility in Cadillac Michigan. The third site is currently under construction and will add generating capacity of .5 MW to the existing program. In its Oct. 5, 2018 order in Case No. U-18351, the Commission approved Solar Gardens as a VGP program. The Solar Gardens program continues to serve both residential and business customers.

The Solar Gardens program allows customers to subscribe to 500 watt "SolarBlocks" through a variety of payment options, from an upfront onetime payment of $1,035 in 2021 to a $9 per month payment over the remaining life of the facilities. On a monthly basis, customers receive a credit for the energy generated by their SolarBlock. Starting in April 2016, the credit was set at $0.075 per kWh until April 2021. At that time, the credit will then be based on the value of the day-ahead locational marginal pricing ("LMP") of energy and the market capacity value, which will be calculated based upon the Zonal Resource Credits for each of the generating facilities and 75% of the Cost of New Entry for the resource zone.

As of Dec. 31, 2020, the Solar Gardens program was 96.5% subscribed with 2,352 customers approved for 7,718 SolarBlocks. From Dec. 31, 2019 to Dec. 31, 2020, 152 new customers joined the program for 483 SolarBlocks. Customer attrition resulted in a loss of 167 customers for 409 SolarBlocks over the same time period. Customer attrition was in a large part due to move outs without re-enrollment or transfer of subscriptions and removal of accounts with balances in arrears of over 90 days. In total, the Solar Gardens program saw a net gain of 74 SolarBlocks subscribed in 2020.

Program marketing is currently focused on both email and online awareness campaigns as these are the least costly and most effective means of driving participation in the program. In addition, a dedicated customer care team provides support for those customers who need additional clarification regarding program details or how to enroll. The 2020 marketing campaigns, however, were scaled back due to the ongoing pandemic. The total cost for marketing and administration through December 2020 was $196,713. Marketing expenditures for 2020 focused on retention efforts rather than on new customer acquisition.

A member satisfaction survey of enrolled customers was conducted during the summer of 2020. Key findings included that while customers expressed satisfaction with the program, they are desiring more communication regarding the impact of the program, solar production, and other statistical information. 86% agree that the program is easy to join, with most enrollments being submitted through the online application. The desire to support and participate in sustainable resources was the leading driver for enrollment in the program, as well as wishing to make a positive impact in the world. Retention marketing strategy for 2021 will focus on providing more program data, as well as exploring how to bring more awareness to the website as an information source. Customer affinity will be evaluated after the new Cadillac Solar Gardens facility is complete and marketing has occurred.

Supply costs are born by subscribers, based upon the levelized cost of energy for the facilities, and are paid by subscribers either as an upfront cost or through a subscription plan of 3 years, 7 years, or by month. No RECs were purchased for the program so far in 2020, and REC procurement is not a program component.

Table 2 – 2020 Solar Gardens Subscription Costs

Subscription Costs Per SolarBlock	4/1/2021
Upfront	$1,035
3 Years / 36 Months	$32
7 Years / 84 Months	$16
Monthly to End of Facility Life	$9

The subscribed Solar Gardens program generated 5,311 MWh for 2,352 customers in 2020. In 2020, subscribed customers received energy credits totaling $212,630 and capacity credits of $180,474. The monthly kWhs and credit paid per block of subscription can be seen in Table 3.

Table 3 – Monthly Energy and Capacity Credits - Solar Gardens

Generation Period	Bill Month	Energy ($.04664 kWh)	Capacity ($.02725 kWh)	Avoided Line Loss ($.00111 kWh)	Credit Per Block
Nov-19	Jan-20	$ 0.89	$ 0.52	$ 0.02	$ 1.43
Dec-19	Feb-20	$ 0.75	$ 0.44	$ 0.02	$ 1.21
Jan-20	Mar-20	$ 0.84	$ 0.49	$ 0.02	$ 1.35
Feb-20	Apr-20	$ 1.63	$ 0.95	$ 0.04	$ 2.62
Mar-20	May-20	$ 2.24	$ 1.31	$ 0.05	$ 3.60
Apr-20	Jun-20	$ 2.71	$ 1.58	$ 0.06	$ 4.35
May-20	Jul-20	$ 3.96	$ 2.32	$ 0.09	$ 6.37
Jun-20	Aug-20	$ 4.66	$ 2.73	$ 0.11	$ 7.50
Jul-20	Sep-20	$ 4.38	$ 2.56	$ 0.10	$ 7.04
Aug-20	Oct-20	$ 4.34	$ 2.53	$ 0.10	$ 6.97
Sep-20	Nov-20	$ 3.22	$ 1.88	$ 0.08	$ 5.18
Oct-20	Dec-20	$ 2.19	$ 1.28	$ 0.05	$ 3.52
Nov-20	Jan-21	$ 1.82	$ 1.06	$ 0.04	$ 2.92
Dec-20	Feb-21	$ 0.98	$ 0.57	$ 0.02	$ 1.57

The Company is continuing to evaluate options for increasing the size and reducing the cost of the Solar Gardens program, and anticipates providing additional detail in the Company's biennial VGP filing in October. Options being considered include utilizing supply of a new asset and reducing the subscription block size, but the Company has not yet finalized these plans.

The Company recognizes that in order to realize customer savings for the Solar Gardens program, competitive bidding best practices and lessons learned from other solicitations could be incorporated. The Company intends to use a practice similar to Renewable Energy Plan solicitations for competitive bidding for VGP resources, and will consider future applicable guidelines, in order to promote efficient and cost effective competitive procurement. The Company is still in the process of seeking approval of the contracts acquired as a result of the Company's Integrated Resource Plan ("IRP") competitive solicitation, and thus has not yet fully determined the lessons learned from the solicitation or the extent to which VGP resources should be procured through the IRP's RFP process.

Cumulative Capital Costs

The cumulative capital costs through December 2020 are shown below.

Table 4 – Cumulative Solar Gardens Capital Costs

COMMUNITY SOLAR
PROJECT-TO-DATE COSTS as of December 31, 2020

		TOTAL
DEVELOPMENT	$	274,555
ENGINEERING	$	727,832
PROJECT MANAGEMENT	$	1,184,604
EQUIPMENT	$	5,501,273
CONSTRUCTION	$	4,434,901
OWNERS COSTS	$	203,238
	$	**12,326,403**

Locational Marginal Price (LMP) and Capacity Forecast

The Midcontinent Independent System Operator, Inc. Zone 7 capacity price forecast provided below in Table 5 is from the Company's 2021 PSCR Plan (MPSC Case No. U-20802). The LMP forecast is based on the forward price published by Argus Pricing Services at the Michigan Hub.

Table 5 – LMP and Capacity Forecast

	Year	LMP ($/MWh)	Capacity (Calendar Year, $/ZRC-year)
1	2021	$27.94	$80,573
2	2022	$26.81	$71,934
3	2023	$24.74	$73,372
4	2024	$24.76	$74,840
5	2025	$20.24	$76,337

REC Valuation

Amerex Brokers, LLC. indicates the per Michigan REC trade price as of March 11, 2021 is a bid price of $1.80 and ask price of $2.25 for 2021 vintage, $1.40 and $2.00 for 2020 vintage, $1.30 and $1.85 for 2019 vintage, and $1.20 and $1.75 for 2018 vintage.

"The program is easy to understand and join. I know it will have a lasting impact for generations"

- Consumers Energy Solar Gardens Customer

LARGE CUSTOMER RENEWABLE ENERGY PILOT PROGRAM (LC-REP)

The LC-REP program was conditionally approved in 2017 and approved as a VGP program in 2018. The LC- REP program Option A allows customers to subscribe to wind or solar facilities placed into service after December 2017 at the Levelized Cost of Energy ("LCOE") of the facility per MWh. Customers receive a credit for the energy and capacity value of the resource on a per MWh basis each month.

In 2018, the program was expanded from the originally approved 115,000 MWh to 155,000 MWh, and in 2020, a third expansion brought the program to 400,000 MWh. Currently, three customer accounts are subscribed to Option A, with five additional customer accounts in the contracting process which will fully subscribe the current expansion. Applications have been received for an additional 222,000 MWh beyond the current available approved program expansion, which totals 622,000 MWh of demand for the program. Actual subscribed values vary based on actual use, however applications are limited to the expected maximum annual subscribed usage matched to the expected generation by the program facilities. We have received no additional customer feedback from customers who have applied for the program regarding current contract length offerings, and additional contract length options were approved in 2020 adding both 10 year and 15 year options.

Through December 2020, the three customer accounts subscribed to an actual total of 117,124 MWh. Each of these subscriptions are for 20-year terms. No RECs were utilized for the program outside of the contracted supply year to date in 2020. The energy credit, based on the Day 7 MISO settlement, and the capacity credit for the program can be seen in Table 6 below.

Table 6 - Large Customer Renewable Energy Program Energy and Capacity Credit

FINAL Subscribed - Actual Prices	January	February	March	April	May	June
Total Revenue from MISO $/MWh	$ 22.89	$20.07	$17.31	$ 15.88	$18.50	$19.90
Capacity $/MWh	$ 0.40	$0.38	$0.43	$ 0.49	$0.67	$11.14
FINAL Subscribed - Actual Prices	**July**	**August**	**September**	**October**	**November**	**December**
Total Revenue from MISO $/MWh	$28.97	$ 23.13	$ 19.08	$ 23.06	$ 21.58	$ 22.94
Capacity $/MWh	$13.26	$ 12.14	$ 7.67	$ 6.52	$ 4.68	$ 5.63

As the LC-REP program has been communicated primarily through our customer account managers and through earned media, there are no marketing costs associated with the program. Administrative costs through December 2020 were $120,462 and were associated with the operational aspects of invoicing and reporting the LC- REP program.

Customers who are expanding in Michigan or relocating to the state and who are interested in pursuing renewable energy through a third-party developer can select Option B under the LC- REP program. The benefit to those customers who participate is access to the market index rate, through which they have the option to substitute the Real Time Locational Marginal Price (RT-LMP) at Consumers Energy's Zonal Load Node, plus a Market Settlement Fee of $0.002 per kWh, for the Standard Rate power supply energy charges.

To date, we have not had additional inquiries regarding this option. The Company also has not had any additional inquiries regarding the lowered 1 MW aggregation limit under LC-REP Option B approved in 2020.

RESEARCH COMPLETED

Income Qualified Customer Research

In 2020, the Company implemented a combination of qualitative and quantitative research intended to better understand the perceptions and preferences of income-qualified customers regarding renewable energy. The research summary document is attached as an appendix to this report. This research will assist with the refinement of the new Sunrise component of the Solar Gardens program and development of new programs and features to make the benefits of renewable energy more accessible to income-qualified customers.

Large Customer Renewable Energy Pilot Program

Market Potential

Forecasted annual participation and MWh subscription estimates for LC-REP program (Option A) are shown in Table 7. The five-year planning horizon of this market forecast incorporated Consumers Energy's customer and sales forecasts. As the program is now available to a larger number of customers and the first application for aggregated usage has been received, the number of customer accounts is expected to expand a great deal. This will expedite the need for program automation, and requirements for that automation are being collected.

Table 7 - Large Customer Renewable Energy Program Market Potential

Program Year	Annual Enrollments	Annual MWh Subscriptions
2021	7	400,000
2022	7	400,000
2023	7	400,000
2024	1,600	1,800,000+
2025	1,600	2,100,000+

Solar Gardens

Market Potential

Forecasted annual participation and MWh subscription estimates for Solar Gardens are shown below in Table 8. The annual forecasts reflect the total number of enrollments or MWh subscriptions each year after accounting for incremental (positive or negative) changes from year-to-year. The forecast includes the existing participation within the program, and capacity may be added if there is adequate customer demand.

Table 8 - Solar Gardens Market Potential

Program Year	Total Program Enrollments	Annual MWh Subscriptions
2021	2,748	5,855
2022	2,866	6,044
2023	2,958	6,195
2024	3,025	6,309
2025	3,073	6,390

PORTFOLIO DEVELOPMENT FUTURE STATE

New and Planned Program Development

The new Renewable Energy Credit Program with four options launched in November 2020 with participation becoming available starting Jan. 1, 2021. No applications have been received to date for the National REC option or either of the REC New options, all of which are available to large customers. The Michigan REC option is available to all full-service customers, and an online enrollment form became available Jan. 1, 2021.

Solar Gardens' new Sunrise program was approved with the Commission's Sept. 24, 2020 Order in Case No. U-20649. The program was designed as a means for income qualified customers within the Company's territory to participate in a VGP option at no cost to them, but still receive the benefits of the credits associated with the program. Subscription costs are borne by a non-profit agency subscribing to the program and assigning their subscriptions to income qualified customers that they choose to participate in the program. The program has been launched and available as of Feb. 1, 2021 with the first non-profit agency in the process of securing the grant funding needed to submit the application and pay for the subscription into the program. The first income qualified customers are expected to be assigned by the non-profit agency in April, with subsequent bill credits beginning in June of 2021.

Planned Research

Consumers Energy will undertake research in 2021 regarding community wind and solar options for possible future program development or modification. Research into customer interest in the LC-REP also took place in late 2020 to better understand the expected future expansion needs. Additional information will be included in the 2021 Biennial Voluntary Green Pricing filing.

APPENDIX

Solar Gardens December 2020

	2020	2015-2020
Marketing, Administration, and Researcl	$ 196,713	$ 3,247,517
Payments from Customers	$ 537,856	$ 5,989,716
Energy Payments to Customers	$ 212,630	$ 936,278
Capacity Payments to Customers	$ 180,474	$ 709,896
REC Payments to Customers	$ 227	$ 877
Enrollments	-15	2,352
Blocks Subscribed	74	7,718
MWh Subscribed	5,311	22,423
MWh Supplied	5,650	26,397

LC-REP December 2020

	2020	2018-2020
Marketing, Administration, and Researcl	$120,462	$340,654
Payments from Customers	$5,270,600	$ 14,644,475
Energy Payments to Customers	$2,483,308	$8,265,489
Capacity Payments to Customers	$547,973	$558,323
Enrollments	3	4
MWh Subscribed	117,124	325,432
MWh Supplied	145,140	414,291

Green Generation December 2020

	2020	2005-2020
Supply Cost	$ 5,615,616	$184,834,291
Marketing, Administration, and Researcl	$118,024	$10,029,405
Supply Purchased, Not Sold	$ 186,464	$33,654,993
Customer Payments	$718,798	$12,443,620
Average PSCR Applied to Deliveries	$3,339,299	$122,719,808
Enrollments	14,499	
MWh Subscribed	77,995	1,099,339
MWh Supplied	68,030	2,134,584

Consumers Energy

Count on Us®

Income-Qualified Customer Preferences for Renewable Energy

December 3, 2020

Presented to:

Jeff Myrom

Director of Renewable Energy & Electric Vehicle Customer Products
Consumers Energy Company
One Energy Plaza

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Executive Summary

Since 2015, Consumers Energy has pursued research to understand customer preferences and interest in renewable energy programs. As part of its 2019 Voluntary Green Pricing program planning, Consumers Energy hired Cadmus to conduct primary and secondary research to determine how to better offer voluntary green pricing programs for income-qualified customers. Cadmus interviewed utility program administrators nationwide and conducted a literature review. This research assisted Consumers Energy with developing near-term program ideas included in the *2019 Voluntary Green Pricing Biennial Report*; however, the report acknowledged plans to conduct additional primary research directly with income-qualified customers, as requested by the Michigan Public Service Commission in its October 5, 2018 Order in Case No. U-18351.

To enhance their understanding of income-qualified customers' general perceptions about renewable energy, Consumers Energy initiated segment-specific primary research through focus groups and surveys. The purpose of this research was not to determine how to market voluntary green pricing programs to income-qualified customers, but rather to identify the best opportunities to offer renewable energy options to this population.

The timing of this research is of note. Cadmus conducted focus groups in the first quarter of 2020, prior to the coronavirus pandemic's spread throughout the United States. Consumers Energy and Cadmus carefully considered the possible impacts of continuing with a large-scale study of income-qualified customers later in the year, paying particular attention to timing, outreach details, and customer service. Cadmus fielded an online survey in August 2020, during an economic recession and the pandemic, when many customers were experiencing new financial hardships. As the data contained in this report represent customer attitudes and outlooks on renewable energy during this unprecedented time, Consumers Energy will continue to monitor customer and market trends when planning for future clean energy initiatives.

Research Objectives

The study had several research objectives:

- Identify income-qualified customers' general energy priorities (such as reliability, affordability, sustainability, or choice in fuel source)
- Gauge income-qualified customers' awareness of and interest in renewable energy products (including their needs, wants, and expectations regarding renewable energy options)
- Identify income-qualified customers' perceived challenges and barriers to accessing renewable energy (including their perception of the environmental impacts of renewable energy generation)
- Understand income-qualified customers' price sensitivity and willingness to pay for renewable energy products
- Identify the value proposition that drives income-qualified customers to consider renewable energy adoption
- Determine income-qualified customers' preferences for potential renewable energy program concepts (including customer preferences for location and fuel source)

Research Approach

To address the research objectives, Cadmus conducted three distinct research activities:

- Reviewed survey data from the 2018 Renewable Energy Roadmap[1] to inform data collection
- Conducted in-person focus groups with Consumers Energy income-qualified customers in locations across Michigan
- Conducted web surveys with a general population of Consumers Energy income-qualified customers

Report Organization

Cadmus organized this report as follows:

- Key Findings and Conclusions
- Detailed Findings (from the focus groups and online customer surveys)
- Methodology (outlining the detailed research approach for each task)
- Appendices
  - Appendix A. Summary of Recommendations
  - Appendix B. Program Concept A/B Testing Stimuli
  - Appendix C. Additional Survey Findings: Trusted Organizations
  - Appendix D. Focus Group Recruitment Screener
  - Appendix E. Focus Group Discussion Guide
  - Appendix F. Survey Instrument
  - Appendix G. 2018 Renewable Energy Roadmap Data Review PowerPoint
  - Appendix H. Focus Group Interim Findings PowerPoint

[1] Cadmus. May 23, 2018. *Renewable Energy Roadmap.* Prepared for Consumers Energy.

Key Findings and Conclusions

This section presents Cadmus' key findings and conclusions. Cadmus conducted eight in-person focus groups to gather qualitative insights on income-qualified customer attitudes toward renewable energy, followed by a quantitative survey with 1,502 income-qualified customers.[2]

The *Detailed Findings* chapter of this report provides further explanation of these findings and additional context for our conclusions. Table 1 outlines how each conclusion addresses Consumers Energy's research objectives.

Table 1. Research Objective Mapping

Conclusion	Research Objective					
	1. Energy Priorities	2. Interest in Renewable Energy	3. Challenges + Barriers	4. Willingness to Pay	5. Value Proposition	6. Program Preferences
While reliability remains a top energy concern, income-qualified customers understand the benefits that clean energy can provide to their health, future generations, and the environment; with environmental benefits being a powerful driver for pursuing renewable energy.	✓				✓	
Income-qualified customers are interested in renewable energy programs and are seeking more information about how renewable energy can become a reality for their home; details surrounding payment and assurance of energy reliability are very important.	✓	✓	✓			
Income-qualified customers understand why renewable energy may cost more than fossil fuel energy up front and are willing to pay more to obtain it, though they favor least cost options.				✓		✓
Consumers Energy has flexibility in structuring renewable energy programs for their income-qualified customers, as the research revealed few differences in customer preferences across tested program options and showed that market demand exists for each program concept.		✓		✓		✓
Customer age correlates with perceived barriers to participating in renewable energy programs that could impact the market uptake of a donated solar and rooftop solar offering.						✓

[2] The definition of income-qualified for this study was those who have a household income of less than or equal to 300% of the federal poverty level. Consumers Energy provided a list of income-qualified customers, which Cadmus screened for income eligibility during focus group recruitment and in the online survey. There were 1,242 fully completed surveys, but Cadmus kept partial completes in the dataset for analysis.

Conclusion 1. While reliability remains a top energy concern, income-qualified customers understand the benefits that clean energy can provide to their health, future generations, and the environment; with environmental benefits being a powerful driver for pursuing renewable energy.

Customers want reliable and affordable energy but view energy as an interconnected and multipronged issue that also impacts health and the environment. While customers nearly uniformly agreed that reliability and affordability are important qualities of their electricity (90% and 88% of respondents, respectively), over half the survey respondents also reported that it is important to them that their electricity is clean. Survey and focus group respondents believe it is important to have a choice in how their energy is generated and that energy generation should consider future generations. As one Flint focus group participant said, "I am not entirely sure how my electricity is currently generated, but a coal-fired plant is my last choice. I have a daughter. I want the planet to be here for my kids and grandkids."

Customers who participated in the focus group easily connected the link between clean energy, their personal health, and the health of the environment. For example, one Muskegon participant made a connection between the environment and personal health, stating: "If the environment wasn't so [bad], I wouldn't be so sick." When it comes to *why* renewable energy is important, the research revealed that addressing climate change and helping the environment are key drivers for income-qualified customers. Based on the test of maximum differences (MaxDiff) Cadmus employed in the survey, fighting climate change was selected most often as the most important benefit of renewable energy, and is predicted to be the most preferred message, yet the "good for environment" message was a less polarizing choice. For example, addressing climate change was selected as the least important benefit of renewable energy nearly as often as it was selected as the most important, implying that messages surrounding the broader environmental benefits of renewable energy may be the best way to reach the most customers. Overall, findings illustrated that income-qualified customers value the health and environmental benefits of clean energy as key considerations beyond the impact on their electricity bill. Health benefits were more important to younger customers as well as to customers who self-identified as a member of Black, Indigenous, or other minority ethnic groups.

Respondents identified these top four benefits of renewable energy:

- Renewable energy fights climate change because it does not produce greenhouse gas emissions like coal-fired power plants do
- Supporting renewable energy helps future generations
- Renewable energy is good for my health because it reduces air pollution and smog
- Renewable energy is a reliable source of energy throughout the year

Conclusion 2. Income-qualified customers are interested in renewable energy programs ar are seeking more information about how renewable energy can become a reality for their home; details surrounding payment and assurance of energy reliability are very important.

Income-qualified customers are aware of and support renewable energy, with 69% of survey respondents holding a favorable opinion of renewable energy. During focus group discussions, customers expressed not only an interest in learning more about how they can obtain renewable energy for their home, but also a desire for Consumers Energy to accelerate the adoption of renewable energy. However, the survey and focus groups revealed multiple real and perceived barriers that income-qualified customers must overcome to feel ready to participate in a program and obtain renewable energy. For example, at least half the survey respondents agreed that they do not know how to get renewable energy for their home, that renewable energy is not something they typically read about or hear about, and that they do not know anyone with renewable energy. These findings indicate that many customers have had little exposure to renewable energy within their normal information channels, networks, and communities; therefore, the questions they have surrounding the technology and how a program might logistically work are to be expected.

Specifically, customers expressed confusion around these key points of renewable energy and potential future programs: how renewable energy, particularly solar-only options, will serve as a reliable energy source; how free or discounted programs are funded; and how it works to use renewable energy credits to fund renewable energy. They generally rated information presented about these topics as helpful.

- ***Reliability***. Survey respondents rated reliability as the most important aspect of their household energy use (with 90% rating this aspect as *important*). The research revealed a consistent theme across the focus groups and surveys: concern about losing some reliability in their power supply when relying on solar. Survey respondents said the most useful information about the Michigan Renewable Energy Credits (RECs) program was the explanation about how Consumers Energy would manage grid reliability even when using solar and wind power (66%; n=359).
- ***Free or discounted programs.*** Customers exhibited skepticism about a free donated community solar program. Some customers said they do not have enough of an understanding as to why energy would be provided to them for free and that there must be some "catch" to participating. As one Cadillac focus group participant stated, "If it sounds too good to be true, it probably is." Survey respondents who had received information about why Consumers Energy would offer a donated community solar program at no cost to the customer rated this as one of the most helpful pieces of information statements they received (71%; n=302). Over two-thirds (67%) also said that information about where the donations come from to cover the costs is helpful (a sentiment shared by some focus group respondents). Though most respondents said they had not received bill payment assistance from Consumers Energy or a community organization, they were able to cite several trusted organizations they would turn to in the future, including the Michigan Department of Health and Human Services, Consumers Energy, TrueNorth, and the Salvation Army.

- ***Purchasing renewable energy credits***. Focus group customers expressed confusion about how they would receive renewable energy in their home after subscribing to a program that does not involve installing on-site solar and expressed that they would be more likely to participate in this type of program if they had more information about how it works. As one Flint participant said, "I live in a trailer park, so there is a trailer 15 feet from mine. If I pay more, how do I know I am getting the renewable energy and not the other trailer?" Over half the survey respondents (55%; n=355) found the information about how the subscription of renewable energy credits works and where their energy would come from in the Michigan RECs program to be helpful.

Customers did not express undue concerns or cite misinformation about renewable energy's impact on the environment as they did during the research conducted for the 2018 Renewable Energy Roadmap. Though 22% agreed they were not certain whether renewable energy has a positive impact on the environment, this was the smallest perceived barrier reported by respondents. On the other hand, customers appeared to be interested in information about how renewable energy can work for their home and their community.

Conclusion 3. Income-qualified customers understand why renewable energy may cost more than fossil fuel energy up front and are willing to pay more to obtain it, though they favor least cost options.

Though energy costs are a leading household concern for income-qualified customers,[3] the research revealed that this segment not only understands why renewable energy may cost more but is willing to pay a nominal amount to obtain it. Customers agreed with statements that referred to renewable energy as being more expensive in the short term or requiring a fee due to new technology or new infrastructure, while a minority (29%; n=1,057) believed that, "renewable energy is free, because the wind and the sun are free." Customers do expect their energy costs to go down over time. As one Flint focus group participant stated, "[Renewable energy costs more because of the] development of it. Fossil fuels are established, but when renewable energy is up and running, I assume we would see costs come down."

During the focus groups, participants reported being willing to pay $5 or even $10 more for renewable energy, comparing that incremental monthly cost to small purchases such as buying soda or coffee. However, though they are willing to pay, income-qualified customers are price-sensitive. Unlike the 2018 Renewable Energy Roadmap research, which found that general residential customers were willing to pay more to subscribe to renewable energy credits that match their home's entire electric usage, this study revealed that income-qualified customers are not: the income-qualified customers surveyed were significantly more likely to participate in a program that offers renewable energy credits that match 50% of their usage for $3 per month compared to one that offers renewable energy credits that match 100% of their usage for $6 per month.[4]

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[3] Respondents rated energy as their second most important household cost. Thirty-five percent rated energy as their greatest concern, while 48% rated housing costs (such as mortgage or rent) as their greatest concern.

[4] $p<0.10$.

Conclusion 4. Consumers Energy has flexibility in structuring renewable energy programs for their income-qualified customers, as the research revealed few differences in customer preferences across tested program options and showed that market demand exists for each program concept.

The market demand for renewable energy programs that were tested in the survey (for the Michigan RECs, donated community solar, or a rooftop solar program) ranged from 21% to 39%, with a donated community solar program[5] having the highest demand among income-qualified customers.

The research supports several key outcomes impacting program planning and design:

- ***Amount and price of renewable energy.*** As previously stated, customers were significantly more likely to participate in the Michigan RECs program that offers to match 50% of a customer's usage with renewable energy credits for $3 per month compared to a program that offered to match 100% usage with renewable energy credits for $6 per month;[6] however, there was only a 6% difference in market demand for these options, underscoring that some income-qualified customers are still willing to pay for more access to renewable energy and may appreciate that program choice from Consumers Energy.
- ***Contract length.*** Though some focus group respondents raised concerns about contract length when presented with a rooftop solar program scenario, the surveyed customers did not make an obvious trade-off between contract length and price. There was not a significant difference in likelihood to participate in a 15-year contract with $250 annual costs for solar panels versus a 10-year contract with $900 annual costs for solar panels. The rooftop solar concept yielded the smallest demand, with income-qualified customers citing cost, their age, concerns about maintenance, moving, and skepticism toward substantial eventual bill savings (after the contract period) as reasons for not wanting to install rooftop solar. However, among customers that are likely to put solar panels on their home, the research demonstrates that Consumers Energy can structure this program according to its priorities regarding contract terms without impacting market demand for the program. Customers do not have concerns about on-bill financing.
- ***Branding***. Though survey findings did not reveal a preference for the Helping Neighbors brand over a generic description among respondents presented with a donated community solar program concept, focus group participants demonstrated familiarity with and trust of the Helping Neighbors program.

  Source location. Though some customers viewed generation in Michigan as favorable, local community generation was not important to survey respondents or focus group participants compared to other high-priority aspects.

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[5] This program concept, named MI Sunrise Solar, was approved by the Michigan Public Service Commission in September 2020.

[6] $p<0.10$.

Conclusion 5. Customer age correlates with perceived barriers to participating in renewable energy programs that could impact the market uptake of a donated solar and rooftop solar offering.

In a donated community solar or rooftop solar program, younger and middle-aged customers are significantly more likely to participate than more mature customers.[7] Participants who were 71 or older were less likely to participate in either program than individuals who were between 36 and 70 years old; and in the case of a rooftop solar program, they were also less likely to participate than 18 to 35 year-olds. Both survey respondents and focus group participants expressed concern with a rooftop solar program not yielding bill savings for 15 years. In the case of a donated community solar program, while there is no clear single barrier to older respondents' participation, some older participants expressed skepticism about the no-cost program and stated concerns about being taken advantage of. Cadmus did not find differences across age groups in likelihood to participate in Michigan RECs, suggesting that this program is well-suited to all ages and will have relatively equal uptake across age groups.
Consumers Energy should consider these findings when targeting and communicating future programs to their income-qualified customers.

[7] $p<0.05$.

Detailed Findings

This chapter presents detailed findings from the customer focus group and survey research; methodology details are included in the *Methodology* section of this report. During the analysis, Cadmus tested for statistically significant differences in responses and attitudes across various demographics such as region, income level, race and ethnicity, and age to provide deeper insight into specific communities and customer groups within the income-qualified population.[8] While most responses were consistent across groups (meaning Cadmus did not find statistical differences), Cadmus highlights differences in the survey response data using statistical tests at the $p \leq 0.1$ and $p \leq 0.05$ levels, where applicable. For more information on the tests conducted, please see the *Statistical Analyses* section.

General Energy Priorities

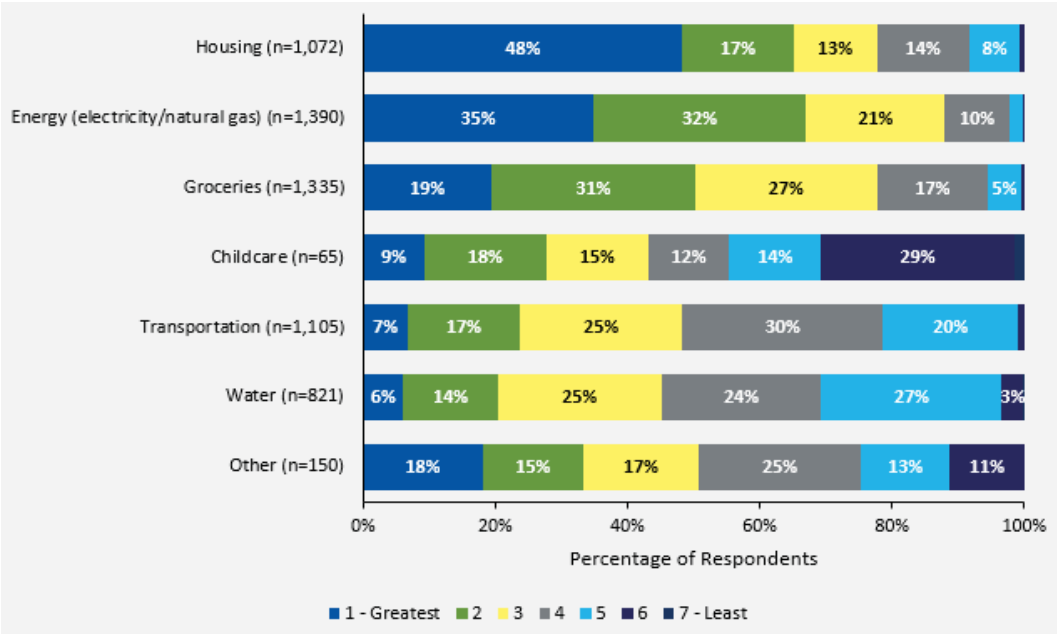
To inform Consumers Energy's understanding of income-qualified customers' perceptions of and interest in renewable energy, Cadmus first identified the respondents' general energy priorities including household cost concerns and priorities with respect to energy generation.

Household Cost Concerns

Online survey respondents ranked their concerns with general household costs (housing, energy, water, grocery, childcare, transportation, and other) on a 7-point scale, where 1 indicated the greatest concern and 7 indicated the least concern. As shown in Figure 1, survey respondents ranked housing costs (mortgage and rent) as their greatest concern (48% rated this as a 1; n=1,072), followed by energy costs (35% rated this as a 1; n=1,390). Focus group findings were consistent with these survey findings.

[8] Seniors had a higher response rate than others; see the *Methodology* section for a discussion about the population Cadmus used for this study and the sampling plan.

Figure 1. Household Cost Concerns



Source: Survey Question B1. "Please rank the following household costs by dragging them into the box. Drag the household cost you are most concerned with to the top and the one you are least concerned with to the bottom." Note that the number of respondents for each prompt varies, as some respondents indicated that certain concerns were not applicable to them. These not applicable responses were removed.

Energy Priorities

Survey respondents (49%; n=1,495) and focus group participants (61%; n=56) reported being most concerned with cost when it comes to using energy in their households. Survey respondents who were at 200% (or below) of the federal poverty level (FPL) were more likely to be concerned about energy costs than respondents between 200-300% FPL; respondents between 36 to 55 years old were also more likely to be concerned about costs than respondents older than 70.[9] In contrast, respondents over 70 were more concerned about losing power than those aged 36 to 55[10] (overall, 18% of respondents said reliability was their *greatest* concern, as shown in Figure 2).

While survey respondents were forced to choose one aspect of their energy use as the top priority, resulting in a clear hierarchy, focus groups participants elaborated that all factors related to energy use (costs, reliability, comfort, health, and environment) are important to them because these aspects are interrelated. For example, one Muskegon participant made a connection between the environment and personal health, stating: "If the environment wasn't so [bad], I wouldn't be so sick," then saying that her utility costs would not be such a concern if her medical bills were lower.

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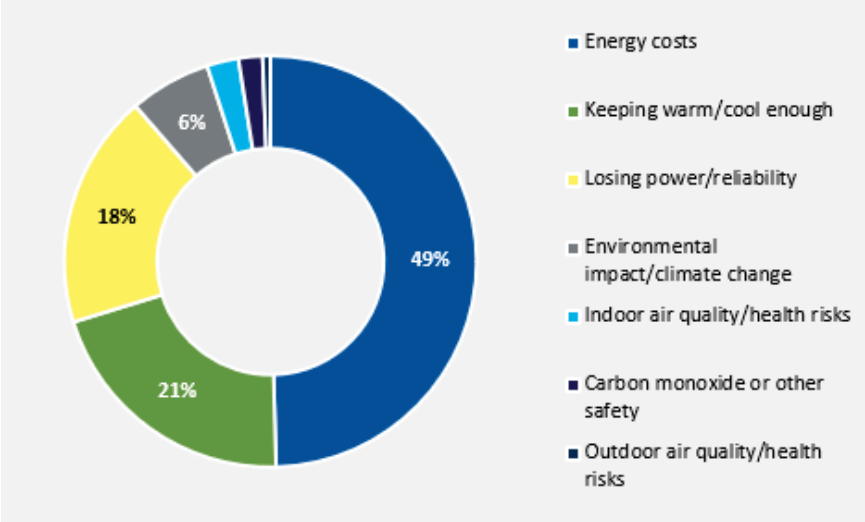
9 $p \leq 0.01$.

10 $p \leq 0.01$.

Figure 2. Energy Concerns



Source: Survey Question B2. "What is your greatest concern when it comes to using energy in your household? Choose only one." (n=1,495)

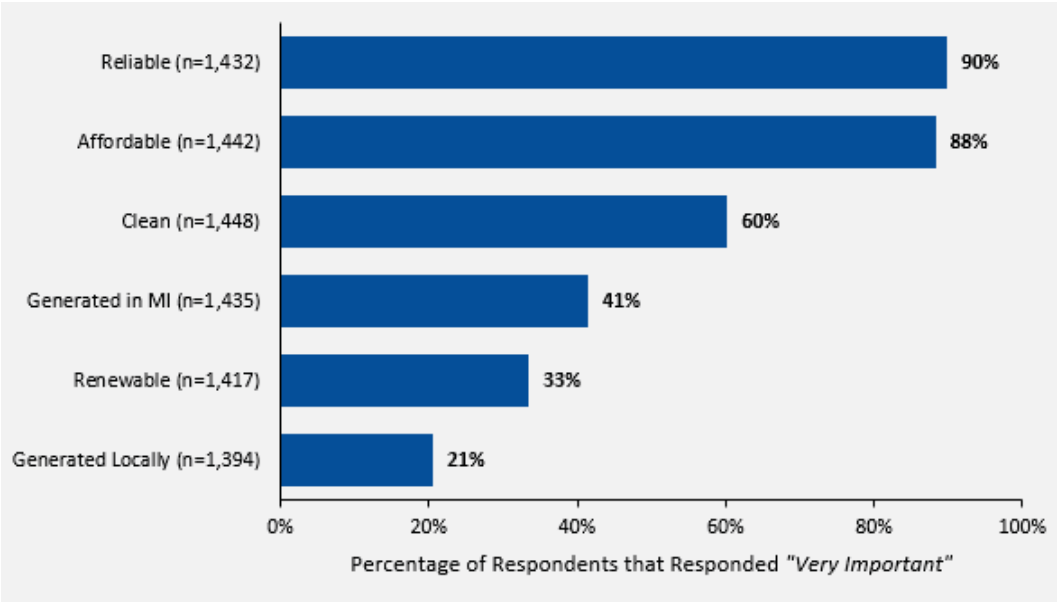
As shown in Figure 3, reliability was more important to survey respondents than any other aspect of electricity, followed closely by affordability. Focus group participants aligned with this outcome. Additionally, clean energy was also important to survey respondents and focus group participants. During discussion, focus groups participants connected the importance of clean energy to other impacts in their lives, with some participants pointing out that clean energy would not only be better for the environment, but also for their own health. Not only did the focus group respondents identify these benefits individually, they also discussed the connection between environmental and health impacts, in conjunction with the desire to take care of the next generation, at great length, making connections at the individual, community, and global levels.

> "[All aspects of electricity generation] are important to me. They all go hand-in-hand."
> – Flint Focus Group Participant

> "I want to heat my house comfortably, but I want to have a world for my kids and grandkids."
> – Flint Focus Group Participant

While local generation was less important than all other considerations (such as reliability, affordability, and clean energy), 41% reported that Michigan energy is *very important;* this finding, that Michigan-generated power is important, yet local community sourcing is less so, is consistent with customer research conducted for the 2018 Renewable Energy Roadmap.

Figure 3. Important Qualities of Electricity



Source: Survey Question B4. "How important is it to you that your electricity is…?"

In a separate question, 30% of survey respondents (n=1,454) rated it as *very important* for them to have a choice in how their electricity is generated (another 31% rated this as *somewhat important*). Results from the focus groups supported this finding, with focus group participants being more passionate about generation choice: 61% of focus group participants (n=56) rated it as *very important* to have a choice in how their electricity is generated. Focus group respondents across the state agreed that energy generation "should be a concern for everyone," not only because everyone is paying for the generation, but because everyone has shared environmental concerns.

> "I am not entirely sure how my electricity is currently generated, but a coal-fired plant is my last choice. I have a daughter. I want the planet to be here for my kids and grandkids."
> – Flint Focus Group Participant

Attitudes toward Renewable Energy

In order to understand customers' awareness of and level of interest in renewable energy products, Cadmus encouraged focus group participants to discuss their knowledge of renewable energy topics and their concerns and expectations regarding renewable energy options. Survey respondents also answered questions about their attitudes toward and perceptions of renewable energy. Consistent with focus group findings, 69% of the survey respondents reported having a favorable attitude toward renewable energy (n=1,447). This was a lower percentage than the 88% found in the 2018 Renewable Energy Roadmap research, which may be a result of the different population of customers surveyed (where the roadmap surveyed all residential customers, this study surveyed income-qualified customers).

Renewable Energy Awareness, Interest, and Needs

Focus group participants displayed an awareness and basic knowledge of renewable energy, similar to the results of the 2018 Renewable Energy Roadmap. When asked what they think of when they hear the phrase "renewable energy," focus group participants collectively named solar power, wind power, and hydropower with relative ease. Overall, focus group participants across the state understood that renewable energy will not "run out" like fossil fuels, and that renewable sources of energy generally have less negative environmental impacts. The saliency of various benefits of renewable energy are discussed further in the *Drivers for Pursuing Renewable Energy* section.

> "[Renewable energy is] something that's not going to run out and is not hazardous to the environment."
> – Jackson Focus Group Participant

Focus group participants across the state were not particularly interested in one type of renewable energy over another (such as solar versus wind), nor did they have strong thoughts on the location of renewable energy generation as long as the source is reliable. Cadmus asked focus group respondents about their awareness of the Clean Energy Plan, which details Consumers Energy's commitment to switching to 90% clean resources by 2040.[11] Most respondents were not aware of the Clean Energy Plan prior to the focus group sessions; however, Jackson respondents had some awareness of the plan. After hearing about the Clean Energy Plan, many focus group respondents struggled to understand why it would take until 2040 to reach that goal and wanted Consumers Energy to take action and adopt renewable energy resources sooner rather than later.

Barriers to Accessing Renewable Energy

Although focus group participants displayed a basic knowledge of renewable energy, they demonstrated a need for further education. Specifically, respondents had little knowledge about how renewable energy works, their renewable energy options, and struggled to identify how they could obtain this resource for their home. For example, some respondents were concerned that they would be without power if rooftop solar panels could not supply enough energy for their entire home on a cloudy day, others wondered if solar panels would work in the winter, and a few asked how they would know for sure that they were getting renewable energy if they did not have panels on their home. Recognizing knowledge limitations, focus group participants showed interest in receiving information about how renewable energy works and their options for obtaining it for their home.

> "If the sun goes down, how do you store the energy?"
> – Jackson Focus Group Participant

Focus group respondents identified concerns tied to the need for more information and transparency regarding how renewable energy works; in comparison, the 2018 Renewable Energy Roadmap research

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[11] Consumers Energy. *2019 Clean Energy Plan*. https://www.consumersenergy.com/-/media/CE/Documents/sustainability/integrated-resource-plan-summary.ashx?la=en&hash=9F602E19FE385367FA25C66B6779532142CBD374#:~:text=The%20Clean%20Energy%20Plan%20is,while%20maintaining%20affordability%20and%20reliability

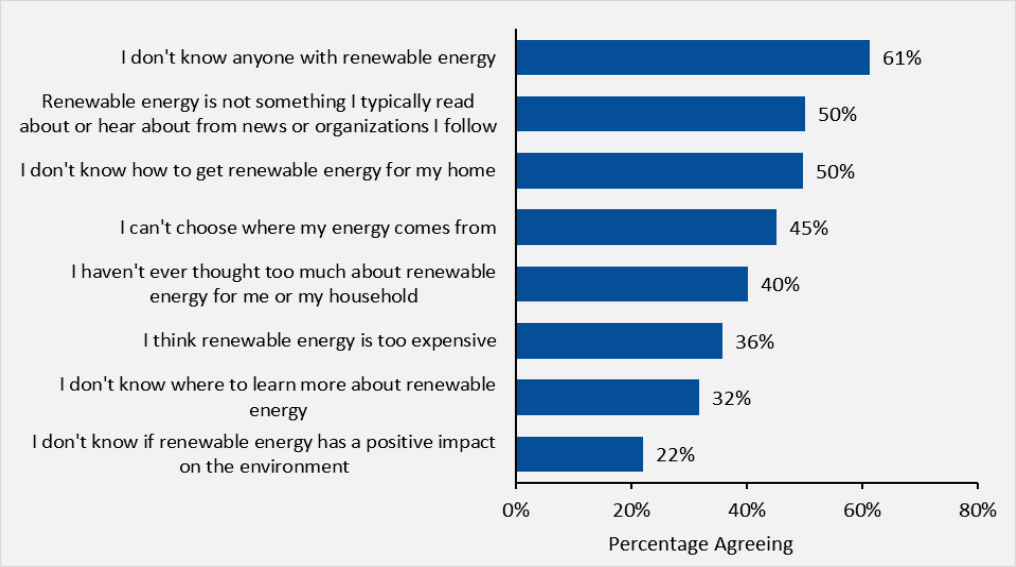
revealed that aesthetics, possible noise and environmental disruptions, and potential public controversies as leading concerns. Since 2018, respondents appear to have moved past undue concerns or misinformation about renewable energy and are now seeking more education. The survey findings corroborated this trend. Cadmus sought to develop scenarios pertaining to knowledge, experience, and sociocultural aspects of renewable energy and prompted survey respondents to select their level of agreement with certain statements on a 5-point scale, where 1 meant *strongly disagree* and 5 meant *strongly agree*. A relatively low percentage of respondents (22%; n= 1,085) *agreed* that they were not sure whether renewable energy has a positive impact on the environment; respondents agreed the least with this barrier statement compared to all other statements.

As shown in Figure 4, the most commonly agreed upon barrier statement was that respondents do not know anyone with renewable energy. Cadmus tested differences in barriers across race, age, and income. Black survey respondents were significantly more likely to agree with two statements than white respondents:[12]

- "I don't know anyone with renewable energy."
- "I don't know how to get renewable energy for my home."

There was no difference in income levels in regard to the perceived barrier of renewable energy being too expensive, with a little over one-third of respondents at all income levels agreeing with this barrier.[13]

Figure 4. Agreement with Barrier Statements



Source: Survey Question C5. "Please indicate your level of agreement with each of the following statements, where 1 is *strongly disagree* and 5 is *strongly agree*." Respondents could skip prompts (n=1,085 to 1,242). Percentage in graph includes those rating either *strongly agree* or *agree.*

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12 Per pairwise z-tests, $p<0.10$.

13 Cadmus segmented respondents' income as less than or equal to 300% of the federal poverty level and less than or equal to 200% of the federal poverty level.

Cadmus presented one additional barrier statement not included in the figure: "I am a renter and I don't have the ability to put solar panels on my home." The vast majority of respondents skipped over this prompt because it did not pertain to them (86% of survey respondents own their home). Of the 163 respondents who did answer that prompt, 80% agreed.

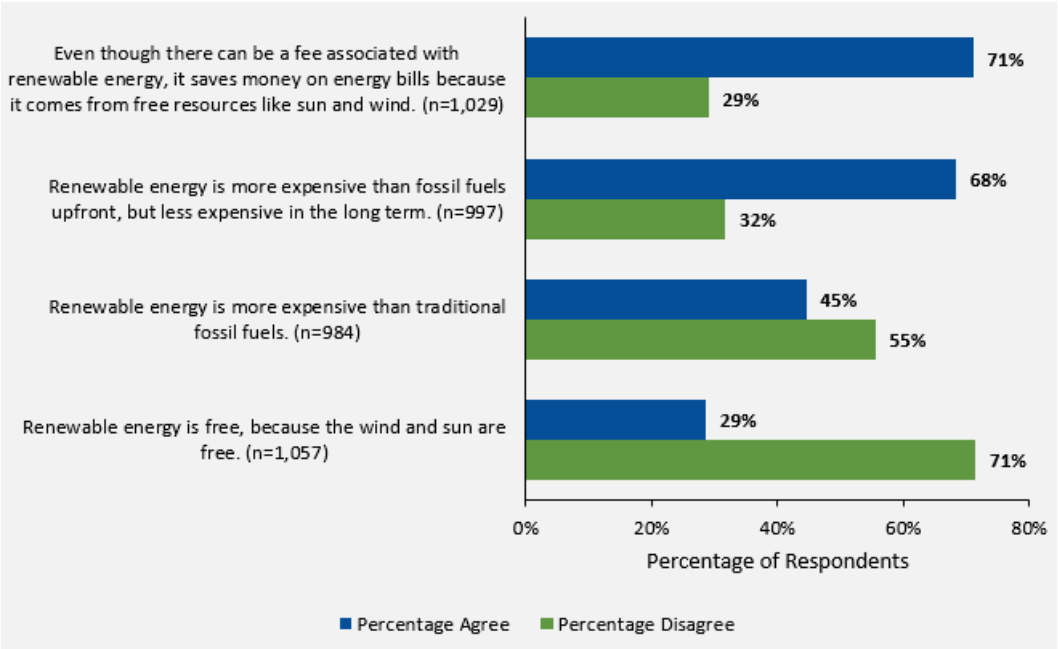
Cost Perceptions

Consumers Energy was interested in understanding what income-qualified customers think about the costs of renewable energy. Survey respondents were presented with several scenarios about the cost of renewable energy compared to conventional energy (from fossil fuels) and asked to state whether they agreed or disagreed with each statement (Figure 5). Findings showed that there was less agreement with broad generalized statements about costs, such as "renewable energy is free, because the wind and sun are free," illustrating that most customers understand the nuances around renewable energy generation costs. Survey respondents agreed that renewable energy costs may be accompanied by a fee or be higher upfront cost but expected long-term cost savings.

> "[Renewable energy costs more because of the] development of it. Fossil fuels are established, but when renewable energy is up and running, I assume we will see costs come down."
>
> – Flint Focus Group Participant

This mirrored focus group findings. At first, focus group participants' thought renewable energy would cost less. However, when Cadmus clarified that renewable energy can often cost more, focus group participants were able to quickly articulate why renewable energy might cost more than traditional fossil fuels. Many participants indicated that it was logical for renewable energy to cost more up front, mentioning that it is still a relatively new and specialized technology that requires new infrastructure to be built. And, similar to the survey, some focus group participants noted that while it makes sense that it would cost more in the immediate term, they assumed it would eventually lead to lower energy costs once the proper infrastructure is in place and paid for.

Figure 5. Survey Participant Conceptions of Renewable Energy Costs



Source: Survey Question C4. "Please read the following statements about renewable energy costs. Drag the statements you agree with to the box labeled 'Agree.' Drag the statements you disagree with to the box labeled 'Disagree.' You can agree or disagree with more than one statement."

Drivers for Pursuing Renewable Energy

To provide Consumers Energy with relevant information for talking to income-qualified customers about renewable energy, Cadmus used a MaxDiff analysis to identify the *most important* benefits of renewable energy.[14] Cadmus tested eight commonly understood benefits and facts about renewable energy that are often cited for pursuing a clean energy future. The goal of this analysis was to see which benefit resonated most with customers.

Preference Share

The benefits Cadmus tested are listed in Figure 6. As shown, respondents cited "renewable energy fights climate change because it does not produce greenhouse gas emissions like coal-fired power plants do" as the most important benefit of renewable energy, underscoring the fact that addressing climate change, specifically, is a key driver for customers, beyond the other benefits.[15] Focus group participants also cited climate change as a concern. However, as explained in the following section, the data from the model provide another layer of insight surrounding customer attitudes. Though the predictive analysis forecasts that the "climate change" is likely

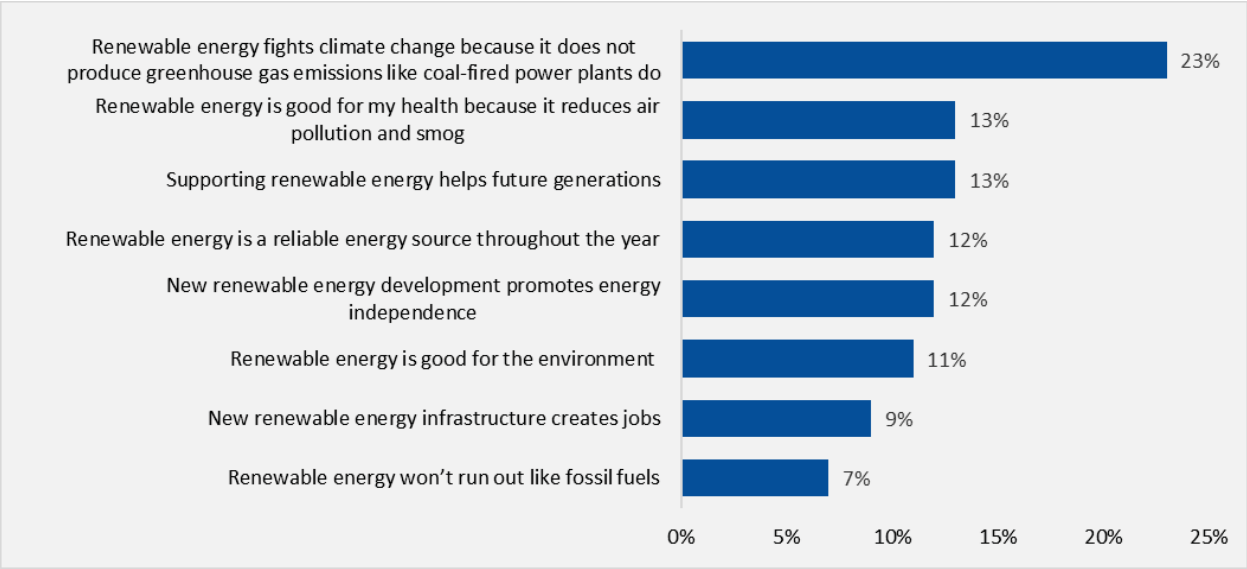
> "If we don't fix [global warming] now, then what?"
> – Flint Focus Group

[14] For a detailed discussion around the methodology and definitions of MaxDiff modeling outputs, see the *Methodology* section.

[15] The preference share is a model output indicating the likelihood that the attribute would actually prove to be the most appealing benefit.

the most important benefit of renewable energy for the greatest number of customers, Cadmus also found it to be a polarizing message, resonating least with certain customers. As shown in Figure 6, messages about health and helping future generations were predicted to be the next most important benefits among income-qualified customers, while job creation and long-term availability were the least important benefits.

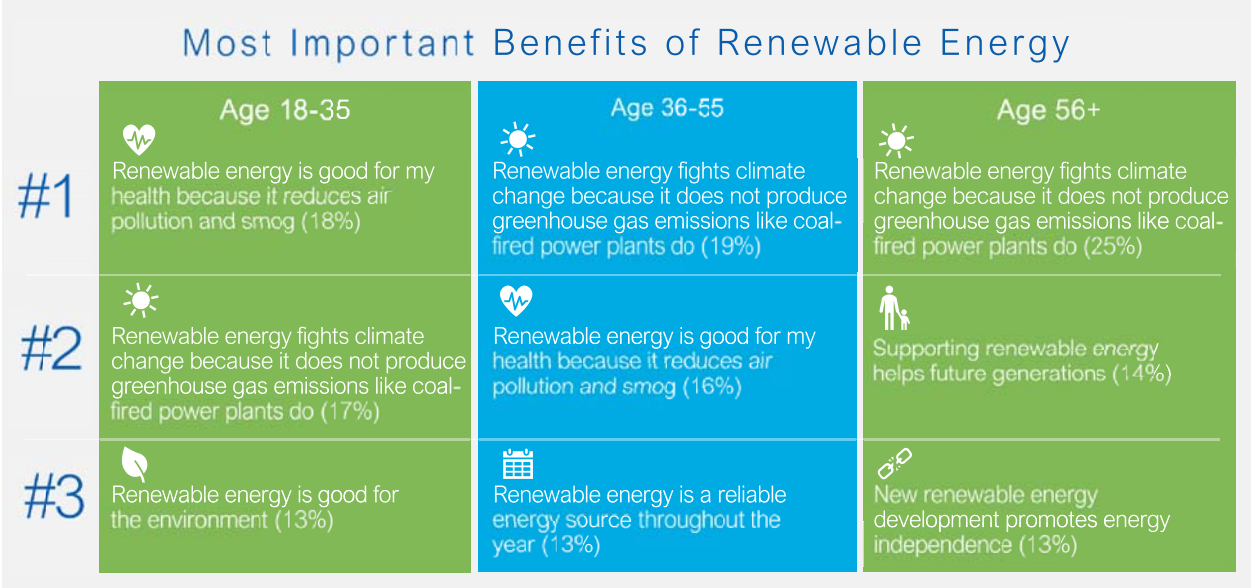
Figure 6. Renewable Energy Benefits: Predicted Preference Among Income Qualified Customers



Source: Survey Question C2 "For the next 12 questions, you will be asked to evaluate the importance of different statements about renewable energy… Thinking only of the five statements listed below, which ONE about renewable energy is most important and which ONE least important to you?" Preference share data generated from MaxDiff modeling output.

Cadmus investigated resonance by demographic details and found differences by age group and race. Younger people (ages 18 to 35) rated the most powerful benefit of renewable energy as being good for their health, indicating that messages about clean air will resonate most with this age segment. "Supporting renewable energy helps future generations" was not one of the top three benefits for customers younger than 55, as it was for the vast majority of income-qualified customers who are 56 years or older (Figure 7). For both white customers and those from other minority ethnic groups, "renewable energy fights climate change …" was the most appealing benefit. However, the message about positive impacts on *health* had the second highest preference share for ethnic minority customers but ranked only fourth for white respondents.

Figure 7. Differences by Age



Average Utility Scores

A key benefit of MaxDiff analysis is the rich data it produces, which can illustrate nuanced and complex attitudes better than an ordinary rating scale would. In addition to the predicted preference for the most important benefit of renewable energy, discussed above, the analysis also produced average utility scores. These scores represent the relative importance of each feature compared to the others and are helpful in illustrating respondents' range of opinions. As shown in Table 2, the average utility scores for renewable energy messages were relatively clustered; for example, the top benefits were differentiated by less than one point each. This can be interpreted to mean that one message does not have a large relative difference over another. The average utility scores are ordered differently than the preference share shown above because the average utility score is a function of the number of times each message was selected as the most important *and* the least important. For example, the message, "renewable energy fights climate change because it does not produce greenhouse gas emissions like coal-fired power plants do" was selected as most important 29.5% of the time, and also selected as *least* important 22.5% of the time. This creates an average utility score below "renewable energy is good for the environment."

The "good for the environment" message was only selected as least important 6% of the time, which improves its utility score. Considering both metrics – utility scores as well as preference shares – are useful to understand customer values and drivers. Fighting climate change was selected most often as the most important benefit of renewable energy, and is predicted to be the most preferred message, yet the "good for environment" message is a less polarizing choice.

Table 2. Average Utility Scores of Renewable Energy Benefits

Benefit	Utility Score	Most	Least
Renewable energy is good for the environment	0.5	23.0%	6.0%
Supporting renewable energy helps future generations	0.2	22.0%	13.5%
Renewable energy fights climate change because it does not produce greenhouse gas emissions like coal-fired power plants do	0.2	29.5%	22.5%
Renewable energy is good for my health because it reduces air pollution and smog	0.0	21.0%	14.5%
Renewable energy is a reliable energy source throughout the year	-0.4	19.5%	19.5%
New renewable energy development promotes energy independence	-0.4	20.0%	21.0%
New renewable energy infrastructure creates jobs	-1.2	13.0%	30.0%
Renewable energy won't run out like fossil fuels	-1.3	12.0%	33.0%

Source: Survey Question C2 "For the next 12 questions, you will be asked to evaluate the importance of different statements about renewable energy… Thinking only of the five statements listed below, which ONE about renewable energy is most important and which ONE least important to you?" Data generated from MaxDiff modeling output.
A negative average utility score generally means the feature was chosen as least appealing more often than most appealing, or, that those options were chosen roughly the same amount by respondents. Negative utility scores should not be interpreted as meaning that respondents viewed this particular trait as a drawback, only that it was not as powerful of a message as others.

Willingness to Pay for Renewable Energy

Focus group participants discussed the trade-offs for paying a nominal fee (of $5 or $10 each month) to match their usage with renewable energy credits, though they were cautious about higher amounts such as $25. As one Jackson participant explained, "Five dollars or $10 [a month] is a soda and maybe a coffee a month. But $25 starts dipping into other expenses—that could be a quarter tank of gas."

However, participants agreed that they want more information regarding what the payment would cover. For example, some respondents expressed concerns over how exactly their money would be spent to support renewable energy, including how the energy would get to their home. Ultimately, respondents agreed that more information would help build trust and confidence that their money would be used in the ways they desired, such as for building infrastructure to support additional renewable energy generation, to support free or low-cost energy to people who need it, or to create jobs.

> "If I had more information, then maybe $10 [instead of only $5]."
>
> – Muskegon Focus Group Participant

Renewable Energy Program Concept Testing

Focus group findings, including respondents' willingness to pay for renewable energy and their reactions to hypothetical program concepts, helped inform the survey questions Cadmus used to quantify likelihood to participate. Working with Consumers Energy, Cadmus developed detailed program descriptions for three distinct programs. Cadmus used an experimental design to explore whether small changes to program descriptions or program details resulted in meaningful differences in customers'

likelihood to participate.[16] This type of quantitative survey design is referred to as A/B testing, and is a common statistical approach used in marketing and product development. For full details on this approach, see the *Methodology* section.

Cadmus determined market demand, or the estimated likelihood to participate in each program, by applying a downward propensity adjustment to results to address desirability bias.[17] Since every survey respondent was presented with the program descriptions, the results also assume that prospective participants are aware of the programs and have received key pieces of information beyond the preliminary graphical description. It will be important for Consumers Energy to convey this information to customers in order to achieve the estimated market uptake presented in this report.

Figure 8 shows a brief overview of the programs and the difference in A/B scenarios. *Appendix A* provides the full program descriptions shown to survey respondents. Consumers Energy filed versions of a donated community solar and the Michigan RECs programs consistent with option A in the *2019 Voluntary Green Pricing Biennial Report* filing and received approval from the Michigan Public Service Commission to move forward with program implementation in 2021.

Figure 8. Overview of Program Descriptions and A/B Options

Program Tested	Description	Option A	Option B
Donated Community Solar	A no-cost program in which income-eligible customers receive a credit on their electric bill from energy generated by a community solar array, funded by non-profit organizations through public and private donors.	Without "Helping Neighbors" branding	With "Helping Neighbors" branding
Michigan Renewable Energy Credit Program (MI RECs)	Customers pay a small fee on their electric bill to match a portion of their energy use with renewable energy through renewable energy credits.	100% of usage is matched with renewable energy credits for $6 more on electric bill per month	50% of usage is matched with renewable energy credits for $3 more on electric bill per month
Rooftop Solar	Customers install solar panels on the roof of their home through zero interest, on-bill financing from Consumers Energy.	Contract length of 15 years; additional $250 on their electric bill per year for solar panels	Contract length of 10 years; additional $900 on their electric bill per year for solar panels

[16] Respondents who answered questions about a potential donated community solar or the Michigan RECs program where shown more information after their first response about how likely they would be to participate. Those who rated themselves as *not very likely* were asked a follow-up likelihood question after receiving more information about the program.

[17] For methodologies on how Cadmus calculated this percentage, see the *Market Demand Analysis* section.

Donated Community Solar Participation Preferences

Preferred Program (Option A/B):	Customers prefer both options equally
Overall Market Demand:	39%

Findings

The focus groups discussed a version of a potential donated community solar program. Most focus group customers would be interested in participating in such a program and demonstrated an understanding of most program components. Where there was confusion, Cadmus designed information statements to include in the survey to test customer reactions to additional information (described in more detail in the *Barriers and Solutions* section).

During the focus group discussion, participants were asked if being required to install energy efficiency items such as LED light bulbs, low flow showerheads, or weatherization upgrades before participating in a donated solar program would impact their level of interest. Initially, customers were concerned about costs associated with these upgrades, but after an explanation that these are products and services provided to income-eligible customers free of cost under the Consumers Energy Helping Neighbors program,[18] participants did not perceive this as a barrier. During this discussion, participants showed a familiarity with and very favorable opinion of the Consumers Energy Helping Neighbors program; some recognized the program by its name, but most recognized the program after hearing a description of it. Paired with the knowledge from previous Cadmus evaluations that Helping Neighbors is a trusted and well-liked program among income-qualified customers, Cadmus decided to test the branding within the survey by including an option of the program with Helping Neighbors branding.[19]

Findings from the A/B testing indicate that the Helping Neighbors branding (option B) did not make a significant impact on a respondent's likelihood to participate. However, individuals between 36 and 55 years old and those between 56 and 70 years old were more likely to participate (in either option of a donated community solar program) compared to participants older than 70.[20] Based on feedback from individuals who were not likely to participate in the program, this difference is not clearly tied to one specific kind of barrier.

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[18] Consumers Energy designed the Helping Neighbors program to provide income-qualified customers (those at or below 200 percent of the federal poverty guidelines) with improved access to energy-efficiency measures and information on ways to make long-term behavior changes related to their energy use through a portfolio of options.

[19] Only survey respondents whose income was at or below 200% of the federal poverty level were eligible to complete donated community solar program questions.

[20] Per Tukey HSD test, $p<0.05$; as detailed further in the *Demographics* section, over half the survey respondents were 71 years or older.

Barriers and Solutions

Focus group participants not only spoke about their interest in a donated community solar program, but also about their concerns or questions when considering their hypothetical participation in such as program. Cadmus used these findings to write information statements, which were shown to survey respondents who indicated they were *not very likely* to participate in the program. In particular, two key themes emerged from focus group participants' feedback that impacted information statements tested in the survey:

- ***Customer Costs and Customer Credit.*** Focus group participants struggled to believe that participation would truly come at no cost to them and could even result in a credit to their bill. However, participants indicated that with more information (such as identifying the sources of funding and assuring them that the program would not increase any of their costs), they would be more comfortable participating in the program.
- ***Participation Period.*** Focus group participants desired more background information on how the three-year participation period and amount of renewable energy were determined.[21] For example, while some customers understood that the participation period was limited so others could also receive the benefit, other customers expressed concern about what would happen to their bills after the three-year period—many of whom said they wanted the ability to re-enroll.

> "If it sounds too good to be true, it probably is."
>
> – Cadillac Focus Group Participant

The information statements that were presented to survey respondents are shown in Table 3.

Table 3. Donated Community Solar Additional Information Statements

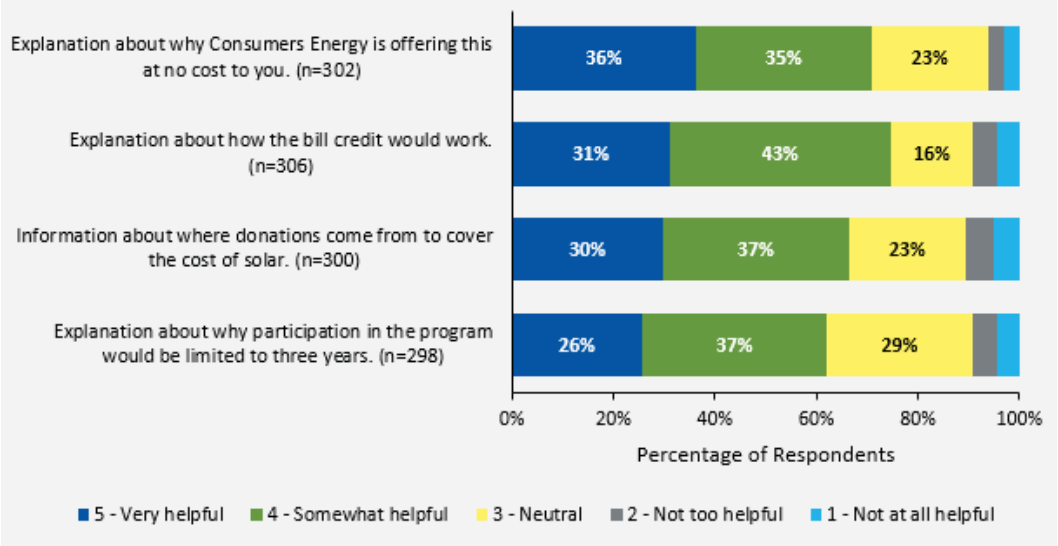
Summary	Full Statement
Explanation about why participation in the program would be limited to three years.	This offering is for a limited 3-year period because Consumers Energy wants to help as many people as they can. After your 3-year period is finished, another eligible family receives the donation. By enrolling, you're paving the way for a program that will be around for years to come.
Explanation about why Consumers Energy is offering this at no cost to you.	Consumers Energy is offering this program at no cost to you because they are focused on helping provide affordable renewable energy for those who need it most and moving Michigan toward a cleaner future.
Information about where donations come from to cover the cost of solar.	The funds for the solar energy would be donated by a variety of entities, including grants from charitable organizations, government entities and individuals who are looking to make an impact on their community.
Explanation about how the bill credit would work.	The credit on your bill will be simple. One of Consumers Energy's solar projects will generate a certain amount of solar energy every month. The energy will be divided up and credited to your electric bill, and to those of other qualified households that participate.

Survey respondents rated the helpfulness of each statement in clarifying program details on a 5-point scale, where 1 meant *not at all helpful* and 5 meant *very helpful.* As shown in Figure 9, the explanation about why Consumers Energy is offering the program at no cost to the customer was most frequently

[21] In the program descriptions presented to customers, participation in the program was limited to a three-year period.

rated *very helpful.* Though respondents found each statement helpful overall (with all statements being rated *helpful* by over 60% of respondents), statements about receiving information did not significantly impact respondents' likelihood to participate.

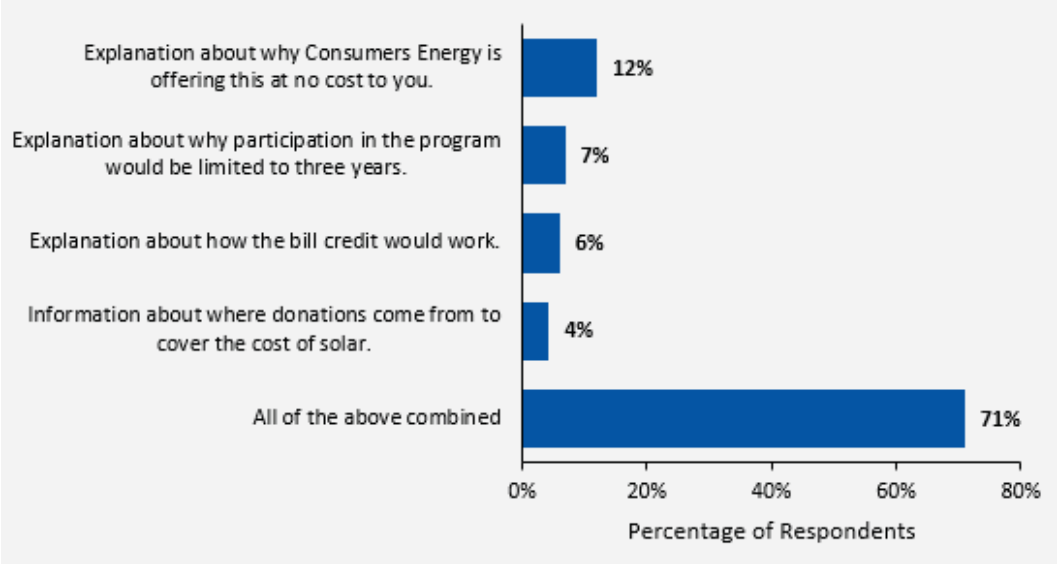
Figure 9. Donated Community Solar: Information Statement Helpfulness



Source: Survey Question E2. "We recognize you may have questions about this program. Below are some further details. How helpful is each of the following statements in clarifying details about the program?"

After reading all the statements and re-rating their likelihood to participate, respondents answered which statement was the *most* helpful for them. The vast majority of respondents indicated that all of the statements were equally helpful (71%; n=117). As shown in Figure 10, of those who identified one statement as the most helpful, again the explanation about why Consumers Energy is offering the program at no cost to the customer rose to the top.

Figure 10. Donated Community Solar: Most Helpful Information Statements



Source: Survey Question E5. "Which additional piece of information was most helpful for you? Please choose one." (n=117)

After receiving the information statements, survey respondents who still indicated they were *unlikely* to participate were asked why. Most of these respondents perceived that they were ineligible because they were renters (20%; n=11). Other common themes surrounded trust concerns regarding the free aspect of the program, even after additional information was presented (16%), as well as needing even further details about how the program would work (16%), a non-specific dislike of the program concept (15%), belief they were too old or too unhealthy to be able to participate (13%), or still not having a clear understanding of the program (9%). Those who did not understand the program commonly made statements such as "I don't want [solar panels] affixed to my roof" or "I'm not comfortable with spending that kind of money."

Trust concerns commonly referred to distrust in receiving something for free. For example, one respondent said, "We are elderly. [We're] always worried about being offered something that isn't supposed to cost us anything. [We] do not want to be taken advantage of." However, a couple of participants also expressed a distrust about the "fairness" of the program, expressing concern about whether the program was "funded on the backs of other customers," rather than from donations through local community action agencies (as described in the program concept testing).[22]

[22] See *Appendix B* for full program concept testing details.

Michigan Renewable Energy Credits Participation Preferences

Preferred Program (Option A/B):	Option B: $3/month to subscribe to a match of 50% renewable energy
Market Demand Option A:	24%
Market Demand Option B:	31%

Findings

As was discussed in the *Cost Perceptions* section above, focus group respondents did not think paying $5 a month was a barrier to accessing renewable energy. At the same time, they had challenges with the abstract concept of subscribing to renewable energy that might not be flowing directly to their home. Though the Michigan RECs program was not tested in focus groups, these findings prompted Cadmus and Consumers Energy to test the Michigan RECs program with entry cost-points that would be appropriate for income-qualified customers. To further understand income-qualified customers' price sensitivity, Cadmus tested two versions of the program: one for $6 more each month to match 100% of their electricity with renewable sources and one for $3 more each month for a 50% energy match.

Respondents were significantly more likely to participate in a program that involved a $3 increase on their monthly electric bill to match 50% of their energy with renewable resources (Option B) than to participate in a program for $6 more each month to match 100% of their electricity with renewable sources (Option A).[23]

Barriers and Solutions

> "I live in a trailer park, so there is a trailer 15 feet from mine. If I pay more, how do I know I am getting the renewable energy and not the other trailer?"
>
> – Flint Focus Group Participant

Though Michigan RECs was not specifically tested in the focus groups, Cadmus anticipated that survey respondents may have additional questions about this program due to general challenges with understanding a remote renewable energy option, as was identified during the focus groups and in the 2018 Renewable Energy Roadmap research. For example, when speaking about paying more for renewable energy, focus group participants did not have a clear understanding of how they would receive that renewable energy. Participants did, however, indicate that more information would help build trust and confidence that their money would be used in the way they desired. Participants also said that additional information would help overcome concerns about

[23] Per Tukey HSD test, $p<0.10$.

> "[The most appealing renewable energy would be] whatever is most reliable. I want to say solar because it's more reliable than wind – but I don't know."
>
> – Cadillac Focus Group Participant

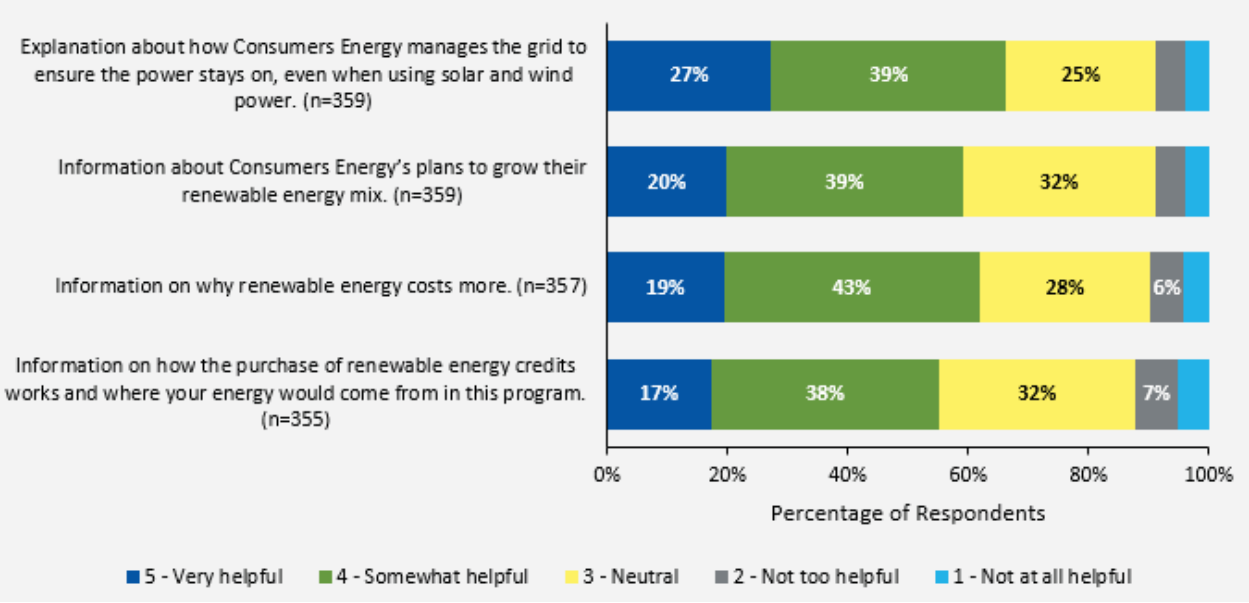
renewable energy being less reliable. Due to this feedback and the abstract nature of energy credits, Cadmus designed four information statements (shown in Table 4) to help survey respondents gain a better understanding of the program before reassessing their likelihood to participate.

Table 4. Michigan Renewable Energy Credits Information Statements

Summary	Full Statement
Information on why renewable energy costs more.	Though proven to be highly reliable, large-scale renewable energy systems are still a new technology. The cost of new infrastructure means it costs slightly more to develop these resources than gas or coal systems historically.
Information on how the subscription of renewable energy credits works and where your energy would come from in this program.	Your home will still receive the same energy that your neighbor does from a central grid. However, Consumers Energy uses your dollars to purchase renewable energy credits equivalent to the amount of electricity your home uses. Each person who opts in to match their use with renewable energy helps grow the overall amount of renewable energy that is generated in Michigan.
Information about Consumers Energy's plans to grow their renewable energy mix.	Consumers Energy is dedicated to promoting a cleaner energy future for all of Michigan. While some of your electricity is already generated by renewable energy, Consumers Energy recognizes that some customers would like that transition to take place sooner, and low-cost programs such as this one is one way to do that.
Explanation about how Consumers Energy manages the grid to ensure the power stays on, even when using solar and wind power.	Though extreme weather events always pose a risk for the electric grid, you will never run out of power due to lack of sun or wind. Consumers Energy will optimize its energy mix to make sure it is reliable 24 hours a day, 7 days a week. By opting-in to match your usage with renewable energy, you are helping Michigan diversify the grid with a greater mix of renewable fuels from different locations throughout the state.

When reading the statements, respondents indicated the helpfulness of each statement on a 5-point scale, where 1 meant *not at all helpful* and 5 meant *very helpful.* Respondents found the statement that explained how Consumers Energy would ensure that power would remain on, even when the grid is relying on solar and wind sources, to be the most helpful (59%, n=359). Overall, receiving information statements did not significantly impact respondents' likelihoods to participate. Even so, respondents found each statement helpful (with all statements being rated as *helpful* by over 50% of respondents; Figure 11).

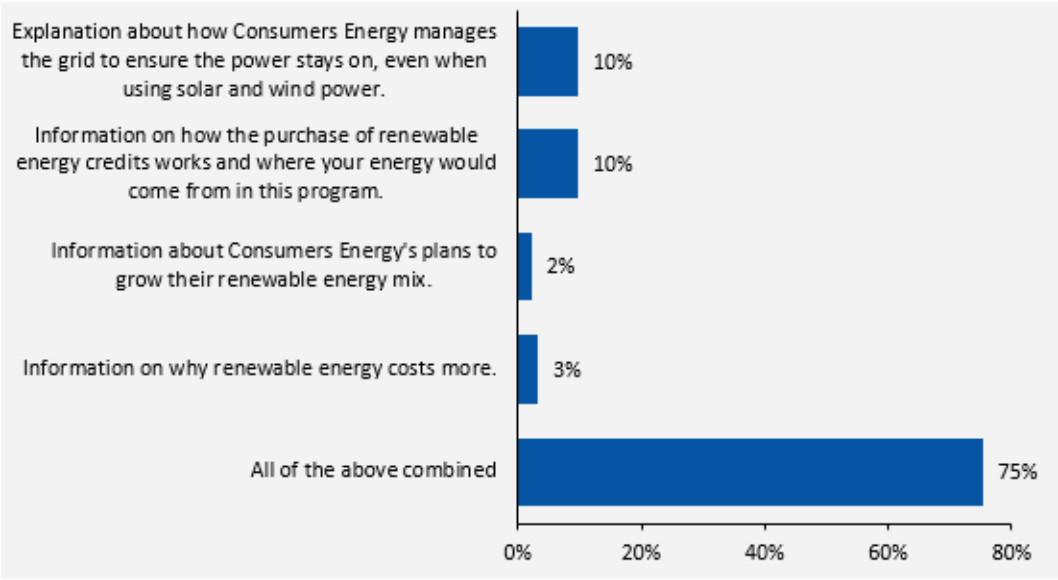
Figure 11. Michigan Renewable Energy Credits Information Statement Helpfulness



Source: Survey Question F2. "We recognize you may have questions about this program. Below are some further details. How helpful is each of the following statements in clarifying details about the program?"

As a follow-up, respondents identified which statement was the *most* helpful. Three-quarters of respondents said all the statements combined was the most helpful (75%, n=93. As shown in Figure 12, though the information about the subscription of renewable energy credits was considered as *helpful* as the other three statements, it was considered *most helpful* by 10% of respondents whose likelihood to participate changed as a result of reading the statements (only these respondents were asked to identify which statement was *most* helpful.)

Figure 12. Michigan Renewable Energy Credits Most Helpful Information Statements



Source: Survey Question F5. "Which additional piece of information was most helpful for you? Please choose one." (n=93)

Customers who received the information statements and reported still being unlikely to participate were asked why. By far, most respondents said they were not willing to participate because of the cost (43%; n=127), followed by other concerns such as skepticism about the renewable energy sources in the program (13%). For example, one respondent said, "It seems to me that all this renewable stuff is way too expensive and doesn't work. Last time I checked the sun does not come out much in the winter even when the wind does not blow." Other concerns included needing even further information (9%), a perception of being ineligible because they were renters (8%), trust or reliability concerns (7%), or a general lack of interest in the program (7%).

Rooftop Solar Participation Preferences

Preferred Program (Option A/B):	Customers prefer options equally
Overall Market Demand:	21%

Findings

During the focus groups, Cadmus tested the concept of a rooftop solar program with a 15-year contract period and an annual payment of $250. Focus groups respondents expressed concern about the 15-year contract period being too long. Therefore, Cadmus and Consumers Energy created two versions to test with survey respondents: a 15-year contract period with a payment of $250 per year (option A) and a 10-year contract period with a payment of $900 per year (option B). Additionally, this rooftop solar program concept was only presented to survey respondents who indicated owning their home.

> "15 years seems like a long time. Even people who own their homes might not be in it for 15 years."
> – Flint Focus Group Participant

The difference between the A/B options did not affect a survey respondent's likelihood to participate. However, age did make a significant difference: all respondents who are 71 years or older were less likely to participate in either program option compared to younger participants.[24] Barriers and solutions are discussed in more detail below, but within this program, older individuals more commonly expressed that the barrier to their participation was the length of time to see savings, saying they would not be able to see those benefits come to fruition.

Barriers and Solutions

If a survey respondent was unlikely to participate in the program, they were asked what kind of challenges they would have with participating. Most respondents indicated that cost was a barrier (51%; n=173). In a follow-up question, 87% of customers (n=224) answered "no" when asked if the program

[24] Per Tukey HSD test, $p<0.05$

would be more favorable if the contract length were shorter (even if it resulted in a higher annual payment). Even within option A (15-year contract with $250 annual payments for the panels), 85% of survey respondents did not favor the tradeoff between shorter contract length for a higher price. This contrasted with focus group participants, who did not perceive the $250 as a barrier to participation but did view the 15-year contract as a barrier.

Survey respondents were also asked if making payments directly to the installation contractor (either up front or through a payment plan), rather than paying Consumers Energy through a surcharge on their electric bill, would make the program more favorable. Survey respondents indicated that this would not make the program more favorable (71%; n=231).

Barriers to participation, among those who rated themselves as unlikely to participate, included questions about solar panel maintenance (23%),[25] concern about moving or selling the home during the contract period (20%), concern that the electricity savings after the contract period would not go down as much as described in the program concept testing (18%), or confusion about pricing and payments (9%). Consistent with these concerns, focus groups participants commonly expressed concern with the 15-year participation period due to moving or selling the home, as well as concern about solar panel maintenance. As mentioned above, respondents who are older than 70 were more likely to express concern over the length of the participation period.

About half of the 30% who answered "other" when asked about their concerns did not provide further details. However, of those who did provide more detail, most were disinterested in the program because they believed they were too old to realize the benefits (37%; n=27), underscoring the significant differences between age groups.

Trusted Organizations and Sources

Twelve percent of survey respondents (n=1,255) reported having received energy bill payment assistance from a community organization at any point in the past and just 8% (n=1,097) reported having a trusted organization in mind that they could turn to if they had trouble in the future. Those who had received assistance in the past cited the organization that helped them:

- Michigan Department of Health and Human Services (31%)
- Consumers Energy Affordable Resource for Energy (CARE) program (16%)
- TrueNorth (13%)[26]
- Salvation Army (12%)[27]
- Community action agencies (various; 9%)

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[25] After concerns about maintenance were discussed in the focus groups, Cadmus added a statement about a 25-year warranty that would cover solar panel maintenance to the rooftop solar program concept shown to survey respondents.

[26] https://www.truenorthservices.org/Assistance/Heat-and-Energy

[27] https://centralusa.salvationarmy.org/usc/

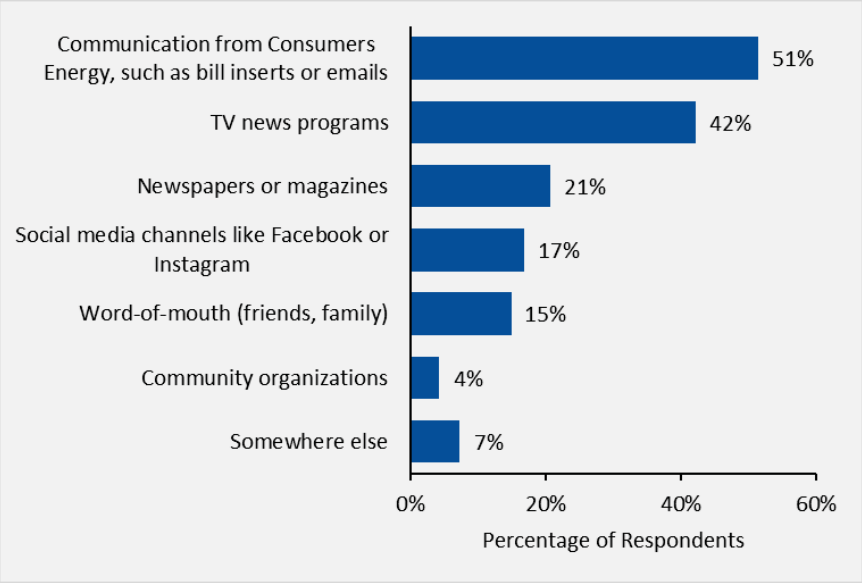
For those who reported being aware of a trusted organization they could turn to in need for bill assistance, the top four organizations were the same. The full list of organizations listed by respondents, including specific community action agencies, is included in *Appendix C*.

Information Channels for Energy and Environment

> "I trust [Consumers Energy] to power my house, so I trust them [to provide information about renewable energy]."
>
> – Cadillac Focus Group Participant

Survey respondents answered a question regarding how they typically hear about environmental and energy-related topics. They selected the top two ways they have learned about the environment or energy in the past. Half the respondents (51%; n=1,253) said they learned about energy and the environment from Consumers Energy. This was the most common answer, followed by TV news programs, newspapers or magazines, and social media (Figure 13).

Figure 13. Typical Channels for Hearing about Energy and Environmental Topics



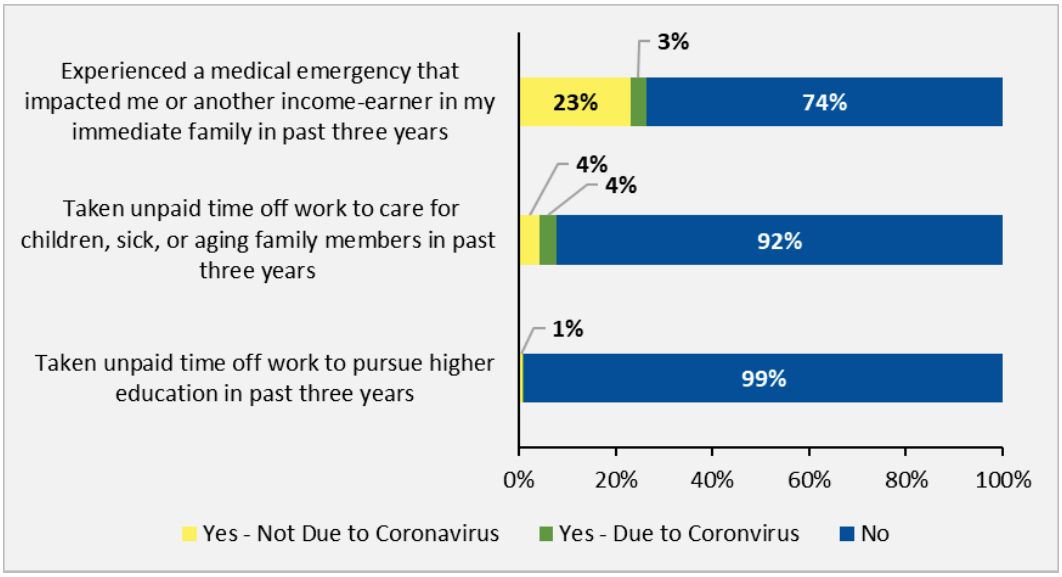
Source: Survey Question G3. "Where do you typically hear about information related to energy or the environment? Please select the top two ways you have learned about energy or environmental topics in the past." (n=1,253)

Those who said they learned about energy and the environment "somewhere else" cited sources of online news and other websites and articles, radio programs and podcasts, environmental organizations, books, and journal articles. When asked where they look for more information on a *specific* topic or question about an energy-related or environmental topic, the vast majority of respondents (72%; n=1,129) said they conduct a general internet search. Other methods were contacting Consumers Energy (47%), social media (19%), calling a friend or family member (10%), contacting a community organization (9%), or visiting a trusted website (8%), which included product manufacturers' websites, state and federal government websites, and environmental organizations and reporting websites.

Impacts of COVID-19 and the Economic Recession

Because Consumers Energy conducted this survey in August 2020, during the economic recession and the pandemic, Cadmus included some questions to help Consumers Energy understand the impact of the pandemic on their income-qualified customers. The survey found that 30% of survey respondents are receiving some type of government assistance. Of those receiving assistance, 19% reported starting to receive this assistance recently, since the pandemic. Cadmus explored the extent that customers are experiencing time off work due to coronavirus impacts and events, and 3% (or, 38 respondents) reported that a medical emergency caused by coronavirus had impacted them or another income earner in their household. Similarly, 4% (or, 44 respondents) reported having taken unpaid time off work to care for a sick family member(s) due to coronavirus (Figure 14).

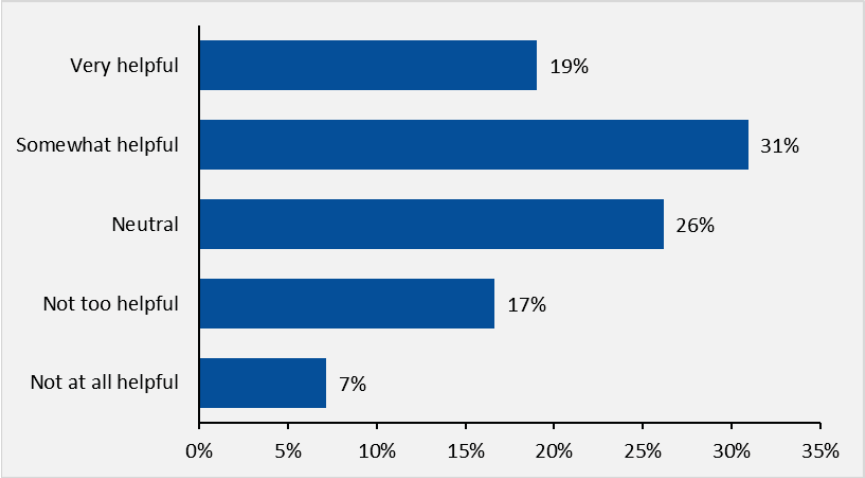
Figure 14. Impacts of Coronavirus on Unpaid Time Off Work



Source: Survey Question G8. "Please select whether any of the following life events are true for you. Select all that apply." (n=1,233)

Among those customers who recently took time away from work for any reason (due to coronavirus or another reason), 46% (n=390) reported that these life events impacted their ability to pay their Consumers Energy bill. Those who were specifically affected by the coronavirus had mixed feelings about Consumers Energy's assistance compared to those who were financially affected by the pandemic, though most had positive or neutral feedback (Figure 15).

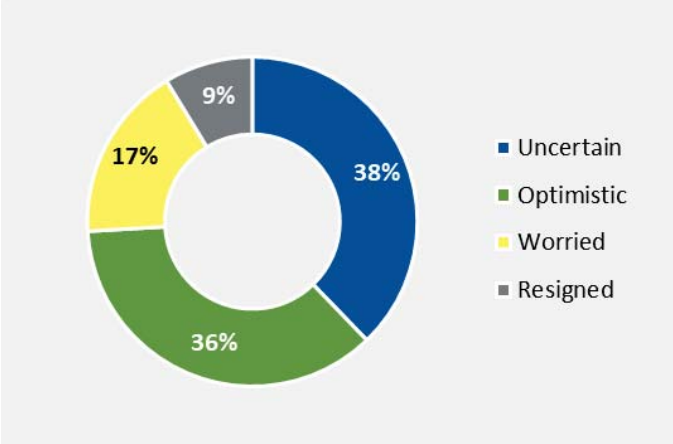
Figure 15. Rating of Consumers Energy Assistance to Those Financially Affected by Virus



Source: Survey Question G11. "How would you rate Consumers Energy's assistance to customers, like you, who were financially affected by the coronavirus?" (n=42)

Despite the difficulties in recent months, 41% of respondents (n=907) reported seeing signs of economic improvement in their community and 36% (n=1,172) reported being optimistic about their financial future (Figure 16).

Figure 16. Respondents' Outlook on the Financial Future



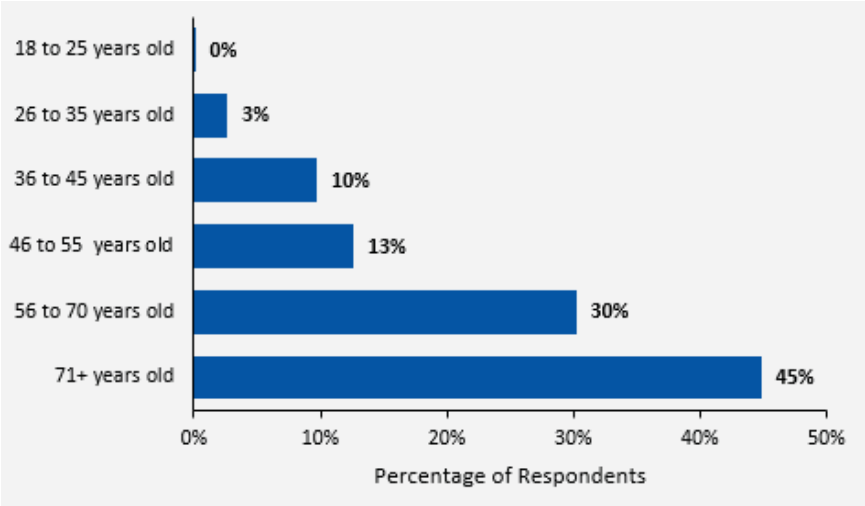
Source: Survey Question G13. "Which word best describes your feelings about your financial future, specifically?" (n=1,172)

Demographics

Survey respondents provided demographic information about themselves. Ninety-nine percent of respondents (n=1,229) reported English as their primary language, followed by Spanish, reported by three individuals as their primary language. The survey was only provided in English, which may have biased this result.

Almost half of all respondents (45%; n=1,216) were over 70 years old. The second most common age range was 56 to 70 years old (30%). Only one participant identified as being 18 to 25 years old (Figure 17). Note that for the analyses, Cadmus used four age bins to mitigate sample size problems: 18 to 35, 36 to 55, 56 to 70, and 71 or older. Seniors had a higher response rate than others; see the *Methodology* section for a discussion about the population Cadmus used for this study and the sampling plan.

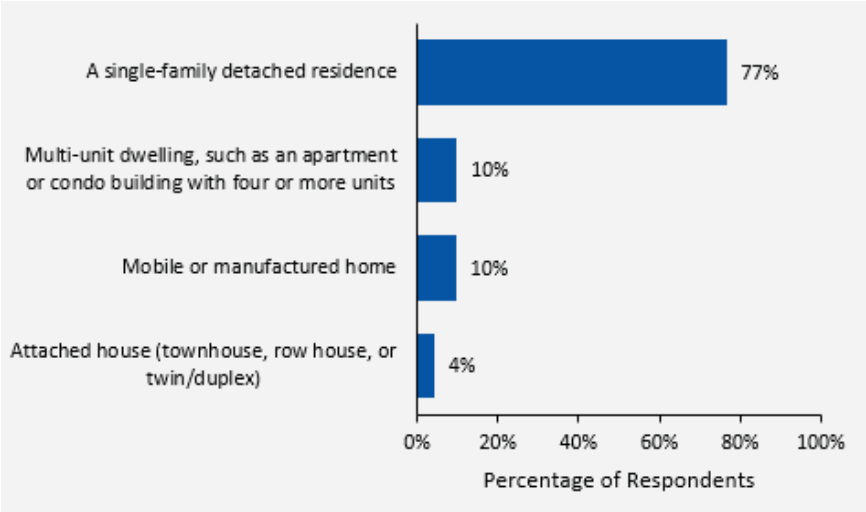
Figure 17. Survey Respondent Age Distribution



Source: Survey Question H2. "What age range do you fall into?" (n=1,216)

Figure 18 shows that the majority of respondents (77%; n=1,236) live in a single-family detached residence.

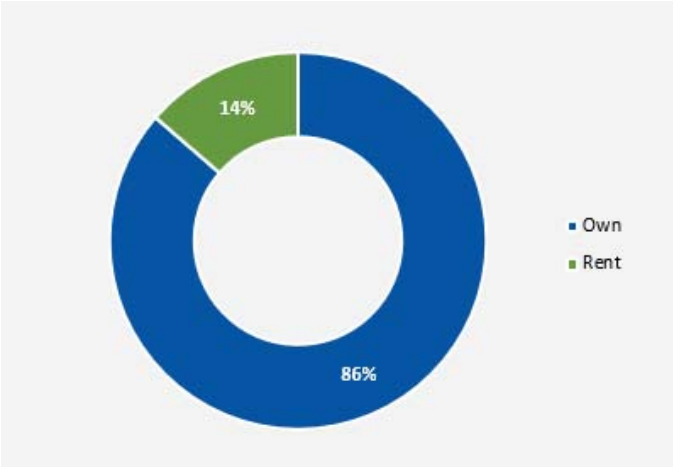
Figure 18. Type of Residence



Source: Survey Question H3. "What type of residence do you live in?" (n=1,236)

Overall, 86% of respondents (n=1,502) own their home (Figure 19); this ratio did not vary significantly by region.

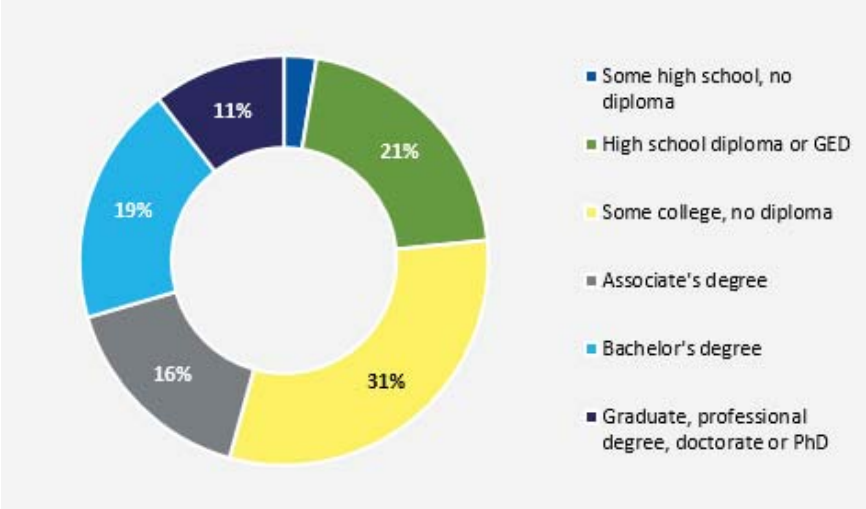
Figure 19. Homeownership Versus Renting



Source: Survey Question A3. "Do you currently rent or own your home?" (n=1,502)

Levels of education varied: most commonly, respondents had completed some college but not received a diploma (31%; n=1,208). As shown in Figure 20, this was followed by having completed high school (21%) and having received a bachelor's degree (19%).

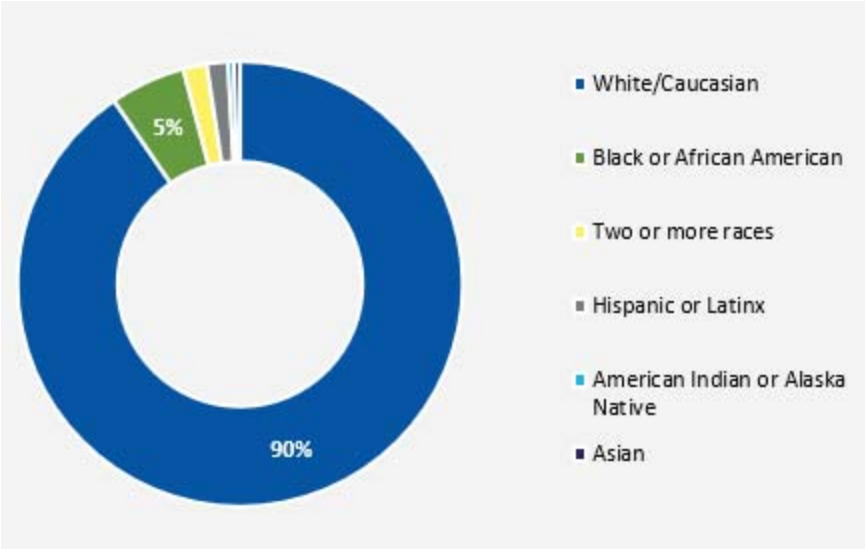
Figure 20. Education Level



Source: Survey Question H4. "What is the highest level of education you've completed so far?" (n=1,208)

Survey respondents were not very racially diverse: as Figure 21 shows, 90% of survey respondents (n=1,168) were white or Caucasian.

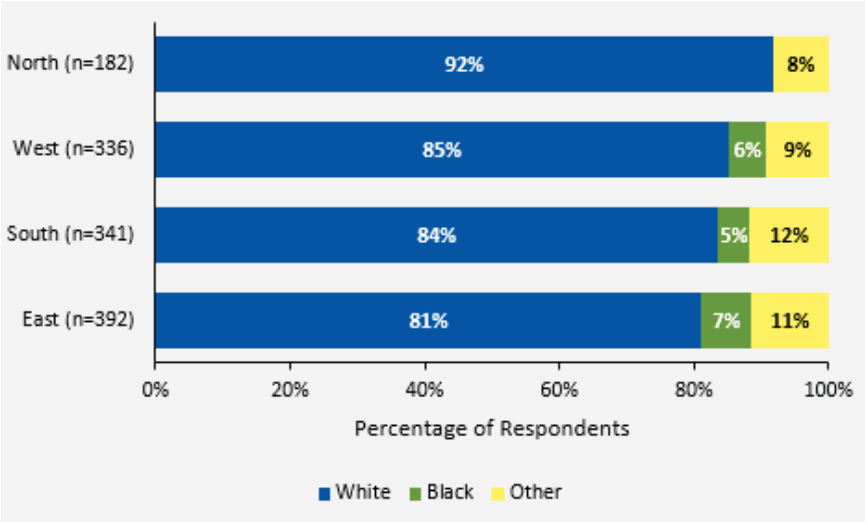
Figure 21. Race/Ethnicity



Source: Survey Question H5. "What race or ethnicity would you consider yourself?" (n=1,168)

Figure 22 shows the race/ethnicity of respondents by region.

Figure 22. Race/Ethnicity by Region



Source: Survey Question H5. "What race or ethnicity would you consider yourself?"

Methodology

The sections below outline the methodology for each research activity.

Renewable Energy Roadmap Survey Data Review

Prior to this income-qualified customer research, Cadmus conducted a survey of a geographically representative sample of Consumers Energy customers (residential and business) to inform the 2018 Renewable Energy Roadmap. Although we focused our analysis for the roadmap project on identifying outcomes that would broadly apply to most customers, Cadmus conducted a customer segmented review of the residential survey data to offer insights for subsequent research efforts with income-qualified customers.

Cadmus analyzed the 2018 Renewable Energy Roadmap survey data by customer clusters (conventional customers, digital dwellers, and the financially fraught), as previously determined from Personix segmentation categories associated with each customer record. We compared the clusters to identify how respondents in Consumers Energy's price sensitive cluster (the financially fraught) were statistically alike or different from the general residential customer population.[28] Cadmus assumed that the financially fraught cluster would be most similar to Consumers Energy's income-qualified customer population. The outcomes of the segment-specific comparison informed our development of the focus group discussion guide and customer survey instrument.

The 2018 Renewable Energy Roadmap findings Cadmus presented to Consumers Energy are included as *Appendix G*.

Focus Groups

Cadmus conducted eight in-person focus groups to gather qualitative insights from income-qualified customer regarding their attitudes toward renewable energy.

Group Segmentation and Recruitment

Consumers Energy compiled a population of residential customers who were likely to be eligible for this income-qualified focused research (such as participants in the Consumers Energy Affordable Resource for Energy program or those with shut-off protection). Cadmus then worked with recruiters from a professional focus group facility to screen customers, using a recruitment script provided by Cadmus, to confirm the required screening criteria, as well as the focus group locations and demographics. The recruitment screener is included in *Appendix D* and the required screening criteria are listed in Table 5. Cadmus offered focus group respondents a $100 VISA gift card for participating in the group.

[28] The segmentation plan for the 2018 Renewable Energy Roadmap was based on Consumers Energy's residential customer segmentation and cluster research. The financially fraught segment includes customers who self-identified as being budget conscious or struggling financially.

Table 5. Required Screening Criteria

Criteria	
Customer sector	All respondents must be current Consumers Energy residential electric account holders
Decision maker	All respondents must be household decision makers regarding electricity payments
Income	All respondents must have a household income at or below 300% of the federal poverty guidelines
Awareness	All respondents must have some awareness of renewable energy

To ensure representation across the state, Consumers Energy identified four locations to host the focus groups: Flint, Muskegon, Jackson, and Cadillac. A total of 56 respondents participated in these focus groups, representing the demographic profiles presented in Table 6. Recruiters collected variables such as household income, ethnicity, gender, and age during the screening process to ensure that each focus group was representative of the city or county population as determined in the focus group sample. Cadmus used demographic data from the U.S. Census Bureau to develop the sampling criteria for each region, then conducted the focus groups in February 2020.

Table 6. Focus Group Respondent Demographics by Region

Demographics	East		West		South		North	
Focus group location (city)	Flint		Muskegon		Jackson		Cadillac	
Number of groups	2		2		2		2	
Group timing (EST)	5:30 p.m.	7:30 p.m.	5:30 p.m.	7:30 p.m.	5:30 p.m.	7:30 p.m.	5:30 p.m.	7:30 p.m.
Respondents per group	6	6	8	9	9	5	6	7
Age								
Between 25 and 64 years	92%		88%		86%		92%	
65 years and over	8%		12%		14%		8%	
Gender								
Male	50%		47%		50%		62%	
Female	50%		53%		50%		38%	
Ethnicity								
White or Caucasian	17%		47%		79%		83%	
Black or African American	75%		29%		21%		0%	
Hispanic or Latinx	8%		6%		0%		0%	
Native American	0%		6%		0%		0%	
Other	0%		12%		0%		17%	
Income								
Most commonly reported income range	Less than $25k		$25k to $50k		$25k to $50k		$25k to $50k	

Discussion Guides

Cadmus drafted a discussion guide and pre-group survey designed to support Consumers Energy's research objectives. In addition to the discussion guide, Cadmus created two handouts with program descriptions to test interest in donated community solar and rooftop solar programs. We designed these handouts to cover the basic information and requirements for both types of program while being easily digestible and accessible to focus group respondents. The discussion guide, including the program handouts, is included in *Appendix E*.

Customer Surveys

Following analysis of the focus group data, Cadmus conducted an online (and mobile-enabled) survey to gather market demand and customer preference data. Cadmus recruited respondents by sending email invitations to the online survey, fielded in August 2020. To incent participation, we sent a $10 gift card (Meijer or Amazon, their choice) to eligible customers who completed the survey. The survey instrument, including the email invitation language, is included in *Appendix F*. Cadmus used screening criteria to ensure the survey gathered feedback from income-qualified customers: to be eligible to participate in the survey effort, customers had to report their household income to be at or below 300% of the federal poverty level.

Sampling

Consumers Energy provided email addresses for a population of customers assumed to have a high likelihood of being qualified to participate in the study prior to the income screening. The customers in this population included those enrolled in the Helping Neighbors program; the winter protection program (CARE); individuals who receive an income credit; shutoff protection; or were seniors on a fixed income. To contact respondents, Cadmus used a stratified random sampling approach, where we stratified by region. Cadmus split the population into four regions of Michigan (north, south, east, and west) based on the county of each customers' zip code and contacted a subset of the population size for each group. As shown in Table 7, the final survey sample was highly representative of the population's regional distribution.

Table 7. Sampling Table with Survey Results

Region	Population Size	Percentage of Population	Number of Survey Respondents	Percentage of Survey Respondents
North	32,300	14%	221	15%
South	58,973	26%	409	27%
East	74,375	33%	467	31%
West	59,356	26%	405	27%
Total	**225,004**	**100%**	**1,502[a]**	**100%**

[a] There were 1,502 eligible customers who at least partially completed the survey. Overall, there were 1,242 fully completed surveys.

Though Cadmus didn't use the population variables (such as income-qualified program enrollment or other descriptors) to stratify the sample, we investigated the representativeness of the respondents compared to the population after demographic results showed a very high proportion of customers over the age of 70. Cadmus found that customers flagged as "seniors" had a higher response rate than others: 54% of customers in the initial population contained a senior flag, whereas 63% of those who responded to the survey invitation contained the senior flag. After the eligibility screening, 59% of the respondents in the final sample contained the Consumers Energy senior flag. Cadmus explored differences in responses by age for many questions in the survey and reported differences where appropriate in the findings.

Market Demand Analysis

Cadmus examined the market demand for each renewable energy program tested by measuring likelihood to participate in the program.[29] It can be challenging to accurately quantify market demand for renewable energy offerings. Although customers often say they will likely participate in a program or purchase a product in the future, this does not necessarily mean they will actually participate when given the opportunity. Thus, the measure of market demand must consider that intentions do not always match the corresponding behaviors. To overcome this challenge, Cadmus applied a propensity adjustment to the results. Such a downward adjustment more accurately reflects the percentage of respondents actually expected to participate by compensating for desirability bias and respondents' likelihood to overstate their intentions in survey research.

Cadmus used the adjustment shown in Table 8, which is consistent with the analysis approach used for the 2018 Renewable Energy Roadmap study.

Table 8. Propensity Adjustment

Likelihood to Participate Response Option	Propensity Adjustment	Unadjusted Likelihood to Participate Data		
		Donated Solar (n=381)	Michigan RECs (n=390)	Rooftop Solar (n=402)
Very likely	90%	25%	17%	11%
Likely	50%	18%	12%	12%
Somewhat likely	25%	24%	24%	20%
Neither likely nor unlikely	0%	12%	12%	13%
Somewhat unlikely	0%	5%	9%	5%
Unlikely	0%	8%	11%	15%
Very unlikely	0%	9%	14%	23%

Statistical Analyses

To analyze survey responses, Cadmus employed multiple statistical approaches.

Maximum Differences Test

Cadmus used a MaxDiff test (also known as best-worst scaling) to identify the renewable energy benefits *most appealing* to income-qualified customers.

MaxDiff uses an experimental survey design (meaning it uses a random presentation of information to respondents), in which respondents answer a series of similar (yet different) questions about which renewable energy benefit they find the most and the least appealing. This design predicts more accurate preferences than using traditional rating scales and has wide applications to inform education and outreach strategies. After the survey fielding ended, Cadmus used hierarchal Bayesian regression analysis to calculate utility scores and preference shares for each tested benefit of renewable energy,

[29] Note: the market demand for each program is not cumulative. Since participants were only presented with one program, each market demand estimate in a program does not reflect the market demand of customers participating in multiple programs.

allowing for a relative ranking of positive messages that helped us to define the most powerful value propositions for customers (and that may inform effective messaging).

Metrics

Cadmus derived a **preference share** for each benefit of renewable energy tested that summarizes the model's outcome. The preference share represents the likelihood that the attribute would truly be the most appealing benefit for renewable energy. Across all attributes, shares totaled 100%, with the most powerful benefits exhibiting the largest preference share.

We also produced individual-level utility scores for each feature used in calculating the preference shares. When averaged, these **average utility scores** represent the relative importance of each feature and indicate how powerful each feature was to respondents. Overall, higher average utility scores represent features that respondents prefer more, while lower average utility scores represent features that respondents are more likely to find less appealing. Negative values represent features participants rated as "least appealing" while positive values represent features rated as "most appealing." Values around zero had a similar likelihood of being chosen as "most appealing" or "least appealing." Otherwise, absolute values are not critical (meaning that negative values did not necessarily indicate that an attribute was a drawback, only that it was preferred less).

Though the utility scores do not represent the final analysis output (as the preference share summarizes the model outcome), they do provide a means of comparing each attribute's preference relative to the other attributes and can provide some directional understanding of summary outputs.

Comparison and A/B Testing

To gather details on program preferences, Cadmus structured the survey to randomly present one of two different program concepts, and then analyzed the data to determine whether there was a statistically meaningful difference in responses. When exploring the differences in A/B options for program concepts, Cadmus also explored whether age had an impact on the overall answers, as well as whether age had an impact on how individuals answered within each program option. Lastly, we also examined whether various respondent groups responded differently to the same survey questions. For example, we examined whether differences in demographics such as age impacted a respondent's opinion of renewable energy. Cadmus identified the correct statistical analysis to apply based on question and variable types, and conducted preliminary analyses to determine a relationship followed by specific pair-wise tests (for example, if individuals who lived in the *north* were different from those who lived in the *south,* but *not* different from those who lived in the *east*). Table 9 outlines the tests we used for each question and group.

Table 9. Statistical Tests Performed on Customer Survey Data

Survey Question	Segments	Preliminary Test	*Post Hoc* Test
B2	Income (200% or 300% of federal poverty level)	chi-squared	Pairwise z tests
B2	Region	chi-squared	Pairwise z tests
B2	Race/Ethnicity (Black, White, Other)	chi-squared	Pairwise z tests
B2	Age (binned)	chi-squared	Pairwise z tests
C1 [d]	Income (200% or 300% of federal poverty level)	Kruskal-Wallis	Pairwise z tests
C1	Region	Kruskal-Wallis	Pairwise z tests
C1	Race/Ethnicity (Black, White, Other)	Kruskal-Wallis	Pairwise z tests
C1	Age (binned)	Kruskal-Wallis	Pairwise z tests
C5 (all prompts)	Income (200% or 300% of federal poverty level)	Kruskal-Wallis	Pairwise z tests
C5 (all prompts)	Region	Kruskal-Wallis	Pairwise z tests
C5 (all prompts)	Race/Ethnicity (Black, White, Other)	Kruskal-Wallis	Pairwise z tests
C5 (all prompts)	Age (binned)	Kruskal-Wallis	Pairwise z tests
D1 [a]	Rooftop Solar A, Rooftop Solar B	Kruskal-Wallis	Pairwise z tests
D1	Rooftop Solar A, Rooftop Solar B, Age (binned) [c]	Two-way ANOVA	Tukey HSD test
E1	Donated Solar A, Donated Solar B	Kruskal-Wallis	Pairwise z tests
E1	Donated Solar A, Donated Solar B, Age (binned)	Two-way ANOVA	Tukey HSD test
E1	Donated Solar A, Donated Solar B, Income-Qualified Energy Waste Reduction Participation	Two-way ANOVA	Tukey HSD test
E1	E4	Kruskal-Wallis	Pairwise z tests
E4	Donated Solar A, Donated Solar B	Kruskal-Wallis	Pairwise z tests
E4	Donated Solar A, Donated Solar B, Age (binned)	Two-way ANOVA	Tukey HSD test
E4	Donated Solar A, Donated Solar B, Income-Qualified Energy Waste Reduction Participation	Two-way ANOVA	Tukey HSD test
E Adjusted [b]	Donated Solar A, Donated Solar B	Kruskal-Wallis	Pairwise z tests
E Adjusted	Donated Solar A, Donated Solar B, Age (binned)	Two-way ANOVA	Tukey HSD test
E Adjusted	Donated Solar A, Donated Solar B, Income-Qualified Energy Waste Reduction Participation	Two-way ANOVA	Tukey HSD test
F1	Michigan RECs A, Michigan RECs B	Kruskal-Wallis	Pairwise z tests
F1	Michigan RECs A, Michigan RECs B, Age (binned)	Two-way ANOVA	Tukey HSD test
F1	F4	Kruskal-Wallis	Pairwise z tests
F4	Michigan RECs A, Michigan RECs B	Kruskal-Wallis	Pairwise z tests
F4	Michigan RECs A, Michigan RECs B, Age (binned)	Two-way ANOVA	Tukey HSD test
F Adjusted	Michigan RECs A, Michigan RECs B	Kruskal-Wallis	Pairwise z tests
F Adjusted	Michigan RECs A, Michigan RECs B, Age (binned)	Two-way ANOVA	Tukey HSD test
G13	C1	Kruskal-Wallis	Pairwise z tests
G13	C1 (binned)	Kruskal-Wallis	Pairwise z tests

[a] In order to account for potentially small sample sizes across response groups, we also examined questions D1, E1, E4, E (Adjusted), F1, F4, and F (Adjusted) when responses were binned into one of three categories: *unfavorable*, *neutral*, or *favorable.* However, these results did not differ from the results when not binned.

[b] E (Adjusted) and F (Adjusted) refer to the likelihood adjustment we made after respondents were given a chance to reassess their likelihood. Please see *Donated Community Solar Participation Preferences* and *Michigan Renewable Energy Credits Participation Preferences* for more details.

[c] We binned ages were binned as 18 to 35, 36 to 55, 56 to 70, 70 or older.

[d] Again, to account for potentially small sample sizes, we also examined C1 when responses were binned into a category of *unfavorable*, *neutral*, or *favorable.*

Appendix A. Summary of Recommendations

As previously stated, the purpose of this research was not to determine how to market voluntary green pricing programs to income-qualified customers, but rather to identify the best opportunities to offer renewable energy options to this population. This appendix outlines customer-centric next steps for Consumers Energy to consider as it plans for and implements renewable energy programs.

Considerations for Future Program Design

There are several factors for Consumers Energy to consider as it pursues new renewable energy program concepts in the future:

- Include income-qualified customers in renewable energy program planning and communications, even if programs are offered at a cost. However, prioritize programs with a monthly cost of $5 or less for this segment, which will be the most attractive, even if it means a trade-off with the amount of renewable energy customers will subscribe to.
- If pursuing a rooftop solar program, design the program with a contract length that works best for Consumers Energy's needs. Though rooftop solar is not the top preference for a renewable energy program among income-qualified customers, be sure to communicate the advantages of rooftop solar to this customer segment. The research revealed that there are some income-qualified customers who are interested in pursuing rooftop solar regardless of contract length.
- Consider segmenting the income-qualified customer population into age groups for purposes of communicating about the rooftop solar (and donated community solar) program. Avoid heavily reaching out to senior citizens about a rooftop solar program due to their concerns about the payback period.

Considerations for Current Program Implementation

During the course of this research, the Michigan Public Service Commission approved Consumers Energy's *2019 Voluntary Green Pricing Biennial Report*, which proposed a donated community solar program (MI Sunrise Solar, a subcomponent of Solar Gardens) and a REC program similar to those tested during this study. The following subsections provide suggestions for Consumers Energy, based on the findings from this research, for rolling out these new programs as part of the approved voluntary green pricing portfolio in 2021. These considerations were developed with an eye toward helping Consumers Energy with structuring outreach and education efforts geared toward their income-qualified customers, with an understanding of the specific barriers this segment is facing.

Donated Community Solar (MI Sunrise Solar, a subcomponent of Solar Gardens)

- To implement a donated community solar program, consider partnering with the trusted charitable organizations cited by respondents in an effort to overcome skepticism about a free product. The top two trusted organizations that respondents cited, beyond the Michigan Department of Health and Human Services and Consumers Energy, were TrueNorth and the Salvation Army.

- Because senior citizens' concerns with a donated community solar program are more grounded in information barriers and distrust of a free program, work to overcome these barriers through communication and building trust, even though this segment is less likely to participate than younger age groups. Again, consider partnering with trusted entities to spread the word about opportunities to participate, emphasizing the reasons for Consumers Energy to offer this program (citing climate change, health, and future generations) and the source of the donations. Case studies featuring other senior citizens' solar projects may also help build trust among this customer segment.

Michigan RECs (REC Program)

- When offering Michigan RECs (or a donated community solar program) to income-qualified customers, take extra steps to make sure customers understand that while energy would not flow directly to their home, their contribution would still provide equivalent benefits to the grid.
- With demonstrated customer interest in and demand for a Michigan RECs program, consider focusing on low-cost options for renewable energy credits when communicating with income-qualified customers. Ideally, focus on communicating options that keep monthly costs to less than $5, as cost appears to be more important to this customer segment than percentage of energy matched.

Considerations for Communicating to Income-Qualified Customers

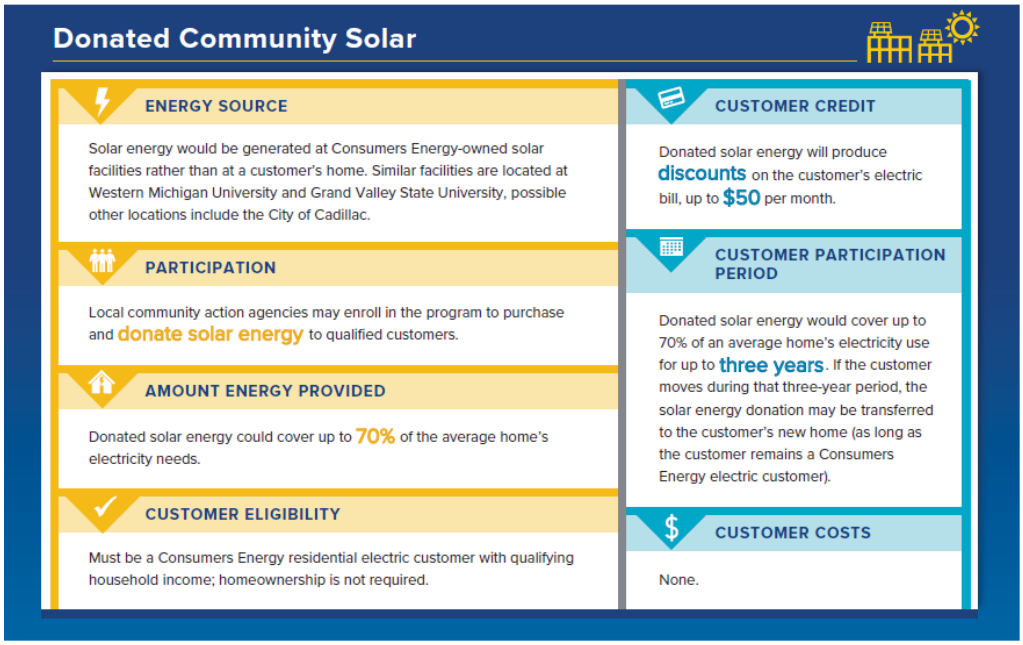
Consumers Energy should consider several factors as it pursues education and outreach for its renewable energy programs:

- When designing customer-facing information about renewable energy programs, ensure that all program details are transparent and understandable to help overcome customers' knowledge gaps in how such a program might work. Include key information about how Consumers Energy will ensure continued energy reliability to assuage concerns about using solar power.
- In messaging about renewable energy, emphasize the environmental benefits. This is a powerful driver for most income-qualified customers, many of who are thinking about the next generation and are also concerned about climate change. Because customers understand the connected nature of energy, health, and the environment, acknowledging these intersections will resonate as well. If conducting targeted outreach, consider how to incorporate messages that are of most importance to different age groups and ethnicities.
- Consider leveraging the Helping Neighbors brand, either by direct branding or cross-promotion within the programs, when conducting outreach about new programs geared to income-qualified customers due to their strong familiarity with Consumers Energy's income-qualified weatherization program. Helping Neighbors also offers free products and services, which may help customers overcome skepticism of a new donation program, such as donated community solar.
- Once new renewable energy program implementation is underway, consider developing case studies to help address the barrier that many income-qualified customers do not know anyone with renewable energy. Align these case studies with the target audience to help prospective participants relate to renewable energy as something they can achieve for their home.

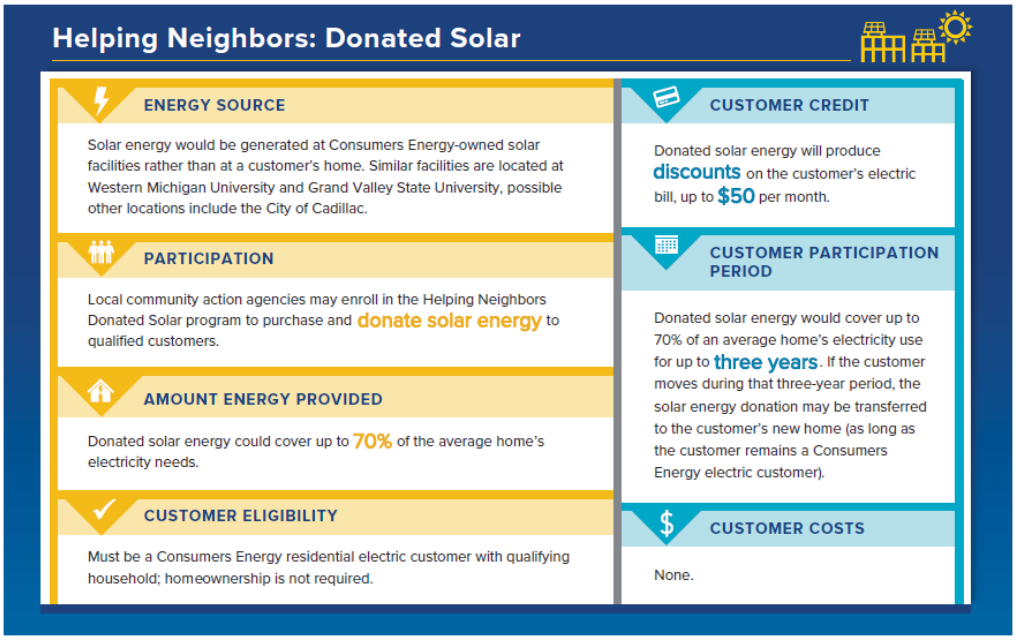
Appendix B. Program Concept A/B Testing Stimuli

Each survey participant reviewed one of the following graphics summarizing a program option. These graphics were used for the survey only and are slightly different from what was shown during the focus groups (based on feedback from the focus groups). For the focus group stimuli, please see *Appendix E*.

Option A



Option B



Michigan Renewable Energy Credits Program

Option A

Michigan Renewable Energy Credit Program

- **Energy source:** Consumers Energy pays an incremental cost to support renewable energy (wind, solar, biomass) from renewable sources in Michigan.
- **Participation:** Customers pay a small additional fee on their electric bill to match the energy their home uses with renewable energy. Nothing is installed on the customer's home or property, and the electricity does not flow directly to the customer's home.
- **Amount energy purchased:** Renewable energy would match 100% of the customer's average electricity needs.
- **Customer eligibility:** Must be a Consumers Energy residential electric customer; homeownership is not required.
- **Customer participation period:** Month-to-month participation, with no contract. Customers can opt out of the additional fee for the program at any time.
- **Customer costs:** $6 additional per month (on top of your standard electric bill costs).

Option B

Michigan Renewable Energy Credit Program

- **Energy source:** Consumers Energy pays an incremental cost to support renewable energy (wind, solar, biomass) from renewable sources in Michigan.
- **Participation:** Customers pay a small additional fee on their electric bill to match the energy their home uses with renewable energy. Nothing is installed on the customer's home or property, and the electricity does not flow directly to the customer's home.
- **Amount energy purchased:** Renewable energy would match 50% of the customer's average electricity needs.
- **Customer eligibility:** Must be a Consumers Energy residential electric customer; homeownership is not required.
- **Customer participation period:** Month-to-month participation, with no contract. Customers can opt out of the additional fee for the program at any time.
- **Customer costs:** $3 additional per month (on top of your standard electric bill costs).

Rooftop Solar Program

Option A

Rooftop Solar

ENERGY SOURCE: Energy generated by solar panels installed on the **customer's home**.

PARTICIPATION: Customer hires Consumers Energy-qualified contractor to install solar panels on their home's rooftop. The home would remain connected to the Consumers Energy grid, but primarily all of the home's electricity would be generated on-site. All maintenance costs for the panels are covered by a 25-year warranty.

CUSTOMER ELIGIBILITY: Must be a Consumers Energy residential electric customer, homeownership required.

AMOUNT ENERGY PROVIDED: Up to **100%** of the home's electricity would be generated from rooftop solar panels.

CUSTOMER PARTICIPATION PERIOD: Monthly on-bill payments are designed to pay for the full cost of the solar panels in **15 years** (at 0% interest). Costs are included on the customer's electric bill, and paid directly to Consumers Energy. If the customer moves during the 15-year payment period, the solar panels and the surcharge remain with the home (and the next occupant).

CUSTOMER COSTS: For the first 15 years annual utility payments would be about $250 more than if no solar panels were on the roof; however, as shown in the table, after the 15-year payment period, the home's electric bill would decrease significantly. Solar panels have an expected life of at least 25 years.

	Without Solar Panels	With Solar Panels	
Month	**Standard Electric Bill**	**Electric Bill (Years 1-15)**	**Electric Bill (*After* 15 years)**
January	$101	$158	$49
February	$101	$144	$35
March	$101	$116	$13
April	$101	$104	$13
May	$101	$96	$13
June	$101	$93	$13
July	$101	$85	$13
August	$101	$98	$13
September	$101	$112	$13
October	$101	$135	$13
November	$101	$157	$13
December	$101	$164	$55
Annual	**$1,209**	**$1,464**	**$256**

Costs are estimated based on a household with average monthly usage of 915 kWh.

Option B

Rooftop Solar

ENERGY SOURCE: Energy generated by solar panels installed on the **customer's home**.

PARTICIPATION: Customer hires Consumers Energy-qualified contractor to install solar panels on their home's rooftop. The home would remain connected to the Consumers Energy grid, but primarily all of the home's electricity would be generated on-site. All maintenance costs for the panels are covered by a 25-year warranty.

CUSTOMER ELIGIBILITY: Must be a Consumers Energy residential electric customer, homeownership required.

AMOUNT ENERGY PROVIDED: Up to **100%** of the home's electricity would be generated from rooftop solar panels.

CUSTOMER PARTICIPATION PERIOD: Monthly on-bill payments are designed to pay for the full cost of the solar panels in **10 years** (at 0% interest). Costs are included on the customer's electric bill, and paid directly to Consumers Energy. If the customer moves during the 10-year payment period, the solar panels and the surcharge remain with the home (and the next occupant).

CUSTOMER COSTS: For the first 10 years annual utility payments would be about $900 more than if no solar panels were on the roof; however, as shown in the table, after the 10- year payment period, the home's electric bill would decrease significantly. Solar panels have an expected life of at least 25 years.

	Without Solar Panels	With Solar Panels	
Month	**Standard Electric Bill**	**Electric Bill (Years 1-10)**	**Electric Bill (*After* 10 years)**
January	$101	$213	$49
February	$101	$198	$35
March	$101	$170	$13
April	$101	$159	$13
May	$101	$151	$13
June	$101	$148	$13
July	$101	$140	$13
August	$101	$153	$13
September	$101	$167	$13
October	$101	$190	$13
November	$101	$212	$13
December	$101	$219	$55
Annual	**$1,209**	**$2,118**	**$256**

Costs are estimated based on a household with average monthly usage of 915 kWh.

Appendix C. Additional Survey Findings: Trusted Organizations

In the survey, Cadmus asked customers to provide the names of organizations from which they've received bill payment assistance in the past, or, whether they know of an organization to turn to in the event they need assistance in the future. Table 10 and Table 11 contain these responses.

Table 10. Organizations Providing/Have Provided Bill Assistance to Survey Respondents

Organization	Percentage of Respondents Mentioning
Michigan Department of Health and Human Services	31%
Consumers Energy Affordable Resource for Energy program	16%
TrueNorth	13%
Salvation Army	12%
Other	11%
Community Action Agency (Any)	9%
Local church	6%
United Way	5%
Genesee County Community Action Resource Department	2%
Mid-Michigan Community Action Agency	2%
Jackson County Community Action Agency	1%
St. Vincent de Paul	1%
Supplemental Nutrition Assistance Program	1%
Access of West Michigan	1%
Allegan County Resource Development Committee	1%
Children's Advocacy Centers of Michigan	1%
Monroe County Community Action Agency	1%
Barry County Cares	1%

Source: Cadmus Survey Question G1: "Have you been supported by any community organizations (community action agencies, nonprofits, or other) in receiving energy bill payment assistance in the past? (If Yes | Name of organization: _____)" (n=121)

Table 11. Trusted Organizations Cited by Respondents for Future Difficulty with Bill Payment

Organization	Percentage of Respondents Mentioning
Michigan Department of Health and Human Services	20%
TrueNorth	12%
Salvation Army	11%
Consumers Energy	11%
St. Vincent de Paul	11%
Local church	8%
Other	8%
Catholic Charities	3%
Genesee County Community Action Resource Department	3%
EightCAP	3%
211	2%
Home Depot	2%
Linden Ministerial Association	2%
Senior Neighbors	2%
United Way	2%
Red Cross	2%
Community Action Agency (Any)	2%
Heat and Warmth Fund	2%
Outreach East	2%
North Kent Connect	2%

Source: Cadmus Survey Question G: "If you ever have trouble paying your energy bill in the future, do you already know a trusted organization that you might turn to for assistance? (If yes, please provide the name of organization)." (n=66)

Appendix D. Focus Group Recruitment Screener

[RECRUITMENT INSTRUCTIONS] Please recruit respondents as outlined in Table 1, as possible, and screen for ***required*** criteria listed in Table 2.

Table 1. Tenant Focus Group Demographic Goals

Demographics	West #1	North #2	East #3	South Central #4
Focus Group Location (City)	Muskegon	Cadillac	Flint	Jackson
Focus Group Location (Hotel)	Delta Hotels Muskegon Downtown	Evergreen Resort	Hyatt Place Flint	Holiday Inn Jackson
Number of Groups	2	2	2	2
Date of Groups	2/3/2020	2/4/2020	2/5/2020	2/6/2020
Timing of Groups (EST)	5:30 7:30	5:30 7:30	5:30 7:30	5:30 7:30
Recruits per Group	8	8	8	8
Age and Gender				
Between 25-64	90%	80%	90%	80%
65 or older	10%	20%	10%	20%
Gender	50% male/50% female			
Ethnicity				
White/Caucasian	50%	90%	30%	80%
Black/African American	30%	10%	50%	10%
Hispanic/Latino	10%		10%	10%
Other	10%		10%	

Table 2. Required Screening Criteria

Criteria	
Customer sector	All respondents must be current Consumer Energy residential electric account holders
Decision maker	All respondents must be household decision makers regarding electricity payments
Income	All respondents must have a household income of ≤ 300% of the federal poverty guidelines
Awareness	All respondents must have some awareness of renewable energy

A. Introduction

A1. Hello, I'm _____ from C&F Market Research and I'm calling on behalf of Consumers Energy.

[IF CONTACT NAME PROVIDED] May I please speak to _____?

[IF NOT AVAILABLE, ASK IF THERE IS A BETTER TIME TO CONTACT. IF YES, RESCHEDULE CALL. IF NO, THANK AND TERMINATE]

A2. Consumers Energy is inviting qualifying residential customers to take part in a 90-minute focus group to discuss renewable energy. This is a group discussion with other residential customers that will be led by a moderator to gather input. The discussion will take place on **[INSERT DATE BASED ON LOCATION]** at **[INSERT FOCUS GROUP LOCATION (HOTEL): SEE TABLE 1]** and we are offering a $100 incentive to each person who participates in the discussion. How interested would you be in participating in the focus group if you meet the criteria for the study?

1. Very interested
2. Somewhat interested
3. Not too interested **[THANK AND TERMINATE]**
4. Not at all interested **[THANK AND TERMINATE]**

[IF NEEDED] Let me assure you we are not trying to sell you anything. Your responses will be kept confidential and used for research purposes only.

A3. Thank you! First, I need to ask you a few questions to ensure you qualify for the study. Please confirm Consumers Energy provides the electricity at **[PHYSICAL ADDRESS FROM SAMPLE] [READ LIST ONLY IF NEEDED]**

1. Yes
2. No **[THANK AND TERMINATE]**
98. (Don't know) Is there anyone in the house who might know who provides the electricity at this address? **[IF YES, CONFRIM ELECTRICITY PROVIDER. IF NO, THANK AND TERMINATE]**
99. (Refused) **[THANK AND TERMINATE]**

A4. Do you participate in decisions about your household electricity payments?

1. Yes, I am the primary decision-maker
2. I am not the main decision-maker, but I am part of the decision-making
3. I am involved but I have a minor role **[THANK AND TERMINATE]**
4. Not involved at all with these decisions **[THANK AND TERMINATE]**
98. (Don't know) **[THANK AND TERMINATE]**
99. (Refused) **[THANK AND TERMINATE]**

A5. How many people live in your home year-round?

1. **[DOCUMENT]**_____
99. (Refused) **[THANK AND TERMINATE]**

A6. Is your annual household income…? **[USE TABLE BELOW TO DETERMINE INCOME ELIGIBILITY; THANK AND TERMINATE IF INCOME IS OVER 300% OF FEDERAL POVERTY LEVEL BASED ON RESPONSE TO A5 AND A6]**

1. Less than $25,000
2. $25,000-$50,000
3. $51,000-$75,000
4. $76,000-$125,000
5. $126,000-200,000
6. $201,000-$300,000
7. Over $300,000

99. (Refused) **[THANK AND TERMINATE]**

Persons in Household	300% Of Federal Poverty Level[30]
1	$37,470
2	$50,730
3	$63,990
4	$77,250
5	$90,510
6	$103,770
7	$117,030
8	$130,290
Add $4,320 for each person over 8	

A7. What type of residence do you live in?

1. A single-family detached residence
2. Multi-unit dwelling, such as an apartment or condo building with 4 or more units
3. Attached house (townhouse, row house, or twin/duplex)
4. Mobile or manufactured home
5. Other:_____

98. (Don't know) **[THANK AND TERMINATE]**
99. (Refused) **[THANK AND TERMINATE]**

A8. Do you currently rent or own your home? **[DO NOT READ]**

1. Rent
2. Own

98. (Don't know) **[THANK AND TERMINATE]**
99. (Refused) **[THANK AND TERMINATE]**

[30] https://www.payingforseniorcare.com/federal-poverty-level

A9. Regarding ethnicity, do you identify as …. **[MULTIPLE RESPONSE ALLOWED]**

1. Asian
2. Black/African
3. White/Caucasian
4. Hispanic/Latinx
5. Native American Pacific Islander
6. Other:_____

99. (Refused) **[THANK AND TERMINATE]**

A10. Please tell me if you are...

1. Under 25 years old **[THANK AND TERMINATE]**
2. Between 25-64 years old
3. 65 years old or older

99. (Refused) **[THANK AND TERMINATE]**

A11. How do describe (or identify) yourself?

1. Male
2. Female
3. Non-binary

99. (Refused)

B. Articulation

[This next question screens for the respondents' ability to articulate their thoughts (i.e., add value to the session). *Please note that the recruiters will not capture the answers from the articulation question, but rather make a judgement call to determine whether a potential recruit is a good candidate for a focus group based on how they perceive the recruit's ability to express oneself, speak fluently, and feel comfortable thinking on the spot. Potential recruits who pass the screener questions above but may not articulate their thoughts as well as other recruits will be placed on a "waitlist" and called back with an invitation if the facility is unable to fill the group to quota (i.e., 8 recruits)***]**

B1. What does renewable energy mean to you?

[Continue if they are a good candidate for the groups.]

[IF THEY HAVE TROUBLE BEING ARTICULATE OR HAVE NO KNOWLEDGE OR AWARENESS OF RENEWABLE ENERGY POLITELY THANK THEM AND END THE CALL BY SAYING "WE REALLY APPRECIATE THE TIME YOU TOOK TO TALK WITH US."]

C. Invitation (if respondent qualifies)

C1. I would like to invite you to participate in a group discussion at **[TIME]** on **[DATE]**. The discussion will be held at the **[FOCUS GROUP LOCATION (HOTEL)].** We are offering a $100 VISA gift card for your time to participate in the 90-minute focus group. Does this sound like something in which you could participate?

1. Yes
2. No **[THANK AND TERMINATE]**

Thank you very much. Consumers Energy values your opinions and we look forward to talking with you.

Can you please tell me your email address so that we can send you a confirmation email **[IF NO EMAIL ADDRESS THEN PROVIDE A REMINDER CALL ONLY]**?

Name: _____

E-mail: _____

I will send a reminder to you when we closer to the actual date. May I also get a preferred phone number for you?

Preferred telephone number: _____

Thank you. I have you scheduled for the focus group at **[TIME]** on **[DATE].** You can look for an invitation email from mbrodsky@candfmarketresearch.com within the next week confirming the date and time of the focus group.

We will provide the $100 incentive in the form of a VISA gift card the evening of the focus group.

Please feel free to contact me if you have any questions prior to the focus group. **[Provide facility phone number]** Thank you again for your time and we look forward to hearing your opinions.

[If the customer has questions about the legitimacy of the research effort and wants a Consumers Energy contact, please provide the following contact: Elody Samuelson at Elody.Samuelson@cmsenergy.com; 517-788-2983]

Appendix E. Focus Group Discussion Guide

Research Objectives	Discussion Sections*
Identify general energy priorities	Section C
Gauge renewable energy awareness / interest	Section D
Identify perceived challenges and barriers to accessing renewable energy	Section D
Understand price sensitivity for renewable energy	Section E
Determine preferences for renewable energy program concepts	Section F
Identify motivating value proposition	Section G

*Section A is the discussion pre-group activity and B covers the moderator's introduction to the group.

Cadmus will conduct eight in-person focus groups with residential income qualified customers. This document contains the discussion guide for the focus groups. Cadmus will use this guide to frame the focus group discussion, but it is not meant to be a verbatim script. As with all focus groups, the results are qualitative and cannot be interpreted to represent all income qualified residential customers throughout Consumers Energy's territory.

A. Pre-Group Activity

[Cadmus will provide respondents with the pre-group activity while they wait for the group to begin.]

A1. Please rank the following household costs. Rank the household cost you are **most** concerned with "1" and the item you are next most concerned about "2," and so on. If a listed concern is not an issue for you, please mark it N/A. If you have an additional concern that is not on the list, please add it under "Other" and rank that category as well.

Household Costs	Ranking	N/A
Housing costs		
Energy (electricity/natural gas) costs		
Water costs		
Grocery costs		
Childcare costs		
Transportation costs		
Other: _____		

A2. What is your greatest concern when it comes to using energy in your household? **[Mark only one.]**

1. Energy costs
2. Losing power/reliability
3. Keeping warm/cool enough
4. Carbon monoxide or other safety
5. Indoor air quality – health risks
6. Outdoor air quality – health risks
7. Environmental impact
8. Other: _____

A3. How important is it for you to have a choice in how your electricity is generated?

1. Very important
2. Somewhat important
3. Not too important
4. Not at all important

A4. On a scale of 1 to 4, how important is it to you that your electricity is…? **[Mark an X in the box indicating your rating for each factor.]**

How important is it that your electricity is…	1 Very important	2 Somewhat important	3 Not too important	4 Not at all important
Affordable				
Reliable				
Renewable (from sun, wind, water)				
Clean (fewer air/water pollutants)				
Generated in Michigan				
Generated near your home/community				

B. Warm-Up (5 min)

Thanks for coming today! We're glad you're here, and we really appreciate that you could take some time to share your ideas with us.

- Please turn off any cell phones if you haven't already.
- Bathrooms are located… **[GIVE DIRECTIONS]**
- Our discussion will take about 90 minutes.
- As you may remember from the invitation call, we'll be talking about renewable energy options for utility customers like you. You all have been invited here today because of your individual experiences and we want to hear from everyone about those experiences and gather your insights. We want to hear your perspective, no matter how much you feel you know about the topics we discuss.
- There are no right or wrong answers, your opinions are what count here today.
- We'll be recording the session today, but this is for our research purposes only. Your name will not be attached to any quotes if we use them in our reports.
- This room has a two-way video recorder and some of our clients are observing us from a nearby room. Just as a heads up, at one point during the discussion I'll step out of the room to check in with the clients to see if they have any follow-up questions for us.
- One more thing, as you can see there are red, yellow, and green cards in front of you. At several points during the discussion I'll ask you to raise a green card to indicate if you have a favorable response, a yellow card if you are unsure or neutral, or a red card to indicate you do not have a favorable response to the question posed.
- Any questions before we begin?

C. General Energy Priorities (15 min)

Let's start with introductions.

C1. As we go around the table please tell us your name, how long you have lived in your current home, and your greatest concern when it comes to energy use in your household (from the pre-group handout question A2)? *[Probe on reasons why during the introductions]*

C2. How important is it that you have a choice in how your electricity is generated? *Why is that?*

C3. What factors are important to you when considering how your electricity is generated? *Why?* ***[Tally responses on pre-written easel]****:*

1. Losing power [Probe about needs for backup power and what they use during power outage]
2. Being off grid (generating your own power)
3. Energy costs
4. Indoor or outdoor health impacts – clean air
5. Environmental impact (reducing air/water pollutants in community)
6. How electricity is generated (renewable v. fossil fuel)
7. Reducing home's carbon footprint
8. Making Michigan a better place for the next generation
9. Increasing jobs in Michigan

C4. From the factors we just discussed, what is *most* important to you? *Tell me a little more about why that is the most important to you*.

D. Renewable Energy Awareness, Interest, and Barriers (20 min)

Now, let's talk a little bit more about renewable energy.

D1. What do you think of when I say, "renewable energy?"

1. What have you heard about renewable energy? [Probe: specific renewable energy technologies – solar, wind]
2. From where or whom have you heard about renewable energy? [Probe: specific <u>sources</u> of information and <u>level of trust</u> in these specific sources e.g., have they heard about renewable energy / programs from Consumers Energy]

D2. How familiar are you with renewable energy options for your home? *Why do you say that?*

D3. How interested are you in obtaining renewable energy to provide some or all of your home's electricity? ***[Raise the green card in front of you if you are interested, yellow card if you're not sure, and the red card if you are not interested]*** *Why do you say that?*

1. What type of renewable energy is most appealing? *[Probe: solar, wind, water]*
2. Does the source of renewable energy matter to you? *Why is that?*
3. Does the location of renewable energy generation matter to you? *[Probe: in-state vs. out of state; within community outside of community; at your home] Why/why not?*

D4. What are the benefits of having your home's electricity generated by renewable energy?

D5. What are your concerns with having your home's electricity generated by renewable energy? *Why?*

1. What are the barriers to having your home's electricity powered by renewable energy? *[Probe: reliability, cost, understanding of generation] Why do you say that?*
2. What can Consumers Energy do to help overcome some of these barriers? *Why do you say that?*

D6. What is your perception of the environmental impact of renewable energy generation? *[Probe: positive or negative] Why do you say that?*

D7. When it comes to renewable energy, what, if anything, do you expect from Consumers Energy? *Why do you say that?*

E. Price Sensitivity (10 min)

E1. Often, renewable energy can cost more than electricity powered by traditional fossil fuels. Why do you think that it?

E2. How many of you would be willing to pay more on your utility bill to have some or all of your home's electricity come from renewable energy? *Why is that?* ***[Raise a green card if you would be willing to pay more and a red card if you would not]***

1. Keep your green card raised if you would you be willing to pay $5 more per month. *Why is that?*
2. Keep your card raised if you would be willing to pay about $10 more per month. *[For those who dropped their hands, ask why]*
3. What about $25 per month? *[For those who dropped their hands, ask why]*
4. What if the cost was more than $25? *[For those who dropped their hands, ask why]*

E3. What if the renewable energy was generated in Michigan? Would you be willing to pay more for renewable energy generated in-state compared to out-of-state? ***[Raise green or red card]*** *Why/why not?*

E4. What if the additional cost on your electric bill helped support development of new renewable energy resources (such as a new solar field or new wind turbine construction)? Would you be willing to pay more to support new renewable energy projects? ***[Raise green or red card]*** *Why/why not?*

E5. **[IF NO TO ALL OF E1-E4**] Can you think of any scenario where you might be willing to pay more to have some of all of home's electricity come from renewable energy? *[IF YES: Tell me about that* scenario*]*

F. Preference for Renewable Energy Program Components (30 min)

Consumers Energy is exploring potential new renewable energy programs for their customers. There are many ways that these programs can be structured, and we would like to get your feedback on some of these options. I'll show you examples of two different types of programs and ask for your thoughts on each.

[Note for reviewer: Moderator will randomize the order in which the program concepts are presented to respondents during each group]

Donated Community Solar Program

Please take a look at the program description in front of you. I will give you a minute to review.
[Moderator will give respondents 1-2 min to review the program description handout]

Donated Community Solar

- **Energy source:** Solar energy would be generated at Consumers Energy-owned solar facilities rather than at a customer's home. Similar facilities are located at Western Michigan University and Grand Valley State University, possible other locations include the City of Cadillac.
- **Participation**: Local community action agencies may enroll in the program to purchase and donate solar energy to qualified customers.
- **Amount energy provided:** Donated solar energy could cover up to 70% of the average home's electricity needs.
- **Customer eligibility:** Must be a Consumers Energy residential electric customer with qualifying household income (based on graphic below); homeownership is not required.

Annual Income	Household Size
≤ $24,120	1 person
≤ $32,480	2 people
≤ $40,840	3 people
≤ $49,200	4 people
≤ $57,560	5 people
≤ $65,920	6 people
≤ $74,280	7 people
≤ $82,640	8 people

- **Customer credit:** Donated solar energy will produce discounts on the customer's electric bill, up to $50 per month.
- **Customer participation period:** Donated solar energy would cover up to 70% of an average home's electricity use for up to three years. If the customer moves during that three-year period, the solar energy donation may be transferred to the customer's new home (as long as the customer remains a Consumers Energy electric customer).
- **Customer costs:** None.

F1. What stood out to you about this program?

F2. Can someone summarize for me what they think this program is offering? *[Probe for agreement/disagreement and alternate interpretations, as appropriate]*

F3. What is appealing about this program? *Why?*

1. What is less appealing? *Why?*

F4. How many of you might be interested in participating in a program like this? [***Raise hand****] Why do you say that?*

1. What do you see as the benefits to a program like this?
2. What do you see as the barriers or drawbacks to a program like this? [Probe: participation period]
   a. How could Consumers Energy help address these barriers?

F5. ***[If not already mentioned]*** Donations are provided to a community action agency. Do you have affiliations with a community action agency in your community that might participate in a program like this? *If so, which ones?*

1. Would having to be selected for the solar donation by this agency be a barrier or benefit to you participating in this program? *Why do you say that?*
2. How would participation in this program impact your life in a positive or negative way?

F6. What else, if anything, do you want to know about this program? *[Note: moderator does not have answer, but will document areas of interest]*

1. Are any aspects of this program unclear? Is there anything confusing about this program description? *If yes, what is unclear or confusing?*

F7. What aspects of this program could be changed to make it more likely for you to participate?

F8. Would your level of interest in this program change if you were required to first install energy efficiency items such as LED light bulbs, low flow showerheads, or complete weatherization updates like adding insulation and/or completing weather-stripping and caulking around windows and doors? These services would be provided free of charge by Consumers Energy to reduce the amount of energy needed to keep your home comfortable. **[IF LEVEL OF INTEREST CHANGES]** *Why do you say that?*

1. What benefits do you see if having your home or apartment receive energy efficiency measures?
2. Any barriers? How could Consumers Energy help address these barriers?

Rooftop Solar

Let's look at another program. I will give you a minute to review the program description. If you do not currently own your home, please imagine a time in the future where you are a homeowner when considering this potential program. **[Moderator will give respondents 1-2 min to review the program description handout]**

Rooftop Solar

- **Energy source:** Energy generated by solar panels installed on the customer's home.
- **Participation:** Customer hires Consumers Energy-qualified contractor to install solar panels on their home's rooftop. The home would remain connected to the Consumers Energy grid, but primarily all of the home's electricity would be generated on-site.
- **Customer eligibility:** Must be a Consumers Energy residential electric customer, homeownership required.
- **Amount energy provided:** Up to 100% of the home's electricity would be generated from rooftop solar panels.
- **Customer participation period:** Monthly payments are designed to pay for the full cost of the solar panels in 15 years (at 0% interest). If the customer moves during the 15-year payment period, the solar panels and the surcharge remain with the home (and the next occupant).
- **Customer costs:** For the first 15-years annual utility payments would be about $250 more than if no solar panels were on the roof; however, as shown in the table, after the 15-year payment period, the home's electric bill would decrease significantly. Solar panels have an expected life of at least 25 years.

Month	Without Solar Panels	With Solar Panels	
	Standard Electric Bill	Electric Bill (Years 1-15)	Electric Bill (*After* 15 years)
January	$101	$158	$49
February	$101	$144	$35
March	$101	$116	$13
April	$101	$104	$13
May	$101	$96	$13
June	$101	$93	$13
July	$101	$85	$13
August	$101	$98	$13
September	$101	$112	$13
October	$101	$135	$13
November	$101	$157	$13
December	$101	$164	$55
Annual	**$1,209**	**$1,464**	**$256**

Costs are estimated based on a household with average monthly usage of 915 kWh.

F9. What stood out to you about this program?

F10. Can someone summarize for me what they think this program is offering? *[Probe for agreement/disagreement and alternate interpretations, as appropriate]*

1. Has anyone considered installing solar panels on their home before today? *Why/why not?*

F11. What is appealing about this program? Why?

1. What is less appealing? Why?

F12. How many of you might be interested in participating in a program like this? ? [***Raise hand****]* *Why/why not?*

1. What do you see as the benefits to a program like this? *[Probe: value of rebates]*
2. What do you see as the barriers or drawbacks to a program like this? *[Probe: cost, installing system – how to select system, who installs it, maintenance costs, etc.]*
   a. How could Consumers Energy help address these barriers?

F13. What else, if anything, do you want to know about this program? *[Note: moderator does not have answer, but will document areas of interest]*

1. Are any aspects of this program unclear? Is there anything confusing about this program description? *If yes, what is unclear or confusing?*

F14. What aspects of this program could be changed to make it more likely for you to participate?

G. Motivations (5 min)

G1. In summary, what about these programs stands out as particularly motivating to encourage you to want to use renewable energy to provide your home's electricity? *Why do you say that?*

G2. In general, how could Consumers Energy better motivate you to participate in a renewable energy program?

1. What are you most interested in hearing about when being presented with a renewable energy program option for your home? *Why do you say that?*

H. Closing (5 min)

H1. Those are all the questions I have for you this evening. Does anyone have any other comments they would like to share before we end tonight's discussion?

Thank you for sharing your opinions and taking the time to participate, your input is greatly appreciated.

Please do not forget to pick up your incentive on your way out.

Appendix F. Survey Instrument

Cadmus will program the survey into an online format using the Qualtrics platform. Table 1 presents the research objectives and the corresponding survey sections.

Table 1. Survey Objectives and Sections

Research Objective	Survey Topics	Section or Questions
Identify income-qualified customers' general energy priorities	Energy priorities	Section B
Gauge income-qualified customers' awareness of and interest in renewable energy products	Attitudes toward renewable energy	C1
	Motivations and drivers	Section C
	Best ways to understand positive impacts of renewable energy and most influential program aspects	C2–C5
	Trust and knowledge statements that overcome information barriers related to program details and transparency	Sections E and F
Identify income-qualified customers' perceived challenges and barriers to accessing renewable energy	Significance of challenges	C5
	Feedback on why customers are unlikely to participate in tested programs	Sections D, E, and F
Understand income-qualified customers' price sensitivity and willingness to pay for renewable energy products	Trusted entities, life journey, time and place	Section G
	Impacts of coronavirus on bill payment ability	G9–G11
	Customers' economic outlook and attitudes	G12 and G13
	Demographic characteristics	Section H
Identify the value proposition that drives income-qualified customers to encourage renewable energy adoption	Motivations and drivers	Section C
Determine income-qualified customers' preferences for potential renewable energy program concepts	Likelihood to participate in tested programs	Sections D, E, and F

Survey and Sampling Design

- NOTE: Respondents will not answer all questions in this survey
- Respondent will be randomly presented with one program variant for one program concept
  - Rooftop Solar questions will only be asked of homeowners
  - Donated solar will only be asked of ≤ 200% FPL

	Donated Solar		Rooftop Solar		RECs		
Region	A	B	A	B	A	B	Total
North	29	29	29	29	29	29	172
South	52	52	52	52	52	52	315
East	66	66	66	66	66	66	397
West	53	53	53	53	53	53	317
Total	200	200	200	200	200	200	1,200

Email Invitation

To: [EMAIL]
Sender: Consumers Energy, ConsumersEnergyAsks@qemailserver.com
Subject: Tell us your thoughts on renewable energy and receive a $10 gift card!

Dear [FIRSTNAME AND LASTNAME],

Consumers Energy values the opinions of its customers. We would like your input as we plan the future of our renewable energy programs. Because we value your time, when you complete the survey, **we will send you your choice of a $10 Meijer or Amazon.com gift card.** The survey will take approximately 10-15 minutes to complete. Your responses will be kept confidential and used for research purposes only. Also, space in this study is limited, so if you'd like to participate, be sure to take the survey soon.

Click HERE To take the survey
Or copy and paste the URL below into your internet browser: [SURVEY LINK]

Only one $10 gift card allowed per participating household.

If you have any difficulties taking this survey, please contact Kaitlyn Teppert at Cadmus, the national research firm conducting this survey on behalf of Consumers Energy. You can reach Kaitlyn Teppert at (303) 389-2530 or Kaitlyn.Teppert@cadmusgroup.com.

If you would like to contact Consumers Energy directly to verify the legitimacy of this study, please contact Elody Samuelson in the Consumers Energy Clean Energy Products department at Elody.Samuelson@cmsenergy.com. You can also call the main Consumers Energy customer service number of (800) 477-5050, the same phone number that is on your bill, and a customer care representative will contact Elody directly on your behalf.

Thank you in advance for sharing your opinions and your time.

Regards,
Elody Samuelson
Renewable Energy Program Manager
Clean Energy Products
Consumers Energy
ConsumersEnergy.com

Reminder Invitation

To: [EMAIL]
Sender: Consumers Energy, ConsumersEnergyAsks@qemailserver.com
Subject: Don't forget to tell us your thoughts on renewable energy and receive a $10 gift card!

Dear [FIRSTNAME AND LASTNAME],

We recently invited you to participate in a survey about the future of Consumers Energy's renewable energy programs. We would still like to hear from you! Because we value your time, when you complete the survey, **we will send you your choice of a $10 Meijer or Amazon.com gift card.** Your input is very important to us and will be kept confidential and used for research purposes only. **Please take 10-15 minutes today to complete the survey**. Also, space in this study is limited, so if you'd like to participate, be sure to take the survey soon.

Click HERE To take the survey
Or copy and paste the URL below into your internet browser: [SURVEY LINK]

Only one $10 gift card allowed per participating household.

If you have any difficulties taking this survey, please contact Kaitlyn Teppert at Cadmus, the national research firm conducting this survey on behalf of Consumers Energy. You can reach Kaitlyn Teppert at (303) 389-2530 or Kaitlyn.Teppert@cadmusgroup.com.

If you would like to contact Consumers Energy directly to verify the legitimacy of this study, please contact Elody Samuelson in the Consumers Energy Clean Energy Products department at Elody.Samuelson@cmsenergy.com. You can also call the main Consumers Energy customer service number of (800) 477-5050, the same phone number that is on your bill, and a customer care representative will contact Elody directly on your behalf.

Thank you in advance for sharing your opinions and your time.

Regards,
Elody Samuelson
Renewable Energy Program Manager
Clean Energy Products
Consumers Energy
ConsumersEnergy.com

A. Screeners

Welcome! We'd like to ask you about renewable energy. This survey should take approximately 10 to 15 minutes to complete. We are looking for responses from individuals who are responsible for making decisions about energy use whose income falls within a specific range. If you fit the criteria and finish the survey, you will be eligible to receive a $10 Amazon.com or Meijer gift card. Please note that not all respondents will be eligible to complete the study.

Open drop-down menus by clicking on this icon within the survey.

Click on the "Next" and "Back" buttons at the bottom of each page to navigate through the survey.

A1. Are you either jointly or solely responsible for decisions related to energy use for your home?

1. Yes
2. No **[THANK AND TERMINATE]**

A2. Are you either jointly or solely responsible for paying your home's utility bill?

1. Yes
2. No **[THANK AND TERMINATE]**

A3. Do you currently rent or own your home?

1. Own
2. Rent

A4. In 2019, how many people lived in your household full-time?

[dropdown list, 1 through 10, ending with "More than 10"] **[TERMINATE IF A4 > 10]**

A5. In 2019, what was your annual household income before taxes? This information may determine which questions you receive next. Please enter numbers only, without commas or a dollar sign.

[USE TABLE BELOW TO DETERMINE INCOME ELIGIBILITY; THANK AND TERMINATE IF INCOME IS OVER 300% OF FEDERAL POVERTY LEVEL BASED ON RESPONSE TO A4 AND A5. CODE AS A OR B TO DETERMINE STIMULI ASSIGNMENT.]

[open end numeric response]

	A	B
Persons in Household	300% Of Federal Poverty Level [a]	Qualify for Donated Solar
1	$38,280	$25,520
2	$51,720	$34,480
3	$65,160	$43,440
4	$78,600	$52,400
5	$92,040	$61,360
6	$105,480	$70,320
7	$118,920	$79,280
8	$132,360	$88,240
9	$136,840	$92,720
10	$141,320	$97,200

[a] https://www.payingforseniorcare.com/federal-poverty-level

IF ALL PROGRAM PATHS (ROOFTOP A/B, DONATED A/B, RECS A/B) THAT A PARTICIPANT IS ELIGIBLE FOR HAVE ALREADY REACHED 200 RESPONSES AS COUNTED IN THE QUOTA ON QUALTRICS, TERMINATE SURVEY.

Termination Message: At this time, we are requesting responses to this survey from individuals who are responsible for making decisions about energy use whose income falls within a specific range. Thank you for your time. **[TERMINATE SURVEY]**

B. Energy Priorities

B1. Please rank the following household costs by dragging them into the box. Drag the household cost you are most concerned with to the **top** and the one you are least concerned with to the **bottom**. If a listed cost is not a concern for you, please put it in the "not applicable to me" box. If you have an additional cost concern that is not on the list, please add it under "Other" box and rank that category as well. **[PROVIDE TWO BOXES FOR COSTS TO BE DRAGGED TO, ONE LABELED "HOUSEHOLD COSTS" AND THE OTHER "NOT APPLICABLE TO ME."]**

1. Housing
2. Energy (electricity/natural gas)
3. Water
4. Groceries
5. Childcare
6. Transportation
7. Other: _____

B2. What is your greatest concern when it comes to using energy in your household? Choose only one. **[RANDOMIZE 1-7; SINGLE RESPONSE ONLY]**

1. Energy costs
2. Losing power/reliability
3. Keeping warm/cool enough
4. Carbon monoxide or other safety
5. Indoor air quality – health risks
6. Outdoor air quality – health risks
7. Environmental impact/climate change
8. Other: _____

B3. How important is it for you to have a choice in how your electricity is generated?

1. Not at all important
2. Not too important
3. Neutral
4. Somewhat important
5. Very important
6. Don't know

B4. How important is it to you that your electricity is…?

How important is it that your electricity is…	1	2	3	4	5	
	Not at all important	Not too important	Neutral	Somewhat important	Very important	Don't know
Affordable						
Reliable						
Renewable (from sun, wind, water)						
Clean (fewer air/water pollutants)						
Generated in Michigan						
Generated near your home/community						

C. Motivations and Drivers

C1. How would you rate your general attitude towards using renewable energy resources to generate electricity? **[CODE SCALE POINTS WHERE VERY FAVORABLE = 7, FAVORABLE = 6, SOMEWHAT FAVORABLE = 5, NEUTRAL = 4, SOMEWHAT UNFAVORABLE = 3, UNFAVORABLE = 2, VERY UNFAVORABLE = 1]**

1. Very unfavorable **[skip to Section C5**
2. Unfavorable
3. Somewhat unfavorable
4. Neutral
5. Somewhat favorable
6. Favorable
7. Very favorable
8. Don't know

Note: this section will be programmed in Qualtrics to allow for a randomized presentation of 12 Best/Worst questions that display a combination of the following statements:

1. Renewable energy is a reliable energy source throughout the year
2. Renewable energy is good for my health because it reduces air pollution and smog
3. New renewable energy infrastructure creates jobs
4. Supporting renewable energy helps future generations
5. Renewable energy is good for the environment
6. New renewable energy development promotes energy independence
7. Renewable energy won't run out like fossil fuels
8. Renewable energy fights climate change because it does not produce greenhouse gas emissions like coal-fired power plants do

C2. For the next 12 questions, you will be asked to evaluate the importance of different statements about renewable energy. Each of the 12 will include a slightly different group of five statements. Thinking only of the five statements listed below, which ONE about renewable energy is most important and which ONE least important to you?

Most	Feature [RANDOMIZED LIST of 5]	Least
☐	Renewable energy is a reliable energy source throughout the year	☐
☐	Renewable energy is good for my health because it reduces air pollution and smog	☐
☐	New renewable energy development creates jobs	☐
☐	Supporting renewable energy helps future generations	☐
☐	Renewable energy is good for the environment	☐

C3. Which of the following is the best way to understand the positive outcomes of a renewable energy program? Please choose one. **[RANDOMIZE LIST ORDER 1-5; SINGLE RESPONSE ONLY]**

1. Information on how many homes a renewable energy system can power for one month
2. Information on the amount of greenhouse gas emissions a renewable energy program reduces from the environment
3. Information on the number of trees planted that would remove the same amount of carbon from the environment as the renewable energy program
4. Information on the number of cars removed from the road that would provide the same reduction in pollution as the renewable energy program
5. Information on the number of jobs created by the renewable energy program
6. No opinion

C4. Please read the following statements about renewable energy costs. Drag the statements you agree with to the box labeled "Agree." Drag the statements you disagree with to the box labeled "Disagree." You can agree or disagree with more than one statement. **[RANDOMIZE LIST; DRAG AND DROP STATEMENTS INTO BOX]**

1. Renewable energy is more expensive than traditional fossil fuels.
2. Renewable energy is more expensive than fossil fuels upfront, but less expensive in the long-term.
3. Even though there can be a fee associated with renewable energy, it saves money on energy bills because it comes from free resources like sun and wind.
4. Renewable energy is free, because the wind and sun are free.

[Agree box] **[Disagree box]**

Thanks. The truth about renewable energy costs is a combination of all of these. Though wind and sunshine are free, naturally-occurring resources, it costs money to create renewable energy infrastructure and distribute the electricity. While renewable energy can create an opportunity for long-term cost savings, the timing of those savings is uncertain and depends on many factors.

C5. Please indicate your level of agreement with each of the following statements, where 1 is strongly disagree and 5 is strongly agree. **[1-5 scale: 5 – Strongly Agree, 4 –Agree, 3 – Neutral, 2—Disagree, 1 – Strongly Disagree with "Don't know" and "Does not apply to me"] [RANDOMIZE LIST ORDER 1-9]**

1. I don't know how to get renewable energy for my home
2. I think renewable energy is too expensive
3. I am a renter, and I don't have ability to put solar panels on my home
4. I can't choose where my energy comes from
5. I don't know if renewable energy has a positive impact on the environment
6. I don't know where to learn more about renewable energy
7. I don't know anyone with renewable energy
8. Renewable energy is not something I typically read about or hear about from news or organizations I follow
9. I haven't ever thought too much about renewable energy for me or my household

D. Rooftop Solar

[IF A3 = 1; HOMEOWNERS ONLY]

[RANDOMLY ASSIGN PARTICIPANTS TO ONE OF TWO BATTERIES WITH DIFFERENT CONTRACT LENGTHS: OPTION A: 15 YRS AT $250 ANNUAL AND OPTION B: 10 YRS AT $910 ANNUAL]

Consumers Energy is exploring potential new renewable energy programs for their customers. There are many ways that these programs can be structured, and we would like to get your feedback on one of these options. Below is a description of a potential Rooftop Solar program.

Option A

Rooftop Solar

ENERGY SOURCE: Energy generated by solar panels installed on the customer's home.

PARTICIPATION: Customer hires Consumers Energy-qualified contractor to install solar panels on their home's rooftop. The home would remain connected to the Consumers Energy grid, but primarily all of the home's electricity would be generated on-site. All maintenance costs for the panels are covered by a 25-year warranty.

CUSTOMER ELIGIBILITY: Must be a Consumers Energy residential electric customer, homeownership required.

AMOUNT ENERGY PROVIDED: Up to 100% of the home's electricity would be generated from rooftop solar panels.

CUSTOMER PARTICIPATION PERIOD: Monthly on-bill payments are designed to pay for the full cost of the solar panels in 15 years (at 0% interest). Costs are included on the customer's electric bill, and paid directly to Consumers Energy. If the customer moves during the 15-year payment period, the solar panels and the surcharge remain with the home (and the next occupant).

CUSTOMER COSTS: For the first 15 years annual utility payments would be about $250 more than if no solar panels were on the roof; however, as shown in the table, after the 15-year payment period, the home's electric bill would decrease significantly. Solar panels have an expected life of at least 25 years.

	Without Solar Panels	With Solar Panels	
Month	Standard Electric Bill	Electric Bill (Years 1-15)	Electric Bill (*After* 15 years)
January	$101	$158	$49
February	$101	$144	$35
March	$101	$116	$13
April	$101	$104	$13
May	$101	$96	$13
June	$101	$93	$13
July	$101	$85	$13
August	$101	$98	$13
September	$101	$112	$13
October	$101	$135	$13
November	$101	$157	$13
December	$101	$164	$55
Annual	**$1,209**	**$1,464**	**$256**

Costs are estimated based on a household with average monthly usage of 915 kWh.

Option B

Rooftop Solar

ENERGY SOURCE: Energy generated by solar panels installed on the customer's home.

PARTICIPATION: Customer hires Consumers Energy-qualified contractor to install solar panels on their home's rooftop. The home would remain connected to the Consumers Energy grid, but primarily all of the home's electricity would be generated on-site. All maintenance costs for the panels are covered by a 25-year warranty.

CUSTOMER ELIGIBILITY: Must be a Consumers Energy residential electric customer, homeownership required.

AMOUNT ENERGY PROVIDED: Up to 100% of the home's electricity would be generated from rooftop solar panels.

CUSTOMER PARTICIPATION PERIOD: Monthly on-bill payments are designed to pay for the full cost of the solar panels in 10 years (at 0% interest). Costs are included on the customer's electric bill, and paid directly to Consumers Energy. If the customer moves during the 10-year payment period, the solar panels and the surcharge remain with the home (and the next occupant).

CUSTOMER COSTS: For the first 10 years annual utility payments would be about $900 more than if no solar panels were on the roof, however, as shown in the table, after the 10- year payment period, the home's electric bill would decrease significantly. Solar panels have an expected life of at least 25 years.

	Without Solar Panels	With Solar Panels	
Month	Standard Electric Bill	Electric Bill (Years 1-10)	Electric Bill (*After* 10 years)
January	$101	$213	$49
February	$101	$198	$35
March	$101	$170	$13
April	$101	$159	$13
May	$101	$151	$13
June	$101	$148	$13
July	$101	$140	$13
August	$101	$153	$13
September	$101	$167	$13
October	$101	$190	$13
November	$101	$212	$13
December	$101	$219	$55
Annual	**$1,209**	**$2,118**	**$256**

Costs are estimated based on a household with average monthly usage of 915 kWh.

D1. How likely are you to participate in the Rooftop Solar program if this was offered in the future? Please note, the purpose of this question is not to enroll you in the program, we are simply looking for your feedback. **[CODE SCALE POINTS WHERE VERY LIKELY = 7, LIKELY = 6, SOMEWHAT LIKELY = 5, NEITHER LIKELY NOR UNLIKELY = 4, SOMEWHAT UNLIKELY = 3, UNLIKELY = 2, VERY UNLIKELY = 1]**

1. Very unlikely
2. Unlikely
3. Somewhat unlikely
4. Neither likely nor unlikely
5. Somewhat likely
6. Likely
7. Very likely **[SKIP TO SECTION G]**
8. Don't know

D2. Would this program be more favorable if the contract length was shorter, even if this resulted in a higher annual payment?

1. Yes
2. No
3. Don't know

D3. Would this program be more favorable if you could pay for the solar panels directly to the installation contractor (either up front or through a payment plan) rather than paying Consumers Energy through a surcharge on your electric bill?

1. Yes
2. No
3. Don't know

D4. **[ASK IF D1≤ 3]** What are the challenges you see with participating in this type of program? **[RANDOMIZE ORDER 1-5; MULTIPLE RESPONSES ALLOWED]**

1. Cost
2. Concerned about moving or selling the home
3. Worried about solar panel maintenance
4. Confused about pricing and payments
5. Concerned electricity costs will not go down enough after **[15/10]** years
6. Other (please specify): _____

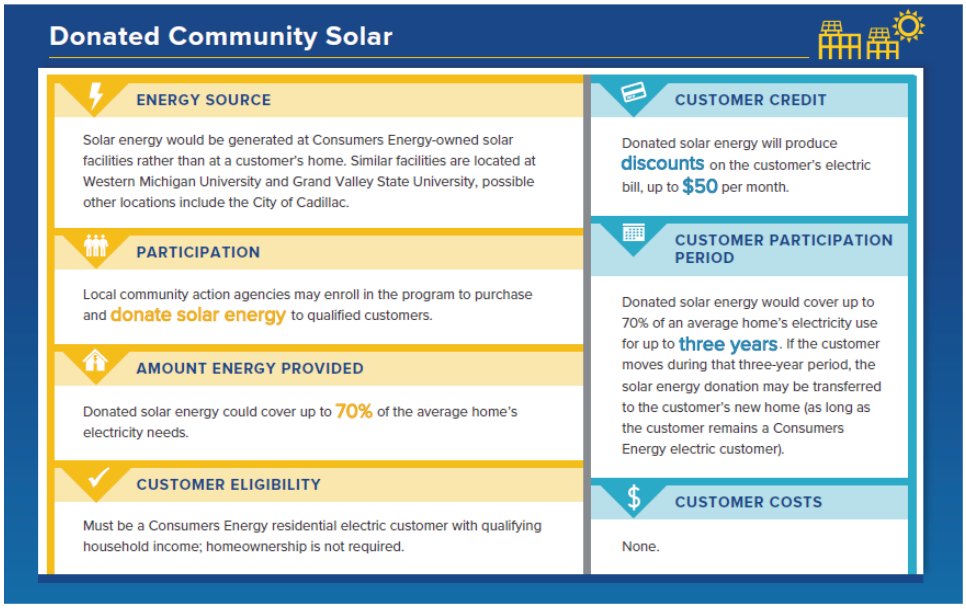
E. Donated Solar

[IF INCOME ≤ 200% FPL BASED ON RESPONSE TO A4 AND A5]

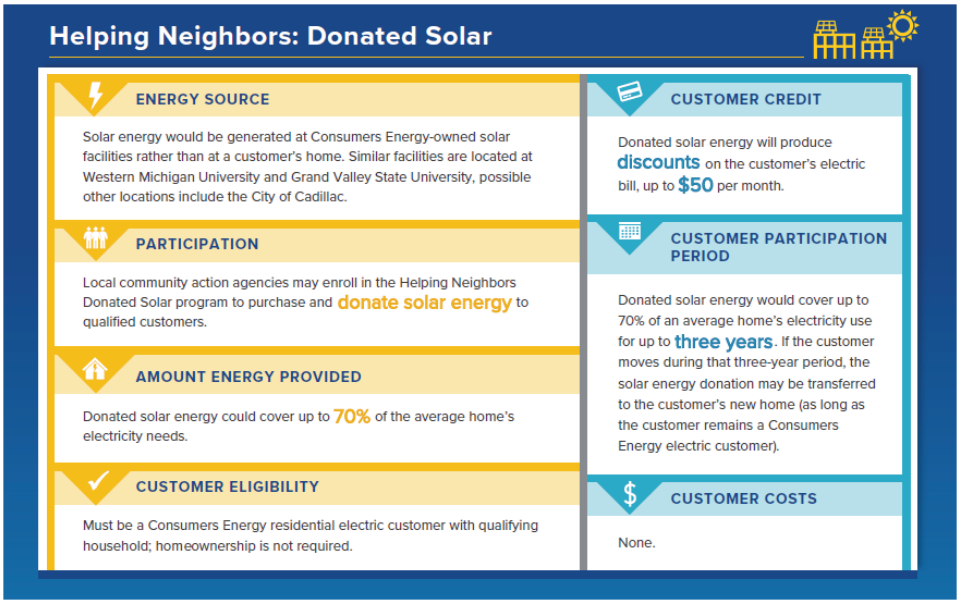
[RANDOMLY ASSIGN PARTICIPANTS TO ONE OF TWO BATTERIES WITH SLIGHTLY DIFFERENT PROGRAM NAMES: OPTION A: DONATED COMMUNITY SOLAR OR OPTION B: HELPING NEIGHBORS: DONATED SOLAR]

Consumers Energy is exploring potential new renewable energy programs for their customers. There are many ways that these programs can be structured, and we would like to get your feedback on one of these options. Below is a description of a potential **[Donated Community Solar/Helping Neighbors: Donated Solar]** program.

Option A



Option B



E1. How likely are you to participate in the **[DONATED COMMUNITY SOLAR/HELPING NEIGHBORS: DONATED SOLAR]** program if this was offered in the future? Please note, the purpose of this question is not to enroll you in the program, we are simply looking for your feedback. **[CODE SCALE POINTS WHERE VERY LIKELY = 7, LIKELY = 6, SOMEWHAT LIKELY = 5, NEITHER LIKELY NOR UNLIKELY = 4, SOMEWHAT UNLIKELY = 3, UNLIKELY = 2, VERY UNLIKELY = 1]**

1. Very unlikely
2. Unlikely
3. Somewhat unlikely
4. Neither likely nor unlikely
5. Somewhat likely
6. Likely
7. Very likely **[SKIP TO SECTION G]**
8. Don't know

E2. We recognize you may have questions about this program. Below are some further details. How helpful is each of the following statements in clarifying details about the program? **[1-5 scale: 5 – Very helpful, 4 – Somewhat helpful, 3 – Neutral, 2 -- Not too helpful, 1 – Not at all helpful] [RANDOMIZE LIST ORDER 1-4]**

1. This offering is for a limited 3-year period because Consumers Energy wants to help as many people as they can. After your 3-year period is finished, another eligible family receives the donation. By enrolling, you're paving the way for a program that will be around for years to come.
2. Consumers Energy is offering this program at no cost to you because they are focused on helping provide affordable renewable energy for those who need it most and moving Michigan toward a cleaner future.

3. The funds for the solar energy would be donated by a variety of entities, including grants from charitable organizations, government entities and individuals who are looking to make an impact on their community.
4. The credit on your bill will be simple. One of Consumers Energy's solar projects will generate a certain amount of solar energy every month. The energy will be divided up and credited to your electric bill, and to those of other qualified households that participate.

E3. After learning more about the program, has your likelihood to participate in the **[DONATED COMMUNITY SOLAR/HELPING NEIGHBORS: DONATED SOLAR]** program changed?

1. Yes
2. No

E4. **[IF E3 = 1]** Now how likely are you to participate in the **[DONATED COMMUNITY SOLAR/HELPING NEIGHBORS: DONATED SOLAR]** program? **[CODE SCALE POINTS WHERE VERY LIKELY = 7, LIKELY = 6, SOMEWHAT LIKELY = 5, NEITHER LIKELY NOR UNLIKELY = 4, SOMEWHAT UNLIKELY = 3, UNLIKELY = 2, VERY UNLIKELY = 1]**

1. Very unlikely
2. Unlikely
3. Somewhat unlikely
4. Neither likely nor unlikely
5. Somewhat Likely
6. Likely
7. Very likely
8. Don't know **[SKIP TO E6]**

E5. **[IF E3 = 1]** Which additional piece of information was **most** helpful for you? Please choose one. **[SINGLE RESPONSE ONLY]**

1. Explanation about why participation in the program would be limited to three years.
2. Explanation about why Consumers Energy is offering this at no cost to you.
3. Information about where donations come from to cover the cost of solar.
4. Explanation about how the bill credit would work.
5. All of the above combined

E6. **[IF E1<4 AND E3 = 2, OR E4 < 4]** Why are you not likely to participate in the program? **[OPEN-ENDED TEXT RESPONSE]**

F. Michigan RECs

[RANDOMLY ASSIGN PARTICIPANTS TO ONE OF TWO BATTERIES FOR 50% OR 100% RENEWABLE ENERGY]

Consumers Energy is exploring potential new renewable energy programs for their customers. There are many ways that these programs can be structured, and we would like to get your feedback on one of these options. Below is a description of a potential program.

Option A

Michigan Renewable Energy Credit Program

- **Energy source:** Consumers Energy pays an incremental cost to support renewable energy (wind, solar, biomass) from renewable sources in Michigan.
- **Participation:** Customers pay a small additional fee on their electric bill to match the energy their home uses with renewable energy. Nothing is installed on the customer's home or property, and the electricity does not flow directly to the customer's home.
- **Amount energy purchased:** Renewable energy would match 100% of the customer's average electricity needs.
- **Customer eligibility:** Must be a Consumers Energy residential electric customer; homeownership is not required.
- **Customer participation period:** Month-to-month participation, with no contract. Customers can opt out of the additional fee for the program at any time.
- **Customer costs:** $6 additional per month (on top of your standard electric bill costs).

Option B

Michigan Renewable Energy Credit Program

- **Energy source:** Consumers Energy pays an incremental cost to support renewable energy (wind, solar, biomass) from renewable sources in Michigan.
- **Participation:** Customers pay a small additional fee on their electric bill to match the energy their home uses with renewable energy. Nothing is installed on the customer's home or property, and the electricity does not flow directly to the customer's home.
- **Amount energy purchased:** Renewable energy would match 50% of the customer's average electricity needs.
- **Customer eligibility:** Must be a Consumers Energy residential electric customer; homeownership is not required.
- **Customer participation period:** Month-to-month participation, with no contract. Customers can opt out of the additional fee for the program at any time.
- **Customer costs:** $3 additional per month (on top of your standard electric bill costs).

F1. How likely are you to participate in this program if this was offered in the future? Please note, the purpose of this question is not to enroll you in the program, we are simply looking for your feedback. **[CODE SCALE POINTS WHERE VERY LIKELY = 7, LIKELY = 6, SOMEWHAT LIKELY = 5, NEITHER LIKELY NOR UNLIKELY = 4, SOMEWHAT UNLIKELY = 3, UNLIKELY = 2, VERY UNLIKELY = 1]**

1. Very unlikely
2. Unlikely
3. Somewhat unlikely
4. Neither likely nor unlikely
5. Somewhat likely
6. Likely
7. Very likely **[SKIP TO SECTION G]**
8. Don't know

F2. We recognize you may have questions about this program. Below are some further details. How helpful is each of the following statements in clarifying details about the program? **[1-5 scale: 5 – Very helpful, 4 – Somewhat helpful, 3 – Neutral, 2-- Not too helpful, 1 – Not at all helpful with "Don't know"] [RANDOMIZE LIST ORDER 1-4]**

1. Though proven to be highly reliable, large-scale renewable energy systems are still a new technology. The cost of new infrastructure means it costs slightly more to develop these resources than gas or coal systems historically.
2. Your home will still receive the same energy that your neighbor does from a central grid. However, Consumers Energy uses your dollars to purchase renewable energy credits equivalent to the amount of electricity your home uses. Each person who opts in to match their use with renewable energy helps grow the overall amount of renewable energy that is generated in Michigan.
3. Consumers Energy is dedicated to promoting a cleaner energy future for all of Michigan. While some of your electricity is already generated by renewable energy, Consumers Energy recognizes that some customers would like that transition to take place sooner, and low-cost programs such as this one is one way to do that.
4. Though extreme weather events always pose a risk for the electric grid, you will never run out of power due to lack of sun or wind. Consumers Energy will optimize its energy mix to make sure it is reliable 24 hours a day, 7 days a week. By opting-in to match your usage with renewable energy, you are helping Michigan diversify the grid with a greater mix of renewable fuels from different locations throughout the state.

F3. After learning more about the program, has your likelihood to participate in this program changed?

1. Yes
2. No

F4. **[IF F3= 1]** Now how likely are you to participate in the **MICHIGAN RENEWABLE ENERGY CREDIT** program? **[CODE SCALE POINTS WHERE VERY LIKELY = 7, LIKELY = 6, SOMEWHAT LIKELY = 5, NEITHER LIKELY NOR UNLIKELY = 4, SOMEWHAT UNLIKELY = 3, UNLIKELY = 2, VERY UNLIKELY = 1]**

1. Very unlikely
2. Unlikely
3. Somewhat unlikely
4. Neither likely nor unlikely
5. Somewhat likely
6. Likely
7. Very likely
8. Don't know **[SKIP TO F6]**

F5. **[IF F3= 1]** Which additional piece of information was **most** helpful for you? Please choose one.

1. Information on why renewable energy costs more.
2. Information on how the purchase of renewable energy credits works and where your energy would come from in this program.
3. Information about Consumers Energy's plans to grow their renewable energy mix.
4. Explanation about how Consumers Energy manages the grid to ensure the power stays on, even when using solar and wind power.
5. All of the above combined

[IF F1<4 AND F3 = 2, OR F4<4]

F6. Why are you not likely to participate in the program? **[OPEN-ENDED TEXT RESPONSE]**

G. Trusted Entities, Life Journey, and Time and Place

The next few questions are to help us understand our customers better. The answers will be used for research purposes only.

G1. Have you been supported by any community organizations (community action agencies, nonprofits, or other) in receiving energy bill payment assistance in the past?

1. Yes | Name of organization: _____
2. No

G2. **[IF G1 =2]** If you ever have trouble paying your energy bill in the future, do you already know a trusted organization that you might turn to for assistance?

1. Yes | Name of organization: _____
2. No

G3. Where do you typically hear about information related to energy or the environment? Please select the top two ways you have learned about energy or environmental topics in the past. **[ALLOW ONLY TWO RESPONSES; RANDOMIZE LIST 1-6]**

1. Word-of-mouth (friends, family)
2. Newspapers or magazines
3. TV news programs
4. Social media channels like Facebook or Instagram
5. Communication from Consumers Energy, such as bill inserts or e-mails
6. Community organizations
7. Somewhere else: _____
8. Don't know

G4. If there is something specific you are looking for about energy or environmental topics, where are you most likely to seek out more information? Select the top two ways you are likely to search for information. **[ALLOW ONLY TWO RESPONSES; RANDOMIZE LIST 1-6]**

1. General internet search on your topic
2. Visit a specific website: _____
3. Call a friend or family member
4. Contact Consumers Energy (call, e-mail, or visit website)
5. Contact a community organization (call, e-mail, or visit website)
6. Search, read posts, or interact with others on social media
7. Some other way: _____
8. Don't know

G5. Are you currently receiving any government assistance such as unemployment, disability, Medicaid, Supplemental Security Income (SSI), or Supplemental Nutrition Assistance Program (SNAP)? This does not include the one-time federal stimulus checks mailed in April of this year to help in the wake of the coronavirus pandemic.

1. Yes
2. No **[SKIP TO G8]**
3. Prefer not to say **[SKIP TO G8]**

G6. About how long have you been receiving this assistance for?

1. Since the coronavirus pandemic (less than 12 months)
2. 1-3 years
3. 4-6 years
4. 7-10 years
5. Over 10 years
6. Not sure

G7. How long do you anticipate receiving this assistance for in the future?

1. 6 months or less
2. Up to 1 year
3. 1-3 years
4. 4-6 years
5. 7-10 years
6. Over 10 years
7. Not sure

G8. Please select whether any of the following life events are true for you. Select all that apply.

1. In the past three years, a medical emergency impacted me or another income-earner in my immediate family.
2. In the past three years, I have taken unpaid time off work to care for children, sick, or aging family members.
3. In the past three years, I have taken unpaid time off work to pursue higher education.
4. None

G9. **[IF NUMBER OF SELECTED CHOICES IN G8<4, ASK FOR EACH RESPONSE CHOSEN IN G8]** Was this **[IF G8=1: medical emergency/ IF G8=2: unpaid time off to care for children, sick, or aging family members/ IF G8=3: unpaid time off to pursue higher education]** due to the recent coronavirus pandemic?

1. Yes
2. No, this life event or events was not related to the coronavirus pandemic
3. Both

G10. **[IF NUMBER OF SELECTED CHOICES IN G8<4, ASK FOR EACH RESPONSE CHOSEN IN G8]** Did this **[IF G8=1: medical emergency/ IF G8=2: unpaid time off to care for children, sick, or aging family members/ IF G8=3: unpaid time off to pursue higher education]** impact your ability to pay your Consumers Energy bill?

1. Yes
2. No
3. Prefer not to say

G11. **[Ask if G9=1 AND G10=1]** How would you rate Consumers Energy's assistance to customers, like you, who were financially affected by the coronavirus? **[CODE SCALE POINTS WHERE VERY HELPFUL = 5, SOMEWHAT HELPFUL = 4, NEUTRAL = 3, NOT TOO HELPFUL = 2, NOT AT ALL HELPFUL = 1]**

1. Not at all helpful
2. Not too helpful
3. Neutral
4. Somewhat helpful
5. Very helpful
6. Don't know

G12. Do you see signs of economic improvement in your community?

1. Yes
2. No
3. Don't know

G13. Which word best describes your feelings about your financial future, specifically?

1. Optimistic
2. Uncertain
3. Resigned
4. Worried

H. Demographics

Just a few more questions.

H1. Is English your first (or primary) language?

1. Yes
2. No, my primary language is: _____

H2. Which age range do you fall into?

1. 18 to 25 years old
2. 26 to 35 years old
3. 36 to 45 years old
4. 46 to 55 years old
5. 56 to 70 years old
6. 70+ years old
7. Prefer not to say

H3. What type of residence do you live in?

1. A single-family detached residence
2. Multi-unit dwelling, such as an apartment or condo building with 4 or more units
3. Attached house (townhouse, row house, or twin/duplex)
4. Mobile or manufactured home
5. Other (please specify): [allow text entry]
6. Prefer not to say

H4. What is the highest level of education you've completed so far?

1. Some high school, no diploma
2. High school diploma or GED
3. Some college, no diploma
4. Associate's degree
5. Bachelor's degree
6. Graduate, professional degree, Doctorate or PhD
7. Prefer not to say

H5. What race or ethnicity would you consider yourself?

1. White/Caucasian
2. Black or African American
3. American Indian or Alaska Native
4. Asian
5. Native Hawaiian or Other Pacific Islander
6. Hispanic or Latinx
7. Two or more races
8. Prefer not to say

I. Closing

I1. Those are all the questions we have. Thank you for your time! Before you go, please tell us what type of gift card you prefer.

1. Meijer gift card
2. Amazon.com gift card
3. Neither – I do not wish to receive a gift card **[SKIP TO: End of Survey Message]**

I2. **[IF I1=1]** To receive your gift card, please verify your name and address. Your information will only be used to mail you a gift card; Consumers Energy will not use it for marketing purposes, and they will not update any of your billing or mailing preferences with this information. *Please note that if you do not complete your mailing address, or only fill in some of the fields below, you will not receive your gift card.*

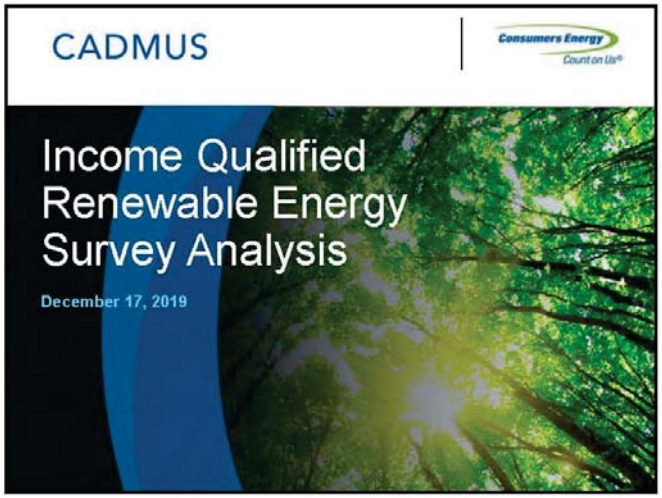
1. First Name:
2. Last Name:
3. Street Address:
4. City:
5. State:
6. ZIP code:
7. Email:

I3. **[IF I1=2]** To receive your gift card, please verify your name and e-mail address. Your information will only be used to e-mail you a gift card; Consumers Energy will not use it for marketing purposes, and they will not update any of your billing or e-mailing preferences with this information. *Please note that if you do not complete your e-mail address, or only fill in some of the fields below, you will not receive your gift card.*

1. First Name:
2. Last Name:
3. Email:

End of Survey Message: This survey is now complete. You should receive your gift card within four weeks. If you have not received it by then, please contact Rachel Halverson at Rachel.Halverson@cadmusgroup.com or 303-389-2487. To contact Consumers Energy directly, please call the customer service number of (800) 477-5050. Thank you for your time.

Appendix G. 2018 Renewable Energy Roadmap Data Review PowerPoint



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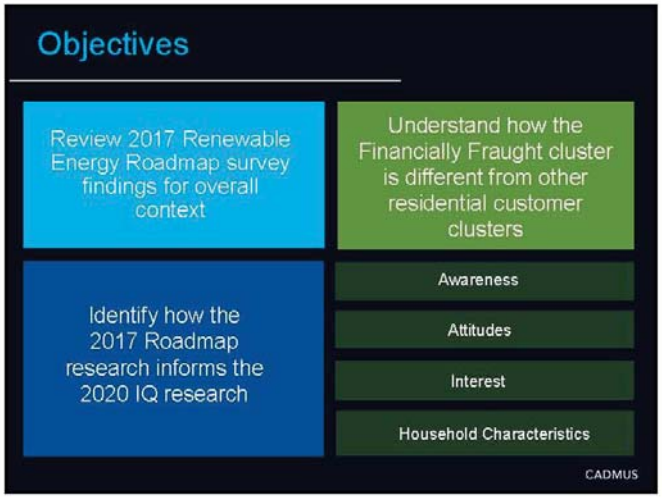

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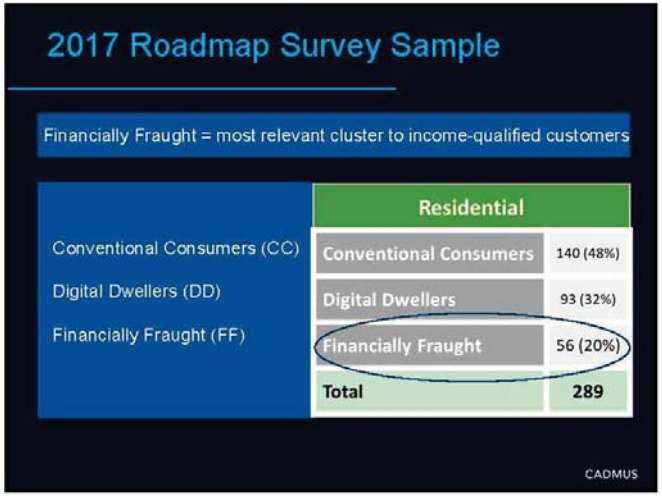

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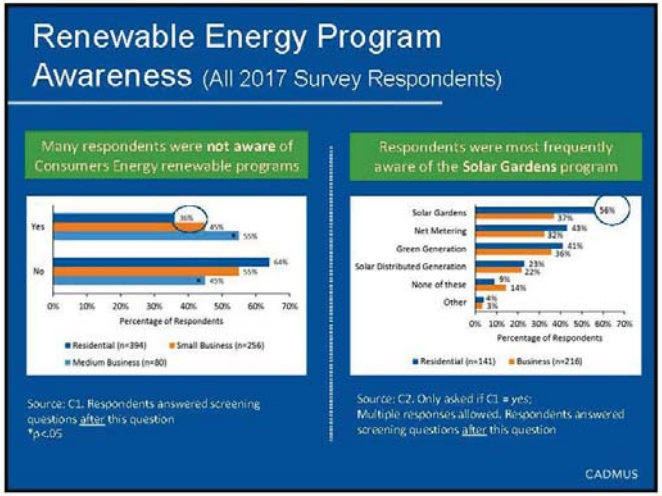

4

What Customers Need
All 2017 Survey Respondents
Clear/Tangible Benefits
Transparency
More Program Information
A Sales Pitch or Story
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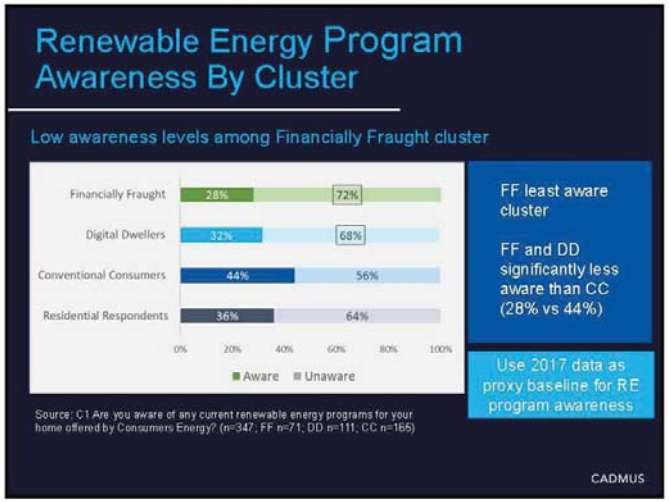
Renewable Energy Program Awareness By Cluster
Low awareness levels among Financially Fraught cluster
Financially Fraught 28% 72%
Digital Dwellers 32% 68%
Conventional Consumers 44% 56%
Residential Respondents 36% 64%
0% 20% 40% 60% 80% 100%
Aware
Unaware
Source: C1 Are you aware of any current renewable energy programs for your home offered by Consumers Energy? (n=347; FF n=71; DD n=111; CC n=165)
FF least aware cluster
FF and DD significantly less aware than CC (28% vs 44%)
Use 2017 data as proxy baseline for RE program awareness
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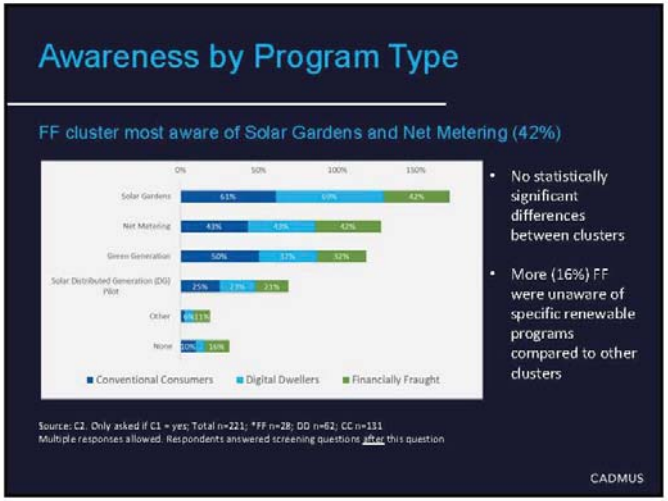
Awareness by Program Type
FF cluster most aware of Solar Gardens and Net Metering (42%)
Solar Gardens
Net Metering
Green Generation
Solar Distributed Generation (DG) Pilot
Other
None
Conventional Consumers
Digital Dwellers
Financially Fraught
No statistically significant differences between clusters
More (16%) FF were unaware of specific renewable programs compared to other clusters
Source: C2. Only asked if C1 = yes; Total n=221; *FF n=28; DD n=62; CC n=131
Multiple responses allowed. Respondents answered screening questions after this question
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How To Reach
FF cluster similar to other clusters in awareness source
Consumers Energy materials or website
Internet
Advertisement in magazine, newspaper, or direct mail
From a friend, family member, or colleague
From a contractor
Saw product installed or used in another home or business
TV or radio
Financially Fraught
Digital Dwellers
Conventional Consumers
No statistical differences between clusters
Consumers Energy material top source, but FF lower compared to other clusters
Internet second highest source for FF (25%)
More awareness via word of mouth
Source: C3. How did you learn about these Consumers Energy renewable energy programs? (Multiple responses) (n=172; FF n=22; DD n=52; CC n=98)
Don't rule out website or internet channels for IQ
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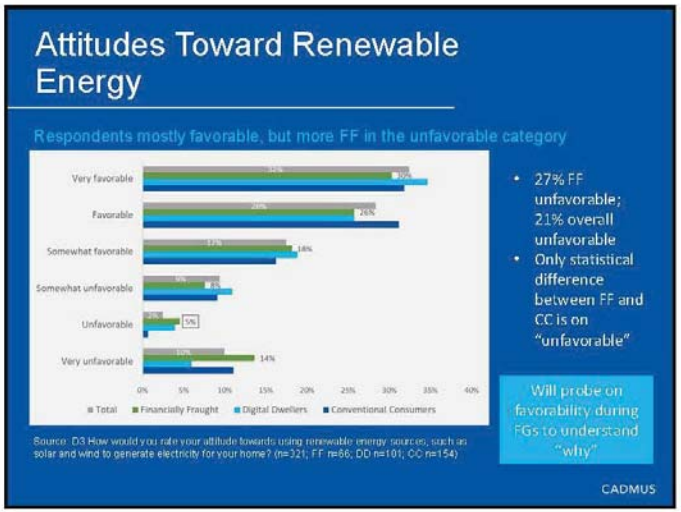
Attitudes Toward Renewable Energy
Respondents mostly favorable, but more FF in the unfavorable category
Very favorable
Favorable
Somewhat favorable
Somewhat unfavorable
Unfavorable
Very unfavorable
Total
Financially Fraught
Digital Dwellers
Conventional Consumers
• 27% FF unfavorable; 21% overall unfavorable
• Only statistical difference between FF and CC is on "unfavorable"
Will probe on favorability during FGs to understand "why"
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Concerns With Paying More
All 2017 Survey Respondents
Unclear Benefits
Unsure Why Renewables Cost More
Need Transparency into What They Are Paying For
Expect Return on Investment
10
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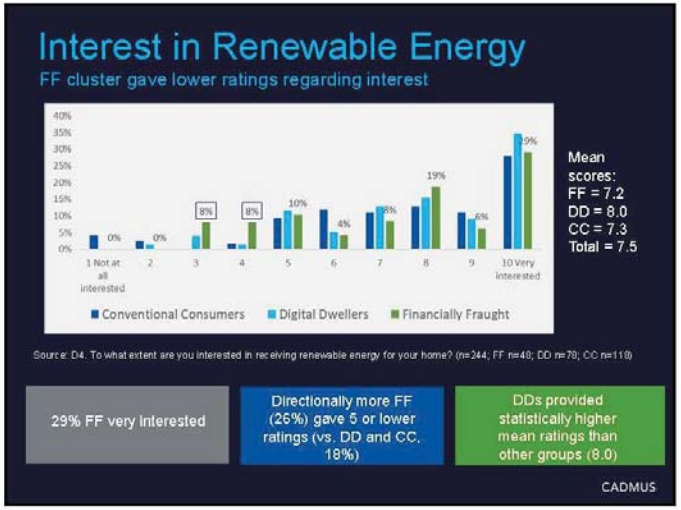
10


Interest in Renewable Energy
FF cluster gave lower ratings regarding interest
1 Not at all interested
10 Very interested
Conventional Consumers
Digital Dwellers
Financially Fraught
Mean scores:
FF = 7.2
DD = 8.0
CC = 7.3
Total = 7.5
29% FF very interested
Directionally more FF (26%) gave 5 or lower ratings (vs. DD and CC, 18%)
DDs provided statistically higher mean ratings than other groups (8.0)
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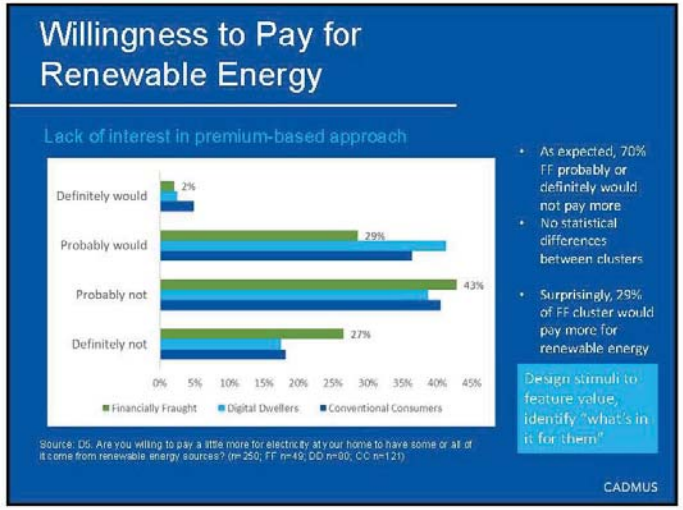
Willingness to Pay for Renewable Energy
Lack of interest in premium-based approach
Definitely would
Probably would
Probably not
Definitely not
Financially Fraught
Digital Dwellers
Conventional Consumers
• As expected, 70% FF probably or definitely would not pay more
• No statistical differences between clusters
• Surprisingly, 29% of FF cluster would pay more for renewable energy
Design stimuli to feature value, identify "what's in it for them"
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Priorities

Keeping energy costs low is a top priority for all clusters

1. Keeping energy costs low (89% ranked #1)
2. Expanding renewable energy generation in MI
3. Reducing my carbon footprint

All clusters had same rank order but in different proportions

Communicate how renewable energy can keep energy costs low for customers

Source: F23. What is most important to you about a renewable energy program ? (n=202; FF n=35; DD n=67; CC n=100)

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Household Characteristics

Higher proportion of FF cluster rent (23%)
- Yet 77% own their home
- Statistically higher proportion of renters compared to other clusters

FF cluster tends to live in newer homes
- 29% live in homes built in 2000 or later
- Statistically higher proportion compared to other clusters

FF cluster has lower household income
- 51% have annual household income of $50,000 or less
- Some outliers with higher incomes labeled as FF
- Also comparably lower education levels (33% with High School/GED)

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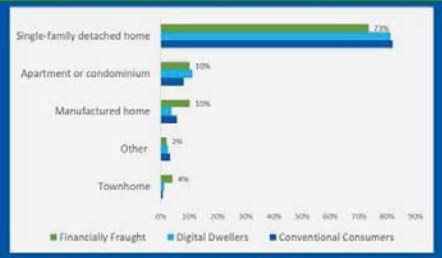
Home Type

Home type similar to other clusters
- Directionally fewer single family homes (73%)
- More manufactured homes (10%)
- Similar proportion of multifamily across all clusters (10%)



Source: G41. Which of the following best describes your home? (n=251; FF n=49; DD n=80; CC n=122)

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Mobility

FF have shorter tenure living in home:
- 29% have lived in current home five or fewer years
- FF not different from other groups on plans to move in the next two years:
  - 82% do not plan to move in the next 2 years

Possible implications for contract terms during program concept testing during FGs

16

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2020 Research Implications

1. Communication channels
   - Website and internet channels reach the FF cluster
   - Supports online survey methodology
2. Program/concept design considerations
   - Program descriptions that feature value, "what's in it for them"
   - Communicate how renewable energy can help keep energy costs lower (customer credits)
   - Barriers/opportunities for longer program contract terms
3. Probes for future research
   - Renewable energy program awareness- increase since 2017?
   - Understand what makes respondents more/less favorable toward renewable energy
   - WTP not statistically different by customer cluster- supports further research on premium-based programs

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Appendix H. Focus Group Interim Findings PowerPoint

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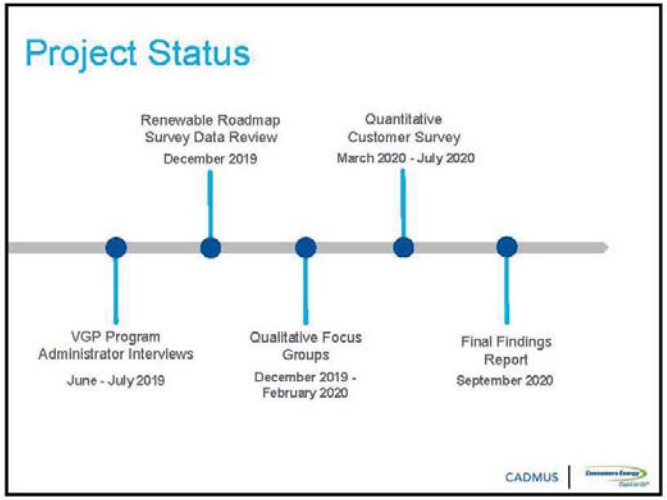

4

Research Objectives

Determine preferences for renewable energy program concepts

Identify perceived challenges and barriers to accessing renewable energy

Gauge renewable energy awareness / interest

Understand financial constraints for renewable energy

Identify motivating value propositions

Identify general energy priorities

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Research Approach

OVERVIEW

56 income-qualified customers provided insights on renewable energy

Recruit

- Income ≤ 300% FPG
- Targeted mix of age, gender, ethnicity based on U.S. Census
- $100 incentive for participation
- 10 recruits per group to seat 6-8

Groups

- 8 groups, 4 locations
  - Muskegon
  - Cadillac
  - Flint
  - Jackson
- 2 groups per evening

Facilitation

- Pre-group survey
- Interactive exercises during group
- 90-min qualitative discussion

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Regional Segmentation

Identify how/whether priorities and interest differ regionally within the state.

Muskegon | 17 respondents

Cadillac | 13 respondents

Flint | 12 respondents

Jackson | 14 respondents

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Key Findings

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General Energy Priorities: Concerns

Although cost is a critical concern to income-qualified respondents, potential health impacts of energy generation and energy reliability are also priorities.

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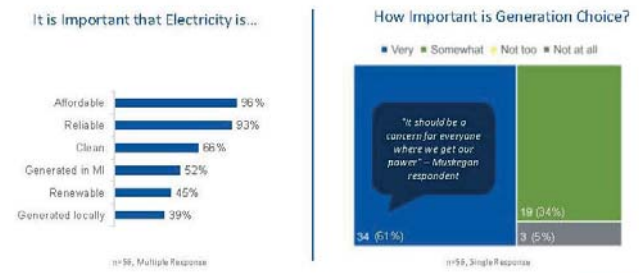
General Energy Priorities: Generation

While affordability and reliability are important, so is having a choice in how energy is generated.



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Renewable Energy: Awareness

Although income-qualified respondents displayed *general* awareness and a basic knowledge of renewable energy, there remains a need for further customer education.

Respondents see potential cost savings and positive impact on the environment (in comparison to fossil fuels) as key benefits to using renewable energy.

"[Renewable energy is] something that's not going to run out and is not hazardous to the environment"
- Jackson respondent

"It would be excellent if someone explained pros and cons [of our electricity options]. right now we just get what we get"
- Flint respondent

"[We need] education ... a lot of us just don't know anything about [renewable energy]. we don't know our options"
- Muskegon respondent

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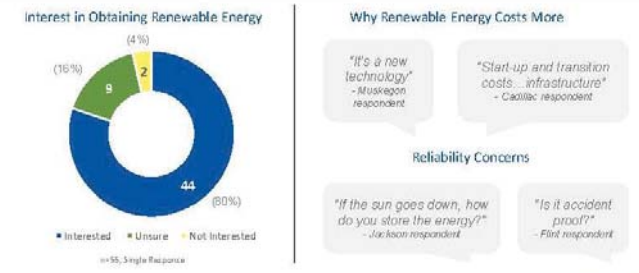
Renewable Energy: Interest & Concerns

Most income-qualified respondents are interested in obtaining renewable energy and understand why it might cost more, but need assurances on reliability to alleviate concern.



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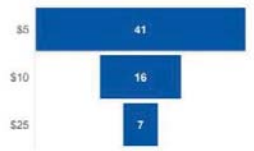
Renewable Energy: Price Sensitivity

Despite household financial constraints, the benefits of renewable energy are priority enough that income-qualified respondents are willing to pay an additional nominal amount to obtain it for their home; however, respondents want more information regarding what they are paying for.

Respondents generally agree that Michigan-generated energy is preferred and support additional infrastructure, but it's unclear if local generation would have more value.

Willingness to Pay More per Month



n=56, Multiple Response

Transparency/Education is Needed

"If I had more information, then maybe $10 (instead of only $5)"
- Muskegon respondent

"I live in a trailer park, there is a trailer 15 ft from mine, if I pay more, how do I know I am getting the renewable energy and not the other trailer?"
- Flint respondent

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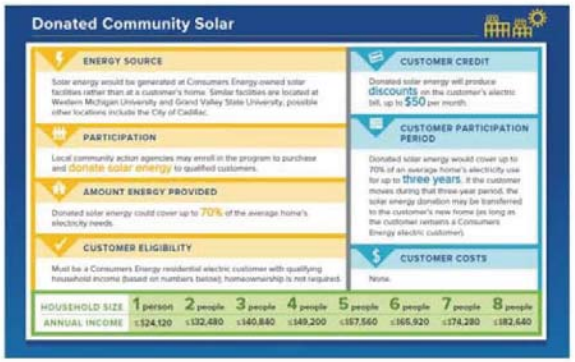
Program Concept Stimuli



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Donated Community Solar

Most respondents were interested in participating in a Donated Community Solar program, but want a more transparent explanation of the program elements.

Energy Source	Indifferent to solar versus other renewable energy sources.
Participation	Some confusion on how donation would work (e.g. where the money comes from) and mixed awareness of CAAs.
Amount of Energy Provided	70% is nice, but why not 100%? Need for transparency.
Customer Eligibility	Helping both renters and homeowners is good, but there is concern about income requirements and mixed views on CAA trustworthiness.
Customer Credit	Positive, but skeptic, reaction to $50 discount.
Participation Period	What happens after three years? Need for transparency.
Customer Costs	Positive, but skeptic, reaction to $0 customer cost.
Program Entry	Helping Neighbors seen as a value-add rather than a burden to program participation.

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Program Concept Stimuli

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Rooftop Solar

Although income-qualified respondents found the program concept enticing, committing to a contract for 15 years made it difficult for respondents to envision the reality of participation.

Energy source	Rooftop panels serve as a tangible reminder of renewable energy.
Participation	Lengthy contract terms created a barrier to commitment; mixed reactions regarding paying more for a shorter period.
Amount of Energy Provided	Positive reaction to 100% solar energy coverage.
Customer Eligibility	Disappointment that the opportunity is only for homeowners.
Participation Period	Positive reaction to post-contract bill savings, but 15-year contract is too long to effectively plan for.
Customer Costs	$250 annual net premium recognized as a reasonable cost for participation.

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Clean Energy Plan: Reactions

Consumers Energy's commitment to 90% clean energy by 2040.

Respondents are looking to Consumers Energy to adopt renewable energy and to do so sooner rather than later.

"I expect Consumers Energy to do something tomorrow" - Jackson respondent

"How much of fossil fuels are actually being cut out, how much will be solar, wind, water. I want to make sure the environment is actually safer." - Flint respondent

"I won't live that long (to 2040, it's too far away)" - Muskegon respondent

"Why will it take so long (Consumers Energy) has solar panels already" - Cadillac respondent

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Conclusions

Lack of trust/knowledge is the central barrier to motivating early adoption.

Customers want reliable and affordable energy, but are concerned about how energy generation may impact their health and the environment.

The greatest challenge customers face in obtaining renewable energy is having information about how to access it for their home.

Customers want Consumers Energy to accelerate the adoption of renewable energy and desire transparent information regarding these efforts.

Customers have basic awareness of renewable energy and want choice in how their energy is generated.

Customers understand why renewable energy may cost more (than fossil fuel-based energy) and are willing to pay a nominal amount more to obtain it.

Customers are interested in renewable energy programs, but require transparency on key program elements (e.g., participation period, administration, costs, and how energy is transferred) to fully commit.

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Programmatic Conclusions

Cadmus suggests further testing these programmatic conclusions during the quantitative survey research.

Interest	Interest is high for low-cost, residential program options.
Cost	Customers can justify minor financial trade-offs for renewable energy.
Values	Reliability, health, environment, next generation are motivating values.
Administration	No clear preference on program administration; no consensus on CAAs.
Customer Eligibility	Moderate income customers (≤ 300% FPG) may have as much need/interest for programs as more income-qualified customers (≤ 200% FPG); renters want options as well.
Participation Period	Customers require options/flexibility in contract terms; no "one size fits all" for contract length.
Recognition	Consumers Energy is a trusted source of information; Helping Neighbors is a trusted program/brand.

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Survey Approach: Next Steps

Sample size:
1,000 income-qualified customers

Recommended Survey Approach:

- Test interest in participating in 3 program concepts: RECs, Donated Solar, Rooftop Solar
- Test each program with unique subsample of customers to avoid bias
  - (i.e., do not present a no-cost program in the survey followed by a fee-based program).
  - Obtain a quantitative metric of market demand
- To achieve above, use random sample design for each subsample (do not stratify by region)

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Quantitative Outcomes: WTP and Program Participation

Program	Primary Research Question(s)	Quantitative Outcome	Sample size
1. Rooftop Solar	What percentage of IQ customers are likely to participate? Do customers prefer a shorter or longer term contract?	Estimated participation for 2 different contract and price levels	400, respondents randomized to one of two concept tests
2. Donated Community Solar	What percentage of IQ customers are likely to participate? Does leveraging the Helping Neighbors brand help gain trust?	Estimated participation for 2 different program descriptions with different branding	400, respondents randomized to one of two program descriptions, one with Helping Neighbors brand and one without
3. RECs	What percentage of IQ customers are likely to participate?	Estimated participation at $6 price point, which is what is currently filed; could test at other price points, if desired	200

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Motivating Values

What motivates income-qualified customers?
A test of Maximum Differences will determine the most powerful value statement.

- Renewable energy is reliable energy
- Renewable energy is good for my health because it reduces air pollution and smog
- New renewable energy infrastructure creates jobs
- Using renewable energy helps the next generation
- Renewable energy is good for our planet because it reduces greenhouse gas emissions

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Overcoming The Trust Barrier: Donated Solar

Test which program detail(s) help motivate interested customers to participate and overcome questions about enrollment.

Known Challenge	Information Statement (These are examples and may be revised during the survey design process)
Concern about 3-year timeframe	This offering is for a limited time only because Consumers Energy wants to help as many people as they can. By enrolling, you're paving the way for a program that will be around for years to come.
Is this for real? (what's in it for them?)	Consumers Energy is offering this program at no cost to you because they are focused on helping provide affordable energy for those who need it most *and* moving Michigan toward a cleaner future.
Who is paying for this?	The funds for the solar energy would be donated by a variety of entities, including grants from external organizations and governments and individuals who are looking to make an impact on their community.
How do I actually get the solar energy if it's not at my house?	The credit on your bill will be simple. One of Consumers Energy's solar projects will generate a certain amount of solar energy every month. The energy will be divided up and credited to your electric bill, and to those of other income-qualified customers who participate.

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Overcoming The Trust Barrier: RECs

Test which program detail(s) help motivate interested customers to participate and overcome questions about enrollment.

Known Challenge	Information Statement (These are examples and may be revised during the survey design process)
Why do I need to pay more for renewable energy?	Though proven to be highly reliable, large-scale renewable energy systems are still a new technology. The cost of new infrastructure means it costs slightly more to use renewable energy as Consumers Energy transitions to cleaner energy.
How do I know I'm getting renewable energy?	Your home will still receive the same energy that your neighbor does from a central grid. However, Consumers Energy uses your dollars to purchase renewable energy credits equivalent to the amount of electricity your home uses. Each person who opts in to receive 100% renewable energy helps grow the overall amount of renewable energy that is generated.
Consumers Energy should be doing this anyway	Consumers Energy is dedicated to promoting a cleaner energy future for all of Michigan. While some of your electricity is already generated by renewable energy, Consumers Energy needs support transitioning to a clean energy supply, offering low-cost programs for customers to opt-in early is one way they are doing that.
What if the wind isn't blowing or sun isn't shining? (Will my power go off?)	Consumers Energy will optimize your energy mix to make sure it is reliable 24 hours a day, 7 days a week. By opting in to renewable energy, you are helping Consumers Energy diversify the grid with a greater mix of renewable fuels from different locations. Though extreme weather events always pose a risk for the electric grid, you will never run out of power due to lack of sun or wind.

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Consumers Energy
Count on Us®

Thank You

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Focus Group: Demographics

Location	Muskegon	Cadillac	Flint	Jackson
Respondents	17	13	12	14
Age				
Between 25-64	88%	92%	92%	86%
65 years old and over	12%	8%	8%	14%
Gender				
Male	47%	62%	50%	50%
Female	53%	38%	50%	50%
Ethnicity				
African American	29%	0%	75%	21%
Hispanic	6%	0%	8%	0%
Caucasian	47%	83%	17%	79%
Native American	6%	0%	0%	0%
Other/Did not report	12%	17%	0%	0%
Income (Note: Average Household Size 2.7 individuals)				
Less than $25k	29%	23%	78%	43%
$25 - $50K	65%	54%	42%	57%
$51 - $75K	6%	15%	0%	0%
$76 - $104K	0%	8%	0%	0%

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Example Survey Question

- The **Helping Neighbors Solar program** is a new program that Consumers Energy is offering to qualifying customers. The program aims to help income-qualified customers go green and reduce their electricity costs by working with local nonprofits to purchase solar energy on their behalf. Through the program, qualifying customers would be able to receive donated solar credits and discounts on their electric bill for up to three years.
- How likely are you to participate in this program?
  - (offer scale)

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Other Potential Survey Topics

What are Consumers Energy's other priorities for the survey?

- Identify trusted agencies and organizations
- Understand customers' questions and concerns regarding renewable energy
- Understand challenges and barriers to accessing renewable energy
- Test awareness of Clean Energy Plan and investigate how the plan's goals/metrics impact satisfaction with Consumers Energy

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S T A T E O F M I C H I G A N

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion, regarding the regulatory reviews, revisions, determination and/or approvals necessary for CONSUMERS ENERGY COMPANY to comply with Section 61 of 2016 PA 342	)	Case No. U-18351

PROOF OF SERVICE

STATE OF MICHIGAN)
) SS
COUNTY OF JACKSON)

Jennifer Joy Yocum, being first duly sworn, deposes and says that she is employed in the Legal Department of Consumers Energy Company; that on April 1, 2021, she served an electronic copy of **Consumers Energy Company's 2021 Semi-Annual Voluntary Green Pricing Report** upon the persons listed in Attachment 1 hereto, at the e-mail addresses listed therein.

Jennifer Joy Yocum

Jennifer Joy Yocum

Subscribed and sworn to before me this 1st day of April, 2021.

Melissa K. Harris

Melissa K. Harris, Notary Public
State of Michigan, County of Jackson
My Commission Expires: 06/11/2027
Acting in the County of Jackson

ATTACHMENT 1 TO CASE NO. U-18351

Administrative Law Judge

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