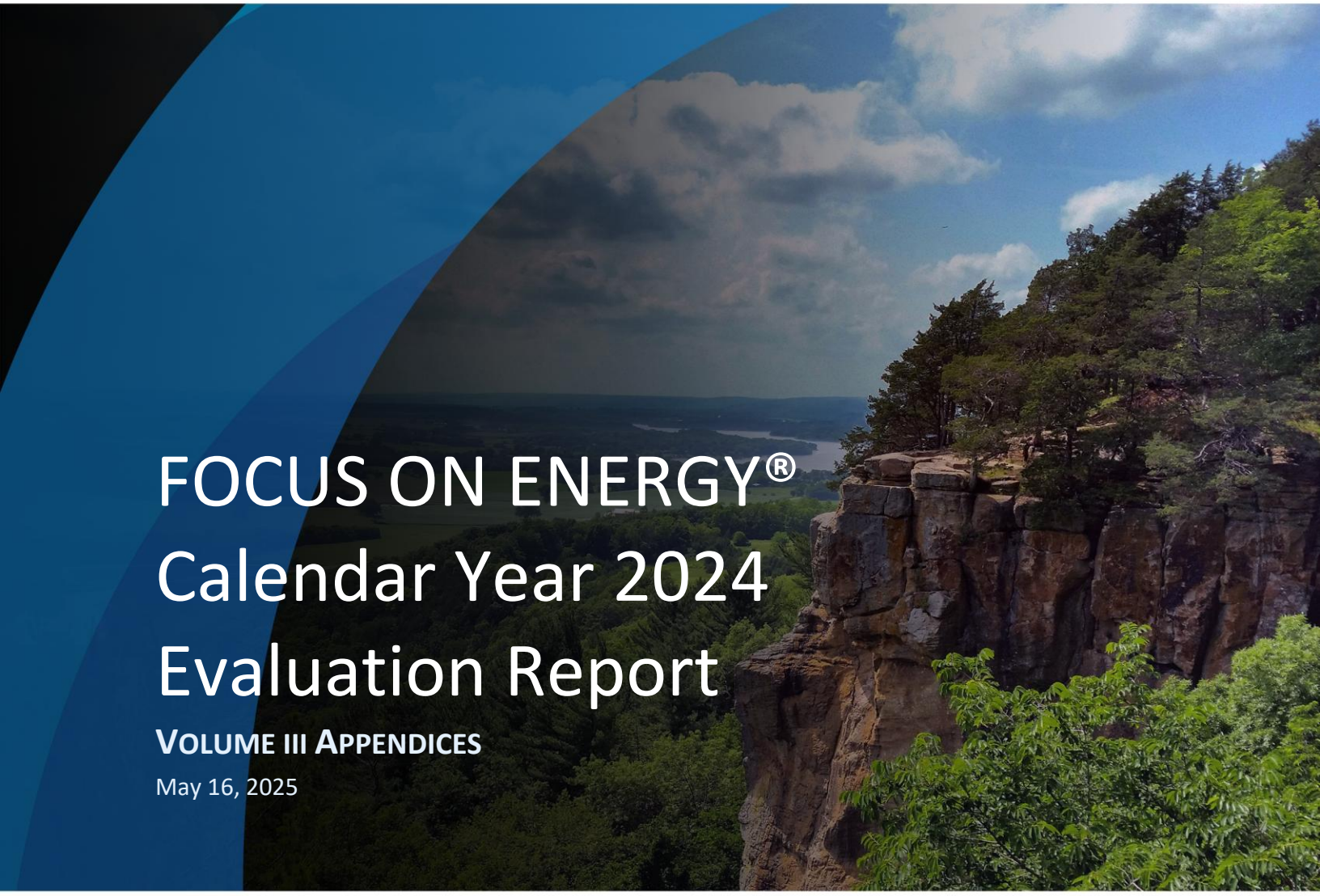
CADMUS



FOCUS ON ENERGY® Calendar Year 2024 Evaluation Report

VOLUME III APPENDICES

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Appendix A. CY 2024 Key Achievements

Offering Participants

- CY 2024 Residential: 165,445
- CY 2024 Nonresidential: 3,159
- CY 2024 Midstream: 9,619
- CY 2024 Total Participants: 178,223

Total Electric and Natural Gas Energy Usage

- CY 2024 Electric Sales to Wisconsin Retail Customers megawatt hours (MWh): 68,563,904[1]
- CY 2024 Wisconsin Aggregated Electric Utilities Noncoincident Peak Demand Megawatts (MW): 17,580[2]
- CY 2024 Natural Gas Consumption (MThms): 5,851,113[3]

Total Verified Gross Annual Savings

- CY 2024 Energy Savings (kWh): 446,024,448
- CY 2024 Demand Reduction (kW): 64,941
- CY 2024 Natural Gas Savings (therms): 18,865,485

Total Verified Net Annual Savings

- CY 2024 Energy Savings (kWh): 364,383,347
- CY 2024 Demand Reduction (kW): 51,083
- CY 2024 Natural Gas Savings (therms): 15,162,726

Total Verified Gross Lifecycle Savings

- CY 2024 Energy Savings (kWh): 7,695,474,300
- CY 2024 Demand Reduction (kW): 64,941
- CY 2024 Natural Gas Savings (therms): 297,212,526

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1 U.S. Energy Information Administration. Re-Release Date: November 6, 2024. Independent Statistics and Analysis. "Wisconsin Electricity Profile 2023." https://www.eia.gov/electricity/state/Wisconsin/

2 Ibid.

3 U.S. Energy Information Administration. Independent Statistics and Analysis. Release Date: March 31, 2025. "Natural Gas Consumption by End Use." https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SWI_a.htm. Convert MMcf to MThms using standard conversion of 1.038 therms per 100 cubic feet of natural gas.

Total Verified Net Lifecycle Savings

- CY 2024 Energy Savings (kWh): 6,131,369,659
- CY 2024 Demand Reduction (kW): 51,083
- CY 2024 Natural Gas Savings (therms): 239,625,243

Population Numbers

- CY 2024 Statewide Census Population: 5,960,975[4]
- CY 2023 Wisconsin Residential Electric Accounts: 2,813,580[5]
- CY 2023 Wisconsin Nonresidential Electric Accounts: 370,759[6]
- CY 2023 Wisconsin Residential Gas Accounts: 1,861,281[7]
- CY 2023 Wisconsin Nonresidential Gas Accounts: 185,159[8]

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4 U.S. Census Bureau. Accessed April 2025. "Annual Estimates of the Resident Population for the United States, Regions, States, District of Columbia, and Puerto Rico: April 1, 2020 to July 1, 2024 " https://www.census.gov/data/tables/time-series/demo/popest/2020s-state-total.html

5 U.S. Energy Information Administration. Release Date: October 10, 2024. "Sales (consumption), revenue, prices & customers" "Number of customers (annual)" and "By sector by state and/or utility". https://www.eia.gov/electricity/data.php

6 Ibid.

7 U.S. Energy Information Administration. Release Date: March 31, 2025. "Number of Natural Gas Consumers." https://www.eia.gov/dnav/ng/ng_cons_num_dcu_SWI_a.htm

8 Ibid.

Table A-1. CY 2024 Costs, Benefits, and Modified Total Resource Cost (TRC) Test Combined Results by Sector

	Residential	Nonresidential	Midstream	Renewables	Total
Incentive Costs[a]	$20,188,779	$27,813,879	$1,779,643	$3,996,993	$53,779,295
Administrative Costs	$995,698	$1,365,433	$87,696	$196,630	$2,645,458
Delivery Costs	$10,780,657	$18,841,049	$997,270	$2,448,800	$33,067,777
Incremental Measure Costs	$40,449,771	$112,361,180	$7,136,361	$81,486,362	$241,433,674
Total Non-Incentive Costs	**$52,226,127**	**$132,567,663**	**$8,221,327**	**$84,131,792**	**$277,146,909**
Electricity Benefits (kWh)	$7,101,923	$104,532,136	-$257,282	$18,029,360	$129,406,137
Capacity Benefits (kW)	$9,959,834	$103,185,961	$983,235	$32,791,426	$146,920,457
Gas Benefits	$42,104,933	$60,498,804	$5,027,908	$0	$107,631,645
Emissions Benefits	$29,576,702	$179,357,959	$1,750,793	$43,282,939	$253,968,393
T&D Benefits (kW)	$2,850,687	$29,558,512	$281,637	$9,367,486	$42,058,320
Total TRC Benefits	**$91,594,079**	**$477,133,372**	**$7,786,291**	**$103,471,211**	**$679,984,953**
TRC Benefits Minus Costs	**$39,367,952**	**$344,565,710**	**-$435,037**	**$19,339,419**	**$402,838,044**
TRC Benefit/Cost Ratio	**1.75**	**3.60**	**0.95**	**1.23**	**2.45**

[a] Incentive costs are shown for clarity but are not included as part of modified TRC costs for testing

Note: T&D = transmission and distribution

Appendix B. Glossary of Terms

Term	Definition
Administrative Costs	Costs not directly associated with a specific program activity but necessary to the development and administration of programs, including record keeping, payroll, accounting, auditing, billing, business management, budgeting and related activities, overhead allocation, and other costs necessary to direct the organization of the program.
Attribution	The establishment of a causal relationship between action(s) taken by a group or program and an outcome. Being attributable to a program means that energy savings and demand reduction can be viewed as a result of the program's influence, and the savings would not have been achieved in the program's absence.
Avoided Costs	Costs the utility avoided by implementing an energy efficiency measure, program, or practice.
Baseline	Conditions (including energy consumption) that would have occurred without implementing the measure or project. These conditions can be either as-found (prior to the energy efficiency retrofit or to conditions that meet the state or federal efficiency codes) or a combination of efficient and non-efficient conditions derived from data.
Benefit/Cost Ratio	The mathematical relationship between the benefits and costs associated with implementing energy efficiency measures, programs, or practices, or including emission reduction benefits resulting from such implementation.
Cost-Effectiveness	Comparison of the benefits and costs associated with implementing energy efficiency measures and programs. The actual benefits and costs included can vary based on the design and intent of different cost-effectiveness tests.
Custom Savings	Savings for nonprescriptive measures that do not meet the criteria for deemed savings as calculated by the offering administrator or offering implementer at the time of project completion. The result reflects savings for the specific project based on pre- and post-installation energy use.
Deemed Savings	An estimate of energy, demand, or natural gas savings for a single unit of an installed energy efficiency measure. Deemed savings are typically developed from data sources and analytical methods that are widely considered acceptable for the measure and are applicable to the situation.
Downstream Offering	An efficiency program that provides incentives to the end user by directly offsetting the first cost of the equipment and reducing the payback period.
Effective Useful Life	The median number of years of expected operation of a specific measure, i.e., the time until half the units would be expected to have failed or been removed
Estimated Savings	The savings estimated by an evaluator after conducting an energy impact evaluation.
***Ex Ante* Savings**	Energy savings the offering administrator or offering implementer reports before verification by the evaluation team (also called reported savings or tracked savings).
***Ex Post* Evaluation**	An assessment of an activity's impact(s) after completion.
Freeriders	Participants who took part in an efficiency program but who would have adopted the energy-efficient measure in the program's absence. Freeriders can be total, partial, or deferred.
Gross Savings	The unadjusted program-reported change in energy consumption or demand resulting from efficiency program-related actions taken by participants.
Interactive Effects	The influence of one technology application on the energy required to operate another application.
Lifecycle Savings	Energy savings—expressed as verified gross or verified net—generated from measures installed in the current program cycle over each measure's effective useful life.
Lifetime Savings	Energy savings—expressed as verified gross or verified net—produced as a result of measures installed in the current and previous program cycles, provided that the reporting period falls within each measure's useful life. This incorporates annual savings and each measure's effective useful life.

Term	Definition
Locational Marginal Price	The marginal cost to serve a unit of energy at a specific location at the time of delivery.
Market Effects	Changes in marketplace practices, services, and promotional efforts that induce businesses and consumers to buy energy-saving products and services without direct offering assistance. Evaluators generally consider these effects as resulting from offering impacts on the market.
Market Lift	An increase in efficient product sales above a pre-established baseline in response to program incentives, promotion, or advertising.
Midstream Offering	An efficiency program that targets retailers, distributors, or both. Midstream programs are designed to encourage the targeted audience to stock, promote, and sell more energy-efficient products. Incentives are paid directly to the retailer or distributor.
Net Savings	Savings net of what would have occurred in the program's absence (observed impacts attributable to the program). Net savings are typically calculated by applying the net-to-gross ratio to the verified gross savings.
Net-to-Gross Ratio	The ratio of verified net savings (attributed to the program after evaluation) to the verified gross savings.
Non-Energy Benefits	An array of valued attributes, such as increased property values or reduced water usage, derived from energy-efficient measures in addition to energy savings.
Nonparticipant Spillover	The effect on eligible general consumers who did not participate in an efficiency program yet adopted energy-saving products or practices because of the program's influence.
Participant Spillover	The effect of participants who, after an initial program experience, adopt more energy-saving products or practices without program assistance.
Precision	The degree to which repeated measurements under unchanged conditions produce the same results.
Realization Rate	The ratio of gross savings to verified gross savings.
Reported Savings	Energy savings the offering administrator or offering implementer reports before verification by the evaluation team (also called tracked savings or *ex ante* savings).
Resource Acquisition Offering	An efficiency program designed to directly achieve energy savings and/or demand reduction, as well as avoided emissions.
Standard Error	The measure of a data sample's variability (that is, the distance of a typical data point from the sample mean).
Tracked Savings	Energy savings the offering administrator or offering implementer reports before verification by the evaluation team (also called reported savings or *ex ante* savings).
Upstream Offering	An efficiency program designed to encourage retailers and manufacturers to promote and sell more energy-efficient products. These programs provide incentives to retailers or manufacturers, which are passed through to customers.
Verified Gross Savings	Energy savings verified by an independent evaluation team and based on inspections and reviews of the number and types of implemented energy efficiency measures and the engineering calculations used to estimate the energy saved. Verified gross savings reflect total calculated savings based on changes in energy consumption or demand resulting from program-related actions taken by participants in an efficiency program without considering the influence of freeridership or spillover.
Verified Net Savings	Energy savings that evaluators can confidently attribute to program efforts. To calculate verified net savings, the evaluation team makes adjustments for outside influences, such as freeridership and spillover.

Appendix C. Acronyms and Abbreviations

Acronym	Term
ACH	Air changes per hour
APS	Advanced power strip
AFUE	Annual fuel utilization efficiency
AVERT	AVoided Emissions and geneRation Tool
BPK	Benefits per kilowatt-hour
CDD	Cooling degree day
COBRA	Co-Benefits Risk Assessment
CONE	Cost of New Entry
CSA	Conditional savings analysis
CY	Calendar year
DHW	Domestic hot water
DIY	Do-it-yourself
EDA/EDR	Energy Design Assistance/Energy Design Review
eEDA	Express EDA
ECM	Electronically commutated motor
EISA	Energy Independence and Security Act
EPA	U.S. Environmental Protection Agency
EUL	Effective useful life
EWG	Evaluation Work Group
GWh	Gigawatt-hour
HDD	Heating degree day
HID	High-intensity discharge
HVAC	Heating, ventilation, and air conditioning
ISR	In-service rate
kW	Kilowatt
kWh	Kilowatt-hour
LED	Light-emitting diode
LMP	Locational marginal price
LPD	Lighting power density
MISO	Midcontinent Independent Transmission System Operator

Acronym	Term
MMBtu	Million British thermal units
MMBtu/h	Million British thermal units per hour
MMcf	Million cubic feet
MMID	Master measure identification
MThm	Thousand therms
MW	Megawatt
MWh	Megawatt-hour
NEO	Net Energy Optimizer
NOAA	National Oceanic and Atmospheric Administration
NPV	Net present value
NTG	Net-to-gross
PEP	Product equipment performance
POSTNAC	Post-installation weather-normalized
PRENAC	Pre-installation weather-normalized
PRISM	PRInceton Scorekeeping Method
PSC	Public Service Commission of Wisconsin
PV	Photovoltaic
PWC	People Working Cooperatively
RAP	Regulatory Assistance Project
SCT	Societal test
SEER	Seasonal energy efficiency rating
SIM	System Information Modeling
SPECTRUM	Statewide Program for Energy Customer Tracking, Resource Utilization, and Data Management
T&D	Transmission and distribution
TMY	Typical meteorological year
TRC	Total resource cost test
TRM	Technical reference manual
UAT	Utility administrator cost test

Appendix D. Voluntary Program Efficiency Savings and Participation

In CY 2024, the Public Service Commission of Wisconsin (PSC) authorized Northern States Power-Wisconsin, Wisconsin Power and Light, We Energies, and Wisconsin Public Service Corporation to fund and operate voluntary programs in addition to the funding they contribute to Focus on Energy.

In general, these voluntary programs complement Focus on Energy offerings by providing bonus incentives on top of the existing Focus on Energy incentives or by offering additional energy efficiency savings opportunities for customers in the respective utility territories. For a number of these voluntary programs that build on existing offerings, their kW, kWh, and therm savings are not considered additive savings but rather as Focus on Energy portfolio savings achieved by the projects. Savings for We Energies' Voluntary Design Assistance Program are not currently claimed by Focus on Energy.

Table D-1 shows the CY 2024 program savings and participation for Investor-Owned Utility voluntary energy efficiency programs, where available.

Table D-1. CY 2024 Utility Voluntary Energy Efficiency Program Summary

Program	Participation	kW	kWh	therms
Northern States Power-Wisconsin Community Conservation Programs[a]	11,012	6,297	45,211,041	1,200,607
Wisconsin Power & Light Enhanced Low-Income Weatherization Program[b]	40	N/A	N/A	N/A
We Energies Voluntary Design Assistance Program[c]	0	0	0	0
We Energies Residential Assistance Program[c]	169	N/A	N/A	26,980
Wisconsin Public Service Residential Assistance Program[d]	34	N/A	N/A	5,564

[a] See Northern States Power-Wisconsin's 2024 Customer Service Conservation Report in PSC Docket 4220-EE-2024 for additional program details. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=537098

[b] Final CY 2024 savings were not available as of the time of publication and are pending independent evaluation of Wisconsin Power and Light's voluntary program. See Wisconsin Power & Light's 2024 Enhanced Low-Income Weatherization Program Report in PSC Docket 6680-EE-2024 for additional program details. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=537912

[c] See We Energies' 2024 Customer Service Conservation Report in PSC Docket 5-EE-2024 for additional program details. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=538279

[d] See Wisconsin Public Service's 2024 Customer Service Conservation Report in PSC Docket 6690-EE-2024 for additional program details. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=538397

Appendix E. Detailed Findings

This section contains detailed first-year annual gross savings and lifecycle savings for the residential, nonresidential, and midstream channels, as well as savings organized by offering and measure category.

Overview of Savings

Table E-1 lists the CY 2024 first-year gross (*ex ante*), verified gross, and verified net savings.

Table E-1. CY 2024 First-Year Annual Savings Split between Residential, Nonresidential, and Midstream

Savings Type	Unit	Residential	Nonresidential	Midstream	Total
Gross	MMBtu	863,860	2,395,316	96,905	**3,356,082**
	kWh	59,263,552	386,201,414	24,755	**445,489,721**
	kW	12,031	53,326	648	**66,005**
	therms	6,616,531	10,775,968	968,208	**18,360,707**
Verified Gross	MMBtu	914,625	2,396,201	97,558	**3,408,384**
	kWh	59,549,664	386,460,770	14,014	**446,024,448**
	kW	11,293	53,017	631	**64,941**
	therms	7,114,413	10,775,968	975,104	**18,865,485**
Verified Net	MMBtu	694,117	2,005,446	59,986	**2,759,549**
	kWh	38,967,580	325,897,506	-481,738	**364,383,347**
	kW	6,563	44,130	390	**51,083**
	therms	5,611,596	8,934,837	616,294	**15,162,726**

Table E-2 lists the lifecycle savings achieved by Focus on Energy in CY 2024. Lifecycle savings represent the savings an offering can realize through its measures over each measure's effective useful life.

Table E-2. CY 2024 Lifecycle Savings Split between Residential, Nonresidential, and Midstream

Savings Type	Unit	Residential	Nonresidential	Midstream	Total
Gross	MMBtu	15,300,113	37,921,864	1,727,245	**54,949,222**
	kWh	1,279,861,465	6,378,220,767	-9,862,472	**7,648,219,760**
	kW	12,031	53,326	648	**66,005**
	therms	109,332,257	161,593,752	17,608,957	**288,534,966**
Verified Gross	MMBtu	16,243,821	37,995,610	1,738,779	**55,978,211**
	kWh	1,307,919,009	6,397,784,104	-10,228,812	**7,695,474,300**
	kW	11,293	53,017	631	**64,941**
	therms	117,812,018	161,663,711	17,736,797	**297,212,526**
Verified Net	MMBtu	12,077,679	31,735,016	1,070,062	**44,882,758**
	kWh	769,516,744	5,376,018,133	-14,165,218	**6,131,369,659**
	kW	6,563	44,130	390	**51,083**
	therms	94,520,879	133,920,426	11,183,939	**239,625,243**

Summary of Savings by Offering

Table E-3 summarizes the first-year annual savings by offering.

Table E-3. CY 2024 Summary of First-Year Annual Savings by Offering

Program Name	Offering Name	Gross			Verified Gross			Verified Net		
		kWh	kW	therms	kWh	kW	therms	kWh	kW	therms
Residential Programs										
Direct to Customer	Online Marketplace	8,588,950	33	669,523	8,810,010	54	700,563	7,723,860	45	609,533
	Packs	6,199,516	496	1,930,222	6,315,605	622	2,341,164	5,062,087	505	1,796,869
Multifamily	Multifamily	2,768,816	123	278,669	2,768,816	123	278,669	2,298,117	102	231,295
	Energy Design Assistance/ Energy Design Review (EDA/EDR)	11,157,448	1,599	549,869	11,045,874	1,583	549,869	10,272,662	1,472	511,378
Renewable Rewards	Residential Renewable Rewards	30,135,827	7,186	0	30,019,625	6,317	0	16,210,598	3,411	0
Residential New Construction	Residential New Construction	4,880,552	1,542	485,145	4,880,552	1,542	485,145	488,055	154	578,994
	New Manufactured Homes Pilot	91,838	68	27,200	91,838	68	26,680	10,102	7	2,935
Trade Ally Solutions	Heating and Cooling	-6,482,789	74	2,361,817	-6,306,716	74	2,418,244	-4,851,078	32	1,600,723
	Insulation and Air Sealing	1,941,368	908	302,746	1,941,368	908	302,746	1,761,478	831	270,675
	Tribal	-17,974	1	11,339	-17,308	1	11,333	-8,303	3	9,194
Residential Total		**59,263,552**	**12,031**	**6,616,531**	**59,549,664**	**11,293**	**7,114,413**	**38,967,580**	**6,563**	**5,611,596**
Nonresidential Programs										
Agribusiness	Agribusiness	32,884,928	4,478	316,885	32,884,928	4,478	316,885	25,650,244	3,493	247,170
Business and Industry	Commercial and Industrial	83,514,298	11,006	1,996,233	83,514,298	11,006	1,996,233	65,976,296	8,695	1,577,024
	EDA/EDR	17,228,540	3,640	349,793	17,573,111	3,640	349,793	16,342,993	3,385	325,307
Large Industrial	Large Industrial	163,410,467	17,339	4,443,657	163,410,467	17,339	4,443,657	150,337,629	15,952	4,088,165
	EDA/EDR	10,386,466	2,159	258,853	10,386,466	2,159	258,853	9,659,413	2,008	240,733
Renewable Rewards	Business Renewable Rewards	26,629,786	6,430	0	26,544,570	6,120	0	19,642,982	4,529	0
Schools and Government	Government	17,893,733	2,259	587,700	17,893,733	2,259	587,700	12,704,551	1,604	417,267
	Schools	29,097,186	5,217	2,675,618	29,097,186	5,217	2,675,618	20,659,002	3,704	1,899,689
	EDA/EDR	3,308,775	545	110,677	3,308,775	545	110,677	3,077,161	506	102,930

Program Name	Offering Name	Gross			Verified Gross			Verified Net		
		kWh	kW	therms	kWh	kW	therms	kWh	kW	therms
Pilots[a]	Community Impact	1,049,673	121	0	1,049,673	121	0	1,049,673	121	0
	Life Sciences Midstream	797,562	133	36,551	797,562	133	36,551	797,562	133	36,551
Nonresidential Total		**386,201,414**	**53,326**	**10,775,968**	**386,460,770**	**53,017**	**10,775,968**	**325,897,506**	**44,130**	**8,934,837**
Midstream Programs										
Midstream/ Instant Discount	Commercial Midstream	1,349,895	255	164,282	1,370,334	253	166,754	666,459	123	83,431
	Residential Midstream	-1,325,140	393	803,927	-1,356,320	378	808,351	-1,148,197	266	532,863
Midstream Total		**24,755**	**648**	**968,208**	**14,014**	**631**	**975,104**	**-481,738**	**390**	**616,294**
Total All Offerings		**445,489,721**	**66,005**	**18,360,707**	**446,024,448**	**64,941**	**18,865,485**	**364,383,347**	**51,083**	**15,162,726**

Note: Totals may not match the sum of channel savings due to rounding.

[a] CY 2024 is the first year that the evaluation team is reporting savings for the Community Impact and Life Sciences Midstream Pilots. Gross (*ex ante*) and verified gross savings in this report include CY 2023 and CY 2024 pilot activity because CY 2023 savings were not previously reported.

Table E-4 summarizes the lifecycle savings by offering.

Table E-4. CY 2024 Summary of Lifecycle Savings by Offering

Program Name	Offering Name	Gross		Verified Gross		Verified Net	
		kWh	therms	kWh	therms	kWh	therms
Residential Programs							
Direct to Customer	Online Marketplace	78,169,952	6,503,305	80,749,583	6,846,386	70,749,211	5,937,664
	Packs	64,384,161	18,851,837	74,478,282	25,728,469	59,831,393	19,771,905
Multifamily	Multifamily	36,392,441	5,640,196	36,392,441	5,640,196	30,205,726	4,681,362
	EDA/EDR	223,148,960	10,997,380	220,917,470	10,997,380	205,453,247	10,227,563
Renewable Rewards	Residential Renewable Rewards	825,316,737	0	840,549,506	0	453,896,733	0
Residential New Construction	Residential New Construction	146,416,572	14,554,363	146,416,572	14,554,363	14,641,657	17,369,820
	New Manufactured Homes Pilot	2,755,140	816,000	2,755,140	800,400	303,065	88,044
Trade Ally Solutions	Heating and Cooling	-145,048,072	44,151,292	-142,671,652	45,427,048	-109,561,079	29,472,259
	Insulation and Air Sealing	48,536,994	7,575,986	48,537,098	7,575,986	44,039,615	6,773,603
	Tribal	-211,425	241,899	-205,431	241,791	-42,826	198,658
Residential Total		**1,279,861,460**	**109,332,257**	**1,307,919,009**	**117,812,018**	**769,516,744**	**94,520,879**
Nonresidential Programs							
Agribusiness	Agribusiness	500,428,759	5,241,071	500,428,759	5,241,071	390,334,432	4,088,035
Business and Industry	Commercial and Industrial	1,203,995,225	29,241,927	1,203,995,225	29,241,927	951,156,228	23,101,122
	EDA/EDR	344,559,623	6,995,860	351,450,815	7,065,819	326,849,258	6,571,211
Large Industrial	Large Industrial	2,549,700,056	62,347,132	2,549,700,057	62,347,132	2,345,724,052	57,359,362
	EDA/EDR	207,729,320	5,177,060	207,729,320	5,177,060	193,188,268	4,814,666
Renewable Rewards	Business Renewable Rewards	730,575,828	0	743,247,972	0	550,003,499	0
Schools and Government	Government	279,252,854	9,850,676	279,252,854	9,850,676	198,269,526	6,993,980
	Schools	471,910,162	39,975,962	471,910,162	39,975,962	335,056,215	28,382,933
	EDA/EDR	66,175,500	2,213,540	66,175,500	2,213,540	61,543,215	2,058,592
Pilots[a]	Community Impact	11,297,341	550,525	11,297,341	550,525	11,297,341	550,525
	Life Sciences Midstream	12,596,098	0	12,596,098	0	12,596,098	0
Nonresidential Total		**6,378,220,767**	**161,593,752**	**6,397,784,104**	**161,663,711**	**5,376,018,133**	**133,920,426**

Program Name	Offering Name	Gross		Verified Gross		Verified Net	
		kWh	therms	kWh	therms	kWh	therms
Midstream Programs							
Midstream/ Instant Discount	Commercial Midstream	14,086,022	2,169,323	14,277,743	2,194,807	6,973,717	1,108,776
	Residential Midstream	-23,948,494	15,439,634	-24,506,555	15,541,991	-21,138,936	10,075,163
Midstream Total		**-9,862,472**	**17,608,957**	**-10,228,812**	**17,736,797**	**-14,165,218**	**11,183,939**
Total All Offerings		**7,648,219,755**	**288,534,966**	**7,695,474,300**	**297,212,526**	**6,131,369,659**	**239,625,243**

Note: Totals may not match the sum of channel savings due to rounding.

[a] CY 2024 is the first year that the evaluation team is reporting savings for the Community Impact and Life Sciences Midstream Pilots. Gross (*ex ante*) and verified gross savings in this report include CY 2023 and CY 2024 pilot activity because CY 2023 savings were not previously reported.

Summary of Savings by Measure Category

The program administrator uses measure categories to group similar measures under one heading in SPECTRUM. This organization simplifies measure tracking by allowing the program to track how well certain measure types perform within the portfolio. For example, the HVAC-Heat Pump category includes all heat pump measures as opposed to tracking ductless, air-source, and ground-source heat pumps individually. These measure categories may change over time for various reasons related to program design, operations, and management.

Table E-5 summarizes CY 2024 residential savings and incentives by measure category.

Table E-5. CY 2024 Summary of First-Year Annual Savings by Measure Category, Residential Channel

Measure Category	Verified Gross						Incentive Dollars	Incentive Dollars %
	kWh	kWh %	kW	kW %	therms	therms %		
Appliance Plug Loads-Advanced Power Strip (APS)	35,494	0.06%	4	0.04%	0	0.00%	$3,615	0.02%
Appliance Plug Loads-Room Air Cleaner	15,987	0.03%	2	0.02%	0	0.00%	$1,425	0.01%
Boilers and Burners-Boiler	0	0.00%	0	0.00%	188,973	2.66%	$320,895	1.46%
Boilers and Burners-Tune-up/Repair	0	0.00%	0	0.00%	185	0.00%	$625	0.00%
Bonus-Equipment[a]	0	0.00%	0	0.00%	0	0.00%	$633,179	2.87%
Bonus-Other[a]	0	0.00%	0	0.00%	0	0.00%	$722,110	3.28%
Bonus-Survey/Study[a]	0	0.00%	0	0.00%	0	0.00%	$111,999	0.51%
Building Shell-Air Sealing	78,197	0.13%	8	0.07%	82,507	1.16%	$1,408,467	6.40%
Building Shell-Insulation	2,146,707	3.60%	965	8.54%	370,351	5.21%	$1,718,217	7.80%
Domestic Hot Water-Low-Flow Devices	333,660	0.56%	18	0.16%	56,830	0.80%	$56,141	0.25%
Domestic Hot Water-Other[b]	108	0.00%	0	0.00%	44	0.00%	$8	0.00%
Domestic Hot Water -Pipe Insulation	166,112	0.28%	30	0.26%	18,846	0.26%	$15,460	0.07%
Domestic Hot Water-Water Heater	3,124	0.01%	0	0.00%	12,975	0.18%	$18,550	0.08%
Energy Management-Strategic Energy Management	372,875	0.63%	0	0.00%	55,545	0.78%	$18,567	0.08%
HVAC-Controls	12,552,976	21.08%	0	0.00%	832,880	11.71%	$1,340,396	6.09%
HVAC-Distribution Improvements[a]	0	0.00%	0	0.00%	0	0.00%	$2,400	0.01%
HVAC-Fans	415	0.00%	0	0.00%	0	0.00%	$25	0.00%
HVAC-Heat Pump	-11,247,444	-18.89%	13	0.12%	1,406,968	19.78%	$3,044,245	13.82%
HVAC-Heat Recovery	0	0.00%	1	0.01%	0	0.00%	$144	0.00%
HVAC-Heating Equipment[c]	1,370,071	2.30%	1	0.01%	684,470	9.62%	$1,580,275	7.18%

Measure Category	Verified Gross						Incentive Dollars	Incentive Dollars %
	kWh	kWh %	kW	kW %	therms	therms %		
HVAC-Tune-up/Repair	630	0.00%	1	0.01%	980	0.01%	$9,628	0.04%
Lighting(old)-LED (old)	57,185	0.10%	8	0.07%	0	0.00%	$1,022	0.00%
Lighting-LED Fixtures	896,890	1.51%	48	0.43%	0	0.00%	$36,282	0.16%
Lighting-Lighting Controls	2,920	0.00%	0	0.00%	0	0.00%	$140	0.00%
Lighting-Other	11,388	0.02%	0	0.00%	0	0.00%	$300	0.00%
Lighting-TLED	359,023	0.60%	47	0.41%	0	0.00%	$8,635	0.04%
Miscellaneous-Adjustment Measure (Incentive Only) [a]	0	0.00%	0	0.00%	0	0.00%	$8,032	0.04%
Miscellaneous-Other[a]	0	0.00%	0	0.00%	0	0.00%	$144,070	0.65%
Miscellaneous-Packs Kits	5,620,471	9.44%	555	4.91%	2,076,776	29.19%	$4,277,072	19.42%
New Construction-Energy Design Assistance	8,541,569	14.34%	1,082	9.58%	410,802	5.77%	$1,101,483	5.00%
New Construction-Energy Design Review	1,185,388	1.99%	170	1.51%	32,571	0.46%	$94,641	0.43%
New Construction-Product Equipment Performance	1,318,917	2.21%	331	2.93%	106,496	1.50%	$72,707	0.33%
New Construction-Residential New Construction	4,972,390	8.35%	1,610	14.26%	511,825	7.19%	$3,102,116	14.09%
Other(old)-Other(old)[d]	695,133	1.17%	67	0.60%	264,388	3.72%	$516,863	2.35%
Process Equipment-Other[e]	39,852	0.07%	15	0.13%	0	0.00%	$10,454	0.05%
Renewables-Solar Photovoltaic	30,019,625	50.41%	6,317	55.94%	0	0.00%	$1,643,841	7.46%

[a] Measure categories with incentive dollars but no savings include bonuses, rewards, prize money, survey incentives, shipping reimbursement, and other costs that do not directly induce efficiency improvements but that support the installation or completion of energy efficiency measures.

[b] Domestic Hot Water-Other in the residential channel includes temperature turndown.

[c] HVAC-Heating Equipment in the residential channel includes furnaces.

[d] Other-Other in the residential channel includes bundled packs in the Packs offering.

[e] Process Equipment-Other in the residential channel includes motors not otherwise specified

Table E-6 lists CY 2024 nonresidential savings and incentives by measure category.

Table E-6. CY 2024 Summary of First-Year Annual Savings by Measure Category, Nonresidential Channel

Measure Category	Verified Gross						Incentive Dollars	Incentive Dollars %
	kWh	kWh %	kW	kW %	therms	therms %		
Adjustment Measure (Incentive Only)[a]	0	0.00%	0	0.00%	0	0.00%	$9,933	0.03%
Air Compressor	10,568,438	2.73%	1,755	3.31%	0	0.00%	$370,348	1.15%
Air Treatment	2,109,904	0.55%	299	0.56%	0	0.00%	$74,520	0.23%
Boiler	288,612	0.07%	34	0.06%	1,829,167	16.97%	$2,871,025	8.94%
Bonus[a]	0	0.00%	0	0.00%	0	0.00%	$6,600	0.02%
Building Element	232,461	0.06%	2	0.00%	33,777	0.31%	$42,426	0.13%
Burners	0	0.00%	0	0.00%	562,687	5.22%	$312,092	0.97%
Cases	2,860,887	0.74%	471	0.89%	248,296	2.30%	$374,384	1.17%
Chiller	4,061,228	1.05%	556	1.05%	0	0.00%	$383,502	1.19%
Controls	13,079,880	3.38%	406	0.76%	775,897	7.20%	$1,159,349	3.61%
Controls(old)	3,762	0.00%	0	0.00%	756	0.01%	$540	0.00%
Cooling Equipment	728,492	0.19%	420	0.79%	20,442	0.19%	$173,330	0.54%
Data Center/IT	14,678	0.00%	2	0.00%	0	0.00%	$320	0.00%
Demand-Side	71,305	0.02%	27	0.05%	0	0.00%	$5,818	0.02%
Dishwashing	1,041,885	0.27%	51	0.10%	0	0.00%	$18,000	0.06%
Docks and Doors	0	0.00%	0	0.00%	30,502	0.28%	$11,675	0.04%
Domestic Hot Water	17,012	0.00%	0	0.00%	15,701	0.15%	$24,500	0.08%
Electronically Commutated Motor Pumps	31,227	0.01%	0	0.00%	0	0.00%	$960	0.00%
Energy Design Assistance	29,156,263	7.54%	6,011	11.34%	702,534	6.52%	$2,863,288	8.92%
Energy Design Review	2,112,089	0.55%	333	0.63%	16,789	0.16%	$135,993	0.42%
Equipment[a]	0	0.00%	0	0.00%	0	0.00%	$26,779	0.08%
Fan	5,547,742	1.44%	881	1.66%	0	0.00%	$240,670	0.75%
Fans	2,434,262	0.63%	540	1.02%	8,660	0.08%	$128,915	0.40%
Grain Dryer	98,039	0.03%	0	0.00%	213,992	1.99%	$646,032	2.01%
Greenhouse Perimeter	0	0.00%	0	0.00%	14,926	0.14%	$14,180	0.04%
Heat Exchanger	861,401	0.22%	0	0.00%	0	0.00%	$55,277	0.17%
Heat Pump	580,357	0.15%	45	0.08%	0	0.00%	$29,437	0.09%
Heat Recovery	233,047	0.06%	200	0.38%	2,421,973	22.48%	$967,197	3.01%
Heating Equipment	97,727	0.03%	6	0.01%	223,974	2.08%	$195,971	0.61%
Insulation	1,583	0.00%	0	0.00%	102,900	0.95%	$84,129	0.26%
Irrigation	40,941	0.01%	3	0.01%	0	0.00%	$8,125	0.03%
LED Fixtures	79,051,696	20.46%	9,561	18.03%	0	0.00%	$4,893,018	15.24%
LED Screw-in Lamps	993,877	0.26%	86	0.16%	0	0.00%	$29,047	0.09%
LED, Other	3,920,282	1.01%	742	1.40%	0	0.00%	$492,261	1.53%

Measure Category	Verified Gross						Incentive Dollars	Incentive Dollars %
	kWh	kWh %	kW	kW %	therms	therms %		
LED (old)	753,344	0.19%	127	0.24%	0	0.00%	$22,818	0.07%
Lighting	69,237	0.02%	11	0.02%	0	0.00%	$2,826	0.01%
Lighting Controls	2,738,520	0.71%	263	0.50%	0	0.00%	$195,106	0.61%
New Construction Lighting	10,028,507	2.59%	1,541	2.91%	0	0.00%	$402,807	1.25%
Other[b]	23,096,205	5.98%	2,460	4.64%	1,354,337	12.57%	$5,185,719	16.15%
Packs Kits	343	0.00%	0	0.00%	0	0.00%	$0	0.00%
Paper	3,299,781	0.85%	390	0.74%	0	0.00%	$141,375	0.44%
Planning[a]	0	0.00%	0	0.00%	0	0.00%	$559,408	1.74%
Process Cooling	12,043,168	3.12%	1,301	2.45%	0	0.00%	$629,200	1.96%
Process Heating	117,834	0.03%	0	0.00%	78,213	0.73%	$51,391	0.16%
Pumping/Piping	6,788,377	1.76%	791	1.49%	0	0.00%	$214,476	0.67%
Pumps	5,999	0.00%	0	0.00%	0	0.00%	$1,120	0.00%
Refrigerator/Freezer - Industrial	408,078	0.11%	47	0.09%	0	0.00%	$79,200	0.25%
Retrocommissioning	4,928,222	1.28%	269	0.51%	392,956	3.65%	$598,116	1.86%
School Challenge[a]	0	0.00%	0	0.00%	0	0.00%	$10,868	0.03%
Solar Photovoltaic	26,544,570	6.87%	6,120	11.54%	0	0.00%	$2,087,615	6.50%
Steam Traps	0	0.00%	0	0.00%	380,172	3.53%	$50,340	0.16%
Strategic Energy Management	1,177,826	0.30%	0	0.00%	32,538	0.30%	$34,564	0.11%
Survey/Study[a]	0	0.00%	0	0.00%	0	0.00%	$274,251	0.85%
Thermal Curtains	0	0.00%	0	0.00%	2,096	0.02%	$1,991	0.01%
TLED	15,775,191	4.08%	3,048	5.75%	0	0.00%	$561,061	1.75%
Trade Ally[a]	0	0.00%	0	0.00%	0	0.00%	$1,245,295	3.88%
Tune-up/Repair	11,890,439	3.08%	1,418	2.67%	916,805	8.51%	$193,360	0.60%
Unspecified	131,742	0.03%	1	0.00%	1,116	0.01%	$36,300	0.11%
Utility Bill Verified Savings	396,916	0.10%	0	0.00%	45,752	0.42%	$39,231	0.12%
Vacuum Pump	798,679	0.21%	133	0.25%	0	0.00%	$16,968	0.05%
Variable Speed Drive	101,208,964	26.19%	12,320	23.24%	39,465	0.37%	$2,344,710	7.30%
Ventilation Equipment	1,126,021	0.29%	93	0.18%	304,858	2.83%	$312,673	0.97%
Walk-ins	33,390	0.01%	4	0.01%	0	0.00%	$636	0.00%
Waste Water Treatment Plant	2,362,539	0.61%	250	0.47%	3,690	0.03%	$132,677	0.41%
Water Heater	0	0.00%	0	0.00%	998	0.01%	$10,261	0.03%
Waterer	497,800	0.13%	0	0.00%	0	0.00%	$16,950	0.05%

[a] Measure categories with incentive dollars but no savings include bonuses, rewards, prize money, survey incentives, and other costs that do not directly induce efficiency improvements but that support the installation or completion of energy efficiency measures.

[b] Other in the nonresidential channel encompasses a wide variety of measures, such as unspecified process improvements, unspecified HVAC improvements, unspecified refrigeration improvements, and industrial oven/furnace.

Table E-7 lists CY 2024 midstream savings and incentives by measure category.

Table E-7. CY 2024 Summary of First-Year Annual Savings by Measure Category, Midstream Channel

Measure Category	Verified Gross						Incentive Dollars	Incentive Dollars %
	kWh	kWh %[a]	kW	kW %	therms	therms %		
Adjustment Measure (Incentive Only)	0	N/A	0	0.00%	0	0.00%	$2,100	0.12%
Boiler	0	N/A	0	0.00%	13,956	1.43%	$6,000	0.34%
Boilers and Burners-Boiler	0	N/A	0	0.00%	26,338	2.70%	$47,800	2.68%
Cooking	177,284	N/A	177	28.00%	120,730	12.38%	$236,400	13.23%
Dishwashing	993,671	N/A	48	7.65%	1,827	0.19%	$22,700	1.27%
Domestic Hot Water-Water Heater	300,680	N/A	19	2.94%	76,695	7.87%	$475,022	26.59%
Hand Dryer	20,192	N/A	2	0.37%	0	0.00%	$4,800	0.27%
Heat Pump	20,861	N/A	6	0.89%	3,720	0.38%	$6,800	0.38%
Heating Equipment	880	N/A	0	0.00%	3,752	0.38%	$900	0.05%
HVAC(old)-Other(old) (Incentive Only)	0	N/A	0	0.00%	0	0.00%	$550	0.03%
HVAC-Heat Pump	-2,472,943	N/A	342	54.14%	471,077	48.31%	$457,400	25.61%
HVAC-Heating Equipment	524,667	N/A	0	0.00%	232,855	23.88%	$336,150	18.82%
HVAC-Pumps	283,550	N/A	17	2.75%	0	0.00%	$58,350	3.27%
Miscellaneous-Packs Kits	7,726	N/A	0	0.06%	1,386	0.14%	$953	0.05%
Refrigeration	66,064	N/A	8	1.19%	0	0.00%	$27,600	1.55%
Ventilation	88,352	N/A	11	1.69%	14,564	1.49%	$24,200	1.35%
Water Heater	3,030	N/A	2	0.32%	8,205	0.84%	$78,469	4.39%

[a] Measure-level kWh percentages are not included in this table because the substantial negative kWh impacts from heat pumps offset positive impacts from other measures. This resulted in relatively modest kWh savings at the channel level. As such, comparing large measure-level kWh savings or impacts to small channel-level savings can produce misleading or illogical measure-level percentages of savings..

Table E-8 lists CY 2024 residential lifecycle savings by measure category.

Table E-8. CY 2024 Summary of Lifecycle Savings by Measure Category, Residential Channel

Measure Category	Verified Gross			
	kWh	kWh %	therms	therms %
Appliance Plug Loads-APS	212,962	0.02%	0	0.00%
Appliance Plug Loads-Room Air Cleaner	143,883	0.01%	0	0.00%
Boilers and Burners-Boiler	0	0.00%	4,847,634	4.11%
Boilers and Burners-Tune-up/Repair	0	0.00%	370	0.00%
Building Shell-Air Sealing	1,151,385	0.09%	1,201,627	1.02%
Building Shell-Insulation	54,684,676	4.18%	9,630,847	8.17%
Domestic Hot Water (DHW)-Low-Flow Devices	3,336,604	0.26%	568,303	0.48%
DHW-Other [a]	216	0.00%	89	0.00%
DHW-Pipe Insulation	2,491,680	0.19%	282,683	0.24%

Measure Category	Verified Gross			
	kWh	kWh %	therms	therms %
DHW-Water Heater	37,488	0.00%	196,725	0.17%
Energy Management-Strategic Energy Management	1,864,375	0.14%	277,725	0.24%
HVAC-Controls	112,976,784	8.64%	7,495,920	6.36%
HVAC-Fans	7,470	0.00%	0	0.00%
HVAC-Heat Pump	-200,833,285	-15.36%	25,489,928	21.64%
HVAC-Heating Equipment	31,500,506	2.41%	15,737,596	13.36%
HVAC-Tune-up/Repair	1,261	0.00%	1,960	0.00%
Lighting(old)-LED(old)	592,561	0.05%	0	0.00%
Lighting-LED Fixtures	10,442,671	0.80%	0	0.00%
Lighting-Lighting Controls	23,372	0.00%	0	0.00%
Lighting-Other	56,940	0.00%	0	0.00%
Lighting-TLED	3,328,399	0.25%	0	0.00%
Miscellaneous-Packs Kits	66,457,066	5.08%	22,843,044	19.39%
New Construction-EDA	170,831,371	13.06%	8,216,040	6.97%
New Construction-EDR)	23,707,768	1.81%	651,420	0.55%
New Construction-Product Equipment Performance	26,378,332	2.02%	2,129,920	1.81%
New Construction-Residential New Construction	149,171,712	11.41%	15,354,763	13.03%
Other(old)-Other(old) [b]	8,021,215	0.61%	2,885,425	2.45%
Process Equipment-Other [c]	782,092	0.06%	0	0.00%
Renewables-Solar Photovoltaic (PV)	840,549,506	64.27%	0	0.00%

[a] DHW-Other in the residential channel includes temperature turndown.

[b] Other-Other in the residential channel includes bundled packs in the Packs offering.

[c] Process Equipment-Other in the residential channel includes motors not otherwise specified

Table E-9 lists CY 2024 nonresidential lifecycle savings by measure category.

Table E-9. CY 2024 Summary of Lifecycle Savings by Measure Category, Nonresidential Channel

Measure Category	Verified Gross			
	kWh	kWh %	therms	therms %
Air Compressor	137,389,692	2.15%	0	0.00%
Air Treatment	30,840,074	0.48%	0	0.00%
Boiler	7,215,300	0.11%	45,680,497	28.26%
Bonus	0	0.00%	0	0.00%
Building Element	4,649,220	0.07%	675,540	0.42%
Burners	0	0.00%	9,035,621	5.59%
Cases	40,364,446	0.63%	3,724,440	2.30%
Chiller	82,726,639	1.29%	0	0.00%
Controls	170,452,199	2.66%	10,341,538	6.40%
Controls(old)	33,858	0.00%	6,804	0.00%
Cooling Equipment	12,263,858	0.19%	306,630	0.19%
Data Center/IT	146,780	0.00%	0	0.00%
Demand-Side	1,069,575	0.02%	0	0.00%

Measure Category	Verified Gross			
	kWh	kWh %	therms	therms %
Dishwashing	10,418,850	0.16%	0	0.00%
Docks and Doors	0	0.00%	313,110	0.19%
DHW	255,180	0.00%	235,515	0.15%
Electronically Commutated Motor (ECM) Pumps	468,426	0.01%	0	0.00%
EDA	583,113,865	9.11%	14,117,281	8.73%
EDR	42,241,770	0.66%	339,138	0.21%
Equipment	0	0.00%	0	0.00%
Fan	83,217,638	1.30%	0	0.00%
Fans	39,225,525	0.61%	129,900	0.08%
Grain Dryer	1,960,780	0.03%	4,279,840	2.65%
Greenhouse Perimeter	0	0.00%	149,260	0.09%
Heat Exchanger	12,921,015	0.20%	0	0.00%
Heat Pump	5,537,530	0.09%	0	0.00%
Heat Recovery	3,495,705	0.05%	33,817,867	20.92%
Heating Equipment	1,868,500	0.03%	4,011,152	2.48%
Insulation	39,570	0.00%	1,571,931	0.97%
Irrigation	614,115	0.01%	0	0.00%
LED Fixtures	1,319,228,508	20.62%	0	0.00%
LED Screw-in Lamps	14,483,341	0.23%	0	0.00%
LED, Other	58,878,555	0.92%	0	0.00%
LED(old)	8,081,716	0.13%	0	0.00%
Lighting	692,370	0.01%	0	0.00%
Lighting Controls	22,138,990	0.35%	0	0.00%
New Construction Lighting	149,947,573	2.34%	0	0.00%
Other[a]	461,683,628	7.22%	20,331,009	12.58%
Packs Kits	1,693	0.00%	0	0.00%
Paper	49,496,715	0.77%	0	0.00%
Planning	0	0.00%	0	0.00%
Process Cooling	253,054,679	3.96%	0	0.00%
Process Heating	1,767,510	0.03%	1,173,195	0.73%
Pumping/Piping	139,914,605	2.19%	0	0.00%
Pumps	89,971	0.00%	0	0.00%
Refrigerator/Freezer - Industrial	4,896,936	0.08%	0	0.00%
Retrocommissioning	28,734,860	0.45%	2,357,736	1.46%
School Challenge	0	0.00%	0	0.00%
Solar PV	743,247,972	11.62%	0	0.00%
Steam Traps	0	0.00%	2,281,031	1.41%
Strategic Energy Management	8,843,761	0.14%	162,690	0.10%
Survey/Study	0	0.00%	0	0.00%
Thermal Curtains	0	0.00%	10,480	0.01%
TLED	232,680,861	3.64%	0	0.00%
Trade Ally	0	0.00%	0	0.00%

Measure Category	Verified Gross			
	kWh	kWh %	therms	therms %
Tune-up/Repair	23,751,921	0.37%	1,155,796	0.71%
Unspecified	3,282,039	0.05%	16,733	0.01%
Utility Bill Verified Savings	1,587,664	0.02%	183,010	0.11%
Vacuum Pump	11,980,185	0.19%	0	0.00%
Variable Speed Drive	1,517,535,285	23.72%	591,975	0.37%
Ventilation Equipment	16,890,315	0.26%	4,572,870	2.83%
Walk-ins	133,560	0.00%	0	0.00%
Waste Water Treatment Plant	47,250,780	0.74%	73,800	0.05%
Water Heater	0	0.00%	17,321	0.01%
Waterer	4,978,000	0.08%	0	0.00%

[a] Other in the nonresidential channel encompasses a wide variety of measures, such as unspecified process improvements, unspecified HVAC improvements, unspecified refrigeration improvements, and industrial oven/furnace.

Table E-10 lists CY 2024 midstream lifecycle savings by measure category.

Table E-10. CY 2024 Summary of Lifecycle Savings by Measure Category, Midstream Channel

Measure Category	Verified Gross			
	kWh	kWh %	therms	therms %
Boiler	0	0.00%	348,888	1.97%
Boilers and Burners-Boiler	0	0.00%	684,788	3.86%
Cooking	2,127,408	-20.80%	1,448,760	8.17%
Dishwashing	9,936,710	-97.14%	18,270	0.10%
DHW-Water Heater	3,608,160	-35.27%	1,007,622	5.68%
Hand Dryer	201,920	-1.97%	0	0.00%
Heat Pump	375,498	-3.67%	66,960	0.38%
Heating Equipment	18,476	-0.18%	78,800	0.44%
HVAC-Heat Pump	-44,512,975	435.17%	8,479,386	47.81%
HVAC-Heating Equipment	12,067,341	-117.97%	5,355,665	30.20%
HVAC-Pumps	4,253,250	-41.58%	0	0.00%
Miscellaneous-Packs Kits	77,669	-0.76%	14,529	0.08%
Refrigeration	697,851	-6.82%	0	0.00%
Ventilation	883,520	-8.64%	145,640	0.82%
Water Heater	36,360	-0.36%	87,489	0.49%

Appendix F. Measure Analysis

This appendix describes the impact evaluation results for sampled residential and nonresidential projects in the CY 2024 evaluation. The evaluation team performed desk reviews and virtual verification reviews of a sample of projects in the Multifamily Program and in each nonresidential program. The team calculated measure-level realization rates based on the analysis completed for these sample projects, which informed the offering- and program-level realization rates for CY 2024. A more detailed description of the sampled projects follows.

Multifamily

Of the 50 projects in the impact evaluation sample for the Multifamily Program, 46 achieved a 100% energy realization rate. The four projects with realization rates that deviated from 100% were randomly sampled hybrid Product Equipment Performance (PEP) and custom Express EDA (eEDA) new construction measures. Table F-1 provides specific details related to projects with significant or impactful discrepancies.

Table F-1. CY 2024 Multifamily Program Sample Detailed Projects

MMID	Project Measure	Lifecycle Savings (MMBtu)		Real. Rate	Share of Offering	Notes
		Ex Ante	*Ex Post*			
5188	PEP Multifamily NC	32,795.1	32,351.8	**98.6%**	1.8%	Interior lighting power densities (LPDs) claimed in the summary report do not agree with workbook. *Ex post* savings applied a reduction to the lighting savings to reflect that the common area LPD reported in the workbook is greater than the modeled LPD.
5188	PEP Multifamily NC	7,480.3	7,300.1	**97.6%**	<1%	Interior LPDs claimed in the summary report do not agree with the workbook. Garage lighting savings are claimed in the model but are not documented or reported in the workbook. *Ex post* savings remove the garage lighting savings, given the limited supporting documentation to verify them.
5188	PEP Multifamily NC	59,841.0	58,604.7	**97.9%**	3.2%	Interior LPDs claimed in the summary report do not agree with the workbook. *Ex post* savings applied a reduction to the lighting savings to reflect the common area, and in-unit LPD reported in the workbook is greater than the modeled LPD.
10083	Express EDA Multifamily NC	91,559.1	91,331.5	**99.8%**	4.9%	Verified System Information Modeling (SIM) report had slight differences in final net energy optimizer (NEO) modeled values from those reported in *ex ante. Ex post* utilized values in the final verified SIM Report, resulting in a reduction in therm savings.

Agribusiness Program

In the impact evaluation sample for the Agribusiness Program, 37 of 45 projects achieved a 100% energy realization rate. Six of the remaining eight measures deviated only slightly (99.9%) due to rounding errors made in the *ex ante* calculations (all MMID 4403). The remaining two measures that deviated from 100% each received a realization rate of 100.1% due to specification and technical reference manual (TRM) discrepancies. The eight measures with deviations were randomly selected prescriptive measures. Table F-2 provides specific details for the two projects with TRM reference discrepancies.

Table F-2. CY 2024 Agribusiness Program Sample Detailed Projects

MMID	Project Measure	Lifecycle Savings (MMBtu)		Real. Rate	Share of Offering	Notes
		Ex Ante	*Ex Post*			
3998	Fans High Volume Low Speed Fans	1,001.1	1,002.1	**100.1%**	<1%	*Ex post* derived from Focus on Energy 2024 TRM MMID 3998 with deemed savings values. *Ex ante* savings values used differ from current TRM-deemed values. *Ex post* results in slightly higher first-year and lifecycle kWh savings and slightly lower kW demand savings.
4696	LED Fixture <250 Watts Replacing 320-399W HID High Bay Ag	376.8	377.4	**100.1%**	<1%	*Ex ante* used MMID 4696 (<250 watts, replacing 320-400 watt HID). The specification provided indicates this is a 153.4-watt fixture. This fixture appears to better align with MMID 4695 (<155 watts, replacing 250-watt HID). *Ex post* used MMID 4695 from the Focus on Energy 2024 TRM Agricultural space type. *Ex post* results in reduced kW demand savings, reduced first year and lifecycle kWh savings, with less of an impact to lifecycle kWh due to longer effective useful life (EUL) (17 years for MMID 4695).

Business and Industry Program

In the impact evaluation sample for the Business and Industry Program, 69 of 72 projects achieved a 100% energy realization rate. Three custom measures received a realization rate that deviated from 100%. The team selected one of the EDA/EDR measures using a census approach and the others using random sampling. Projects that represent a 5% or more share of the offering savings were census sampled; projects less than 5% were randomly sampled.

Table F-3 provides specific details about projects with discrepancies, designating projects by their master measure identifier (MMID).

Table F-3. CY 2024 Business and Industry Program Sample Detailed Projects

MMID	Measure	Lifecycle Savings (MMBtu)		Real. Rate	Share of Offering	Notes
		Ex Ante	*Ex Post*			
5119	EDA Project Savings B&I NC	26,010.6	25,899.1	**99.6%**	1%	Verified SIM report had slight differences in final NEO modeled values from those reported in *ex ante. Ex post* utilized values in the final verified SIM Report, resulting in very slight differences in all metrics, but primarily first-year kWh savings realization (99%).
5120	EDA Project Savings B&I NC	391,227.1	412,000.0	**105.3%**	21%%	Verified SIM report had slight differences in final NEO modeled values from those reported in *ex ante. Ex post* utilized values in the final verified SIM Report. Baseline kWh consumption from the Trace report does not match the verification report.
2455	EDA Project Savings B&I NC	3,897.9	3,989.6	**102.4%**	<1%	*Ex post* savings result in slightly higher first-year and lifecycle kWh savings due to a different wattage used for an efficient fixture found in the provided specification (660 watts).

Large Industrial Program

In the impact evaluation sample for the Large Industrial Program, 60 of 65 projects achieved a 100% energy realization rate. Of the five measures with realization rates that deviated from 100%, one hybrid randomly sampled measure (not listed below) contained a slight rounding error in *ex ante* calculation and received a realization rate of 100.2%. The remaining four measures (listed below) were randomly sampled prescriptive measures.

Table F-4 provides specific details related to projects with significant or impactful discrepancies.

Table F-4. CY 2024 Large Industrial Program Sample Detailed Projects

MMID	Project Measure	Lifecycle Savings (MMBtu)		Real. Rate	Share of Offering	Notes
		Ex Ante	*Ex Post*			
5445	LED Fixture, Linear Ambient, Replacing 1 or 2 Lamp(s)	171.2	146.7	**85.7%**	<1%	*Ex ante* calculation appears to have used a 14-year EUL. *Ex post* calculation utilizes Focus on Energy 2024 TRM MMID 5445 value of 12-year EUL for the industrial space type.
3400	LED Fixture, 2x2, Low Output	44.9	35.1	**78.3%**	<1%	*Ex post* savings are derived from Focus on Energy 2024 TRM MMID 3400 deemed savings. Deemed savings values used for *ex ante* appear to align with an older version of the TRM. *Ex post* calculates slightly lower first-year and lifecycle kWh savings.
2264	Compressed Air, Cycling Thermal Mass Air Dryers	719.3	733.7	**102.0%**	<1%	*Ex post* savings are derived from Focus on Energy 2024 TRM for MMID 2264 deemed savings, resulting in slightly higher kW demand, first-year, and lifecycle kWh savings than claimed in *ex ante*.
5451	4' or U-Bend TLED 24W, Replacing 4' or U-Bend T5, T8 or T12 Lamp	112.4	96.3	**85.7%**	<1%	*Ex ante* calculation appears to have used a 14-year EUL. *Ex post* calculation utilizes Focus on Energy 2024 TRM MMID 5451 value of 12-year EUL for the industrial space type.

Schools and Government Program

In the impact evaluation sample for the Schools and Government Program, 83 of 88 projects achieved a 100% energy realization rate. Of the five measures where the realization rate deviated from 100%, three were custom measures, one was prescriptive, and one was hybrid. The team randomly sampled all of these. Table F-5 provides specific details related to projects with discrepancies.

Table F-5. CY 2024 Schools and Government Program Sample Detailed Projects

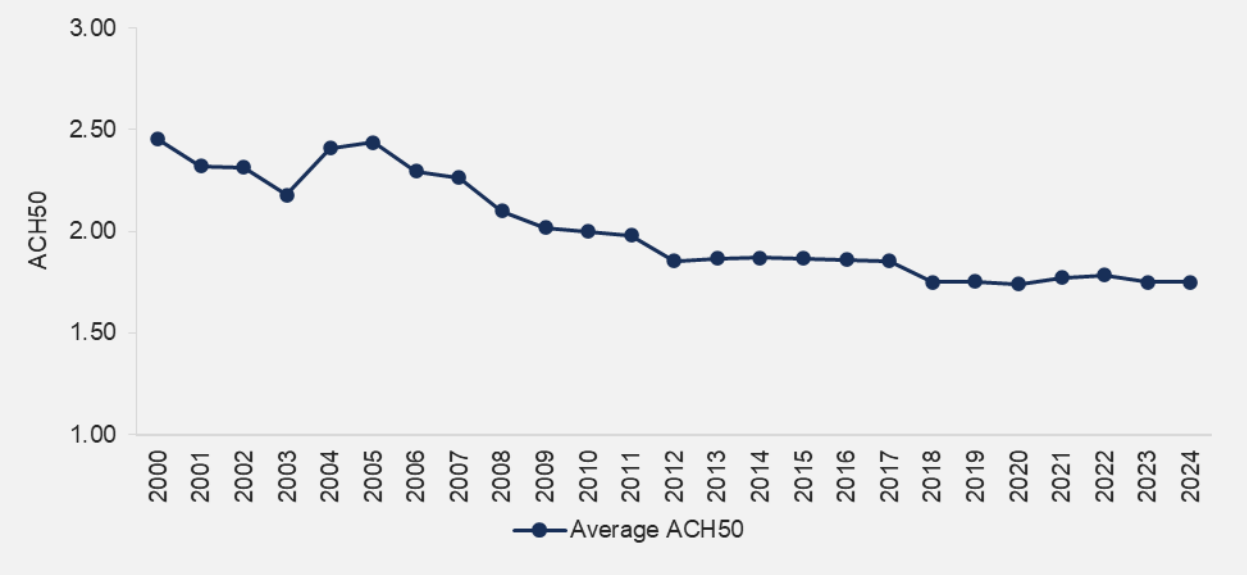
MMID	Project Measure	Lifecycle Savings (MMBtu)		Real. Rate	Share of Offering	Notes
		Ex Ante	*Ex Post*			
3912	ECM HVAC Fan Motors	684.0	690.9	**101.0%**	<1%	*Ex post* savings calculated from MMID 3912 in the Focus on Energy 2024 TRM from deemed savings values for 1/3 horsepower, qty 9 motors. *Ex ante* calculation appears to be using different deemed savings values for this MMID, presumably from an older TRM version. *Ex post* results in slightly higher kW demand savings and higher first-year and lifecycle kWh savings for the measure.
5119	EDA - Project Savings and Verification S&G NC	988.7	986.8	**99.8%**	<1%	Verified SIM report had slight differences in final NEO modeled values from those reported in *ex ante*. *Ex post* utilized values in the final verified SIM Report.

MMID	Project Measure	Lifecycle Savings (MMBtu)		Real. Rate	Share of Offering	Notes
		Ex Ante	*Ex Post*			
5119	EDA - Project Savings and Verification S&G NC	7,940.1	7,931.2	**99.9%**	2%	Verified SIM report had slight differences in final NEO modeled values from those reported in *ex ante*. *Ex post* utilized values in the final verified SIM Report, resulting in very slight differences in all metrics, with first-year kWh (102%) and first-year therms (99%) deviating from 100%, while lifecycle metrics round to 100% realization.
5119	EDA - Project Savings and Verification S&G NC	36,678.0	36,712.0	**100.1%**	8%	Verified SIM report had slight differences in final NEO modeled values from those reported in *ex ante*. *Ex post* utilized values in the final verified SIM Report.
4713	Chiller Air Cooled, 150 tons Path A	7,950.4	7,960.7	**100.1%**	<1%	Rounding error in *ex ante* calculation.

Appendix G. Residential New Construction Building Practices

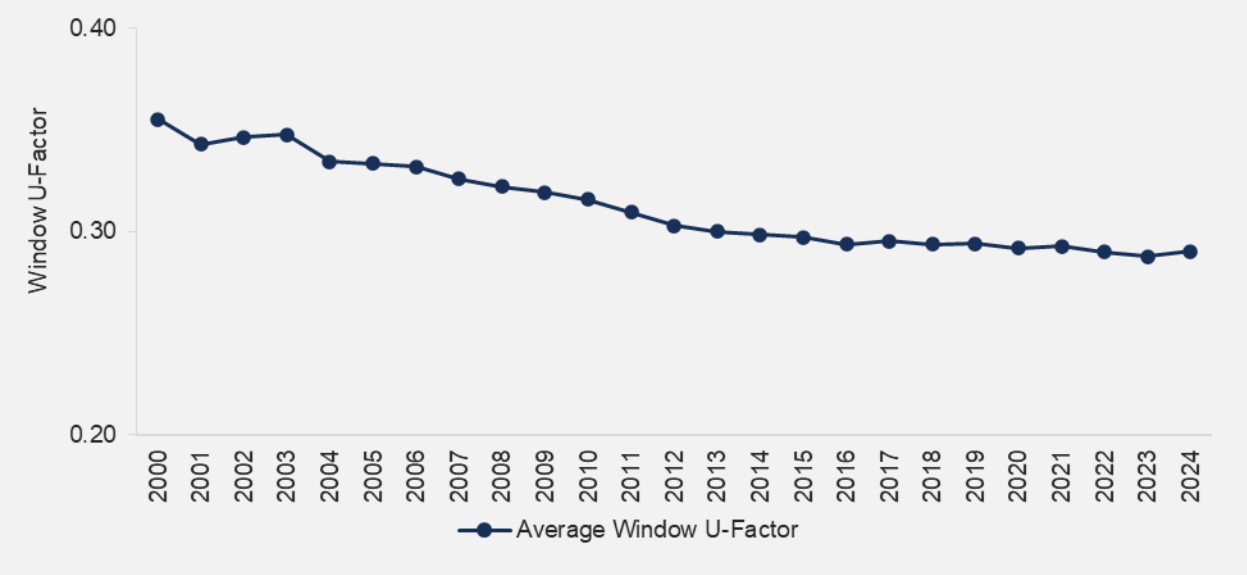
As part of the CY 2024 Residential New Construction Program evaluation, the evaluation team collected and tracked data on building practices in CY 2024 program homes. The following sections describe findings from this analysis, alongside similar historical analyses. Air tightness in program homes remained relatively constant in CY 2024 compared to prior program years. The overall airtightness, measured in ACH50, has remained consistent since CY 2018 but has shown significant improvement since CY 2005 (Figure G-1).

Figure G-1. Residential New Construction Program
Average Home Airtightness (CY 2000-CY 2024)



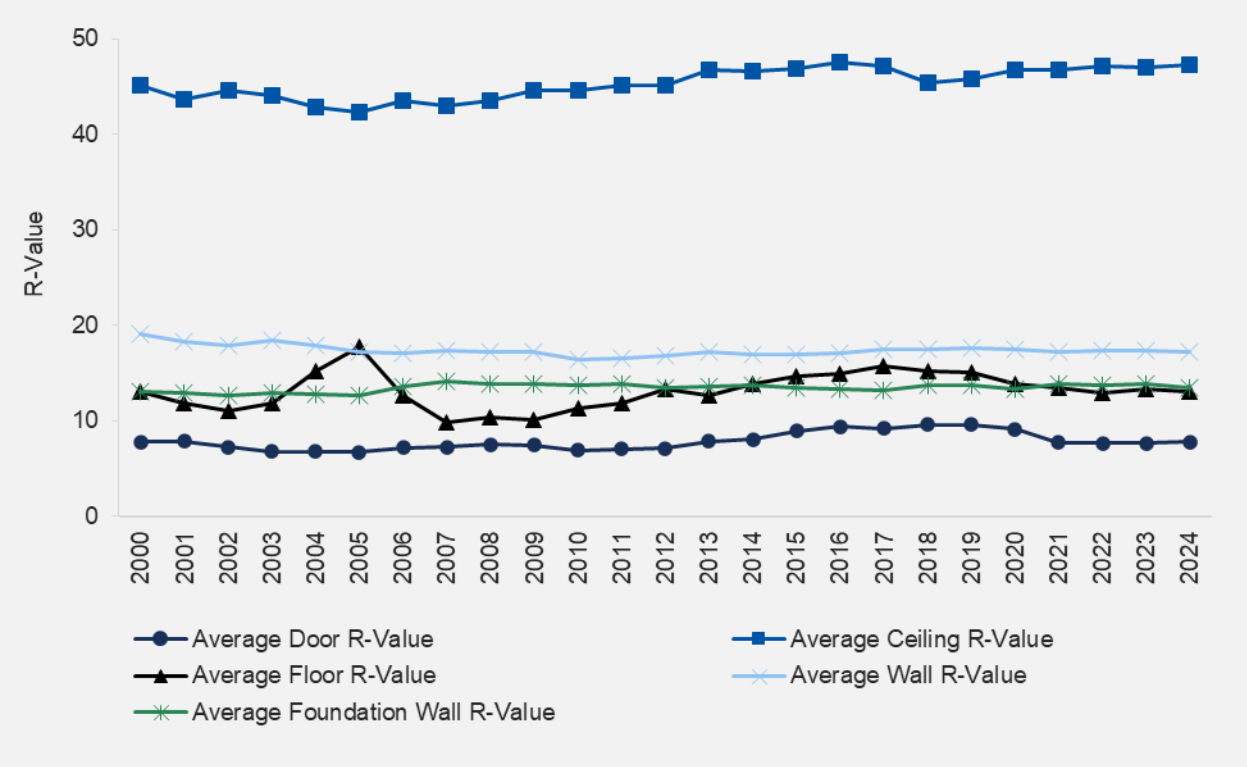
Window efficiency in participating homes has steadily improved since CY 2000, as evidenced by decreases in the average window U-Factor (Figure G-2). However, the efficiency of windows has remained relatively consistent since CY 2016.

Figure G-2. Residential New Construction Program
Average Window U-Factor (CY 2000-CY 2024)



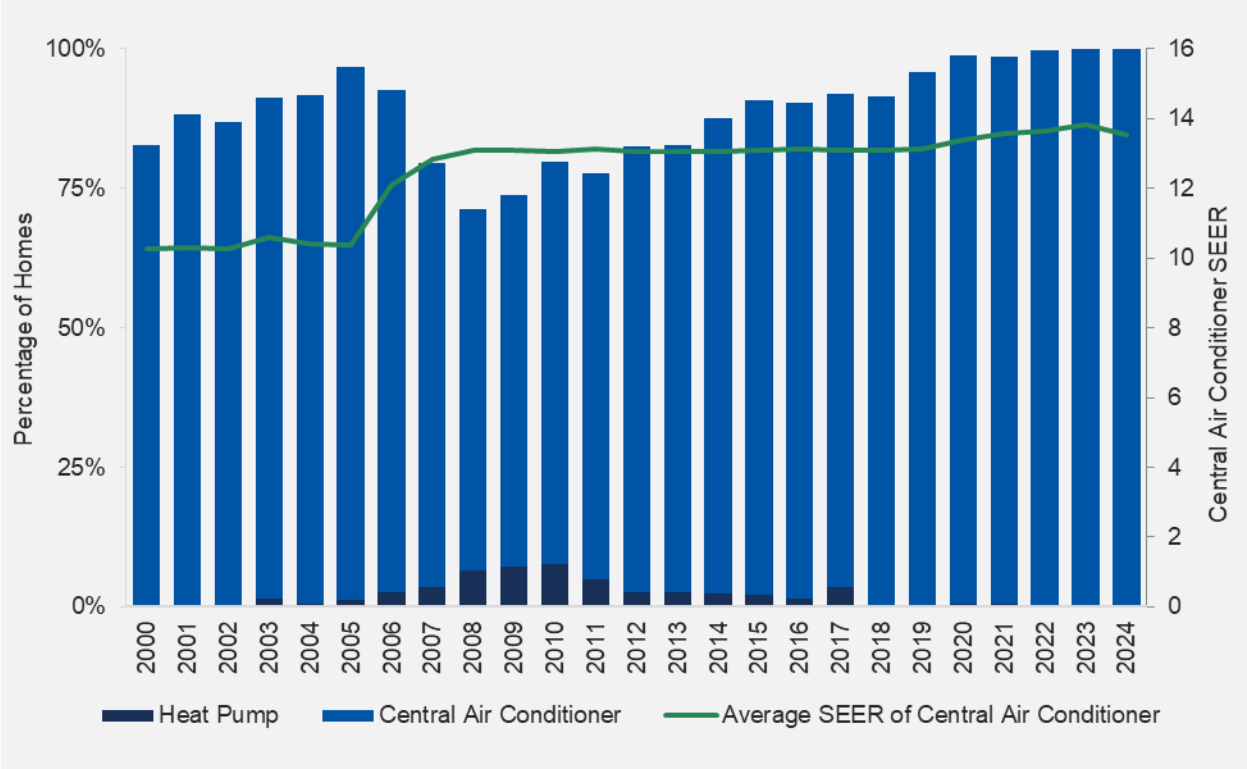
Similar to other characteristics of participating homes, various measures of home insulation levels have remained stable through CY 2024 (Figure G-3).

Figure G-3. Residential New Construction Program
Average Home Insulation Levels (CY 2000-CY 2024)



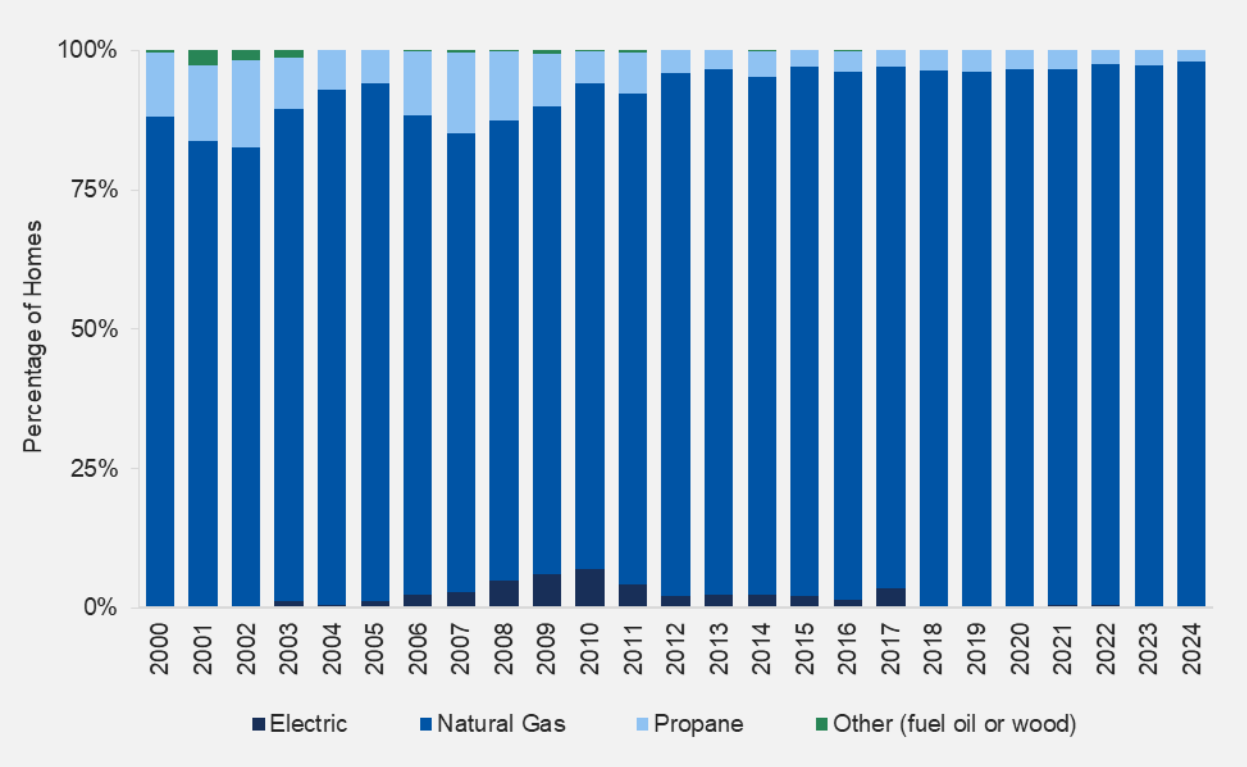
In CY 2024, homes participating in the Residential New Construction Program experienced a slight decline in central air conditioner installations, from 99.9% in CY 2023 to 99.7%, driven by a modest increase in air-source heat pump adoption, which rose from 0.1% to 0.3% over the same period. (Figure G-4). The figure also illustrates that since CY 2020, the average efficiency of central air conditioners in participating homes has surpassed the federal minimum standard of Seasonal Energy Efficiency Rating (SEER) 13. In contrast, between CY 2007 and CY 2019, the SEER value of central air conditioners aligned with the federal standard.

Figure G-4. Residential New Construction Program
Average Home Cooling SEER Level (CY 2000-CY 2024)



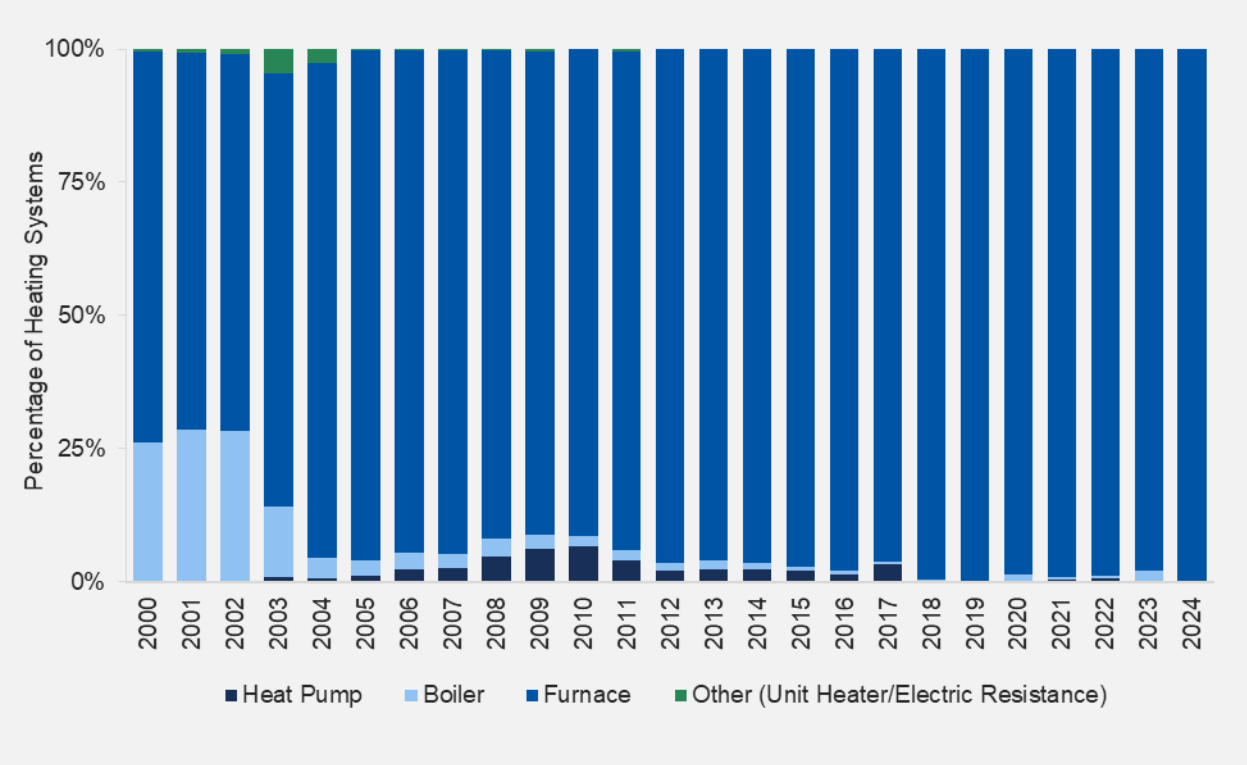
In CY 2024, the primary heating source for most participating homes was natural gas (Figure G-5). Only 2% of these homes were heated by propane, with less than 1% using electricity for heating.

Figure G-5. Residential New Construction Program
Home Heating Fuel Type (CY 2000-CY 2024)



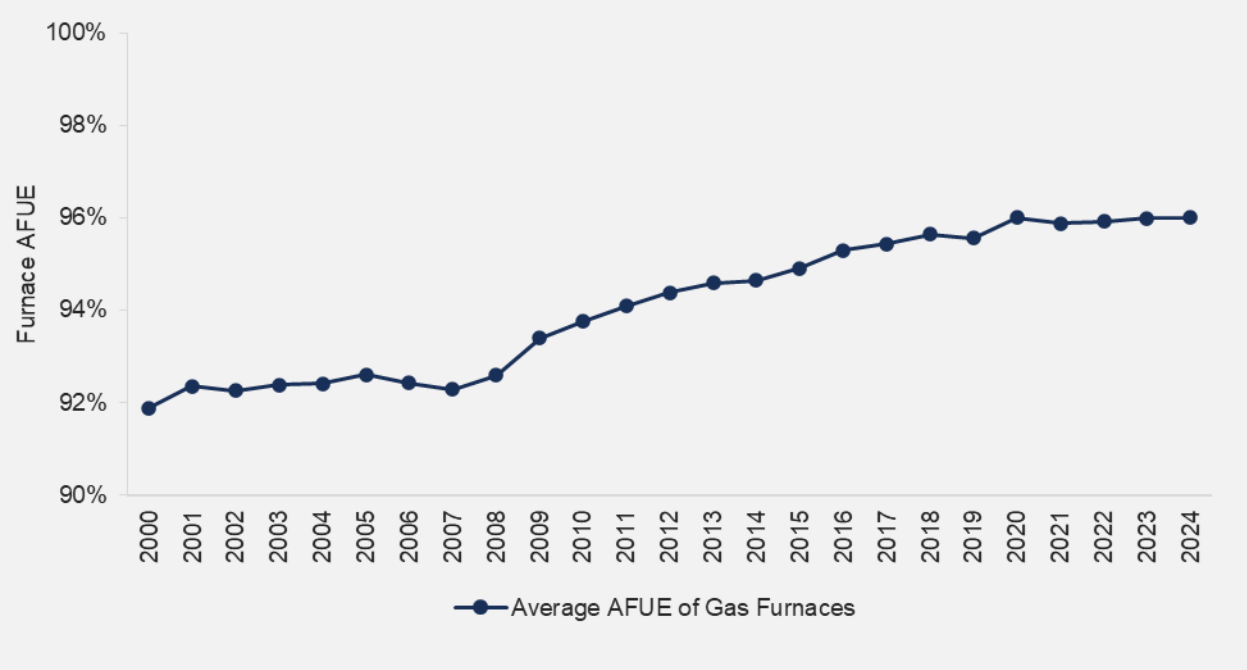
In CY 2024, similar to previous years, the primary heating equipment type for participating homes was a furnace (Figure G-6). Less than 1% of the participating homes relied on a boiler or heat pump as their primary heating equipment in CY 2024.

Figure G-6. Residential New Construction Program
Space Heating System (CY 2000-CY 2024)



Participating homes are primarily heated by natural gas-powered furnaces, which have maintained a steady efficiency of 96% Annual Fuel Utilization Efficiency (AFUE) since CY 2018, even with the introduction of a bonus incentive for highly efficient furnaces in CY 2021. Furnace efficiency has shown a continuous improvement trend since CY 2007 until it began to plateau in CY 2020 (Figure G-7).

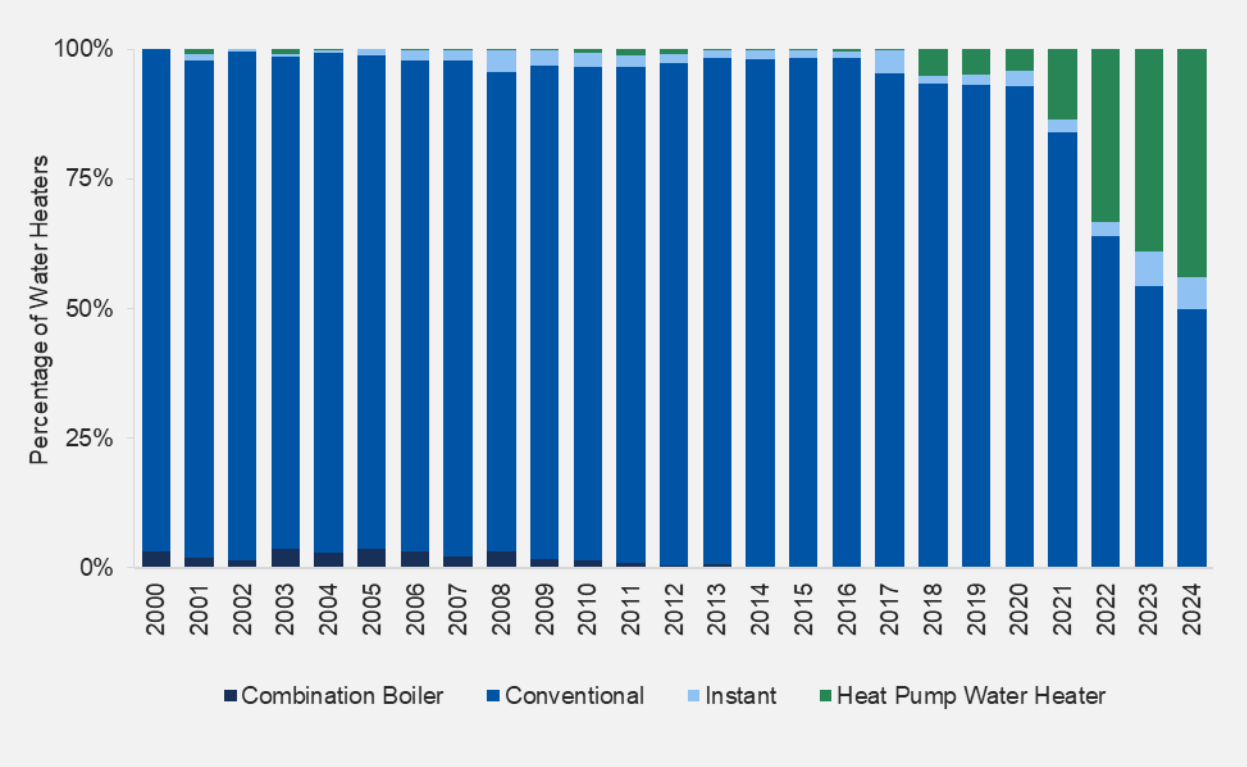
Figure G-7. Residential New Construction Program
Average Homes Furnace AFUE (CY 2000-CY 2024)



The prevalence of heat pump water heaters in participating homes has more than tripled since CY 2021, rising from 13% in CY 2021 to 44% in CY 2024 (Figure G-8). This increase corresponds with the introduction of Focus on Energy's bonus incentive for this measure in CY 2021-CY 2022. Additionally, the most common builder training (all-electric and zero-energy-ready homes) has emphasized heat pump water heaters, and the implementer reported that it motivated one of the largest builders to use them as the standard water heater in all new homes.

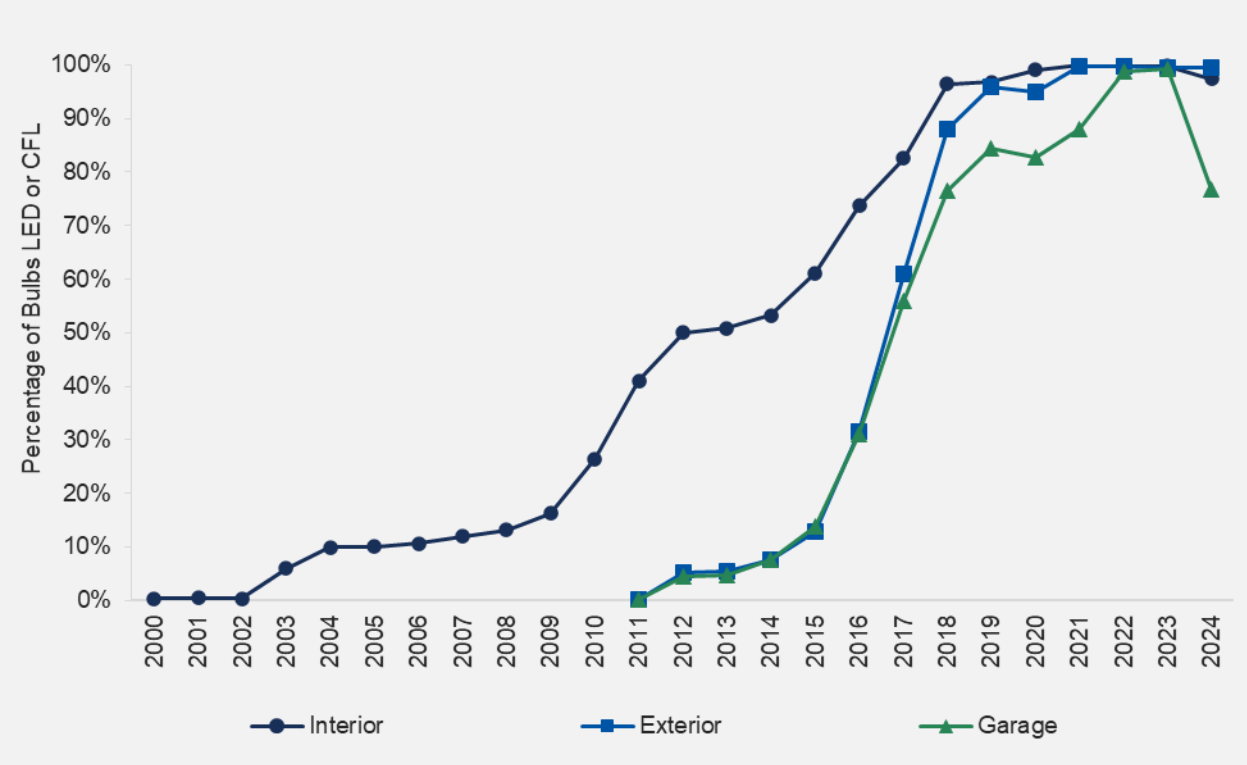
Despite the growing use of heat pump water heaters, the majority of participating homes have continued to rely on conventional tank water heating systems, with a small percentage also using instant (i.e., tankless) water heaters. Notably, the proportion of homes using tankless water heaters increased from 2% in CY 2021 to 6% in CY 2024.

Figure G-8. Residential New Construction Program
Water Heating System (CY 2000-CY 2024)



In CY 2024, nearly all participating homes were equipped with efficient LED or compact fluorescent light bulbs in both their interior and exterior lighting fixtures. These increased adoption rates align with U.S. Department of Energy's ruling that all general service lamps manufactured or sold in the United States must meet a 45-lumen-per-watt threshold by June 30, 2023. However, the use of efficient bulbs in garage light fixtures saw a significant decline, dropping from 99% in CY 2023 to 77% in CY 2024, as homes instead opted for CFL lighting. Figure G-9 illustrates that the adoption of efficient lighting technology has steadily increased in participating homes since CY 2002.

Figure G-9. Residential New Construction Program Lighting Types (CY 2000-CY 2024)



For the CY 2024 evaluation, the team also extracted details about participating homes' mechanical ventilation systems. According to REM/Rate data, all homes still use mechanical ventilation systems, which can increase the electric load, even though the program no longer requires these systems for participation. Eleven percent of homes used balanced mechanical ventilation systems with air intake and exhaust, and 89% of homes used exhaust-only systems. The average outdoor air fan operating time is 10 hours per day for balanced systems, while exhaust-only systems operate eight hours per day. The REM/Rate data does not include details on where a system is installed (such as part of a bathroom ventilation system) or if the systems are heat recovery systems, which can improve the efficiency of a home.

Appendix H. Net Savings Analysis

For the CY 2024 evaluation of Focus on Energy's offerings, the evaluation team applied net-to-gross (NTG) adjustments drawn from CY 2024 and historical primary research. This appendix describes which research findings the team applied to each offering.

Net Savings Overview

As described in Volume II, the evaluation of a program and its offerings involves reviewing the reported gross savings to ensure that the measures installed have remained installed and are working as intended. The evaluation team then applies any adjustments found during that review to calculate verified gross savings.

Net savings are savings that would not have occurred in the absence of a given offering. These are the final savings attributed to an offering, as determined by an independent evaluator. To determine these savings, the evaluator deducts reported savings that are associated with freeriders (participants who would have undertaken the same action and achieved the same savings in the absence of an offering) and adds spillover savings (savings that are the result of an offering's influence, but for which no incentive was paid and for which no offering has recorded savings).

Net savings represent the total savings achieved through the investment of ratepayer dollars into the offering. These net savings are the primary benefits factored in the benefit/cost analysis used to help design offerings and ensure that they are operating in a manner that returns a net positive benefit to ratepayers. Focus on Energy also uses net savings to track progress toward the savings targets established for it by the PSC.

For CY 2024, the evaluation team calculated net savings by applying NTG ratios estimated from CY 2024 primary research, historical NTG ratios from primary research, or assuming an NTG of 1.0. In some cases, the team combined studies to determine the savings-weighted average NTG ratios for each offering. Table H-1 shows the evaluation methods the team used to determine net savings for each offering for the CY 2024 evaluation.

Table H-1. CY 2024 Net Savings Methodology by Offering

CY 2024 Offerings	Net Savings Methodologies
Residential	
Online Marketplace	CY 2024 Self-report
Packs	CY 2024 Self-report for Focus on Comfort, Focus on Showers, Focus on Baths packs CY 2020 Self-report for all other measures
Heating and Cooling (Standard)	CY 2023 Self-report
Heating and Cooling (Income-Qualified)	Assumed 100% NTG
Insulation and Air Sealing (Standard)	CY 2024 Billing analysis
Insulation and Air Sealing (Income-Qualified)	CY 2024 Billing analysis
Multifamily	CY 2023 Self-report
Multifamily, EDA/EDR	CY 2023 Self-report

CY 2024 Offerings	Net Savings Methodologies
Renewable Rewards (Residential)	CY 2024 Self-report
Residential New Construction	CY 2019 Billing analysis for single-family homes CY 2024 Self-report from participant retailers and community organization manufactured home purchasers for the New Manufactured Homes Pilot.
Nonresidential	
Agribusiness	CY 2023 Self-report
Rural Farmhouse Kits	CY 2020 Self-report from Packs participant surveys
Commercial and Industrial	CY 2023 Self-report
Large Industrial	CY 2023 Self-report
Government	CY 2023 Self-report
Schools	CY 2023 Self-report
EDA/EDR	CY 2023 Self-report
Renewable Rewards (Business)	CY 2024 Self-report
Midstream	
Midstream and Instant Discount	CY 2023 Self-report from contractors for circulator pumps CY 2023 Self-report from Trade Ally Solutions HVAC participant results for HVAC equipment CY 2022 Self-report and Delphi Panel results for commercial kitchen equipment Average NTG from other Midstream/Instant Discount Program measures for water heating and hand dryers
Residential HVAC, Income-Qualified	Assumed 100% NTG
Community-Based Organization Distribution	Assumed 100% NTG
Pilots	
Community Impact Pilot	Assumed 100% NTG
Life Sciences Midstream Pilot	Assumed 100% NTG

Insulation and Air Sealing Offering Billing Analysis

In CY 2024, the Insulation and Air Sealing offering claimed prescriptive project completion *ex ante* savings based on the average per-participant savings from the CY 2020 billing analysis. Table H-2 shows the *ex ante* savings estimates for the measure completion measures for the standard and income-qualified tracks.

Table H-2. CY 2024 Measure *Ex Ante* Estimates

Tracks	Project Completion Measure	Electric *Ex Ante* (kWh)	Gas *Ex Ante* (therms)
Standard	Natural Gas Heat	854	135
	Natural Gas Heat Only	0	135
	Do-it-Yourself (DIY) Installation Gas Heat	543	101
	Electric Heat	2,395	0
Income-Qualified	Natural Gas Heat	945	186
	Natural Gas Heat Only	0	186
	DIY Installation Gas Heat	543	101
	Electric Heat	2,793	0

In CY 2024, the evaluation team conducted a billing analysis of CY 2023 participants to determine the continued accuracy of these savings. Analyzing CY 2023 participants allowed for a comparison of one year of pre-participation billing data to one year of post-participation billing data. The team used weather-normalized regression models to measure the impact of energy efficiency measures on consumption for CY 2023 participants and compared them to the *ex ante* estimates shown in Table H-2. By evaluating the pre- and post-installation energy consumption and accounting for variables such as weather, the team measured impacts for offering-related installations.

The analysis included a control group of nonparticipants, which allowed the team to estimate net savings by comparing the change in energy consumption for participants to the results of a similar analysis conducted for nonparticipants. This difference resulted in total verified net savings from the Insulation and Air Sealing offering. The team identified the nonparticipant group by sampling future offering participants—that is, customers who participated *after* the analysis period. Sampling from this group helped account for exogenous factors that might have occurred simultaneously with offering activity. The team conducted eight separate billing analyses to evaluate verified net savings for the project completion measure categories listed in Table H-2.

The evaluation team requested gas and electric billing data for all standard and income-qualified customers who participated in the Insulation and Air Sealing offering during CY 2023 and CY 2024. These data came from Wisconsin utilities whose customers participated in the offering in CY 2023. Data covered the period from November 2021 through January 2025. The team also reviewed detailed tracking data from SPECTRUM for participants in all Focus on Energy programs from CY 2022, CY 2023, and CY 2024.

The evaluation team received billing data for these gas utilities:

- Alliant (Wisconsin Power & Light)
- City Gas Company
- Madison Gas and Electric Company
- Midwest Natural Gas Incorporated
- Xcel Energy (Northern States Power Company)
- St Croix Valley Natural Gas Company
- Superior Water Light and Power Company
- We Energies
- Wisconsin Public Service Corporation

The evaluation team received billing data for these electric utilities:

- Algoma Utility Commission
- Alliant (Wisconsin Power and Light)
- Belmont Light & Water
- Brodhead Water & Light
- Cedarburg Light & Water
- Columbus Water & Light
- Evansville Water & Light
- Jefferson Water and Electric Department
- Kaukauna Utilities
- Lake Mills Light and Water Department
- Lodi Mun Light and Water Utility
- Madison Gas and Electric Company
- Manitowoc Public Utilities
- Marshfield Utilities
- Mazomanie Electric Utility
- Menasha Utilities
- Mount Horeb Electric Utility
- New Glarus Utilities
- New London Utilities
- New Richmond Municipal Electric Utility
- Oconomowoc Utilities
- Oconto Falls Water and Light Commission
- Plymouth Utilities
- Prairie Du Sac Municipal Electric & Water
- Reedsburg Utility Commission
- Rice Lake Utilities
- River Falls Municipal Utilities
- Rock Energy Cooperative
- Shawano Municipal Utilities
- Sheboygan Falls Utilities
- Spooner Municipal Utilities
- Stoughton Utilities
- Sturgeon Bay Utilities
- Sun Prairie Utilities
- Superior Water Light and Power Company
- Two Rivers Utilities
- Vernon Electric Cooperative
- Waterloo Utilities
- Waunakee Utilities
- Waupun Utilities
- We Energies
- Whitehall Electric Utility
- Wisconsin Public Service Corporation
- Xcel Energy (Northern States Power)

Through the billing analyses, the evaluation team determined the net savings from gas and electric customers in the standard and income-qualified tracks to validate each measure's *ex ante* estimates listed above in Table H-2. To control for exogenous factors during the analysis period, the team used a nonparticipant group that included future participants. The percentage change in this group's energy use allowed the team to calculate the net savings and also the overall and pre-participation use quartile energy savings from the CY 2023 and CY 2024 Insulation and Air Sealing offering.

For each participant, the evaluation team obtained these data:

- SPECTRUM ID and customer ID
- Customer name and address, including zip code
- Heating fuel

- Minimum measure installation date
- Maximum measure installation date
- Total *ex ante* gas therm savings
- Total *ex ante* electric kWh savings
- Minimum installation date of other Focus on Energy solution measure(s)
- Maximum installation date for other Focus on Energy solution measure(s)
- Total therm *ex ante* savings from participation in other Focus on Energy solution(s)
- Total kWh *ex ante* savings from participation in other Focus on Energy solution(s)
- Measure-level flags, including air sealing, attic insulation, foundation insulation, sill-box insulation, wall insulation, bonus measures, and other low-cost water-heating measures (showerheads, aerators, water heater replacement, pipe wrap), compact fluorescent lamps, LEDs, and a measure completion indicator[9]

The evaluation team then matched customer-level tracking information with the electric and gas billing data using the SPECTRUM ID and service address. Next, the team followed these steps to conduct the billing analysis of the standard and income-qualified tracks:

1. Checked each participant account against the complete measure tracking data for participation in other offerings occurring in the analysis period.
2. Used ZIP code mapping to determine the nearest weather station for each ZIP code.
3. Obtained daily average temperature weather data from November 2021 through January 2025 for 29 National Oceanic and Atmospheric Administration weather stations, representing all ZIP codes associated with the participants.
4. Used daily average temperatures to determine base 45 through base 85 heating degree days (HDDs) and cooling degree days (CDDs) for each station.
5. Obtained typical meteorological year 3 (TMY3; 1991 through 2005) annual normal and cooling degree days to weather-normalize the billing data.
6. Matched billing data periods with the CDDs and HDDs from the associated stations.

Comparison Group

An important aspect of the CY 2024 billing analysis quasi-experimental design is to compare the participant, or treatment group, to a group of nonparticipants to account for exogenous factors that may have occurred simultaneously with offering activity. These factors can include macroeconomic effects, increases or decreases in energy rates, or other interactions that may have affected energy consumption outside of offering influence. For the standard and income-qualified tracks in the

[9] Since the team validated the *ex ante* estimates, the billing analysis results ultimately only included participants who received completion measures or DIY installations to isolate the impacts accurately.

Insulation and Air Sealing offering, the team identified nonparticipant groups by sampling future offering participants—that is, late CY 2024 customers who participated *after* the CY 2023 analysis period.

This approach has several advantages over randomly selecting from the customer population. First, the future participants are more representative of the participant treatment group because they are more likely to be aware of saving energy and to have similar pre-offering building characteristics. Second, this population received offering measures (though after the analysis period) so the team could isolate the installation period to ensure this group had no impact during the analysis period.

Because comparison group pre-period use may not be identical to participant pre-period use, the evaluation team used a percentage of pre-period use to obtain the net participant savings. The following formula depicts this specific calculation for adjusted gross participant savings:

$$Net\ Savings = (Pre\ Part\ Usage)\left(\frac{Part\ Change\ In\ Usage}{Pre\ Part\ Usage} - \frac{NonPart\ Change\ In\ Usage}{Pre\ NonPart\ Usage}\right)$$

Instead of taking the difference between the participant savings delta and the nonparticipant savings delta (i.e., a difference-of-differences approach), the calculation determines the percentage reduction of both the participant and the nonparticipant groups. The percentage reduction that represents net savings is the participant percentage reduction minus the nonparticipant percentage reduction. This net percentage reduction is then multiplied by the participant's pre-period use to obtain the net participant savings, thus effectively accounting for the differences in pre-period use between participants and nonparticipants.

The evaluation team used the above approach to define the future nonparticipant group as participants who installed measures from July 2024 through October 2024. This group did not have sufficient post-period billing data to be included in the participant group, but it did have sufficient pre-participation billing data.

The evaluation team defined the participant pre-installation period as the one year before the first measure installation and the post-installation period as one year after the last measure installation. It assigned the nonparticipant periods using the average participant installation date of July 11, 2023. The nonparticipant pre-period was July 2022 through June 2023, and the post-period was August 2023 through July 2024.

The evaluation team relied primarily on the PRInceton Scorekeeping Method (PRISM) to develop savings estimates because its models are simpler to summarize across various groups and yield better precision than the more complex Conditional Savings Analysis (CSA) fixed-effects modeling approach. The evaluation team used the CSA approach to corroborate PRISM findings only at the overall offering level.

Data Screening

The evaluation team removed these items from the analysis:

- Billing data readings that spanned less than 15 days or more than 65 days
- Electric billing data monthly readings where the use was less than 1 kWh per day

- Customers with fewer than 10 pre- and 10 post-installation months
- Nonparticipant customers with fewer than 10 pre- and 10 post-installation months

This ensured that the pre- and post-installation periods were well balanced and that all seasons were represented in the PRISM models.

PRISM Modeling Approach

In the next step of the screening process, the evaluation team estimated PRISM models for pre- and post-installation billing data. These models provided weather-normalized pre- and post-installation annual use for each account and an alternate check to savings obtained from the fixed-effects model.

The PRISM electric model used the following specification:

$$ADC_{it} = \alpha_i + \beta_1 AVGHDD_{it} + \beta_2 AVGCDD_{it} + \varepsilon_{it}$$

Where for each customer *i* and month *t*:

ADC_{it}	=	Average daily kWh consumption in the pre-/post-installation period
α_i	=	Participant intercept; represents the average daily kWh base load
β_1	=	Model space heating parameter value
β_2	=	Model cooling parameter value
$AVGHDD_{it}$	=	Base 45-65 average daily HDDs for the specific location
$AVGCDD_{it}$	=	Base 65-85 average daily CDDs for the specific location
ε_{it}	=	Error term

Using this model, the evaluation team computed weather-normalized annual consumption for each heating and cooling reference temperature as follows:

$$NAC_i = \alpha_i * 365 + \beta_1 LRHDD_i + \beta_2 LRCDD_i$$

Where for each customer *i*:

NAC_i	=	Normalized annual kWh consumption
α_i	=	Intercept is the average daily or base load for each participant; it represents the average daily base load from the model
$\alpha_i * 365$	=	Annual base load kWh usage (non-weather sensitive)
β_1	=	Heating parameter value; in effect, this is usage per heating degree day from the model above
$LRHDD_i$	=	Annual, long-run HDDs of a typical meteorological year (TMY3) in the 1991–2005 series from NOAA, based on the home location
$\beta_1 * LRHDD_i$	=	Weather-normalized annual weather-sensitive heating usage, also known as HEATNAC
β_2	=	Cooling parameter value; in effect, this is usage per CDD from the model above

$LRCDD_i$	=	Annual, long-run CDDs of a typical meteorological year (TMY3) in the 1991–2005 series from NOAA, based on home location
$\beta_2 * LRCDD_i$	=	Weather-normalized annual weather-sensitive cooling usage, also known as COOLNAC

Furthermore, if the heating and cooling models above yielded negative intercepts, negative heating parameters, or negative cooling parameters, the evaluation team estimated additional models that included only the cooling usage (cooling-only models) or heating usage (heating-only models). Among the models with correct parameters, the best model for each participant in the pre- and post-installation periods was the one with the highest R-square.

The PRISM gas models used the following specification:

$$ADC_{it} = \alpha_i + \beta_1 AVGHDD_{it} + \varepsilon_{it}$$

Where for each customer *i* and month *t*:

ADC_{it}	=	Average daily therms consumption in the pre-/post-program period
α_i	=	Participant intercept; represents the average daily therms base load
β_1	=	Model space heating parameter value
$AVGHDD_{it}$	=	Base 45-65 average daily HDDs for the specific location
e_{it}	=	Error term

Using this model, the evaluation team computed NAC for each heating and cooling reference temperature as follows:

$$NAC_i = \alpha_i * 365 + \beta_1 LRHDD_i$$

Where for each customer *i*:

NAC_i	=	Normalized annual therm consumption
α_i	=	Intercept is the average daily or base load for each participant; it represents the average daily base load from the model
$\alpha_i * 365$	=	Annual base load therms usage (non-weather sensitive)
β_1	=	Heating parameter value; in effect, this is usage per heating degree day from the model above
$LRHDD_i$	=	Annual, long-run HDDs of a typical meteorological year (TMY3) in the 1991–2005 series from NOAA, based on the home location
$\beta_1 * LRHDD_i$	=	Weather-normalized annual weather-sensitive heating usage, also known as HEATNAC

Once the pre- and post-installation uses were obtained for each customer, the evaluation team applied other PRISM-based screening steps and excluded these items:

- Accounts where the post-installation weather-normalized (POSTNAC) use was 70% higher or lower than the pre-installation weather-normalized (PRENAC) use. Such large changes could indicate property vacancies when adding or removing other electric equipment unrelated to the offering.
- Accounts that had missing PRENAC or POSTNAC estimates (because of negative heating/cooling slopes or negative intercepts), since they likely indicate problems with the billing data
- Accounts that received additional measures through other offerings in the analysis period
- Electric accounts with solar
- Accounts where the *ex ante* claimed savings were less than 1% of the PRENAC
- Electric accounts where PRENAC or POSTNAC was less than 1,250 kWh
- Gas accounts where PRENAC or POSTNAC was less than 150 therms

Finally, the evaluation team performed a billing data screen that examined the gas and electric monthly billing data for each customer individually, plotting their average monthly use. To avoid confounding the billing analysis, the team removed accounts with outliers, vacancies, seasonal use, and equipment changes in the pre- or post-installation periods.

Attrition for Insulation and Air Sealing Offering for Gas Accounts

Table H-3 summarizes attrition for the standard track of the Insulation and Air Sealing offering gas account participants from the various screens. The data showed that 3,243 participants received project completion or DIY gas measures from January 2023 through June 2024. The team removed approximately 34% of these accounts because billing data did not match, and there were insufficient months of billing data.[10] The team removed another 3% due to individual billing review problems and an additional 3% from PRISM screening, large percentage changes, or participation in other offerings during the analysis period. The final analysis group involved 1,943 participants.

[10] Most of the attrition is from customers who installed measures before September 2022 or after February 2024, due to insufficient pre- and post- period billing data.

Table H-3. Standard Insulation and Air Sealing Gas Participant Account Attrition

Screen	Participants Remaining	Percentage Remaining	Number Dropped	Percentage Dropped
Original Gas Accounts	**3,243**	**100%**	**0**	**0%**
Matched to Billing Data Provided	2,917	90%	326	10%
Less than 10 Months of Pre- or Post-Period Billing Data	2,146	66%	771	24%
Usage/Percentage Change Screens + PRISM Screening	2,130	66%	16	0%
Participated in Other Offerings During Analysis Period	2,028	63%	102	3%
Individual Customer Bill Review: Outliers, Vacancies, Seasonal Usage, and Equipment Changes	1,943	60%	85	3%
Final Analysis Group	**1,943**	**60%**	**1,300**	**40%**

Table H-4 lists the attrition of standard track gas account nonparticipants from the various screens. From July 2024 through October 2024, there were 396 nonparticipant gas accounts with completed projects. The team removed approximately 31% of the accounts because billing data did not match, and there were insufficient months of billing data. They removed another 3% due to PRISM screening, large percentage changes, or participation in other offerings during the analysis period. An additional 1% attrition was due to individual billing review problems. The final analysis group involved 260 nonparticipants.

Table H-4. Standard Insulation and Air Sealing Gas Nonparticipant Account Attrition

Screen	Nonparticipants Remaining	Percentage Remaining	Number Dropped	Percentage Dropped
Original Gas Accounts	**396**	**100%**	**0**	**0%**
Matched to Billing Data Provided	354	89%	42	11%
Less than 10 Months of Pre- or Post-Period Billing Data	275	69%	79	20%
Usage/Percentage Change Screens + PRISM Screening	275	69%	0	0%
Participated in Other Offerings During Analysis Period	264	67%	11	3%
Individual Customer Bill Review: Outliers, Vacancies, Seasonal Usage, and Equipment Changes	260	66%	4	1%
Final Analysis Group	**260**	**66%**	**136**	**34%**

Table H-5 lists the attrition of income-qualified track gas account participants from the various screens. From January 2023 through June 2024, 538 participants received project completion or DIY gas measures. The team removed approximately 35% of the accounts because billing data did not match, and there were insufficient months of billing data.[11] The team removed another 10% because of participation in other offerings and an additional 3% due to individual billing review problems and because of PRISM screening or large percentage changes. The final analysis group involved 271 participants.

[11] Most of the attrition is from customers who installed measures before September 2022 or after February 2024, where there were insufficient pre- and post- period billing data.

Table H-5. Income-Qualified Insulation and Air Sealing Gas Participant Account Attrition

Screen	Participants Remaining	Percentage Remaining	Number Dropped	Percentage Dropped
Original Gas Accounts	**538**	**100%**	**0**	**0%**
Matched to Billing Data Provided	493	92%	45	8%
Less than 10 Months of Pre- or Post-Period Billing Data	346	64%	147	27%
Usage/Percentage Change Screens + PRISM Screening	342	64%	4	1%
Participated in Other Offerings During Analysis Period	287	53%	55	10%
Individual Customer Bill Review: Outliers, Vacancies, Seasonal Usage, and Equipment Changes	271	50%	16	3%
Final Analysis Group	**271**	**50%**	**267**	**50%**

Table H-6 lists the attrition of income-qualified track gas account nonparticipants from the various screens. From July 2024 through October 2024, 90 nonparticipant gas accounts had project completions. The team removed approximately 21% of accounts because billing data did not match, and from insufficient months of billing data. The team removed another 6% due to individual billing review problems and an additional 1% because they participated in other offerings during the analysis period. The final analysis group involved 65 nonparticipants.

Table H-6. Income-Qualified Insulation and Air Sealing Gas Nonparticipant Account Attrition

Screen	Nonparticipants Remaining	Percentage Remaining	Number Dropped	Percentage Dropped
Original Gas Accounts	**90**	**100%**	**0**	**0%**
Matched to Billing Data Provided	81	90%	9	10%
Less than 10 Months of Pre- or Post-Period Billing Data	71	79%	10	11%
Usage/Percentage Change Screens + PRISM Screening	71	79%	0	0%
Participated in Other Offerings During Analysis Period	70	78%	1	1%
Individual Customer Bill Review: Outliers, Vacancies, Seasonal Usage, and Equipment Changes	65	72%	5	6%
Final Analysis Group	**65**	**72%**	**25**	**28%**

Attrition for Insulation and Air Sealing Offering for Electric Accounts

Table H-7 lists the standard track electric account participants from the various screens. From January 2023 through June 2024, a total of 3,272 participants received project completion or DIY electric measures. The team removed approximately 35% of accounts because billing data did not match, and from insufficient months of billing data.[12] The team removed another 12% due to individual billing review problems and an additional 4% because they participated in other offerings or because they had

[12] Most of the attrition is from customers who installed measures before September 2022 or after February 2024, due to insufficient pre- and post- period billing data.

solar power during the analysis period. An additional 1% attrition was from PRISM screening and large percent changes. The final analysis group involved 1,576 participants.

Table H-7. Standard Insulation and Air Sealing Electric Participant Account Attrition

Screen	Participants Remaining	Percentage Remaining	Number Dropped	Percentage Dropped
Original Electric Accounts	**3,272**	**100%**	**0**	**0%**
Matched to Billing Data Provided	2,901	89%	371	11%
Less than 10 Months of Pre- or Post-Period Billing Data	2,105	64%	796	24%
Usage/Percentage Change Screens + PRISM Screening	2,086	64%	19	1%
Participated in Other Offerings During Analysis Period or had Solar	1,954	60%	132	4%
Individual Customer Bill Review: Outliers, Vacancies, Seasonal Usage, and Equipment Changes	1,577	48%	377	12%
Drop customers that received any other Insulation and Air Sealing measures other than Completion and DIY Measures	1,576	48%	1	0%
Final Analysis Group	**1,576**	**48%**	**1,696**	**52%**

Table H-8 lists the attrition of standard track electric account nonparticipants from the various screens. From July 2024 through October 2024, there were 396 nonparticipant electric accounts that had project completions. The team removed approximately 33% of accounts because billing data did not match, and there were insufficient months of billing data. The team removed another 4% because they participated in other offerings or because they had solar power during the analysis period, and an additional 2% because of individual billing review problems. The final analysis group involved 243 nonparticipants.

Table H-8. Standard Insulation and Air Sealing Electric Nonparticipant Account Attrition

Screen	Nonparticipants Remaining	Percentage Remaining	Number Dropped	Percentage Dropped
Original Electric Accounts	**396**	**100%**	**0**	**0%**
Matched to Billing Data Provided	354	89%	42	11%
Less than 10 Months of Pre- or Post-Period Billing Data	268	68%	86	22%
Usage/Percentage Change Screens + PRISM Screening	267	67%	1	0%
Participated in Other Offerings During Analysis Period or had Solar	251	63%	16	4%
Individual Customer Bill Review: Outliers, Vacancies, Seasonal Usage, and Equipment Changes	243	61%	8	2%
Final Analysis Group	**243**	**61%**	**153**	**39%**

Table H-9 lists the attrition of income-qualified track electric account participants from the various screens. From January 2023 through June 2024, 543 participants received project completion or DIY electric measures. The team removed approximately 38% of accounts because billing data did not match

and there were insufficient months of billing data.[13] The team removed another 12% because of individual billing review problems and an additional 7% because they participated in other offerings or because they had solar during the analysis period. An additional 1% attrition was due to PRISM screening, large percentage changes, and installations of insulation and air sealing measures other than the measures evaluated with the billing analysis. The final analysis group included 227 participants.

Table H-9. Income-Qualified Insulation and Air Sealing Electric Participant Account Attrition

Screen	Participants Remaining	Percentage Remaining	Number Dropped	Percentage Dropped
Original Electric Accounts	**543**	**100%**	**0**	**0%**
Matched to Billing Data Provided	476	88%	67	12%
Less than 10 Months of Pre- or Post-Period Billing Data	336	62%	140	26%
Usage/Percentage Change Screens + PRISM Screening	332	61%	4	1%
Participated in Other Offerings During Analysis Period or had Solar	294	54%	38	7%
Individual Customer Bill Review: Outliers, Vacancies, Seasonal Usage, and Equipment Changes	229	42%	65	12%
Drop customers that received any other Insulation and Air Sealing measures other than Completion and DIY Measures	227	42%	2	0%
Final Analysis Group	**227**	**42%**	**316**	**58%**

Table H-10 lists the attrition of income-qualified track electric account nonparticipants from the various screens. From July 2024 through October 2024, there were 90 nonparticipant electric accounts that had project completions. The team removed approximately 16% of accounts because the billing data did not match, and there were insufficient months of billing data. The team removed another 6% due to individual billing review problems. The final analysis group involved 68 nonparticipants.

[13] Most of the attrition is from customers who installed measures before September 2022 or after February 2024, due to insufficient pre- and post- period billing data.

Table H-10. Income-Qualified Insulation and Air Sealing Electric Nonparticipant Account Attrition

Screen	Nonparticipants Remaining	Percentage Remaining	Number Dropped	Percentage Dropped
Original Electric Accounts	**90**	**100%**	**0**	**0%**
Matched to Billing Data Provided	86	96%	4	4%
Less than 10 Months of Pre- or Post-Period Billing Data	75	83%	11	12%
Usage/Percentage Change Screens + PRISM Screening	73	81%	2	2%
Participated in Other Offerings During Analysis Period or had Solar	73	81%	0	0%
Individual Customer Bill Review: Outliers, Vacancies, Seasonal Usage, and Equipment Changes	68	76%	5	6%
Drop customers that received any other Insulation and Air Sealing measures other than Completion and DIY Measures	68	76%	0	0%
Final Analysis Group	**68**	**76%**	**22**	**24%**

Following all of these screens, the final gas analysis groups for the standard track included 1,943 participants (60% of the original total) and 260 nonparticipants (66% of the original total), and the income-qualified track included 271 participants (50% of the original total) and 65 nonparticipants (72% of the original total).

The final electric analysis groups for the standard track included 1,576 participants (52% of the original total) and 243 nonparticipants (39% of the original total), and the income-qualified track included 227 participants (58% of the original total) and 68 nonparticipants (24% of the original total).

From the screened billing analysis samples, the evaluation team summarized the PRISM average Difference in Normalized Annual Consumption (DNAC = PRENAC – POSTNAC) for participants and nonparticipants to yield the average gross savings for the offerings. The team also used the PRISM method to obtain the weather-normalized pre-installation period usage (PRENAC) to determine the percentage savings. The difference between the participant and nonparticipant percentage change in use yielded the adjusted gross savings.

Standard Track Billing Analysis Results

Electric Savings Results

Table H-11 shows the standard natural gas heat track gross and net realized electric savings, as estimated by the PRISM models, along with NTG rates and the standard errors around the savings estimates. The participant group reduced energy use by 782 kWh, or 8.5%. The nonparticipant group showed an increase in usage of 8 kWh, or 0.1%, over the same period. However, this change in usage was not statistically significant from 0 (relative precision was 1,788%). As a result, participant net savings are the same as the gross savings because the team did not make a nonparticipant adjustment.

Table H-11. Standard Insulation and Air Sealing
Gross and Net Electric Savings from Billing Analysis, Natural Gas

Group	n	*Ex Post* Model Savings (kWh)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Participant Gross	1,549	782	854	**92%**	6%	9,248	9.2%	8.5%
Nonparticipant	243	-8	N/A	**N/A**	1,788%	8,780	N/A	-0.1%
Participant Net	1,549	782	854	**92%**	6%	9,248	9.2%	8.5%

Table H-12 summarizes the standard natural gas heat track net electric savings overall and by quartile, based on consumption during the pre-installation period.[14] The average participant achieved net electric savings of 782 kWh. Compared to the *ex ante* savings estimate of 854 kWh, this represents a 92% NTG rate. With an average pre-installation period use of 9,248 kWh, the savings represent an approximate 8.5% reduction in consumption.

Table H-12. Standard Insulation and Air Sealing
Evaluated Electric Net Energy Savings by Quartile, Natural Gas

Group	n	*Ex Post* Model Savings (kWh)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Quartile 1	387	331	854	**39%**	12%	4,609	18.5%	7.2%
Quartile 2	387	566	854	**66%**	9%	7,107	12.0%	8.0%
Quartile 3	388	798	854	**93%**	9%	9,639	8.9%	8.3%
Quartile 4	387	1,434	854	**168%**	11%	15,637	5.5%	9.2%
Overall	**1,549**	**782**	**854**	**92%**	**6%**	**9,248**	**9.2%**	**8.5%**

The evaluation team also separated the gas-heated electric PRENAC uses into four quartiles. Net savings represent approximately 7% of pre-installation period consumption for the lowest quartile and 9% for the highest-use quartile. The *ex ante* expected consumption savings as a percentage of pre-installation period consumption ranged from 5% to 18%. Since the *ex ante* savings are based on an average value of 854 kWh from the previous billing analysis, they do not vary by quartile. Thus, it is not surprising that NTG rates range from 39% in the lowest quartile to 168% in the highest quartile.

Table H-13 presents the standard electric heat track gross and net realized electric savings, as estimated by the PRISM models, along with the NTG rates and the standard errors around the savings estimates. The electrically heated participant group reduced energy use by 1,831 kWh, or 10.5%. The nonparticipant group showed an increase in usage of 8 kWh, or 0.1%, over the same period. However, this change in usage was not statistically significant from 0 (relative precision was 1,788%). As a result,

[14] Quartiles are defined as equal groups of participants sorted by pre-installation period consumption (lowest to highest).

participant net savings are the same as the gross savings because the team did not apply a nonparticipant adjustment.

Table H-13. Standard Insulation and Air Sealing
Gross and Net Electric Savings from Billing Analysis, Electric

Group	n	*Ex Post* Model Savings (kWh)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Participant Gross	27	1,831	2,395	**76%**	30%	17,478	13.7%	10.5%
Nonparticipant	243	-8	N/A	**N/A**	1,788%	8,780	N/A	-0.1%
Participant Net[a]	27	1,831	2,395	**76%**	30%	17,478	13.7%	10.5%

Table H-14 summarizes the standard electric heat track net electric savings overall and by quartile, based on consumption during the pre-installation period.[15] The average participant achieved net electric savings of 1,831 kWh. Compared to the *ex ante* savings estimate of 2,395 kWh, this represents a 76% NTG rate. With an average pre-installation period use of 17,478 kWh, the savings represent an approximate 10.5% reduction in consumption.

The evaluation team also separated the electric heat PRENAC uses into four quartiles. Net savings represented ranged from 8% of pre-installation period consumption for the third quartile to 14% in the second quartile. The *ex ante* expected consumption savings as a percentage of pre-installation period consumption ranged from 7% to 33%. Since the *ex ante* savings are based on an average value of 2,395 kWh from the previous billing analysis, they do not vary by quartile. Thus, it is not surprising that the NTG rates are only 38% in the lowest quartile and 132% in the highest quartile.

Table H-14. Standard Insulation and Air Sealing
Evaluated Electric Net Energy Savings by Quartile, Electric

Group	n	*Ex Post* Model Savings (kWh)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Quartile 1	7	900	2,395	**38%**	56%	7,257	33.0%	12.4%
Quartile 2	7	1,787	2,395	**75%**	72%	12,670	18.9%	14.1%
Quartile 3	7	1,665	2,395	**70%**	55%	19,542	12.3%	8.5%
Quartile 4	6	3,164	2,395	**132%**	42%	32,603	7.3%	9.7%
Overall	**27**	**1,831**	**2,395**	**76%**	**30%**	**17,478**	**13.7%**	**10.5%**

[15] Quartiles are defined as equal groups of participants sorted by pre-installation period consumption (lowest to highest).

Gas Savings Results

Table H-15 presents the standard track gross and net gas savings, as estimated by the PRISM models, along with NTG rates and the standard errors around the savings estimates. The participant group reduced energy use by 124 therms or 12.8%. The nonparticipant group decreased energy use by 1 therm, or 0.1%, over the same period. However, this change in usage was not statistically significant from 0 (relative precision was 835%). As a result, participant net savings are the same as the gross savings because the insignificant nonparticipant adjustment was not applied.

As a result, participants achieved a net reduction of 124 therms in usage, or 13% savings.[16]

Table H-15. Standard Insulation and Air Sealing Gross and Net Gas Savings from Billing Analysis

Group	n	*Ex Post* Model Savings (therms)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Participant Gross	1,943	124	135	**92%**	3%	968	14.0%	12.8%
Nonparticipant	260	1	N/A	**N/A**	835%	930	N/A	0.1%
Participant Net	1,943	124	135	**92%**	3%	968	14.0%	12.8%

Table H-16 summarizes the net gas savings for the standard track, both overall and by quartile. On average, the standard track participant achieved net gas savings of 124 therms. Compared to the *ex ante* savings estimate of 135 therms, this represents a 92% NTG rate. With an average pre-installation period use of 968 therms, the savings correspond to an approximate 13% reduction in usage.

Table H-16. Standard Insulation and Air Sealing Evaluated Gas Net Energy Savings by Quartile

Group	n	*Ex Post* Model Savings (therms)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Quartile 1	486	62	135	**46%**	7%	560	24.1%	11.0%
Quartile 2	485	102	135	**75%**	5%	795	17.0%	12.8%
Quartile 3	486	125	135	**93%**	5%	1,000	13.5%	12.5%
Quartile 4	486	209	135	**155%**	6%	1,515	8.9%	13.8%
Overall	**1,943**	**124**	**135**	**92%**	**3%**	**968**	**14.0%**	**12.8%**

The evaluation team also separated the gas PRENAC uses into four quartiles. Net savings represented approximately 11% of pre-installation period consumption for the lowest quartile and 14% for the highest quartile. The *ex ante* expected savings as a percentage of pre-installation period consumption were as high as 24% for the first quartile (i.e., the lowest pre-installation period consumption) to 9% for the highest quartile. Thus, the realized savings were very low for the lowest quartile group, at only 46%

[16] The evaluation team checked the PRISM savings estimate against an alternate monthly fixed effects model specification using the average PRISM reference temperatures. The fixed effects models yielded a very similar net savings estimate of 121 therms, with a similar precision of 4%.

of claimed savings. For the highest consumption quartile, realized savings were 155% of claimed savings. The quartile variation in NTG results is expected, as the *ex ante* expected savings were set to an average of 135 therms based on the previous billing analysis (that is, there is no variation in *ex ante* expected savings by quartile).

Income-Qualified Billing Analysis Results

Electric Savings Results

Table H-17 lists the income-qualified gas heat track gross and net realized electric savings, as estimated by the PRISM models, along with NTG rates and the standard errors around the savings estimates. The gas heat participant group reduced energy use by 904 kWh, or 11%. The nonparticipant group showed a decrease in usage of 18 kWh, or 0.2%, over the same period. However, this change in usage was not statistically significant from 0 (relative precision was 1,638%). As a result, participant net savings are the same as the gross savings because the team did not apply a nonparticipant adjustment.

Table H-17. Income-Qualified Insulation and Air Sealing
Gross and Net Electric Savings from Billing Analysis, Natural Gas

Group	n	*Ex Post* Model Savings (kWh)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Participant Gross	200	904	945	**96%**	17%	8,213	11.5%	11.0%
Nonparticipant	68	18	N/A	**N/A**	1,638%	7,545	N/A	0.2%
Participant Net[a]	200	904	945	**96%**	17%	8,213	11.5%	11.0%

Table H-18 lists the income-qualified gas heat track net electric savings overall and by quartile. The average income-qualified participant achieved net electric savings of 904 kWh. Compared to the *ex ante* savings estimate of 945 kWh, this represents a 96% NTG rate. With an average pre-installation period use of 8,213 kWh, the savings represent an approximate 11% reduction in consumption.

Table H-18. Income-Qualified Insulation and Air Sealing
Evaluated Electric Net Energy Savings by Quartile, Natural Gas

Group	n	*Ex Post* Model Savings (kWh)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Quartile 1	50	365	945	**39%**	27%	3,835	24.6%	9.5%
Quartile 2	50	709	945	**75%**	19%	5,974	15.8%	11.9%
Quartile 3	50	892	945	**94%**	29%	8,694	10.9%	10.3%
Quartile 4	50	1,652	945	**175%**	28%	14,347	6.6%	11.5%
Overall	**200**	**904**	**945**	**96%**	**17%**	**8,213**	**11.5%**	**11.0%**

The team also separated the gas heat electric PRENAC uses into four quartiles. Net savings represent approximately 9% of pre-installation period consumption for the lowest quartile and 11% to 12% for the two highest quartiles.

The *ex ante* expected consumption savings as a percentage of pre-installation period consumption ranged from 7% to 25%. The realized savings were low for the lowest quartile group, achieving only 39% of claimed savings. In contrast, the highest consumption quartiles realized savings of 175% of claimed savings. Since the *ex ante* savings were based on an average of 945 kWh from the previous billing analysis, they did not vary by quartile. Thus, it is not surprising that the NTG rates are only 39% in the lowest quartile and 175% in the highest quartile.

There was only one electric heat income-qualified participant, which was not a sufficient sample to determine savings.[17] Consequently, the evaluation team could not determine separate income-qualified results. As such, the team applied the standard track electric heat NTG of 76% (see Table H-13) to electric income-qualified participants.

Table H-19 lists the income-qualified gas heat track gross and net realized DIY savings, as estimated by the PRISM models, along with NTG rates and the standard errors around the savings estimates. The gas heat participant group reduced energy use by 266 kWh, or 3.5%. The nonparticipant group showed a decrease in usage of 18 kWh, or 0.2%, over the same period. However, this change in usage was not statistically significant from 0 (relative precision was 1,638%). As a result, participant net savings are the same as the gross savings because the team did not apply a nonparticipant adjustment. The team did not develop quartile-level savings for this group because of poor overall precision levels (61%) and low percentage savings. The final net NTG for this measure is 49%.

Table H-19. Income-Qualified Insulation and Air Sealing
Gross and Net Electric Savings from Billing Analysis, DIY Natural Gas

Group	n	*Ex Post* Model Savings (kWh)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Participant Gross	27	266	543	**49%**	61%	7,562	7.2%	3.5%
Nonparticipant	68	18	N/A	**N/A**	1,638%	7,545	N/A	0.2%
Participant Net [a]	27	266	543	**49%**	61%	7,562	7.2%	3.5%

Gas Savings Results

Table H-20 presents the income-qualified track gross and net realized gas savings, as estimated by the PRISM models, along with NTG rates and the standard errors around the savings estimates. The participant group reduced usage by 144 therms or 14.6%. Though the nonparticipant group increased

[17] The team did not include the electric heat Income-qualified participant group in a feasible analysis and therefore it does not appear in the final analysis group attrition counts (i.e., counts for income-qualified electric only include homes heated with gas).

usage by 3 therms, or 0.3% savings, over the same period, this change in usage was not statistically significant from 0 (relative precision was 819%). As a result, participant net savings are the same as the gross savings because the team did not apply a nonparticipant adjustment. As such, the participant group achieved a net reduction of 144 therms in usage, or 15% savings.[18]

Table H-20. Income-Qualified Insulation and Air Sealing Gross and Net Gas Savings from Billing Analysis

Group	n	*Ex Post* Model Savings (therms)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Participant Gross	240	144	186	**78%**	10%	986	18.9%	14.6%
Nonparticipant	65	-3	N/A	**N/A**	819%	944	N/A	-0.3%
Participant Net [a]	240	144	186	**78%**	10%	986	18.9%	14.6%

Table H-21 summarizes the income-qualified track net savings overall and by quartile. The average income-qualified participant achieved net gas savings of 144 therms. Compared to the *ex ante* savings estimate of 186 therms, this represents a 78% NTG rate. With an average pre-installation period use of 986 therms, the savings represent an approximate 15% reduction in consumption.

Table H-21. Income-Qualified Insulation and Air Sealing Evaluated Gas Net Energy Savings by Quartile

Group	n	*Ex Post* Model Savings (therms)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Quartile 1	60	79	186	**43%**	12%	511	36.4%	15.5%
Quartile 2	60	100	186	**54%**	17%	750	24.8%	13.4%
Quartile 3	60	144	186	**77%**	15%	1,025	18.1%	14.1%
Quartile 4	60	254	186	**137%**	17%	1,657	11.2%	15.3%
Overall	**240**	**144**	**186**	**78%**	**10%**	**986**	**18.9%**	**14.6%**

The team also separated the gas PRENAC uses into four quartiles. Net savings range from approximately 13% to 14% in the second and third quartiles to 15% of pre-installation period consumption for the lowest quartile and the highest-use quartile. The *ex ante* expected consumption savings as a percentage of pre-installation period consumption were as high as 36% for the first quartile (i.e., lowest pre-installation period consumption) to 11% for the highest quartile. Thus, the realized savings were very low for the lowest quartile, at only 43% of *ex ante* savings, whereas for the highest consumption quartile, realized savings were 137% of *ex ante* savings. The quartile variation in NTG results was

[18] The evaluation team checked the PRISM savings estimate against an alternate monthly fixed effects model specification using the average PRISM reference temperatures. The fixed effects models yielded a very similar net savings estimate of 140 therms, with a similar precision of ±10%.

expected since the *ex ante* expected savings were set to an average of 186 therms based on the previous billing analysis (that is, there was no variation in *ex ante* expected savings by quartile).

Table H-22 presents the income-qualified track gross and net realized gas savings for DIY installs, as estimated by the PRISM models, along with NTG rates and the standard errors around the savings estimates. The participant group reduced usage by 84 therms, or 9.9%. Though the nonparticipant group increased usage by 3 therms, or 0.3% savings, over the same period, this change in usage was not statistically significant from 0 (relative precision was 819%). As a result, participant net savings are the same as the gross savings because the team did not apply a nonparticipant adjustment. As such, the participant group achieved a net reduction of 84 therms in usage, or 10% savings.

Table H-22. Income-Qualified DIY Insulation and Air Sealing Gross and Net Gas Savings from Billing Analysis

Group	n	*Ex Post* Model Savings (therms)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Participant Gross	31	84	101	**83%**	24%	848	11.91%	9.9%
Nonparticipant	65	-3	N/A	**N/A**	-819%	944	N/A	-0.3%
Participant Net [a]	31	84	101	**83%**	24%	848	11.91%	9.9%

Table H-23 summarizes the income-qualified track net savings overall and by quartile for the DIY installs. The average income-qualified DIY participant achieved net gas savings of 84 therms. Compared to the *ex ante* savings estimate of 101 therms, this represents an 83% NTG rate. With an average pre-installation period use of 848 therms, the savings represent an approximate 10% reduction in consumption.

Table H-23. Income-Qualified DIY Insulation and Air Sealing Evaluated Gas Net Energy Savings by Quartile

Group	n	*Ex Post* Model Savings (therms)	*Ex Ante* Savings per Participant	NTG Rate	Precision at 90% Level	PRENAC	*Ex Ante* Expected Percent Savings	*Ex Post* Percent Savings
Quartile 1	7	62	101	62%	44%	475	21.2%	13.1%
Quartile 2	8	64	101	63%	33%	652	15.5%	9.7%
Quartile 3	8	100	101	99%	31%	802	12.6%	12.4%
Quartile 4	8	108	101	107%	60%	1,416	7.1%	7.6%
Overall	**31**	**84**	**101**	**83%**	**24%**	**848**	**11.9%**	**9.9%**

The team also separated the gas PRENAC uses into four quartiles. Net savings range from approximately 8% in the highest-use quartile to 13% in the lowest-use quartile. The *ex ante* expected consumption savings as a percentage of pre-installation period consumption were as high as 21% for the first quartile (i.e., lowest pre-installation period consumption) to 7% for the highest quartile. Thus, the realized savings were very low for the lowest quartile, at only 62% of *ex ante* savings, whereas for the highest

consumption quartile, realized savings were 107% of *ex ante* savings. The quartile variation in NTG results was expected since the *ex ante* expected savings were set to the average of 101 therms based on the previous billing analysis (that is, there is no variation in *ex ante* expected savings by quartile).

Summary Billing Analysis Results

The following section summarizes the billing analysis findings for the evaluated completion and DIY measure groups.

Billing Analysis for Electric Savings

The evaluation team used PRISM models to estimate NTG rates and the standard errors around the savings estimates for each offering. Table H-24 shows the *ex ante* and verified electric net energy savings as well as the NTG rates for each track. The PRENAC variable in the table represents the pre-installation weather-normalized usage.

Table H-24. Insulation and Air Sealing Offering
Verified Electric Net Energy Savings from Billing Analysis

Track	Measure	*Ex Ante* Savings per Participant (kWh)	Verified Net Model Savings (kWh)	NTG	PRENAC	*Ex Ante* Savings Per Customer	Verified Savings Per Customer
Standard	Gas Heat Completion	854	782	92%	9,248	9.2%	8.5%
Standard	Electric Heat Completion	2,395	1,831	76%	17,478	13.7%	10.5%
Standard	DIY Install	N/A	N/A	49%[a]	N/A	N/A	N/A
Income-Qualified	Gas Heat Completion	945	904	96%	8,213	11.5%	11.0%
Income-Qualified	Electric Heat Completion	N/A	N/A	76%[b]	N/A	N/A	N/A
Income-Qualified	DIY Install	543	266	49%	7,562	7.2%	3.5%

[a] Since there was only one standard track DIY install, the team could not calculate a separate NTG ratio. Instead, the team applied the NTG ratio from the income-qualified track to the standard track.

[b] Since there was only one electric heat income-qualified participant in the analysis sample, the team could not calculate a separate NTG ratio. Instead, the team applied the NTG ratio from the standard track to the income-qualified track.

On average, standard track completion participants with gas heat saved 782 kWh, compared to the *ex ante* savings estimate of 854 kWh. This represents an NTG of 92% and an 8.5% reduction in usage from the pre-installation period. Standard track participants with electric heat saved 1,831 kWh, compared to the *ex ante* savings estimate of 2,395 kWh. This represents an NTG of 76% and a 10.5% reduction in usage from the pre-installation period.

On average, income-qualified completion participants with gas heat saved 904 kWh, compared to the *ex ante* savings estimate of 945 kWh. This represents an NTG of 96% and an 11% reduction in usage from the pre-installation period. Income-qualified participants with DIY installations saved 266 kWh, compared to the *ex ante* savings estimate of 543 kWh. This represents an NTG of 49% and a 3.5% reduction in usage from the pre-installation period.

Billing Analysis for Gas Savings

The evaluation team used PRISM models to estimate NTG and the standard errors around the savings estimates for each offering track. Table H-25 shows the *ex ante* and verified electric net energy savings as well as the NTG rates for each track.

On average, standard completion participants saved 124 therms. Compared to the *ex ante* savings estimate of 135 therms, this represents an NTG of 92%. With an average pre-installation period usage of 968 therms, the savings represent an approximate 13% reduction in consumption.

On average, income-qualified completion participants saved 144 therms. Compared to the *ex ante* savings estimate of 186 therms, this represents an NTG of 78%. With an average pre-installation period usage of 986 therms, the savings represent an approximate 15% reduction in consumption.

On average, income-qualified DIY install participants saved 84 therms. Compared to the *ex ante* savings estimate of 101 therms, this represents an NTG of 83%. With an average pre-installation period usage of 848 therms, the savings represent an approximate 10% reduction in consumption.

Table H-25. Home Performance with ENERGY STAR®
***Ex Ante* and Verified Natural Gas Net Energy Savings from Billing Analysis**

Track	Measure	*Ex Ante* Savings per Participant (therms)	Verified Net Model Savings (therms)	NTG	PRENAC (therms)	*Ex Ante* Expected Savings Per Customer	Verified Savings Per Customer
Standard	Completion	135	124	92%	968	14.0%	12.8%
Standard	DIY Install	N/A	N/A	83%[a]	N/A	N/A	N/A
Income-Qualified	Completion	186	144	78%	986	18.9%	14.6%
Income-Qualified	DIY Install	101	84	83%	848	11.9%	9.9%

[a] Since there was only one standard track DIY install, the team applied the income-qualified DIY NTG to the standard track.

NTG Rates

Table H-26 lists NTG rates and precision achieved for each analysis in CY 2023. The team applied these results to the CY 2024 projects.

Table H-26. CY 2023 Insulation and Air Sealing Billing Analysis Results Applied to CY 2024 Projects

Track	Measure	Savings Type	NTG	Precision at 90% Confidence
Standard	Natural Gas Heat Completion	Electricity	92%	±17%
Standard	Natural Gas Heat Completion	Natural Gas	92%	±3%
Standard	Natural Gas Heat Only Completion	Natural Gas	92%	±3%
Standard	Electric Heat Completion	Electricity	76%	±30%
Standard	DIY Install [a]	Electricity	49%	±61%
Standard	DIY Install [a]	Natural Gas	83%	±24%
Income-Qualified	Natural Gas Heat Completion	Electricity	96%	±17%
Income-Qualified	Natural Gas Heat Completion	Natural Gas	78%	±10%
Income-Qualified	Natural Gas Heat Only Completion	Natural Gas	78%	±10%

Track	Measure	Savings Type	NTG	Precision at 90% Confidence
Income-Qualified	Electric Heat Completion [b]	Electricity	76%	±30%
Income-Qualified	DIY Install	Electricity	49%	±61%
Income-Qualified	DIY Install	Natural Gas	83%	±24%

[a] The team applied the income-qualified DIY realization NTG rates because of the small analysis sample size.

[b] The team applied the standard track electric heat realization NTG rate because of the small sample size.

Self-Report Net-to-Gross Methodology

Two components—freeridership and participant spillover—constitute NTG. True freeriders are customers who would have purchased a measure without an offering's influence. Participant spillover is the savings obtained by customers investing in additional energy-efficient measures or activities specified in the TRM because of their program participation.

This section presents the self-report approaches the evaluation team used to determine NTG for CY 2024 residential and nonresidential offerings. In summary, the team conducted participant surveys and used self-reported findings to calculate NTG ratios. It then applied these results to measure categories and offerings for which adequate baseline data were unavailable.

Survey Design

To assess NTG for surveyed offerings, the evaluation team asks a series of freeridership and spillover questions. The evaluation team combines two types of freeridership to align with industry best practices:

- *Intention* freeridership relies on customers' self-reported intention to purchase a measure in the absence of the offering. Survey items that addressed the offering's effect on the efficiency, quantity, and timing of purchases.
- *Influence* freeridership relies on the influence of offering elements on the customer's decision to purchase a measure (e.g., Focus on Energy incentives, staff recommendations, or educational materials about energy efficiency).

The team estimates an *intention* freeridership score and an *influence* freeridership score, ranging from 0% to 100% for each surveyed participant for each offering. Offering-level *intention* and *influence* freeridership scores are then calculated by weighting the individual freeridership component scores by respondents' verified lifecycle gross savings.

By saving-weighting the *intention* methodology with an *influence* methodology, the evaluation team produces a freeridership score for the offering. The team calculates the arithmetic mean of *intention* and *influence* freeridership components to estimate the final freeridership for the offering, as shown in the following equation:

$$\text{Final Freeridership} = \frac{Intention\ \text{FR Score} + Influence\ \text{FR Score}}{2}$$

The *intention* freeridership questions are designed to elicit as accurately as possible the impact of a particular offering on the respondent's decision to purchase high-efficiency equipment. Offerings can influence customer decisions in a variety of ways: participants may decide to purchase an energy-efficient measure sooner than planned, purchase a higher efficiency measure than planned, or purchase more units than planned without the offering. To understand the influence of the offering, the survey asks questions about what decision-makers might have done in its absence.

Direct questions such as, "Would you have installed measure X without the offering incentive?" tend to result in exaggerated *yes* responses. Participants often provide answers they believe surveyors seek, so such a question becomes the equivalent of asking: "Would you have done the right thing on your own?" Effectively avoiding such bias involves asking a question in several different ways and checking for consistent responses.

Basing *intention* freeridership estimates on a series of questions rather than a single question helps the evaluation team recognize and minimize response biases. Not all questions are weighted equally. For example, respondents who would not have installed the measure(s) to the same level of efficiency without the offering are automatically 0% *intention* freeriders. If nonresidential participants would not have installed the measure(s) within two years without the offering, they are automatically 0% *intention* freeriders. The team assigns other questions included in the *intention* freeridership analysis partial weights for responses that are indicative of a non-freerider.

The survey questions address five core dimensions of *intention* freeridership for residential offerings and six core intention freeridership dimensions for nonresidential offerings, as listed below:

- Would participants have installed measures without the offering?
- Were participants planning on purchasing or installing the measures before learning about the offering?
- Would participants have installed the measures at the same efficiency levels without the offering incentive?
- Would participants have installed the same quantity of efficient measures without the offering?
- In the absence of the offering, would participants have installed the measures at a different time?
- Was the purchase of the measures in the organization's most recent capital budget (nonresidential only)?

Specific intention freeridership questions used for the offerings are presented in their individual analysis sections in this appendix.

Persistent conjecture in the industry indicates that intention self-reports may be subject to biases, yielding an inflated freeridership value. To address this possibility and to provide a triangulation of approaches to the estimate, the evaluation team integrates a second set of survey questions designed to measure the offering's perceived influence on the respondents' purchasing decisions.

To estimate offering influence, the survey asks respondents to rate the influence of five offering elements on their purchasing decisions. Responses are captured using a 1 to 5 scale, with 1 meaning *not at all important* and 5 meaning *very important*. A surveyed participant's overall influence rating equals the maximum influence of any single offering element. This draws upon an underlying principle: if a single element had a substantial influence on a respondent's purchasing decision, the offering has successfully influenced the respondent.

Intention Freeridership Methodology

To assess freeridership, the team uses a probability matrix to assign a single *intention* freeridership score to each participant, using his or her responses to targeted survey questions.[19] The team then applies *intention* freeridership scores to question response patterns in the probability matrix.

This matrix approach provides these key benefits:

- Derivation of a partial *intentio*n freeridership score, based on the likelihood of a respondent taking similar actions in the offering's absence
- Use of a rules-based approach for consistency among multiple respondents
- Ability to change weightings in a "what-if" exercise, testing the response set's stability

The evaluation team's method offers the advantage of partial *intention* freeridership. Experience has shown that participants do not fall neatly into freerider and non-freerider categories. For example, the team assigns partial *intention* freeridership scores to participants who have plans to install a measure; that is, although the offering exerts some influence over their decisions, these respondents are also influenced by other market factors outside of the offering. Further, the team can assign partial credit to "don't know" and "refused" responses rather than removing respondents entirely from the analysis.

Next, the evaluation team converts each participant's survey response into *intention* freeridership matrix terminology, combines each participant's converted responses to assign an *intention* freeridership score from the matrix, and aggregates all participants into an average *intention* freeridership score for the entire offering category, ultimately assessing *intention* freeridership at three different levels.

Response Conversion to Matrix Terminology

The evaluation team independently evaluates each response, assesses it for *intention* freeridership, and converts it into one of these values:

- Yes (indicative of freeridership)
- No (indicative of non-freeridership)
- Partial (indicative of partial freeridership)

[19] Khawaja, M. S. 2007 edition. *The N/APEE Handbook on DSM (Demand-Side Management) Evaluation.* p. 5-1.

Participant Intention Freeridership Scoring

Following conversion of survey responses into matrix terminology, the team created an *intention* freeridership matrix for each offering. The team's process for determining an *intention* freeridership score is as follows:

- Categorize customers as 0% intention freeriders in these instances:
  - They had no plans to install the measure in the absence of the offering's incentives and would not have installed the measure within a year for residential offerings and within two years for nonresidential offerings.
  - They had specific plans to install the measure before learning about the offering, but would not have done so without offering incentives.
  - In the absence of offering incentives, the customer would not have purchased or installed equipment to the same level of efficiency.
- Categorize customers as 100% *intention* freeriders if they would have installed the measure without the offering or if they had installed the measure before learning about the offering.
- Assign customers a partial *intention* freeridership score (ranging from 12% to 75%) if they had plans to install the measure and their decision was influenced by the offering. (This influence may have been installation timing, the number of measures installed, or the efficiency levels of measures installed.) For customers who are highly likely to install a measure and for whom the offering had less influence over their decision, apply a higher *intention* freeridership percentage.

Measure Category *Intention* Freeridership Scoring

After assigning an *intention* freeridership score to every survey respondent, the evaluation team calculates a savings-weighted average *intention* freerider score for the measure category. For each offering, the respondents' *intention* freerider scores are individually weighted by estimated savings of equipment installed using the following calculation:

$$\text{Savings Weighted } \textit{Intention} \text{ Freeridership} = \frac{\sum[\text{Respondent } \textit{Intention} \text{ Freerider Score}] * [\text{Verified Measure Lifecycle Gross Energy Savings}]}{\sum[\text{All Respondents Verified Measure Lifecycle Gross Energy Savings}]}$$

Influence Freeridership Methodology and Scoring

To estimate an *influence* freeridership score, the survey asks respondents to rate the importance of offering elements on their purchasing decisions. The surveys capture responses using a five-point scale, with 1 meaning *not at all important* and 5 meaning *very important*. A surveyed participant's overall influence rating equals the maximum importance of any single offering element. This methodology assumes that if a single element had a substantial influence on a respondent's purchasing decision, the offering successfully influenced the respondent.

For example, Table H-27 shows a set of questions to capture respondents' perspectives on elements driving them to take energy-efficient actions.[20] In this example, the influence rating would be a 5 because the offering's maximum influence was a 5 for "The Focus on Energy incentive or discount."

Table H-27. Example of Influence Freeridership Component Question

I'm going to read a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was *not at all important* and 5 meaning the factor was *very important* in your decision to purchase the energy-efficient [MEASURE][s].							
Rate Influence of Offering Elements							
	1 - Not at all important	**2**	**3**	**4**	**5 - Very important**	**Don't Know**	**Not Applicable**
The Focus on Energy incentive or discount	1	2	3	4	(5)	DK	N/A
Recommendation from Focus on Energy Staff	1	2	3	(4)	5	DK	N/A
Information provided by Focus on Energy on energy-saving opportunities	1	2	3	4	5	(DK)	N/A
Recommendation from contractor or vendor	1	(2)	3	4	5	DK	N/A
Previous participation in a Focus on Energy efficiency offering	1	2	(3)	4	5	DK	N/A

High offering-influence ratings and influence freeridership maintain an inverse relationship: the greater the offering's influence rating, the lower the participant's final influence freeridership score. Table H-28 presents the freeridership level implied by each influence rating.

Table H-28. *Influence* Freeridership Implied by Response to Influence Items

Influence Rating	*Influence* Freeridership Score
1 - *Not at all important*	100%
2	75%
3	50%
4	25%
5 - *Very important*	0%
Don't know	50%
Not applicable	50%

[20] The question wording and program factors in surveys may vary slightly depending on the specific program component. The *Influence Freeridership Analysis* sections in the specific program chapters list factors included for each specific program component.

Measure Category *Influence* Freeridership Scoring

After assigning an *influence* freeridership score to every survey respondent, the evaluation team calculates a savings-weighted average *influence* freerider score for the measure category. For each offering, the respondents' *influence* freerider scores are individually weighted by estimated savings of equipment installed using the following calculation:

$$\text{Savings Weighted Influence Freeridership} = \frac{\sum[\text{Respondent } Influence \text{ Freerider Score}] * [\text{Verified Measure Lifecycle Gross Energy Savings}]}{\sum[\text{All Respondents Verified Measure Lifecycle Gross Energy Savings}]}$$

Spillover Methodology

Spillover refers to additional savings generated by offering participants following their participation but not captured by offering records. Spillover occurs when participants choose to purchase energy-efficient measures or adopt energy-efficient practices because of an offering's influence, but they do not receive offering incentives from a utility or another organization.

The evaluation team measures spillover by asking a sample of participants who purchased and received an incentive for a particular measure if they installed another efficient measure or undertook another energy efficiency activity because of the offering. Respondents rate the offering's (and incentive's) relative influence (either *very important*, *somewhat important*, *neutral, not too important*, or *not at all important*) on their decisions to pursue additional savings.

Participant Spillover Analysis

The evaluation team uses a top-down approach to calculate spillover savings. The team starts the analysis with a subset of survey respondents who indicated they had installed additional energy-saving measures after participating in the offering and screens out any respondents who received an incentive for these additional measures. Respondents are only removed if they indicate the offering had little influence on their decisions to purchase additional measures.

The evaluation team applies evaluated and deemed savings to the spillover measures respondents said they had installed as a result of their participation. To calculate a spillover percentage per offering category, the team divides the sum of additional spillover savings reported by respondents by total gross savings achieved by all respondents in the offering category, as in the following equation:

$$Spillover\ \% = \frac{\sum \text{Spillover Measure Lifecycle Gross Energy Savings for All Survey Respondents}}{\sum \text{Offering Measure Verified Lifecycle Gross Energy Savings}}$$

Net-to-Gross Analysis

The evaluation team combines this spillover information with the offering-level freeridership results to achieve the NTG ratio using the following calculation:

NTG = 100% – Freeridership + Spillover

CY 2024 Self-Reported Freeridership, Spillover, and NTG Results

Table H-29 lists CY 2024 participants' self-reported freeridership, spillover, and NTG results. The following sections provide additional detail about the methodology and results for each offering.

Table H-29. CY 2024 Self-Report Participant Freeridership, Spillover, and NTG by Offering

Offering	Measure	n	Freeridership [a]	Spillover	NTG
Residential Offerings					
Online Marketplace	Advanced Power Strip	20	21%	1%	80%
	Air Purifier	6	25%	1%	76%
	Showerhead	208	18%	1%	83%
	Shower Start	24	6%	1%	95%
	Faucet Aerator	38	25%	1%	76%
	Pipe Insulation	42	16%	1%	85%
	Door Sweep	64	22%	1%	79%
	Door Weatherstripping	54	14%	1%	87%
	Window Weatherstripping	54	17%	1%	84%
	Window Film	7	21%	1%	80%
	Outlet Gaskets	11	13%	1%	88%
	Smart Thermostats	98	21%	4%	13%
Packs	Door Sweep	77	20%	2%	82%
	Outlet Gasket	100	9%	2%	93%
	Switch Gasket	89	8%	2%	94%
	Weatherstripping	106	26%	2%	76%
	Window Film Insulation	39	41%	2%	61%
	Showerhead	120	22%	2%	80%
	Handheld Showerhead	81	15%	2%	87%
	Pipe Wrap	155	23%	2%	79%
	Water Heater Temperature Card/Turned Down Temperature	85	31%	2%	71%
Renewable Rewards (Residential)	Solar PV	199	46%	0%	54%
Residential New Construction	Manufactured Homes	3	89%	0%	11%
Nonresidential Offerings					
Renewable Rewards (Business)	Solar PV	14	26%	0%	74%

[a] Weighted by CY 2024 verified lifecycle MMBtu gross energy savings.

Online Marketplace, Smart Thermostats

The evaluation team applied slightly different approaches to calculate NTG for smart thermostats and non-thermostat measures in the Online Marketplace offering.

Freeridership – Smart Thermostats

Intention Freeridership Survey Questions

The participant survey's *intention* freeridership section included four questions that address four core freeridership dimensions of the online marketplace smart thermostat offering:

- F14. Before you heard about the Focus on Energy discount, had you already considered purchasing a smart thermostat?
- F15. Without the discount from Focus on Energy, what kind of thermostat would you have purchased and installed?
- F16. Would you have purchased the same quantity of smart thermostats without the discount from Focus on Energy?
- F17. Thinking about timing, without the Focus on Energy discount, when would you have purchased and installed the smart thermostat?

Convert Responses to Matrix Terminology

Table H-30 shows how the initial survey responses were translated into the responses *yes, no*, or *partially* indicative of *intention* freeridership (in parentheses).

Table H-30. Online Marketplace, Smart Thermostats
Raw Survey Response Translation to *Intention* Freeridership Scoring Matrix Terminology

F14. Before you heard about the Focus on Energy discount, had you already considered purchasing a smart thermostat?	F15. Without the discount from Focus on Energy, what kind of thermostat would you have purchased and installed?	F16. [ASK IF C_ TSTAT > 1] Would you have purchased the same quantity of smart thermostats without the discount from Focus on Energy?	F17. Thinking about timing, without the Focus on Energy discount, when would you have purchased and installed the smart thermostat?
Yes (Yes)	A smart or learning thermostat (Yes)	Yes, the same quantity (Yes)	At the same time (Yes)
No (No)	A Wi-Fi thermostat (non-learning) (Partial2)	No, would have purchased fewer (Partial2)	Later, but within 12 months (Partial2)
Don't Know (Partial)	A programmable thermostat (No)	No, would have purchased more (Yes)	One to two years out (No)
	A manual thermostat (No)	No, would not have purchased anything at all (No)	More than two years out (No)
	Would not have purchased a new thermostat (No)	Don't Know (Partial)	Never (No)
	Don't Know (Partial)		Don't Know (Partial)

Participant Intention Freeridership Scoring

The *intention* freeridership score started with 100%, which the evaluation team decremented based on the participant's responses to the four questions, as shown in Table H-31.

Table H-31. Online Marketplace, Smart Thermostats
***Intention* Freeridership Scoring Legend**

Question Number	Decrement
F14	50% decrement for "No," 25% decrement for "Partial"
F15	100% decrement for "No," 25% decrement for "Partial," 50% decrement for 'Partial2'
F16	100% decrement for "No," 25% decrement for "Partial," 50% decrement for 'Partial2'
F17	100% decrement for "No," 25% decrement for "Partial," 50% decrement for 'Partial2'

Intention Freeridership Analysis

Table H-32 shows the unique response combinations from Online Marketplace smart thermostat participants to the *intention* freeridership questions (actual responses mapped to *yes*, *no*, or *partial*, as indicative of freeridership), the *intention* freeridership score assigned to each combination, and the number of responses. The team calculated an *intention* freeridership score for the smart thermostat measure based on the savings-weighted average of the distribution of scores within the matrix.

Table H-32. Online Marketplace, Smart Thermostats
Frequency of *Intention* Freeridership Scoring

F14. Before you heard about the Focus on Energy discount, had you already considered purchasing a smart thermostat?	F15. Without the discount from Focus on Energy, what kind of thermostat would you have purchased and installed?	F16. [ASK IF C_ TSTAT > 1] Would you have purchased the same quantity of smart thermostats without the discount from Focus on Energy?	F17. Thinking about timing, without the Focus on Energy discount, when would you have purchased and installed the smart thermostat?	*Intention* Freerider Score	Count
Yes	Yes	-	Yes	100%	8
Yes	Yes	-	Partial2	50%	8
Yes	Yes	-	Partial	75%	4
Yes	Yes	-	No	0%	5
Yes	Partial	-	Partial2	25%	2
Yes	Partial	-	Partial	50%	1
Yes	Partial	-	No	0%	1
Yes	Partial	Partial	Partial	25%	1
Yes	Partial	Partial	No	0%	1
Yes	Partial2	Yes	Yes	50%	1
Yes	Partial2	Yes	Partial2	0%	1
Yes	Partial2	-	Yes	50%	8
Yes	Partial2	-	Partial2	0%	5
Yes	Partial2	-	Partial	25%	1
Yes	Partial2	-	No	0%	3
Yes	Partial2	No	x	0%	1
Yes	No	-	Partial2	0%	46
Partial	No	-	-	0%	1

Table H-33 shows the Online Marketplace offering smart thermostat *intention* freeridership score.

Table H-33. Online Marketplace, Smart Thermostats
***Intention* Freeridership Results**

Measure Category	n	*Intention* FR Score
Smart Thermostat	98	21% [a]

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Influence Freeridership Analysis

The evaluation team assessed *influence* freeridership by asking participants how important various offering elements were in their purchasing decisions. Table H-34 shows how participants rated the importance, along with a count and average rating for each factor.

Table H-34. Online Marketplace, Smart Thermostats
***Influence* Freeridership Responses**

Influence Rating	Influence FR Score	The Focus on Energy instant discount	Recommendation from Focus on Energy Staff	Information provided by Focus on Energy about energy savings opportunities	Recommendation from a store representative, dealer, or contractor	Previous participation in a Focus on Energy energy-efficiency offering or program
1 - Not at all important	100%	0	40	6	58	11
2	75%	0	5	5	6	3
3	50%	3	24	18	15	19
4	25%	17	19	26	11	25
5 - Very important	0%	78	10	43	8	40
Average Rating		**4.8**	**2.5**	**4.0**	**2.0**	**3.8**

The evaluation team determined each respondent's *influence* freeridership score for each measure category, using the maximum rating provided for any factor included in Table H-34. As shown in Table H-35, the respondents' maximum influence ratings ranged from 1 (*not at all important*) to 5 (*very important*). A maximum score of 1 means the customer ranked all factors from the Table as *not at all important*, while a maximum score of 5 means the customer ranked at least one factor *very important*. Counts refer to the number of "maximum influence" responses for each factor, or *influence* freeridership score, response option.

Table H-35. Online Marketplace, Smart Thermostats
***Influence* Freeridership Score**

Maximum Influence Rating	Influence FR Score	Count
1 - Not at all important	100%	0
2	75%	0
3	50%	1
4	25%	9
5 - Very important	0%	88
Average Maximum Influence Rating - Simple Average		**4.9**
Average Influence FR Score - Weighted by Verified Lifecycle MMBtu Gross Savings		**4%**

Final Freeridership

The evaluation team calculated the mean of the overall intention and the overall influence of freeridership components to estimate the final freeridership for the smart thermostat measure category. A higher freeridership score means more savings are deducted from the gross savings estimates. Table H-36 lists intention, influence, and final freeridership scores for smart thermostats in the Online Marketplace offering.

Table H-36. Online Marketplace, Smart Thermostats
Freeridership Score

Measure Category	n	Intention FR Score	Influence FR Score	Final FR Score
Smart Thermostats	98	21%[a]	4%[a]	13%

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Freeridership – Non-thermostat Measures

Intention Freeridership Survey Questions

The participant surveys included the following *intention* freeridership question that collected measure-specific responses for non-thermostat measures:

- E13/P11/G10/Q10/H10/I10/J10/L11/N11/R11/M11/O16. If the Focus on Energy discount had not been available, would you have purchased and installed efficient [MEASURE]s for your home within 12 months?

Table H-37 shows how the initial survey responses were translated into the responses *yes, no*, or *partially,* as indicative of freeridership (in parentheses).

Table H-37. Online Marketplace, Non-Thermostat Measures
Raw Survey Response Translation to *Intention* Freeridership Scoring Matrix Terminology

E13/P11/G10/Q10/H10/I10/J10/L11/N11/R11/M11/O16. If the Focus on Energy discount had not been available, would you have purchased and installed efficient [MEASURE]s for your home within 12 months?
Yes, at the same time (Yes)
Yes, later, but within the next 12 months (Partial)
No, not within 12 months (No)
No, already had them in all available locations (Yes)
Don't Know (Partial)

Participant Intention Freeridership Scoring

Each *intention* freeridership score started at 100%, which the evaluation team decremented based on the participant's responses, shown in Table H-38.

Table H-38. Online Marketplace, Non-Thermostat Measures
***Intention* Freeridership Scoring Legend**

Question Number	Decrement
E13/P11/G10/Q10/H10/I10/J10/L11/N11/R11/M11/O16	100% decrement for "No," 50% decrement for "Partial"

Intention Freeridership Analysis Results

Table H-39 shows the unique response distribution from Online Marketplace offering *intention* freeridership questions (actual responses mapped to yes, no, or partial, as indicative of freeridership) for non-thermostat measures, the intention freeridership score assigned to each response, the number of responses for each measure, and an intention freeridership score for each measure based on the savings weighted average of the distribution of *intention* freeridership scores.

Table H-39. Online Marketplace, Non-Thermostat Measures
Frequency of *Intention* Freeridership Scoring

E13/P11/G10/Q10/H10&I10/J10/L11/N11/R11/M11/O16. If the Focus on Energy discount had not been available, would you have purchased and installed efficient [MEASURE]s for your home within 12 months?	*Intention* FR Score	Advanced Power Strip	Air Purifier	Showerhead	Shower Start	Faucet Aerator	Pipe Insulation	Door Sweep	Door Weatherstripping	Window Weatherstripping	Window Film	Outlet Gaskets
Yes	100%	6	1	32	3	7	4	13	6	22	3	1
Partial	50%	4	3	63	9	17	19	26	29	6	2	2
No	0%	10	2	113	12	14	19	25	19	26	2	8
Average Intention Score - Weighted by Verified Lifecycle MMBtu Gross Energy Savings		**40%**	**50%**	**31%**	**12%**	**49%**	**30%**	**41%**	**21%**	**32%**	**42%**	**25%**

Influence Freeridership Analysis

The evaluation team assessed *influence* freeridership by asking participants how important various offering elements were in their purchasing decisions. The team determined each respondent's *influence* freeridership score for each measure category, using the maximum rating provided for any of the elements related to Focus on Energy listed below:

- Focus on Energy instant discount
- Recommendation from Focus on Energy staff
- Information provided by Focus on Energy on energy-saving opportunities
- Previous participation in a Focus on Energy efficiency offering or program

As shown in Table H-40, the respondents' maximum influence ratings ranged from 1 (*not at all important*) to 5 (*very important*). A maximum score of 1 means the customer ranked all factors from the Table as *not at all important*, while a maximum score of 5 means the customer ranked at least one factor *very important*. Counts refer to the number of "maximum influence" responses for each factor, or *influence* freeridership score, response option.

Table H-40. Online Marketplace, Non-Thermostat Measures
***Influence* Freeridership Score**

Maximum Influence Rating	*Influence* FR Score	Advanced Power Strip	Air Purifier	Showerhead	Shower Start	Faucet Aerator	Pipe Insulation	Door Sweep	Door Weatherstripping	Window Weatherstripping	Window Film	Outlet Gaskets
1 - Not at all important	100%	0	0	1	0	0	0	0	1	1	0	0
2	75%	0	0	0	0	0	0	0	0	0	0	0
3	50%	0	0	4	0	0	0	2	1	0	0	0
4	25%	2	0	23	3	2	3	4	5	4	0	0
5 - Very important	0%	18	6	180	21	36	39	58	47	49	7	11
Average Maximum Influence Rating - Simple Average		**4.9**	**5.0**	**4.8**	**4.9**	**4.9**	**4.9**	**4.9**	**4.8**	**4.9**	**5.0**	**5.0**
Average Influence FR Score - Weighted by Verified Lifecycle MMBtu Gross Energy Savings		**2%**	**0%**	**4%**	**0%**	**1%**	**2%**	**3%**	**6%**	**2%**	**0%**	**0%**

Final Freeridership

The evaluation team calculated the mean of the overall *intention* and the overall *influence* of freeridership components to estimate the final freeridership for the measure categories. A higher freeridership score translates to more savings that are deducted from the gross savings estimates Table H-41 lists the *intention*, *influence*, and final freeridership scores for non-thermostat measures in the Online Marketplace offering.

Table H-41. Online Marketplace, Non-Thermostat Measures
Freeridership Score

Measure Category	n	*Intention* Freeridership Score[a]	*Influence* Freeridership Score[a]	Final Freeridership Score
Advanced Power Strip	20	40%	2%	21%
Air Purifier	6	50%	0%	25%
Showerhead	208	31%	4%	18%
Shower Start	24	12%	0%	6%
Faucet Aerator	38	49%	1%	25%
Pipe Insulation	42	30%	2%	16%
Door Sweep	64	41%	3%	22%
Door Weatherstripping	54	21%	6%	14%
Window Weatherstripping	54	32%	2%	17%
Window Film	7	42%	0%	21%
Outlet Gaskets	11	25%	0%	13%

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Participant Spillover Analysis

The evaluation team estimated participant spillover based on answers from respondents who purchased additional high-efficiency equipment or appliances following their participation in the Online Marketplace offering. The team applied evaluated and deemed savings to the spillover measures that customers said they had installed as a result of their offering participation, presented in Table H-42.

Table H-42. Online Marketplace, Total Offering Spillover Measures and Savings

Measure Category	Spillover Measure	Quantity	Total MMBtu Lifecycle Gross Savings Estimate
Total Offering	Advanced Power Strip	2	2.5
	ENERGY STAR Air Purifier	1	4.1
	ENERGY STAR Freezer	2	6.6
	ENERGY STAR Room Air Conditioner	3	1.2
	Gas Furnace	1	80.5
	Smart Thermostat	1	43.6

Next, the team divided the sample spillover savings by the offering measure category gross savings from the entire survey sample, as shown in this equation:

$$Spillover\ \% = \frac{\sum \text{Spillover Measure EnergySavings for All Survey Respondents}}{\sum \text{Offering Measure Energy Savings for All Survey Respondents}}$$

This yielded a 1% spillover estimate for the Online Marketplace offering, when rounded to the nearest whole percentage (Table H-43). The evaluation team estimated one spillover ratio for the Online Marketplace offering and then applied this estimate to each measure because participants could purchase multiple measures.

Table H-43. Online Marketplace, Total Offering Spillover Percentage Estimate

Variable	Total Lifecycle MMBtu Savings Estimate
Spillover Savings	138
Offering Savings	13,574
Spillover Estimate	**1%**

Final Net-to-Gross Analysis

The evaluation team combined the spillover information with the freeridership results to achieve the NTG ratios using the following calculation, as shown in Table H-44:

NTG = 1 – Freeridership + Spillover

Table H-44. Online Marketplace Offering – NTG Estimate

Measure Category	n	Freeridership[a]	Spillover	NTG
Advanced Power Strip	20	21%	1%	80%
Air Purifier	6	25%	1%	76%
Showerhead	208	18%	1%	83%
Shower Start	24	6%	1%	95%
Faucet Aerator	38	25%	1%	76%
Pipe Insulation	42	16%	1%	85%
Door Sweep	64	22%	1%	79%
Door Weatherstripping	54	14%	1%	87%
Window Weatherstripping	54	17%	1%	84%
Window Film	7	21%	1%	80%
Outlet Gaskets	11	13%	1%	88%
Advanced Power Strip	20	21%	1%	80%

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Packs Offering (Focus on Comfort Pack, Focus on Showers Pack, Focus on Baths Pack)

Freeridership

Through the Packs offering, single-family and multifamily customers can order free packs containing an assortment of energy-efficient measures. Given that the low-cost measures were provided for free in the energy-saving packs and the number of measures included in each kit, the evaluation team estimated a single freeridership estimate for each measure instead of estimating separate *intention* and *influence* freeridership scores. The evaluation team has observed this to be the most common approach used in other jurisdictions for measures provided to customers for free.

Freeridership Survey Questions

The Focus on Comfort Pack participant survey's freeridership section included two questions that collected measure-specific responses:

- M3_1_1/M3_1_2/ M3_1_3/M1_4/M3_1_5/M3_1_6/M3_1_7/M3_1_8/M3_1_9. If you had not received the Energy Saver Pack from Focus on Energy, would you have installed or completed any of the following items in your home within 12 months?
- M1_1/ M1_2/M1_3/M1_4/M1_5/M1_6/M1_7/M1_8. Before receiving the pack, had you previously installed any of the following?

Convert Responses to Matrix Terminology

Table H-45 shows how the evaluation team translated survey responses into results of *yes, no*, or *partially*, as indicative of freeridership (in parentheses).

Table H-45. Packs Offering, Raw Survey Response Translation to Freeridership Scoring Matrix Terminology

M3_1_1/M3_1_2/M3_1_3/M1_4/M3_1_5/M3_1_6/M3_1_7/M3_1_8 /M3_1_9. If you had not received the Energy Saver Pack from Focus on Energy, would you have installed or completed any of the following items in your home within 12 months?	M1_1/M1_2/M1_3/M1_4/M1_5/M1_6/M1_7/ M1_8. Before receiving the pack, had you previously installed any of the following?
Yes, at the same time (Yes)	Yes (Yes)
Yes, later, but within 12 months (Partial)	No (No)
No, not within 12 months (No)	Don't Know (Partial)
Don't Know (Partial)	

Participant Freeridership Scoring

Each freeridership score started at 100%, which the evaluation team decremented based on the participant's responses to the two questions shown in Table H-46.

Table H-46. Packs Offering, Freeridership Scoring Legend

Q#	Decrement
M3	100% decrement for "No," 50% decrement for "Partial"
M1	50% decrement for "No," 25% decrement for "Partial"

Freeridership Analysis Results

Table H-47 shows the freeridership results for Packs offering measures.

Table H-47. Packs Offering, Freeridership by Measure Category

Measure Category	n	Freeridership[a]
Door Sweep	77	20%
Outlet Gasket	100	9%
Switch Gasket	89	8%
Weatherstripping	106	26%
Window Film Insulation	39	41%
Showerhead	120	22%
Handheld Showerhead	81	15%
Pipe Wrap	155	23%
Water Heater Temperature Card/Turned Down Temperature	85	31%

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Participant Spillover Analysis

The evaluation team estimated participant spillover based on answers from respondents who purchased additional high-efficiency equipment or appliances following their participation in the Packs offering. The team applied evaluated and deemed savings to the spillover measures that customers said they had installed as a result of their offering participation, presented in Table H-48.

Table H-48. Packs Offering, Spillover Measures and Savings

Measure Category	Spillover Measure	Quantity	Total MMBtu Lifecycle Gross Savings Estimate
Focus on Comfort Pack, Focus on Showers Pack, Focus on Baths Pack	ENERGY STAR air purifier	2	8.2
	ENERGY STAR freezer	5	8.3
	Advanced Power Strip	13	16.0
	Smart thermostat	4	39
	Weatherstripping	10	60.6

Next, the team divided the total sample spillover savings by gross verified savings from the entire survey analysis sample, as shown in this equation:

$$Spillover\ \% = \frac{\sum \text{Spillover Measure EnergySavings for All Survey Respondents}}{\sum \text{Offering Measure Energy Savings for All Survey Respondents}}$$

This yielded a 2% spillover estimate for the Focus on Comfort packs, when rounded to the nearest whole percentage (Table H-49).

Table H-49. Packs Offering, Spillover Percentage Estimate

Variable	Total Lifecycle MMBtu Savings Estimate
Spillover Savings	210
Offering Savings	11,860
Spillover Estimate	**2%**

Final Net-to-Gross Analysis

The evaluation team combined the spillover information with the freeridership results to determine final measure-level NTG ratios (Table H-50) using the following calculation:

NTG = 100% – Freeridership + Spillover

Table H-50. Packs Offering, NTG Estimates by Measure Category

Measure Category	n	Freeridership[a]	Spillover	NTG
Door Sweep	77	20%	2%	82%
Outlet Gasket	100	9%	2%	93%
Switch Gasket	89	8%	2%	94%
Weatherstripping	106	26%	2%	76%
Window Film Insulation	39	41%	2%	61%
Showerhead	120	22%	2%	80%
Handheld Showerhead	81	15%	2%	87%
Pipe Wrap	155	23%	2%	79%
Water Heater Temperature Card/Turned Down Temperature	85	31%	2%	71%

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Self-Report NTG Methodology and Findings – Renewable Energy Offering

Freeridership

Intention Freeridership Survey Questions

The participant survey's residential *intention* freeridership section included the following questions:

- C1. When did you first hear about the availability of the Focus on Energy Renewable Energy incentive for solar PV systems?
- C2. [Ask IF C1=3, 4, 5, or 6] Just to be clear, you purchased your solar PV system before you heard anything about the Focus on Energy rebate. Is that correct?
- C3. Before you heard about the program, had you already considered installing a solar PV system project?
- C4. Would you most likely have had the same solar PV system project completed without the rebate and information you received from Focus on Energy?
- C7. Thinking about timing, without the rebate and information from Focus on Energy, when would you most likely have installed the solar PV system?
- C5. Without the rebate and information or education from Focus on Energy, what size of solar PV system project would you most likely have completed? Would you have…
- C6. [Ask IF C5=1. Smaller] How much smaller would your system have been, as a percentage?

Convert Responses to Matrix Terminology

Table H-51 shows how the initial residential survey responses were translated into the responses *yes, no*, or *partially*, as indicative of *intention* freeridership (in parentheses).

Table H-51. Renewable Energy Offering Raw Survey Response Translation to *Intention* Freeridership Scoring Matrix Terminology, Residential

C1. When did you first hear about the availability of the Focus on Energy rebate for solar PV systems?	C2. [ASK IF C1=3, 4, 5 OR 6] Just to be clear, you purchased your solar PV system before you heard anything about the Focus on Energy rebate. Is that correct?	C3. Before you heard about the Focus on Energy rebate, had you already considered installing a solar PV system project?	C4. Would you most likely have had the same solar PV system project completed without the rebate and information you received from Focus on Energy?	C7. Without the rebate and information from Focus on Energy, what size of solar PV system project would you most likely have completed? Would you have…	C5. Thinking about timing, without the rebate and information from Focus on Energy, when would you most likely have installed the solar PV system?	C6_smaller. [ASK IF C6=1] How much smaller would your system have been, as a percentage?
Before you contacted your contractor to purchase a system (No)	Yes, that's correct (Yes)	Yes (Yes)	Yes (Yes)	At the same time (Yes)	Installed a smaller, less expensive PV system (Yes)	*Intention* FR Score is reduced by the percentage they would not have installed
When the contractor provided the quote for purchase and installation (No)	No, that's not correct (No)	No (No)	No (No)	Later, but within 12 months (Partial2)	Installed same size, same-cost PV system (Yes)	
After your contractor installed your system (Yes)	Don't Know (Partial)	Don't Know (Partial)	Don't Know (Partial)	One to two years out (No)	Installed a larger, more expensive PV system (Yes)	
When you received your incentive check from Focus on Energy (Yes)				More than two years out (No)	Not installed a PV system at all (No)	
After you purchased the system (Yes)				Never (No)	Don't Know (Partial)	
You had not heard of Focus on Energy before this survey (Yes)				Don't Know (Partial)		
Don't Know (No)						

Table H-52 shows how the initial business survey responses were translated into the responses *yes, no*, or *partially*, indicative of *intention* freeridership (in parentheses).

Table H-52. Renewable Energy Offering Raw Survey Response Translation to *Intention* Freeridership Scoring Matrix Terminology, Business

D1. First, did your organization decide to install the PV system[s] before learning about the Focus on Energy rebate?	D2. [ASK IF D1=1] Prior to learning about the Focus on Energy rebate, was the purchase of the solar PV system[s] included in your business' capital budget for this property?	D3. [ASK IF D2=1] Had your business already ordered or purchased the PV system[s] for this property BEFORE you heard about the Focus on Energy rebate?	D4. [ASK IF D3=1] So just to be clear, BEFORE you heard anything about the Focus on Energy rebate you had ALREADY purchased your solar PV system. Is that correct?	D5. Would you most likely have had the same solar PV system project completed without the rebate and information you received from Focus on Energy?	D8. Without the rebate for the solar PV system[s] and information or education from Focus on Energy, when would you most likely have installed the solar PV system[s]?	D6. Without the rebate and information from Focus on Energy, what size of solar PV system project would you most likely have completed if the Focus on Energy rebate had not been available to you? Would you have…	D7. [Ask IF D6=1. Smaller] How much smaller would your system have been, as a percentage?
Yes (Yes)	Yes (Yes)	Yes (Yes)	Yes (Yes)	Yes (Yes)	Within the same year (Yes)	Installed a smaller, less expensive PV system (Yes)	*Intention* FR Score is reduced by the percentage they would not have installed
No (No)	No (No)	No (No)	No (No)	No (No)	Within one to two years (Partial2)	Installed same size, same-cost PV system (Yes)	
Don't Know (Partial)	Don't Know (Partial)	Don't Know (Partial)	Don't Know (Partial)	Don't Know (Partial)	Within three to five years (No)	Installed a larger, more expensive PV system (Yes)	
					In more than five years (No)	Not installed a PV system at all (No)	
					Never (No)	Don't Know (Partial)	
					Don't Know (Partial)		

Participant Intention Freeridership Scoring

The *intention* freeridership score started with 100%, which the evaluation team decremented based on the participant's responses to the five questions, as shown in Table H-53 and Table H-54.

Table H-53. Renewable Energy *Intention* Freeridership Scoring Legend, Residential

Question Number	Decrement
C1	0% decrement for "No," "Partial" level not needed
C2	100% *Intention* FR if "Yes," "Partial" level not needed
C3	50% decrement for "No," 25% decrement for "Partial"
C4	50% decrement for "No," 25% decrement for "Partial"
C7	100% decrement for "No," 25% decrement for "Partial," 50% decrement for "Partial2"
C5	100% decrement for "No," 25% decrement for "Partial"
C6	*Intention* FR Score is reduced by the percentage they would not have installed

Table H-54. Renewable Energy *Intention* Freeridership Scoring Legend, Business

Question Number	Decrement
D1	50% decrement for "No," 25% decrement for "Partial"
D2	50% decrement for "No," 25% decrement for "Partial"
D3	0% decrement for "No," "Partial" level not needed
D4	100% *Intention* FR if "Yes," "Partial" level not needed
D5	50% decrement for "No," 25% decrement for "Partial"
D8	100% decrement for "No," 25% decrement for "Partial," 50% decrement for "Partial2"
D6	100% decrement for "No," 25% decrement for "Partial"
D7	*Intention* FR Score is reduced by the percentage they would not have installed

Intention Freeridership Analysis

Table H-55 and Table H-56 show the unique response combinations from residential solar PV and business solar PV participants, respectively, answering the Renewable Energy Offering *intention* freeridership questions (actual responses mapped to yes, no, or partial, as indicative of freeridership), the *intention* freeridership score assigned to each combination, and the number of responses. The evaluation team calculated an *intention* freeridership score for the offering based on the distribution of scores within the matrix.

Table H-55. Renewable Energy Offering Frequency of *Intention* Freeridership Scoring, Residential

C1. When did you first hear about the availability of the Focus on Energy rebate for solar PV systems?	C2. [ASK IF C1=3, 4, 5 OR 6] Just to be clear, you purchased your solar PV system before you heard anything about the Focus on Energy rebate. Is that correct?	C3. Before you heard about the Focus on Energy rebate, had you already considered installing a solar PV system project?	C4. Would you most likely have had the same solar PV system project completed without the rebate and information you received from Focus on Energy?	C7. Without the rebate and information from Focus on Energy, what size of solar PV system project would you most likely have completed? Would you have…	C5. Thinking about timing, without the rebate and information from Focus on Energy, when would you most likely have installed the solar PV system?	*Intention* Freerider Score	Count
Yes	Yes	-	-	-	-	100%	13
No	-	Yes	Yes	Yes	Yes	100%	109
No	-	Yes	Yes	Yes	Partial	75%	7[a]
No	-	Yes	Yes	Partial	Yes	75%	1
No	-	Yes	Yes	Partial2	Yes	50%	5
No	-	Yes	Yes	Partial2	Partial	25%	2[b]
No	-	Yes	Yes	No	-	0%	3
No	-	Yes	Yes	-	No	0%	1
No	-	Yes	Partial	Yes	Yes	75%	8
No	-	Yes	Partial	Yes	Partial	50%	6[c]
No	-	Yes	Partial	Partial	Yes	50%	1
No	-	Yes	Partial	Partial	Partial	25%	3[d]
No	-	Yes	Partial	Partial2	Yes	25%	1
No	-	Yes	Partial	Partial2	Partial	12.5%	3[e]
No	-	Yes	Partial	No	-	0%	2
No	-	Yes	Partial	-	No	0%	1
No	-	Yes	No	Yes	Yes	50%	2
No	-	Yes	No	Partial	Yes	25%	1[f]
No	-	Yes	No	Partial	Partial	12.5%	1
No	-	Yes	No	Partial2	Yes	12.5%	2[g]
No	-	Yes	No	No	-	0%	1
No	-	Yes	No	-	No	0%	1
No	-	Partial	Partial	Yes	Partial	25%	3

C1. When did you first hear about the availability of the Focus on Energy rebate for solar PV systems?	C2. [ASK IF C1=3, 4, 5 OR 6] Just to be clear, you purchased your solar PV system before you heard anything about the Focus on Energy rebate. Is that correct?	C3. Before you heard about the Focus on Energy rebate, had you already considered installing a solar PV system project?	C4. Would you most likely have had the same solar PV system project completed without the rebate and information you received from Focus on Energy?	C7. Without the rebate and information from Focus on Energy, what size of solar PV system project would you most likely have completed? Would you have…	C5. Thinking about timing, without the rebate and information from Focus on Energy, when would you most likely have installed the solar PV system?	*Intention* Freerider Score	Count
No	-	Partial	No	No	-	0%	5
No	-	No	Yes	Yes	Yes	50%	1
No	-	No	Partial	Yes	Yes	25%	1
No	-	No	No	Partial2	Yes	0%	5
No	-	No	No	No	-	0%	1
No	-	No	No	-	No	0%	1

[a] Five participants' Intention Freerider Score were reduced by the percentage of solar PV system equipment they would not have installed with the Focus on Energy rebate.
[b] One participant's Intention Freerider Score was reduced by the percentage of solar PV system equipment they would not have installed without the Focus on Energy rebate.
[c] Four participants' Intention Freerider Score was reduced by the percentage of solar PV system equipment they would not have installed without the Focus on Energy rebate.
[d] One participant's Intention Freerider Score was reduced by the percentage of solar PV system equipment they would not have installed without the Focus on Energy rebate.
[e] Two participants' Intention Freerider Score was reduced by the percentage of solar PV system equipment they would not have installed without the Focus on Energy rebate.
[f] One participant's Intention Freerider Score was reduced by the percentage of solar PV system equipment they would not have installed without the Focus on Energy rebate.
[g] One participant's Intention Freerider Score was reduced by the percentage of solar PV system equipment they would not have installed without the Focus on Energy rebate.

Table H-56. Renewable Energy Program Frequency of *Intention* Freeridership Scoring Combinations, Business

D1. First, did your organization decide to install the PV system[s] before learning about the Focus on Energy rebate?	D2. [ASK IF D1=1] Prior to learning about the Focus on Energy rebate, was the purchase of the solar PV system[s] included in your business' capital budget for this property?	D3. [ASK IF D2=1] Had your business already ordered or purchased the PV system[s] for this property BEFORE you heard about the Focus on Energy rebate?	D4. [ASK IF D3=1] So just to be clear, BEFORE you heard anything about the Focus on Energy rebate you had ALREADY purchased your solar PV system. Is that correct?	D5. Would you most likely have had the same solar PV system project completed without the rebate and information you received from Focus on Energy?	D8. Without the rebate for the solar PV system[s] and information or education from Focus on Energy, when would you most likely have installed the solar PV system[s]?	D6. Without the rebate and information from Focus on Energy, what size of solar PV system project would you most likely have completed if the Focus on Energy rebate had not been available to you? Would you have…	*Intention* Freerider Score	Count
Yes	Yes	Yes	Yes	-	-	Yes	100%	2
Yes	Yes	Yes	No	Yes	Partial2	Yes	50%	1
Yes	Yes	No	-	Yes	Partial2	Yes	50%	1
Yes	Yes	No	-	No	Partial2	Yes	0%	1
Yes	No	-	-	Yes	Yes	Yes	50%	1
Yes	No	-	-	No	Yes	Yes	0%	1
No	-	-	-	Yes	Yes	No	50%	5
No	-	-	-	Partial	Partial2	No	0%	1
No	-	-	-	No	-	No	0%	1

Table H-57 shows the Renewable Energy Offering *intention* freeridership score.

Table H-57. Renewable Energy Offering, *Intention* Freeridership Results

Measure Category	n	*Intention* FR Score
Solar PV, Residential	199	72%[a]
Solar PV, Business	14	48%[a]

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Influence Freeridership Analysis

The evaluation team assessed *influence* freeridership by asking participants how important various offering elements were in their purchasing decisions. Table H-58 shows how participants rated the importance, along with a count and average rating for each factor.

Table H-58. Renewable Energy Offering *Influence* Freeridership Responses, Solar PV

Influence Rating	Influence FR Score	The Focus on Energy program rebate or discount		Recommendation from Focus on Energy Staff		Information provided by Focus on Energy on energy savings opportunities		Recommendation from a contractor or vendor		Previous participation in a Focus on Energy efficiency program	
		Residential	Business	Residential	Business	Residential	Business	Residential	Business	Residential	Business
1 - Not at all important	100%	19	0	66	2	34	2	16	1	64	3
2	75%	35	0	31	2	34	1	15	0	22	1
3	50%	76	3	36	5	53	4	36	2	35	4
4	25%	43	4	17	2	34	3	54	4	19	2
5 - Very important	0%	24	7	10	3	22	4	72	7	21	4
Don't know	50%	19	0	66	2	34	2	16	1	64	3
Average Rating		**3.1**	**4.3**	**2.2**	**3.1**	**2.9**	**3.4**	**3.8**	**4.1**	**2.4**	**3.2**

The team then determined each respondent's *influence* freeridership score for each measure category, using the maximum rating provided for any factor included in Table H-58. As shown in Table H-59, the respondents' maximum influence ratings ranged from 1 (*not at all important*) to 5 (*very important*). A maximum score of 1 means the customer ranked all factors from the Table as *not at all important*, while a maximum score of 5 means the customer ranked at least one factor *very important*. Counts refer to the number of "maximum influence" responses for each factor, or *influence* freeridership score, response option.

Table H-59. Renewable Energy Offering *Influence* Freeridership Score, Solar PV

Maximum Influence Rating	*Influence* Freeridership Score	Residential Count	Business Count
1 - Not at all important	100%	10	0
2	75%	9	1
3	50%	11	11
4	25%	21	7
5 - Very important	0%	19	19
Don't know	50%	0	0
Average Maximum Influence Rating - Simple Average		**4.2**	**4.9**
Average Influence FR Score - Weighted by Verified Lifecycle MMBtu Gross Savings		**20%**	**3%**

Final Freeridership

The evaluation team calculated the mean of the overall *intention* and the overall *influence* of freeridership components to estimate the final freeridership for the measure categories. A higher freeridership score translates to more savings that are deducted from the gross savings estimates. Table H-60 lists the *intention*, *influence*, and final freeridership scores by measure category for the Renewable Energy Offering.

Table H-60. Renewable Energy Offering Freeridership Score

Measure Category	n	Intention FR Score	Influence FR Score	Final FR Score
Solar PV, Residential	199	72%[a]	20%[a]	46%
Solar PV, Business	14	48%[a]	3%[a]	26%

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Participant Spillover Analysis

The evaluation team estimated participant spillover based on answers from respondents who purchased additional high-efficiency equipment or appliances following their participation in the Renewable Energy offering. No business respondents reported attributable spillover activity, so spillover is 0% for business solar PV measures.

The team applied evaluated savings to residential energy-efficient measures that customers reported installing as a result of participation in the offering, as shown in Table H-61.

Table H-61. Renewable Energy Offering Participant Spillover Measures and Savings, Residential

Measure Category	Spillover Measure	Quantity	Total MMBtu Lifecycle Gross Savings Estimate
Solar PV, Residential	ENERGY STAR Air Purifier	1	4.1
	ENERGY STAR Room Air Conditioner	1	1.2
	Smart Thermostat	1	43.6

Next, the team divided the residential sample spillover savings by the offering measure category gross savings from the entire residential survey sample, as shown in this equation:

$$Spillover\ \% = \frac{\sum \text{Spillover Measure EnergySavings for All Survey Respondents}}{\sum \text{Program Measure Energy Savings for All Survey Respondents}}$$

This yielded a 0% spillover estimate for the residential solar PV measure category, when rounded to the nearest whole percentage, for the Renewable Energy offering's residential respondents (Table H-62).

Table H-62. Renewable Energy Offering Participant Spillover Percentage Estimate, Residential

Variable	Total MMBtu Lifecycle Savings Estimate
Spillover Savings	49
Offering Savings	209,273
Spillover Estimate	**0%**

Final Net-to-Gross Analysis

The evaluation team combined the spillover information with the freeridership results to achieve the NTG ratios, using the following calculation, as shown in Table H-63:

NTG = 1 – Freeridership + Spillover

Table H-63. Renewable Energy Offering NTG Estimates

Measure Category	n	Freeridership	Spillover	NTG
Solar PV, Residential	199	46%[a]	0%	54%
Solar PV, Business	14	26%[a]	0%	74%

[a] Weighted by verified lifecycle MMBtu gross energy savings.

New Manufactured Homes Pilot (New Construction Program)

Freeridership

Intention Freeridership Survey Questions

For the New Manufactured Homes Pilot, the participant retailer and community organization survey included the following *intention* freeridership sections:

- F3. Since learning about the program, what percentage of the time would you have recommended manufactured homes that meet the program's qualifications, even if the program had not existed?
- F5. Thinking about the manufactured homes sales that were rebated by the program in 2024, what percentage do you estimate would have still occurred without the program??

Intention Freeridership Scoring

The evaluation team estimated a separate Upselling *Intention* Freeridership score and Sales *Intention* Freeridership score for each respondent, as shown in Table H-64.

Table H-64. Intention Freeridership Scoring Legend

F3. Since learning about the program, what percentage of the time would you have recommended manufactured homes that meet the program's qualifications, even if the program had not existed?	F5. Thinking about the manufactured homes sales that were rebated by the program in 2024, what percentage do you estimate would have still occurred without the program?
[% RESPONSE] = Upselling *Intention* FR Score	[% RESPONSE] = Sales *Intention* FR Score

Influence Focused Freeridership Scoring

The evaluation team estimated a separate Upselling *Influence* Freeridership score and Sales *Influence* Freeridership score for each respondent based on the response to the questions shown in Table H-65.

Table H-65. Influence Freeridership Scoring Legend

F4. How important was the program to your ability to upsell program-qualified manufactured homes to buyers? Use a scale from 1 to 5, with 1 meaning the program was "not at all important" and 5 meaning the program was "very important".	F6. How important was the program to your final sale of program-rebated manufactured homes to buyers? Use a scale from 1 to 5, with 1 meaning the program was "not at all important" and 5 meaning the program was "very important".
[RESPONSE] = Upselling *Influence* FR Score	[RESPONSE] = Sales *Influence* FR Score

Table H-66 presents the freeridership level implied by each influence rating.

Table H-66. Influence Focused, Freeridership Scoring

Maximum Influence Rating	*Influence* Freeridership Score
1 - *Not at all important*	100%
2	75%
3	50%
4	25%
5 - *Very important*	0%

Intention and Influence Freeridership Findings

The evaluation team calculated an *intention* freeridership score and an *influence* freeridership score for the offering based on the savings-weighted average of the distribution of scores from the three respondents. The upselling and sales-specific *intention* freeridership scores were averaged to calculate the overall *intention* freeridership score for a respondent. The team averaged the upselling and sales-specific *influence* freeridership scores to calculate the overall *influence* freeridership score for a respondent. Table H-67 shows the upselling and sales *intention* and *influence* freeridership scores for each respondent and the overall savings weighted average *intention* and *influence* freeridership scores for the New Manufactured Homes Pilot.

Table H-67. New Manufactured Homes Pilot
***Influence* Freeridership Responses**

Respondent #	Upselling Intention FR Score	Sales Intention FR Score	Overall Intention FR Score	Sales Influence FR Score	Upselling Influence FR Score	Overall Sales Influence FR Score
#1	100%	100%	100%	100%	100%	100%
#2	50%	100%	75%	50%	37.5%	60%
#3	100%	100%	100%	100%	100%	100%
Overall	**86%**[a]	**100%**[a]	**93%**[a]	**86%**[a]	**83%**[a]	**96%**[a]

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Final Freeridership

The evaluation team calculated the mean of the overall *intention* and the overall *influence* of freeridership components to estimate the final freeridership for the New Manufactured Homes Pilot. A higher freeridership score means more savings are deducted from the gross savings estimates. Table H-68 lists *intention*, *influence*, and final freeridership scores for the offering.

Table H-68. New Manufactured Homes Pilot Freeridership Score

Offering	n	Overall *Intention* FR Score	Overall *Influence* FR Score	Final FR Score
New Manufactured Homes Pilot	3	93%[a]	85%[a]	89%

[a] Weighted by verified lifecycle MMBtu gross energy savings.

Participant Spillover Analysis

The evaluation team determined that there was no spillover for the New Manufactured Homes Pilot based on self-report survey data. None of the surveyed participants attributed additional energy-efficient equipment purchases or manufactured home sales to their participation in the New Manufactured Homes Pilot. Therefore, spillover is 0% for the New Manufactured Homes Pilot.

Final Net-to-Gross Analysis

The evaluation team combined the spillover information with the freeridership results to achieve the NTG ratios using the following calculation, as shown in Table H-69.

NTG = 100% – Freeridership + Spillover

Table H-69. New Manufactured Homes Pilot, NTG Estimates

n	Freeridership[a]	Spillover	NTG[a]
3	89%	0%	11%

[a] Weighted by verified lifecycle gross MMBtu savings.

Appendix I. Summary of Confidence and Precision

Focus on Energy gives serious consideration to evaluation design to ensure that its offerings achieve the most accurate and reliable results possible under the available evaluation budget. The evaluation uses statistical confidence and precision standards as a key driver in determining the scale and scope of the evaluation design for each offering; the net savings confidence and precision target is 90% confidence with ±10% precision over the CY 2023-CY 2026 quadrennium.

The evaluation team calculated the precision of final net first-year and lifetime energy savings estimates (MMBtu) at 90% confidence for each offering in the Focus on Energy portfolio. The precision reflects the uncertainty in the savings estimates due to measurement error, regression error, and sampling error. Measurement error refers to the uncertainty around engineering parameters derived from simulation or professional judgment, regression error refers to uncertainty around estimates derived from regression analysis, and sampling error refers to uncertainty introduced by estimating population parameters based on a sample.

After calculating standard errors, the evaluation team calculated the precision of the final estimates using the following formula:

$$relative\ precision = \frac{z\text{-}statistic * SE}{total\ net\ savings}$$

Where:

z-statistic	=	Critical value at a specific confidence level
SE	=	Standard error of the total net savings estimate
total net savings	=	Total net savings estimated based on the evaluation results

This appendix provides details on how the evaluation team calculated total net savings estimates and their standard errors.

Introduction to Statistical Uncertainty

The evaluation team collected data from surveys, billing histories, meters, and secondary sources, including the TRM, to estimate net savings for each offering and the portfolio. Statistical uncertainty is inherent in all activities for which samples or models are used to estimate a property of a population. Using sampled data is often preferred to save on the costs and time associated with studying an entire population, and because random samples of the population provide sufficiently reliable results. The strength of an estimate is related to the amount of uncertainty or error around it, which is determined based on the statistical properties of sampled data and how they are used to make inferences about a population.

Statistical uncertainty comprises two parts: the confidence and the precision of the estimate. Confidence intervals show the range of values within which one expects the unknown population

parameter to fall. Confidence refers to the probability that the true value of the metric of interest (such as kilowatt-hours saved) will fall within some level of precision.

A statement of precision without a statement of confidence is misleading. For example, if energy savings are estimated as 24 kWh with precision ±5 kWh at 90% confidence, the interpretation is that one is 90% confident that the true energy savings are between 19 kWh and 29 kWh. Narrower confidence intervals indicate that the savings estimate is very precise, and wider confidence intervals indicate that the variability in the data is large and that more information would be required to produce a more precise estimate.

For the Focus on Energy evaluation, the general standard for uncertainty is to achieve evaluation results at 90% confidence with ±10% precision over the CY 2023-CY 2026 quadrennium. The team defined and prioritized evaluation activities to align with this standard. This standard is in line with nationwide best practices for the evaluation of energy efficiency programs, as documented in the U.S. Environmental Protection Agency's National Action Plan for Energy Efficiency and elsewhere.[21]

Net Uncertainty with Gross Uncertainty

When two estimates are based on different evaluation activities and combined to produce a final estimate, the uncertainty from each estimate must be considered in calculating the uncertainty of the final estimate. For example, if one set of data collected from surveys, billing analyses, metering, and/or TRM review is used to estimate gross savings and another set of data collected from a separate survey is used to estimate spillover, freeridership, and NTG ratios and then that NTG ratio is applied to the gross savings to estimate net savings, the standard error of total net savings should be based on the standard error of gross savings and the NTG ratio. Details are provided below, specific to each set of offerings.

When the evaluation team estimates NTG ratios using survey data collected from an independent simple random sample of participants, it uses a ratio estimator and its standard error formula to quantify the uncertainty in the NTG ratios where net savings are represented by y_i, *ex post* savings are represented by x_i, and the standard error of the NTG ratio estimate is represented by SE_{NTG}, in the following formulas:

$$NTG\ Ratio = \frac{\sum_{sample} y_i}{\sum_{sample} x_i}$$

$$SE_{NTG} = \sqrt{\sum_{i=1}^{n} \frac{(y_i - NTG\ Ratio * x_i)^2}{\bar{x}^2 * n(n-1)}}$$

[21] U.S. Environmental Protection Agency. Accessed April 2024. "Energy and the Environment. National Action Plan for Energy Efficiency." National Action Plan for Energy Efficiency | Energy and the Environment | US EPA

The evaluation team then multiplies the NTG ratio by the total *ex post* gross savings to estimate total net savings and uses the formula for the standard error of the product of two independent random variables to calculate precision, as shown in this formula:

$$SE_{total\ net\ savings} = \sqrt{NTG^2 * SE^2_{total\ ex\ post\ gross\ savings} + total\ ex\ post\ gross\ savings^2 * SE^2_{NTG} + SE^2_{NTG} * SE^2_{total\ ex\ post\ gross\ savings}}$$

The evaluation team used this method for all offerings unless otherwise noted.

Nonresidential Offerings

The evaluation team selected a sample of projects in each nonresidential and multifamily offering to estimate *ex post* verified gross savings. It used a stratified sample design with a random stratum and a census stratum in most offerings. Sampling took place throughout the evaluation year in three waves. The evaluation team placed projects with savings above a percentage threshold of total offering savings in the census stratum. The remaining sample was pulled using a random sample design to reach 90% confidence with ±10% precision at the offering level, ultimately rolling up to 90% confidence with ±10% precision at the program level. The sample design was successful in achieving low precision values for all offerings, as seen in the CY 2024 precision results.

For the random stratum, the evaluation team applied the realization rates to the population total *ex ante* savings in each offering by wave to estimate that wave's population total *ex post* gross savings. The team calculated realization rates and standard errors in the random stratum in each wave using the formulas presented in the Uniform Methods Project sampling chapter.[22]

In the following formulas, y_i represents *ex post* savings for each evaluated measure, x_i represents *ex ante* savings for each measure, and n represents each wave's sample size.

$$RR_{random\ stratum} = \frac{\sum_{sample} y_i}{\sum_{sample} x_i}$$

$$random\ stratum\ ex\ post\ gross\ savings = RR_{random\ stratum} * \sum_{random\ stratum\ population} x_i$$

$$SE_{random\ stratum\ total\ ex\ post\ gross\ savings} = \frac{\sum_{random\ stratum\ population} x_i}{\sqrt{n} * \overline{x_i}} * \sqrt{\sum_{i=1}^{n} \frac{(y_i - RR * x_i)^2}{n-1}}$$

The team also calculated realization rates for the census stratum in each offering. In this stratum, the team evaluated all projects to directly verify the highest saving projects. The census stratum has no

[22] National Renewable Energy Laboratory. April 2013. *The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures.* "Chapter 11: Sample Design Cross-Cutting Protocols." Prepared by Cadmus. http://energy.gov/sites/prod/files/2013/11/f5/53827-11.pdf

sampling error. To estimate a single standard for each wave's combined census and random strata, the evaluation team used the following formula.

$$SE_{wave\ total\ ex\ post\ gross\ savings} = \sqrt{(SE_{random\ stratum\ total\ ex\ post\ gross\ savings})^2 + (SE_{census\ stratum\ total\ ex\ post\ gross\ savings})^2}$$

As the standard error of the census stratum is zero, the standard error for the wave simplifies to the following:

$$SE_{wave\ total\ ex\ post\ gross\ savings} = SE_{random\ stratum\ total\ ex\ post\ gross\ savings}$$

The following formulas show the realization rate calculations for the census stratum and the method for calculating a single realization rate for the wave. The team used similar methods to combine census and random stratum standard errors and realization rates within waves and across waves.

$$RR_{census\ stratum} = \frac{\sum_{census} y_i}{\sum_{census} x_i}$$

$$census\ stratum\ ex\ post\ gross\ savings = RR_{census\ stratum} * \sum_{census\ stratum\ population} x_i$$

$$RR_{wave} = \frac{random\ stratum\ ex\ post\ gross\ savings + census\ stratum\ ex\ post\ gross\ savings}{\sum_{wave} x_i}$$

The team estimated nonresidential NTG ratios using survey data collected from an independent simple random sample of participants and then multiplied these ratios by the total *ex post* gross savings to estimate total net savings for each offering. The team used a ratio estimator and the standard error formula described above to quantify the uncertainty in the NTG ratios.

Table I-1 presents the precision of total net first and cumulative year MMBtu savings estimates at 90% confidence for each nonresidential offering by calendar year. The sources of uncertainty in all nonresidential savings estimates stemmed from estimating the realization rate and NTG values based on sample data.

Table I-1. Nonresidential Net First-Year MMBtu Energy Savings Precision

Nonresidential Offering	Precision at 90% Confidence				
	CY 2023	CY 2024	CY 2025	CY 2026	Cumulative
Agribusiness	11%	9%	TBD	TBD	7%
Commercial and Industrial	8%	8%	TBD	TBD	6%
Commercial and Industrial New Construction	12%	12%	TBD	TBD	8%
Large Industrial	9%	7%	TBD	TBD	6%
Large Industrial New Construction	16%	14%	TBD	TBD	9%
Government	10%	11%	TBD	TBD	7%
Schools	10%	10%	TBD	TBD	8%
School and Government New Construction	11%	12%	TBD	TBD	8%
Business Renewable Rewards	8%	22%	TBD	TBD	9%
Total	**5%**	**5%**	TBD	TBD	**4%**

Residential and Midstream Offerings

The evaluation team used various methods to evaluate the residential and midstream offerings. Table I-2 presents the precision of total net savings estimates and the sources of uncertainty for each residential offering by calendar year and cumulatively.

Table I-2. Residential Net First-Year MMBtu Energy Savings Precision (90% Confidence)

Residential Offering	Precision at 90% Confidence					Sources of Uncertainty
	CY 2023	CY 2024	CY 2025	CY 2026	Cumulative	
Online Marketplace	5%	5%	TBD	TBD	4%	ISR and NTG ratio
Packs	3%	2%	TBD	TBD	2%	ISR and NTG ratio
Retail	13%	NA	TBD	TBD	13%	ISR and NTG ratio
Heating and Cooling[a]	9%	10%	TBD	TBD	6%	Baseline efficiency for furnaces and NTG ratio. Relatively high variance in NTG ratios increased overall net standard errors.
Insulation and Air Sealing	0.0%	3%	TBD	TBD	1%	NTG determined via billing analysis for projects that accounted for the majority of savings.
Tribal[a]	2%	7%	TBD	TBD	4%	Baseline efficiency for furnaces, NTG ratio for heating and cooling measures, and billing analysis for Tier 2 natural gas heat insulation/air sealing projects.
Multifamily	7%	7%	TBD	TBD	5%	Realization rate and NTG
Multifamily New Construction	11%	12%	TBD	TBD	8%	Realization rate and NTG

Residential Offering	Precision at 90% Confidence					Sources of Uncertainty
	CY 2023	CY 2024	CY 2025	CY 2026	Cumulative	
Renewable Rewards, Residential	7%	11%	TBD	TBD	6%	NTG ratio
Residential New Construction	8%	8%	TBD	TBD	6%	PRISM model
Total	**2%**	**3%**	TBD	TBD	**2%**	

[a] The team corrected the CY 2023 precision estimates for the Heating and Cooling and Tribal offerings to use annual MMBtu savings to calculate both standard errors and precision.

Table I-3 presents the precision of total net savings estimates and the sources of uncertainty for each midstream offering by program year and cumulatively.

Table I-3. Midstream Net First-Year MMBtu Energy Savings Precision (90% Confidence)

Midstream Offering	Precision at 90% Confidence					Sources of Uncertainty
	CY 2023	CY 2024	CY 2025	CY 2026	Cumulative	
Midstream Contractor	6%	NA	TBD	TBD	6%	Deemed gross savings and NTG ratio
Community-Based Organization Distribution	0%	NA	TBD	TBD	0%	Deemed gross savings and NTG. No sampling uncertainty.
Combined Midstream/ Instant Discount Programs	NA	2%	TBD	TBD	2%	Deemed gross savings and NTG ratio. Baseline efficiency for furnaces and NTG ratio.
Total	**0.5%**	**2%**	TBD	TBD	**0.5%**	

Appendix J. Cost-Effectiveness and Emissions Methodology and Analysis

Cost-effectiveness for the Focus on Energy portfolio, programs, and offerings is calculated using the EUROPA tool. EUROPA is a flexible cost-effectiveness tool that can be configured to calculate custom cost-effectiveness tests at varying levels of temporal granularity. Previously, cost-effectiveness was calculated using a spreadsheet approach that was developed by the program administrator to help them screen new offerings prior to their implementation. This prior approach was limited to annual timeframes and offering-level calculations. Quadrennium IV priorities established by the PSC may result in a need for additional, time-varying tracking and measuring capabilities; therefore, in CY 2024, the transition was made to EUROPA. To confirm that the two methodologies deliver consistent results, the team used both tools to evaluate CY 2024 cost-effectiveness. Findings from the analysis are presented in this appendix.

The PSC considers the modified total resource cost test (modified TRC) to be the primary test in assessing the cost-effectiveness of both individual offerings and the entire Focus on Energy portfolio.[23] The PSC also directed the evaluator to conduct three additional tests for advisory purposes. These tests comprise an expanded TRC test that includes net economic benefits, the utility administrator cost test (UAT), and the societal test (SCT).

NTG ratios can have a significant effect on the results of the tests, as NTG ratios are applied to adjust offerings' gross electric and natural gas impacts so they reflect only the net gains that result from the offering. Therefore, NTG ratios adjust for electric and natural gas impacts that would have been achieved without the efficiency offerings, as well as participant spillover. When NTG is less than 1.0, savings are removed; when NTG is greater than 1.0, savings are added. In all cases, the gross impacts are multiplied by NTG.

On the cost side, expenditures that would have occurred without the efficiency effort are also removed. Specifically, the evaluation team applies NTG incremental measure costs for the modified TRC, expanded TRC, and SCT; however, it does not apply NTG to any costs in the UAT. Costs that would not have occurred in the absence of the offerings—such as delivery and administrative costs—are not impacted by NTG in any test.

[23] The use of the modified TRC test as the primary cost-effectiveness test is directed by the PSC. Public Service Commission of Wisconsin. September 3, 2014. Quadrennial Planning Process II – Scope. Order PSC Docket 5-FE-100, REF#: 215245. Order was reconfirmed on November 14, 2022. Quadrennial Planning Process IV. Order PSC Docket 5-FE-104, REF#: 453081. http://apps.psc.wi.gov/vs2015/ERF_view/viewdoc.aspx?docid=453081.

Test Descriptions

To develop its cost-effectiveness calculator, the evaluation team, as well as the administrator, use methods adapted from and consistent with the California Standard Practice Manual, the original standard of cost-effectiveness analysis for energy efficiency programs in the United States and the more recent National Standard Practice Manual for Benefit Cost Analysis of Distributed Energy Resources.[24, 25] This section describes the four tests—the modified TRC test, the expanded TRC test, the UAT, and the societal test.

Modified Total Resource Cost Test

The TRC test is the most commonly applied test for evaluating the cost-effectiveness of energy efficiency and renewable resource programs around the country. Applications range across states and utility jurisdictions, from the standard TRC test to the societal test, which expands the test inputs to provide a more holistic societal perspective. The TRC test includes total participant and administrator costs and estimates of benefits in the form of avoided utility costs. Common modifications to the standard TRC test often involve reducing the discount rate or including various environmental and other non-energy benefits (such as emissions reduction benefits) to reflect a jurisdiction's policy objectives. Wisconsin's version of the modified TRC test accounts for the standard TRC test costs and benefits and is modified to also include monetized benefits of reduced emissions (carbon dioxide, sulfur oxide, and nitrogen oxide) due to saving energy.

In CY 2024, the evaluation team used the modified TRC test to determine if the offerings were cost-effective from a regulatory perspective (as directed by the PSC) and, where feasible, measured the overall impacts of the benefits and costs of these offerings on the State of Wisconsin. In general, the test compares all benefits and costs that can be measured with a high degree of confidence, including any net avoided emissions that have values approved by the PSC. The test's purpose is to determine if the total net costs that Wisconsin residents, businesses, utilities, and Focus on Energy incur for operating the offerings are outweighed by the total net benefits that these same groups receive via avoided energy costs and avoided emissions.

In simple terms, the benefit/cost value of the modified TRC test is the ratio of avoided utility and environmental costs from avoided energy consumption to the combination of administrative costs, delivery costs, and net participant incremental measure costs.

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[24] California Public Utilities Commission. July 2002. *California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects*. http://www.calmac.org/events/SPM_9_20_02.pdf

[25] National Energy Screening Project. August 2020. *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources*. https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/

The benefit/cost equation used for the modified TRC test is:

$$TRC\frac{B}{C} = \frac{[Value\ of\ Gross\ Saved\ Energy + Value\ of\ Gross\ Avoided\ Emissions] * NTG}{[Adminstrative\ Costs\ +\ Delivery\ Costs + (Incremental\ Measure\ Cost\ * NTG)]}$$

Where:

$$Value\ of\ Gross\ Saved\ Energy = Net\ Gross\ Savings\ x\ Utility\ Avoided\ Costs$$

Expanded Total Resource Cost Test with Net Economic Benefits

The evaluation team investigated the impact of expanding the TRC to include net economic benefits for the CY 2024 offerings. The team conducts an analysis of economic benefits every two years and issues the results separately from the evaluation reports.

This is the benefit/cost equation used for the expanded TRC test with net economic benefits:

$$TRC\frac{B}{C} = \frac{[(Value\ of\ Gross\ Saved\ Energy + Value\ of\ Gross\ Avoided\ Emissions) * NTG + Net\ Economic\ Benefits]}{[Adminstrative\ Costs\ +\ Delivery\ Costs + (Incremental\ Measure\ Cost\ * NTG)]}$$

Utility Administrator/Offering Administrator Cost Test

The evaluation team also assessed the portfolio's cost-effectiveness using the UAT, which measures the net benefits and costs of the offerings as a resource option from the perspective of the Focus on Energy administrator. In Wisconsin, the UAT represents the collective perspectives of the participating utilities that hire and fund the administrator.

The UAT effectively estimates the portfolio's impacts on utility revenue requirements (the costs of providing service) by comparing the benefits of avoided utility costs from avoided energy consumption to the combined costs of operating the offering, such as incentive payments, administrative costs, and delivery costs. A benefit/cost ratio above 1.0 indicates that the offering improves an energy system's operational cost-effectiveness.

For this evaluation, the UAT's benefit/cost value indicates whether the combined revenue requirements from all participating utilities increase or decrease as a result of the Focus on Energy offerings. The net benefits determined with the UAT indicate the estimated dollar value of the change in the combined revenue requirements from all participating utilities. The NTG ratio impacts only the benefit side of the UAT because none of the costs would have occurred absent the effort, and therefore, all are kept in the test (not subtracted from the denominator like in the TRC and SCT).

The benefit/cost equation used for the UAT follows:

$$UAT\frac{B}{C} = \frac{[Value\ of\ Gross\ Saved\ Energy * NTG]}{[Participant\ Incentives +\ Adminstrative\ Costs\ +\ Delivery\ Costs]}$$

Societal Test

In addition to the expanded TRC, the evaluation team investigated the impact of several non-energy benefits, such as health, water, purchase deferral, property value, and arrearage benefits that are included in the CY 2024 offerings. These non-energy benefits are estimated for the purpose of reporting the results of the SCT.

The benefit/cost equation used for the SCT is the following:

$$SOC\frac{B}{C} = \frac{[(Value\ of\ Gross\ Saved\ Energy + Value\ of\ Gross\ Avoided\ Emissions) * NTG + Net\ Economic\ Benefits + NEBs]}{[Adminstrative\ Costs\ +\ Delivery\ Costs + (Incremental\ Measure\ Cost\ * NTG)]}$$

The next section includes a more detailed discussion of the various non-energy benefits in the SCT.

Non-Energy Benefits

Table J-1 summarizes the non-energy benefits from the five metrics quantified in the SCT: health benefits, water benefits, purchase deferral benefits, property value benefits, and income-qualified arrearage benefits. Each benefit is further described in the following sections.

Table J-1. Non-Energy Benefits Results Summary

Benefit	Value	Unit
Health Benefit	$0.0336	per kWh
Water Benefits - Residential	$0.01063	per gallon
Water Benefits - Commercial	$0.01001	per gallon
Purchase Deferral	Measure specific	Measure specific
Property Values	$9,493	per home
Arrearages	$26.22	per participant

Health Benefits

The evaluation team estimated the value of health benefits accumulated by reduced emissions attributable to an offering's activity. The team followed the method recommended by the Environmental Protection Agency (EPA) using the benefits per kilowatt-hour (BPK) tool. The EPA introduced the BPK tool in late fall 2019, using data from 2017, to help interested parties estimate health benefits from reduced emissions. The EPA last updated the tool in May 2021 using data from 2019. In CY 2024, a literature scan confirmed that the 2021 update remained the most up-to-date version.

The BPK tool relies on the AVoided Emissions and geneRation Tool (AVERT) regional inputs, which specify the blend of electric generation sources (coal, natural gas, hydroelectric, other renewables, etc.) and the downstream effects of particulate generation from those sources as determined in the Co-Benefits Risk Assessment (COBRA) health impacts screening and mapping tool.

BPK values are determined using the following equation:

$$BPK_{t,r} = \frac{HealthBenefits_{t,US}}{GenerationChange_{t,r}}$$

Where:

$BPK_{t,r}$	=	Annual monetized public health benefits per kilowatt-hour (c/kWh) for each energy efficiency/renewable energy technology type (t) and AVERT region (r)
Health $Benefits_{t,US}$	=	Aggregated monetized public health benefits from emissions reductions for each type of energy efficiency/renewable energy technology (t) for the contiguous United States (US) in 2019 dollars
Generation $Change_{t,r}$	=	Change in electricity generation for each energy efficiency/renewable energy technology type (t) and AVERT region (r)

The effects of these emissions are then tied to the negative health outcomes associated with inhaling those particulates. The EPA's 2021 report on public health and energy provides an in-depth methodology for calculating these benefits.[26] Figure J-1 shows a snapshot from the EPA's report for the included health inputs, along with the savings associated with each input.

[26] U.S. Environmental Protection Agency. May 2021. *Public Health Benefits per kWh of Energy Efficiency and Renewable Energy in the United States: A Technical Report.* https://www.epa.gov/sites/default/files/2021-05/documents/bpk_report_second_edition.pdf

Figure J-1. U.S. EPA Snapshot of Included Health Inputs

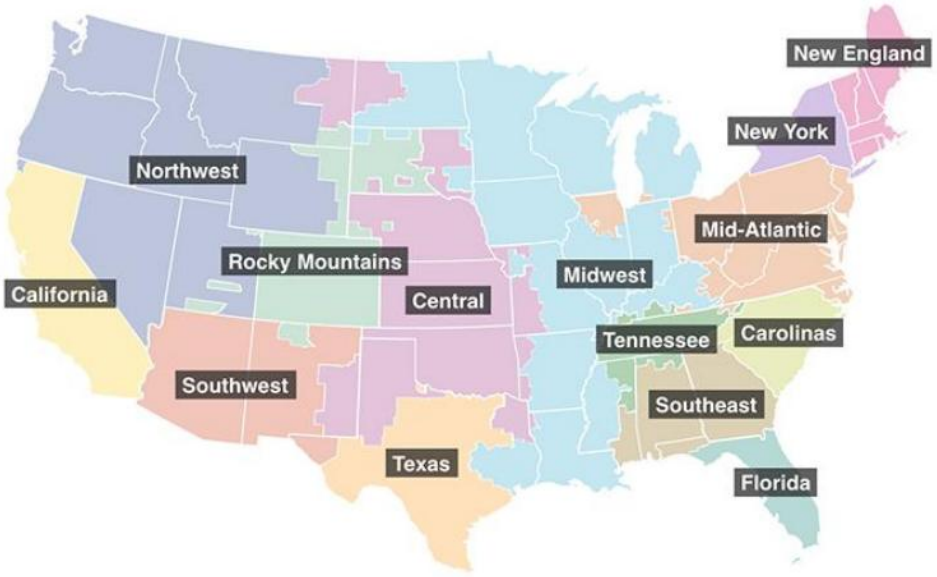
Health Endpoint	Age Range
Mortality[a]	25–99
Infant Mortality[b]	0–0
Acute Myocardial Infarction, Nonfatal[c]	0–24
Acute Myocardial Infarction, Nonfatal[c]	25–44
Acute Myocardial Infarction, Nonfatal[c]	45–54
Acute Myocardial Infarction, Nonfatal[c]	55–64
Acute Myocardial Infarction, Nonfatal[c]	65–99
Acute Myocardial Infarction, Nonfatal[d]	0–24
Acute Myocardial Infarction, Nonfatal[d]	25–44
Acute Myocardial Infarction, Nonfatal[d]	45–54
Acute Myocardial Infarction, Nonfatal[d]	55–64
Acute Myocardial Infarction, Nonfatal[d]	65–99
Hospital Admissions, All Cardiovascular (less-acute myocardinal infraction)	18–64
Hospital Admissions, All Cardiovascular (less-acute myocardinal infraction)	65–99
Hospital Admissions, All Respiratory	65–99
Hospital Admissions, Asthma	0–17
Hospital Admissions, Chronic Lung Disease	18–64
Asthma Emergency Room Visits (Smith et al. 1997)	0–99
Asthma Emergency Room Visits (Stanford et al. 1999)	0–99
Acute Bronchitis	8–12
Lower Respiratory Symptoms	7–14
Upper Respiratory Symptoms	9–11
Minor Restricted Activity Days	18–64
Work Loss Days	18–64
Asthma Exacerbation (cough, shortness of breath, or wheeze)	6–18

[a] Mortality value after adjustment for 20-year lag.
[b] Infant mortality value is not adjusted for 20-year lag.
[c] Based on Russell (1998).
[d] Based on Wittels (1990).

Source: U.S. Environmental Protection Agency

To determine Wisconsin-specific values, the evaluation team used the cost of emissions generated across the AVERT region that covers the state (Midwest, as shown in Figure J-2). The team assumed a 2% discount rate to comply with the PSC's decisions for the Quadrennial Planning Process IV, the current Focus on Energy period.

Figure J-2. U.S. EPA AVERT Regions



Source: U.S. Environmental Protection Agency.

The inputs specific to Wisconsin health benefits are a low estimate value of 6.17 cents per kWh, a median estimate of 8.49 cents per kWh, and a high estimate value of 10.70 cents per kWh, as presented in Table J-2. The evaluation team determined that the lowest value was the most appropriate to use because it provides the most conservative estimate of offering-induced health benefits.

Table J-2. Wisconsin-Specific Health Benefits

Region	Technology	Cents/kWh (Low Estimate)	Cents/kWh (Median Estimate)	Cents/kWh (High Estimate)
Midwest - Wisconsin	Uniform energy efficiency	6.17	8.49	10.70

The team generated aggregated health benefits by applying 6.17 cents per kWh to the first five years of lifecycle program savings, a shorter period than claimed for lifetime emissions benefits in the modified TRC. This is in line with EPA recommendations not to extend savings beyond the five-year threshold because of the uncertainty in the share of generation each region is expected to draw from various fuel sources during that period and for the likelihood of revisions to health savings assumptions as the tool is regularly updated.[27] For example, power sector emissions have been decreasing with the increased deployment of pollution controls and shifts away from coal generation to more natural gas and renewable sources, which are less polluting than coal and which may substantially reduce the risk of certain specific negative healthcare outcomes while leaving others unaffected.

[27] EPA. December 2024. *Public Health Benefits per kWh of Energy Efficiency and Renewable Energy in the United States: A Technical Report.* Page 6. https://www.epa.gov/system/files/documents/2024-12/bpk_report_third_edition.pdf

Water Benefits

The evaluation team estimated participant water delivery and wastewater bill savings attributed to reductions in volumetric water consumption accrued over the lifetime of efficient measures installed. These benefits are estimated for each offering by the following equation:

$$\sum_{Measure=1}^{n} Units_{Measure} \times PV(Water\ Savings\ Per\ Unit_{Measure} \times Marginal\ Cost\ of\ Water, EUL_{Measure})$$

Where PV indicates a present value function that takes annual bill savings and the number of periods as inputs, and n indicates the count of unique measures installed within a particular offering.

The marginal cost of water is then shown in this equation:

$$Marginal\ Cost\ of\ Water = (Marginal\ Cost\ of\ Water\ Delivery\ + Marginal\ Cost\ of\ Wastewater\ Service)$$

The evaluation team acquired input data from various sources:

- Measure quantity ($Units_{Measure}$) came directly from Focus on Energy on an offering-by-offering basis.
- Volumetric water savings attributed to the efficient measure relative to some baseline measure ($Water\ Savings\ Per\ Unit_{Measure}$) were calculated using the Wisconsin TRM. The evaluation team scaled the savings data by the NTG ratio for each offering.
- The water delivery rate ($Marginal\ Cost\ of\ Water\ Delivery$) was estimated using a weighted averaging algorithm from a sample of 25 water utilities in Wisconsin. This sample includes the 10 largest water utilities in Wisconsin, a random sample of 10 utilities from the smallest 50% of utilities in Wisconsin, and a random sample of five additional utilities in Wisconsin, where size is measured by the average number of customers served.[28]
- From these 25 utilities, the evaluation team calculated average marginal (volumetric) delivery rates for each utility for both residential and commercial sectors by taking the arithmetic mean of the highest and lowest rate tiers charged by each utility.[29] The team then calculated overall rate estimates by taking weighted averages of these utility-specific averages for both residential and commercial sectors, where each utility's weight is proportional to the utility's average number of customers relative to the sum of each utility's average number of customers for all utilities included in the sample. The final water delivery rate estimates for Wisconsin are $3.96 and $3.91 per 100 cubic feet for residential and commercial sectors, respectively.

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[28] The team acquired utility sales data from the PSC's E-Services Portal, using 2022 and 2023 water sales data. Public Service Commission of Wisconsin. March 2024. E-Services Portal: Municipal Annual Report Data. https://apps.psc.wi.gov/ARS/WEGSqueries/default.aspx

[29] The team acquired utility tariff data from the Public Service Commission of Wisconsin's E-Services Portal. Public Service Commission of Wisconsin. March 2024. E-Services Portal: Utility Tariffs. https://apps.psc.wi.gov/RATES/tariffs/default.aspx?tab=4

Table J-3 summarizes the weighted averaging algorithm applied to residential rates in Wisconsin by showing intermediate calculation outputs.[30]

Table J-3. Residential Water Rate Algorithm Example

Utility Size Bracket	Rank by Gallons Sold	Utility Name	Average Number of Customers	Weight (Utility Customers/ Customers in Sample)	Lowest/ Highest Tier Rates[a]	Rate Average
Top 10	1	Milwaukee Water Works	160,775	33.74%	$2.46	$2.46
	2	Madison Water Utility	71,429	14.99%	Low: $4.60; High: $10.52	$7.56
	3	Racine Water Works Commission	34,493	7.24%	Low: $2.41; High: $3.11	$2.76
	4	Green Bay Water Utility	36,091	7.57%	Low: $1.89; High: $2.66	$2.28
	5	City of Oshkosh Water Utility	23,979	5.03%	Low: $4.26; High: $5.12	$4.69
	6	Janesville Water Utility	25,735	5.40%	Low: $2.19; High: $3.70	$2.95
	7	Appleton Water Department	28,334	5.95%	Low: $4.68; High: $6.08	$5.38
	8	Fond Du Lac Water Utility	16,315	3.42%	Low: $4.31; High: $4.74	$4.53
	9	City of Waukesha Water Utility	20,749	4.35%	Low: $5.82; High: $9.64	$7.73
	10	Kenosha Water Utility	31,406	6.59%	Low: $1.76; High: $2.26	$2.01
Random Sample of 10 from Smallest 50%	338	Crandon Water and Sewer Utility	745	0.16%	Low: $2.65; High: $3.92	$3.28
	365	Arlington Water Utility	323	0.07%	$11.41	$11.41
	392	Hixton Municipal Water Utility	209	0.04%	Low: $6.12; High: $6.95	$6.54
	402	Town of Farmington Sanitary District	300	0.06%	Low: $5.35; High: $9.00	$7.18
	404	Lannon Municipal Water Utility	486	0.10%	$5.54	$5.54
	426	Clyman Utility Commission	141	0.03%	Low: $1.22; High: $1.58	$1.40

[30] Some participants obtained water from sources outside of conventional water delivery from a water utility, such as from natural bodies of water. These participants were not subject to the same marginal cost of delivery charged by water utilities. Because of an inability to reliably identify the source of water saved by program participants, the evaluation team conservatively assumed a water bill savings of $0 for those larger customers.

Utility Size Bracket	Rank by Gallons Sold	Utility Name	Average Number of Customers	Weight (Utility Customers/ Customers in Sample)	Lowest/ Highest Tier Rates[a]	Rate Average
	507	Loganville Municipal Water and Sewer Utility	144	0.03%	$5.12	$5.12
	508	Lowell Municipal Water and Sewer Utility	117	0.02%	$6.90	$6.90
	515	Stone Lake Sanitary District	140	0.03%	$4.60	$4.60
	535	Town of Knight Municipal Water Utility	114	0.02%	Low: $5.68; High: $6.04	$5.86
Random Sample of Five from Through-out	97	Brookfield Municipal Water Utility	13,196	2.77%	Low: $3.95; High: $4.80	$4.38
	157	Village of Pewaukee Water Utility	2,178	0.46%	Low: $3.20; High: $3.85	$3.47
	175	Ripon Water Utility	3,095	0.65%	Low: $1.63; High: $2.14	$1.89
	253	Redgranite Water Utility	434	0.09%	Low: $1.88; High: $2.15	$2.02
	451	Village of Allouez Water	5,567	1.17%	Low: $6.35; High: $10.30	$8.33
Final Rate Estimate						**$3.96**

[a] Utilities that list one rate offer a flat rate to their customers.

- The wastewater service rate ($Marginal\ Cost\ of\ Wastewater\ Service$) estimate was constructed from a population-weighted average of marginal (volumetric) wastewater charges for 326 (41%) Wisconsin wastewater service territories. The evaluation team acquired population and volumetric charge data from the Wisconsin Sewer User Charge Survey Report.[31] The final wastewater rate estimate is $3.96 per 100 cubic feet for both residential and commercial. This estimate accounts for the prevalence of utilities with no volumetric wastewater charge. The team used the same values and method as in 2019 due to a lack of updated data on wastewater service rates for 2024.
- The evaluation team conducted a well water pump analysis to estimate the water delivery rate for the population that uses privately owned wells and pump systems rather than those that are connected to the municipal system. According to the research, 31% of the Wisconsin population

[31] MSA Professional Services, Inc. October 2019. *The Cost of Clean: Wisconsin Sewer User Charge Survey Report.*

uses privately owned wells.[32] The team applied a weighted average to the water delivery rates to reflect both water delivery types and calculated the water delivery rate for residential as $0.00569 per gallon.

- The commercial sector costs of $3.37 for delivery and $3.24 for wastewater per 100 cubic feet of water equate to $0.0053 per gallon.
- The expected useful life of an efficient measure ($EUL_{Measure}$) derived from the TRM.
- The evaluation team assumed a real annual interest rate of 2%.
- The evaluation team included an inflation factor of 3% applied to CY 2023 values.

Purchase Deferral

Purchase deferral benefits account for the avoided costs of future baseline measure replacement in cases where the useful life of an efficient measure exceeds the useful life of the baseline measure it replaces. The evaluation team estimated purchase deferral benefits for lighting and non-lighting measures.

Lighting

The team estimated purchase deferral benefits for lighting measures on an EUL basis, where the lifetime of efficient measures (fixtures and lamps) tends to exceed that of their corresponding baseline measures. The implementation of the full Energy Independence and Security Act (EISA) in 2023 greatly reduced the theoretical benefits from purchase deferral, as most short-lived screw-based incandescent and halogen lamps were no longer available for purchase, and as the Focus on Energy portfolio largely phased out incentives for most screw-based LED lighting measures.

The evaluation team assumed that participants of Focus on Energy offerings would have replaced each baseline measure with an identical baseline or equivalent at regular intervals equal to the baseline measure's useful life. Purchase deferral benefits are estimated for each offering by the following generalized expression:

$$\sum_{Measure=1}^{n} Units_{Measure} \times PV(Avoided\ Replacement\ Costs_{Measure})$$

Where PV indicates a present value function, and $Avoided\ Replacement\ Costs$ refers to the value of avoided baseline measure replacements over the lifetime of the efficient measure.

For each efficient measure installed, the evaluation team attempted to identify a corresponding baseline measure from the Mid-Atlantic TRM, which contains a study of purchase deferral benefits for lighting

[32] Wisconsin Department of Natural Resources. *Wisconsin Public Water Systems 2020 Annual Drinking Water Report.* June 2021. https://dnr.wisconsin.gov/sites/default/files/topic/DrinkingWater/2020AnnualDrinkingWaterReport.pdf

measures.[33] Where available, the team used the present value of purchase deferral benefits provided explicitly by the Mid-Atlantic TRM.

In cases where the Mid-Atlantic TRM did not provide purchase deferral benefit estimates or the efficient measure installed through a Focus on Energy offering was not an exact match, the team conducted research to identify the EUL (in life-hours and years) and the cost of the baseline measure indicated in the TRM. The team used these two inputs to estimate benefits accrued from each avoided baseline replacement over the lifetime of the efficient measure, reduced by the Focus on Energy discount of 2%.

Finally, the evaluation team scaled the calculated savings by the NTG ratio for each offering.

Non-Lighting

The evaluation team estimated purchase deferral benefits for non-lighting measures on an equipment maintenance cost deferral basis. The team leveraged EUL benchmarking data for the period of July 2020 to June 2021 to prioritize significant non-lighting measures based on the MMBtu saving contribution. For the identified measures, the team reviewed the Non-Energy Impacts study in the Mass Save TRM.[34] Benefits arising from equipment maintenance costs were reviewed for available measures.

Based on the aforementioned sources, the team estimated purchase deferral benefits for the following non-lighting measures:

- Residential boilers
- Residential furnaces
- Residential thermostats
- Residential/retail ductless mini-split heat pumps

Based on the sourced data, the evaluation team estimated benefits accrued from avoided equipment maintenance costs over the lifetime of the non-lighting measure and applied the Focus on Energy discount rate of 2%.

Finally, the evaluation team scaled the calculated savings by the NTG ratio for each offering.

Property Values

Participating in energy efficiency programs can increase the value of a home and the associated property. Customers who participate in whole-home offerings, such as the Insulation and Air Sealing offering, are most likely to see increases in property values.

In 2012, Cadmus completed a study for People Working Cooperatively (PWC), a provider of whole-home weatherization for low-income individuals in Cincinnati, that researched the impact of low-income

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[33] Northeast Energy Efficiency Partnerships. October 2019. *Mid-Atlantic Technical Reference Manual, Version 9.* https://neep.org/sites/default/files/resources/Mid_Atlantic_TRM_V9_Final_clean_wUpdateSummary%20-%20CT%20FORMAT.pdf

[34] Non-Energy Benefits. *Massachusetts Technical Reference Manual.* May 2020. https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/12190505

whole-home weatherization programs on home value.[35] Through this study, Cadmus found a $7,000 increase in property value for participants in the PWC program compared with nonparticipants with similar homes. A more recent study done in 2021 by Oak Ridge National Laboratory confirms that a whole-home weatherization project would increase property value for low-income customers.[36] Though these studies were specific to low-income customers, the team maintains that the increase in property value can be applied to all customers who complete a whole-home weatherization project.

Many factors can impact home value, which makes it difficult to measure this benefit. To adjust for inflation from 2012, the net present value (NPV) of $7,000 is calculated as $9,493 per home. Therefore, for Wisconsin Focus on Energy, the evaluation team used an NPV benefit of $9,493 per whole-home participant (both standard income and income qualified) of the Insulation and Air Sealing offering within the Trade Ally Solutions Program (formerly the Home Performance with ENERGY STAR program).

Arrearages

Outstanding customer debt incurs costs to the utility and the customer, including the costs associated with financing (carrying costs, bad debt write-offs), shutoffs, reconnections, sending notices, and collecting debts. Low-income programs provide customers with the opportunity to reduce monthly bills, which in turn lowers the probability they will carry debt and, among those who do carry debt, helps reduce the overall total.

Several utilities have included the reduced arrearage costs associated with providing low-income program benefits in their societal tests. However, there does not appear to be a universally agreed-upon per-participant value associated with these benefits. Limited primary research is available, but what does exist is not recent. Nevertheless, the evaluation team reviewed two benchmarking analyses that compiled several potential inputs related to the utility benefits associated with low-income programs.[37,38]

One of these studies (Skumatz 2014) found a typical arrearage-related carrying cost of $2.50 per participant, with an additional $1.75 associated with the paying of bad debt and $2.15 in total costs from shutoffs and reconnects, notices, and customer calls/collections. These direct arrearage costs sum to $6.40. An additional $13 per customer was also attributed to reduced low-income subsidy payments

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35 Cadmus. December 2012. *PWC 2009 Ohio Program Services Evaluation Report.* Prepared for People Working Cooperatively. http://www.pwchomerepairs.org/Assets/PWC_2009_Evaluation_FINAL_DEC12.pdf

36 Oak Ridge National Laboratory. March 2021. *Addressing Non-Energy Impacts of Weatherization.* ORNL_SPR-2020_1840.pdf

37 Skumatz Economic Research Associates, Inc., and Cadmus. 2010. *Non Energy Benefits: Status, Findings, Next Steps, and Implications for Low Income Program Analyses in California – Revised Report.*

38 Skumatz Economic Research Associates, Inc., 2014. *Non-Energy Benefits/Non-Energy Impacts (NEBS/NEIS) and Their Role & Values In Cost-Effectiveness Tests: State Of Maryland.*

and discounts if the program was strictly low-income. Figure J-3 shows a snapshot of the study's findings.

Figure J-3. Typical Utility Costs Associated with Customer Debt

NEB Estimates from Multiple Weatherization Studies: Dollar and Percentage Analysis	Dollar NEB Values Range Low-High	Typical Value	Percent NEB Values Range Low-High	Typical Value	Notes
UTILITY PERSPECTIVE					
Payment-related					
Carrying cost on arrearages	$1.50 - $4.00	$2.50	0.6% - 4.4%	2.0%	Total arrearages $2-$100; $20-30 typical
Bad Debt Write-offs	$0.50 - $3.75	$1.75	0.4% - 2.0%	0.7%	
Reduced LI subsidy pymt/discounts	$3.00 - $25.00	$13.00	3.9% - 29.0%	16.4%	IF low income program
Shutoffs / Reconnects	$0.10 - $3.65	$0.65	0.1% - 4.4%	0.5%	
Notices	$0.05 - $1.50	$0.60	0.1% - 1.8%	0.9%	
Customer calls / collections	$0.40 - $1.60	$0.90	0.2% - 1.9%	0.6%	

Source: Skumatz Economic Research Associates, Inc., 2014

Therefore, for Focus on Energy, the evaluation team recommends that a per-participant value of $26.22 ($19.40 from 2014 adjusted for inflation) be applied to income-qualified customers in the Trade Ally Solutions and Instant Discount Programs based on the results of the most direct benchmarking research available.

The evaluation team reviewed other, more recent evaluations of the impact of various program designs on the amount of debt participants carry. One of these programs, a prepayment program in the upper Midwest, showed evidence that customers were able to eliminate approximately $68 in total debt after participating in the program for at least one calendar year. However, key differences between that program design and the low-income offerings in Wisconsin make direct comparisons difficult. These differences include the targeting or opening of that offering to customers who are not low-income qualified. That is, the total debt paid off through that prepayment program is not necessarily comparable to the debt held by strictly low-income customers in Focus on Energy's offerings in Wisconsin.

Interpreting Test Results

No single benefit/cost test can provide a comprehensive understanding of program performance or impacts in isolation. The results of tests that measure overall program cost-effectiveness, such as the modified TRC test, should be reviewed along with the results of other tests, such as the UAT. Such a multi-perspective approach warrants a clear understanding of the tradeoffs among the tests.

Test results summarize the impact of the Focus on Energy portfolio of programs from different perspectives, with test scores above 1.0 indicating that portfolio benefits outweigh the costs associated with generating those benefits. A modified TRC test score above 1.0 suggests that Focus on Energy is providing a net benefit, with energy and emissions benefits weighed against administrator and participant costs. The UAT score above 1.0 suggests that administrator costs, including incentives and program management and implementation, are outweighed by avoided energy and capacity benefits. The expanded TRC and SCT compare the same system-wide costs as the modified TRC against those same benefits, with additional benefits accruing from economic activity and non-energy benefits also included.

Energy Avoided Costs

The PSC established the methodology to estimate electric and natural gas avoided energy costs for Quadrennium IV under PSC docket 5-FE-104 (PSC REF#: 453081). The approach represents a continuation of the avoided cost methodology previously used in Quadrennium II and III. The source for electric avoided costs is based on the Midcontinent Independent Transmission System Operator (MISO) forecasted locational marginal price (LMP), that is, the average of LMPs across Wisconsin nodes. Avoided natural gas costs are calculated based on Energy Information Administration 2023 Annual Energy Outlook forecasts of Henry Hub prices, adjusted using Wisconsin City Gate prices and retail prices.

Compared with the previous quadrennium, the updated price forecasts for the current quadrennium the evaluation the team used to calculate avoided costs are lower by approximately 5% to 8% in early years (CY 2023 to CY 2026), to more than 60% in the furthest out years (CY 2040 to CY 2050). The primary driver of the lower trend in avoided electric energy costs is the anticipated ramp-up of zero-fuel-cost renewable energy sources, particularly grid-scale solar, in MISO's most recent forecast modeling. Changes to avoided natural gas and avoided T&D benefits were also lower than in the previous quadrennium.

The PSC has determined that, for purposes of evaluating Focus on Energy, avoided electric capacity costs shall be based on the unit cost of a peaker plant. The PSC established the step-by-step methodology to estimate avoided electric capacity costs under PSC docket 5-FE-101 (PSC REF#: 390566).[39] The PSC approved this methodology to carry forward for the current quadrennium under PSC docket 5-FE-104 (PSC REF#: 453081).[40] The approach relies upon MISO-established Cost of New Entry (CONE) values as well as MISO Narrow Constrained Area net revenues to calculate avoided capacity costs.

The forecast model decreases the verified gross energy savings by the conventional attribution factor of NTG to derive net savings. The net savings are then increased by the line loss factor of 8% to account for avoided distribution losses. Table J-4 shows the assumptions for CY 2023 (the first year of Quadrennium IV of Focus on Energy), and CY 2024 evaluation avoided costs used for the cost-effectiveness tests. CY 2024 annual avoided cost values are identical to those used in CY 2023 in each year, but the evaluation team updated the reporting tables to only reflect the years included in this year's analysis. Table J-5 shows avoided electric generation costs, Table J-6 shows avoided electric capacity costs, and Table J-7 shows avoided natural gas costs for 2024 through 2051.

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[39] Public Service Commission of Wisconsin. June 1, 2022. Quadrennial Planning Process III. Order PSC Docket 5-FE-101, PSC REF#: 390566. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=390566

[40] Public Service Commission of Wisconsin. November 14, 2022. Quadrennial Planning Process IV. Order PSC Docket 5-FE-104, PSC REF#: 453081.

Table J-4. Avoided Costs Summary

Avoided Cost	CY 2023	CY2024
Electric Energy ($/kWh)	$0.0299–$0.0210	$0.0292–$0.0212
Electric Capacity ($/kW year)	$177.33–$194.34	$176.06–$196.46
Gas ($/therms)	$0.463–$0.621	$0.451–$0.628
Transmission and Distribution ($/kW year)	$49.25–$54.29	$48.98–$54.88
Avoided Cost Inflation	0%	0%
Real Discount Rate	2%	2%
Line Loss	8%	8%

Table J-5. Avoided Electric Generation Costs

Year	Avoided Generation ($/kWh-Yr)	Year	Avoided Generation ($/kWh-Yr)
2024	$0.0292	2040	$0.0161
2025	$0.0286	2041	$0.0165
2026	$0.0280	2042	$0.0168
2027	$0.0273	2043	$0.0171
2028	$0.0267	2044	$0.0175
2029	$0.0260	2045	$0.0178
2030	$0.0254	2046	$0.0182
2031	$0.0248	2047	$0.0185
2032	$0.0241	2048	$0.0189
2033	$0.0223	2049	$0.0192
2034	$0.0205	2050	$0.0196
2035	$0.0187	2051	$0.0199
2036	$0.0169	2052	$0.0203
2037	$0.0151	2053	$0.0206
2038	$0.0154	2054	$0.0210
2039	$0.0158	2055	$0.0212

Table J-6. Avoided Electric Capacity Costs

Year	Avoided Capacity Cost ($/kW-Yr)	Year	Avoided Capacity Cost ($/kW-Yr)
2024	$176.06	2040	$174.97
2025	$174.29	2041	$176.31
2026	$172.53	2042	$177.66
2027	$170.77	2043	$179.01
2028	$169.02	2044	$180.37
2029	$167.27	2045	$181.73
2030	$165.54	2046	$183.11
2031	$163.80	2047	$184.49
2032	$172.55	2048	$185.87
2033	$172.22	2049	$187.27
2034	$171.91	2050	$188.67
2035	$171.59	2051	$190.07
2036	$171.29	2052	$191.49
2037	$170.99	2053	$192.91
2038	$172.31	2054	$194.34
2039	$173.64	2055	$196.46

Table J-7. Avoided Natural Gas Costs

Year	Avoided Natural Gas Cost ($/kW-Yr)	Year	Avoided Natural Gas Cost ($/kW-Yr)
2024	$0.451	2040	$0.571
2025	$0.464	2041	$0.571
2026	$0.480	2042	$0.568
2027	$0.490	2043	$0.564
2028	$0.511	2044	$0.564
2029	$0.530	2045	$0.565
2030	$0.538	2046	$0.567
2031	$0.541	2047	$0.571
2032	$0.551	2048	$0.579
2033	$0.561	2049	$0.588
2034	$0.566	2050	$0.595
2035	$0.569	2051	$0.601
2036	$0.569	2052	$0.608
2037	$0.568	2053	$0.614
2038	$0.571	2054	$0.621
2039	$0.571	2055	$0.628

Avoided Transmission and Distribution Costs

In its Final Decision of June 1, 2020, the PSC directed the Evaluation Work Group (EWG) to propose to the PSC a method for calculating avoided T&D costs to be used for the purpose of evaluating Focus on Energy (PSC REF#: 390566). In its Final Decision of March 10, 2021, the PSC approved the EWG's recommended methodology to estimate avoided electric T&D costs for Quadrennium III under PSC docket 5-FE-101 (PSC REF#: 406591). [41]

As stated in the commission order:

> "In order to reduce the year-to-year variability of the costs, a four-year running average of the total miles and the annualized cost per mile per kW-Year are multiplied to get the average cost per kW-Year. For projecting values in future years, this approach escalates the most recent average Midcontinent Independent System Operating (MISO) Cost of New Entry (CONE) value by a growth factor that takes into account inflation and construction costs. The growth factor is calculated by taking the four-year average of construction cost growth as determined by the Wisconsin Department of Transportation in the Chained Fisher Construction Cost Index, and subtracting inflation (U.S. Bureau of Labor Statistics Consumer Price Index, Midwest Region),[42] over the same period."

In its Final Decision in Quadrennial Planning Process IV, the PSC directed the EWG, or EWG and a third party, to propose an alternative methodology for calculating avoided T&D costs to the PSC for its consideration.[43] The evaluation team conducted research in CY 2024 to assess alternative methods to calculate avoided T&D costs. With support from the Regulatory Assistance Project (RAP), the team developed a memo that analyzed alternative approaches and put forth a recommended approach for the Focus on Energy EWG's consideration. After reviewing and discussing the memo, the EWG supported the approach recommended by the evaluation team and RAP. In November 2024, Commission staff delivered a memo to the Commission for its consideration seeking a decision on the EWG's recommended approach.[44] A decision to adopt an alternative methodology for calculating avoided T&D costs was still pending before the PSC as of the time the CY 2024 Evaluation Report was published.

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41 Public Service Commission of Wisconsin. March 10, 2021. Quadrennial Planning Process III. Order PSC Docket 5-FE-101, REF#: 406591. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=406591

42 Bureau of Labor Statistics Midwest CPI Summaries available here: Midwest CPI Summaries : Midwest Information Office : U.S. Bureau of Labor Statistics (bls.gov)

43 Public Service Commission of Wisconsin. November 14, 2022. Quadrennial Planning Process IV. Order PSC Docket 5-FE-104, REF#: 453081. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=453081

44 Public Service Commission of Wisconsin. November 14, 2024. *Quadrennial Planning Process IV*. PSC Docket 5-FE-104, PSC REF#: 524099. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=524099

The evaluation team applied the method first approved in Quadrennium III and specified above to estimate avoided T&D costs per kW for each year from CY 2023 to CY 2051. Table J-8 lists these values.

Table J-8. Calculated and Forecasted Avoided T&D Costs

Year	Avoided T&D Cost ($/kW-Yr)	Year	Avoided T&D Cost ($/kW-Yr)
2024	$48.98	2040	$50.35
2025	$48.78	2041	$50.60
2026	$48.65	2042	$50.85
2027	$48.58	2043	$51.11
2028	$48.55	2044	$51.38
2029	$48.56	2045	$51.65
2030	$48.62	2046	$51.93
2031	$48.70	2047	$52.21
2032	$48.81	2048	$52.49
2033	$48.95	2049	$52.78
2034	$49.10	2050	$53.07
2035	$49.28	2051	$53.37
2036	$49.47	2052	$53.67
2037	$49.67	2053	$53.98
2038	$49.89	2054	$54.29
2039	$50.12	2055	$54.88

Emissions Benefits

The modified TRC benefit/cost calculations include the benefit of avoiding three air pollutants that are regulated under the Clean Air Act. These are carbon dioxide, sulfur dioxide, and nitrogen oxide. Determining the emissions benefits requires three key parameters: lifecycle net energy savings, emissions factors or a tool that uses emissions factors, and the dollar value of the displaced emissions.

Emissions factors are the rate at which the criteria pollutants are emitted per unit of energy generated and are most often expressed in tons of pollutant per energy unit. Electric is in tons/megawatt-hour (MWh), and gas is in tons/thousand therms (MThm). The product of the emissions factor and the net energy savings is the total weight of air pollutants offset or avoided by the program.

The product of the total tonnage of pollutant saved and the discounted annual dollar value of the reduced emissions per ton is, therefore, the avoided emissions benefit, as shown in this equation:

$$Value\ of\ Avoided\ Emissions = \sum_{Years=MeasureEUL}^{n} PV\left(Annual\ Emissions\ Factor * Annual\ Emissions * Annual\ Market\ Value\ of\ Emissions\right)$$

Where PV indicates a present value function that takes annual emissions results and the number of periods as inputs, and n indicates the count of unique measures installed within a particular offering.

For CY 2024, the evaluation team assessed the benefits of electric emissions for Focus on Energy using AVERT, a tool developed by the EPA to calculate avoided emissions from renewable energy and energy efficiency programs. AVERT is a spreadsheet-based model that uses historical hourly generation and emissions data to determine the individual power plants that are likely to be displaced by energy efficiency or renewable energy during each hour of the year.

To use AVERT to calculate electric emissions benefits, the lifecycle net electric savings for Focus on Energy need to be attributed to an AVERT region. As shown in Figure J-2 above, Wisconsin falls into a single AVERT region.

Savings for Focus on Energy offerings are run through a region-specific version of AVERT to calculate the electric emissions benefits per offering. AVERT uses a model from the previous year to compare the electricity generation avoided by the Focus on Energy offerings during each hour of the year with the hourly generation information to determine the amount of emissions displaced.

Table J-9 lists the gas emissions factor and allowance prices. For CY 2024, the electric emissions scalar was 792 tons of carbon dioxide per GWh. Note that this can be used to estimate avoided tons of carbon from electric savings; however, it is not exact, will not apply for any other years or regions, and will vary in results based on input GWh.

Table J-9. Emissions Factors and Allowance Price for CY 2024

Service Fuel Type	Carbon Dioxide	Nitrogen Oxide	Sulfur Dioxide
Electric Emissions Factor (Tons/MWh)	0.792	0.0005	0.0004
Gas Emissions Factor (Tons/MThm)	5.85	N/A	N/A
Allowance Price ($/Ton)	$26.50	$7.50	$2

For CY 2024, as in previous years, the evaluation team continued to confirm that allowance prices for nitrogen oxide and sulfur dioxide emissions were in line with recent annual auction prices held under the EPA's Cross-State Air Pollution Rule, most recently updated in 2023.[45] The team used the carbon dioxide emissions price in the PSC's Order, docket 5-FE-104, PSC REF#: 487366, which states, "For the purposes of evaluating Focus in Quad IV, a starting point market-based value of $24.77 per ton of avoided carbon emissions is reasonable and in the public interest."[46] Further, this value will increase by 7% in each year of Quad IV, which has a first-year value of $26.50 per ton in CY 2024.

[45] Progress Report - Program Compliance and Market Activity | US EPA. https://www.epa.gov/power-sector/progress-report-program-compliance-and-market-activity

[46] Public Service Commission of Wisconsin. June 6, 2018. Quadrennial Planning Process IV. Order PSC Docket 5-FE-104, REF#: 487366. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=487366

The natural gas emissions factor has remained constant since the CY 2011 evaluation report and is derived from a best practice greenhouse gas inventory method developed by the California Energy Commission.[47]

Table J-10 lists the total avoided emissions by gas type in tons for CY 2023 and CY 2024.

Table J-10. Total Emissions Benefits by Gas Type

Year	Carbon Dioxide	Nitrogen Oxide	Sulfur Oxide
CY 2023 Tons of Emissions Avoided	6,844,843	2,437	3,006
CY 2024 Tons of Emissions Avoided	6,539,245	2,612	3,200

Table J-11 lists the emissions benefits for all programs by segment. The substantial increase in relative benefits between CY 2022 and CY 2023/CY 2024 is primarily due to the increase in per-ton emissions benefits, which grew from $15 in CY 2022 to a first year value of $24.77 in CY 2023 and a first year value of $26.50 in CY 2024, which is then increased by 7% per year over the full measure life of all measures in the portfolio. Additionally, proportionally higher natural gas savings in CY 2024 compared to CY2023 resulted in somewhat higher emissions reductions over the years, as the overall emissions factor for electricity generation has decreased slightly, but the natural gas emissions factor has remained unchanged.

Table J-11. Total Emissions Benefits by Segment

Year	Residential	Nonresidential	Midstream	Total
CY 2023 Emissions Benefits	$48,554,654	$187,153,229	$9,005,016	**$244,712,899**
CY 2024 Emissions Benefits	$45,759,843	$202,928,978	$1,750,800	**$250,439,621**

Offering Costs

Focus on Energy's fiscal agent, the accounting firm Wipfli, provided the CY 2024 offering costs to the evaluation team, which represent all costs associated with running the efficiency offerings (including administration and delivery costs). Note that incentive costs are not included as TRC or SCT costs because they are deemed transfer payments, which is consistent with industry guidelines defining the TRC test. Incentive costs, however, are used for the UAT.

Incremental Costs

The gross incremental costs are the additional costs incurred by participants as a result of purchasing efficient equipment over and above a baseline non-qualified product. The evaluation team derived the gross incremental cost values used in this CY 2024 evaluation from the incremental cost study conducted by the administrator, implementers, and evaluation team in CY 2024. This study established

[47] California Air Resources Board. 2019. *California Greenhouse Gas Emissions for 2000 to 2017.* https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf

up-to-date incremental costs for all measures based on the best available data, including historical Focus on Energy program data and independent research from other state programs.

Wisconsin Bill Payer Impacts

The evaluation team determined average annual and projected lifetime values in total bill savings attributable to reductions in energy consumption due to program activity. The team did not apply these results, shown in Table J-12, to any cost-effectiveness test but provided them here for informational purposes. To calculate bill impacts, the evaluation team collected annual 2024 residential and nonresidential electricity rates from utility websites for Alliant Energy (Wisconsin Power and Light), We Energies, Madison Gas and Electric, Upper Peninsula Power Company, Xcel Energy (Northern States Power), and Wisconsin Public Service Corporation. The team gathered annual 2024 Natural Gas rates from the Energy Information Administration website,[48] and then weighted them using the same population-based ratios used to develop avoided electric generation costs.

Table J-12. Bill Savings Inputs and Estimates

	Weighted Average Rate ($/kWh or therms)	Annual Net Bill Savings	Average Measure Life	Total Projected Lifetime Bill Savings
Residential Rate (kWh)	$0.1645	$6,220,599	20	$100,829,084
Nonresidential Rate (kWh)	$0.1488	$48,545,441	16	$676,102,254
Residential Rate (therms)	$0.9711	$5,508,260	16	$74,558,265
Nonresidential Rate (therms)	$0.7129	$6,429,208	15	$82,480,912

Cost-Effectiveness Results by Test

Table J-13 presents the inputs and results from the modified TRC test for the Focus on Energy CY 2024 energy efficiency and renewable resource portfolio. Application of the modified TRC test showed that net statewide benefits to residents, businesses, and Focus on Energy from the CY 2024 offerings were $402,838,044.

[48] EIA. Retrieved April 21, 2025. "Natural Gas Prices." https://www.eia.gov/dnav/ng/NG_PRI_SUM_DCU_SWI_A.htm

Table J-13. CY 2024 Sector-Level and Overall Results, Modified TRC Test

	Residential	Nonresidential	Midstream	Total
Administrative Costs	$1,084,688	$1,473,074	$87,696	$2,645,458
Delivery Costs	$11,744,165	$20,326,342	$997,270	$33,067,777
Incremental Measure Costs	$89,580,732	$144,716,580	$7,136,361	$241,433,674
Total TRC Costs	**$102,409,584**	**$166,515,997**	**$8,221,327**	**$277,146,909**
Electricity Benefits (kWh)	$15,253,597	$114,409,822	-$257,282	$129,406,137
Capacity Benefits (kW)	$24,047,567	$121,889,655	$983,235	$146,920,457
Gas Benefits	$42,104,933	$60,498,804	$5,027,908	$107,631,645
Emissions Benefits	$49,146,360	$203,071,240	$1,750,793	$253,968,393
T&D Benefits	$6,875,111	$34,901,572	$281,637	$42,058,320
Total TRC Benefits	**$137,427,568**	**$534,771,094**	**$7,786,291**	**$679,984,953**
TRC Benefits Minus Costs	**$35,017,983**	**$368,255,097**	**-$435,037**	**$402,838,044**
TRC Benefit/Cost Ratio	**1.34**	**3.21**	**0.95**	**2.45**

Table J-14 presents the inputs and results from the expanded TRC test for the Focus on Energy CY 2024 energy efficiency and renewable resource portfolio. The expanded TRC test includes economic benefits from the portfolio. As expected, the inclusion of economic benefits substantially increases the expanded TRC score from the modified TRC.

Table J-14. CY 2024 Overall Results, Expanded TRC Test

	Total
Administrative Costs	$2,645,458
Delivery Costs	$33,067,777
Incremental Measure Costs	$241,433,674
Total TRC Costs	**$277,146,909**
Electricity Benefits (kWh)	$129,406,137
Capacity Benefits (kW)	$146,920,457
Gas Benefits	$107,631,645
T&D Benefits (kW)	$42,058,320
Emissions Benefits	$253,968,393
Economic Benefits[a]	$475,540,973
Total TRC Benefits	**$1,155,525,926**
TRC Benefits Minus Costs	**$878,379,017**
TRC Benefit/Cost Ratio	**4.17**

[a] Cadmus. May 8, 2024. *Focus on Energy 2019-2022 Quadrennium Economic Impacts, updated to incorporate 2024 inflation (2.98%).* 2019-2022 Quad Economic Impacts Final Report (focusonenergy.com)

Table J-15 presents the inputs and results from the UAT for the CY 2024 Focus on Energy portfolio. The results indicate that the benefits generated by the portfolio far outweighed the combined costs of operating the programs.

Table J-15. CY 2024 Sector-Level and Overall Results, UAT

	Residential	Nonresidential	Midstream	Total
Incentive Costs	$21,993,126	$30,006,526	$1,779,643	$53,779,295
Administrative Costs	$1,084,688	$1,473,074	$87,696	$2,645,458
Delivery Costs	$11,744,165	$20,326,342	$997,270	$33,067,777
Total UAT Costs	**$34,821,978**	**$51,805,943**	**$2,864,609**	**$89,492,530**
Electricity Benefits (kWh)	$15,253,597	$114,409,822	-$257,282	$129,406,137
Capacity Benefits (kW)	$24,047,567	$121,889,655	$983,235	$146,920,457
Gas Benefits	$42,104,933	$60,498,804	$5,027,908	$107,631,645
T&D Benefits (kW)	$6,875,111	$34,901,572	$281,637	$42,058,320
Total UAT Benefits	**$88,281,208**	**$331,699,854**	**$6,035,498**	**$426,016,560**
UAT Benefits Minus Costs	**$53,459,229**	**$279,893,911**	**$3,170,889**	**$336,524,030**
UAT Benefit/Cost Ratio	**2.54**	**6.40**	**2.11**	**4.76**

Table J-16 shows the inputs and results from the SCT for CY 2024 energy efficiency and renewable resource offerings. As expected, the estimated overall benefit/cost value from the SCT is the second highest of the four tests, surpassed only by the UAT. The SCT, which includes the same costs as the modified TRC, has additional non-energy benefits. When interpreted within the context of the modified TRC test results, these findings suggest that Focus on Energy activities provide substantial additional benefits, generating additional value in terms of personal health cost savings, water savings, lighting purchase deferrals, property values, and arrearage repayment assistance. Benefits from the residential offerings were 1.57 times greater than the costs, while the benefits from the nonresidential offerings outweighed the costs by a factor of 3.86.

Table J-16. CY 2024 Sector-Level and Overall Results, SCT

	Residential	Nonresidential	Midstream	Total
Administrative Costs	$1,084,688	$1,473,074	$87,696	$2,645,458
Delivery Costs	$11,744,165	$20,326,342	$997,270	$33,067,777
Incremental Measure Costs	$89,580,732	$144,716,580	$7,136,361	$241,433,674
Total Non-Incentive Costs	**$102,409,584**	**$166,515,997**	**$8,221,327**	**$277,146,909**
Electricity Benefits (kWh)	$15,253,597	$114,409,822	-$257,282	$129,406,137
Capacity Benefits (kW)	$24,047,567	$121,889,655	$983,235	$146,920,457
Gas Benefits	$42,104,933	$60,498,804	$5,027,908	$107,631,645
Emissions Benefits	$49,146,360	$203,071,240	$1,750,793	$253,968,393
T&D Benefits (kW)	$6,875,111	$34,901,572	$281,637	$42,058,320
Health Benefits	$12,215,947	$100,142,504	-$151,025	$112,207,426
Water Benefits	$4,022,941	$4,072,343	$49,402	$8,144,686
Purchase Deferral Benefits	$607,073	$4,239,555	$66,708	$4,913,335
Other Non-Energy Benefits[a]	$6,492,128	$0	$1,075,675	$7,567,803
Economic Benefits	N/A	N/A	N/A	$475,540,973
Total SCT Benefits	**$160,765,657**	**$643,225,496**	**$8,827,050**	**$1,288,359,176**
SCT Benefits Minus Costs	**$58,356,072**	**$476,709,499**	**$605,723**	**$1,011,212,267**
SCT Benefit/Cost Ratio	**1.57**	**3.86**	**1.07**	**4.65**

[a] Includes property values and arrearages

Cost-Effectiveness Results by Offering

Table J-17 and Table J-18 provide the sector-level and overall results of the cost-effectiveness analysis shown by core efficiency offerings and renewables. Incentive costs are provided below, but they are not included in the TRC calculation. The TRC ratio equals the total TRC benefits divided by the total non-incentive costs. Table J-19 provides UAT results, and Table J-20 provides SCT results.

Table J-17. CY 2024 Overall Cost-Effectiveness Analysis with Portfolio Breakout

Focus on Energy Benefits and Costs	Full Portfolio	Core Programs Alone	Renewables Alone
Incentives	$53,779,295	$49,782,302	$3,996,993
Modified TRC Benefits ($ millions)	$679,984,953	$576,513,742	$103,471,211
Modified TRC Costs ($ millions)	$277,146,909	$193,015,117	$84,131,792
Portfolio Modified TRC Benefit/Cost Ratio	**2.45**	**2.99**	**1.23**

Table J-18. CY 2024 Overall with Renewables Separate Cost-Effectiveness Analysis, Modified TRC Test

	Residential	Nonresidential	Midstream	Renewables	Total
Administrative Costs	$995,698	$1,365,433	$87,696	$196,630	$2,645,458
Delivery Costs	$10,780,657	$18,841,049	$997,270	$2,448,800	$33,067,777
Incremental Measure Costs	$40,449,771	$112,361,180	$7,136,361	$81,486,362	$241,433,674
Total Non-Incentive Costs	**$52,226,127**	**$132,567,663**	**$8,221,327**	**$84,131,792**	**$277,146,909**
Electricity Benefits (kWh)	$7,101,923	$104,532,136	-$257,282	$18,029,360	$129,406,137
Capacity Benefits (kW)	$9,959,834	$103,185,961	$983,235	$32,791,426	$146,920,457
Gas Benefits	$42,104,933	$60,498,804	$5,027,908	$0	$107,631,645
Emissions Benefits	$29,576,702	$179,357,959	$1,750,793	$43,282,939	$253,968,393
T&D Benefits (kW)	$2,850,687	$29,558,512	$281,637	$9,367,486	$42,058,320
Total TRC Benefits	**$91,594,079**	**$477,133,372**	**$7,786,291**	**$103,471,211**	**$679,984,953**
TRC Benefits Minus Costs	**$39,367,952**	**$344,565,710**	**-$435,037**	**$19,339,419**	**$402,838,044**
TRC Benefit/Cost Ratio	**1.75**	**3.60**	**0.95**	**1.23**	**2.45**

Table J-19. CY 2024 Overall with Renewables Separate Cost-Effectiveness Analysis, UAT

	Residential	Nonresidential	Midstream	Renewables	Total
Incentive Costs	$20,188,779	$27,813,879	$1,779,643	$3,996,993	$53,779,295
Administrative Costs	$995,698	$1,365,433	$87,696	$196,630	$2,645,458
Delivery Costs	$10,780,657	$18,841,049	$997,270	$2,448,800	$33,067,777
Total UAT Costs	**$31,965,135**	**$48,020,362**	**$2,864,609**	**$6,642,423**	**$89,492,530**
Electricity Benefits (kWh)	$7,101,923	$104,532,136	-$257,282	$18,029,360	$129,406,137
Capacity Benefits (kW)	$9,959,834	$103,185,961	$983,235	$32,791,426	$146,920,457
Gas Benefits	$42,104,933	$60,498,804	$5,027,908	$0	$107,631,645
T&D Benefits (kW)	$2,850,687	$29,558,512	$281,637	$9,367,486	$42,058,320
Total UAT Benefits	**$62,017,376**	**$297,775,413**	**$6,035,498**	**$60,188,272**	**$426,016,560**
UAT Benefits Minus Costs	**$30,052,241**	**$249,755,051**	**$3,170,889**	**$53,545,848**	**$336,524,030**
UAT Benefit/Cost Ratio	**1.94**	**6.20**	**2.11**	**9.06**	**4.76**

Table J-20. CY 2024 Overall with Renewables Separate Cost-Effectiveness Analysis, SCT

	Residential	Nonresidential	Midstream	Renewables	Total
Incentive Costs	$20,188,779	$27,813,879	$1,779,643	$3,996,993	$53,779,295
Administrative Costs	$995,698	$1,365,433	$87,696	$196,630	$2,645,458
Delivery Costs	$10,780,657	$18,841,049	$997,270	$2,448,800	$33,067,777
Incremental Measure Costs	$40,449,771	$112,361,180	$7,136,361	$81,486,362	$241,433,674
Total Non-Incentive Costs	**$52,226,127**	**$132,567,663**	**$8,221,327**	**$84,131,792**	**$277,146,909**
Electricity Benefits (kWh)	$7,101,923	$104,532,136	-$257,282	$18,029,360	$129,406,137
Capacity Benefits (kW)	$9,959,834	$103,185,961	$983,235	$32,791,426	$146,920,457
Gas Benefits	$42,104,933	$60,498,804	$5,027,908	$0	$107,631,645
Emission Benefits	$29,576,702	$179,357,959	$1,750,793	$43,282,939	$253,968,393
T&D Benefits (kW)	$2,850,687	$29,558,512	$281,637	$9,367,486	$42,058,320
Health Benefits	$7,133,925	$93,984,429	-$151,025	$11,240,097	$112,207,426
Water Benefits	$4,022,941	$4,116,722	$56,367	$0	$8,196,030
Purchase Deferral	$607,073	$4,239,555	$66,708	$0	$4,913,335
Other Non-Energy Benefits [a]	$6,492,128	$0	$1,075,675	$0	$7,567,803
Economic Benefits	N/A	N/A	N/A	N/A	$475,540,973
Total SCT Benefits	**$109,850,145**	**$579,474,078**	**$8,834,015**	**$114,711,308**	**$1,288,410,520**
SCT Benefits Minus Costs	**$57,624,019**	**$446,906,415**	**$612,688**	**$30,579,516**	**$1,011,263,611**
SCT Benefit/Cost Ratio	**2.10**	**4.37**	**1.07**	**1.36**	**4.65**

[a] Includes property values and arrearages

Table J-21 provides the cost-effectiveness analysis of the residential and midstream channels. Incentive costs are provided below, but they are not included in the modified TRC calculation. The modified TRC ratio equals the total TRC benefits divided by the total non-incentive costs.

Table J-21. CY 2024 Residential and Midstream/Instant Discount Offering Modified TRC

	Direct to Customer		Multifamily		Renewable Rewards	Residential New Construction		Trade Ally Solutions			Midstream/Instant Discount	
	Online Marketplace	Packs	Multifamily	EDA/EDR	Residential Renewable Rewards	Residential New Construction	New Manufactured Homes Pilot	Heating and Cooling	Insulation and Air Sealing	Tribal	Commercial	Residential
Incentive Costs	$1,519,092	$4,793,935	$1,321,243	$1,196,125	$1,804,346	$3,005,535	$96,750	$5,158,858	$2,639,875	$345,368	$409,969	$1,369,674
Administrative Costs	$74,921	$236,434	$65,163	$58,992	$88,989	$148,231	$4,772	$254,432	$130,197	$17,033	$20,145	$67,551
Delivery Costs	$811,184	$2,559,925	$705,534	$638,722	$963,508	$1,604,933	$51,664	$2,754,792	$1,409,674	$184,424	$265,874	$731,396
Incremental Measure Costs	$3,404,795	$3,687,943	$2,141,690	$9,795,424	$49,130,961	$0	$32,715	$10,761,359	$10,460,704	$165,141	$349,954	$6,786,407
Total Non-Incentive Costs	**$4,290,900**	**$6,484,302**	**$2,912,386**	**$10,493,138**	**$50,183,458**	**$1,753,164**	**$89,150**	**$13,770,583**	**$12,000,574**	**$366,598**	**$635,973**	**$7,585,355**
Electricity Benefits (kWh)	$1,890,817	$1,486,469	$1,178,139	$3,625,575	$8,151,674	$257,762	$5,335	-$2,327,536	$987,140	-$1,778	$179,886	-$437,168
Capacity Benefits (kW)	$92,416	$1,017,809	$1,204,845	$3,630,958	$14,087,733	$673,350	$32,668	$167,744	$3,126,281	$13,762	$240,410	$742,826
T&D Benefits (kW)	$26,443	$290,932	$344,945	$1,040,656	$4,024,425	$192,149	$9,322	$47,900	$894,410	$3,930	$68,715	$212,921
Gas Benefits	$2,764,612	$9,225,515	$2,910,678	$3,688,731	$0	$7,264,838	$36,824	$13,008,711	$3,117,503	$87,521	$508,673	$4,519,235
Emissions Benefits	$2,861,397	$5,145,995	$3,232,672	$7,890,531	$19,569,658	$4,820,743	$34,897	$2,081,469	$3,465,732	$43,266	$394,519	$1,356,274
Total TRC Benefits	**$7,635,685**	**$17,166,721**	**$8,871,278**	**$19,876,452**	**$45,833,489**	**$13,208,842**	**$119,047**	**$12,978,288**	**$11,591,066**	**$146,701**	**$1,392,203**	**$6,394,088**
TRC Benefits Minus Costs	**$3,344,785**	**$10,682,419**	**$5,958,892**	**$9,383,314**	**-$4,349,969**	**$11,455,677**	**$29,897**	**-$792,295**	**-$409,508**	**-$219,897**	**$756,230**	**-$1,191,267**
TRC Benefit/Cost Ratio	**1.78**	**2.65**	**3.05**	**1.89**	**0.91**	**7.53**	**1.34**	**0.94**	**0.97**	**0.40**	**2.19**	**0.84**

Table J-22 provides a cost-effectiveness analysis of nonresidential offerings. Incentive costs are provided below, but they are not included in the TRC calculation. The TRC ratio equals the total TRC benefits divided by the total non-incentive costs.

Table J-22. CY 2024 Nonresidential Offerings Modified TRC

	Agribusiness	Business and Industry		Large Industrial		Renewable Rewards	Schools and Government			Pilots	
	Agribusiness	Commercial and Industrial	EDA/EDR	Large Industrial	EDA/EDR	Business Renewable Rewards	Government	Schools	EDA/EDR	Community Impact	Life Science Midstream
Incentive Costs	$2,098,173	$6,929,177	$1,640,278	$7,295,236	$930,658	$2,192,646	$1,750,958	$5,257,726	$440,844	$1,180,331	$151,900
Administrative Costs	$103,003	$340,166	$80,524	$358,136	$45,688	$107,641	$85,958	$258,111	$21,642	$57,945	$7,457
Delivery Costs	$1,421,297	$4,693,807	$1,111,120	$4,941,774	$630,426	$1,485,293	$1,186,095	$3,561,570	$298,627	$799,553	$102,897
Incremental Measure Costs	$5,726,503	$20,334,772	$13,817,251	$38,088,324	$10,463,729	$32,355,400	$5,833,112	$12,667,348	$4,007,854	$536,025	$886,262
Total Non-Incentive Costs	**$7,250,804**	**$25,368,744**	**$15,008,895**	**$43,388,233**	**$11,139,843**	**$33,948,334**	**$7,105,165**	**$16,487,029**	**$4,328,122**	**$1,393,522**	**$996,616**
Electricity Benefits (kWh)	$8,638,800	$21,279,694	$6,549,974	$50,783,585	$3,871,397	$9,877,686	$4,321,285	$7,190,709	$1,233,296	$260,204	$311,909
Capacity Benefits (kW)	$8,795,730	$21,393,572	$10,555,994	$39,652,112	$6,260,817	$18,703,694	$4,315,453	$10,079,974	$1,579,052	$312,061	$241,196
T&D Benefits (kW)	$2,519,979	$6,127,009	$3,025,416	$11,355,722	$1,794,391	$5,343,061	$1,236,632	$2,888,504	$452,566	$89,357	$68,936
Gas Benefits	$1,828,832	$10,460,370	$2,934,854	$26,454,817	$2,153,580	$0	$3,084,916	$12,407,141	$920,800	$253,495	$0
Emissions Benefits	$12,794,220	$33,549,044	$12,567,092	$85,151,062	$7,614,522	$23,713,281	$7,599,699	$16,693,259	$2,532,366	$435,624	$348,783
Total TRC Benefits	**$34,577,561**	**$92,809,690**	**$35,633,331**	**$213,397,298**	**$21,694,707**	**$57,637,722**	**$20,557,985**	**$49,259,586**	**$6,718,080**	**$1,350,742**	**$970,824**
TRC Benefits Minus Costs	**$27,326,757**	**$67,440,945**	**$20,624,436**	**$170,009,064**	**$10,554,864**	**$23,689,387**	**$13,452,820**	**$32,772,557**	**$2,389,958**	**-$42,781**	**-$25,792**
TRC Benefit/Cost Ratio	**4.77**	**3.66**	**2.37**	**4.92**	**1.95**	**1.70**	**2.89**	**2.99**	**1.55**	**0.97**	**0.97**

Cost-Effectiveness Results for Renewables

Table J-23 lists the CY 2023 and CY 2024 cost-effectiveness results, with renewables excluded and with renewables included.

Table J-23. CY 2023, and CY 2024 Cost-Effectiveness Results for Focus on Energy Portfolio

Calendar Year	Residential	Nonresidential	Midstream	Renewables	Total
CY 2023: Modified TRC Test Result with Renewables	1.37	3.28	3.59	N/A	**2.58**
CY 2023: Modified TRC Test Result Renewables Excluded	1.74	3.63	3.59	1.57	**2.58**
CY 2024: Modified TRC Test Result with Renewables	1.34	3.21	0.95	N/A	**2.45**
CY 2024: Modified TRC Test Result Renewables Excluded	1.75	3.60	0.95	1.23	**2.45**

Outcome 1. The Focus on Energy remained highly cost-effective in CY 2024, consistent with its performance in CY 2023. The Focus on Energy portfolio remained stable and highly cost-effective in CY 2024, delivering $2.45 in benefits for each dollar spent, compared to $2.58 in CY 2023. When accounting for downstream economic benefits, the CY 2024 portfolio was even more effective, delivering $4.17 per dollar spent. When including non-energy benefits through the societal test, the program delivered $4.65 per dollar spent.

Outcome 2. The midstream channel alone narrowly missed being cost-effective in CY 2024, delivering slightly less than $1.00 in benefits for every dollar spent on the programs. The midstream portfolio, which transitioned from the Midstream Program to the Instant Discount Program in CY 2024, achieved a modified TRC of 0.95 in CY 2024. The primary driver of lower cost-effectiveness in the midstream portfolio was the addition of heat pumps in CY 2024, which have high incremental measure costs and produce negative electric impacts when customers switch from gas to electric heat. These measures also produce high natural gas savings that, along with emissions benefits, offset the negative electric impacts to an extent; however, not enough to overcome the cost-effective threshold of 1.00 in the modified TRC test.

Recommendation 1. Continue to monitor which HVAC measures or which heat pump delivery methods achieve the highest cost-effectiveness and consider shifting resources into those channels.

Recommendation 2. Explore alternative cost-effectiveness testing frameworks for beneficial electrification measures, such as heat pumps and solar PV panels, that would align with PSC goals for electrification benefits beyond those found in the modified TRC.

Appendix K. Detailed Survey/Interview Findings

This appendix includes the CY 2024 survey instruments and ongoing participant satisfaction survey questions for several offerings in Focus on Energy's residential and nonresidential sectors.

Customer Satisfaction Survey Questions

The administrator fielded online customer satisfaction surveys throughout CY 2024. Table K-1 lists the rating questions asked in the surveys. All questions were based on a scale of 0 to 10, where 10 indicated the highest satisfaction or likelihood to recommend, and 0 indicated the lowest satisfaction or likelihood. All surveys included four core rating questions:

- **Overall satisfaction**: "Overall, how satisfied are you with your most recent experience with Focus on Energy?"
- **Staff satisfaction**: "How satisfied are you with the [energy advisor or] Focus on Energy staff member who assisted you with your [project/application/order]?"
- **Trade ally satisfaction**: "How satisfied are you with the contractor(s) that you worked with on this project?"
- **Ease of participation**: "How satisfied are you with the ease of [submitting your rebate application/ordering your pack from Focus on Energy/shopping for products at the Online Marketplace]?"
- **Likelihood of recommending Focus on Energy**: "How likely are you to recommend Focus on Energy to others?"

Table K-1. CY 2024 Customer Satisfaction Survey Question Matrix: Ratings

Program	Program/ Offering Overall	Staff	Trade Allies	Ease of Participation	Recommend Focus on Energy	Other Ratings
Residential						
Direct to Customer[a]	✓	✓	-	✓	✓	-
Trade Ally Solutions[b]	✓	✓	✓	✓	✓	-
Multifamily	✓	✓	✓	✓	✓	-
Nonresidential						
Agribusiness	✓	✓	✓	-	✓	-
Business and Industry	✓	✓	✓	-	✓	-
Large Industrial	✓	✓	✓	-	✓	-
Schools and Government	✓	✓	✓	-	✓	-
New Construction Incentives	✓	✓	-	-	✓	✓

[a] Direct to Customer program offerings include the Online Marketplace and Packs.
[b] Trade Ally Solutions program offerings include Heating and Cooling, Insulation and Air Sealing, Renewable Rewards, and Retail Smart Thermostats. Retail Smart Thermostat respondents did not provide ratings for trade allies.

Table K-2 lists the CY 2024 satisfaction survey questions that were not based on a rating. All surveys included five additional questions:

- **Comments and suggestions**: "Please tell us more about your experience and any suggestions for improvement."
- **Awareness of utility role:** "The Focus on Energy program you participated in is offered in partnership with your local energy utility. Before taking this survey, was this something you were aware of?"
- **Opinion of utility**: "How have these offerings affected your opinion of your utility, if at all?"
- **Opt-out of follow-up contact:** "On occasion, Focus on Energy staff may follow up with some survey respondents to learn more about their experience with the program. Please indicate below if you do not want someone from Focus on Energy to contact you about this survey."
- **Contractor comments (for programs that rate trade allies only)**: "Please tell us more about your experience with the contractor(s) you worked with on this project. Any feedback provided shall remain anonymous."

Five additional questions were specific to residential and nonresidential offerings: [49]

- **Awareness sources (nonresidential only)**: "How did you learn about this particular opportunity from Focus on Energy?"
- **Focus on Energy assistance (nonresidential only)**: "Aside from providing project incentive dollars, how can Focus on Energy best support your organization going forward?"
- **Age (residential only)**: "Which of the following categories best represents your age?"
- **Income (residential only)**: "Which category best describes your total household income before taxes?"
- **Number in household (residential only**): "Counting yourself, how many people live in your household on a full-time basis today? Please include everyone who lives in your home and exclude anyone just visiting or children who may be away at college or in the military**.**"

[49] Multifamily surveys did not ask participants the demographic questions included in the residential surveys because Multifamily respondents were the property managers rather than the tenants. Multifamily surveys also asked participants about awareness sources.

Table K-2. CY 2024 Customer Satisfaction Survey Question Matrix: Non-Ratings

Program	Comments and Suggestions	Awareness of Utility Role	Opinion of Utility	Contractor Comments	Awareness Source	Focus Assistance	Age	Income	Number in Household
Residential									
Direct to Customer	✓	✓	✓	-	-	-	✓	✓	✓
Trade Ally Solutions	✓	✓	✓	✓	-	-	✓	✓	✓
Multifamily	✓	✓	✓	✓	✓	-	-	-	-
Nonresidential									
Agribusiness	✓	✓	✓	✓	✓	✓	-	-	-
Business and Industry	✓	✓	✓	✓	✓	✓	-	-	-
Large Industrial	✓	✓	✓	✓	✓	✓	-	-	-
Schools and Government	✓	✓	✓	✓	✓	✓	-	-	-
New Construction Incentives	✓	✓	✓	-	-	-	-	-	-

Survey and Interview Instruments

CY 2024 survey and interview instruments are included in Appendix M.

Appendix L. Quadrennium IV Commission Priorities Progress

The evaluation team will complete a variety of research and analysis activities in Quadrennium IV to help Focus on Energy meet priorities established by the PSC during the Quadrennium IV planning process. These activities will help Focus on Energy develop additional program offerings (e.g., market transformation), track additional metrics (e.g., peak gas reductions), and/or track existing metrics at increased granularity (e.g., hourly emissions benefits) in the upcoming Quadrennium V. In late CY 2023, the PSC approved the budget and timing for a number of research and analysis tasks for the evaluation team during Quadrennium IV.[50] Table L-1 lists commission priorities that the evaluation team made progress on in CY 2024.

Table L-1. CY 2024 Evaluation Activities Related to Commission Priorities

Commission Priority	CY 2024 Activity
Develop recommendations to operationalize enhanced measurement and tracking of the program's carbon emissions reduction impacts.	Progress on this priority is dependent on foundational research and analysis currently underway for certain cross-cutting priority areas. In particular, emissions measurement enhancement activities will build upon efforts to adopt measure-specific load shapes necessary to better understand time-varying emissions impacts of energy efficiency and renewable resources. Specifically, in CY 2024, the evaluation team adopted National Renewable Energy Laboratory load shapes and added summer and winter coincidence factors to the TRM. The team also made progress on identifying and tracking peak gas impacts. In CY 2024, the evaluation team performed a benchmarking study of carbon emissions measurement and tracking practices in other jurisdictions. With this review, the evaluation team reviewed data sources used, methodologies applied, and their potential applicability for Focus on Energy.
Position Focus on Energy to take on a larger role in promoting beneficial electrification statewide.	The evaluation team launched the Quadrennium V Planning Study in CY 2024. A primary goal of the study is to assess opportunities for expanded program electrification in Wisconsin. Results from the study will be available at the end of CY 2025.
Adopt a winter peak electric period definition and begin quantifying and tracking the winter electric peak demand reductions achieved by the program.	The Focus on Energy Evaluation Work Group adopted the following winter electric peak definition in CY 2023: non-holiday weekdays, December through February, from 8:00 a.m. to Noon, and non-holiday weekdays, December through February, from 5:00 p.m. to 9:00 p.m. In CY 2024, the evaluation team worked with the administrator to add winter electric peak demand savings to the 2025 TRM, which was published in January 2025. Focus on Energy will begin tracking, and the evaluation team will begin evaluating these savings in CY 2025.
Adopt a winter natural gas peak period definition; begin quantifying and tracking winter natural gas demand reductions achieved by the program.	The evaluation team conducted research in CY 2024 to learn how other jurisdictions define peak natural gas periods and how they track savings and estimate avoided costs for the period. The team presented a memo to Commission staff in November 2024 that summarized its research and

[50] Public Service Commission of Wisconsin. December 21, 2023. *Quadrennial Planning Process IV– Order*. PSC Docket 5-FE-104, PSC REF#: 487366. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=487366.

Commission Priority	CY 2024 Activity
Investigate and develop recommendations for estimating peak natural gas avoided costs for the Commission's consideration.	recommended the next steps to define peak gas and associated savings. During the remainder of Quadrennium IV, the team will continue working to define the peak gas period and integrate related savings into the TRM.
Report annually on the program's progress toward identifying and implementing strategies to adapt the portfolio to achieve long-term market effects.	The program administrator participated in the review and scoring of market transformation opportunities identified in the first phase of the Market Transformation Assessment. See the update below.
Develop an assessment of Focus on Energy's market transformation potential in coordination with the Program Administrator and Commission staff, with input from stakeholders.	The evaluation team launched a two-year Market Transformation Assessment in CY 2024 that aims to identify and provide an implementation roadmap for the top market transformation opportunities for Wisconsin. The first phase of the study began in CY 2024 with a review of Wisconsin statutes and codes to assess how market transformation aligns with Focus on Energy policies. The team also interviewed administrators of other jurisdictions that offer market transformation programs to identify opportunities and lessons learned. Based on interviews and the 2021 Focus on Energy potential study, the team identified 20 market transformation opportunities that it expanded into opportunity descriptions. The team then scored each opportunity to identify the top five opportunities for Wisconsin. In CY 2025, the team will advance to the second phase of the study to continue researching the top opportunities to better understand their appropriateness for Wisconsin. For each opportunity, the goals in the final year of the study include these: (1) develop savings potential, program cost, and cost-effectiveness estimates, and (2) provide a detailed market overview and preliminary logic model. The team will deliver a comprehensive report outlining its findings and recommendations at the end of CY 2025.
Review options and propose an approach for applying a benefits adder for programs and offerings targeting customers below 60% of the statewide median income in Focus on Energy's primary cost-effectiveness test.	Completed in CY 2023
Develop and propose an alternative method(s) for calculating avoided electric transmission and distribution costs for the PSC's consideration.	The evaluation team conducted research in CY 2024 to assess alternative methods to calculate avoided transmission and distribution costs. With support from the RAP, the team developed a memo that analyzed alternative approaches and put forth a recommended approach for the Focus on Energy EWG's consideration. After reviewing and discussing the memo, the EWG supported the approach recommended by the evaluation team and RAP. In November 2024, Commission staff delivered a memo to the Commission for its consideration seeking a decision on the EWG's recommended approach.[51]
Research and analysis on an appropriate market-based carbon value for the PSC's consideration.	Completed in CY 2023

[51] Public Service Commission of Wisconsin. November 14, 2024. *Quadrennial Planning Process IV*. PSC Docket 5-FE-104, PSC REF#: 524099. https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=524099

Appendix M. Survey and Interview Instruments by Offering

This appendix includes the following survey and interview instruments.

Residential Programs

- Direct to Customer Program – Packs Participant Survey
- Direct to Customer Program – Online Marketplace Participant Survey
- Multifamily Program – Building Owner and Manager Survey
- Residential New Construction – Residential New Construction Building Performance Consultant Interview
- Residential New Construction – Residential New Construction Framer Contractor Interview
- Residential New Construction – Residential New Construction HVAC Contractor Interview
- Residential New Construction – Residential New Construction Insulator Contractor Interview
- Residential New Construction – Residential New Construction Nonparticipant Builder Interview
- Residential New Construction – Residential New Construction Participant Builder Interview
- Residential New Construction – Manufactured Homes Participant Interview
- Trade Ally Solutions Program – Insulation and Air Sealing Participant Survey
- Trade Ally Solutions Program – Insulation and Air Sealing Trade Ally Interview

Nonresidential Programs

- Nonresidential Cross-Cutting – Trade Ally Interview
- Nonresidential Cross-Cutting – Energy Advisor Interview
- Nonresidential Cross-Cutting – Non-Energy Benefits Survey + Interview Follow-Up
- Large Industrial Program – Non-Participant Interview

Cross-Cutting Programs

- Community Impact Pilot – Participant Survey
- Life Sciences Midstream Pilot – Participant Interview
- Instant Discount Program – Distributor Interview
- Renewable Rewards Program – Renewable Rewards Participant Survey
- Renewable Rewards Program – Renewable Rewards Trade Ally Interview

CADMUS

Wisconsin Focus on Energy - Packs Offering
2024 Participant Survey

Estimate survey launch: October 2024

Survey format: Online

Target Quotas

- Minimum of 75 Weatherization Pack respondents
- Minimum of 75 Fixed Showerhead Pack respondents
- Minimum of 75 Handheld Showerhead Pack respondents

General Instructions

- Programming instructions are in red **[LIKE THIS]** (the style is "Survey: Programming").
- Core residential questions are indicated with an asterisk (*). These questions have been previously approved by the Wisconsin PSC and APTIM.
- All questions are single-response unless specified otherwise.
- All questions are forced response, unless specified otherwise.

SAMPLE Variables

EMAIL
FIRSTNAME
LASTNAME
MONTH
YEAR
MULTIFAMILY = YES, NO
[PACK TYPE] = "Focus on Comfort", "Focus on Showers", "Focus on Baths'

Measure	Focus on Comfort	Focus on Showers	Focus on Baths
60W Equivalent A19 LEDs[a]	2	2	
Switch Gaskets	10		
Outlet Gaskets	10		
Dusk-to-Dawn LED Night Lights[a]	1	1	1
Self-Adhesive Door Sweep	1		
17-foot Rolls of Door Weatherstripping	2		
Window Film Insulation Kit	1		
Hot Water Temperature Card	1	1	1
High-Efficiency Showerhead		1	
High-Efficiency Handheld-Showerhead			1
15-foot Pipe Insulation Wrap		1	1

[a] Although we're reflecting nightlights and LEDs in the contents table, there are no questions regarding these measures

Invitation Email

To: [EMAIL]
From: Focus on Energy Feedback
Subject: Are you enjoying your new Energy Saver Pack? Let us know and you could win $200!

Dear **[FIRSTNAME AND LASTNAME]**,

We hope you are enjoying the pack of energy-efficient products you received from Focus on Energy.

Our offerings are designed to help you and your family make smart choices to manage your energy use. That's why we invite you to share **your important feedback** on your recent experience with Focus on Energy by taking our brief survey.

The survey will take about 10 minutes to complete. **As our thanks for completing the survey, we will enter you in a drawing to win a $200 Visa gift card.**

Just click the link below to get started.

[SURVEY LINK]

Your input is very important to us and will be kept confidential and only used for research purposes.

If you have problems with the survey link, please contact the survey coordinator, David Ladd , via email at David.Ladd@Cadmusgroup.com. If you would like to confirm the validity of the research effort, please contact Mitch Horrie at the Public Service Commission of Wisconsin at (608) 267-3206 or mitch.horrie@wisconsin.gov.

We hope you will take this opportunity to have your voice heard. Thank you in advance for your time and for sharing your experiences.

Reminder Invitation

To: [EMAIL]
From: Focus on Energy Feedback
Subject: There's still time to give Focus on Energy feedback and win $200!

Dear [FIRSTNAME AND LASTNAME],

We recently invited you to tell us about your experience with the Energy Saver Pack you received from Focus on Energy. We would still like to hear from you – **your input is very important to us**! We use the information from participants like you to continue to improve our programs.

Please take about 10 minutes to complete our survey. **As our thanks for completing the survey, we will enter you in a drawing to win a $200 VISA gift card.**

Just click the link below to get started.

[auto-generated link]

Your input is very important to us and will be kept confidential and only used for research purposes.

If you have problems with the survey link, please contact the survey coordinator, David Ladd , via email at David.Ladd@Cadmusgroup.com. If you would like to confirm the validity of the research effort, please contact Mitch Horrie at the Public Service Commission of Wisconsin at (608) 267-3206 or mitch.horrie@wisconsin.gov.

We hope you will take this opportunity to have your voice heard. Thank you in advance for your time and for sharing your experiences.

A. Introduction and Screening

Records from Focus on Energy show that you received a **[PACK_TYPE]** pack of energy-efficient products in **[MONTH]** 2024. Your **[PACK_TYPE]** pack contained easy-to-install products such as **[CONTENTS]**.

The following survey will ask about how you received the **[PACK_TYPE]** pack and your satisfaction with the **[PACK_TYPE]** contents. At the end, you will be given the opportunity to enter to win a $200 Visa gift card as a token of our appreciation for your time.

A1. * Do you recall receiving a free **[PACK_TYPE]** pack of energy-saving products from Focus on Energy in 2024? You likely signed up to receive the pack online or by phone.

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

98. Don't know **[THANK AND TERMINATE]**

98.

98. ***TERMINATE MESSAGE:*** *We are only surveying customers who recall receiving the pack. Thank you for your time.*

B. Offering Awareness and Motivation

B1. * Thinking back to when you ordered your pack, what factor was the most important motivation for you to order the free **[PACK_TYPE]** pack? **[RANDOMIZE ITEMS 1-14]**

1. Save energy / don't waste energy / be more energy efficient
2. Reduce energy costs / lower bill
3. Good for the environment
4. Concern about climate change
5. Increase home comfort
6. Recommended by a friend / relative
7. Recommendation from a retailer / dealer
8. Recommendation from a contractor
9. **[IF MULTIFAMILY]=YES** Recommended by property owner or manager
10. Advertisement [newspaper, radio, online, etc.]
11. Utility sponsorship of the program
12. Receiving free items to make home upgrades
13. To replace an item that wore out/broke
14. To replace a working item that was old or outdated
15. Trying out new items to see if I liked them
16. Something else, please describe: **[SPECIFY]**
98. Don't know

B2. * Where have you heard about Focus on Energy's free Energy Saver Packs? Select all that apply. **[RANDOMIZE ITEMS 1-11, MULTIPLE RESPONSES ALLOWED]**

1. **[IF MULTIFAMILY = YES]** Property owner or manager
2. Mailing (direct mail, brochure, postcard, bill insert, etc.)
   - A1a. Who sent the mailing?
     1. My utility
     2. Focus on Energy
     3. Another Organization
     4. I'm not sure
3. An email
   - A1b. Who sent the email?
     1. My utility
     2. Focus on Energy
     3. Another organization
     4. I'm not sure
4. A social media app (Facebook, Twitter, LinkedIn, etc.)
5. Online ad
6. Internet search

1. What were you searching for? [SPECIFY]

7. A website
    1. Which website?
    2. My utility
    3. Focus on Energy
    4. Another organization
    5. I'm not sure
8. Family / friend / word-of-mouth
9. Focus on Energy representative
10. Utility representative
11. Community or utility event
12. Community based organization
13. Installer / Contractor / Trade ally
14. Through participation in another Focus on Energy program
15. A different source – what was it? [SPECIFY]
98. Don't know [EXCLUSIVE]

B3. * What are the best ways for Focus on Energy to inform people about energy efficiency programs? Select all that apply. **[RANDOMIZE ITEMS 1-14] [MULTIPLE RESPONSE]**

1. Promotion through other Focus on Energy programs
2. Television
3. Radio
4. Print media, such as magazine, newspaper article or advertisement
5. Billboard / outdoor ad
6. Direct mail / brochure / postcard
7. Family / friend / word-of-mouth
8. Email from Focus on Energy
9. Focus on Energy or Utility website
10. Community or utility event
11. Community Based Organization
12. Other website - which one? **[SPECIFY]**
13. Social Media such as Twitter, Facebook, or Instagram
14. **[IF MULTIFAMILY = YES]** Property owner or manager
15. A different source – which one? **[SPECIFY]**
16. Do not want to receive information **[EXCLUSIVE]**
98. Don't know **[EXCLUSIVE]**

B4. What was the main reason you chose the specific pack you requested? **[SINGLE RESPONSE, RANDOMIZE ITEMS 1-7]**

1. Wanted to try a specific product(s) that I did not already own
2. Wanted to upgrade an existing but functioning item with an energy-efficient version
3. Needed to replace a specific item(s) that no longer worked properly or at all
4. Total number of products in pack
5. Estimated dollar value based on pack contents
6. Variety of products in pack
7. Felt the pack I ordered offered the greatest overall energy savings
8. Something else, please describe: **[SPECIFY]**

98. Don't know

B5. **[IF B4 = 1, 2, OR 3]** Which specific products motivated you to choose the pack you requested? Select all that apply. **[RANDOMIZE ITEMS 1-10] [MULTIPLE RESPONSE]**

1. **[IF FOCUS ON COMFORT OR FOCUS ON SHOWERS]** General service LEDs
2. **[IF FOCUS ON COMFORT]** Window Film Insulation Kit
3. **[IF FOCUS ON COMFORT]** Door Sweep
4. **[IF FOCUS ON COMFORT]** Door Weatherstripping
5. **[IF FOCUS ON COMFORT]** Outlet Gaskets
6. **[IF FOCUS ON COMFORT]** Switch Gaskets
7. **[IF FOCUS ON SHOWERS]** Fixed showerhead
8. **[IF FOCUS ON BATHS]** Hand-wand showerhead
9. **[IF FOCUS ON SHOWERS OR FOCUS ON BATHS]** Pipe wrap
10. Hot water temperature card
11. LED Nightlight

98. Don't know **[EXCLUSIVE]**

B6. * Other than Focus on Energy's free Energy Saver Packs, are you aware of any other Focus on Energy programs or rebates?

1. Yes
2. No

98. Don't know

B7. * **[IF B6 = 1]** For the Focus on Energy offerings listed below, please indicate which ones you are aware of and which you have participated in**. [TABLE FORMAT; EACH OFFERING LISTED HAS A DROP DOWN MENU WITH THE THREE OPTIONS BELOW]**

1. Participated in this offering
2. Aware but have not participated

3. Not aware of this offering

Program	Description
Insulation and Air Sealing	Rebates for weatherizing, with extra rebates for completing an energy assessment
Heating and Cooling	Instant Discounts or Rebates for upgrading or replacing your heating and cooling equipment
New Construction	Rebates for builders to construct energy efficient homes
Online Marketplace	Online store available through the Focus on Energy website, offering instant discounts on a range of energy-savings products for your home
Multifamily	A program for property owners that offers incentives for improvements that will reduce energy use in units and common areas
Renewable Energy	Rebates for solar PV installations

C. Showerhead

[ASK SECTION IF PACK_TYPE =FOCUS ON SHOWERS]

Our records show you received a showerhead in your **[PACK_TYPE]** pack.

C1. Is the showerhead you received *currently* installed in your home?

1. Yes **[SKIP TO C5]**
2. No
98. Don't know **[SKIP TO C5]**

C2. Did you install the showerhead you received but later remove it?

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

C3. What is your primary reason for not using, or installing but later removing, the showerhead you received? **[RANDOMIZE ITEMS 1-7]**

1. **[IF MULTIFAMILY= YES]** Property owner or manager would not allow install
2. Difficult to install
3. Didn't fit properly
4. Didn't like how it looked
5. Didn't like the water pressure
6. Have not installed yet/plan to install later
7. Never planned to install
8. Another reason – what was it? **[SPECIFY]**
98. Don't know

C4. What did you do with the showerhead?

1. Stored for future use
2. Threw away
3. Gave to someone else
4. Something else **[SPECIFY]**
98. Don't know

C5. How satisfied are you with the showerhead you received?

1. Very satisfied **[SKIP TO D1]**
2. Somewhat satisfied **[SKIP TO D1]**
3. Neither satisfied nor dissatisfied **[SKIP TO D1]**
4. Somewhat dissatisfied
5. Very dissatisfied
98. Don't know [SKIP TO D1]

C6. Why are you **[RESPONSE TO C5]**? Select all that apply. **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. Broken/doesn't work
2. Difficult/unable to install
3. Didn't fit properly
4. Didn't like the water pressure
5. Didn't like how it looked
6. Have not installed yet/never planned to install
7. Another reason – what was it? [SPECIFY]
98. Don't know **[EXCLUSIVE]**

D. Handheld Showerhead

[ASK SECTION IF PACK_TYPE =FOCUS ON BATHS]

Our records show you received a handheld showerhead in your **[PACK_TYPE]** pack.

D1. Is the handheld showerhead you received *currently* installed in your home?

1. Yes **[SKIP TO D5]**
2. No
98. Don't know [SKIP TO **D5]**

D2. Did you install the handheld showerhead you received but later remove it?

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

D3. What is your primary reason for not using, or installing but later removing, the handheld showerhead you received? **[RANDOMIZE ITEMS 1-7]**

1. **[IF MULTIFAMILY=YES]** Property owner or manager would not allow install
2. Difficult to install
3. Didn't fit properly
4. Didn't like how it looked
5. Didn't like the water pressure
6. Have not installed yet/plan to install later
7. Never planned to install
8. Another reason – what was it? **[SPECIFY]**
98. Don't know

D4. What did you do with the handheld showerhead?

1. Stored for future use
2. Threw away
3. Gave to someone else
4. Something else **[SPECIFY]**
98. Don't know

D5. How satisfied are you with the handheld showerhead you received?

1. Very satisfied **[SKIP TO E1]**
2. Somewhat satisfied **[SKIP TO E1]**
3. Neither satisfied nor dissatisfied **[SKIP TO E1]**

4. Somewhat dissatisfied
5. Very dissatisfied
98. Don't know [SKIP TO E1]

D6. Why are you **[ESPONSE TO D5]**? Select all that apply. **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. Broken/doesn't work
2. Difficult/unable to install
3. Didn't fit properly
4. Didn't like the water pressure
5. Didn't like how it looked
6. Have not installed yet/never planned to install
7. Another reason – what was it? **[SPECIFY]**
98. Don't know **[EXCLUSIVE]**

E. Pipe Wrap Insulation

[ASK SECTION IF KIT_TYPE=FOCUS ON SHOWERS, FOCUS ON BATHS]

Our records show you received pipe wrap insulation in your Energy Saver Pack. This is a roll of one-inch-wide stripping that you wrap around your water heater's pipes.

E1. Is the pipe wrap you received *currently* installed in your home?

1. Yes **[SKIP TO E4]**
2. No
98. Don't know [SKIP TO **E4]**

E2. What is your primary reason for not installing the pipe wrap you received? **[RANDOMIZE ITEMS 1-7]**

1. **[IF MULTIFAMILY = YES]** Property owner or manager would not allow install
2. Difficult to install
3. Wrong size
4. Didn't like how it looked
5. Have not installed yet/plan to install later
6. Never planned to install—pipes already fully insulated
7. Never planned to install—not interested in installing
8. Another reason – what was it? **[SPECIFY]**
98. Don't know

E3. What did you do with the pipe wrap *not currently* installed?

1. Stored for future use
2. Threw away
3. Gave to someone else
4. Something else **[SPECIFY]**
98. Don't know

E4. How satisfied are you with the pipe wrap you received?

1. Very satisfied **[SKIP TO F1]**
2. Somewhat satisfied **[SKIP TO F1]**
3. Neither satisfied nor dissatisfied **[SKIP TO F1**Error! Reference source not found.**]**
4. Somewhat dissatisfied
5. Very dissatisfied
98. Don't know [SKIP TO F1]

E5. Why are you **[RESPONSE TO E4]**? Select all that apply. **[RANDOMIZE 1-4] [MULTIPLE RESPONSE]**

1. Difficult to install
2. Wrong size
3. Didn't like how it looked
4. Have not installed yet/never planned to install
5. Another reason – what was it? **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

F. Weatherstripping

[ASK SECTION IF PACK_TYPE = FOCUS ON COMFORT]

Our records also show you received weatherstripping. This is a self-adhesive rubber strip about ¼" wide used for doors and windows to seal out drafts.

F1. Is the weatherstripping you received currently installed?

1. Yes, both rolls of weather stripping are installed
2. Yes, some of the weatherstripping is installed
3. No, none of the weatherstripping is installed
98. Don't know [SKIP TO F6]

F2. **[IF F1=2]** What percentage of the weatherstripping that you received is installed?

1. **[SLIDER FROM 0-100 WITH OPTION TO CHOOSE PERCENTAGES IN INCREMENTS OF 5]**

F3. **[IF F1=1 OR 2]** Of the weather stripping that is installed, where is the majority installed? **[SELECT ONE]**

1. Exterior Doors (doors between conditioned and unconditioned spaces)
2. Interior Doors (doors between two conditioned spaces)
3. Windows
4. Somewhere else, please describe **[SPECIFY]**

F4. **[IF F1=3]** What is your primary reason for not installing the weatherstripping you received? **[RANDOMIZE ITEMS 1-7]**

1. Difficult to install
2. Didn't like how it looked
3. Didn't work/didn't stick well enough
4. Too thick/too thin
5. Did not include enough for the area we wanted to cover
6. Have not installed yet/plan to install later
7. Never planned to install
8. Another reason – what was it? **[SPECIFY]**
98. Don't know

F5. **[IF F1=2 OR 3]** What did you do with the weatherstripping *not currently* installed?

1. Stored for future use
2. Threw away
3. Gave to someone else
4. Something else **[SPECIFY]**

98. Don't know

F6. How satisfied are you with the weatherstripping you received?

1. Very satisfied **[SKIP TO G1]**
2. Somewhat satisfied **[SKIP TO G1]**
3. Neither satisfied nor dissatisfied **[SKIP TO G1]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't know **[SKIP TO G1**]

F7. Why are you **[RESPONSE TO F6]**? Select all that apply. **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. Difficult to install
2. Didn't like how it looked
3. Didn't work/didn't stick well enough
4. Too thick/too thin
5. Did not include enough for the area we wanted to cover
6. Have not installed yet/never planned to install
7. Another reason – what was it? **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

G. Outlet Gaskets

[ASK SECTION IF PACK_TYPE = FOCUS ON COMFORT]

Our records also show you received 10 outlet gaskets. These are foam pads that install behind outlet plate covers to help prevent air penetration.

G1. How many of the outlet gaskets you received are *currently* installed in your home?

0. None
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10 **[SKIP TO G4]**
98. Don't know **[SKIP TO G4]**

G2. What is your primary reason for not installing all of the outlet gaskets you received? **[RANDOMIZE ITEMS 1-7]**

1. Difficult to install
2. Outlet plate didn't fit over them properly
3. Didn't like how they looked
4. Damaged easily
5. Didn't need them all
6. Have not installed yet/plan to install later
7. Never planned to install
8. Another reason – what was it? **[SPECIFY]**
98. Don't know

G3. What did you do with the outlet gaskets *not currently* installed? Select all that apply. **[MULTIPLE RESPONSE]**

1. Stored for future use
2. Threw away
3. Gave to someone else
4. Something else **[SPECIFY]**
98. Don't know

G4. How satisfied are you with the outlet gaskets you received?

1. Very satisfied **[SKIP TO H1]**
2. Somewhat satisfied **[SKIP TO H1]**
3. Neither satisfied nor dissatisfied **[SKIP TO H1]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't know **[SKIP TO H1**]

G5. Why are you **[RESPONSE TO G4]**? Select all that apply. **[RANDOMIZE 1-6] [MULTIPLE RESPONSE]**

1. Difficult to install
2. Outlet plate didn't fit over them properly
3. Didn't like how they looked
4. Damaged easily
5. Didn't need them all
6. Have not installed yet/never planned to install
7. Another reason – what was it? **[SPECIFY]**
8. Don't know **[EXCLUSIVE]**

H. Switch Gaskets

[ASK SECTION IF PACK_TYPE = FOCUS ON COMFORT]

Our records also show you received 10 switch gaskets. These are foam pads that install behind light switch covers to help prevent air penetration.

H1. How many of the switch gaskets you received are *currently* installed in your home?

0. None
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10 **[SKIP TO H4]**
98. Don't know [SKIP TO H4**]**

H2. What is your primary reason for not installing all of the switch gaskets you received? **[RANDOMIZE]**

1. Difficult to install
2. Switch plate didn't fit over them properly
3. Didn't like how they looked
4. Damaged easily
5. Didn't need them all
6. Have not installed yet/plan to install later
7. Never planned to install
8. Another reason – what was it? **[SPECIFY]**
98. Don't know

H3. What did you do with the switch gaskets *not currently* installed?

1. Stored for future use
2. Threw away
3. Gave to someone else
4. Something else **[SPECIFY]**
98. Don't know
98.

H4. How satisfied are you with the switch gaskets you received?

1. Very satisfied **[SKIP TO I1]**
2. Somewhat satisfied **[SKIP TO I1]**
3. Neither satisfied nor dissatisfied **[SKIP TO I1]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't know **[SKIP TO I1]**

H5. Why are you **[RESPONSE TO H4]**? Select all that apply. **[RANDOMIZE 1-6] [MULTIPLE RESPONSE]**

1. Difficult to install
2. Switch plate didn't fit over them properly
3. Didn't like how they looked
4. Damaged easily
5. Didn't need them all
6. Have not installed yet/plan to install later
7. Another reason – what was it? **[SPECIFY]**
8. Don't know **[EXCLUSIVE]**

I. Hot Water Temperature Card

[ASK SECTION IF PACK_TYPE = FOCUS ON COMFORT, FOCUS ON SHOWERS, FOCUS ON BATHS]

Your pack should have included a hot water temperature card that indicates if there is an opportunity to turn down your water heater temperature to save energy.

I1. Did you use the card to test your water temperature?

1. Yes
2. No, but I plan to use it later
3. No, and I don't plan to use it

98. Don't know

I2. **[IF I1 = 1]** Did you reduce the temperature of your water heater as a result of using the card?

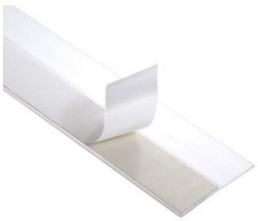
1. Yes
2. No

98. Don't know

J. Self-Adhesive Door Sweep

[ASK SECTION IF PACK_TYPE = FOCUS ON COMFORT

You also received a self-adhesive door sweep in your free Focus on Comfort pack (pictured below).



J1. Is the door sweep you received currently installed?

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

J2. **[IF J1= 1]** Where did you install the door sweep?

1. Exterior Door (doors between conditioned and unconditioned spaces)
2. Interior Door (doors between two conditioned spaces)
3. Somewhere else **[SPECIFY]**

J3. **[IF J1= 2]** Did you use the door sweep you received but later remove it?

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

J4. **[IF J1= 2]** What is your primary reason for not using, or installing but later removing, the door sweep you received? **[RANDOMIZE ITEMS 1-5] [MULTIPLE RESPONSE]**

1. Broken/didn't work
2. Difficult/unable to set up
3. Didn't like how it looked
4. Have not installed yet/plan to install later
5. Never planned to install
6. Another reason – what was it? **[SPECIFY]**
98. Don't know

J5. **[IF J1= 2]** What did you do with the door sweep?

1. Stored for future use
2. Threw away
3. Gave to someone else
4. Something else **[SPECIFY]**

98. Don't know

J6. How satisfied are you with the door sweep you received?

1. Very satisfied **[SKIP TO K1]**
2. Somewhat satisfied **[SKIP TO K1]**
3. Neither satisfied nor dissatisfied **[SKIP TO K1]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't know [SKIP TO K1]

J7. Why are you **[INSERT RESPONSE FROM J6]**? Select all that apply. **[RANDOMIZE ITEMS 1-5]** **[MULTIPLE RESPONSE]**

1. Broken/doesn't work
2. Difficult/unable to set up
3. Didn't like how it looks
4. Have not installed yet/never planned to install
5. Another reason – what was it? **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

K. Window Film Insulation Kit

[ASK SECTION IF PACK_TYPE = FOCUS ON COMFORT]

You also received a window film insulation kit in your free Focus on Comfort pack. This kit includes film and double-sided tape.

K1. Is the window film insulation you received *currently* installed in your home?

1. Yes **[SKIP TO K5]**
2. No
98. Don't know [SKIP TO **K5]**

K2. When do you plan to install the window film insulation?

1. In Fall/Winter 2024 **[SKIP TO K5]**
2. Sometime in 2025 **[SKIP TO K5]**
3. Never
98. Don't know

K3. What is your primary reason for not using the window film insulation you received? **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. **[IF MULTIFAMILY=YES]** Property owner or manager would not allow install
2. Difficult to install
3. Didn't fit properly
4. Didn't like how it looked
5. Have not installed yet/plan to install later
6. Never planned to install
7. Another reason – what was it? **[SPECIFY]**
98. Don't know

K4. What did you do with the window film insulation?

1. Stored for future use
2. Threw away
3. Gave to someone else
4. Something else **[SPECIFY]**
98. Don't know

K5. How satisfied are you with the window film insulation you received?

1. Very satisfied **[SKIP TO L1]**
2. Somewhat satisfied **[SKIP TO L1]**
3. Neither satisfied nor dissatisfied **[SKIP TO L1]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't know **[SKIP TO L1]**

K6. Why are you **[INSERT RESPONSE FROM K5]**? Select all that apply. **[RANDOMIZE ITEMS 1-5]** **[MULTIPLE RESPONSE]**

1. Broken/doesn't work
2. Difficult/unable to install
3. Didn't fit properly
4. Didn't like how it looked
5. Have not installed yet/never planned to install
6. Another reason – what was it? **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

K7. **[IF K1=YES]** If it were available, would you be interested in receiving more discounted window film insulation with your kit?

1. Yes, I would.
2. No, the amount I received was sufficient.

K8. **[IF K7=YES]** Including the window covered by the window insulation you already received, how many total windows would you want to cover with window insulation?

1. Please enter the total number of windows you would want to cover with window insulation **[OPEN NUMBER ENTRY]**

98. Don't know **[EXCLUSIVE]**

L. Satisfaction

The next questions will ask about your experience with your Energy Saver Pack.

L1. Did you request your Energy Saver Pack using the Focus on Energy website, or did you call the 1-800 number?

1. Website
2. 1-800 number **[SKIP TO L8]**
3. Another way, please describe: **[SPECIFY]**

98. Don't know [SKIP TO L8]

L2. **[IF L1 =WEBSITE & DATE >= 9/11/2024]** Focus on Energy recently combined the websites for the Energy Saving Packs and the Online Marketplace. While navigating the Energy Saving Packs, do you recall seeing products available through the Online Marketplace?

1. Yes
2. No

98. Don't know

L3. **[IF L2 =1]** Did you purchase/order any items from the online marketplace?

1. Yes
2. No

98. Don't know

L4. **[IF L3 =1]** What items did you purchase? Select all that apply**: [MULTIPLE CHOICE]**

1. Air purifier
2. Thermostat
3. LED lighting
4. Water Saving device
5. Advanced Power Strip
6. Weatherization items
7. Something else **[SPECIFY]**

98. Don't know [EXCLUSIVE]

L5. Please rate your satisfaction with these aspects of the website" from 1-5 where 1 is **[Dropdowns with ratings from** "1 *Extremely dissatisfied"* to *"5 Extremely Satisfied"* **plus not applicable] [RANDOMIZE ITEMS 1-6]**

1. Clarity of offerings
2. Product selection

3. Level of discount/incentive
4. Ease of website use
5. Time it took to receive products
6. Contact with program/website staff
98. Don't know

L6. How easy was it to fill out the online request for your Energy Saver Pack?

1. Very easy **[SKIP TO L8]**
2. Somewhat easy **[SKIP TO L8]**
3. Neither easy nor difficult **[SKIP TO L8]**
4. Somewhat difficult
5. Very difficult
98. Don't know **[SKIP TO L8**]
98.

L7. Why was it **[RESPONSE FROM L6]**?

1. **[RECORD RESPONSE]**
98. Don't know

L8. After you submitted the request for your Energy Saver Pack**,** how long did it take to receive the pack in the mail?

1. Less than 2 weeks
2. Between 2 and 4 weeks
3. Between 4 and 6 weeks
4. More than 6 weeks
98. Don't know

L9. How satisfied were you with how long it took to receive your Energy Saver Pack?

1. Very satisfied
2. Somewhat satisfied
3. Neither satisfied nor dissatisfied
4. Somewhat dissatisfied
5. Very dissatisfied
98. Don't know

L10. How satisfied were you with the guides and educational materials enclosed in your Energy Saver Pack?

1. Very satisfied **[SKIP TO M1]**
2. Somewhat satisfied **[SKIP TO M1]**
3. Neither satisfied nor dissatisfied **[SKIP TO M1]**
4. Somewhat dissatisfied
5. Very dissatisfied
98. Don't know **[SKIP TO M1]**

L11. Why were you **[INSERT RESPONSE FROM L10]** with the guides and educational materials?

1. Instructions were unclear/I had to consult additional sources (e.g., YouTube)
2. Instructions were missing
3. Already knew everything included in educational materials
4. Another reason – what was it? **[SPECIFY]**
98. Don't know

M. Freeridership

The next few questions ask about measures that may already have been installed in your home prior to receiving an Energy Saver Pack from Focus on Energy and whether you had plans to purchase any of the pack items on your own.

M1. Before receiving the pack, had you previously installed any of the following? **[RECORD RESPONSE FOR EACH, 1 = YES, 2 = NO, 98 = DON'T KNOW]**

A. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Switch Gaskets
B. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Outlet Gaskets
C. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Door Sweep
D. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Weatherstripping
E. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Window Film Insulation
F. **[DISPLAY/ASK IF PACK_TYPE = Focus on Showers]** High-Efficiency Showerhead
G. **[DISPLAY/ASK IF PACK_TYPE = Focus on Baths]** High-Efficiency Handheld-Showerhead
H. **[DISPLAY/ASK IF PACK_TYPE = Focus on Showers, Focus on Baths]** Pipe Insulation Wrap

M2. **[DISPLAY/ASK IF M1A, M1B, M1C, M1D, M1E, M1F, M1G, M1H= 1, OTHERWISE SKIP TO M3]** How many of each of the following pack items were previously installed in your home before you received the Focus on Energy pack? **[RECORD RESPONSE FOR EACH, 98 = DON'T KNOW]**

a. **[DISPLAY/ASK IF M1A= 1]** Switch Gaskets **(% OF TOTAL SWITCHES): _____**
b. **[DISPLAY/ASK IF M1B= 1]** Outlet Gaskets **(% OF TOTAL OUTLETS): _____**
c. **[DISPLAY/ASK IF M1C= 1]** Door Sweep **(# DOOR SWEEPS): _____**
d. **[DISPLAY/ASK IF M1D= 1]** Weatherstripping **(# DOORS OR # WINDOWS): _____**
e. **[DISPLAY/ASK IF M1E= 1]** Windows Film Insulation **(# WINDOWS): _____**
f. **[DISPLAY/ASK IF M1F= 1]** High-Efficiency Showerhead **(# SHOWERHEADS): _____**
i. **[DISPLAY/ASK IF M1G= 1]** High-Efficiency Handheld-Showerhead **(# SHOWERHEADS): _____**
j. **[DISPLAY/ASK IF M1H= 1]** Pipe Insulation Wrap **(# LINEAR FEET): _____**

M3. If you had not received the Energy Saver Pack from Focus on Energy, would you have installed or completed any of the following items in your home within 12 months? **[RECORD RESPONSE FOR EACH]**

Measure	Response Options			
	1. Yes, at the same time	2. Yes, later but within 12 months	3. No, not within 12 months	98. Don't know
a. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Switch Gaskets				
b. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Outlet Gaskets				
c. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Door Sweep				
d. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Weatherstripping				
e. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort]** Window Film Insulation				
f. **[DISPLAY/ASK IF PACK_TYPE = Focus on Showers]** High-Efficiency Showerhead				
g. **[DISPLAY/ASK IF PACK_TYPE = Focus on Baths]** High-Efficiency Handheld-Showerhead				
h. **[DISPLAY/ASK IF PACK_TYPE = Focus on Showers, Focus on Baths]** Pipe Insulation Wrap				
i. **[DISPLAY/ASK IF PACK_TYPE = Focus on Comfort, FOCUS ON SHOWERS, FOCUS ON BATHS AND I2=1]** Turning down the temperature of your hot water heater				

M4. **[DISPLAY/ASK IF M3A, M3B, M3C, M3D, M3E, M3F, M3G, M3H, M3I= 1 OR 2, OTHERWISE SKIP TO NEXT SECTION]** If you had not received the Energy Saver Pack from Focus on Energy, how many of the following items would you have installed or completed in your home within 12 months? **[RECORD RESPONSE FOR EACH]**

Measure	Response Options	
	[RECORD #]	98. Don't know
a. **[DISPLAY/ASK IF M3A = 1, 2]** Switch Gaskets		
b. **[DISPLAY/ASK IF M3B = 1, 2]** Outlet Gaskets		
c. **[DISPLAY/ASK IF M3C = 1, 2]** Door Sweep		
d. **[DISPLAY/ASK IF M3D = 1, 2]** Weatherstripping		
e. **[DISPLAY/ASK IF M3E = 1, 2]** Window Film Insulation		
g. **[DISPLAY/ASK IF M3F = 1, 2]** High-Efficiency Showerhead		
h. **[DISPLAY/ASK IF M3G = 1, 2]** High-Efficiency Handheld-Showerhead		
i. **[DISPLAY/ASK IF M3H = 1, 2]** Pipe Insulation Wrap		
j. **[DISPLAY/ASK IF M3I = 1, 2]** Turning down the temperature of your hot water heater		

N. Energy-Saving Actions

N1. Your **[PACK_TYPE]** Energy Saver Pack should have included a pamphlet with information on actions you can take to save energy. Which of these actions listed in the pamphlet have you taken? Select all that apply. **[RANDOMIZE ITEMS 1-14] [MULTIPLE RESPONSE]**

1. Install ENERGY STAR® certified lightbulbs
2. Use motion-detector lights outdoors
3. Explore connected lighting products
4. Install a smart thermostat
5. Insulate your walls and attic
6. Change furnace filter
7. Upgrade to an energy efficient air conditioner, furnace, heat pump, or boiler
8. Open shades during the day to let in heat from the sun
9. Keep the freezer full
10. Recycle an old, working refrigerator or freezer
11. Purchase a new ENERGY STAR appliance
12. Wash laundry with cold water
13. Install faucet aerators and water-saving showerheads **[ASK IF PACK_TYPE = Focus on Comfort]**
14. Did not want to take any of these actions **[EXCLUSIVE]**
15. Already took all of these actions before receiving pamphlet **[EXCLUSIVE]**
16. Did not receive pamphlet **[EXCLUSIVE]**
98. Don't know **[EXCLUSIVE]**

O. Spillover

Now we would like to learn about any energy-saving improvements you may have made since receiving the Energy Saver Pack of energy-efficient products from Focus on Energy.

O1. Since receiving the free Energy Saver Pack from Focus on Energy, have you made any other energy savings improvements or high-efficiency equipment purchases for your home that you did NOT receive for free or for which you did not receive a rebate from Focus on Energy or another organization?

1. Yes
2. No **[SKIP TO NEXT SECTION]**
98. Don't know **[SKIP TO NEXT SECTION]**

O2. were the products that you installed without receiving for free or getting a cash-back incentive? Note: A Focus on Energy incentive is not available for every product listed? **[ALLOW MULTIPLE RESPONSES]**

1. Gas boiler [HOW MANY DID YOU INSTALL?]
2. Gas furnace [HOW MANY DID YOU INSTALL?]
3. Gas tankless water heater [HOW MANY DID YOU INSTALL?]
4. Gas storage water heater [HOW MANY DID YOU INSTALL?]
5. Electric tankless water heater [HOW MANY DID YOU INSTALL?]
6. Electric storage water heater [HOW MANY DID YOU INSTALL?]
7. Insulation; attic [HOW MANY SQUARE FEET?]
8. Insulation; floor [HOW MANY SQUARE FEET?]
9. Insulation; ceiling [HOW MANY SQUARE FEET?]
10. Air sealing [HOW MANY LINEAR FEET?]
11. Duct sealing [HOW MANY LINEAR FEET?]
12. ENERGY STAR windows [HOW MANY SQUARE FEET?]
13. ENERGY STAR air purifier [HOW MANY DID YOU INSTALL?]
14. ENERGY STAR dehumidifier [HOW MANY DID YOU INSTALL?]
15. ENERGY STAR clothes washer [HOW MANY DID YOU INSTALL?]
16. ENERGY STAR dishwasher [HOW MANY DID YOU INSTALL?]
17. ENERGY STAR pool pump [HOW MANY DID YOU INSTALL?]
18. ENERGY STAR room air conditioner [HOW MANY DID YOU INSTALL?]
19. ENERGY STAR refrigerator [HOW MANY DID YOU INSTALL?]
20. ENERGY STAR freezer [HOW MANY DID YOU INSTALL?]
21. Smart thermostat [HOW MANY DID YOU INSTALL?]
22. Heat pump water heater [HOW MANY DID YOU INSTALL?]
23. Central air conditioner [HOW MANY DID YOU INSTALL?]
24. Air source heat pump [HOW MANY DID YOU INSTALL?]
25. Ductless heat pump [HOW MANY DID YOU INSTALL?]
26. Ground source heat pump [HOW MANY DID YOU INSTALL?]
27. Smart power strip [HOW MANY DID YOU INSTALL?]
28. Other equipment, please specify the items and quantity: [OPEN-ENDED RESPONSE]
98. Don't know [SKIP TO SECTION NEXT SECTION]

O3. **[REPEAT FOR EACH ITEM MENTIONED IN O2]** How important was your experience with the Focus on Energy's Energy Saver Pack in your decision to install **[INSERT EACH ONE SELECTED IN O2]**?

1. **[DROP DOWN LIST SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT", "DON'T KNOW"]**

O4. **[REPEAT FOR EACH ITEM MENTIONED IN O2]** In what year was the **[INSERT EACH ONE SELECTED IN O2]** purchased and installed?

1. **[DROP DOWN LIST SELECTION;** *"2024","2023", "BEFORE 2023"…, 99 FOR DON'T KNOW]*

O5. [ASK **O5** FOR EACH ONE SELECTED IN **O2** EXCEPT 3 (gas tankless water heater) , 4 (gas storage water heater), 5 (electric tankless water heater), 6 (electric storage water heater), 12 (ENERGY STAR windows), 13 (ENERGY STAR air purifier), 14 (ENERGY STAR dehumidifier), 15 (ENERGY STAR clothes washer), 16 (ENERGY STAR dishwasher), 17 (ENERGY STAR pool pump), 18 (ENERGY STAR room air conditioner), 19 (ENERGY STAR refrigerator), 20 (ENERGY STAR freezer), 22 (Heat pump water heater), 27 (smart power strip) OR 28 (other equipment.)] Why didn't you apply for and receive a Focus on Energy rebate for [INSERT EACH ONE SELECTED IN **O2***]*?

1. Did not know rebate was available
2. Product did not qualify
3. Other [SPECIFY: _____]

98. Don't know

P. Customer Demographics

The last few questions are for statistical purposes only.

P1. * What type of fuel does your water heater use?

1. Natural gas
2. Electricity
3. Propane/Bottled gas
4. Wood
5. Other **[SPECIFY]**

98. Don't know

P2. * What is the main type of fuel you use to heat your home?

1. Natural Gas
2. Oil
3. Propane
4. Electricity
5. Wood
6. Other **[SPECIFY]**

98. Don't know

P3. * What type of home do you live in?

1. Mobile/manufactured home
2. Single-family home, detached house
3. Attached house townhouse, row house, or duplex
4. Multifamily apartment or condo building with 4 or more units
5. Co-op/retirement community
6. University housing (dormitory)
7. Other **[SPECIFY]**

98. Don't know

P4. * Do you or members of your household own or rent this home?

1. Own
2. Rent
3. Other **[SPECIFY]**

98. Don't know

P5. * What is the highest level of school that you have completed?

1. Less than 9th grade
2. 9th to 12th grade; no diploma
3. High school graduate (includes GED)
4. Some college, no degree
5. Associate's degree
6. Bachelor's degree
7. Graduate or professional degree

99. (Refused)

Q. Closing

Q1. * Do you have any other comments about your experience with Focus on Energy that you would like to share?

1. **[RECORD RESPONSE]**
98. No comments

Q2. * On occasion, Focus on Energy may want to contact a customer to learn more about their participation experience. May we share your responses with a program manager, who may contact you regarding your experience?

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

Q3. Finally, we would like to confirm how to contact you if you are selected as a $200 gift card winner for completing this survey. The gift card winners will be selected and notified withinthree weeks after this survey closes.

1. FIRSTNAME LASTNAME
2. EMAIL
98. I do not want to be included in the drawing

Thank you. We appreciate your help with this survey. Have a nice day.

[IF Q3 ≠ 98] You will be added into the drawing for a $200 gift card.

To learn about additional opportunities to save energy and money in your home, please visit focusonenergy.com.

CADMUS

Wisconsin Focus on Energy
Online Marketplace Offering: 2024 Participant Survey

Estimated survey launch: October 2024

Survey format: Online

Target Quotas:

Measure	Total Participants through June 2024	Minimum Target
Smart Thermostats	6,172	General target: 75 by measure type; Group measures with low participation. Will prioritize asking participant measures with lower participation if customer purchased multiple items Est 10-20% response rate
Advanced Power Strip (Tier 1 &2)	187	
Pipe Insulation	436	
Door Sweep	755	
Door Weatherstripping	686	
Window Weatherstripping	593	
Showerhead *	2,847	
Showerstart*	205	
Faucet aerator (kitchen and Bath)	421	
Air purifier	38	As many as possible
Temp Turndown	16	
Window Film	51	
Outlet Gaskets	86	

*Combine showerstart and showerhead results

General Instructions:

A. Survey programming instructions are in red **[LIKE THIS]**
B. Core residential questions are indicated with an asterisk (*). These questions have been previously approved by the Wisconsin PSC and APTIM.
C. All questions are single-response, unless specified otherwise.
D. All questions are forced response, unless specified otherwise.

Variables to be Included in Sample:

EMAIL
FIRSTNAME
LASTNAME
SPECID
MULTIFAMILY (YES OR NO)
MEASURE1, MEASURE2, MEASURE3 = selected priority measures to survey, text values below:

A. "smart thermostat" [ST],
B. "smart power strip" [APS],
C. "showerhead" [SH]

D. **"bathroom faucet aerator" [BFA]**
E. **"kitchen faucet aerator" [KFA]**
F. **"window film" [WF]**
G. **"pipe insulation" [PI]**
H. **"outlet gaskets" [OG]**
I. **"showerstart" [SS]**
J. **"door sweep" [DS]**
K. **"door weatherstripping" [DW]**
L. **"window weatherstripping" [WW]**
M. **"air purifier" [AP]**
N. **"hot water turn down card" [TT]**
O. **[STQ]**
P. **[APSQ]**
Q. **[SHQ]**
R. **[BFAQ, KFAQ] = FAQ**
S. **[WFQ]**
T. **[PIQ]**
U. **[OGQ]**
V. **[SSQ]**
W. **[DSQ]**
X. **[DWQ]**
Y. **[WWQ]**
Z. **[APQ]**
AA. **[TTQ]**

MEASURELIST = text list of all measures that have Q value >0 *(i.e., "window film, showerstart, and air purifier")*
MONTH (of participation)
MSDMP (Multiple Single Day Measures Purchased) = YES OR NO

Email Invitation

To: [EMAIL]
From: Focus on Energy Feedback
Subject: Are you enjoying your new **[MEASURE]**(s)? Let us know and you could **win $200!**

Dear [FIRSTNAME AND LASTNAME],

We hope you are enjoying the new **[MEASURE]**(s) you purchased from the Focus on Energy Online Marketplace.

Our offerings are designed to help you and your family make smart choices to manage your energy use. That's why we invite you to share **your important feedback** on your recent experience with Focus on Energy, by taking our brief survey.

The survey will take about 10 minutes to complete. **As our thanks for completing the survey, we will enter you in a drawing to win a $200 gift card.**

Just click the link below to get started.

[auto-generated link]

Your input is very important to us and will be kept confidential and only used for research purposes.

If you have problems with the survey link, please contact the survey coordinator, David Ladd, via email at David.Ladd@Cadmusgroup.com. If you would like to confirm the validity of the research effort, please contact Mitch Horrie at the Public Service Commission of Wisconsin at (608) 267-3206 or mitch.horrie@wisconsin.gov.

We hope you will take this opportunity to have your voice heard. Thank you in advance for your time and for sharing your experiences.

Reminder Invitation

To: [EMAIL]
From: Focus on Energy Feedback
Subject: There's still time to give Focus on Energy feedback and win $200!

Dear [FIRSTNAME AND LASTNAME],

We recently invited you to tell us about your experience using the Focus on Energy Online Marketplace. We would still like to hear from you – **your input is very important to us**! We use the information from participants like you to continue to improve our programs.

Please take about 10 minutes to complete our survey. **As our thanks for completing the survey, we will enter you in a drawing to win a $200 gift card.**

Just click the link below to get started.

[auto-generated link]

Your input is very important to us and will be kept confidential and only used for research purposes.

If you have problems with the survey link, please contact the survey coordinator, David Ladd, via email at David.Ladd@Cadmusgroup.com. If you would like to confirm the validity of the research effort, please contact Mitch Horrie at the Public Service Commission of Wisconsin at (608) 267-3206 mitch.horrie@wisconsin.gov.

We hope you will take this opportunity to have your voice heard. Thank you in advance for your time and for sharing your experiences.

A. Survey Introduction and Screener

[FOCUS ON ENERGY LOGO TO APPEAR ON START SCREEN]

Welcome! Thank you for sharing your experience with Focus on Energy.

Records from Focus on Energy show that you purchased **[MEASURELIST]**(s) from the Focus on Energy Online Marketplace in 2024.

The following survey will ask about your satisfaction with your **[MEASURELIST]**(s) and about why you made your purchase. At the end, you will be given the opportunity to enter to win a $200 Visa gift card as a token of our appreciation for your time.

[SCREEN OUT TERMINATION MESSAGE:] Those are all the questions we have. Thank you.

A1. Did you purchase new **[MEASURELIST]**(s) in 2024 from the Focus on Energy Online Marketplace?

1. Yes
2. No **[TERMINATE]**
98. Don't Know **[TERMINATE]**

A2. * Do you recall that you received a discount on the purchase price from Focus on Energy?

1. Yes
2. No **[TERMINATE]**
98. Don't Know **[TERMINATE]**

B. Awareness

B1. *Where have you heard about Focus on Energy discounts for energy efficiency products available through the Online Marketplace? **[RANDOMIZE ITEMS 1-13, MULTIPLE RESPONSES ALLOWED]**

1. **[IF MULTIFAMILY = YES]** Property owner or manager
2. Mailing (direct mail, brochure, postcard, bill insert, etc.)
    a. Who sent the mailing?
        1. My utility
        2. Focus on Energy
        3. Another Organization
        4. I'm not sure
3. An email
    a. Who sent the email?
        1. My utility
        2. Focus on Energy
        3. Another Organization
        4. I'm not sure
4. A social media app (Facebook, Twitter, LinkedIn, etc.)
5. Online ad
6. Internet search
    a. What were you searching for? **[SPECIFY]**
7. A website
    a. Which website?
        1. My utility
        2. Focus on Energy
        3. Another Organization
        4. I'm not sure
8. Family / friend / word-of-mouth
9. Focus on Energy representative
10. Utility representative
11. Community or utility event
12. Community Based Organization
13. Installer / Contractor / Trade Ally
14. Through participation in another Focus on Energy offering
15. A different source – what was it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

B2. *What is the best way for Focus on Energy to inform people about energy efficiency programs? Select all that apply: **[RANDOMIZE ITEMS 1-14, MULTIPLE RESPONSE]**

1. Promotion through other Focus on Energy programs
2. Television

3. Radio
4. Print media, such as magazine, newspaper article or advertisement
5. Billboard / outdoor ad
6. Direct mail / brochure / postcard
7. Family / friend / word-of-mouth
8. Email from Focus on Energy
9. Focus on Energy or Utility website
10. Community or utility event
11. Community Based Organization
12. Other website - which one? **[SPECIFY]**
13. Social Media such as Twitter, Facebook, or Instagram
14. **[IF MULTIFAMILY = YES]** Property owner or manager
15. A different source – which one? **[SPECIFY]**
16. I do not want to receive information **[EXCLUSIVE]**
98. Don't Know **[EXCLUSIVE]**

B3. *Other than Focus on Energy's Online Marketplace, are you aware of any other Focus on Energy programs or rebates?

1. Yes
2. No
98. Don't Know

B4. **[ASK IF B3=1]** *For the Focus on Energy programs and rebates listed below, please indicate which ones you are aware of, and which you have participated in**.** **[TABLE FORMAT; EACH PROGRAM LISTED HAS A DROP DOWN MENU WITH THE THREE OPTIONS BELOW]**

1. Participated in this program
2. Aware but have not participated
3. Not aware of this program

Program	Description
Energy Saving Packs	Free packs of energy saving items such as low-flow showerheads, aerators, LEDs, and weatherization products, delivered through the mail.
Insulation and Air Sealing	Rebates for weatherizing, with extra rebates for completing an energy assessment
Heating and Cooling	Instant discounts or Rebates for upgrading or replacing your heating and cooling equipment
New Construction	Rebates for builders to construct energy efficient homes
Multifamily	A program for property owners that offers incentives for improvements that reduce energy use in units and common areas
Renewable Rewards	Rebates for solar PV installations

C. Motivation

C1. [ASK THIS UP TO THREE TIMES FOR EACH PRIORITY MEASURE] *What factor was the most important motivation for you to purchase the [MEASURE1/MEASURE2/MEASURE3](s)? [SINGLE RESPONSE, RANDOMIZE ITEMS 1-14.]

1. Save energy / don't waste energy / be more energy efficient
2. Reduce energy costs / lower bill
3. Good for the environment
4. Concern about climate change
5. Increase home comfort
6. Recommended by a friend / relative
7. Recommendation from a retailer / dealer
8. Recommendation from a contractor
9. **[IF MULTIFAMILY = YES]** Recommended by property owner or manager
10. Advertisement (newspaper, radio, online, etc.)
11. Cash / rebate / incentive payment
12. Utility sponsorship of the program
13. To replace my working **[MEASURE]** that was old or outdated
14. My old **[MEASURE]** did not work / was broken
15. Something else, please describe: **[SPECIFY]**

98. Don't know

C2. **[ASK IF MSDMP = YES]** Was one of the items you purchased your primary motivation for shopping on the online marketplace? **[SINGLE RESPONSE.]**

1. **[DISPLAY IF ST>0]** Smart Thermostat
2. **[DISPLAY IF APS>0]** Smart power strip
3. **[DISPLAY IF SH>0]** Showerhead
4. **[DISPLAY IF BFA>0]** Faucet aerator
5. **[DISPLAY IF KFA>0]** Kitchen faucet aerator
6. **[DISPLAY IF WF>0]** Window film
7. **[DISPLAY IF PI >0]** Pipe insulation
8. **[DISPLAY IF OG>0]** Outlet gaskets
9. **[DISPLAY IF SS>0]** Showerstart
10. **[DISPLAY IF DS>0]** Door sweep
11. **[DISPLAY IF DW>0]** Door weatherstripping
12. **[DISPLAY IF WW >0]** Window weatherstripping
13. **[DISPLAY IF AP>0]** Air purifier
14. **[DISPLAY IF TT>0]** Hot water turn down card
15. None of the items I purchased were a primary motivation

C3. Had you visited and shopped the Online Marketplace prior to purchasing your **[MEASURELIST]**(s) in **[MONTH]**?

1. Yes
2. No
98. Don't Know

C4. **[ASK THIS UP TO THREE TIMES FOR EACH PRIORITY MEASURE]** Before you purchased your **[MEASURE1/MEASURE2/MEASURE3]** from the Online Marketplace, where else did you consider purchasing this item? **[RANDOMIZE ITEMS 1-4]**

1. Another online retailer
2. An in-person retailer
3. I looked but couldn't find it anywhere else
4. I only looked for this item on the Online Marketplace **[EXCLUSIVE]**
5. A different source – which one? **[SPECIFY]**

C5. [IF ANY C4=1, 2 OR 5] What's the primary reason you decided to purchase from the Online Marketplace? [RANDOMIZE ITEMS 1-6]

1. Focus on Energy discount
2. Best price
3. Most convenient
4. To get a model/feature I couldn't find elsewhere
5. Products recommended by Focus on Energy
6. To support Focus on Energy
7. Another reason – what was it? **[SPECIFY]**

C6. Please rate your agreement with the following statements about the Online Marketplace on a scale from 1 to 5 with 1 being "Strongly disagree" and 5 being "Strongly agree." **[A TO G - RANDOMIZE LIST] [DROP DOWN LIST SELECTION; "1 – STRONGLY DISAGREE", "2", "3", "4", "5 – STRONGLY AGREE" AND "NOT SURE"]**

1. It was easy to find the product I was looking for
2. It was easy to compare prices and features across similar products
3. The website worked smoothly, without freezing, errors or glitches
4. The checkout process was reasonably fast and easy
5. I received my product on time
6. The product I received was as I expected, and in good condition
7. I was very satisfied with my overall experience with the Online Marketplace

C7. [FOR EACH C6a -g RESPONSE < 3] Can you tell us more about why you do not agree with the statement *"[REPEAT STATEMENT FROM C6a – g]"*? [OPEN-END RESPONSE]

C8. Can you tell us more about any issues you had shopping through the Online Marketplace?

1. **[OPEN RESPONSE]**
98. I did not have any issues

C9. How could Focus on Energy improve the Online Marketplace?

1. **[OPEN RESPONSE]**
98. No suggestions

D. Packs Awareness

[ASK THIS SECTION IF PARTDATE>=9/11/2024] [MAKE THIS SECTION AVIALABLE TO ADD OR REMOVE EASILY IN PROGRAMMING "TOGGLE ON AND OFF"] Focus on Energy recently combined the websites for their Energy Saving Packs and their Online Marketplace. The next few questions are about the combined website.

D1. **[IF MONTH >AUGUST]** Did you notice the free Energy Saving Packs while navigating the online marketplace?

1. Yes
2. No
3. Other **[SPECIFY]**

98. Don't know

D2. **[IF D1 = 1]** Did the new layout encourage you to explore both the online marketplace and the energy savings packs portal?

1. Yes
2. No

98. Don't know

D3. [IF D1 = 1] Did you order any of the free packs?

1. Yes
2. No. Why not? **[SPECIFY]**

98. Don't know

D4. [IF D3 =1] What pack did you order?

1. Focus on Comfort
2. Focus on Showers
3. Focus on Baths

98. Don't know

D5. Do you have other comments about the website you would like to share?

1. Yes **[SPECIFY]**
2. No

E. Advanced Power Strip Verification & Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "smart power strip"]

[ALL FORCED RESPONSE, PER INSTRUCTIONS.]

The next questions are about the advanced power strip(s) you purchased from the Online Marketplace.

E1. Our records show you purchased **[APSQ]** advanced power strip(s). Is that right?

1. Yes, that's about right
2. No, that's not right

98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

E2. [IF E1=2] How many advanced power strips did you purchase?

1. [NUMERIC ONLY 0-99] [CREATE C_APS=E2E2 OR COPY APSQ TO C_APS IF NO NUMERIC RESPONSE TO E2; USE INSTEAD OF APSQ GOING FORWARD – IF C_APS=0 THEN SKIP TO NEXT SECTION]

98. Don't Know **[SKIP TO NEXT SECTION]**

E3. Is an advanced power strip for which you received a Focus on Energy discount *currently* installed in your home (including a home office) or business?

	Installed in my home	Installed in my business	Not installed	Don't Know
Advanced Power Strip 1	◯	◯	◯	◯
[DISPLAY IF C_ APS >1] Advanced Power Strip 2	◯	◯	◯	◯

[IF ALL RESPONSES ARE "BUSINESS" SKIP TO E5]

[IF ALL RESPONSES ARE "DON'T KNOW" SKIP TO NEXT SECTION]

[IF ALL RESPONSES TO E3 = "NOT INSTALLED", SKIP TO E7]

E4. **[IF ANY E3 RESPONSE = "Installed in my home"]** What do you have plugged into the advanced power strip(s) installed in a ***home***? Select all that apply.

1. Home entertainment center (TVs, cable boxes, streaming devices Apple TV or Roku, DVD players)
2. Home office (laptops, desktop computers, computer monitors, scanners, printers, fax machines)
3. Gaming system
4. Other equipment – what is it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

E5. **[IF ANY E3 RESPONSE = "Installed in my business"]** What best describes the type of business where you are using your advanced power strip(s)? Select all that apply. **[SELECT ALL THAT APPLY]**

1. Commercial
2. Industrial
3. Office
4. Retail
5. Something else – please describe: **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

E6. **[IF ANY E3 RESPONSE = "Installed in my business"]** What do you have plugged into the advanced power strip(s) installed in a ***business?*** Select all that apply.

1. Entertainment center (TVs, cable boxes, streaming devices Apple TV or Roku, DVD players)
2. Office equipment (laptops, desktop computers, computer monitors, scanners, printers, fax machines)
3. Other equipment –what is it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

E7. **[IF ANY E3 RESPONSE= "Not Installed"]** Did you install but later uninstall any advanced power strip(s) you purchased?

1. Yes
2. No

98. Don't Know

E8. **[IF E7 = 1]** What is your primary reason for not using, or installing but later removing, the advanced power strip(s)? **[RANDOMIZE ITEMS 1-7]**

1. Broken/didn't work
2. Difficult/unable to set up
3. Didn't like how it looked
4. Didn't like how the attached equipment worked when hooked up to it
5. Not enough regular outlets
6. Plan to install later
7. Another reason – what was it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

E9. [IF ANY E3 RESPONSE= "Not Installed"] What did you do with the advanced power strip(s) *not currently* installed? [RANDOMIZE ITEMS 1-3. MULTIPLE RESPONSE.]

1. Stored for future use
2. Threw away/Disposed of
3. Gave away
4. Something else – what was it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

E10. How satisfied are you with the advanced power strip(s) you purchased?

1. Very satisfied **[SKIP TO E12]**
2. Somewhat satisfied **[SKIP TO E12]**
3. Neither satisfied nor dissatisfied **[SKIP TO E12]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't Know **[SKIP TO E12]**

E11. Why are you [INSERT RESPONSE FROM E10] with your advanced power strip? Select all that apply. **[RANDOMIZE ITEMS 1-5] [MULTIPLE RESPONSE]**

1. Broken/doesn't work
2. Difficult/unable to set up
3. Didn't like how it looks
4. Didn't like how the attached equipment works when hooked up to it
5. Not enough regular outlets
6. Another reason – what was it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

[IF ALL RESPONSES TO E3 = "NOT INSTALLED", SKIP TO NEXT SECTION]

Now we'd like to ask you about how you made your decision to purchase advanced power strip(s).

E12. Did you have any advanced power strips installed in your home before you heard of the Focus on Energy discount for advanced power strips? If so, please tell us how many.

1. Yes, I had some advanced power strips in my home - How many? **[SPECIFY, NUMERIC]**
2. No, I did not have any advanced power strips in my home

98. Don't Know

E13. If the Focus on Energy discount had not been available, would you have purchased and installed advanced power strips for your home within 12 months?

1. Yes, at the same time - How many? **[SPECIFY, NUMERIC]**
2. Yes, later but within the next 12 months - How many? **[SPECIFY, NUMERIC]**
3. No, not within 12 months

98. Don't Know

E14. We would like to know more about the factors that contributed to your purchase of the advanced power strips. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the advanced power strips. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

F. Smart Thermostat Verification & Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "smart thermostat"]
[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

The next questions are about the smart thermostat(s) for which you received a Focus on Energy discount in 2024.

F1. Our records show you purchased **[STQ]** smart thermostat(s) with a Focus on Energy discount. Is that correct?

1. Yes, that's right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTIONT1]**

F2. [IF F1=2] How many smart thermostats did you purchase?

1. _____ [NUMERIC ONLY 0-99] [CREATE C_TSTAT=F2 OR COPY STQ TO C_ TSTAT IF NO NUMERIC RESPONSE TO F2; USE INSTEAD OF STQ GOING FORWARD– IF C_TSTAT=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

F3. Is a smart thermostat for which you received a Focus on Energy discount *currently* installed in your home or business?

	Installed in my home	Installed in my business	Not installed	Don't Know
Thermostat 1	◯	◯	◯	◯
[DISPLAY IF C_ TSTAT >1] Thermostat 2	◯	◯	◯	◯

[IF ALL RESPONSES ARE "HOME" OR "BUSINESS" SKIP TO F6]
[IF ALL RESPONSES ARE "DON'T KNOW" SKIP TO NEXT SECTION]
[IF ALL RESPONSES TO F3 = "NOT INSTALLED", SKIP TO F4]

F4. [IF ANY RESPONSES TO F3= "NOT INSTALLED"] Why did you not install the thermostat(s)? **[RANDOMIZE ITEMS 1-8]**

1. Difficult/unable to set up
2. Difficult to use
3. **[IF MULTIFAMILY=YES]** Property owner or manager would not allow install
4. Concerned about internet security
5. Didn't like how it looked
6. Haven't installed yet, but plan to install
7. Not compatible with my heating/cooling equipment / My contractor recommended that I not use the new thermostat with my heating/cooling equipment
8. Another reason – what was it? **[SPECIFY]**
98. Don't Know

F5. [IF ANY RESPONSES TO F3= "NOT INSTALLED"] What did you do with the thermostat(s) you did not install? [SELECT UP TO 2]

1. Stored for future use
2. Threw away/Disposed of/Sold
3. Gave away
4. Something else – what was it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

F6. [IF C_ TSTAT >1 AND F3 = "HOME" OR "BUSINESS"] You indicated you purchased [C_ TSTAT] smart thermostats. What equipment does your first new thermostat control? Select all that apply. [IF C_ TSTAT =1 AND F3 = "HOME" OR "BUSINESS"] What equipment does your new thermostat control? Select all that apply. **[SELECT ALL THAT APPLY]**

1. Furnace
2. Boiler
3. Air-source heat pump
4. Ductless heat pump
5. Central air conditioner
6. Other equipment – what is it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

F7. [IF C_ TSTAT >1 AND F6=1 OR 2] What fuel does the [RESPONSE FROM F6F6] controlled by your first smart thermostat use? [IF C_ TSTAT =1 AND F6=1 OR 2] What fuel does the [RESPONSE FROM F6F6] controlled by your smart thermostat use?

1. Natural gas
2. Electricity
3. Propane/Bottled gas
4. Wood
5. Something else – what is it? **[SPECIFY]**

98. Don't Know

F8. [IF C_ TSTAT >1 AND F3_1= "HOME" OR "BUSINESS"] You indicated you purchased [C_ TSTAT] smart thermostats. What equipment does your second new thermostat control? Select all that apply. **[SELECT ALL THAT APPLY]**

1. Furnace
2. Boiler
3. Air-source heat pump
4. Ductless heat pump
5. Central air conditioner
6. Other equipment – what is it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

F9. [IF F8=1 OR 2] What fuel does the [RESPONSE FROM F8F8] controlled by your second smart thermostat use?

1. Natural gas
2. Electricity
3. Propane/Bottled gas
4. Wood
5. Something else – what is it? **[SPECIFY]**

98. Don't Know

F10. What kind of thermostat did you use before you purchased your new smart thermostat? **[SELECT ONE]**

1. Manual (you manually adjust the temperatures)
2. Programmable (you schedule certain temperatures at specific times / days)
3. Wi-fi enabled (you are able to adjust or scheduled temperature remotely using your phone or another device)
4. Smart (the thermostat adjusts the temperature for you and you can adjust the temperature remotely)
5. Did not previously use a thermostat

98. Don't Know **[SKIP TO F12]**

F11. **[IF F10F10=1-4]** Think about how often you **manually** adjust the settings on your new smart thermostat. Would you say you adjust the settings more often, less often, or about as often as you adjusted your previous thermostat?

1. More often
2. About equally as often
3. Less often

98. Don't Know

F12. How satisfied are you with the smart thermostat(s) you purchased?

1. Very satisfied **[SKIP to F14]**
2. Somewhat satisfied **[SKIP to F14]**
3. Neither satisfied nor dissatisfied **[SKIP to F14]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't Know **[SKIP to F14]**

F13. Why are you [INSERT RESPONSE FROM F12] with your smart thermostat(s)? Select all that apply. [RANDOMIZE ITEMS 1-3] [multiple response]

1. Broken/doesn't work
2. Difficult/unable to set up
3. Didn't like how it looks
4. Another reason – what was it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

[IF ALL RESPONSES TO F3 = "NOT INSTALLED", SKIP TO NEXT SECTION]

Now we'd like to ask you about how you made your decisions to purchase the smart thermostat(s).

F14. Before you heard about the Focus on Energy discount, had you already considered purchasing a smart thermostat?

1. Yes
2. No

98. Don't Know

F15. Without the discount from Focus on Energy, what kind of thermostat would you have purchased and installed?

1. A smart or learning thermostat
2. A WiFi thermostat (non-learning)
3. A programmable thermostat
4. A manual thermostat
5. Would not have purchased a new thermostat **[SKIP TO F18]**

98. Don't Know

F16. **[ASK IF C_ TSTAT > 1]** Would you have purchased the same quantity of smart thermostats without the discount from Focus on Energy?

1. Yes, the same quantity **[ASK F17]**
2. No, would have purchased fewer **[ASK F17]**
3. No, would have purchased more **[ASK F17]**
4. No, would not have purchased anything at all **[SKIP TO F18]**

98. Don't Know **[ASK F17]**

F17. Thinking about timing, without the Focus on Energy discount, when would you have purchased and installed the smart thermostat?

1. At the same time
2. Later, but within 12 months
3. One to two years out
4. More than two years out
5. Never

98. Don't Know

F18. We would like to know more about the factors that contributed to your purchase of the smart thermostat. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the smart thermostat. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

G. Showerhead Verification and Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "showerhead"]

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

The next questions are about the showerhead(s) you purchased from the Online Marketplace.

G1. Our records show you purchased **[SHQ]** showerhead(s). Is that right?

1. Yes, that's about right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

G2. [IF G1=2] How many showerheads did you purchase?

1. _____ [NUMERIC ONLY 0-99] [CREATE C_SHWR=G2 OR COPY SHQ TO C_ SHWR IF NO NUMERIC RESPONSE TO G2; USE INSTEAD OF SHQ GOING FORWARD -– IF C_SHWR=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

G3. How many of the showerhead(s) are *currently* installed in your home?

2. _____ **[NUMERIC ONLY 0-99]**
98. Don't Know **[SKIP TO NEXT SECTION]**

G4. **[IF C_ SHWR > G3]** Did you install some of the showerhead(s) but later remove them?

1. Yes
2. No
98. Don't Know

G5. **[IF C_ SHWR > G3]** What is your primary reason for not installing, or removing, the showerhead(s) you purchased? **[RANDOMIZE ITEMS 1-6]**

1. **[IF MULTIFAMILY=YES]** Property owner or manager would not allow install
2. Have not installed yet, but plan to install later
3. Don't like the way the showerhead(s) look
4. Don't like the water flow from the showerhead(s)
5. Did not fit / unable to install in my shower
6. Showerhead(s) are broken, or failed or malfunctioned
7. Another reason – what was it? **[SPECIFY]**
98. Don't Know

G6. **[IF C_ SHWR > G3]** What did you do with the showerhead(s) *not currently* installed? Select up to two responses. **[ALLOW UP TO 2 RESPONSES]**

1. Stored for future use
2. Discarded/recycled
3. Gave away
4. Something else – what was it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

G7. How satisfied are you with the showerhead(s) you purchased?

1. Very satisfied **[SKIP TO G9]**
2. Somewhat satisfied **[SKIP TO G9]**
3. Neither satisfied nor dissatisfied**[SKIP TO G9]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't Know **[SKIP TO G9]**

G8. Why are you **[INSERT RESPONSE FROM G7]** with your showerhead(s)? Select all that apply. **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. Broke/stopped working properly
2. Didn't fit properly in shower
3. Difficult/unable to install
4. Don't like the way the showerhead(s) look
5. Worked properly, but didn't like the water flow
6. Another reason – what is it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

[IF G3=0 OR 98 THEN SKIP TO NEXT SECTION]

Now we'd like to ask you about how you made your decisions to purchase efficient showerheads.

G9. Did you have any efficient showerheads installed in your home before you heard of the Focus on Energy discount for efficient showerheads? If so, please tell us how many.

1. Yes, I had efficient showerheads in my home - How many? **[SPECIFY, NUMERIC]**
2. No, I did not have any efficient showerheads in my home

98. Don't Know

G10. If the Focus on Energy discount had not been available, would you have purchased and installed efficient showerheads for your home within 12 months?

1. Yes, at the same time - How many? **[SPECIFY, NUMERIC]**
2. Yes, later but within the next 12 months - How many? **[SPECIFY, NUMERIC]**
3. No, not within 12 months
4. No, I already had them installed in all available showers

98. Don't Know

G11. We would like to know more about the factors that contributed to your purchase of the efficient showerheads. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the efficient showerheads. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[Response from C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

H. Bathroom Faucet Aerator Verification and Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "bathroom faucet aerator"]

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

The next questions are about the bathroom faucet aerator(s) you purchased from the Online Marketplace.

H1. Our records show you purchased **[BFAQ]** bathroom faucet aerator(s). Is that right?

1. Yes, that's about right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

H2. [IF H1=2] How many bathroom faucet aerators did you purchase?

1. _____ [NUMERIC ONLY 0-99] [CREATE C_BAER=H2 OR COPY BFAQ TO C_ BAER IF NO NUMERIC RESPONSE TO H2; USE INSTEAD OF BFAQ GOING FORWARD] – IF C_BAER=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

H3. How many of the bathroom faucet aerator(s) are *currently* installed in your home?

1. _____ **[NUMERIC ONLY 0-99]**
98. Don't Know **[SKIP TO NEXT SECTION]**

H4. **[IF C_ BAER > H3]** Did you install some of the bathroom faucet aerator(s) but later remove them?

1. Yes
2. No
98. Don't Know

H5. **[IF H4=1]** What is your primary reason for not installing, or removing, the bathroom faucet aerator(s) you purchased? **[RANDOMIZE ITEMS 1-6]**

1. **[IF MULTIFAMILY=YES]** Property owner or manager would not allow install
2. Have not installed yet, but plan to install later
3. Don't like the way the aerator(s) look
4. Don't like the water flow from the aerator(s)
5. Did not fit / unable to install on my faucet(s)
6. Aerator(s) are broken, or failed or malfunctioned
7. Another reason – what was it? **[SPECIFY]**
98. Don't Know

H6. **[IF H5 = 1,3,4,5,6,7]** What did you do with the bathroom faucet aerator(s) *not currently* installed? Select up to two responses. **[ALLOW UP TO 2 RESPONSES]**

1. Stored for future use
2. Discarded/recycled
3. Gave away
4. Something else – what was it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

H7. How satisfied are you with the bathroom faucet aerator(s) you purchased?

1. Very satisfied **[SKIP TO H9]**
2. Somewhat satisfied **[SKIP TO H9]**
3. Neither satisfied nor dissatisfied**[SKIP TO H9]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't Know **[SKIP TO H9]**

H8. Why are you **[INSERT RESPONSE FROM H7]** with the bathroom faucet aerators? Select all that apply. **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. Broke/stopped working properly
2. Didn't fit properly on faucet(s)
3. Difficult/unable to install
4. Don't like the way the aerator(s) look
5. Worked properly, but didn't like the water flow
6. Another reason – what is it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

[IF H3=0 OR 98 THEN SKIP TO NEXT SECTION]

Now we'd like to ask you about how you made your decisions to purchase efficient bathroom faucet aerators.

H9. Did you have any efficient bathroom faucet aerators installed in your home before you heard of the Focus on Energy discount for efficient faucet aerators? If so, please tell us how many.

1. Yes, I had efficient faucet aerators in my home - How many? **[SPECIFY]**
2. No, I did not have any efficient faucet aerators in my home

98. Don't Know

H10. If the Focus on Energy discount had not been available, would you have purchased and installed efficient bathroom faucet aerators for your home within 12 months?

1. Yes, at the same time - How many? **[SPECIFY]**
2. Yes, later but within the next 12 months - How many? **[SPECIFY]**
3. No, not within 12 months
4. No, I already had them installed in all available faucets

99. Don't Know

H11. We would like to know more about the factors that contributed to your purchase of the efficient bathroom faucet aerators. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the efficient faucet aerators. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

I. Kitchen Faucet Aerator Verification and Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "**kitchen faucet aerator"]**

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

The next questions are about the kitchen faucet aerator(s) you purchased from the Online Marketplace.

I1. Our records show you purchased **[KFAQ]** kitchen faucet aerator(s). Is that right?
1. Yes, that's about right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTIONT1]**

I2. [IF I1=2] How many kitchen faucet aerators did you purchase?
1. _____ [NUMERIC ONLY 0-99] [CREATE C_KAER=I2 OR COPY KFAQ TO C_ KAER IF NO NUMERIC RESPONSE TO I2; USE INSTEAD OF KFAQ GOING FORWARD] – IF C_KAER=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

I3. How many of the kitchen faucet aerator(s) are *currently* installed in your home?
1. _____ **[NUMERIC ONLY 0-99]**
98. Don't Know **[SKIP TO NEXT SECTION]**

I4. **[IF C_ KAER > I3]** Did you install some of the kitchen faucet aerator(s) but later remove them?
1. Yes
2. No
98. Don't Know

I5. **[IF C_ KAER > I3]** What is your primary reason for not installing, or removing, the kitchen faucet aerator(s) you purchased? **[RANDOMIZE ITEMS 1-6]**
1. **[IF MULTIFAMILY=YES]** Property owner or manager would not allow install
2. Have not installed yet, but plan to install later
3. Don't like the way the aerator(s) look
4. Don't like the water flow from the aerator(s)
5. Did not fit / unable to install on my faucet(s)
6. Aerator(s) are broken, or failed or malfunctioned
7. Another reason – what was it? **[SPECIFY]**
98. Don't Know

I6. **[IF I5=1,3,4,5,6,7]** What did you do with the kitchen faucet aerator(s) *not currently* installed? Select up to two responses. **[ALLOW UP TO 2 RESPONSES]**

1. Stored for future use
2. Discarded/recycled
3. Gave away
4. Something else – what was it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

I7. How satisfied are you with the kitchen faucet aerator(s) you purchased?

1. Very satisfied **[SKIP TO I9]**
2. Somewhat satisfied **[SKIP TO I9]**
3. Neither satisfied nor dissatisfied **[SKIP TO I9]**
4. Somewhat dissatisfied
5. Very dissatisfied

99. Don't Know **[SKIP TO I9]**

I8. Why are you **[INSERT RESPONSE FROM I7]** with the kitchen faucet aerators? Select all that apply. **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. Broke/stopped working properly
2. Didn't fit properly on faucet(s)
3. Difficult/unable to install
4. Don't like the way the aerator(s) look
5. Worked properly, but didn't like the water flow
6. Another reason – what is it? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

[IF I3=0 OR 98 THEN SKIP TO NEXT SECTION]

Now we'd like to ask you about how you made your decisions to purchase efficient faucet aerators.

I9. Did you have any efficient kitchen faucet aerators installed in your home before you heard of the Focus on Energy discount for efficient faucet aerators? If so, please tell us how many.

1. Yes, I had efficient faucet aerators in my home - How many? **[SPECIFY]**
2. No, I did not have any efficient faucet aerators in my home

98. Don't Know

I10. If the Focus on Energy discount had not been available, would you have purchased and installed efficient kitchen faucet aerators for your home within 12 months?

1. Yes, at the same time - How many? **[SPECIFY]**
2. Yes, later but within the next 12 months - How many? **[SPECIFY]**
3. No, not within 12 months
4. No, I already had them installed in all available faucets

98. Don't Know

I11. We would like to know more about the factors that contributed to your purchase of the efficient kitchen faucet aerators. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the efficient faucet aerators. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

J. Pipe Wrap Verification & Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "**pipe insulation"]**

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

The next questions are about the pipe insulation you purchased from the Online Marketplace. Pipe insulation is a roll of one-inch-wide stripping that you wrap around your water heater's pipes.

J1. Our records show you purchased **[PIQ]** pack(s) of pipe insulation. Is that right?

7. Yes, that's about right
8. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

J2. **[IF J1=2]** How many pack(s) of pipe insulation did you purchase?

9. _____ [NUMERIC ONLY 0-99] [CREATE C_PI=J2 OR COPY PIQ TO C_ PI IF NO NUMERIC RESPONSE TO J2; USE INSTEAD OF PIQ GOING FORWARD] – IF C_PI=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

J3. How many packs of pipe insulation are currently installed in your home?

10. _____ **[NUMERIC ONLY 0-99]**
98. Don't Know **[SKIP TO NEXT SECTION]**

J4. **[IF C_ PI > J3]** Did you install some of the pipe insulation but later remove it?

1. Yes
2. No
98. Don't Know

J5. **[IF C_ PI > J3]** What is your primary reason for not installing, or removing, the pipe insulation? **[RANDOMIZE ITEMS 1-6]**

1. **[IF MULTIFAMILY=YES]** Property owner or manager would not allow install
2. Difficult to install
3. Wrong size
4. Didn't like how it looked
5. Have not installed yet/plan to install later
6. Never planned to install—pipes already fully insulated
7. Never planned to install—not interested in installing
8. Another reason – what is it? **[SPECIFY]**
98. Don't Know

J6. [IF C_ PI > J3] What did you do with the pipe insulation not currently installed? **[ALLOW UP TO 2 RESPONSES]**

1. Stored for future use
2. Discarded/recycled
3. Gave away
4. Something else – what? **[SPECIFY]**

98. Don't Know**[EXCLUSIVE]**

J7. How satisfied are you with the pipe insulation you purchased?

1. Very satisfied **[SKIP TO J9]**
2. Somewhat satisfied**[SKIP TO J9]**
3. Neither satisfied nor dissatisfied**[SKIP TO J9]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't Know **[SKIP TO J9]**

J8. Why are you **[INSERT RESPONSE FROM J7]** with the pipe insulation? Select all that apply. [RANDOMIZE 1-3] [multiple response]

1. Difficult to install
2. Wrong size
3. Correct size, but didn't fit properly
4. Another reason – what is it? **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

[IF B3=0 OR 98 THEN SKIP TO NEXT SECTION]

J9. Before purchasing the pipe insulation, had you already installed pipe insulation in your home?

1. Yes
2. No

98. Don't Know

J10. If the Focus on Energy discount had not been available, would you have purchased and installed pipe insulation for your home within 12 months?

1. Yes, at the same time
2. Yes, later but within the next 12 month
3. No, not within 12 months

98. Don't Know

J11. We would like to know more about the factors that contributed to your purchase of the pipe insulation. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the pipe wrap. **[1 TO 6 - RANDOMIZE LIST]** **[DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

K. Hot Water Temperature Card Verification & Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "**hot water turn down card"]**

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

Our records indicate that you purchased a hot water temperature card that indicates if there is an opportunity to turn down your water heater temperature to save energy.

K1. Did you use the card to test your water temperature?

1. Yes
2. No, but I plan to use it later **[SKIP TO NEXT SECTION]**
3. No, and I don't plan to use it **[SKIP TO NEXT SECTION]**

98. Don't Know **[SKIP TO NEXT SECTION]**

K2. **[IF K1 = YES]** Did you reduce the temperature of your water heater as a result of using the card?

1. Yes
2. No

98. Don't Know

K3. **[IF K2= YES]** If you had not received the hot water temperature card from Focus on Energy, would you have reduced the temperature on your water heater within 12 months?

1. Yes, at the same time
2. Yes, later but within the next 12 months
3. No, not within 12 months

98. Don't Know

K4. **[IF K2= YES]** We would like to know more about the factors that contributed to reducing the temperature on your hot water heater as a result of using the card. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to reduce the temperature on your hot water heater. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

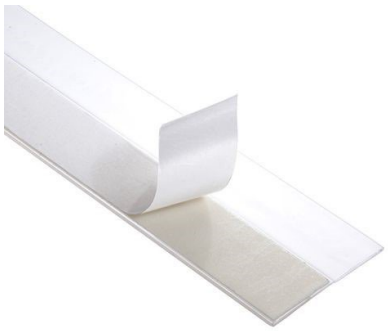
1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

L. Door Sweep Verification and Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "**door sweep"]**

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

The next questions are about the door sweep(s) you purchased from the Online Marketplace. Door sweep(s) are a 3-foot self-adhesive strip design to seal out drafts, dust, and water from the bottom of doors.



L1. Our records show you purchased **[DSQ]** self-adhesive door sweep(s). Is that right?

1. Yes, that's about right
2. No, that's not right

98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

L2. [IF L1L2=2] How many door sweep(s) did you purchase?

1. _____ **[NUMERIC ONLY 0-99] [CREATE C_DS=L2L2 OR COPY DSQ TO C_ DS IF NO NUMERIC RESPONSE TO L2L2; USE INSTEAD OF DSQ GOING FORWARD] – IF C_DS=0 THEN SKIP TO NEXT SECTION]**

98. Don't Know **[SKIP TO NEXT SECTION]**

L3. How many door sweeps are *currently* installed in your home?

1. _____ **[NUMERIC ONLY 0-99]**

98. Don't Know **[SKIP TO L8]**

L4. **[IF C_ DS > L3]** Did you install some of the door sweeps but later remove them?

1. Yes
2. No

98. Don't Know

L5. **[IF L3>0]** Where did you install the door sweep(s)?

1. Exterior Door (doors between conditioned and unconditioned spaces)
    a. **[IF C_DS >1, NUMERIC RESPONSE 0-99]** How many were installed on exterior doors?

2. Interior Door (doors between two conditioned spaces)
    a. **[IF C_DS >1,NUMERIC RESPONSE 0-99]** How many were installed on interior doors?

3. Other **[SPECIFY]**

L6. **[IF C_DS>L3]** What is your primary reason for not using, or installing but later removing, the door sweep(s) you purchased? **[RANDOMIZE ITEMS 1-5] [MULTIPLE RESPONSE]**

1. **[IF MULTIFAMILY = YES]** Property owner or manager would not allow install
2. Broken/didn't work
3. Difficult/unable to install
4. Didn't like how it looked
5. Have not installed yet/plan to install later
6. Other **[SPECIFY]**
98. Don't know

L7. **[IF L4=1 OR L3 < C_DS]** What did you do with the door sweep(s) *not currently* installed?

1. Stored for future use
2. Threw away
3. Gave away
4. Other **[SPECIFY]**
98. Don't know

L8. How satisfied are you with the door sweep(s) you purchased?

1. Very satisfied **[SKIP TO L10]**
2. Somewhat satisfied **[SKIP TO L10]**
3. Neither satisfied nor dissatisfied **[SKIP TO L10]**
4. Somewhat dissatisfied
5. Very dissatisfied
98. Don't know **[SKIP TO L10]**

L9. Why are you [INSERT RESPONSE FROM L8] with the door sweep(s)? Select all that apply. **[RANDOMIZE ITEMS 1-3] [MULTIPLE RESPONSE]**

1. Broken/doesn't work
2. Difficult/unable to set up
3. Didn't like how it looks
4. Other **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

[IF L3=0 OR 98 THEN SKIP TO NEXT SECTION]

L10. Did you have any door sweeps installed in your home before you heard of the Focus on Energy discount for door sweeps? If so, please tell us how many.

1. Yes, I had door sweeps in my home - How many? **[SPECIFY]**
2. No, I did not have any door sweeps in my home

98. Don't Know

L11. If the Focus on Energy discount had not been available, would you have purchased and installed efficient door sweeps for your home within 12 months?

1. Yes, at the same time - How many? **[SPECIFY]**
2. Yes, later but within the next 12 months - How many? **[SPECIFY]**
3. No, not within 12 months
4. No, I already had them installed on all available doors

98. Don't Know

L12. We would like to know more about the factors that contributed to your purchase of the door sweeps. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the door sweeps. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

M. Window Film Verification and Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "window film"]

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

The next questions are about the window film you purchased from the Online Marketplace**.**

M1. Our records show you purchased **[WFQ]** pack(s) of window film insulation. Is that right?

1. Yes, that's about right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

M2. [IF M1M1=2] How many packs of window film did you purchase?

1. _____ [NUMERIC ONLY 0-99] [CREATE C_WF=M2M2 OR COPY WFQ TO C_ WF IF NO NUMERIC RESPONSE TO M2M2; USE INSTEAD OF WFQ GOING FORWARD] – IF C_WF=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

M3. How many packs of window film are *currently* installed in your home?

1. _____ **[NUMERIC ONLY 0-99]**
98. Don't Know **[SKIP TO NEXT SECTIONM8]**

M4. **[IF C_ WF >M3]** Did you install some of the packs of window film but later remove them?

1. Yes
2. No
98. Don't Know

M5. [IF C_ WF >M3 OR M4=1] What is your primary reason for not installing, or removing, the window film insulation you purchased? **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. **[IF MULTIFAMILY = YES]** Property owner or manager would not allow install
2. Difficult to install
3. Didn't fit properly
4. Didn't like how it looked
5. Have not installed yet/plan to install later
6. Installed early in the year but removed after winter
7. Other [SPECIFY]
98. Don't know

M6. **[IF M5=5]** When do you plan to install the window film insulation?

1. Later this year [SPECIFY]
2. Sometime in 2025
3. Never

98. Don't know

M7. **[IF M5=1,2,3,4,6,7]** What did you do with the window film insulation *not currently* installed?

1. Stored for future use
2. Threw away
3. Gave away
4. Other **[SPECIFY]**

98. Don't know

M8. How satisfied are you with the window film insulation you received?

1. Very satisfied **[SKIP TO M10]**
2. Somewhat satisfied **[SKIP TO M10]**
3. Neither satisfied nor dissatisfied **[SKIP TO M10]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't know **[SKIP TO M10]**

M9. Why are you [INSERT RESPONSE FROM M8, M8] with your window film insulation? Select all that apply. **[RANDOMIZE ITEMS 1-4] [MULTIPLE RESPONSE]**

1. Broken/doesn't work
2. Difficult/unable to install
3. Didn't fit properly
4. Didn't like how it looked
5. Other **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

[IF M3=0 OR 98 THEN SKIP TO NEXT SECTION]

M10. Had you ever installed window film in your home before you heard of the Focus on Energy discount for window film insulation?

1. Yes, in the past, I had installed window film insulation installed in my home before I heard of the Focus on Energy discount- How many windows? **[SPECIFY]**
2. No, I had not installed any window film insulation in my home before I heard of the Focus on Energy discount.

98. Don't Know

M11. If the Focus on Energy discount had not been available, would you have purchased and installed window film insulation for your home within 12 months?

1. Yes, at the same time - How many? **[SPECIFY]**
2. Yes, later but within the next 12 months - How many? **[SPECIFY]**
3. No, not within 12 months
4. No, I already had window film insulation installed on all available windows

98. Don't Know

M12. We would like to know more about the factors that contributed to your purchase of the window film insulation. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the window film insulation. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

N. Door Weatherstripping Verification & Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "**door weatherstripping"]**

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

N1. The next questions are about the weatherstripping you purchased from the Online Marketplace. Weatherstripping is a self-adhesive rubber strip used for doors and windows to seal out drafts.

Our records show you purchased **[DWQ]** roll(s) of **[MEASURE]**. Is that right?

1. Yes, that's about right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

N2. [IF N1=2] How many rolls of [MEASURE] did you purchase?

1. _____ [NUMERIC ONLY 0-99] [CREATE C_DW =N2N2 OR COPY DWQ TO C_ DW IF NO NUMERIC RESPONSE TO N2N2; USE INSTEAD OF DWQ GOING FORWARD] – IF C_DW=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

N3. Is the **[MEASURE]** you purchased *currently* installed in your home?

1. **YES, ALL ROLLS OF [MEASURE] IS INSTALLED**
2. Yes, some of the **[MEASURE]** is installed
3. No, none of the **[MEASURE]** is installed
98. Don't know **[SKIP TO NEXT SECTIONN8]**

N4. [IF N3=2] What percentage of the [MEASURE] is currently installed?

1. **[SLIDER FROM 0-100 WITH OPTION TO CHOOSE PERCENTAGES IN INCREMENTS OF 5]**

N5. [IF N3=1 OR 2] Of the [MEASURE] that is installed, where in the house is the majority installed?

1. Exterior Doors (doors between conditioned and unconditioned spaces)
2. Interior Doors (doors between two conditioned spaces)
3. Windows
4. Other **[SPECIFY]**

N6. [IF N3=2 OR 3] What is your primary reason for not installing (all of) the [MEASURE] you purchased? **[RANDOMIZE ITEMS 1-7] [MULTIPLE RESPONSE]**

1. **[IF MULTIFAMILY = YES]** Property owner or manager would not allow install
2. Difficult to install
3. Didn't like how it looked
4. Didn't work/didn't stick well enough
5. Too thick/too thin

6. Did not include enough for the area we wanted to cover
7. Have not installed yet/plan to install later
8. Other **[SPECIFY]**
98. Don't know

N7. [IF N6=1,2,3,4,5,8] What did you do with the [MEASURE] *not currently* installed?

1. Stored for future use
2. Threw away
3. Gave away
4. Other **[SPECIFY]**
98. Don't know

N8. How satisfied are you with the **[MEASURE]** you purchased?

1. Very satisfied **[SKIP TO N10]**
2. Somewhat satisfied **[SKIP TO N10]**
3. Neither satisfied nor dissatisfied **[SKIP TO N10]**
4. Somewhat dissatisfied
5. Very dissatisfied
98. Don't know **[SKIP TO N10]**

N9. Why are you [RESPONSE TO N8] with the [MEASURE]? Select all that apply. **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. Difficult to install
2. Didn't like how it looked
3. Didn't work/didn't stick well enough
4. Too thick/too thin
5. Did not include enough for the area we wanted to cover
6. Other **[SPECIFY]**
98. Don't know **[EXCLUSIVE]**

[IF N3=3 OR 98 THEN SKIP TO NEXT SECTION]

N10. Did you have any **[MEASURE]** installed in your home before you heard of the Focus on Energy discount for weatherstripping? If so, please tell us how many windows.

1. Yes, I had weatherstripping installed in my home - How many feet? **[SPECIFY]**
2. No, I did not have any weatherstripping in my home
98. Don't Know

N11. If the Focus on Energy discount had not been available, would you have purchased and installed **[MEASURE]** for your home within 12 months?

1. Yes, at the same time - How many feet? **[SPECIFY]**
2. Yes, later but within the next 12 months - How many feet? **[SPECIFY]**
3. No, not within 12 months
4. No, I already had **[MEASURE]** installed in all available locations

98. Don't Know

N12. We would like to know more about the factors that contributed to your purchase of the **[MEASURE]**. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the weatherstripping. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

O. Switch and Outlet Gaskets Verification and Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "**outlet gaskets"]**

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

The next questions are about the switch and outlet gaskets you purchased from the Online Marketplace. These are foam pads that are installed behind switch and outlet plate covers to help prevent air penetration.

O1. Our records show you purchased **[OGQ]** pack(s) of 10 switch and outlet gaskets. Is that right?

1. Yes, that's about right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

O2. [IF O10=2] How many packs of switch and outlet gaskets did you purchase?

1. _____ [NUMERIC ONLY 0-99] [CREATE C_OG=O2O2 OR COPY OGQ TO C_ OG IF NO NUMERIC RESPONSE TO O2O2; USE INSTEAD OF OGQ GOING FORWARD] – IF C_OG=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

O3. Focusing only on the **outlet gaskets**, are the outlet gaskets you purchased *currently* installed in your home?

2. Yes, all packs of outlet gaskets are currently installed
3. Yes, some of the outlet gaskets are installed
4. No, none of the outlet gaskets are installed
98. Don't know **[SKIP TO O8]**

O4. [IF O3=2] How many of the outlet gaskets in the [IF C_OG > 1, "first pack", OTHERWISE "pack"] are *currently* installed in your home?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10 **[IF O4O4 = 10 AND C_OG=1, SKIP TO O8O13]**
98. Don't know **[SKIP TO O8O13]**

O5. [IF O3=2 AND C_OG>1] How many of the outlet gaskets in the second pack are *currently* installed in your home?

0. None
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10 **[SKIP TO O8 IF O4 = 10]**
98. Don't know **[SKIP TO O8]**

O6. [IF O3=2 OR 3] What is your primary reason for not installing all of the outlet gaskets you purchased? **[RANDOMIZE ITEMS 1-7] [MULTIPLE RESPONSE]**

1. **[IF MULTIFAMILY = YES]** Property owner or manager would not allow install
2. Difficult to install
3. Outlet plate didn't fit over them properly
4. Didn't like how they looked
5. Damaged easily
6. Didn't need them all
7. Have not installed yet/plan to install later
8. Other **[SPECIFY]**
98. Don't know

O7. What did you do with the outlet gaskets *not currently* installed? Select all that apply. **[MULTIPLE RESPONSE]**

1. Stored for future use
2. Threw away
3. Gave away
4. Other **[SPECIFY]**
98. Don't know

O8. Focusing only on the **switch gaskets**, are the switch gaskets you purchased *currently* installed in your home?

1. Yes, all packs of switch gaskets are currently installed
2. Yes, some of the switch gaskets are installed
3. No, none of the switch gaskets are installed
98. Don't know **[SKIP TO O13]**

O9. [IF O8=2] How many of the switch gaskets in the [IF C_OG > 1, "first pack", OTHERWISE "pack"] are *currently* installed in your home?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10 **[IF O4 = 10 AND C_OG=1, SKIP TO O13]**

98. Don't know **[SKIP TO O13]**

O10. [IF O8=2 AND C_OG>1] How many of the switch gaskets in the second pack are currently installed in your home?

1. None
2. 1
3. 2
4. 3
5. 4
6. 5
7. 6
8. 7
9. 8
10. 9
11. 10 **[SKIP TO O13]**

98. Don't know **[SKIP TO O13]**

O11. [IF O8=2 OR 3] What is your primary reason for not installing the switch gaskets you purchased? [RANDOMIZE ITEMS 1-7] [MULTIPLE RESPONSE]

1. **[IF MULTIFAMILY = YES]** Property owner or manager would not allow install
2. Difficult to install
3. Outlet plate didn't fit over them properly
4. Didn't like how they looked
5. Damaged easily
6. Didn't need them all
7. Have not installed yet/plan to install later
8. Other **[SPECIFY]**

98. Don't know

O12. What did you do with the switch gaskets *not currently* installed? Select all that apply. **[MULTIPLE RESPONSE]**

1. Stored for future use
2. Threw away
3. Gave away
4. Other **[SPECIFY]**

98. Don't know

O13. How satisfied are you with the switch and outlet gaskets you purchased?

1. Very satisfied **[SKIP TO O15]**
2. Somewhat satisfied **[SKIP TO O15]**
3. Neither satisfied nor dissatisfied **[SKIP TO O15]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't know **[SKIP TO O15]**

O14. Why are you [RESPONSE TO O13] with the switch and outlet gaskets? Select all that apply. **[RANDOMIZE ITEMS 1-4] [MULTIPLE RESPONSE]**

1. Difficult to install
2. Outlet plate didn't fit over them properly
3. Didn't like how they looked
4. Damaged easily
5. Other **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

[IF O3=3 OR 98 AND O8=3 OR 98 THEN SKIP TO NEXT SECTION]

O15. Did you have any switch and outlet gaskets installed in your home before you heard of the Focus on Energy discount for outlet gaskets? If so, please tell us how many.

1. Yes, I had switch and outlet gaskets installed in my home - How many? **[SPECIFY]**
2. No, I did not have any switch and outlet gaskets in my home

98. Don't Know

O16. If the Focus on Energy discount had not been available, would you have purchased and installed the switch and outlet gaskets for your home within 12 months?

1. Yes, at the same time - How many? **[SPECIFY]**
2. Yes, later but within the next 12 months - How many? **[SPECIFY]**
3. No, not within 12 months
4. No, I already had outlet gaskets installed in all available locations

98. Don't Know

O17. We would like to know more about the factors that contributed to your purchase of the switch and outlet gaskets. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the gaskets. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

P. Air Purifier Verification & Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "**air purifier"]**

The next questions are about the air purifier(s) you purchased from the Online Marketplace.

P1. Our records show you purchased **[APQ]** air purifier(s). Is that right?

1. Yes, that's about right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

P2. **[IF P1=2]** How many air purifier(s) did you purchase?
[NUMERIC ONLY 0-99] [CREATE C_AP=P2 OR COPY APQ TO C_AP IF NO NUMERIC RESPONSE TO P2; USE INSTEAD OF APQ GOING FORWARD] – IF C_AP=0 THEN SKIP TO NEXT SECTION]

98. Don't Know **[SKIP TO NEXT SECTION]**

P3. How many air purifiers are *currently* being used your home?

1. _____ **[NUMERIC ONLY 0-99]**
98. Don't Know **[SKIP TO NEXT SECTION]**

P4. **[IF C_ AP >P3]** Did you use some of the air purifier(s) but later stop using them?

1. Yes
2. No
98. Don't Know

P5. **[P3=1 OR C_ AP >P3]** What is your primary reason for not using, or stopping use of, the air purifier(s)? [RANDOMIZE ITEMS 1-6]

3. **[IF MULTIFAMILY = YES]** Property owner or manager would not allow install
4. Difficult to set up
5. Too loud
6. Didn't like how it looked
7. Didn't notice an improvement in air quality
8. Have not used yet/plan to use later
9. Used earlier in the year but removed after summer
10. Never planned to use
11. Another reason – what is it? **[SPECIFY]**
98. Don't Know

P6. **[IF KKKKKKKKKKKKKKKKKKKKKKKKKK0.10344960.98=5**] When do you plan to use the air purifier(s)?

1. Later this year **[SPECIFY]**
2. Sometime in 2025 **[SPECIFY]**
3. Never
98. Don't know

P7. [IF KKKKKKKKKKKKKKKKKKKKKKKKKK0.10344960.98 ≠ 5] What did you do with the air purifier(s) *not currently* in use? [ALLOW UP TO 2 RESPONSES]

12. Stored for future use
13. Discarded/recycled
14. Gave away
15. Something else – what? **[SPECIFY]**
98. Don't know **[EXCLUSIVE]**

P8. How satisfied are you with the air purifier(s) you purchased?

16. Very satisfied **[SKIP TO P10]**
17. Somewhat satisfied **[SKIP TO P10]**
18. Neither satisfied nor dissatisfied **[SKIP TO P10]**
19. Somewhat dissatisfied
20. Very dissatisfied
98. Don't know **[SKIP TO P10]**

P9. Why are you [RESPONSE TO P8] with the air purifier(s)? Select all that apply. [RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]

21. Difficult to set up
22. Too loud
23. Didn't like how it looked
24. Didn't notice an improvement in air quality
25. Other **[SPECIFY]**
98. Don't know **[EXCLUSIVE]**

[IF P3=0 OR 98 THEN SKIP TO NEXT SECTION]

P10. Did you use any air purifiers in your home before you heard of the Focus on Energy discount for air purifiers? If so, please tell us how many air purifiers.

1. Yes, I had air purifiers in my home - How many? **[SPECIFY]**
2. No, I did not have any air purifiers in my home
98. Don't Know

P11. If the Focus on Energy discount had not been available, would you have purchased any energy efficient air purifiers for your home within 12 months?

1. Yes, at the same time - How many? **[SPECIFY]**
2. Yes, later but within the next 12 months - How many? **[SPECIFY]**
3. No, not within 12 months

4. No, I already had air purifiers installed in all available locations
98. Don't Know

P12. We would like to know more about the factors that contributed to your purchase of the air purifier(s). Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the air purifiers(s). **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[Response from C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

Q. Showerstart Verification & Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "**showerstart"]**

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

The next questions are about the showerstart(s) you purchased from the Online Marketplace.

Q1. Our records show you purchased **[SSQ]** showerstart(s). Is that right?

1. Yes, that's about right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

Q2. **[IF Q1 =2]** How many showerstart(s) did you purchase?

1. _____ [NUMERIC ONLY 0-99] [CREATE C_SS=Q2 OR COPY SSQ TO C_ SS IF NO NUMERIC RESPONSE TO Q2; USE INSTEAD OF SSQ GOING FORWARD] – IF C_SS=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

Q3. How many of the showerstart(s) are *currently* installed in your home?

1. _____ **[NUMERIC ONLY 0-99]**
98. Don't Know **[SKIP TO NEXT SECTION]**

Q4. **[IF C_ SS >Q3]** Did you install some of the showerstart(s) but later remove them?

1. Yes
2. No
98. Don't Know

Q5. **[IF C_ SS > Q3]** What is your primary reason for not installing, or removing, the showerstart(s) you purchased? **[RANDOMIZE ITEMS 1-6]**

1. **[IF MULTIFAMILY = YES]** Property owner or manager would not allow install
2. Have not installed yet, but plan to install later
3. Don't like the way the showerstart(s) look
4. Did not fit / unable to install in my shower
5. Showerstart(s) are broken, or failed or malfunctioned
6. Another reason – what was it? **[SPECIFY]**
98. Don't Know

Q6. [IF C_ SS > Q3 OR Q4=1] What did you do with the showstarts(s) not currently installed? [ALLOW UP TO 2 RESPONSES]

1. Stored for future use
2. Discarded/recycled
3. Gave away
4. Something else – what? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

Q7. How satisfied are you with the showerstarts(s) you purchased?

1. Very satisfied **[SKIP TO Q9]**
2. Somewhat satisfied **[SKIP TO Q9]**
3. Neither satisfied nor dissatisfied **[SKIP TO Q9]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't know **[SKIP TO Q9]**

Q8. Why are you [RESPONSE TO Q7] with your showerstart(s)? Select all that apply. **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. Broke/stopped working properly
2. Didn't fit properly
3. Difficult/unable to install
4. Don't like the way it looks
5. Worked properly, but didn't like the water flow Other **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

[IF Q3=0 OR 98 THEN SKIP TO NEXT SECTION]

Now we'd like to ask you about how you made your decisions to purchase showerstart(s).

Q9. Did you have any showerstarts installed in your home before you heard of the Focus on Energy discount for showerstarts? If so, please tell us how many.

1. Yes, I had efficient showerstarts in my home - How many? **[SPECIFY]**
2. No, I did not have any showerstarts in my home

98. Don't Know

Q10. If the Focus on Energy discount had not been available, would you have purchased and installed showerstarts for your home within 12 months?

1. Yes, at the same time - How many? **[SPECIFY]**
2. Yes, later but within the next 12 months - How many? **[SPECIFY]**
3. No, not within 12 months
4. No, I already had them installed in all available showers

98. Don't Know

Q11. We would like to know more about the factors that contributed to your purchase of the showerstart(s). Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the showerstart(s). **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

R. Window Weatherstripping Verification and Freeridership

[ASK SECTION IF MEASURE1, MEASURE2, OR MEASURE3 = "**window weatherstripping"]**

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

R1. The next questions are about the weatherstripping you purchased from the Online Marketplace. Weatherstripping is a self-adhesive rubber strip used for doors and windows to seal out drafts. Our records show you purchased **[WWQ]** rolls of **[MEASURE]**. Is that right?

1. Yes, that's about right
2. No, that's not right
98. Don't Know how many I purchased **[SKIP TO NEXT SECTION]**

R2. [IF R1=2] How many rolls of [MEASURE] did you purchase?

1. _____ [NUMERIC ONLY 0-99] [CREATE C_WW=R2 OR COPY WWQ TO C_WW IF NO NUMERIC RESPONSE TO R2; USE INSTEAD OF WWQ GOING FORWARD] – IF C_WW=0 THEN SKIP TO NEXT SECTION]
98. Don't Know **[SKIP TO NEXT SECTION]**

R3. Is the **[MEASURE]** you purchased *currently* installed in your home?

1. Yes, all rolls of **[MEASURE]** are installed
2. Yes, some of the **[MEASURE]** is installed
3. No, none of the **[MEASURE]** is installed
98. Don't know **[SKIP TO R8]**

R4. [IF R3=2] What percentage of the [MEASURE] is currently installed?

1. **[SLIDER FROM 0-100 WITH OPTION TO CHOOSE PERCENTAGES IN INCREMENTS OF 5]**

R5. Of the **[MEASURE]** that is installed, where in the house is the majority installed?

1. Exterior doors (doors between conditioned and unconditioned spaces)
2. Interior doors (doors between two conditioned spaces)
3. Windows
4. Other **[SPECIFY]**

R6. [IF R3=2 OR 3] What is your primary reason for not installing the [MEASURE] you purchased? **[RANDOMIZE ITEMS 1-7] [MULTIPLE RESPONSE]**

1. **[IF MULTIFAMILY = YES]** Property owner or manager would not allow install
2. Difficult to install
3. Didn't like how it looked
4. Didn't work/didn't stick well enough
5. Too thick/too thin
6. Did not include enough for the area we wanted to cover
7. Have not installed yet/plan to install later
8. Other **[SPECIFY]**
98. Don't know

R7. [IF R6=1,2,3,4,5,8] What did you do with the [MEASURE] *not currently* installed?

1. Stored for future use
2. Threw away
3. Gave away
4. Other **[SPECIFY]**

98. Don't know

R8. How satisfied are you with the **[MEASURE]** you purchased?

1. Very satisfied **[SKIP TO 0]**
2. Somewhat satisfied **[SKIP TO 0]**
3. Neither satisfied nor dissatisfied **[SKIP TO 0]**
4. Somewhat dissatisfied
5. Very dissatisfied

98. Don't know **[SKIP TO 0]**

R9. Why are you **[RESPONSE TO R8]** with the **[MEASURE]**? Select all that apply. **[RANDOMIZE ITEMS 1-6] [MULTIPLE RESPONSE]**

1. Difficult to install
2. Didn't like how it looked
3. Didn't work/didn't stick well enough
4. Too thick/too thin
5. Did not include enough for the area we wanted to cover
6. Other **[SPECIFY]**

98. Don't know **[EXCLUSIVE]**

[IF R3=3 OR 98 THEN SKIP TO NEXT SECTION]

R10. Did you have any **[MEASURE]** installed in your home before you heard of the Focus on Energy discount for weatherstripping? If so, please tell us how many windows.

1. Yes, I had weatherstripping installed in my home - How many feet? **[SPECIFY]**
2. No, I did not have any weatherstripping in my home

98. Don't Know

R11. If the Focus on Energy discount had not been available, would you have purchased and installed **[MEASURE]** for your home within 12 months?

1. Yes, at the same time - How many feet? **[SPECIFY]**
2. Yes, later but within the next 12 months - How many feet? **[SPECIFY]**
3. No, not within 12 months
4. No, I already had **[MEASURE]** installed in all available locations

98. Don't Know

R12. We would like to know more about the factors that contributed to your purchase of the **[MEASURE]**. Below is a list of possible factors that could have contributed to your decision. For each of the factors listed, please rate how important it was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the weatherstripping. **[1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT"]**

1. **[RESPONSE FROM C1 IF C1≠ 7, 8, 11 OR 12]**
2. The Focus on Energy instant discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a store representative, dealer or contractor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

S. Spillover

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]

Now we would like to learn about any energy-saving improvements you may have made since purchasing the **[MEASURELIST](**s) from Focus on Energy's Online Marketplace.

S1. Since purchasing the **[MEASURELIST]**(s) discounted by Focus on Energy, have you made any other energy savings improvements or high-efficiency equipment purchases for your home that you did NOT receive for free or an instant discount from Focus on Energy or another organization?

1. Yes
2. No **[SKIP TO NEXT SECTION]**

98. Don't Know **[SKIP TO SECTION NEXT SECTION]**

S2. What were the products that you installed without receiving for free, getting an instant discount, or cash-back rebate?

1. Gas boiler **[HOW MANY DID YOU INSTALL?]**
2. Gas furnace **[HOW MANY DID YOU INSTALL?]**
3. Gas tankless water heater **[HOW MANY DID YOU INSTALL?]**
4. Gas storage water heater **[HOW MANY DID YOU INSTALL?]**
5. Electric tankless water heater **[HOW MANY DID YOU INSTALL?]**
6. Electric storage water heater **[HOW MANY DID YOU INSTALL?]**
7. Insulation; attic **[HOW MANY SQUARE FEET?]**
8. Insulation; floor **[HOW MANY SQUARE FEET?]**
9. Insulation; ceiling **[HOW MANY SQUARE FEET?]**
10. Air sealing **[HOW MANY LINEAR FEET?]**
11. Duct sealing **[HOW MANY LINEAR FEET?]**
12. ENERGY STAR windows **[HOW MANY SQUARE FEET?]**
13. ENERGY STAR air purifier **[HOW MANY DID YOU INSTALL?]**
14. ENERGY STAR dehumidifier **[HOW MANY DID YOU INSTALL?]**
15. ENERGY STAR clothes washer **[HOW MANY DID YOU INSTALL?]**
16. ENERGY STAR dishwasher **[HOW MANY DID YOU INSTALL?]**
17. ENERGY STAR pool pump **[HOW MANY DID YOU INSTALL?]**
18. ENERGY STAR room air conditioner **[HOW MANY DID YOU INSTALL?]**
19. ENERGY STAR refrigerator **[HOW MANY DID YOU INSTALL?]**
20. ENERGY STAR freezer **[HOW MANY DID YOU INSTALL?]**
21. Smart thermostat **[HOW MANY DID YOU INSTALL?]**
22. Heat pump water heater **[HOW MANY DID YOU INSTALL?]**
23. Central air conditioner **[HOW MANY DID YOU INSTALL?]**
24. Air source heat pump **[HOW MANY DID YOU INSTALL?]**
25. Ductless heat pump **[HOW MANY DID YOU INSTALL?]**
26. Ground source heat pump

27. Advanced power strip **[HOW MANY DID YOU INSTALL?]**
28. Other **[SPECIFY] [HOW MANY DID YOU INSTALL?]**
98. Don't Know **[SKIP TO SECTION NEXT SECTION]**

S3. **[REPEAT FOR EACH ITEM MENTIONED IN S2]** How important was your experience with the Focus on Energy [MEASURE] offering in your decision to install **[INSERT EACH ONE SELECTED IN S2]**. Was it …?

1. **[DROP DOWN LIST OR RADIO BUTTON SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT", "DON'T KNOW"]**

S4. **[REPEAT FOR EACH ITEM MENTIONED IN S2]** In what year was the **[INSERT EACH ONE SELECTED IN** S2**]** purchased and installed?

1. **[RECORD NUMERIC YEAR: "2024", "2023", "Before 2023"…, 99 FOR DON'T KNOW]**

[ASK S5 FOR EACH ONE SELECTED IN S2 EXCEPT 3 (gas tankless water heater) , 4 (gas storage water heater), 5 (electric tankless water heater), 6 (electric storage water heater), 12 (ENERGY STAR windows), 13 (ENERGY STAR air purifier), 14 (ENERGY STAR dehumidifier), 15 (ENERGY STAR clothes washer), 16 (ENERGY STAR dishwasher), 17 (ENERGY STAR pool pump), 18 (ENERGY STAR room air conditioner), 19 (ENERGY STAR refrigerator), 20 (ENERGY STAR freezer), 22 (Heat pump water heater), 27 (smart power strip) OR 28 (other equipment.)**]**

S5. Why didn't you apply for and receive a Focus on Energy rebate for [INSERT EACH ONE SELECTED IN S2]?

1. Did not know rebate was available
2. Product did not qualify
3. Other **[SPECIFY]**
98. Don't Know

T. Demographics and Household Characteristics

The last few questions are for statistical purposes only.

T1. * What type of fuel does your water heater use?

1. Natural gas
2. Electricity
3. Propane/Bottled gas
4. Wood
5. Something else – what is it? **[SPECIFY]**

98. Don't Know

T2. * What is the main type of fuel you use to heat your home?

1. Natural Gas
2. Oil
3. Propane
4. Electricity
5. Wood
6. Something else – what is it? **[SPECIFY]**

98. Don't Know

T3. * What connected devices that help save energy do you have installed in your home? **[MULTIPLE RESPONSE]**

1. None [EXCLUSIVE]
2. Smart thermostats
3. Smart plugs
4. Smart switches
5. Smart LED bulbs
6. Motion sensors
7. Light sensors
8. Temperature sensors
9. Door/windows closure sensors
10. Other device(s) – what are they? **[SPECIFY]**

98. Don't Know **[EXCLUSIVE]**

T4. * What type of home do you live in?

1. Mobile/manufactured home
2. Single-family home, detached house
3. Attached house townhouse, row house, or duplex
4. Multifamily apartment or condo building with 4 or more units
5. Co-op/retirement community
6. Something else – what is it? **[SPECIFY]**

98. Don't Know

U.

U1. * Do you or members of your household own or rent this home?

1. Own
2. Rent
3. Another situation – please describe: **[SPECIFY]**

98. Don't Know

U2. * What is the highest level of school that you have completed?

1. Less than 9th grade
2. 9th to 12th grade; no diploma
3. High school graduate [includes GED]
4. Some college, no degree
5. Associate's degree
6. Bachelor's degree
7. Graduate or professional degree

99. Prefer not to answer

V. Closing

V1. * Do you have any other comments about your experience with Focus on Energy that you would like to share? (Leave blank if you do not).
[RECORD RESPONSE:_____]

V2. * On occasion, Focus on Energy may want to contact a customer to learn more about their participation experience. May we share your responses with a program manager, who may contact you regarding your experience?
1. Yes
2. No
98. Don't Know

V3. Finally, we would like to confirm where to send your prize if you are selected as a $200 gift card winner. Please enter a name and email address below. The gift card winners will be selected and notified within two weeks of the survey closing.
1. Record recipient name and email address: **[RECORD RESPONSE:_____]**
2. I do not wish to be included in the drawing.

Thank you. We appreciate your help with this survey. Have a nice day.

[IF V3=1] You will be added into the drawing for a $200 gift card.

To learn about additional opportunities to save energy and money in your home, please visit focusonenergy.com.

Focus on Energy Multifamily Program
CY 2024 Building Owner & Manager Survey Guide

Table 1. Topic Areas

Researchable Questions		
Key Research Topics	**Areas of Investigation**	**Related Section/ Questions**
Building Characteristics	• Building type and ownership structure • Existing heating fuel and equipment type • Common area equipment • Utility bill responsibilities	Section C
Implications and Challenges of Electrification	• Awareness & interest • Tenant impact • IRA considerations	Section D
Motivations and Barriers to Program Participation	• Challenges for participation • Motivations to participate • Advertising/Marketing insights	Section E

Target Completes: 30

Sample audience: 2023 MF sector, non-new construction MF program participants

Sample Variables:

[CONTACT NAME]
[SITE ADDRESS]
[PARTICIPATION YEAR]

ALL QUESTIONS ARE SKIPABLE UNLESS OTHERWISE NOTED
ALL MULTIPLE CHOICE QUESTIONSARE SINGLE-RESPONSE UNLESS OTHERWISE NOTED

A. Email Invitation

Subject line: We Need Your Insight! Take Our Survey
Hello **[CUSTOMER NAME]**,

Focus On Energy would like to learn more about multifamily building energy use, equipment, and electrification to help them offer a strong program for multifamily energy customers. Your input will help!

Please take several minutes to respond to the survey
[TAKE THE SURVEY LINK]

Or copy and paste the URL below into your internet browser:
[SURVEY URL]

The survey should take about 15 minutes to complete. As a thank you for your time, we are offering a $25 e-gift card to use at an online retailer of your choice.

If you have any questions about this research or any difficulties taking the survey, please contact Callie Lenkart at Cadmus, the research firm working with Focus on Energy, at 971-242-3418 or callie.lenkart@cadmusgroup.com.

If you have any questions about the validity of this email or the survey, you may contact Mitch Horrie at Public Service Commission of Wisconsin at 608-267-3206 or mitch.horrie@wisconsin.gov.
We greatly appreciate your time and input.

Thank you very much!

B. Online Survey Introduction & Screener

Welcome! Thank you for your interest in Focus on Energy's study about multifamily building energy use, equipment, and electrification. As a thank you for your time completing this survey, we are offering a $25 e-gift card. Please confirm your email address at the end of the survey so that we can send you the e-gift card.

This survey will take about 15 minutes to complete. First, we will ask a few questions to determine if you and your property(ies) qualify for the study.

Please click "Next" below to begin the survey.

B1. Do you own, manage, or provide facility services for a building that has four or more residential units in Wisconsin? **[FORCED RESPONSE]**

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

B2. **[IF B1=1]** Are you familiar with your building's physical characteristics and equipment (such as space heating, cooling, and water heating systems)? **[FORCED RESPONSE]**

1. Yes
2. No

B3. **[IF B2=2]** This survey is for multifamily building owners or managers who are familiar with the building's physical characteristics and equipment (such as space heating, cooling, and water heating systems). Please provide the contact information for the person who can best answer questions about your building(s).

1. Name: **[OPEN TEXT ENTRY]**
2. Phone Number: **[OPEN TEXT ENTRY]**
3. Address: **[OPEN TEXT ENTRY]**

[IF B1=2 OR (B2=2 AND B3=NO INFO), TERMINATE] Thank you for your time and interest in this survey. Unfortunately, this survey is for building owners and managers of Wisconsin multifamily buildings with four or more units and requires familiarity with the building's physical characteristics and equipment. Have a good day.

[IF B3=INFO PROVIDED, TERMINATE] Thank you for providing an alternate contact. We will reach out to them to ask if they can help us with this survey. Have a good day.

C. Building Overview & Characteristics

C1. How many properties do you own/manage/support?

1. **[OPEN TEXT ENTRY]**

For the purpose of this survey, we will be asking questions about the building characteristics at **[ADDRESS]**. If this address is specific to a building that is part of a complex with more than one multifamily building, please consider the complex as the property. If any questions refer to your portfolio of properties overall, that will be made clear in the question.

C2. How many multifamily buildings with at least four residential units does the complex at **[ADDRESS]** have? (Please enter the number of buildings)

1. **[OPEN TEXT ENTRY]**

C3. What is the total number of individual residential units at the property? (Please enter the number of units)

1. **[OPEN TEXT ENTRY]**

C4. What type of units does the property have? **[ALLOW MULTIPLE SELECTIONS]**

1. Apartments
2. Condominiums
3. Townhomes
4. Other **[OPEN TEXT ENTRY]**

C5. What is the approximate square footage of total residential unit space for this property? (Don't include common areas or unconditioned porches, garages, or basements in this estimate.)

1. **[NUMERIC ENTRY]** Square feet

C6. What's the most accurate description of this property's residential units?

1. Market-rate rentals (no subsidies)
2. Naturally occurring affordable rentals (rents are low/affordable without subsidies)
3. Subsidized affordable housing rentals (applies to 25% or more of units)
4. Co-op or condos

C7. **[IF C6=4]** Are there homeowner association (HOA) fees?

1. Yes
2. No

(98) Don't know

C8. **[IF C7=1]** What do the HOA fees cover?

1. **[OPEN TEXT ENTRY]**

C9. Approximately how many residential units does the property have of the following?

1. Studios **[OPEN TEXT ENTRY]**
2. 1 bedroom units **[OPEN TEXT ENTRY]**
3. 2 bedroom units **[OPEN TEXT ENTRY]**
4. 3 bedroom units **[OPEN TEXT ENTRY]**
5. 4 or more bedroom units **[OPEN TEXT ENTRY]**

C10. Does the property also have a basement?

1. Yes
2. No

C11. Approximately what year was the property built?

1. **[OPEN TEXT ENTRY]**

(98) Don't know

C12. Does the property contain any commercial space?

1. Yes
2. No

C13. **[IF C6≠4]** Which of the following best describes the ownership of this property?

1. Family-owned or an individual
2. Mid-sized portfolio owner
3. Private corporate large portfolio owner
4. Real estate investment trust (REIT)
5. Institutional investor
6. Government-owned
7. Other **[OPEN TEXT ENTRY]**

(98) Don't Know

C14. **[IF C1>1]** Of all the properties that you manage in Wisconsin, how many include multifamily buildings with four or more residential units?

[OPEN TEXT ENTRY]

The next questions ask about the building features at [ADDRESS].

C15. Which of the following amenities does this property have? Please select all that apply. **[MULTIPLE RESPONSE ALLOWED]**

1. Common area laundry
2. Electric vehicle charging stations
3. Parking areas
4. Swimming pools or hot tubs
5. Bike storage facilities
6. Access to carsharing
7. Access to bike sharing or scooter sharing
8. None of the above **[EXCLUSIVE RESPONSE]**

C16. **[IF C15=3]** What kind of parking does this property have for tenants and staff? **[MULTIPLE RESPONSES ALLOWED]**

1. Underground parking garage
2. Above-ground parking garage
3. Open parking lot

4. Street parking

C17. How are electric utilities metered for this property?

1. Master meter only
2. Master meter with residential unit submeters
3. Direct-metered residential units
4. Other **[OPEN TEXT ENTRY]**

(98) Don't know

C18. Who pays the electric bill for in-unit electricity use? **[FORCED RESPONSE]**

1. Tenant/unit owner
2. Property owner
3. Other **[OPEN TEXT ENTRY]**

(98) Don't know

C19. How are natural gas utilities metered for this property?

1. Master meter only
2. Master meter with residential unit submeters
3. Direct-metered residential units
4. Other **[OPEN TEXT ENTRY]**
5. No gas service

(98) Don't know

C20. **[IF C19≠5]** Who pays the gas bill for in-unit gas use? **[FORCED RESPONSE]**

1. Tenant/unit owner
2. Property owner
3. Other **[OPEN TEXT ENTRY]**

(98) Don't know

The next questions ask about the heating systems for the property.

C21. What is the primary heating fuel for this property? **[FORCED RESPONSE]**

1. Natural gas
2. Electric
3. Delivered fuel (such as oil or propane)
4. Other **[OPEN TEXT ENTRY]**

(98) Don't know

C22. **[IF C21=3]** Who pays the heating fuel bill? **[FORCED RESPONSE]**

1. Tenant/unit owner
2. Property owner
3. Other **[OPEN TEXT ENTRY]**

(98) Don't know

C23. Does the property have central heating or does each unit have its own heating system? **[MULTIPLE RESPONSES ALLOWED]**

1. Central heating
2. Individual unit heating

(98) Don't know

C24. **[IF C21= 1-4]** What is the typical primary heating system for the property's residential units?

1. **[DON'T DISPLAY IF C21=2]** Furnace with forced hot air
2. **[DON'T DISPLAY IF C21=2]** Hot water boiler with baseboards or radiators
3. **[DON'T DISPLAY IF C21=2]** Steam boiler with baseboards or radiators
4. **[DON'T DISPLAY IF C23=1 OR C21=1 OR 3]** Baseboard or wall electric resistance heat
5. **[DON'T DISPLAY IF C21=1 OR 3]** Ducted air source heat pump
6. **[DON'T DISPLAY IF C23=1 OR C21=1 OR 3]** Ductless mini-split heat pump
7. **[DON'T DISPLAY IF C23=1 OR C21=1 OR 3]** Packaged terminal heat pump
8. **[DON'T DISPLAY IF C23=1]** Direct vent furnace or wall heater
9. **[DON'T DISPLAY IF C21=1 OR 3]** Ground source heat pump
10. Other – what is it? **[OPEN TEXT ENTRY]**

(98) Don't know

C25. **[IF C23=2]** What percent of the residential units' primary heating systems fall into each age range, approximately?

1. Less than 5 Years – percent: **[RECORD NUMBER 0-100]**
2. 5 to 9 Years – percent: **[RECORD NUMBER 0-100]**
3. 10 to 14 Years – percent: **[RECORD NUMBER 0-100]**
4. 15 to 19 Years – percent: **[RECORD NUMBER 0-100]**
5. 20 or More Years – percent: **[RECORD NUMBER 0-100]**

(98) Don't know

C26. **[IF C23=1]** How old is the property's heating system?

1. Less than 5 Years
2. 5 to 9 Years
3. 10 to 14 Years
4. 15 to 19 Years

5. 20 or More Years

(98) Don't know

C27. **[IF C23=1]** Can the residents of this property control the heating temperatures in their residential unit?

1. Yes
2. No

(98) Don't know

C28. **[IF C27=YES]** What type of thermostat controls are typically used for heating in residential units?

1. Controls integrated with equipment
2. Manual thermostat
3. Programmable thermostat (not Wi-Fi enabled)
4. Smart/Wi-Fi Enabled Thermostat
5. Something else – what is it? **[OPEN TEXT ENTRY]**

(98) Don't know

The next questions ask about the cooling systems for the property.

C29. Does the building(s) at this property have central cooling?

1. Yes
2. No

(98) Don't know

C30. Are tenants/unit owners allowed to install window AC units?

1. Yes
2. No

(98) Don't know

C31. **[IF C29=Yes]** What type of central cooling system does the property have?

1. Ducted air source heat pump
2. Ducted central AC system
3. Central chiller
4. Ground source heat pump

(98) Don't know

C32. **[IF C29=Yes]** Approximately how old is the central cooling system?

1. Less than 5 Years
2. 5 to 9 Years
3. 10 to 14 Years
4. 15 to 19 Years
5. 20 or More Years

(98) Don't know

C33. **[IF C29=Yes]** Can the residents of this building control the air conditioning in their residential unit?

1. Yes
2. No

(98) Don't know

C34. **[IF C29=No]** What is the typical primary cooling system for the units at this property?

1. Window AC
2. Through-the-wall AC
3. Ductless mini-split heat pump
4. Packaged terminal AC
5. Packaged terminal heat pump
6. Other – what is it? **[OPEN TEXT ENTRY]**
7. No air conditioning in residential units **[SKIP TO C37]**

(98) Don't know

C35. **[IF C34=WINDOW AC]** Who typically owns the window air conditioners?

1. Building
2. Tenant/unit owner
3. Third party

(98) Don't know

C36. **[IF C29=No]** Approximately what percent of the residential units' primary cooling systems fall into each age range?

1. Less than 5 Years– percent: **[RECORD NUMBER 0-100]**
2. 5 to 9 Years – percent: **[RECORD NUMBER 0-100]**
3. 10 to 14 Years – percent: **[RECORD NUMBER 0-100]**
4. 15 to 19 Years – percent: **[RECORD NUMBER 0-100]**
5. 20 or More Years – percent: **[RECORD NUMBER 0-100]**

(98) Don't know

The next questions are about the water heating system for the property's residential units.

C37. Does the building(s) at this property have a central hot water system, or does each unit have its own system?

1. Central system
2. Individual unit systems

(98) Don't know

C38. What is the primary hot water heating system type for this property?

1. Natural gas storage water heater
2. Natural gas boiler (either tankless or with indirect tank)
3. Electric resistance water heater
4. Heat pump water heater
5. Delivered fuel (such as oil or propane)
6. Other – what is it? **[OPEN TEXT ENTRY]**

(98) Don't know

C39. **[IF C37=1]** How old is the domestic hot water system at this property?

1. Less than 5 Years
2. 5 to 9 Years
3. 10 to 14 Years
4. 15 to 19 Years
5. 20 or More Years

(98) Don't know

C40. **[IF C37=2]** Approximately what percentage of the equipment that typically provides domestic hot water to residential units falls into each age range?

1. Less than 5 Years – percent: **[RECORD NUMBER 0-100]**
2. 5 to 9 Years – percent: **[RECORD NUMBER 0-100]**
3. 10 to 14 Years – percent: **[RECORD NUMBER 0-100]**
4. 15 to 19 Years – percent: **[RECORD NUMBER 0-100]**
5. 20 or More Years – percent: **[RECORD NUMBER 0-100]**

(98) Don't know

The next questions are about common area appliances in the property.

C41. **[ASK IF C15=1]** Which of the following best describes the property's common area laundry equipment?

1. Owned by the property owner
2. Leased from a third party

(98) Don't know

C42. **[ASK IF C41=2]** Who is the common area laundry equipment leased from?

1. **[OPEN TEXT ENTRY]**

C43. **[ASK IF C15=1]** How many clothes dryers are there in the building's common laundry area(s)?

1. **[RECORD NUMBER 1 OR GREATER]**

(98) Don't know

C44. **[ASK IF C15=1]** What type of dryer are the majority of the common area clothes dryers?

1. Standard electric dryer
2. Heat pump dryer
3. Gas clothes dryer

(98) Don't know

C45. **[ASK IF C15=1]** Are most of the common area washing machines front-load or top-load machines?

1. Front-load
2. Top-load

(98) Don't know

C46. **[ASK IF C15=1]** About how old are the majority of the common area washing machines and clothes dryers? **[SELECT ONE FOR WASHERS AND ONE FOR DRYERS]**

	a. Clothes Washers	b. Clothes Dryers
1. Less than 2 years		
2. 2 to 4 years		
3. 5 to 9 years		
4. 10 to 14 years		
5. 15 to 19 years		
6. 20 or more years		
7. Don't know		

The next questions are about appliances in residential units.

C47. Do any of the property's residential units have in-unit clothes washers and dryers?

1. Yes
2. No

(98) Don't know

C48. **[ASK IF C47= 1]** What type of clothes dryers are most common in the property's residential units?

1. Standard electric dryer
2. Gas clothes dryer
3. Heat pump dryer

(98) Don't know

C49. **[ASK IF C47= 1]** Who owns the clothes washers and dryers in the units?

1. Building
2. Tenant/unit owner
3. Third-party

(98) Don't know

C50. What type of cook stoves are included in most of the property's residential units?

1. Gas stove
2. Traditional electric
3. Induction electric
4. Other – what is it? **[OPEN TEXT ENTRY]**
5. No cook stoves in units

(98) Don't know

C51. About how old are the following appliances in the residential units?

	a. **[ASK IF C47=1 AND C49=1]** Clothes Washer	b. **[ASK IF C47=1 AND C49=1]** Clothes Dryers	c. Refrigerator	d. Cook Stoves **[ASK IF C50=1-4]**
1. Less than 5 years				
2. 5 to 9 years				
3. 10 to 14 years				
4. 15 to 19 years				
5. 20 or more years				
(98) Don't know				

The next questions are about other property amenities.

C52. **[ASK IF C15=4]** How are the property's pool and/or hot tub heated? **[ALLOW MULTIPLE SELECTIONS]**

1. Gas heater

2. Conventional electric heater
3. Heat pump heater
4. Solar heater
5. Other – what is it? **[OPEN TEXT ENTRY]**

(98) Don't know

C53. **[ASK IF C15=2]** How many electric vehicle charging stations are there at this property?

1. **[RECORD NUMBER 1 OR GREATER]**

(98) Don't know

C54. Which of the following equipment or systems does this building have? Select all that apply. **[ALLOW MULTIPLE SELECTIONS]**

1. Solar photovoltaic (PV) system
2. Electric energy storage system (An on-site energy storage system provides a way for energy to be stored for later conversion back to electricity when needed, such as through batteries or thermal storage.)
3. Combined heat and power (CHP) equipment (Also known as cogeneration systems, CHP systems provide on-site electric power and heating from a single fuel source)
4. None of the above **[EXCLUSIVE RESPONSE]**

D. Electrification Considerations

The next section of this survey will focus on electrification and its challenges as well as the Inflation Reduction Act (IRA) and its implications in Wisconsin's multifamily building market.

The next few questions are about heat pump technology.

D1. **[IF Primary Space Heating ≠ Heat Pumps]** Has the introduction of heat pump technology for space heating been considered for this property?

1. Yes
2. No

(98) Don't know

D2. **[IF Primary Space Heating ≠ Heat Pumps]** Are there any current plans for adding heat pump technology for space heating to the building(s)?

1. Yes
2. No

(98) Don't know

D3. **[IF A2=1]** What are the plans, and how soon will heat pump technology be installed at this property?

1. **[OPEN TEXT ENTRY]**

D4. **[IF A2=1]** What made the installation of heat pumps in the building(s) feasible?

1. **[OPEN TEXT ENTRY]**

D5. **[IF A2=2]** What would make the installation of heat pump technology for space heating in the building(s) ***more feasible***?

1. **[OPEN TEXT ENTRY]**

D6. **[IF A1=2 OR 'DON'T KNOW']** Why hasn't heat pump technology for space heating been a consideration for the property?

1. **[OPEN TEXT ENTRY]**

D7. **[ASK IF Primary Space Heating ≠ Heat Pumps]** What information from Focus on Energy would be helpful regarding heat pump technology?

1. **[OPEN TEXT ENTRY]**

D8. **[ASK IF Primary Space Heating ≠ Heat Pumps]** Portable or window heat pumps are a heating and cooling option for small units or spaces. They are portable, plug into a standard 120-volt outlet, do not require any through-wall ducting, and cost less than a mini-split heat pump installation. They are the heat pump equivalent to portable air conditioners and provide both heating and cooling. Non-cold climate portable heat pumps have been available for a number of years. Several manufacturers have developed cold climate portable heat pumps, which can provide heating in below-zero temperatures, and announced that they should be available to the market at large in 2025.

Were you aware of cold climate portable heat pumps before taking this survey?

1. Yes
2. No

D9. **[ASK IF Primary Space Heating ≠ Heat Pumps]** These cold climate portable heat pumps are expected to be available on the market in 2025. Is this a technology you might consider for your property?

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

The next few questions will focus more broadly on electrification.

D10. Are you aware of any concrete plans for any of the types of projects listed below at **[ADDRESS]**?

	1. Yes	2. No	98. Don't know
[Ask if Water Heater ≠ Heat Pump Water Heater] a. Installing heat pump water heaters.			
[Ask if Stove Type = Gas] b. Replacing gas cook stoves with electric stoves.			
[Ask if Cooling = In Unit AND Cooling Type ≠ Heat Pump] c. Replacing in-unit cooling with heat pumps.			
[Ask if Common Area Laundry = Yes and Dryer Type = Gas] d. Replacing gas clothes dryers with electric.			
[Ask if Pool = Yes AND Pool Heater Type ≠ (Heat Pump OR Solar)] e. Installing a heat pump and/or solar pool heater.			
f. Installing on-site solar			
g. Installing electric energy storage (such as a battery)			
[Ask if Property has Parking] h. Installing electric vehicle chargers			
i. Other building electrification project.			

D11. **[FOR EACH A10=1]** What is the motivation for this project? **[A10 Selection]**

1. **[OPEN TEXT ENTRY]**

D12. **[IF ALL A10=2]** Even though there are no plans currently in place to do these types of building electrification projects, do you see the property making electrification upgrades at some point?

1. Yes
2. No

(98) Don't know

D13. **[IF A12=1]** If you had to estimate how soon electrification upgrades could start happening, what would be your best guess?

1. Within 2 years
2. 2-5 years
3. 5-10 years
4. more than 10 years

(98) Don't know

D14. What causes hesitation/barriers when considering electrification projects for the property?

1. **[OPEN TEXT ENTRY]**

D15. What is your sense of tenant/unit owner interest in these technologies?

	1. Interested	2. Uninterested	3. Mixed	4. Unaware	98. Don't know
A. Heat pump technologies					
B. Induction stoves					
C. Electric vehicles					
D. Solar					
E. Battery storage					

D16. Are there other specific energy efficient or electrification technologies or equipment that tenants/unit owners have expressed interest in?

1. Yes, please specify: **[OPEN TEXT ENTRY]**
2. No

(98) Don't know

The next few questions will be about the Inflation Reduction Act and its implication in Wisconsin's multifamily market.

Starting in 2024, **Focus on Energy delivers Home Energy Rebate Programs as part of the Inflation Reduction Act (IRA).** Wisconsin has been allocated $149 million to deliver two HER programs: The Home Efficiency Rebates Program (HOMES) and the Home Electrification and Appliance Rebate Program (HEAR).

The HOMES program launched in August 2024 and offers rebates for whole-building energy-saving upgrades in single-family and multifamily buildings, such as insulation and efficient heating/cooling equipment. Home energy assessments are required to identify eligible upgrades. Rebate amounts are based on the participant's income level and predicted energy savings from the recommended upgrades.

The HEAR Program launched this winter and provides rebates to households installing heat pumps and other efficient electric equipment to help further electrify their homes. Additional qualified improvements will include insulation, air sealing, and upgraded electrical panels and wiring. This program are available to Wisconsin residents in single-family homes and multifamily buildings, earning 150% of Area Median Income or less.

D17. Were you aware of the IRA opportunities for multifamily buildings in WI?

1. Yes
2. No

D18. Do you have any plans for projects that would utilize IRA funding?

1. Yes
2. No

(98) Don't know

D19. **[IF A18=1]** What projects do you have planned that may utilize IRA funding?

1. **[OPEN TEXT ENTRY]**

D20. **[IF A17=1]** Where have you gotten information about IRA funding opportunities? **[ALLOW MULTIPLE RESPONSES]**

1. Another building owner or manager
2. Contractors
3. Personal research
4. Department of Energy
5. Focus on Energy
6. Your utility (please specify): **[OPEN TEXT ENTRY]**
7. Other (please specify): **[OPEN TEXT ENTRY]**
8. I did not access any resources

(98) Don't know

D21. **[IF A17=1]** Has awareness of the anticipated IRA funding opportunities impacted any projects that you were already planning in terms of timing or scope?

1. Yes
2. No

D22. **[IF A17=1]** How has anticipated IRA funding opportunities impacted previously planned projects?

1. **[OPEN TEXT ENTRY]**

D23. What information from Focus on Energy would be helpful regarding IRA funding opportunities?

1. **[OPEN TEXT ENTRY]**

E. Motivations & Barriers

You're nearly done! The next section is about benefits and challenges to completing energy efficiency projects, such as those that Focus on Energy currently provides incentives for, in the multifamily building(s) you manage.

E1. **[IF C14>1]** You indicated that you own or manage multiple multifamily properties in Wisconsin. Are there differences between properties that make conducting energy efficiency projects easier or more difficult depending on the building?

1. Yes
2. No

(98) Don't know

E2. **[IF E1=1]** What are the differences?

1. **[OPEN TEXT ENTRY]**

E3. What is the biggest challenge to getting energy efficiency projects to move forward in the buildings you manage?

1. Time constraints
2. Monetary constraints
3. Coordination with stakeholders
4. Lack of information
5. Difficulty of implementation
6. Lack of tenant/unit owner buy-in
7. Other (please specify): **[OPEN TEXT ENTRY]**

(98) Don't know

E4. Is there an example that sticks out to you of navigating one of these challenges?

1. Yes (please specify): **[OPEN TEXT ENTRY]**
2. No

(98) Don't know

E5. For the building(s) that you own or manage or work with, who needs to sign off on a capital improvement project for it to move forward?

1. **[OPEN TEXT ENTRY]**

E6. What is the strongest motivation for implementing an energy efficiency project?

1. Saving money
2. Increasing tenant satisfaction
3. Environmental impact
4. Access incentives/tax credits
5. Enhance equipment/building performance
6. Reduce maintenance
7. Improve aesthetics
8. Other (please specify): **[OPEN TEXT ENTRY]**

(98) Don't know

E7. What was most important in completing your recent energy efficiency project that received a Focus on Energy incentive at **[ADDRESS]**?

1. Incentives
2. Focus on Energy project support
3. Stakeholder interest
4. Anticipated energy/cost savings
5. Anticipated project benefits other than energy or cost savings (please specify): **[OPEN TEXT ENTRY]**
6. Other (please specify): **[OPEN TEXT ENTRY]**

(98) Don't know

E8. Why did you choose to move forward with the energy efficiency project at **[ADDRESS]**?

1. **[OPEN TEXT ENTRY]**

E9. There are a lot of advertising and salespeople vying for your attention, how can Focus on Energy avoid being confused for another one of these vendors and best reach building owners and managers?

1. **[OPEN TEXT ENTRY]**

E10. What information from Focus on Energy would be helpful for implementing future energy efficiency projects?

1. **[OPEN TEXT ENTRY]**

F. Closing

F1. Thanks for answering all our questions! Is there any additional feedback for Focus on Energy that you would like to share?

[OPEN TEXT ENTRY]

F2. Are you ok with Focus on Energy following up with additional questions, if applicable?

1. Yes
2. No

(98) Don't know

F3. We will be sending thank you gift cards as an online gift card. To ensure that we can send this gift card to you, please enter your contact information below. **This information will not be shared with Focus on Energy**.

1. First Name: **[OPEN TEXT ENTRY]**
2. Last Name: **[OPEN TEXT ENTRY]**
3. Email Address: **[OPEN TEXT ENTRY]**

Thank you for participating in the survey.

Focus on Energy <link to https://focusonenergy.com/>

IRA Rebates for Wisconsin <link to https://focusonenergy.com/home-energy-rebates>

CADMUS

Focus on Energy CY 2024 Interview Guide: Participating BPCs Residential New Construction Program

Respondent name:	
Respondent phone:	
Interview date:	Interviewer initials:

Introduction

Thank you for taking the time to speak with me. My company, Cadmus, was hired by the Public Service Commission of Wisconsin to evaluate the Focus on Energy Residential New Construction Program.

We are talking to Building Performance Consultants who certified homes for the Focus on Energy program over the past year to gather their input on the Residential New Construction Program, the Wisconsin new construction market, and learn about their experiences partnering with Focus on Energy.

Do you have 30-45 minutes to discuss your experiences as a building performance consultant with me? In appreciation of your time, we're offering a $125 gift card. All your responses will be kept strictly confidential and will not be attributed to you or your company in our reporting.

A. General BPC Information

To start, I'd like to gain a better understanding of your business and how it engages with the Focus on Energy Program.

A1. First, could you tell me if you do any work with new construction homes beyond your role as a building performance consultant for Focus on Energy's New Construction Program?
   1. If so, what other type of work do you do? [probe, if necessary: Do they certify any new homes outside of Focus? If so, what are the certifications for?]
   2. Thinking about all of the different types of work you do; roughly what percentage of your time is spent on projects for the New Construction Program?
   3. Would you say that the percentage of your revenue that comes from Focus on Energy projects aligns with the proportion of time you spend working on those projects?

A2. When did you begin participating in the Focus on Energy Residential New Construction Program as a Building Performance Consultant?
   1. [If <3 years] How did you first hear about the opportunity to become a building performance consultant?
   2. [If <3 years] What motivated you to become a building performance consultant?

A3. Our records show that your company certified [INSERT NUMBER OF 2024 CERTIFIED HOMES] for the Focus on Energy Residential New Construction program in 2024. Does that sound about right?
   1. Is this more or less than the number of homes you've certified each of the past three years? [If actual number vary, ask why]

A4. What aspects of the program provide the most value to you?

A5. What challenges do you face with the program? [probe, if necessary: Paperwork, building requirements, trainings/certifications, builder responses]
   1. What improvements could Focus on Energy make to ease these challenges?

A6. Has partnering with the Residential New Construction Program provided any benefits to other aspects of your business? [probe if necessary: training/education, competitiveness]

B. Training Opportunities / Program Support

B1. How frequently do you interact with Focus on Energy staff?
   1. Is this amount of interaction satisfactory? If not, what cadence would you prefer?

B2. How do you usually interact with Focus on Energy staff? [Phone, in-person, larger meetings, etc.]
   1. Are there ways you would prefer to interact with Focus staff?

B3. I have a few questions about the RESNET Home Energy Rater (HER) training and certification, and the Rating Field Inspector training which are offered by Focus on Energy. As you are probably aware, a HERS Rater or RESNET RFI certification is required to partner as a Building Performance Consultant (BPC) with Focus on Energy's Residential New Construction Program. (Note to interviewer: Focus on Energy contracts with NEHERS or an EEBA for the HERS Rater (BPC) Training. PSD staff will be delivering the RFI Training.) Have you participated in the initial Rater Certification trainings offered by Focus on Energy or similar trainings somewhere else?
   1. [If answered "somewhere else"] Outside of the trainings offered by Focus on Energy, where else have you participated in these types of trainings?
   2. [If answered "somewhere else"] Did you acquire a HERS Rater or RESNET RFI certification from the training you completed outside of the trainings offered by Focus on Energy?
   3. [IF YES] Which of these certifications, did you acquire through the training offered by [answer to B3.a]?
   4. [IF NO] What skills or knowledge did you gain from the training offered by [answer to B3.a]?
   5. [If participated in the trainings offered by Focus on Energy] On a scale of 1 to 5, with 1 being not at all satisfied and 5 being very satisfied, how satisfied were you with the knowledge you gained from the training(s) offered by Focus on Energy?
      i. [If rate 1-3] Why were you less than satisfied with the trainings?
      ii. [ask everyone] What did you find to be the most beneficial aspect of the trainings?

6. [If participated in the trainings offered by Focus on Energy] Upon completing the training and certification, you received a blower door kit, duct blaster kit, pressure plate, and manometer at no cost. How much influence did the free equipment have on your decision to become a BPC? Would you still have become a BPC without the free equipment?
7. [If participated in the trainings offered by Focus on Energy] Have you faced any challenges meeting the training and certification offering requirements? Have any of these challenges kept you from getting certified in the past?
8. [Ask everyone] Where did you hear about these training sessions? [If they participated in the focus on energy training AND another training outside of focus on energy make sure to specify the sources]
9. [Ask everyone] What types of professions would gain the most knowledge from these trainings? Which would they be less beneficial for? [If they participated in the focus on energy training AND another training outside of focus on energy make sure to specify the trainings they're talking about]

B4. Thinking across all of the training that Focus on Energy offers and promotes through the New Construction Program, would you like to see additional training opportunities? [If yes] What topics would be most beneficial? [probe about emerging technologies/building practices]

B5. Beyond training, are there other ways the program can better support a Building Performance Consultant's skill development?

B6. Would you find value in more networking opportunities with other Focus on Energy Building Performance Consultant?

B7. How could the program help foster stronger relationships between Building Performance Consultants, participating builders, and Focus on Energy staff?

C. BPC Recruitment

C1. As you likely know, Focus on Energy is interested in bringing in new building performance consultants to support growth in the New Construction Program and to support existing program activity as some of the existing consultants retire. Are you familiar with their previous efforts to recruit new BPCs?
   1. [If yes] Do you agree with the avenues they're using to recruit new BPCs?
   2. Do you have suggestions for other avenues they could use to recruit BPCs?

C2. In your own words, what type of person makes a good candidate to be a BPC? [probe for training/knowledge, personality, etc.]

C3. What barriers are there to someone becoming a BPC?
   1. What does Focus offer to address those barriers?
   2. OR How could Focus better address those barriers?

C4. Have you heard any other feedback about Focus on Energy or the New Construction Program that might deter someone from becoming a BPC?
   1. If yes, what was the feedback?
   2. What can Focus do to address those perceptions?

C5. Are there any other changes Focus on Energy could make to the program or their partnership with BPCs to attract more Building Performance Consultants?

C6. Are there additional incentives, marketing efforts, or partnership opportunities that you think could improve recruitment?

D. Closing

D1. Is there anything that Focus on Energy could improve about the program that hasn't already been discussed? [Probe: communication with builders and Building Performance Consultants, marketing to the peers, processes, requirements]

D2. Thank you for taking the time to talk to me today, I appreciate that your time is limited. Your input is valuable and will be very helpful in our study.

[Collect/confirm contact data to mail the gift card.]

CADMUS

Focus on Energy CY 2024
Participant Contractor Interview Guide: HVAC
Residential New Construction Program

Respondent name/Company:_____

Respondent phone: _____

Interview date: _____ Interviewer initials: _____

Research Questions	Interview Guide Questions
What are indicators that the program is influencing the building practices in the Wisconsin market?	C2, D1-D4
How close are builders to zero net energy homes?	C1
How does market demand influence efficient building practices?	D4

Thank you for taking the time to speak with me. My company, Cadmus, was hired by the Public Service Commission of Wisconsin to evaluate the Focus on Energy Residential New Construction Program. This program provides financial incentives to builders who construct homes that are more energy efficient than the requirements set by the Wisconsin Uniform Dwelling Code.

We would like to gather input on the Wisconsin new homes market from contractors who worked with participating Focus on Energy builders. Another important part of this study is to understand how the Residential New Construction Program may have affected the construction of homes that are not certified by the Residential New Construction Program.

Do you have 30 minutes to discuss the program and how you choose and install equipment in homes? We're offering a $125 gift card for your time. All your responses will be kept strictly confidential and will not be attributed to you or your company in our reporting.

A. Screening and Introduction

A1. Our records indicate that your company may have worked on Focus on Energy certified homes with builders in 2024. Potential builders include **[INSERT BUILDERS].** Do you recall that your company worked on homes that participated in the Focus on Energy Residential New Construction Program this year?

IF YES: CONTINUE OR ASK TO SCHEDULE A CONVENIENT TIME TO TALK. IF NO: THANK AND INFORM THAT CADMUS IS CONDUCTING INTERVIEWS WITH CONTRACTORS WHO WORKED ON FOCUS HOMES THIS YEAR.

A2. Are you the right person to talk to at your company regarding HVAC equipment installations and interactions with builders?

IF YES: CONTINUE. IF NO: THANK AND ASK TO SPEAK TO THE BEST PERSON.

B. General Contractor Information

I have a few questions about the homes that you work on in Wisconsin.

B1. Are you typically made aware by the builder that the home(s) you are working on will be certified in the Focus on Energy Residential New Construction Program?
   1. If yes: Does the builder tell you that a Building Performance Consultant (BPC) associated with Focus on Energy will be visiting the job site and may provide you with feedback?

B2. How many new homes in Wisconsin will your company have installed HVAC systems in by the end of 2024?
   1. How does this compare to last year?
   2. How does this number compare to your expectations at the start of the year?
   3. Does your company focus on any particular type of home, such as custom homes or spec homes?

B3. How does your company typically find jobs?
   1. What kind of relationship do you typically have with builders? [Probe: long-standing relationships, work as-needed, how many of their homes do you install HVAC systems in, respond to competitive bids on jobs, etc.]
   2. Do you work with one primary builder, or do you work with several different builders?
   3. Do you know why you're selected for jobs over other HVAC contractors? [Probe: price, scheduling, or quality of work]

B4. Does anyone from your company engage with the Focus on Energy Residential New Construction Program's Building Performance Consultants, or BPCs for short?
   1. If yes, how does your engagement with the Focus on Energy Residential New Construction Program's Building Performance Consultants affect how you install equipment or which equipment you install?

B5. Do you work on any homes that are not certified by Focus on Energy? If so, how do HVAC systems in these homes typically differ from Program-certified homes? [Probe: efficiency and installation practices]
   1. Does your work on Focus on Energy certified homes affect how you install equipment, or the type of equipment that you install in non-certified homes? If so, how?

C. HVAC Equipment and Installation

C1. What do you consider the most energy-efficient ways to install/seal/insulate HVAC equipment and duct work?

1. How frequently do you use these techniques and why?
2. Do you ever install ducts outside of the conditioned space? (attic, truss system above garage crawl space)
3. When ductwork is located outside of the conditioned space how do you insulate it?

C2. I would like to ask you about a few specific equipment types. Can you please tell me if you install these equipment types, and if so, in what percent of your homes you do so?

Mechanical Equipment	Install? (Y/N)	% of Focus on Energy certified new homes installed in in 2024?	% of non-certified new homes installed in in 2024?
Heat or energy-recovery ventilation (HRV or ERV).			
Gas furnace with 95 AFUE or greater with ECMs.			
Air Source Heat Pump with HSPF2 8 or greater			
Cold Climate ASHP HSPF2 8.5 or greater			
Gas water heaters with 0.67 UEF or greater (tank <= 55 gallons). Gas water heaters with 0.77 UEF or greater (tank > 55 gallons). Gas instantaneous water heaters. Electric heat pump water heaters.			
100% of ductwork and air handler located within home's thermal and air boundary (or similarly optimized location).			

Have you participated in any of the past trainings offered by Focus on Energy? These trainings provide information about advanced construction practices.

1. [If yes] What did you find most helpful about the training sessions?
2. What effect did the training(s) have on the type of equipment you install or how you install it?
3. Is there anything that could be improved about these types of trainings to make them more helpful?
4. Do you, or have you participated in building performance trainings by other organizations? If so, which ones?

D. Market Effects Metrics

D1. Over the past three years, what changes have you seen in the Wisconsin new homes market that have affected how homes are being built? [Probe: use of building consultants, labor shortage, smart thermostats, duct testing, cold climate air source heat pumps, ductless mini split systems, heat/energy recovery ventilators, ground source heat pumps, home automation, contractors gaining knowledge of efficient construction practices, greater homebuyer demand for efficient homes.]

1. Why do you think these trends have emerged?
2. Have those changes affected how you install equipment, or the type of equipment installed?
3. Where do you think these market trends are heading?

D2. Besides [responses to D1], have you made any other changes in your equipment selection or installation practices in the last three years?

1. Why did you make those changes?

D3. Have you noticed a change in demand for energy-efficient building practices over the past three years?

1. If yes, what changes in builder or customer behavior have you observed (for example, requests for more/fewer energy-efficient features, amount they are willing to pay)?
2. What do you think is driving this change?
3. Does this affect how you build homes?

D4. Have you noticed a change in how other HVAC contractors approach energy efficiency?

D5. What effect do you think the Focus on Energy Residential New Construction Program has on the Wisconsin new homes market at large?

D6. How does competition and market demand influence the decisions you make regarding the HVAC system installed in the homes that you build on? Are there conflicting demands from the market and builders?

1. [If yes] How do you deal with those competing demands? [Probe: knowing that they will do what the builder wants, do they ever negotiate with the builder about the approach to take?]
2. How has that changed in the past three years?

E. Closing

E1. What more can Focus on Energy do to impact the Wisconsin new homes market?

E2. Is there anything else you think would be valuable for us to know to understand energy efficient building practices in Wisconsin?

E3. Do you have any feedback on the Focus on Energy Residential New Construction Program or trainings that you'd like to share?

E4. Do you have any suggestions for improving the Residential New Construction Program or trainings?

Thank you for taking the time to talk to me today, I appreciate that your time is limited. Your input is valuable and will be very helpful in our study.

Collect/confirm contact data to mail the gift card.

CADMUS

Focus on Energy CY 2024 Participating Contractor Interview Guide: Framers Residential New Construction Program

Respondent name:	
Respondent phone:	
Interview date:	Interviewer initials:

Research Questions	Interview Guide Questions
What are indicators that the program is influencing the building practices in the Wisconsin market?	D1-D5
How close are builders to zero net energy homes?	C1-C5
How does market demand influence efficient building practices?	D6

Thank you for taking the time to speak with me. My company, Cadmus, was hired by the Public Service Commission of Wisconsin to evaluate the Focus on Energy Residential New Construction Program. This program provides financial incentives to builders who construct homes that are more energy efficient than the requirements set by the Wisconsin Uniform Dwelling Code.

We would like to gather input on the Wisconsin new homes market from contractors who worked with participating Focus on Energy builders. Another important part of this study is to understand how the Residential New Construction Program may have affected the construction of homes that are not certified by the Residential New Construction Program.

Do you have 30 minutes to discuss the Focus on Energy program and how you build homes? We're offering a $125 gift card for your time. All your responses will be kept strictly confidential and will not be attributed to you or your company in our reporting.

A. Screening and Introduction

A1. Our records indicate that your company may have worked on Focus on Energy certified homes with builders in 2024. Potential builders include **[INSERT BUILDERS].** Do you recall that your company worked on homes that participated in the Focus on Energy Residential New Construction Program this year?

IF YES: CONTINUE OR ASK TO SCHEDULE A CONVENIENT TIME TO TALK. IF NO: THANK AND INFORM THAT CADMUS IS CONDUCTING INTERVIEWS WITH CONTRACTORS WHO WORKED ON FOCUS HOMES THIS YEAR.

A2. Are you the right person to talk to at your company regarding framing practices and interactions with builders?

IF YES: CONTINUE. IF NO: THANK AND ASK TO SPEAK TO THE BEST PERSON.

B. General Contractor Information

I have a few questions about the homes that you work on in Wisconsin.

B1. Are you typically made aware by the builder that the home(s) you are working on will be certified in the Focus on Energy Residential New Construction Program?

1. If yes: Does the builder tell you that a Building Performance Consultant (BPC) associated with Focus on Energy will be visiting the job site and may provide you with feedback?

B2. How many new homes will your company have framed in Wisconsin by the end of 2024?

1. How does this compare to last year?
2. How does this number compare to your expectations at the start of the year?
3. Does your company focus on any particular type of home, such as custom homes or spec homes?

B3. How does your company typically find jobs?

1. What kind of relationship do you typically have with builders? [Probe: long-standing relationships, work as-needed, how many of their homes do you frame, respond to competitive bids on jobs, etc.]
2. Do you work with one primary builder, or do you work with several different builders?
3. Do you know why you are selected for jobs over other framers? [Probe: price, scheduling, history with builder, or quality of work]

B4. Does anyone from your company engage with the Focus on Energy Residential New Construction Program's Building Performance Consultants, or BPCs for short?

1. If yes, how does your engagement with the Focus on Energy Residential New Construction Program's Building Performance Consultants affect how you frame homes?

B5. Do you work on any homes that are not certified by Focus on Energy? If so, how do these homes differ from Program-certified homes? [Probe for differences in framing techniques, size, custom/spec, etc.]

1. Does your work on Focus on Energy certified homes affect how you frame non-certified homes? If so, how?

C. Framing Practices

C1. Does your company build homes with 24-inch on-center framing? If so, how frequently do you build these homes?

C2. Does your company utilize any other "non-traditional" framing techniques or materials? If so, what are they, how frequently do you use them? These practices might include two-stud corners, 2x6 inch framing with exterior sheeting, use of insulated headers, or ladder blocking.

1. If yes, how did you learn about these techniques? [Probe: BPC, Focus on Energy, other training, etc.]
2.

C3. What are the pros and cons of using "non-traditional" framing techniques? [Probe: cost, risk management, material availability concern]

C4. How do these non-traditional framing techniques affect the comfort, safety, durability, quality and energy efficiency of a home?

C5. What types of air barriers do you install?

1. Which types of air barriers are most energy efficient?
2. Do you generally see any difference between the exterior air barriers installed on Focus on Energy certified homes and homes not certified through the program? If so, what are these differences?

C6. Have you participated in any of the past trainings offered by Focus on Energy? These trainings provided information about advanced construction practices.

1. [If yes] What did you find most helpful about the training sessions?
2. What effect did the training(s) have on how you build homes?
3. Is there anything that could be improved about these types of trainings to make them more helpful in the future?
4. Do you, or have you participated in building performance trainings by other organizations? If so, which ones?

D. Market Effects Metrics

D1. Over the past three years, what changes have you seen in the Wisconsin new homes market that have affected how homes are being built? [Probe: use of building consultants, labor shortage, cost of soft lumber, contractors gaining knowledge of efficient construction practices, greater homebuyer demand for efficient homes.]

1. Why do you think these trends have emerged?
2. Have those changes affected how you frame homes?
3. Where do you think these market trends are heading?

D2. Besides [responses to **D1**], have you made any other changes in framing practices in the last three years?

1. Why did you make those changes?

D3. Have you noticed a change in demand for energy-efficient building practices over the past three years?

1. If yes, what changes in builder or customer behavior have you observed (for example, requests for more/fewer energy-efficient features, amount they are willing to pay)?
2. What do you think is driving this change?
3. Does this affect how you build homes?

D4. Have you noticed a change in how other framers approach building efficient homes?

D5. What effect do you think the Focus on Energy Residential New Construction Program has on the Wisconsin new homes market at large?

D6. How does competition and market demand influence decisions about how you frame homes? Are there conflicting demands from the market and builders?

1. [If yes] How do you deal with those competing demands? [Probe: knowing that they will do what the builder wants, do they ever negotiate with the builder about the approach to take?]
2. How have builder and market demands changed over the past three years?

E. Closing

E1. What more can Focus on Energy do to impact the Wisconsin new homes market?

E2. Is there anything else you think would be valuable for us to know to understand energy-efficient building practices in Wisconsin?

E3. Do you have any feedback on the Focus on Energy Residential New Construction Program or trainings that you'd like to share?

E4. Do you have any suggestions for improving the Residential New Construction Program or trainings?

Thank you for taking the time to talk to me today, I appreciate that your time is limited. Your input is valuable and will be very helpful in our study.

Collect/confirm contact data to mail the gift card.

CADMUS

Focus on Energy CY 2024 Participating Contractor Interview Guide: Insulator Residential New Construction Program

Respondent name/Company:	
Respondent phone:	
Interview date:	Interviewer initials:

Research Questions	Interview Guide Questions
What are indicators that the program is influencing the building practices in the Wisconsin market?	C3, D1-D4
How close are builders to zero net energy homes?	C1-C2
How does market demand influence efficient building practices?	D5-D6

Thank you for taking the time to speak with me. My company, Cadmus, was hired by the Public Service Commission of Wisconsin to evaluate the Focus on Energy Residential New Construction Program. This program provides financial incentives to builders who construct homes that are more energy efficient than the requirements set by the Wisconsin Uniform Dwelling Code.

We would like to gather input on the Wisconsin new homes market from contractors who worked with participating Focus on Energy builders. Another important part of this study is to understand how the Residential New Construction Program may have affected the construction of homes that are not certified by the Residential New Construction Program.

Do you have 30 minutes to discuss the Program and how you insulate homes? We're offering a $125 gift card for your time. All your responses will be kept strictly confidential and will not be attributed to you or your company in our reporting.

A. Screening and Introduction

A1. Our records indicate that your company may have worked on Focus on Energy certified homes with builders in 2024. Potential builders include **[INSERT BUILDERS].** Do you recall that your company worked on homes that participated in the Focus on Energy Residential New Construction Program this year?

IF YES: CONTINUE OR ASK TO SCHEDULE A CONVENIENT TIME TO TALK. IF NO: THANK AND INFORM THAT CADMUS IS CONDUCTING INTERVIEWS WITH CONTRACTORS WHO WORKED ON FOCUS HOMES THIS YEAR.

A2. Are you the right person to talk to at your company regarding Insulation and air sealing for new homes and interactions with builders?

IF YES: CONTINUE. IF NO: THANK AND ASK TO SPEAK TO THE BEST PERSON.

B. General Contractor Information

I have a few questions about the homes that you work on in Wisconsin.

B1. Are you typically made aware by the builder that the home(s) you are working on will be certified in the Focus on Energy Residential New Construction Program?
   1. If yes: Does the builder tell you that a Building Performance Consultant (BPC) associated with Focus on Energy will be visiting the job site and may provide you with feedback?

B2. How many new homes will your company have insulated in Wisconsin by the end of 2024?
   1. How does this compare to last year?
   2. How does this number compare to your expectations at the start of the year?
   3. Does your company focus on any particular type of home, such as custom homes or spec homes?

B3. How does your company typically find jobs?
   1. What kind of relationship do you typically have with builders? [Probe: long-standing relationships, work as-needed, how many of their homes do you frame, respond to competitive bids on jobs, etc.]
   2. Do you work with one primary builder, or do you work with several different builders?
   3. Do you know why you're selected for jobs over other insulators? [Probe: price, scheduling, history with builder, or quality of work]

B4. Does anyone from your company engage with the Focus on Energy Residential New Construction Program's Building Performance Consultants, or BPCs for short ?
   1. If yes, does your engagement with the Building Performance Consultant affect how you air-seal or insulate homes?

B5. Do you work on any homes that are not certified by Focus on Energy? If so, how does insulation levels and/or techniques in these homes differ from Program-certified homes? [Probe: insulation level, custom/spec, practices, etc.]
   1. Does your work on Focus on Energy certified homes affect how you insulate non-certified homes? If so, how?

C. Insulation Practices

C1. What do you consider the most energy-efficient types of insulation? [Probe: spray foam, blown in blanket, damp spray cellulose, dense pack cellulose, fiberglass batts, rigid exterior insulation]

1. How frequently do you use this insulation in Focus on Energy certified homes?
2. How frequently do you use this insulation in non-certified home?
3. Why do you use this insulation?
4. If don't use in all homes: Why do you sometimes not use this insulation? What do you install instead?

C2. Do you install air barriers in a home?

1. If yes: Which types of air barriers are most energy efficient?
2. How frequently do you use this insulation in Focus on Energy certified homes?
3. How frequently do you use this insulation in non-certified homes?
4. Do you generally see any difference between the air barriers installed on Focus on Energy certified homes and homes not certified through the program? If so, what are these differences?

C3. Have you participated in any of the past trainings offered by Focus on Energy? These trainings provided information about advanced construction practices.

1. [If yes] What did you find most helpful about the training sessions?
2. What effect did the training(s) have on how you insulate homes?
3. Is there anything that could be improved about these types of trainings to make them more helpful?
4. Do you, or have you participated in building performance trainings offered by other organizations? If so, which ones?

D. Market Effects Metrics

D1. Over the past three years, what changes have you seen in the Wisconsin new homes market that have affected how homes are being built? [Probe: use of building consultants, labor shortage, contractors gaining knowledge of efficient construction practices, greater home-buyer demand for efficient homes.]

1. Why do you think these trends have emerged?
2. Have those changes affected how you insulate homes?
3. Where do you think these market trends are heading?

D2. Besides [responses to D1], have you made any other changes in insulation practices in the last three years?

1. Why did you make those changes?

D3. Have you noticed a change in demand for energy-efficient building practices over the past three years?

1. If yes, what changes in builder or customer behavior have you observed (for example, requests for more/fewer energy-efficient features, amount they are willing to pay)?
2. What do you think is driving this change?
3. Does this affect how you build homes?

D4. Have you noticed a change in how other Insulators approach building efficient homes?

D5. What effect do you think the Focus on Energy Residential New Construction Program has on the Wisconsin new homes market at large?

D6. How does competition and market demand influence decisions about how you insulate or air-seal homes? Are there conflicting demands from the market and builders?

1. [If yes] How do you deal with those competing demands? [Probe: knowing that they will do what the builder wants, do they ever negotiate with the builder about the approach to take?]
2. How have builder and market demands changed over the past three years?

E. Closing

E1. What more can Focus on Energy do to impact the Wisconsin new homes market?

E2. Is there anything else you think would be valuable for us to know to understand energy efficient building practices in Wisconsin?

E3. Do you have any feedback on the Focus on Energy Residential New Construction Program or trainings that you'd like to share?

E4. Do you have any suggestions for improving the Residential New Construction Program or trainings?

Thank you for taking the time to talk to me today, I appreciate that your time is limited. Your input is valuable and will be very helpful in our study.

Collect/confirm contact data to mail the gift card.

CADMUS

Focus on Energy CY 2024 Interview Guide: Nonparticipating Home Builders Residential New Construction Program

Respondent name:	
Respondent phone:	
Interview date:	Interviewer initials:

Introduction

Thank you for taking the time to speak with me. My company, Cadmus, was hired by the Public Service Commission of Wisconsin to evaluate the Focus on Energy Residential New Construction Program. This program provides financial incentives to builders and general contractors who construct homes that are more energy efficient than the requirements set by the current Wisconsin Uniform Dwelling Code.

We would like to understand the perspective of builders who have not recently participated in the Residential New Construction Program by gathering their input on the Wisconsin housing market and hearing their thoughts on Focus on Energy and the Residential New Construction Program.

Do you have 30 minutes to discuss the program and the new construction market? We're offering a $125 gift card for your time. All your responses will be kept strictly confidential and will not be attributed to you or your company in our reporting.

A. Screening and Introduction

A1. Has your company certified any homes through the Focus on Energy Residential New Construction Program this year?

IF NO: CONTINUE OR ASK TO SCHEDULE A CONVENIENT TIME TO TALK. IF YES: THANK AND INFORM THAT CADMUS IS CONDUCTING INTERVIEWS WITH CURRENT PROGRAM PARTICIPANTS AND OFFER TO CONDUCTTHAT INTERVIEW IF THE QUOTA FOR THOSE INTERVIEWS HAS NOT BEEN MET.

B. General Builder Information

B1. Thinking about all of the homes your company builds, about how many homes will you build in Wisconsin by the end of 2024?

1. How does this number compare to your expectations at the start of the year? [If actual number differs from expectation, ask why]
2. How does the number of homes you are building this year compare to 2023?
3. Do you build custom homes, spec homes, or both types? If you build multiple types, what percentage of your total homes fall into each category?

B2. Do you:

1. Use building performance consultants or HERS raters? If so, what do you think the value of testing a home is?
2. Conduct blower-door testing? If so, what level of tightness do your homes typically achieve (in ACH 50)?

B3. What type of subcontractors do you use to build your homes?

1. What category of subcontractors, such as HVAC contractors, framers, or insulators are most important to build energy efficient homes?
2. Do subcontractors require special skills, certifications, or trainings to build energy efficient homes? If so, what are these?
3. How do you ensure those subcontractors meet energy efficiency standards?
4. Have you experienced any challenges gaining access to qualified contractors in the last three years? [Probe for specific trades; Framers, Insulation, HVAC, etc.]

C. Program Awareness

C1. Prior to this conversation, had you heard of the Focus on Energy Residential New Construction Program? [If yes, ask questions below.]

C2. Have you ever participated in the program? [If yes] When was the last year that you participated? [Probe if exact time is unknown: 5 years or less? More than 5 years?]

1. [If participated in the past] Why are you no longer participating in the program?
2. [If builder has never participated] What are the primary reasons you have never participated in the Focus on Energy Residential New Construction Program? (Probe for perceived barriers such as cost, complexity, or lack of demand from customers.)
3. Would anything make you reconsider joining the program in the future? If so, what changes would need to be made?

C3. Do you participate in any other building certification programs, such as ENERGY STAR, Zero Energy Ready, or Passive House? Is so, what are the benefits of those programs?

C4. Have you participated in any of the trainings offered by Focus on Energy? These trainings provide information about advanced construction practices, sometimes as part of trainings sponsored by utilities or Home Builder Associations.

1. [If yes] What did you find most helpful about the training sessions?
2. What effect did the training(s) have on how you build homes?

C5. [If previously aware of RNC] Has Focus on Energy's New Construction Program had an impact on how your company builds homes in Wisconsin? (Probe for specific changes in construction techniques, insulation levels, HVAC systems, or energy-efficient materials.)

C6. Are the homes you build typically more efficient than a home built to the Wisconsin Uniform Dwelling Code?

1. If yes, do you know about what percent more efficient your homes are than a home built to the Wisconsin UDC?

D. General Market Questions

D1. Over the past three years, what changes have you seen in the Wisconsin new homes market that have affected how you build homes? [Probe if necessary: effects of labor shortage [aging population of contractors] or tariffs, consumer knowledge and preferences, changes in building practices.]

1. Why do you think these trends have emerged?
2. Where do you think these market trends are heading?

D2. Have there been any changes to how you build homes over the last three years? [Probe for specific equipment uses or construction techniques.]

1. [If yes] Why have you made these changes?
2. [If no] What factors or influences would drive you to make changes in the way that you build homes? [Probe for market demand, Focus on Energy / BPC influence, contractor advice.]

D3. Have you noticed a change in demand for energy-efficient homes over the past three years?

1. If yes, what changes in customer behavior have you observed (for example, requests for more/less efficient features, amount they are willing to pay)?
2. [If yes] what do you think is driving this change?
3. Does this affect how you build homes?

D4. [Ask if familiar with the New Homes Program] Do you think the program has influenced other builders in your region? [Probe: use of building consultants, contractors gaining knowledge of efficient construction practices, greater home-buyer demand for efficient homes.]

D5. [Ask if familiar with the New Homes Program] What effect do you think the Focus on Energy New Homes Program has on the Wisconsin residential new construction market?

D6. [Ask if familiar with the New Homes Program] Have any of your subcontractors worked on homes that were certified by the Focus on Energy Residential New Construction Program?

1. If so, what effect, if any, did their participation in the program have on how you build your homes?

E. Building Practices

E1. I would like to ask you about a few specific building practices. Can you please tell me if you utilize these practices, and if so, in what percent of your homes you do so in?

Building Practice	Utilize? (Y/N)	% of Homes utilized in in 2024?	% Utilized more/less than 3 years ago?
Building Envelope			
Windows with U-Factor of or lesser than 0.27.			
Wood framed exterior walls with cavity plus continuous exterior insulation. • Cavity insulation greater than R-20 and continuous insulation greater than R-5. • Record type of insulation typically used.			
Floor insulation R-38 or greater.			
ACH 50 below 2.			
Ceiling insulation R-49 or greater.			
Mechanical Equipment			
Heat or energy-recovery ventilation (HRV or ERV).			
Gas furnace with 95% AFUE or greater with ECMs.			
Air Source Heat Pump with HSPF2 8.0 or greater			
Cold Climate ASHP with HSPF2 8.5 or greater			
Gas water heaters with 0.67 UEF or greater (tank <= 55 gallons). Gas water heaters with 0.77 UEF or greater (tank > 55 gallons). Gas instantaneous water heaters. Electric heat pump water heaters.			
100% of ductwork and air handler located within home's thermal and air boundary (or similarly optimized location).			
Lighting and Appliances			
91% or more percent of light bulbs or fixtures are LEDs.			
All installed appliances are ENERGY STAR qualified.			
Other			
Smart thermostats			
Electric Vehicle-Ready (a pre-wired 240v outlet)			
On-site renewable energy			
Renewable-ready home features (such as pre-designated areas for solar PV installations or inverters)			

F. Marketing

F1. How do you market your homes?

1. Do you market your homes as energy-efficient? If so, how?
2. How frequently do your customers ask about energy efficient features or operating cost, [Ask if builder constructs custom homes] particularly when constructing custom homes?

G. Closing

G1. What else can Focus on Energy do to impact the Wisconsin residential building market?

G2. Is there anything else you think would be valuable for us to know to understand energy efficient building practices in Wisconsin?

Thank you for taking the time to talk to me today, I appreciate that your time is limited. Your input is valuable and will be very helpful in our study.

[Collect/confirm contact data to mail the gift card.]

CADMUS

Focus on Energy CY 2024 Interview Guide: Participating Home Builders Residential New Construction Program

Respondent name:	
Respondent phone:	
Interview date:	Interviewer initials:

Introduction

Thank you for taking the time to speak with me. My company, Cadmus, was hired by the Public Service Commission of Wisconsin to evaluate the Focus on Energy Residential New Construction Program. This program provides financial incentives to builders and general contractors who construct homes that are more energy efficient than the requirements set by the current Wisconsin Uniform Dwelling Code.

We would like to understand the perspective of builders who participated in the Residential New Construction Program this year and want to gather their input on the Wisconsin housing market.

Do you have 30 minutes to discuss your experience with the program and the new construction market? We're offering a $125 gift card for your time. All your responses will be kept strictly confidential and will not be attributed to you or your company in our reporting.

A. Screening and Introduction

A1. We see that your company certified (a) home(s) through the Focus on Energy Residential New Construction Program this year. Do you remember certifying that/those homes?

IF YES: CONTINUE OR ASK TO SCHEDULE A CONVENIENT TIME TO TALK.

B. General Builder Information

To start, I have a few questions about all of the homes that your company builds in Wisconsin – both certified and non-certified homes.

B1. About how many homes will your company build in Wisconsin by the end of 2024?

1. Of these homes, how many do you expect will be certified through the Focus on Energy Residential New Construction Program? [If needed: a quantity or percent is fine]
2. [Ask if builder builds both certified and non-certified homes] Why do you build both certified and non-certified homes? [Probe if necessary: customer demand, material availability, qualified labor availability, costs, etc.]
3. [Ask if builder builds both certified and non-certified homes] How do your certified and non-certified homes differ?
4. How does the number of homes you are building this year, and percent of homes certified, compare to 2023? [If there is a difference, ask why.]
5. Do you build custom homes, spec homes, or both types? If you build multiple types, what percentage of your total homes fall into each category? Do you tend to have more certified homes in one category? [If yes, ask why.]

B2. Have there been any changes to how you build homes over the last three years? [Probe for specific equipment uses or construction techniques.]

1. [Ask if builder has made changes in practices] Why have you made these changes?
2. [Ask if builder has made no changes in practices] What factors or influences would drive you to make changes in the way that you build homes? [Probe for market demand, Focus on Energy / BPC influence, contractor advice.]
3. [Ask everyone] What role do subcontractors play in your decisions to change your building practices? [Probe for anything specific to energy efficiency, such as insulation types, equipment efficiencies, etc.]
4. What is your most trusted source of information regarding making changes to your building practices, particularly as they relate to energy efficiency?

B3. What type of subcontractors do you use to build your homes?

1. What category of subcontractors, such as HVAC contractors, framers, or insulators are most important to build energy efficient homes?
2. Do subcontractors require special skills, certifications, or trainings to build energy efficient homes? If so, what are these?
3. How do you ensure those subcontractors meet energy efficiency standards?
4. Have you experienced any challenges gaining access to qualified contractors in the last three years? What about more recently? [Probe for specific trades; Framers, Insulation, HVAC, etc.] Have certain trades been more difficult to get access to than others?

B4. To understand more about the building practices used in Focus on Energy New Homes Program homes compared with homes that aren't program homes, we would like to interview HVAC, Insulation, and framing contractors that have worked on program homes in 2024. Could you please provide a list of HVAC, Insulation, and Framing subcontractors that you've worked with to build Focus on Energy program homes in 2024?

C. Program Participation

C1. Why do you participate in the Focus on Energy Residential New Construction Program?
   1. When did you begin participating in the program?

C2. What aspects of the program provide the most value to you?
   1. What effect has the New Construction Program had on how your company builds homes in Wisconsin? Please focus on specific equipment or building practices. (Probe for specific changes in construction techniques, insulation levels, HVAC systems, or energy-efficient materials.)

C3. Has the program led you to adopt energy-efficient practices in homes that are not certified through the program? If so, what practices have you adopted?

C4. Do you believe your participation in the program has provided a competitive advantage in the marketplace? If yes, in what ways?

C5. What value do the program's building performance consultants, or BPCs, bring to your building practices, beyond certifying the home?

C6. [Note for Interviewer: Have the new structure on hand in case they need to reference it.] Last year the program introduced a new incentive structure and new certification levels. How have these programmatic changes affected your participation in the program? [Probe if necessary: number of homes certified, overall construction techniques, types of subcontractors they work with]
   1. What certification level do you most commonly achieve for homes certified by the program?
   2. What challenges, if any, have you faced in meeting the program's requirements (e.g., subcontractor availability, costs, certification process)?
   3. [If applicable] What factors prevent you from certifying more homes at the ENERGY STAR and zero-energy-ready levels?
   4. How could the Focus on Energy program make it easier for you to certify homes or meet energy efficiency standards?
   5. Have you experienced any other challenges associated with the new program design?
   6. Would you say your satisfaction with the program has changed due to the recent program changes?

C7. Do you participate in any other building certification programs, such as ENERGY STAR, Wisconsin Green Built Home, National Green Building Standard, or Passive House? Is so, what are the benefits of that program?

C8. Are homebuyers aware of energy certifications (such as ENERGY STAR) when they approach you for new construction? How does this awareness affect their buying decisions?

D. General Market Questions

D1. Over the past three years, what changes have you seen in the Wisconsin new homes market that have affected how homes are being built? [Probe if necessary: effects of labor shortage [aging population of contractors] or tariffs, consumer knowledge and preferences, changes in building practices.]

1. How have these trends affected your ability to build efficient homes?
2. Why do you think these trends have emerged?
3. Where do you think these market trends are heading?

D2. Have you noticed a change in demand for energy-efficient homes over the past three years?

1. If yes, what changes in customer behavior have you observed (for example, requests for more/fewer energy-efficient features, amount they are willing to pay)?
2. What do you think is driving this change?
3. Does this affect how you build homes?

D3. Have you noticed a change in how other builders approach energy efficiency?

D4. What effect do you think the Residential New Construction Program has on Wisconsin's residential new construction market at large?

D5. [Ask if not addressed above.] In the last three years, have you faced any issues in gaining access to labor or supplies to build energy efficient homes?

E. Building Practices

E1. I would like to ask you about a few specific building practices. Can you please tell me if you utilize these practices, and if so, in what percent of your homes you do so in?

Building Practice	Utilize? (Y/N)	% of Homes utilized in in 2024?	% Utilized more/less than 3 years ago?
Building Envelope			
Windows with U-Factor of or lesser than 0.27.			
Wood framed exterior walls with cavity plus continuous exterior insulation. • Cavity insulation greater than R-20 and continuous insulation greater than R-5. • Record type of insulation typically used.			
Floor insulation R-38 or greater.			
ACH 50 below 2.			
Ceiling insulation R-49 or greater.			
Mechanical Equipment			
Heat or energy-recovery ventilation (HRV or ERV).			
Gas furnace with 95% AFUE or greater with ECMs.			
Air Source Heat Pump with HSPF2 8 or greater			
Cold Climate ASHP HSPF2 8.5 or greater			
Gas water heaters with 0.67 UEF or greater (tank <= 55 gallons). Gas water heaters with 0.77 UEF or greater (tank > 55 gallons). Gas instantaneous water heaters. Electric heat pump water heaters.			
100% of ductwork and air handler located within home's thermal and air boundary (or similarly optimized location).			
Lighting and Appliances			
91% or more percent of light bulbs or fixtures are LEDs.			
All installed appliances are ENERGY STAR qualified.			
Other			
Smart thermostats			
Electric Vehicle-Ready (a pre-wired 240v outlet)			
On-site renewable energy			
Renewable-ready home features (such as pre-designated areas for solar PV installations or inverters)			

F. Marketing

F1. How do you market your homes?
   1. Do you market your homes as energy-efficient? If so, how?

F2. How frequently do your customers ask about energy efficient features or operating cost, [Ask if builder constructs custom homes] particularly when constructing custom homes?

F3. How does the timing of the home sale (such as selling a home before construction begins, or selling a home after it has been constructed) affect the energy efficient features within the home, such as equipment selection or insulation levels?

G. Closing

G1. Is there anything that Focus on Energy could improve about the program that hasn't already been discussed? [Probe: communication with builders, marketing to the public, processes, requirements]

G2. What else can Focus on Energy do to impact the Wisconsin residential building market?

G3. Is there anything else you think would be valuable for us to know to understand energy efficient building practices in Wisconsin?

Thank you for taking the time to talk to me today, I appreciate that your time is limited. Your input is valuable and will be very helpful in our study.

[Collect/confirm contact data to mail the gift card.]

CADMUS

Focus on Energy CY 2024 Interview Guide: Manufactured Homes Participant Interview Guide

Respondent Name:	
Respondent Phone:	
Interview Date:	Interviewer Initials:

Introduction

Thank you for taking the time to speak with me. We are interviewing several manufactured home retailers and communities who have participated in Focus on Energy's New Manufactured Homes Program to better understand how your [community/company] is interacting with the program and capture your thoughts on the manufactured homes market in general. We hope to get your perspective on things that are working well and any areas where you have experienced challenges. This information will inform potential program changes in the coming year, so we encourage you to be as direct as possible and offer any suggestions you have for program improvement.

While we do not expect to ask you anything sensitive, your responses will be confidential; we will never use your name or your company's name in our reporting.

Finally, we do appreciate that you are very busy, so we are offering a $125 gift card as a thank you for sharing your time and feedback today. At the end of the interview, we will confirm the address of where to send the gift card.

Do you have any questions before we begin?

[ASK SECTION A IF RETAILER]

A. General Company Information

First, I'd like to ask a few questions to understand your role and responsibilities within your company, as well as the markets you operate in and around Wisconsin.

A1. Please tell me your title and describe your role within your company and how long you have worked there.

A2. In what part of Wisconsin does your company generally work? (regions, counties, cities, etc.)

A3. Could you provide an estimate of the current number of employees at your company?

Roughly how many new manufactured homes does your company sell each year? [IF ANSWERED YES TO A3] How many of those are to Wisconsin customers?

A4. Roughly what percentage of your new manufactured homes sales are in rural areas characterized by low population density, greater open spaces, and fewer developed properties, versus those in urban areas that are denser, more developed, and closer to major cities or towns?

[ASK SECTION B IF COMMUNITY ORGANIZATION]

B. General Organization Information

First, I'd like to ask a few questions to understand your role and responsibilities within your community, as well as the markets you operate in and around Wisconsin.

B1. Please tell me your title and describe your role within your community and how long you have worked there.

B2. Does your company manage multiple communities? [if yes] How many communities does your company manage?

B3. [IF YES TO B2] In what part of Wisconsin are your communities generally located? (regions, counties, cities, etc.)

B4. [IF YES TO B2] How many homes are typically in each community?

B5. [IF NO TO B2] How many homes are in your community?

B6. [IF YES TO B2] How often does your company replace existing homes with new ones or add new homes to an existing community?

B7. [IF NO TO B2] How often does your community replace existing homes with new ones or add new homes (without replacement)?

B8. [IF YES TO B2] Does your company typically sell or lease homes in their communities? [IF BOTH]
Roughly how many new homes do your communities sell each year?
How is your company typically using the Focus on Energy program homes in their communities?

B9. [IF NO TO B2] Does your community typically sell or lease homes? [IF BOTH]
Roughly how many new homes does your community sell each year?
How is your community typically using the Focus on Energy program homes?

C. Program Awareness and Participation

C1. Our records show that your company/community submitted [INSERT NUMBER OF APPLICATIONS IN SPECTRUM] applications to the Focus on Energy Manufactured Homes Program from the beginning of 2024 through November 2024. Does that sound about right?

C2. What motivated you and company/community to participate in the Focus on Energy Program?
What aspects of the program are most valuable to you?
Were there other factors that motivated you to participate?

C3. How did you first become aware of the Focus on Energy program?

C4. What sources of information (e.g., LinkedIn ads, Trade Ally Participant Newsletters, Webinars) have been most effective in keeping you informed about the program?

C5. Are there any additional resources or information that could help increase your awareness and engagement with the program?

C6. *Have you received sufficient information and training from the program about the benefits of ENERGY STAR certified manufactured homes?
If not, what additional information or training would be useful?

C7. Thinking back to when you first decided to participate in the program, what were your initial expectations about the program?
Have your expectations been met? Why or why not?

C8. Would your company/community seek out additional incentives/program support for future sales/purchases?

D. Baseline Practices

D1. [ASK IF RETAILER] Thinking about all the manufactured homes your company has sold to Wisconsin customers in the last year, roughly what percentage of homes met or exceeded the performance standards required by the Focus on Energy Manufactured Homes Program? [IF NEEDED: JUST A BALLPARK OR ESTIMATION IS FINE]
Would all these projects qualify for participation in the Focus on Energy Manufactured Homes program? (e.g. "are all of these manufactured homes purchased directly from the manufacturer?")

D2. [ASK IF RETAILER] Are you aware of any qualifying manufactured homes that have been sold to Wisconsin customers in 2024 and not submitted to Focus on Energy for a rebate?
If yes, what percent of sales have not been submitted? [IF NEEDED: JUST A BALLPARK OR ESTIMATION IS FINE]
Why were some manufactured homes sales not submitted?

D3. [ASK IF COMMUNITY] Thinking about all of the manufactured homes your company/community has purchased in the last 3 years, roughly what percentage of homes have met or exceeded the performance standards required by the Focus on Energy program?
1. Would all these projects qualify for participation in the Focus on Energy Manufactured Homes program? (e.g. "are they in participating utility territories?", "are all of these manufactured homes purchased directly from the manufacturer?")

D4. *[ASK IF COMMUNITY] Has your company/community purchased any qualifying manufactured homes in 2024 and not submitted the home for a Focus on Energy rebate?
1. If yes, how many?
2. Why were those homes not submitted for a rebate?

D5. Overall, how would you describe the Focus on Energy Manufactured Homes Program's impact on the volume of ENERGY STAR certified manufactured homes you offer or sell in Wisconsin?

D6. *Before participating in the program, how often did you promote or sell ENERGY STAR certified manufactured homes?
How did you typically promote or educate customers about energy efficiency in manufactured homes before the program was implemented?

D7. What impact has the program had on your business practices, such as marketing, customer engagement, or inventory management? Why do you think it's had that impact?

E. Barriers and Program Delivery

I'd like to ask you about customer barriers and program delivery aspects of the program.

E1. *Beyond cost, what other factors make customers hesitant to purchase or make [retailers/communities] hesitant to offer ENERGY STAR certified manufactured homes? [Probe: awareness about ENERGY STAR, attitude about ENERGY STAR, demand for ENERGY STAR manufactured homes)
Do you notice these barriers in certain demographic groups? (regional, age, etc.)
Does the program address these obstacles?

E2. *[IF NOT ADDRESSED] What kind of feedback, if any, do customers provide about ENERGY STAR manufactured homes compared with non-ENERGY STAR manufactured homes?

E3. Besides Focus on Energy, are you aware of other programs or organizations that support customers overcoming these barriers? What are they?

E4. What could Focus on Energy do to better serve manufactured home [Retailers/Communities]?

F. NTG

F1. When you are looking to sell a program-qualifying manufactured home, and it is not in stock at the manufacturer or otherwise available on a reasonable timeline, what percent of the time would you:
   1. Recommend your client delay their project [0-100%] [IF Community] Delay your project [0-100%]
   2. Recommend your client select a lower-efficiency model of home [0-100%]? [IF Community] Select a lower-efficiency model of home [0-100%]?

F2. In situations where you are selling manufactured homes, about what percent of the time are you currently recommending the program-qualifying models?

F3. Since learning about the program, what percentage of the time would you have recommended manufactured homes that meet the program's qualifications, even if the program had not existed?

F4. How important was the program to your ability to upsell program-qualified manufactured homes to buyers? Use a scale from 1 to 5, with 1 meaning the program was “not at all important” and 5 meaning the program was “very important”.

F5. Thinking about the manufactured homes sales that were rebated by the program in 2024, what percentage do you estimate would have still occurred without the program?

F6. *How important was the program to your final sale of program-rebated manufactured homes to buyers? Use a scale from 1 to 5, with 1 meaning the program was “not at all important” and 5 meaning the program was “very important”.

G. Program Satisfaction and Wrap-up

G1. On a scale from 1-5 where 1 means “not at all satisfied” and 5 means “extremely satisfied,” how satisfied are you with Focus on Energy’s Manufactured Homes Program overall?

G2. What aspects of the program do you find most beneficial?

G3. What is one thing Focus on Energy can improve to increase your satisfaction with the program?

G4. How would you rate the support and communication you’ve received from the program staff?

G5. Is there anything we have not discussed about the program that you would like to share?

G6. The last question I have is to confirm where we can send your $125 gift card. Could you please provide the contact information of where we should send it?

Those are all the questions we have for you today. Focus on Energy appreciates your time and your feedback. Have a good day.

CADMUS

Wisconsin Focus on Energy - Insulation and Air Sealing Offering 2024 Participant Survey

Estimated launch date: Fall 2024

Survey Format: Online

Target Quota:

- 80 Tier 1
- As many as possible tier 2

General Instructions:

- Programming instructions are in red **[LIKE THIS]** (the style is "Survey: Programming").
- Responses will be required for all questions, unless indicated
- Single response only, unless indicated
- Core questions marked with an asterisk (*)

This survey is designed for residential customers who received a rebate for purchasing and installing equipment through the Focus on Energy Insulation and Air Sealing Offering.

SAMPLE Variables:

[FIRSTNAME] = CUSTOMER FIRST NAME

[LASTNAME] = CUSTOMER LAST NAME

[EMAIL] = CUSTOMER EMAIL

[MEASURE] = TEXT INSERT LIST OF SPECIFIC MEASURES USING THE MEASURE QUANTITY. MEASURES IN LIST CAN BE ASKED ABOUT INDIVIDUALLY

[MEASURE COUNT] = NUMBER OF MEASURES IN MEASURE VARIABLE

DISTRIBUTIONS BELOW:

ASQ = AIR SEALING

DSQ= DUCT SEALING

INSDIYQ= DIY INSULATION

ATTINSQ=ATTIC INSULATION

FOUINSQ=FOUNDATION INSULATION

WALINSQ=WALL INSULATION

[MEASURE_LIST] = CONCENTRATED MEASURE (IF [ASQ,DSQ]= 0, "insulation", IF [INSDIYQ,ATTINSQ,FOUINSQ,WALINSQ]=0 AND DSQ=0," air sealing", IF [ASQ]>0, DSQ=0 AND [INSDIYQ,ATTINSQ,FOUINSQ,WALINSQ]>0 "insulation and air sealing". IF ASQ>0, DSQ>0, AND [INSDIYQ,ATTINSQ,FOUINSQ,WALINSQ]>0, "insulation, air sealing, and duct sealing") CAN ASK ABOUT INDIVIDUAL CONCENTRATED MEASURE

[TIER] = TIER 1 OR TIER 2

[PARTDATE] = PARTICIPATION DATE (NOT USED IN SURVEY)

UTILITY (XCEL ENERGY, ETC)

A. Email Invitation

To: [EMAIL]
From: Focus on Energy Feedback
Subject: Are you enjoying your new [MEASURE_LIST]? Let us know and you could win $200!

Dear [FIRSTNAME AND LASTNAME],

We hope you are enjoying the new [MEASURE_LIST] you purchased with a rebate from Focus on Energy.

Our programs are designed to help you and your family make smart choices to manage your energy use. That's why we invite you to share **your important feedback** by taking our brief survey about your new [MEASURE_LIST] and experience with Focus on Energy.

The survey will take about 10 minutes to complete. **As our thanks for completing the survey, you may enter a drawing to win a $200 gift card.**

Just click the link below to get started.

[auto-generated link]

Your input is very important to us. It will be kept confidential and only used for research purposes.

If you have problems with the survey link, please contact the survey coordinator, David Ladd, via email at David.Ladd@Cadmusgroup.com. If you would like to confirm the validity of the research effort, contact Mitch Horrie at the Public Service Commission of Wisconsin at (608) 267-3206 or mitch.horrie@wisconsin.gov.

We hope you will take this opportunity to have your voice heard. Thank you in advance for your time and for sharing your experiences.

Reminder Invitation: [SEND ONE WEEK AFTER LAUNCH]
To: [EMAIL]
From: Focus on Energy Feedback
Subject: There's still time to give Focus on Energy feedback and win $200!

Dear [FIRSTNAME AND LASTNAME],

We recently invited you to tell us about your experience with Focus on Energy and your new [MEASURE_LIST]. We would still like to hear from you – **your input is very important to us**! We use the information from participants like you to continue to improve our programs.

Please take about 10 minutes to complete our survey. **As our thanks for completing the survey, we will enter you in a drawing to win a $200 gift card.**

Just click the link below to get started.

[auto-generated link]

Your input is very important to us. It will be kept confidential and only used for research purposes.

If you have problems with the survey link, please contact the survey coordinator, David Ladd, via email at David.Ladd@Cadmusgroup.com. If you would like to confirm the validity of the research effort, please contact Mitch Horrie at the Public Service Commission of Wisconsin at (608) 267-3206 or mitch.horrie@wisconsin.gov.

We hope you will take this opportunity to have your voice heard. Thank you in advance for your time and for sharing your experiences.

B. Introduction

Thank you for participating in this survey. You recently received a rebate through Focus on Energy's Insulation and Air Sealing Offering. For the purposes of this survey, please focus your responses on your experience purchasing and receiving a rebate for [MEASURE_LIST]. Your feedback is very important to us and will help us improve our programs for customers like you. Your responses are confidential and will be used for research purposes only. When you complete the survey, you can enter to win a $200 gift card.

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.

C. Awareness, Motivation, and Satisfaction

C1. Our records show that you installed [MEASURE_LIST] in 2024. Do you remember installing or having {MEASURE_LIST] installed in your home?

1. Yes
2. No [THANK AND TERMINATE]

98. Don't Know [THANK AND TERMINATE]

TERMINATE MESSAGE: We are only surveying customers who recall installing insulation and air sealing measures in their homes. Thank you for your time.

C2. [ASK FOR EACH ITEM IN [MEASURE] (if MEASURE_COUNT variable greater than zero)] How satisfied are you with [MEASURE]?

1. Very satisfied [SKIP TO C4]
2. Somewhat satisfied [SKIP TO C4]
3. Neither satisfied nor unsatisfied [SKIP TO C4]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO C4]

C3. [FOR EACH ITEM IN [MEASURE] WHERE C2 = 4 OR 5] Why are you dissatisfied with your [MEASURE]?

[OPEN-ENDED RESPONSE]

C4. How satisfied are you with the rebate application process?

1. Very satisfied [SKIP TO C6]
2. Somewhat satisfied [SKIP TO C6]
3. Neither satisfied nor unsatisfied [SKIP TO C6]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO C6]

C5. [IF C4 = 4 OR 5] Why are you dissatisfied with the rebate application process?

[OPEN-ENDED RESPONSE]

C6. [EXCLUDE INSDIYQ] How satisfied are you with the process of scheduling an appointment with a contractor?

1. Very satisfied [SKIP TO C8]
2. Somewhat satisfied [SKIP TO C8]
3. Neither satisfied nor unsatisfied [SKIP TO C8]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO C8]

C7. [IF C6 = 4 OR 5] Why are you dissatisfied with the appointment scheduling process?
[OPEN-ENDED RESPONSE]

C8. [EXCLUDE INSDIYQ] How satisfied are you with the professionalism of the contractor who installed your equipment?

1. Very satisfied [SKIP TO C10]
2. Somewhat satisfied [SKIP TO C10]
3. Neither satisfied nor unsatisfied [SKIP TO C10]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO C10]

C9. [IF C8 = 4 OR 5] Why are you dissatisfied with the professionalism of the contractor?
[OPEN-ENDED RESPONSE]

C10. How satisfied are you with the value of the rebate you received?

1. Very satisfied [SKIP TO C12]
2. Somewhat satisfied [SKIP TO C12]
3. Neither satisfied nor unsatisfied [SKIP TO C12]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO C12]

C11. [IF C10 = 4 OR 5] Why are you dissatisfied with the rebate?
[OPEN-ENDED RESPONSE]

C12. How satisfied are you with Focus on Energy?

1. Very satisfied [SKIP TO C14]
2. Somewhat satisfied [SKIP TO C14]
3. Neither satisfied nor unsatisfied [SKIP TO C14]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO C14]

C13. [IF C12 = 4 OR 5] Why are you unsatisfied with Focus on Energy?
[OPEN-ENDED RESPONSE]

C14. *What factor was the most important motivation for you to install [MEASURE_LIST]?
[RANDOMIZE 1-12]

1. Saving energy / reducing energy waste / being more energy efficient
2. Reducing energy costs / lowering bill
3. Good for the environment
4. Concern about climate change
5. Increase home comfort
6. Recommendation from a friend / relative
7. Recommendation from a retailer / dealer

8. Recommendation from a contractor
9. Cash / rebate / incentive payment
10. Federal tax credit
11. Advertisement [newspaper, radio, online, etc.]
12. Utility sponsorship of the program
13. Other [SPECIFY: _____]

98. Don't know

C15. Besides saving on energy costs, which of the following benefits have you observed in your home since the installation of your [MEASURE_LIST]? Select all that apply. [MULTIPLE CHOICE]

1. Increased comfort
2. Reduced noise
3. Improved air quality
4. Other [SPECIFY]

[IF C15 SELECTED COUNT>1] Which of the options you chose represents the greatest improvement?

[RANDOMIZE ANSWERS FROM C15]

C16. *Where have you heard about Focus on Energy's rebates for [MEASURE_LIST]?

C17. Select all that apply. [RANDOMIZE ITEMS 1-13, MULTIPLE RESPONSES ALLOWED]

1. Mailing (direct mail, brochure, postcard, bill insert, etc.)
   Who sent the mailing?
   (1) My utility
   (2) Focus on Energy
   (3) Another Organization

   98. I'm not sure
2. An email
   Who sent the email?
   (1) My utility
   (2) Focus on Energy
   (3) Another Organization

   98. I'm not sure
3. Social media (Facebook, Twitter, LinkedIn, etc.)
4. Online ad
5. Internet search
   What were you searching for? [SPECIFY]
6. A website
   Which website?
   (1) My utility
   (2) Focus on Energy
   (3) Another Organization

   98. I'm not sure

7. Family / friend / word-of-mouth
8. Focus on Energy representative
9. Utility representative
10. Community or utility event
11. Installer / Contractor / Trade ally
12. In store
13. Through participation in another Focus on Energy program
14. A different source – what was it? [SPECIFY]

98. Don't know [EXCLUSIVE]

C18. [ASK IF C15C17=11C17.11] What benefits did the contractor or installer mention that convinced you to install the [MEASURE_LIST]? Select all that apply. [RANDOMIZE 1-9; MULTIPLE RESPONSES ALLOWED]

1. Save energy / don't waste energy / be more energy efficient
2. This is a smart investment with a good payback
3. Reduce energy costs/lower bill
4. Good for the environment
5. Increase home comfort / address uneven temperatures
6. Improve indoor air quality / get rid of mold or allergens
7. Cash / rebate / incentive payment
8. Federal tax credit
9. Utility sponsorship of the program
10. Other [SPECIFY: _____]

98. Don't know [EXCLUSIVE]

C19. *What is the best way for Focus on Energy to inform people about energy efficiency programs? Select all that apply. [RANDOMIZE ITEMS 1-12, MULTIPLE RESPONSE]

1. Promotion through other Focus on Energy programs
2. Television
3. Radio
4. Print media, such as magazine, newspaper article or advertisement
5. Billboard / outdoor ad
6. Direct mail / brochure / postcard
7. Family / friend / word-of-mouth
8. Email from Focus on Energy
9. Focus on Energy or Utility website
10. Other website: [SPECIFY: _____]
11. Community or utility event
12. Social Media such as Twitter, Facebook, or Instagram
13. A different source – which one? [SPECIFY: _____]
14. I do not want to receive information [EXCLUSIVE]

98. Don't know [EXCLUSIVE]

C20. *Other than Focus on Energy's Insulation and Air Sealing offering, are you aware of any other Focus on Energy programs or rebates?

1. Yes
2. No

98. Don't know

C21. [ASK IF C20=1] *For the Focus on Energy programs listed below, please indicate which ones you are aware of and which you have participated in. [TABLE FORMAT; EACH PROGRAM LISTED HAS A DROP DOWN MENU WITH THE THREE RESPONSE OPTIONS: PARTICIPATED IN THIS PROGRAM, AWARE BUT HAVE NOT PARTICIPATED, NOT AWARE OF THIS PROGRAM]

Program	Description
Energy Saving Packs	Free packs of energy saving items such as low-flow showerheads, aerators, LEDs, and weatherization products, delivered through the mail
Heating and Cooling	Instant discounts or rebates for heating and cooling equipment in your home
New Construction	Certification of energy efficient homes built above code
Online Marketplace	Online store available through the Focus on Energy website, offering instant discounts on a range of energy-saving products for your home
Multifamily	A program for property owners that offers incentives for improvements that will reduce energy use in units and common areas
Renewable Rewards	Rebates for solar PV installations

C22. Aside from the Focus on Energy rebate or instant discount, did you receive, or do you plan to receive any other rebates or financing for your [MEASURE_LIST]? Select all that apply.

1. Yes, I received or plan to receive a tax credit
2. Yes, manufacturer rebate/discount
3. Yes, another kind of funding [please specify] [TEXT ENTRY – FORCE]
4. No [SKIP TO D1] [EXCLUSIVE]

98. Don't know [EXCLUSIVE]

C23. [IF C22 = 1 or 2 or 3] How influential would you say the additional funding was in your decision to install your [MEASURE_LIST]?

1. Not influential at all
2. Somewhat influential
3. Very influential
4. I wouldn't have installed [MEASURE_LIST] without the additional rebate/financing

C24. Have you installed any high-efficiency heating or cooling equipment in your home for which you received a Focus on Energy rebate or instant discount within the past year? If so, what kind?

1. Yes [please specify] [TEXT ENTRY – FORCE]
2. No [SKIP TO D1]

98. Don't know [SKIP TO D1]

C25. [IF C24 = 1] How influential would you say the Focus on Energy heating and cooling rebate or instant discount was in your decision to install [MEASURE_LIST]?

1. Not influential at all
2. Not very influential
3. Somewhat influential
4. Very influential
5. I wouldn't have installed the air sealing or insulation product if I hadn't participated in the HVAC installation program

C26. [IF C25 = 3-5] What about the heating and cooling rebate or instant discount process influenced you to install [MEASURE]?

[OPEN-ENDED RESPONSE]

D. Trade Ally and Application Process

D1. [IF ANY Q VARIABLE OTHER THAN INSDIYQ >0] Did you work with a contractor to install your new [MEASURE_LIST]?

1. Yes
2. No [SKIP TO D9]

98. Don't know [SKIP TO D9]

D2. How did you find the contractor who installed your new equipment? [RANDOMIZE 1-11]

1. Used the same contractor previously
2. Called Focus on Energy
3. Focus on Energy's website, i.e. 'Find a Trade Ally Contractor' link
4. Focus on Energy or Utility representative
5. Referral from family / friend / word of mouth
6. Retailer / store – Home Depot, Lowes, etc.
7. Focus on Energy advertising
8. Social media from Focus on Energy
9. Social media other than Focus on Energy
10. Contractor advertising
11. Personal research
12. Other [please specify] [TEXT ENTRY – FORCE]

98. Don't know

D3. What was the top reason in choosing your contractor who installed your [MEASURE_LIST (EXCLUDE INSDIYQ)]? [RANDOMIZE ITEMS 1-12]

1. Used the same contractor previously
2. They were the least expensive / price
3. They were close by / near my house
4. Listed on Focus on Energy website, i.e. 'Find a Trade Ally Contractor' link
5. Only program-eligible contractor available in my area
6. Referral from friend, family member, colleague
7. Influenced by an advertisement or website
8. Timing / scheduling worked out
9. Most responsive / easiest to communicate with
10. Only one available for emergency replacement
11. They appeared to provide the best quality / value; appeared to be the most trustworthy
12. [ASK IF UTILITY = XCEL ENERGY] Knowledge/familiarity with the additional rebates from Xcel
13. Other {please specify] [TEXT ENTRY – FORCE]

98. Don't Know

D4. [IF D3 = 4 OR D2 = 3] How easy was it to find a contractor using the Focus on Energy website?

1. Very easy [SKIP TO D6]
2. Somewhat easy [SKIP TO D6]
3. Neither easy nor difficult [SKIP TO D6]
4. Somewhat difficult
5. Very difficult

98. Don't know [SKIP TO D6]

D5. [IF D4 = 4 OR 5] Why was it difficult to find a contractor using the Focus on Energy website?

[OPEN-ENDED RESPONSE]

D6. Overall, how would you rate the experience of working with the contractor who installed your [MEASURE_LIST (EXCLUDE INSDIYQ)]?

1. Very satisfied [SKIP TO D8.1]
2. Somewhat satisfied [SKIP TO D8.1]
3. Neither satisfied nor unsatisfied [SKIP TO D8.1]
4. Somewhat unsatisfied
5. Very unsatisfied

98.Don't know [SKIP TO D8.1]

D7. [IF D6 = 4 OR 5] Why was your experience working with the contractor less than satisfactory?

[OPEN-ENDED RESPONSE]

D8. For the next few questions, please think back to the application process to receive the rebate.

1. Did you or your contractor fill out the application to receive your rebate?
2. My contractor filled out my application
3. I filled out my application
4. Both my contractor and I filled out my application

98.Don't know

D9. [IF D1=2 OR 99 OR D8.1 = 2 OR 3] How would you rate the ease of filling out the application?

1. Very easy
2. Somewhat easy
3. Neither easy nor difficult
4. Somewhat difficult
5. Very difficult

98. Don't know

D10. [IF D9 = 4 OR 5] Please let us know why filling out the application was not very easy. Select all that apply. [RANDOMIZE ITEMS 1-5; MULTIPLE RESPONSES ALLOWED]

1. Hard to locate required information (utility account number, equipment model/serial numbers, etc.)
2. Application form was too long
3. Application form was too confusing
4. Difficulty keeping track of receipts / invoices
5. Trouble with submitting application
6. Other [please specify] [TEXT ENTRY – FORCE]

98. Don't know [EXCLUSIVE]

E. Tier 2 Awareness

[ASK SECTION IF TIER = TIER 2]

E1. Our records show that you received a higher rebate amount available for income-qualified customers. You may have completed an income eligibility application to qualify for this rebate level. Before today, were you aware that you received a higher rebate?

1. Yes
2. No [SKIP TO F1]

98. Don't know [SKIP TO F1]

E2. Do you recall filling out a screening form on the Focus on Energy website to determine whether you qualified for increased rebates?

1. Yes
2. No [SKIP TO E4]E5

E3. How easy or difficult was it to fill out this screening form?

1. Extremely easy [SKIP TO E4E5
2. Somewhat easy [SKIP TO E4E5
3. Neither easy nor difficult [SKIP TOE4E5]
4. Somewhat difficult
5. Extremely difficult

[IF E3 = 4 OR 5] Can you tell us what made the experience of filling out the screening form difficult? [OPEN-ENDED RESPONSE]

E4. [ASK IF E1 = 1] Were you interested in the Focus on Energy rebates before you learned you were eligible for higher rebates?

1. Yes
2. No

98. Don't know

E5. [ASK IF E1 = 1] How did you learn that you qualified for the higher rebates? [RANDOMIZE ITEMS 1-10]

1. When I participated in another Focus on Energy program
2. Installer / Contractor / Trade Ally
3. Focus on Energy website
4. Utility website
5. Focus on Energy representative
6. Utility representative
7. Utility bill insert / direct mail / brochure / postcard mail from utility
8. Focus on Energy direct mail / brochure / postcard
9. Internet advertising / online ad
10. Community or utility event
11. Other [SPECIFY: _____]

98. Don't know

F. Freeridership

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS; ASKED FOR EACH ITEM IN MEASURE LIST]

For the next questions, please think about how you made your decision to purchase and complete a high efficiency [MEASURE_LIST] project.

F1. When did you first hear about the availability of the Focus on Energy rebate for [MEASURE_LIST]? v

1. **[IF INSDIYQ=0]**Before I contacted the contractor to purchase [MEASURE_LIST] [SKIP TO F3]
2. **[IF INSDIYQ=0]**When the contractor provided the quote for purchase and installation [SKIP TO F3]
3. **[IF INSDIYQ=0]** After the contractor completed the [MEASURE_LIST] work [ASK F2]
4. Before the [MEASURE_LIST] project was completed [SKIP TO F3]
5. When I received the rebate check from Focus on Energy [ASK F2]
6. After I purchased the [MEASURE_LIST] [ASK F2]
7. I had not heard of Focus on Energy before this survey [ASK F2]

98. Don't know [SKIP TO F3]

F2. [ASK IF F1=3, 5, 6 OR 7] So just to be clear, you purchased your [MEASURE_LIST] before you heard anything about the Focus on Energy rebate. Is that correct?

1. Yes, that's correct [SKIP TO F6]
2. No, that's not correct [ASK F3]

98. Don't know [ASK F3]

F3. Before you heard about the Focus on Energy rebate, had you already considered completing a [MEASURE_LIST] project?

1. Yes
1. No

98. Don't know

F4. Would you most likely have had the same [MEASURE_LIST] project completed without the rebate and information or education you received from Focus on Energy?

1. Yes
2. No

98. Don't know

F5. [ASK IF F4=2] Would you most likely have had a different [MEASURE_LIST] project completed without the rebate and information or education you received from Focus on Energy, or would you have decided not to have a project completed?

1. I would have had a different project completed
2. I would have decided not to have a project completed [SKIP TO F9]

98. Don't know

F6. Without the rebate and information or education from Focus on Energy, what efficiency level of [MEASURE_LIST] upgrade would you most likely have completed?

1. Same efficiency as I had completed or higher
2. Lower efficiency
3. Lower efficiency or lower cost option available

98. Don't know

F7. Thinking about timing, without the rebate and information or education from Focus on Energy, when would you most likely have had the [MEASURE_LIST] improvements completed?

1. At the same time
2. Later, but within 12 months
3. One to two years out
4. More than two years out
5. Never

98. Don't know

F8. Without the rebate and information or education from Focus on Energy what percentage of the [MEASURE_LIST] upgrade would you have completed? Please enter a percent from 0% to 100%, with '100' denoting that you would have had the same level of work completed?

[NUMERIC TEXT BOX WITH 0-100 REQUIREMENT; ADD PERCENT SYMBOL AFTER TEXT BOX]

F9. [ASK EVERYONE] We would like to know more about the factors that contributed to you completing the [MEASURE_LIST] project. For the list of possible factors that could have contributed to your decision shown below, please rate how important each was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase and complete the [MEASURE_LIST] project. [1 TO 6 - RANDOMIZE LIST] [DROP DOWN LIST SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT", "NOT APPLICABLE" CODE AS 97]

1. [Response from C14 IF C14 ≠ 8, 9 OR 99]
2. The Focus on Energy Insulation and Air Sealing rebate or discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a contractor or vendor
6. Previous participation in a Focus on Energy energy-efficiency offering or program

G. Spillover

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS; ASKED FOR EACH ITEM IN MEASURE LIST]

Now we would like to learn about any energy-saving improvements you may have made since completing the [MEASURE_LIST] project and receiving a rebate from Focus on Energy.

G1. Since completing the [MEASURE_LIST] and receiving the Focus on Energy rebate, have you made any other energy saving improvements or high-efficiency equipment purchases for your home that you did NOT receive for free or a rebate from Focus on Energy or another organization?

1. Yes
2. No [SKIP TO NEXT SECTION]

98. Don't know [SKIP TO NEXT SECTION]

G2. What products did you install without receiving for free or with a rebate?

1. Gas boiler [HOW MANY DID YOU INSTALL?]
2. Gas furnace [HOW MANY DID YOU INSTALL?]
3. Gas tankless water heater [HOW MANY DID YOU INSTALL?]
4. Gas storage water heater [HOW MANY DID YOU INSTALL?]
5. Electric tankless water heater [HOW MANY DID YOU INSTALL?]
6. Electric storage water heater [HOW MANY DID YOU INSTALL?]
7. Insulation; attic [HOW MANY SQUARE FEET?]
8. Insulation; floor [HOW MANY SQUARE FEET?]
9. Insulation; ceiling [HOW MANY SQUARE FEET?]
10. Air sealing [HOW MANY LINEAR FEET?]
11. Duct sealing [HOW MANY LINEAR FEET?]
12. ENERGY STAR windows [HOW MANY SQUARE FEET?]
13. ENERGY STAR air purifier [HOW MANY DID YOU INSTALL?]
14. ENERGY STAR dehumidifier [HOW MANY DID YOU INSTALL?]
15. ENERGY STAR clothes washer [HOW MANY DID YOU INSTALL?]
16. ENERGY STAR dishwasher [HOW MANY DID YOU INSTALL?]
17. ENERGY STAR pool pump [HOW MANY DID YOU INSTALL?]
18. ENERGY STAR room air conditioner [HOW MANY DID YOU INSTALL?]
19. ENERGY STAR refrigerator [HOW MANY DID YOU INSTALL?]
20. ENERGY STAR freezer [HOW MANY DID YOU INSTALL?]
21. Smart thermostat [HOW MANY DID YOU INSTALL?]
22. Heat pump water heater [HOW MANY DID YOU INSTALL?]
23. Central air conditioner [HOW MANY DID YOU INSTALL?]
24. Air source heat pump [HOW MANY DID YOU INSTALL?]
25. Ductless heat pump [HOW MANY DID YOU INSTALL?]
26. Ground source heat pump [HOW MANY DID YOU INSTALL?]
27. Smart power strip [HOW MANY DID YOU INSTALL?]

28. Other equipment [please specify] [OPEN-ENDED RESPONSE] [TEXT – FORCE]
98. Don't know [SKIP TO SECTION NEXT SECTION]

G3. [REPEAT FOR EACH ITEM MENTIONED IN G2] How important was your experience with the Focus on Energy Insulation and Air Sealing Program in your decision to install [INSERT EACH ONE SELECTED IN G2]?

[DROP DOWN LIST SELECTION; "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT", "DON'T KNOW"]

G4. [REPEAT FOR EACH ITEM MENTIONED IN G2] In what year was the [INSERT EACH ONE SELECTED IN G2] purchased and installed?

[DROP DOWN LIST SELECTION; *"2024","2023", "BEFORE 2023"…, 99 FOR DON'T KNOW]*

G5. [ASK G5 FOR EACH ONE SELECTED IN G2 EXCEPT 3 (gas tankless water heater) , 4 (gas storage water heater), 5 (electric tankless water heater), 6 (electric storage water heater), 12 (ENERGY STAR windows), 13 (ENERGY STAR air purifier), 14 (ENERGY STAR dehumidifier), 15 (ENERGY STAR clothes washer), 16 (ENERGY STAR dishwasher), 17 (ENERGY STAR pool pump), 18 (ENERGY STAR room air conditioner), 19 (ENERGY STAR refrigerator), 20 (ENERGY STAR freezer), 22 (Heat pump water heater), 27 (smart power strip) OR 28 (other equipment.)] Why didn't you apply for and receive a Focus on Energy rebate for [INSERT EACH ONE SELECTED IN G2]?

1. Did not know rebate was available
2. Product did not qualify
3. Other [SPECIFY: _____]

98. Don't know

H. Energy Usage Motivations

H1. *How much do you agree with each of the following statements? [FORMAT: DROP DOWN MENUS. RANDOMIZE LIST OF ITEMS; SAME 6 RESPONSE OPTIONS FOR EACH ITEM]

1. Strongly agree
2. Somewhat agree
3. Neither agree nor disagree
4. Somewhat disagree
5. Strongly disagree
6. Does not apply

(1) I try to save energy to lower my energy bill
(2) Keeping the home comfortable is more important than saving on my bill
(3) I've tried a few things to save energy, but have not seen any real savings on my energy bill
(4) It is important to conserve resources to be more environmentally friendly
(5) I prefer to use the most advanced technologies available to control my energy use
(6) I am willing to pay more for efficient products that will save me money in the long term
(7) I am willing to pay more for efficient products that are more environmentally friendly
(8) Energy efficient improvements increase my home's comfort
(9) I'm not interested in improving my home's efficiency
(10) I wish Focus on Energy would offer more options to help manage my energy usage
(11) It is too inconvenient to be efficient at home

H2. *How informed do you feel about all the ways you can save energy, including buying and using energy efficient appliances and equipment?

1. Very informed
2. Somewhat informed
3. Neutral
4. Not too informed
5. Not at all informed

98. Don't know

H3. *How much attention do you pay to the amount of energy (gas or electric) that you use in your home?

1. Very close attention
2. A fair amount of attention
3. Some attention
4. Not much attention
5. No attention at all

98. Don't know

H4. *What other energy improvements do you plan to make to your home over the next 5 to 10 years? Select all that apply.

[MULTIPLE RESPONSES ALLOWED]

1. Gas boiler
2. Gas furnace
3. Gas tankless water heater
4. Gas storage water heater
5. Electric tankless water heater
6. Electric storage water heater
7. Insulation; attic
8. Insulation; floor
9. Insulation; ceiling
10. Insulation; basement
11. Air sealing
12. Duct sealing
13. Low-E Storm windows
14. ENERGY STAR windows
15. ENERGY STAR air purifier
16. ENERGY STAR dehumidifier
17. ENERGY STAR clothes washer
18. ENERGY STAR dishwasher
19. ENERGY STAR pool pump
20. ENERGY STAR room air conditioner
21. ENERGY STAR refrigerator
22. ENERGY STAR freezer
23. Smart thermostat
24. Heat pump water heater
25. Central air conditioner
26. Air source heat pump
27. Ductless heat pump
28. Ground source heat pump
29. Smart power strip
30. Other equipment, please specify the items below: [TEXT ENTRY] **[FORCE]**

98. Don't know [EXCLUSIVE] [SKIP TO SECTION NEXT SECTION]

H5. Is the building where the [MEASURE_LIST] was installed your primary residence?

1. Yes
2. No

H6. [IF H5=1] On average, approximately how many hours each week is someone typically at home? (For reference, there are 168 hours in a week, so if people are at home about half of the time, that would be 84 hours per week.) [OPEN ENDED NUMERIC RESPONSE 1-168]

[IF H5=2] Approximately how many months out of the year do you spend there? [OPEN ENDED NUMERIC RESPONSE 1-12]

H7. Are you spending more or less time at home compared to 5 years ago?

1. Significantly more
2. Slightly more
3. No change
4. Slightly less
5. Significantly less

I. Demographics and Household Information/Business Firmographics

The last few questions are for statistical purposes only.

I1. *What type of fuel does your **water heater** use?

1. Natural gas
2. Electricity
3. Propane/Bottled gas
4. Wood
5. Other [please specify] [TEXT – FORCE]

98. Don't know

I2. *What is the main type of fuel you use to **heat your home**?

1. Natural Gas
2. Oil
3. Propane
4. Electricity
5. Wood
6. Other [please specify] [TEXT – FORCE]

98. Don't know

I3. What is the primary heating system in your home?

1. [IF I2 = 1-4 RESPONSE FROM] furnace
2. Heat Pump
3. [IF I2 = 1-4 RESPONSE FROM] boiler
4. Wood or pellet stove
5. Radiant floor heating
6. Electric baseboard heaters
7. Fireplace
8. Other [please specify] [TEXT – FORCE]

98. Don't know

I4. [IF I3 = NATURAL GAS FURNACE] How old is your natural gas furnace?

1. Less than 5 years old
2. 5-10 years old
3. 10-15 years old
4. More than 15 years old
5. Other [please specify] [TEXT – FORCE]

98. Don't know

I5. [IF I3 = NATURAL GAS FURNACE] Have you considered replacing your gas furnace with an air-source heat pump when it's time to upgrade your system?

1. Yes, [Why?] [OPEN ENDED RESPONSE] [TEXT – FORCE]

2. No, [Why not?] [OPEN ENDED RESPONSE] [TEXT – FORCE]
98. Don't know

I6. *What type of home do you live in?
1. Mobile / manufactured home
2. Single-family home, detached house
3. Attached house townhouse, row house, or duplex
4. Multifamily apartment or condo building with 4 or more units
5. Co-op/retirement community
6. Other [please specify] [TEXT – FORCE]
98. Don't know

I7. *Do you or members of your household own or rent this home?
1. Own
2. Rent
3. Other [SPECIFY: _____]
98. Don't know

I8. [ASK IF I7 = 2 OR 3] How is your electric utility bill paid?
1. My utility bills me directly
2. My maintenance fees or rent includes utility costs
3. My bill is split evenly between units within the complex
4. Other [please specify] [TEXT – FORCE]
98. Don't know

I9. [ASK IF I7 = 2 OR 3] How is your gas utility bill paid?
1. My utility bills me directly
2. My maintenance fees or rent includes utility costs
3. My bill is split evenly between units within the complex
4. I don't have natural gas service
5. Other [please specify] [TEXT – FORCE]
98. Don't know

I10. * What is the highest level of school that you have completed?
1. Less than 9th grade
2. 9th to 12th grade; no diploma
3. High school graduate [includes GED]
4. Some college, no degree
5. Associate's degree
6. Bachelor's degree
7. Graduate or professional degree
98. Prefer not to answer

J. Closing

J1. *Do you have any other comments about your experience with Focus on Energy that you would like to share?

1. Yes: [OPEN ENDED TEXT] [FORCE]
2. No

98. Don't know

J2. * On occasion, Focus on Energy may want to contact a customer to learn more about their participation experience. May we share your responses with a program manager, who may contact you regarding your experience?

1. Yes
2. No

98. Don't know

J3. Finally, we would like to confirm where to send your prize if you are selected as a $200 gift card winner. Please enter a name and email address below. The gift card winners will be selected and notified within two weeks after this survey closes. You may leave this blank if you do not want to be included in the drawing.

FIRSTNAME LASTNAME

EMAIL

Thank you. We appreciate your help with this survey. Have a nice day.

[IF J3 ≠ 0] You will be added into the drawing for a $200 gift card.

To learn about additional opportunities to save energy and money in your home, please visit focusonenergy.com.

CADMUS

Focus on Energy CY 2024 Trade Ally Interview Guide: Insulation and Air Sealing Offering

Respondent name:	
Respondent phone:	
Interview date:	Interviewer initials:

Introduction

Thank you for taking the time to speak with me. We are interviewing several residential insulation and air sealing trade allies who participate in Focus on Energy's Insulation and Air Sealing Program to better understand how your business is interacting with the program and capture your thoughts on the weatherization market in general. We hope to get your perspective on things that are working well and any areas where you have experienced challenges. This information will inform potential program changes in the coming year, so we encourage you to be as direct as possible and offer any suggestions you have for program improvement.

While we do not expect to ask you anything sensitive, your responses will be confidential; we will never use your name or your company's name in our reporting.

Finally, we do appreciate that you are very busy, so we are offering a $125 gift card as a thank you for sharing your time and feedback today. At the end of the call, we will confirm where to send the gift card.

Do you have any questions before we begin?

A. General Contractor/Company Information

First, I'd like to ask a few questions to understand your role and responsibilities within your company, as well as the markets you operate in and around Wisconsin.

A1. Please tell me your title and describe your role within your company and how long you have worked there.

A2. In what part of Wisconsin does your company generally work?

A3. Do you work in states outside of Wisconsin? Which ones? [REMINDER TO PLEASE FOCUS ON WISCONSIN FOR THIS INTERVIEW, UNLESS I SPECIFICALLY ASK ABOUT OTHER STATES.]

A4. Could you provide an estimate of the current number of employees at your company?

A5. Roughly what percentage of your company's Wisconsin residential insulation and air sealing projects are in rural versus urban areas?

A6. Roughly what percentage of your company's Wisconsin residential insulation and air sealing projects are in standard versus low/limited income areas?

B. Program Awareness and Participation (CONTRACTORS ONLY)

B1. Our records show that your company submitted [INSERT NUMBER OF APPLICATIONS IN SPECTRUM] applications to the Focus on Energy Insulation and Air Sealing Program from the beginning of 2024 through August 2024. Does that sound about right?

B2. [IF PARTICIPATED IN 2023] According to our records, the number of projects your company completed in 2024 is [HIGHER THAN/LOWER THAN/SIMILAR TO] the number of projects it completed at this time in 2023. Does that sound correct?

B3. [IF B1 QUANTITY DIFFERENT THAN PREVIOUS YEAR] What do you think accounts for the difference in project volume between this year and last year? [PROBE: UPTAKE/DOWNTAKE REASONS. I.E. ECONOMY, MARKETING, LABOR SHORTAGE, PROGRAM INFLUENCE]

B4. Are you aware that Focus on Energy offers higher incentives for income qualified customers through the Insulation and Air Sealing program?

1. If yes, how familiar are you with the Income Qualified requirements? Do you know what is required to qualify?
2. How comfortable are you offering the Income Qualified incentives to your customers?
3. What are the main challenges to you offering the Income Qualified incentives?
4. What are the main challenges to customers receiving the income qualified incentives?

B5. Thinking about all the residential insulation and air sealing projects your company completes for customers in Wisconsin, roughly what percentage of these projects meet or exceed the performance standards required by the Focus on Energy Insulation and Air Sealing Program? [IF NEEDED: JUST A BALLPARK OR ESTIMATION IS FINE]

1. Would all these projects qualify for participation?

B6. Do you ever complete or help fill out applications for your customers? [IF NO, SKIP TO B8]

B7. Have you completed any qualified insulation and/or air sealing projects that were not submitted to Focus on Energy for a rebate?

1. If yes, what percent of projects are not submitted? [SPECIFY BALLPARK ESTIMATE for Air sealing, Insulation, or Insulation and Air Sealing together] [Probe if one project type is significantly more likely to qualify but not be submitted]
2. Why are some projects not submitted?

B8. Why do you participate in the Focus on Energy Insulation and Air Sealing Program?

1. What aspects of the Program are most valuable to you?

B9. How often do customers already know about the Focus on Energy incentive before you tell them about it?

B10. When you are selling a job, at what point do you mention the Focus on Energy incentive?

B11. After introducing the Focus on Energy incentive, do you provide the customer with any print or digital materials regarding the program or incentives?

B12. Overall, how would you describe the Program's impact on the percentage of insulation or air sealing projects, either individually or both together, you sell in Wisconsin?

1. Does the impact vary by project type? [probe: insulation or air sealing projects, either individually or both together]

B13. Overall, how would you describe the Program's impact on your business? Why would you say that?

C. Feedback On Incentive Structure

C1. Currently, Focus on Energy either pays incentives directly to customers or to contractors who then provide a discount on the customer's invoice. This is determined based on who submits the application to Focus on Energy.

1. Which of these options do you use more frequently, and why?
2. Have you observed any complications arising from this process?

C2. Aside from the Focus on Energy rebate, do your customers typically receive any other rebates or financing for their projects? Examples include tax credits and manufacturer rebates or discounts. **[IF "NO" OR "DON'T KNOW," SKIP TO D1]**

C3. **[IF THEY MENTION CUSTOMERS USING ADDITIONAL FUNDING]** From your perspective, how influential were these additional funding sources, excluding the Focus on Energy incentive, in your customers' decisions to move forward with their projects?

D. Barriers and Program Delivery

I'd like to ask you about customer barriers and program delivery aspects of the Program.

D1. Beyond cost, what other factors make customers hesitant to complete insulation and air sealing projects?
   1. Do you notice these barriers in certain demographic groups? (regional, age, etc.)
   2. How well does the Focus on Energy program address these barriers?

D2. From your perspective, what more could Focus on Energy do in supporting customers to overcome these barriers?

D3. [IF NOT ADDRESSED] Are these non-cost obstacles different for income-qualified customers? Does the program adequately address obstacles for income-qualified customers?

D4. Besides Focus on Energy, are you aware of other programs or organizations that support customers overcoming these barriers? What are they?

What services do those organizations provide to help customers overcome these barriers?

D5. What could Focus on Energy do to better serve customers through the standard path? Through the income-qualified path?

D6. Are you able to recruit and retain an adequate number of employees to deliver projects to interested customers?
   1. [ASK IF D5=NO] What is impacting workforce availability?
   2. [ASK IF D5=NO] Do you have any plans to address the lack in workforce ability?

E. Feedback on IRA

E1. How familiar are you with Inflation Reduction Act (IRA) rebates and tax credits for insulation and air sealing projects? [PROBE: ask them to be as specific as possible such as naming IRA Home Energy Rebates, Home Energy Tax Credits, Energy Efficiency Home Improvement Credits, Home Efficiency Rebates, or Home Electrification and Appliance Rebates]

E2. How familiar are you with Focus on energy's efforts in delivering IRA rebates and tax credits for insulation and air sealing projects? [PROBE: ask them to be as specific as possible such as naming resources or specific programs such as HOMES for Home Energy Rebates or HEAR for Home Electrification and Appliance Rebates and resources such as links or education about tax credits]

E3. What impact has the IRA tax credits for insulation and air sealing projects had on your 2024 sales? [CONTEXT: IRA Tax credits have been available all year while Home Efficiency Rebates (delivered through the HOMES program in Wisconsin/Focus on Energy) will have only been available at the very end of the year and is currently available. Home Electrification and Appliance Rebates (HEAR) have not yet become available in Wisconsin]

E4. How have the IRA Home Efficiency Rebates, offered through Focus on Energy's HOMES program in Wisconsin, which include rebates for insulation and air sealing projects, impacted your 2024 sales?

E5. Have you adjusted, or do you plan to adjust your business because of IRA? [PROBE: additional staff, training, stocking, etc.]

1. Have you signed up to be an IRA registered contractor?
2. [IF E3.a = "No"] Do you plan on signing up to be an IRA registered contractor?

E6. Are your customers generally aware of the IRA?

1. [ASK IF YES] If so, how do they display this awareness?

E7. Have you noticed any change in the length of time it takes to complete insulation and air sealing projects since the IRA was passed? [MORE DETAILS: This includes developing a quote, approval, application completion, completing the work, payment, and processing] **[IF "NO CHANGE" OR "DON'T KNOW," SKIP TO F1]**

E8. How much more/less time do projects typically take since the passage of the IRA?

1. Why are these projects taking [MORE/LESS FROM E8] time?

E9. Which elements of the project are typically affected in your experience?

F. Impact of Customer HVAC Participation

I'd like to ask you about your customers' interest or plans in HVAC upgrades following insulation and air sealing work.

F1. In a typical project, are you aware of the age of the customer's HVAC systems?

F2. Do you have a sense of how often customers complete insulation and air sealing projects around the time that they install new HVAC equipment?

1. [ASK IF YES] Are customers completing insulation and air sealing projects more often before or after installing new HVAC equipment?

G. Wrap-up

G1. On a scale from 1-5 where 1 means "not at all satisfied" and 5 means "extremely satisfied," how satisfied are you with Focus on Energy's Insulation and Air Sealing Program overall? [RESPONSE CHOICES RANGING FROM 1-5, PLUS "DON'T KNOW"]

1. [PROBE FOR REASONS WHY IF ANSWERED 1 OR 2]

G2. What is one thing Focus on Energy can improve to increase your satisfaction with the Program?

G3. Is there anything we have not discussed about the Program that you would like to share?

G4. The last question I have is to confirm where we can send your $125 gift card. Could you please provide the address where we should mail it?

Those are all the questions we have for you today. Focus on Energy appreciates your time and your feedback. Have a good day.

CADMUS

Focus on Energy Nonresidential Programs CY 2024
Trade Ally Interview Guide

This document serves as the interview guide for the Cadmus and Apex team's (the evaluation team) forthcoming interviews with trade allies of Focus on Energy's Non-Residential Programs. The primary goal of these interviews is to assess satisfaction with and influence of the newly introduced trade ally bonus. The interviews are intended to be both open-ended and succinct: we want to allow respondents to describe the realized benefits of the trade ally bonus in their own words without making the interview feel like a burden.

Interview Parameters

- **Target completes:**
  - 24; stratified by trade ally type and primary program
  - Sampling stratification to be conducted upon receipt of updated July tracking data
- **Interview targets:**
  - Employee **most** involved with completing Focus on Energy applications/paperwork
- **Incentives:**
  - $100/complete - $2,400 total
- **Interview medium:**
  - Phone
- **Recruitment medium:**
  - Email/Phone
- **Recruitment approach:**
  1. Attempt recruitment via email to all sample participants with viable email addresses
  2. Send secondary recruitment email 1 week after initial recruitment
  3. Conduct phone recruitment as necessary to supplement and satisfy quotas

Email Recruitment Script

Initial Recruitment Email

Subject: Help Focus on Energy improve our energy efficiency Program offerings

Hello!

As you know, Focus on Energy has ambitious goals related to saving energy in Wisconsin. We know we would not be able to attain those goals without the support of our dedicated trade partners like yourself. To that end, we'd like to ask you to participate in a brief phone interview to learn more about your experiences participating as a Trade Ally in the Focus on Energy Programs.

The interviews should take approximately **30** minutes, and **we are offering a $100 electronic gift card** in appreciation of your time and insights.

Focus on Energy is working with Apex Analytics, an independent research firm, to conduct this research. If you are interested in assisting us with this research effort, please reply to this email, and a member of the Apex Analytics team will reach out to coordinate a time to conduct the interview. If we don't hear back from you, a member of the Apex Analytics team will follow up with you by phone sometime next week.

Thank you very much,

Duncan Ward

If you have any questions about the validity of this email or the interviews, please contact Mitch Horrie at Public Service Commission of Wisconsin at 608-267-3206 or mitch.horrie@wisconsin.gov.

Follow-Up Recruitment Email

Subject: Help Focus on Energy improve our energy efficiency Program offerings

Hello!

You may have seen an email from us last week, but we wanted to reach out one more time to see if you'd be willing to share your experiences as a Focus on Energy Trade Ally.

As you know, Focus on Energy has ambitious goals related to conserving energy in Wisconsin. We know we would not be able to attain those goals without the support of our dedicated trade partners like yourself. To that end, we'd like to ask you to participate in a brief phone interview to learn more about your experiences participating as a Trade Ally in the Focus on Energy Programs.

The interviews should take approximately **30** minutes, and **we are offering a $100 electronic gift card** in appreciation of your time and insights.

Focus on Energy is working with Apex Analytics, an independent research firm, to conduct this research. If you are interested in assisting us with this research effort, please reply to this email, and a member of the Apex Analytics team will reach out to coordinate a time to conduct the interview. If we don't hear back from you, a member of the Apex Analytics team will follow up with you by phone sometime next week.

Thank you very much,

Duncan Ward

If you have any questions about the validity of this email or the interviews, please contact Mitch Horrie at Public Service Commission of Wisconsin at 608-267-3206 or mitch.horrie@wisconsin.gov.

A. Phone Recruitment

Hello, my name is [NAME] and I am calling on behalf of Wisconsin's Focus on Energy programs. We are reaching out to trade allies like yourself to learn more about your experience participating as a Trade Ally in the Focus on Energy Programs. How are you doing today?

We are hoping to speak with the person at your company who is most involved with the Focus on Energy programs, specifically the application process and required program paperwork.

[IF NECESSARY]: We are hoping to either schedule an interview for a later date, or to conduct an interview right now. We anticipate interviews should take roughly 30 minutes, and we are offering a $100 gift card as a thank you for your time.

[IF CONTACT NAME PROVIDED: GO TO A1]

[IF NO CONTACT NAME PROVIDED: GO TO A3]

[IF READING INTRODUCTION AGAIN AFTER BEING TRANSFERRED: GO TO C5]

A1. May I please speak with **[CONTACT NAME].** Our records have you listed as the primary application contact on the majority of your company'snon-residential rebate applications: are you the person at your company most involved with Focus on Energy? Or is there someone else?

1. (Yes, **[CONTACT NAME]** is the person most involved) **[GO TO A2]**
2. (No, someone else is most involved) **[RECORD SECONDARY CONTACT] [GO TO A2]**
3. (No, **[CONTACT NAME]** no longer works here) **[GO TO A3]**
4. (Don't know who is most involved) **[GO TO A4]**

-99. (Refused) [THANK AND TERMINATE]

A2. May I please speak with [CONTACT NAME/SECONDARY CONTACT]?

1. (Yes, that's me / **[CONTACT NAME]** is on the line) **[GO TO A5]**
2. (Yes, that's someone else - **call transferred**) **[START INTRODUCTION OVER WITH NEW RESPONDENT]**
3. (No, not available) **[SCHEDULE CALLBACK]**

-99. (Refused) [THANK AND TERMINATE]

[IF NO CONTACT NAME, OR CONTACT NO LONGER WORKS FOR org]:

A3. May I please speak with the person at your company who is *most* familiar with Focus on Energy's Programs?

1. (Yes, that is me) **[GO TO A5]**
2. (Yes, that's someone else – **call transferred**) **[START INTRODUCTION OVER WITH NEW RESPONDENT]**
3. (No, not available) **[SCHEDULE CALLBACK]**
4. (Don't know) **[GO TO A4]**

-99. (Refused) [THANK AND TERMINATE]

A4. In that case, we would be happy to speak to anyone at your organization who has experience with the Focus on Energy programs. Is there anyone available who might be able to assist with this effort?

1. (That's me) **[GO TO A5]**
2. (Yes, that's someone else – **call transferred**) **[START INTRODUCTION OVER WITH NEW RESPONDENT]**
3. (Don't know) **[THANK AND TERMINATE]**

-99. (Refused) [THANK AND TERMINATE]

A5. Great! We are hoping to either schedule an interview for a later date, or to conduct an interview right now. We anticipate interviews should take roughly 30 minutes, and we are offering a $100 gift card as a thank you for your time. Do you have about 30 minutes to answer some questions?

1. (Yes, now works) **[GO TO B1]**
2. (Interested but unavailable right now) **[SCHEDULE CALLBACK]**

-99. (Not interested/refused) **[THANK AND TERMINATE]**

B. Introduction

B1. Do you have any questions before we begin?

B2. We would like to take an audio recording of this conversation for our own internal note taking purposes. These audio recordings will not be shared with anyone outside of our internal evaluation teams. Do we have your permission to record this call?

1. (Yes): **[READ: Great, we will keep everything you tell us confidential – we won't report anything in a way that would identify individual respondents or companies to Focus or anyone else unless you ask us to] [START RECORDING]**
2. (No): **[READ: That's ok, we can proceed without the audio recording]**

C. Background

C1. To begin, can you tell me a little bit about your role at your company and how long you've been there?

C2. What types of projects and work does your company do? [Probe on commercial, residential markets, commercial sectors, new construction/retrofit, and type of work; e.g., HVAC, electrical, etc.].

C3. What geographic area does your company serve?

C4. How long has your company worked with the Focus on Energy programs?

C5. **[If less than 1 year as a Focus TA]** How did you learn about the Focus on Energy programs?

C6. **[If a registered TA with Focus on Energy]** How long has your company been a registered TA with Focus on Energy?

D. Program Application Experience

D1. Considering the projects you have worked on within the last year for which the customer received an incentive from Focus on Energy, what percentage of projects did:

1. The customer complete the application paperwork with little to no assistance?
2. The customer completed some of the application paperwork, but ultimately needed assistance from you?
3. You completed the application paperwork for the customer in its entirety right from the start?

D2. Please describe your company's approach to assisting customers with the paperwork required to receive a Focus on Energy rebate:

[Allow respondent to describe process, then use the following prompts as necessary]

1. Who from your company typically "leads" the process?
2. How involved are you personally?
3. Are there other people at your company who are more or less involved in the application process?

[IF: 1 > 0 AND 3 > 0 OR G1.2 >0: READ: We'd like to understand your experiences both assisting customers in completing their application paperwork, as well as instances where you complete the application yourself.]

[IF: 1 > 0 OR 2 > 0: READ: Thinking of those projects where customers complete some or all of the application paperwork themselves: [Ask questions D3 - D6]]

D3. Are there certain types of projects, measures, or customers for which customers are more likely to attempt to complete the application paperwork themselves?

1. If so, which ones?
2. Why?

D4. Are there certain **types of projects, measures, or customers** for which customers typically require ***more*** assistance completing the application? If so, which ones?

1. What is it about these projects/measures/customers that necessitate ***greater*** assistance?

D5. Are there certain **aspects of the application itself** for which customers typically require more assistance?

1. If so, which ones?
2. Why?

D6. Conversely, are there certain **types of projects, measures, or customers** in which customers typically require ***less*** assistance? If so, which ones?
   1. What is it about these projects/measures/customers that necessitate ***less*** assistance?
   2. What about the application/paperwork process works well in these instances?

[IF:D1.2 > 0 or D1.3 > 0:

READ: Thinking now about projects where you take the lead on completing application paperwork: [Ask Questions D7 - D14]]

D7. Are there certain types of projects, measures, or customers for which you are more likely to complete the application paperwork yourself?

D8. Are there certain pieces of information required by applications or application support materials that are more difficult or cumbersome to provide?

D9. Are there certain **types of projects or measures** for which you might typically require assistance completing the application from Focus on Energy staff? If so, which ones?

D10. **[IF D9=Yes]** What is it about these projects/measures that necessitate ***greater*** assistance?

D11. Are there certain **aspects of the application itself** for which you typically require more assistance from Focus on Energy staff? If so, which ones? Why?

D12. Conversely, are there certain **types of projects or measures** in which you typically require ***less*** assistance? If so, which ones?

D13. **[IF D12=Yes]** What is it about these projects/measures that necessitate ***less*** assistance?

D14. **[IF D12=Yes]** What about the application/paperwork process works well in these instances?

D15. **[ASK ALL]** Are there any other factors that influence how much involvement is required from you on a project application that we haven't discussed yet?

E. Trade Ally Bonus

Focus on Energy now offers all registered trade allies the opportunity to receive a financial bonus for each non-residential application submitted through the program.

E1. Are you familiar with the Focus on Energy trade ally bonus?

1. (Yes) **[GO TO E3]**
2. (No) **[GO TO E2]**

98. (Don't know) [GO TO E2]
99. (Refused) [GO TO SECTION I]

E2. The Trade Ally Bonus is available to registered Trade Allies who complete and submit application paperwork on behalf of their customers. The bonus is paid directly to Trade Allies and is intended to offset the effort needed to compile and submit an incentive application. There are different bonus structures for prescriptive and custom applications. Does that sound familiar?

1. (Yes) **[GO TO E3]**
2. (No) **[GO TO SECTION H]**

98. (Don't know) [GO TO SECTION H]
99. (Refused) [GO TO SECTION I]

E3. Have you received a trade ally bonus on any of the applications that you've submitted?

1. (Yes) **[GO TO SECTION F]**
2. (No) **[GO TO SECTION G]**

98. (Don't know) [GO TO SECTION G]
99. (Refused) [GO TO SECTION I]

F. Bonus Recipients

F1. **[IF C6 < 2 YEARS OR TA WORKS WITH THE AG PROGRAM]** Did the trade ally bonus have an influence on your company becoming a registered Focus on Energy trade ally?

F2. Of the Focus on Energy projects that you've worked on in 2024, on what percentage have you received a trade ally bonus?

F3. How, if at all, has the trade ally bonus impacted your approach to assisting customers with required program paperwork?

1. **[IF NOT DISCUSSED UNPROMPTED]** Has the trade ally bonus made it worth your time to assist customers with project applications?
    - **[IF NOT]** What would it take to make it worth your time?

F4. How, if at all, has the trade ally bonus impacted the likelihood that you will recommend measures that qualify for Focus on Energy incentives?

1. How, if at all, has the trade ally bonus impacted your business?

F5. Please describe, from your perspective, the process required for you to receive the trade ally bonus for a given project:

F6. Considering the requirements for you to receive the trade ally bonus, what about that system works well?

1. What could be improved?

F7. What, if anything, could be done to influence you to complete more project applications on behalf of your customers?

F8. How, if at all, has the trade ally bonus influenced your opinion of the Focus on Energy program?

1. Influenced it positively
2. Unchanged
3. Influenced it negatively

G. Aware Non-Participants

G1. [IF A REGISTERED TA AND C6 < 2 YEARS OR TA WORKS WITH THE AG PROGRAM] Did the trade ally bonus have an influence on your company becoming a registered Focus on Energy trade ally?

G2. Why haven't you received a trade ally bonus?

G3. What challenges or concerns, if any, do you have related to the requirements necessary for you to receive the trade ally bonus?

G4. Do you find the dollar amount of the trade ally bonus compelling?

1. Why or why not?
2. What would it take to make it worth your time?

G5. What, if anything, could be done to influence you to complete more project applications on behalf of your customers?

H. No Awareness

The Trade Ally Bonus is available to registered Trade Allies who complete and submit application paperwork on behalf of their customers. The bonus is paid directly to Trade Allies and is intended to offset the effort needed to compile and submit an incentive application. There are different bonus structures for prescriptive and custom applications:

- **The prescriptive bonus is calculated based off of the total prescriptive incentive amount installed by the Trade Ally: the greater of $30 or 15% of total incentive. There is no cap for prescriptive incentives.**
- **The custom bonus is calculated based off of total custom incentive amount installed by the Trade Ally: the TA bonus is 10% of the total custom incentive up to $10,000.**

H1. Considering this information, how, if at all, would earning this type of a bonus change your approach to helping customers complete the required program paperwork?

H2. **[IF TA IS NOT A REGISTERED TA]** Were you previously aware of the option to become a registered Focus on Energy trade ally and the benefits associated with it?

[IF NEEDED] In addition to receiving trade ally bonuses, registered trade allies are eligible: 1) To receive incentives on their customers' behalf; 2) to be reimbursed for co-branded marketing materials; 3) to participate in Focus on Energy training opportunities; 4) to receive dedicated support and technical assistance; and 5) to be listed on the Focus on Energy website.

H3. **[IF TA IS NOT A REGISTERED TA]** Will this information about the TA bonus influence your company to look into becoming a registered Focus on Energy trade ally? [If not, why not?]

H4. How, if at all, might the trade ally bonus impact the likelihood that you will recommend measures that qualify for Focus on Energy incentives?

H5. What, if anything, could be done to influence you to complete more project applications on behalf of your customers?

I. Closing

I1. How, if at all, have the Focus on Energy programs impacted your business?

I2. Those are all the questions that we have for today! *Do you have any other comments about your experience with Focus on Energy that you would like to share?

Thank you for your time today, we appreciate your help with this interview. As previously mentioned, we will be sending you a $100 gift card as a thank you for your participation in this effort. Gift cards are distributed through a service called "Tango Card". You will receive an electronic gift card via email, that you can redeem at various online retailers, or you also have the option to have a physical gift card mailed to you. Can you please provide me with the email address where you would like to have that gift card directed?

Desired Email Address:

Thank you again. Gift cards will be sent within two weeks. I will send you a personal email directly once the gift cards are processed; feel free to contact me if you have any difficulties accessing or utilizing the gift card.

CADMUS

Focus on Energy Nonresidential Programs CY 2024
Energy Advisor Interview Guide

This document serves as the interview guide for the Cadmus and Apex team's (the evaluation team) forthcoming interviews with Energy Advisors (EAs) representing Focus on Energy's Non-Residential Programs. The primary goals of these interviews are to understand challenges with current applications/application process, understand program successes and challenges, and understand time demands and limitations of EAs. We will also seek to gain foundational knowledge to be used in the development of research instruments for forthcoming participant surveys, trade ally interviews, and nonparticipant interviews [Large Industrial only], as well as research into the potential adoption of a midstream lighting program.

The interviews are meant to be conversational in nature: while there are specific topics and questions we will ensure are covered in each interview, we will also allow space for EAs to identify and discuss topics that they feel are most critical to our understanding of their experiences, and anything that might be beneficial to our forthcoming research efforts. The interview guide is comprised of several batteries of questions that will be asked of advisors of each of the four programs, along with select questions specifically tailored to each individual program. The research topic areas and corresponding interview sections are presented below in Table 1.

Table 1. Research Topic Map

Topic Areas	Corresponding Section
• Understand program processes.	**B**
• Understand customer outreach processes and associated responsibilities of EAs.	**C**
• Understand EAs' challenges with current application processes/workbook tools. • Compare project/application requirements for nonresidential lighting and identify opportunities to simplify or streamline the Focus on Energy application materials.	**D**
• Understand the benefits and challenges of moving to a midstream program structure for nonresidential lighting.	**E**
• Understand program changes, success, and challenges.	**F**
• Understand how EAs interact and coordinate with trade allies	**G**
• Explore participation barriers for large industrial large energy users	**H**
• Assess benefits of program participation beyond energy and cost savings	**I**

In the event that interviews run long and there isn't sufficient time to ask each question, we will prioritize certain questions to ensure they are asked in each interview. Priority questions are represented below using green text.

A. Research Parameters

- **Target completes: 10 total**
  - **B&I: 3 interviews total**
    - 1 Commercial team EA
    - 1 Industrial team EA
    - 1 TA team EA
  - **Large Industrial: 3 interviews total**
    - 3 Large Industrial EAs
  - **S&G: 2-3 interviews total**
    - At least 1 large metro EA (Milwaukee/Madison)
    - At least 1 non-large metro EA (Not Milwaukee-Madison)
  - **AG: 1-2 interviews total**
    - 1-2 Agribusiness EAs
- **Incentives:** NA
- **Interview medium:** Phone

B. Overview of Program Approaches to Energy Advisors

(for Evaluation Team reference)

EA Team structures:

- B&I:
  - Commercial team
  - Industrial team
  - Trade ally team (outreach manager + 5 EAs)
- Large Industrial: 10 EAs total
  - Customer team
  - Tech review team
- S&G: 9 EAs total + Project coordination team
  - 1 EA each for large metro areas (Milwaukee & Madison)
  - 6 EAs for rest of the state
  - 1 EA for municipal wastewater facilities
  - Project coordination team
- AG: 3 EAs total + Project coordination team
  - Customer + TA team
  - Project coordination team

Business & Industry

The Business & Industry Program utilizes two teams of customer facing EAs and Engineers (one commercial one industrial), and one team of EAs for trade allies.

Customer Facing EA Responsibilities

Customers with a statewide footprint are assigned to a single EA; otherwise EAs are assigned to territories geographically, with each EA responsible for each commercial or industrial customer within their territory. Customer facing EAs are primarily focused on:

- Cultivating customer relationships,
- Gathering insights related to project pipelines, and
- Working with customers throughout the project process.

In 2024 the program is placing added emphasis on field work and customer site visits. The program is tracking all site visits to better understand how often customers are engaged, and how often those engagements are converted into projects.

Trade Ally EA Responsibilities

The trade ally EA team is comprised of one outreach manager, and five EAs. EAs are assigned to territories geographically, and each EA manages anywhere from 100-200 accounts. These EAs are primarily focused on:

- Outreach visits,
- Educating TAs how to use the program, including which measures they qualify for, and
- Helping new Tas through the application process until they can do it on their own.

Known Difficulties

- Getting customers to the right EA can be difficult:
  - "We can't always say 'here are the 25 people we have working on this'".
- Often times our EAs don't have time/resources to do proactive outreach.

New Approaches

- Inside sales EA focused more on:
  - prospecting customers,
  - researching trends/activity in different areas,
  - and cross-coordination between teams.
- **Role has only been active for about a month - still seeing how this works in practice.**

Desired Program Changes

- Improved coordination with utilities.
  - A few utilities provide customer lists and alignment lists.
  - Stated desire to emphasize the utility customer lists more and make them more consistent across utilities.
  - The way the database is currently set up doesn't always provide insight into customers.

Large Industrial

The Large Industrial Program utilizes a single team of customer facing EAs, who are supported by a 3-person technical review team that assists with paperwork. Trade ally management and engagement is not a priority of the Large Industrial program; rather, the program focuses primarily on cultivating relationships with customers. The program classifies eligible customers based on the quality of contact information available, and whether the customer is an active program participant or not. Energy Advisors reach out to customers at least 3 times per year, and identify those customers with insufficient or incorrect contact information.

EA Responsibilities

The primary roles of Large Industrial EAs are to:

1. Raise program awareness, and
2. Make participation as hassle free as possible for customers.

Known Difficulties

- Most business customers, especially industrial, are short staffed.
- Compared to other non-residential programs, Large Industrial EAs spend comparatively more time completing required paperwork for applicants.
  - Large Industrial customers don't have the time or the expertise to calculate the savings as required for many projects.
- The program has a separate prescriptive application processing team, however when things are missing from applications they must involve the EA to capture the required information from the customer.

Desired Program Changes

- Less time spent on application paperwork.
  - "We have a hybrid approach to application support – part of Paul's tech review team does paperwork, but they're only 3 people."
  - "We try to push our EAs to hand off the paperwork. It's been 30% as effective as I'd like it, and I don't know if can get any better just based on resource constraints."

Agribusiness

The Agribusiness Program uses one team of three EAs who divide the state geographically and collectively cover the entire state. The majority of EA outreach is directed at trade allies, but there are also key customers with large farms who receive quarterly outreach. Agribusiness EAs are supported by a small team of project coordinators who assist with application completion and processing.

EA Responsibilities

The primary function of Agribusiness EAs is TA coordination; however, Agribusiness customers are very dependent on EAs for application assistance.

Known Difficulties

Agribusiness customers are typically not well versed in electronic communication – an issue that is compounded by the large geographic territory assigned to each EA. Furthermore, AG customers are generally smaller, and complete smaller projects, resulting in a large number of small applications for EAs to assist with.

Desired Program Changes

- EAs to be consulted earlier in project processes.
  - "While we have done a lot of work to help that process, including the planning bonus and 1-2-3 audits, there are still customers that don't utilize those and don't integrate EE early enough, so they miss opportunities."
- Better integrating sales teams and having EAs coach trade allies to sell the program, or identify how to upsell more efficient equipment.

Schools & Government

The S&G Program utilizes 8 EAs throughout the state with varying territory sizes: the EAs for Madison and Milwaukee have comparatively smaller territories than the other EAs given the increased population density of those locations. The program utilizes a managed customer list that dictates the level and frequency of customer engagement. The program also utilizes a team of project coordinators who possess technical knowledge and assist with customer outreach and the development of project applications.

EA Responsibilities

- Cultivating customer relationships,
- Gathering insights related to project pipelines, and
- Working with customers throughout the project process.

Known Difficulties

While we have done a lot of work to help integrate EAs into project processes early, including the planning bonus and 1-2-3 audits, there are still customers that don't utilize those tools and don't integrate EE early enough, so they miss opportunities.

Desired Program Changes

- EAs to be consulted earlier in the process.
- Better integrating sales teams and having EAs coach trade allies to sell the program, or identify how to upsell more efficient equipment.

C. Introduction (5 minutes)

Thanks for taking the time to speak with us today. We are familiar with the program and would like to focus our time understanding your experiences within the program and specifically these topics:

C1. Your Challenges with the application process and workbook tools required for some measures;

C2. Your experience of program successes and challenges;

C3. Your time demands and limitations.

C4. Please know that this interview is in no way an assessment of you, or the way that you perform your job. Any findings from these interviews will be summarized and reported in aggregate, and any information that might identify you personally will be withheld from our reports. With that, we invite you to speak candidly about your experiences, good or bad.

C5. Do you have any questions before we begin?

C6. We would like to take an audio recording of this conversation for our own internal note taking purposes. These recordings will not be shared with anyone outside of our internal evaluation teams.

C7. Do we have your permission to record this call?

C8. To begin, can you please provide us with a brief overview of your role within the program, including your primary function or responsibilities:

1. As a percentage of time in a given week, how much time, on average, do you spend on each responsibility?

C9. From your perspective what is the greatest value that the EAs bring to the program?

D. Program Process (5 minutes)

[Ask as necessary, depending on response to question A1] Next, we'd like to understand your roles and responsibilities with regards to program processes.

D1. At a high level, please walk us through your involvement in a typical project, beginning with customer outreach and a customer's initial intake into the program, through project scoping, the application and required paperwork, all the way through incentive distribution. Once we've established the general timeline, we'll dig into each aspect a bit deeper:

1. Customer outreach/intake:
2. Project scoping:
3. Application review/processing:
4. Incentive processing/delivery:
5. Anything else:

E. Customer Management & Outreach (10 minutes)

Thinking now about customer classifications and the [PROGRAM] program's customer outreach approach: [DON'T read to TA facing B&I EAs]:

[Present overview of program outreach strategy as necessary, depending on the response provided in B1]

[BUSINESS & INDUSTRY] We understand that the Business & Industry Program utilizes two teams of customer facing EAs and Engineers (one commercial one industrial), and one team of EAs for trade allies. Customer facing EAs divide the state based on populations served and corresponding utility footprints, with the exception being customers with a statewide footprint who are assigned a single energy advisor. Customers with high levels of engagement, utility key accounts, or accounts associated with specific market initiatives receive a managed account approach, while non managed accounts may be contacted if they are past participants within a targeted market segment, or as part of contingency planning.

[LARGE INDUSTRIAL] We understand you classify eligible customers based on quality of contact information and whether they are active program participants or not. EA's reach out to each customer at least 3 times per year and also work to identify those with incorrect or insufficient contact information.

[AGRIBUSINESS] We understand that the majority of program outreach is directed at trade allies, but there are also key customers with large farms who receive quarterly outreach. Additionally, we've learned that, while the primary function of Agribusiness EAs is TA coordination, Agribusiness customers are very dependent on EAs for application assistance.

[SCHOOLS & GOVERNMENT] We understand that EAs are assigned for the Schools and Government program by geographic region, with one additional energy advisor who specifically focuses on large wastewater customers across the state. Each advisor conducts quarterly outreach to managed customers, which are typically larger customers, while un-managed customers receive general marketing but are otherwise only engaged with as projects come up.

E1. **[DON'T ask TA facing B&I EAs]** At a high level, how has this customer outreach approach been working for the program?
   1. What do you see as the strengths of this approach?
   2. What are the main challenges or drawbacks?
   3. How, if at all, could this customer outreach strategy be improved?
   4. Strictly thinking from a time perspective, is there any part of this process that could be changed that might result in you dedicating less of your time to these efforts?

E2. **[ONLY ask TA facing B&I EAs]** We understand your primary role is to coordinate with trade allies, but is there any part of your job that requires coordination or engagement directly with customers? If so, when? Why?
   1. Is there anything about those engagements that can be improved?

F. Trade Allies (10 minutes)

Next, we'd like to understand more about your experiences working with or coordinating with trade allies.

[Start customer facing B&I EAs at question F7]

[DON'T ask customer facing B&I EAs questions F1-F5]

[DON'T read to customer facing B&I EAs]:

Beginning with the [PROGRAM] program's general approach to trade ally management:

[BUSINESS AND INDUSTRY] We understand that the B&I trade ally EA team is comprised of one outreach manager, and five EAs. EAs are assigned to territories geographically, and each EA manages anywhere from 100-200 accounts, with the primary focus being outreach visits, educating Tas how to use the program, and helping new Tas through the application process until they can do it on their own. Beyond that, we understand that the Program utilizes a ranking criterion for trade allies based on savings and application quantity, which dictates the timing and frequency of outreach that is conducted. Beyond that, the program is providing trade ally performance summaries, and there is a greater emphasis on face to face engagement in 2024.

[LARGE INDUSTRIAL] We understand that the Program utilizes a ranking criterion for trade allies based on savings and application quantity, which dictates the timing and frequency of outreach that is conducted.

[AGRIBUSINESS] We understand that the Program utilizes a ranking criterion for trade allies based on savings and application quantity, which dictates the timing and frequency of outreach that is conducted. From there, the team manages Trade Allies to promote the program as an Energy Advisor would in the field, ensuring they have tear-off pads of applications, are equipped with information on all Focus offerings, and a direct connection to their Energy Advisor to ask questions.

[SCHOOLS AND GOVERNMENT] We understand that the Program utilizes a ranking criterion for trade allies based on savings and application quantity, which dictates the timing and frequency of outreach that is conducted. Beyond that, the School and Government Team will coordinate with other business solutions to manage TAs by assigning appropriate TAs to each team managing their market, and utilizing a consistent rating system and tracking metric to evaluate TAs across solutions

F1. Is there anything else related to the program's approach to TA management that we didn't mention? If so, what?

F2. At a high level, how has this Trade Ally management approach been working for the program?
   1. What do you see as the strengths of this approach?
   2. What are the main challenges or drawbacks?
   3. How, if at all, could this strategy be improved?

4. Strictly thinking from a time perspective, is there any part of this process that could be changed that might result in you dedicating less of your time to these efforts?

Turning now to trade ally identification and recruitment:

[BUSINESS & INDUSTRY] We understand that the program is contacting participating, nonregistered Trade Allies and encouraging them to register with the Program, while also increasing the quantity of in-person engagement activities, including attending Trade Shows and industry or manufacturer-sponsored events, and in-person kickoff meetings, whenever possible.

[LARGE INDUSTRIAL] We understand that the Program does not actively recruit TAs, as most customers have existing relationships with preferred vendors as well as specialized industry specific vendors. However, the Program is implementing TA and Service Provider outreach efforts in 2024, primarily targeted at Service Providers that are not registered Trade Allies but have historically been listed as the Service Provider on major savings projects.

[AGRIBUSINESS] We understand that the program reviews top participating non-registered providers quarterly to recruit them to become registered, and also reviews registered TA participation quarterly to identify any TAs who have significantly reduced participation or savings delivery to ensure any issues are addressed.

[SCHOOLS AND GOVERNMENT] We understand that the program reviews top participating non-registered providers, quarterly to recruit them to become registered providers, and reviews registered TA participation quarterly to identify any TAs who have significantly reduced participation or savings delivery to ensure any issues are addressed. Beyond that, there are efforts to encourage TA registration at trade shows utilizing the TA Benefits Flyer.

F3. Is there anything else related to the program's approach to trade ally outreach that we didn't mention? If so, what?

F4. At a high level, how has this Trade Ally outreach approach been working for the program?
   1. What do you see as the strengths of this approach?
   2. What are the main challenges or drawbacks?
   3. How, if at all, could this strategy be improved?
   4. Strictly thinking from a time perspective, is there any part of this process that could be changed that might result in you dedicating less of your time to these efforts?

F5. Beyond what we've just discussed, can you please provide an overview of other instances when you might be in contact with a trade ally?

F6. **[PROBE AS NECESSARY]**

1. What do these interactions typically entail?
    - **[PROBES: equipment eligibility, application assistance, customer engagement/coordination, something else.]**

2. Are there types of projects/measures/customers that require more coordination with trade allies? If so, which ones?
3. What works well about this coordination?
4. What, if anything, could be improved?

F7. **[ONLY ask customer facing B&I EAs]** We understand your primary role is to coordinate with customers, but is there any part of your job that requires coordination or engagement directly with Trade Allies? If so, when? Why?

1. Is there anything about those engagements that can be improved?

F8. As a percentage of the total number of projects you work on in a given year, how often do projects require you to coordinate directly with trade allies?

1. Strictly thinking from a time perspective, is there any part of this process that could be changed that might result in you dedicating less of your time to these efforts?

F9. Thinking now about the program's trade ally bonuses: have you observed any improvements in program processes/experiences since these were implemented?

1. What, if anything, could be improved about the bonuses, how they're utilized, or how they're communicated?

G. Coordination Between EA's (5 minutes)

Next, we'd like to understand more about how energy advisors coordinate within and across programs.

G1. Can you please provide an overview of any instances when you might be in contact with other **[PROGRAM]** energy advisors?

G2. **[PROBE AS NECESSARY]**

1. What do these interactions typically entail?
    - **[PROBES: equipment eligibility, application assistance, customer engagement/coordination, something else.]**
2. Are there types of projects/measures/customers that require more coordination with **[PROGRAM]** energy advisors?? If so, which ones?
3. What works well about this coordination?
4. What, if anything, could be improved?

G3. Can you please provide an overview of any instances when you might be in contact with energy advisors from other Focus on Energy non-residential programs?

G4. **[PROBE AS NECESSARY]**

1. What do these interactions typically entail?
    - **[PROBES: equipment eligibility, application assistance, customer engagement/coordination, something else.]**
2. Are there types of projects/measures/customers that require more coordination with energy advisors from other Focus on Energy non-residential programs?? If so, which ones?
3. What works well about this coordination?
4. What, if anything, could be improved?

H. Application Process (10 minutes)

These next questions are about your role helping customers and trade allies' complete applications. In answering please note any distinctions about lighting projects in particular.

H1. At a high level, what is your role with regards to the application process?

H2. Typically, what percentage of project applications are:
1. Mostly/completely completed by EA's?
2. Mostly/completely completed by Trade allies/contractors?
3. Mostly/completely completed by the customer?
4. Something else?

H3. Are there certain **types of projects, measures, or customers** that typically require ***more*** assistance from EA's? If so, which ones?
1. What is it about these projects/measures/customers that necessitate ***greater*** Energy Advisor involvement?

H4. **[IF NOT MENTIONED]** We're particularly interested in learning more about the application process for some of the more complex lighting projects, specifically those that require the CLS workbook, the horticultural lighting workbook, or include lighting power density calculations.

H5. What is it about these projects/measures/customers that necessitate greater Energy Advisor involvement?
1. What, if anything, do you think can be done to improve these processes?
2. Is there any information required by these workbooks that frequently creates a challenge?
3. Is there any information required by these workbooks that is not crucial to savings calculations?

H6. Are there certain **aspects of the basic application form** that typically require more assistance from EA's? If so, which ones? Why? How about other supporting documents?

H7. Conversely, are there certain **types of projects, measures, or customers** that typically require ***less*** assistance from EA's? If so, which ones?
1. What is it about these projects/measures/customers that necessitate ***less*** Energy Advisor involvement?

   What about the application/paperwork process works well in these instances?

H8. Are there any other factors that influence how much involvement is required from EA's on a project application that we haven't discussed yet?

H9. As a percentage of your total workload, how much time do you typically spend assisting customers with project paperwork?

1. What suggestions do you have that could reduce the amount of time you spend helping customers with paperwork?
2. If you could reduce the time spent on paperwork, how could you use that extra time?

H10. Regarding everything we just discussed about the application process, has any of this changed relative to previous years? If so, how? Why?

I. Midstream Lighting (5 minutes)

Now thinking about lighting projects, another part of our research will be to understand the potential benefits and challenges of moving to a midstream program structure for non-residential lighting measures. In this model, qualified measures would receive an instant discount at the distributor level that would be passed on to the customer.

I1. What do you think the primary benefits of a midstream approach would be?
   1. For customers?
   2. For trade allies?
   3. With regards to your responsibilities and time demands?

I2. What do you think would be the primary challenges that a midstream model would present to the program?
   1. For customers?
   2. For trade allies?
   3. With regards to your responsibilities and time demands?

I3. What types of lighting measures that **[PROGRAM]** customers implement would fit best into a midstream model?

I4. What types of lighting measures that **[PROGRAM]** customers implement would not fit well into a midstream model?

I5. At a high level, how do you think a move for some lighting measures to a midstream model would be received:
   1. By **[PROGRAM]** customers?
   2. By **[PROGRAM]** trade allies?
   3. By **[PROGRAM]** EA's?

J. Large Industrial Non-Participants [Large Industrial EAs only] (5 minutes)

Our research this year will also include interviews with large industrial customers who are classified as large-energy users, who have limited or no historical participation in a Focus on Energy Program.

(Definition of Large Energy User from the Focus statute https://docs.legis.wisconsin.gov/document/statutes/196.374(1)(em))

J1. What percentage of the customers that are assigned to you fit that description (large energy user with little/no historical participation)?
   1. Among those customers, what percentage would you say have poor contact information, or are generally considered hard to reach?

J2. From your perspective, what is most likely to prevent a large energy using customer from engaging with the program? **[PROBES: corporate/ownership structure, business type/industry, location, awareness, something else?]**

J3. I understand the Large Industrial program added an Annual Planning Incentive in 2023 to either identify large and cost-effective projects or to diversify the scope of large projects, and also added an Industrial Staffing Grant to help customers complete large projects that are stalled due to a lack of funding.
   1. As an EA, how are you involved in delivering this effort?
   2. How has it impacted your role within the program more broadly?
   3. How successful has this effort been? What is working well?
   4. How, if at all, could this effort be improved?
   5. Are there any other strategies that have been tried but have not been successful?

J4. Are there any other changes that could be made to the program that might help attract these customers?
   1. Any measures that could be added to the program?
   2. Changes to program processes or requirements?
   3. Changes to the customer management or outreach strategies?
   4. Any other strategies that you have considered related to engaging with non-participating large energy users?

K. Non-Energy Benefits (5 minutes)

We will be administering surveys to program participants to understand the benefits of program participation *beyond* energy and cost savings.

K1. From your perspective, what are some of the non-energy related benefits that participants realize through program participation *beyond* energy and energy cost savings? **[If examples are needed: Improved Comfort, Enhanced Indoor Air Quality, Production Improvements, Reduced Maintenance, Regulatory Compliance and Reputation, Health Benefits…]**

1. Are there any specific customers or project types that you feel are especially representative of those benefits?

L. Wrap Up

L1. If you could change one thing about the way you are utilized, or your roles and responsibilities, what would it be? Why?

L2. What advice would you give someone starting out as an Energy Advisor for the **[PROGRAM]** program?

L3. Those are all the questions that we have for today! Is there anything else related to your experience with the **[PROGRAM]** program that you think would be beneficial to our understanding or to our future research?

CADMUS

Focus on Energy Nonresidential Programs CY 2024
Non-Energy Benefits Survey

This document presents a survey instrument for the Cadmus and Apex team's (the evaluation team) forthcoming surveys with participants of Focus on Energy's Non-Residential Programs. The primary goal of these surveys is to assess benefits of program participation beyond energy and cost savings. Following the survey guide, we have included an in-depth interview guide to gather more detailed data from participants about their experience with Focus on Energy and the energy efficiency improvements they made, and any non-energy benefits they experienced.

The surveys are intended to be both open-ended and succinct: we want to allow respondents to describe the realized non-energy benefits or their participation in their own words without making the survey feel like a burden. The primary objective of this survey is to provide additional context and detail to the importance of Focus on Energy.

A. Data Collection Activity Parameters

- **Target completes:**
  - 70 survey respondents; 10 interview respondents
  - Sampling to be conducted upon receipt of updated August tracking data
- **Incentives:**
  - $25/complete for survey respondents; $75/complete for interview respondents
  - $2,588 total
- **Survey medium:**
  - Mixed-mode web/phone
- **Interview medium:**
  - Phone
- **Recruitment medium:**
  - Email/Phone
- **Recruitment approach:**
  1. Attempt recruitment via email to all sample participants with viable email addresses
  2. Send secondary recruitment email 1 week after initial recruitment
  3. Conduct phone recruitment as necessary to supplement and satisfy quotas

- **SAMPLE Variables:**
  - **[CONTACT NAME]**
  - **[SITE ADDRESS]**
  - **[MEASURE CATEGORY1]**
  - **[MEASURE CATEGORY2]**
  - **[MEASURE CATEGORY3]**
  - **[MEASURE CATEGORY1_QUANTITY]**
  - **[MEASURE CATEGORY2_QUANTITY]**
  - **[MEASURE CATEGORY3_QUANTITY]**
  - **[SERVICE]:** Logical operator equal to **TRUE** if the measure category represents a service provided rather than a measure received.
  - **[ONLY_SERVICE]:** Logical operator equal to **TRUE** if the customer only received **[SERVICE]** measures.

B. Email Recruitment Script

Initial Recruitment Email

Dear ${m://FirstName} ${m://LastName},

Focus on Energy invites you to participate in a feedback survey about your company's experience with its programs. Your input will help Focus on Energy strengthen its programs and ensure they are meeting the needs of customers like you. The survey should take 10 to 15 minutes to complete. As a thank you for your time, we are offering a $25 e-gift card to use at an online retailer of your choice. To start, please click the link below to open our survey.

Your participation is critical to building strong Focus on Energy programs!

Follow this link to the Survey:

${l://SurveyLink?d=Take the Survey}

Or copy and paste the URL below into your internet browser:

${l://SurveyURL}

If you have any questions about this research or any difficulties taking the survey, please contact Jamie Lynch at the St. Norbert College Strategic Research Institute at 920-403-3088 or jamie.lynch@snc.edu.

If you have any questions about the validity of this email or the survey, please contact Mitch Horrie at Public Service Commission of Wisconsin at 608-267-3206 or mitch.horrie@wisconsin.gov.

We greatly appreciate your time and feedback in completing this survey.

Thank you very much!

Follow-Up Recruitment Email

Dear ${m://FirstName} ${m://LastName},

You may have seen an email from us last week, but we wanted to reach out one more time to see if you'd be willing to share your experiences as a participant in the Focus on Energy programs.

Focus on Energy invites you to participate in a feedback survey about your company's recent participation in the **[PROGRAM]** program. Your input will help Focus on Energy strengthen its programs and ensure they are meeting the needs of customers like you. The survey should take 10 to 15 minutes to complete. As a thank you for your time, we are offering a $25 e-gift card to use at an online retailer of your choice. To start, please click the link below to open our survey.

Your participation is critical to building strong Focus on Energy programs!

Follow this link to the Survey:

${l://SurveyLink?d=Take the Survey}

Or copy and paste the URL below into your internet browser:

${l://SurveyURL}

If you have any questions about this research or any difficulties taking the survey, please contact Jamie Lynch at the St. Norbert College Strategic Research Institute at 920-403-3088 or jamie.lynch@snc.edu.

If you have any questions about the validity of this email or the survey, please contact Mitch Horrie at Public Service Commission of Wisconsin at 608-267-3206 or mitch.horrie@wisconsin.gov.

We greatly appreciate your time and feedback in completing this survey.

Thank you very much!

C. Web Survey Introduction

Thank you for responding to this survey on behalf of Focus on Energy about energy efficient equipment upgrades and decision-making. To start, please click "Next" below to begin the survey. The survey will take 10 to 15 minutes to complete. If you are responding on a mobile device, you may be able to use the voice-to-text feature on your keyboard  to provide spoken, rather than written, responses to open-ended questions.

If you have any questions about this research or any difficulties taking the survey, please contact Jamie Lynch at the St. Norbert College Strategic Research Institute. You can reach him at 920-403-3088 or jamie.lynch@snc.edu. If you have any questions about the validity of this survey, please contact Mitch Horrie at Public Service Commission of Wisconsin at 608-267-3206 or mitch.horrie@wisconsin.gov.

As a thank you for your time completing this survey, we are offering a $25 e-gift card. Please confirm your email address at the end of the survey so that we can send you the e-gift card

(sent on Friday) to use at an online retailer of your choice.

Please click "Next" below to begin the survey.

D. Phone Introduction

D1. Hello, my name is **[NAME]** and I am calling on behalf of Focus on Energy. Focus on Energy would like to learn more about your recent energy efficiency project experience for the property at **[SITE ADDRESS]**.

[IF NO CONTACT NAME, OR CONTACT NO LONGER WORKS FOR ORG]: May I please speak with someone who was involved with the energy efficiency project your company recently completed with Focus on Energy?

[IF CONTACT NAME PROVIDED]: May I please speak with **[CONTACT NAME]**?

1. (Yes)
2. (Yes, call transferred) [START OVER WITH NEW RESPONDENT]
3. (No, not available) **[SCHEDULE CALLBACK]**

98. (DON'T KNOW) [ASK TO SPEAK WITH SOMEONE WHO WOULD KNOW AND START AGAIN]
99. (REFUSED) [THANK AND TERMINATE]

Back-up information, not to be programmed:

[If "No – Not available," ask if Respondent would like to arrange a more convenient time for us to call them back or if you can leave a message for that person.]

[IF RESPONDENT ASKS HOW LONG, SAY: "APPROXIMATELY 10-15 MINUTES."]

[IF NEEDED:] This survey is for research purposes only and this is not a marketing call. Your participation in this study is important so that Focus on Energy can improve its energy efficiency programs for businesses and other organizations.

[**Only if asked** for a Focus on Energy contact to verify the survey authenticity, offer Mitch Horrie with the Public Service Commission of Wisconsin, 608.267.3206]

[**Only if respondent says they already did a survey:** Thank you for your responses to that survey. This is another Focus on Energy study that you have been selected for, that asks a few more questions about your experience with the offering and your decision-making. If you have a few more spare minutes, we would greatly appreciate your responses!]

D2. We'd like to ask you to participate in a brief survey about your recent energy efficiency project experience for the property at **[SITE ADDRESS].** We expect this survey to take roughly 10-15 minutes. As a thank you for your time, we'd like to offer you a $25 electronic gift card. Are you able to assist us with this research?

1. Yes [Go to section D]
2. Not right now [Schedule call back]
3. Refuse [Thank and terminate]

E. Participant Background

E1. *[IF ONLY_SERVICE=FALSE] Our records show that you installed energy efficient equipment or upgrades including a [MEASURE CATEGORY1][s], [MEASURE CATEGORY2][s], and [MEASURE CATEGORY3][s] at [SITE ADDRESS] and received an incentive from Focus on Energy for this project in [YEAR].

[IF ONLY_SERVICE=TRUE] Our records show that you received services to improve your facilities energy efficiency including [MEASURE CATEGORY1][s], [MEASURE CATEGORY2][s], and [MEASURE CATEGORY3][s] at [SITE ADDRESS] and received an incentive from Focus on Energy for this project in [YEAR].

1. (Yes)
2. (No, wrong year) [RECORD CORRECT YEAR, IF POSSIBLE]
3. (No, wrong address) [RECORD CORRECT ADDRESS]
4. (No, wrong measure) **[CORRECT BELOW]**
    - (MEASURE CATEGORY1 IS INCORRECT [Correct:_____]) **[CALL THIS VARIABLE C_MEASURE1]**
    - (MEASURE CATEGORY2 IS INCORRECT [Correct:_____]) **[CALL THIS VARIABLE C_MEASURE2]**
    - (MEASURE CATEGORY3 IS INCORRECT [Correct:_____]) [CALL THIS VARIABLE C_MEASURE3]
5. (No, I did not install any measures) **[THANK AND TERMINATE]**

98. (Don't know) [Is there someone we could speak with that would know this? Record name and contact information:_____]
99. (Refused) [THANK AND TERMINATE]

E2. How many locations does your organization operate in Wisconsin?

1. 1
2. 2
3. 3 to 5
4. 6 to 10
5. More than 10

98. Don't know
99. Refused

E3. How many people does your organization employ in Wisconsin (best guess)?

1. One to less than 10;
2. 10 to less than 20;
3. 20 to less than 50;

4. 50 to less than 100;
5. 100 to less than 1,000;
6. More than 1,000
98. Don't know
99. Refused

E4. **[IF Customer Type <> S&G]** How many locations does your organization operate outside of Wisconsin?

1. None
2. 1
3. 2
4. 3 to 5
5. 6 to 10
6. More than 10
98. Don't know
99. Refused

E5. **[IF Customer Type <> S&G AND E4 <> "None"]** How many people does your organization employ outside of Wisconsin (best guess)?

1. One to less than 10;
2. 10 to less than 20;
3. 20 to less than 50;
4. 50 to less than 100;
5. 100 to less than 1,000;
6. More than 1,000
98. Don't know
99. Refused

E6. What is your role within your organization?

1. **[OPEN ENDED]:**

F. Motivations

F1. What are the primary reasons that your organization considers and pursues energy efficiency projects like the one(s) you did with Focus on Energy? **[DO NOT READ LIST; ALLOW FOR MULTIPLE RESPONSES]**

1. (Energy cost savings)
2. (Environmental benefits, including energy/carbon reductions)
3. (Operational benefits, including reducing maintenance and/or improving performance of equipment/system(s)/production processes)
4. (Improving space for tenants/staff, including comfort, aesthetics, air quality and health benefits, etc.)
5. (Regulatory compliance)
6. (Resilience and/or energy security)
7. (To replace old (but still functioning) equipment)
8. (To replace broken equipment)
9. (Other **[SPECIFY_____])**

98. (Don't know)
99. (Refused)

F2. [If F1.F1.1 OR F1.F1.3 is selected] Why is it important for your organization to save on energy and operating costs? **[IF NEEDED:]** What would your organization do differently if you were not able to achieve those energy and operating cost savings?

1. **[OPEN-ENDED]**

F3. [If F1.2 is selected] Why are environmental impacts important for your organization?

1. **[OPEN-ENDED]**

F4. **[If F1.4 is selected]** Why is tenant or staff comfort important for your organization? [IF NEEDED:] Does it contribute to any other organizational goals?

1. **[OPEN-ENDED]**

F5. [If F1.5 is selected] What regulatory structures might energy efficiency projects help your organization comply with?

1. **[OPEN-ENDED]**

F6. [If F1.6 is selected] How might energy efficiency projects support your organization's energy resilience or security?

1. **[OPEN-ENDED]**

G. Organizational Goals

G1. Does your organization have specific goals related to sustainability or energy conservation?

1. Yes
2. No

98. (Don't know)
99. (Refused)

G2. **[IF G1=1]** In your own words, please describe your organization's sustainability or energy conservation goals:

1. [Open ended]:

98. (Don't know)
99. (Refused)

G3. **[IF G1=1]** Does your organization's sustainability/energy goals influence decision-making about capital projects? Would you say that they are:

1. Not at all influential
2. Not very influential
3. Somewhat influential
4. Very influential
5. Extremely influential

98. (Don't know)
99. (Refused)

G4. **[IF G3= 4, OR 5]** How do your organization's sustainability or energy conservation goals influence capital project decision-making?

1. [Open ended]:

98. (Don't know)
99. (Refused)

G5. Which stakeholder groups outside of your organization are vocally concerned about whether your organization meets its sustainability goals? **[DO NOT READ – SELECT ALL THAT APPLY]**

1. Investors
2. Current business clients/customers (for example, retailers selling a company's products)
3. Prospective business clients/customers
4. Current end-use customers
5. Prospective end-use customers
6. Current tenants
7. Prospective tenants
8. Citizens/constituents
9. Government leaders
10. Other, please specify: **[Open ended]:**

98.

G6. **[IF G1=1]** How helpful have each of the following elements of Focus on Energy's programs been in supporting your organization's efforts to achieve its sustainability/energy goals?

	2.Not at all helpful	3.Not very helpful	4.Somewhat helpful	5.Very helpful	6.Extremely helpful	98. Don't know/ Have not used
1. Support from Focus on Energy Advisors						
2. Support from contractors registered as Focus on Energy Trade Allies						
3. Other Focus on Energy support or resources						
4. Focus on Energy support and resources, overall						

G7. **[IF G6.1=1 OR 2]** How, if at all, could the Energy Advisor better work with your business to support your energy savings or carbon reduction goals?

1. **[Open ended]:**
98. (Don't know)
99. (Refused)

G8. **[IF G6.1=4 OR 5]** What did the Energy Advisor do to help your business achieve your energy savings or carbon reduction goals?

1. **[Open ended]:**
98. (Don't know)
99. (Refused)

G9. **[If G6.3=3, 4 OR 5]** What other Focus on Energy resources have helped your company achieve its sustainability goals?

1. **[Open ended]:**
2. (Don't know)
3. (Refused)

G10. **[If G6.4=3, 4 OR 5]** In what way(s) have support and resources from Focus on Energy, overall, helped your company achieve its sustainability goals?

1. **[Open ended]:**
2. (Don't know)
3. (Refused)

G11. Aside from the financial incentives, does knowing that a project meets Focus on Energy requirements and/or standards help when deciding whether to implement the project?

1. Yes
2. No

98. (Don't know)
99. (Refused)

G12. **[IF G11=1]** In what ways does a project meeting the Focus on Energy requirements and/or standards help when deciding whether to implement a project? **[DO NOT READ – SELECT ALL THAT APPLY]**

1. (Gives us confidence that the project will save money as proposed)
2. (Gives us confidence that the project will save energy as proposed)
3. (We know that Focus on Energy will be available for technical support)
4. (Gives us more confidence in the contractor/vendor/trade ally)
5. (Gives us confidence that the equipment used will be of sufficient quality)
6. (Something else) **[RECORD RESPONSE]:**

98. (Don't know)
98. (Refused)

H. Realized NEBs

Now we'd like to understand which, if any, benefits your organization has realized through participation in the Focus on Energy program and other energy efficiency projects.

H1. Earlier, we talked about your motivations for doing projects that received support from Focus on Energy. Now I'd like to know about any benefits you have experienced from those projects. As a result of your Focus on Energy projects, have you experienced: **[READ ENTIRE LIST]**

	Yes	No	DK	NA	Refused
1. **Improved experience for tenants and staff within your facilities, including comfort, safety, aesthetics, air quality, and health benefits**					
2. **Energy efficiency improvements or greenhouse gas reductions that contributed to conservation or environmental targets**					
3. **Improved performance of your equipment/system(s), including reduced downtime, maintenance, or other non-energy operating costs**					
4. **Easier compliance with regulatory requirements**					
5. **Improved energy resilience and/or energy security**					
6. **Increased stakeholder support, including customer loyalty**					

H2. In your own words, please describe the most important benefits your organization has experienced as a result of completing the energy efficiency improvements for which you received a Focus on Energy incentive?

1. **[Open ended]:**
2. Did not experience additional benefits

98. (Don't know)
99. (Refused)

I. Closing

I1. Those are all the questions that we have for today! *Do you have any other comments about your experience with Focus on Energy that you would like to share?
[RECORD RESPONSE:_____; 99 FOR DON'T KNOW, 88 FOR REFUSED]

I2. Thank you for your time today, we appreciate your help with this survey effort.

As previously mentioned, we will be sending you a $25 gift card as a thank you for your participation in this effort. Gift cards are distributed through a service called "Tango Card". You will receive an electronic gift card via email, that you can redeem at various online retailers, or you also have the option to have a physical gift card mailed to you.

Can you please confirm the email address where you would like to have that gift card directed?

1. Desired Email Address:

Thank you again. Gift cards will be sent out on Friday afternoon. We will send you a personal email directly once the gift cards are processed; feel free to contact us if you have any difficulties accessing or utilizing the gift card.

I3. Lastly, Focus on Energy may be interested in contacting you to learn more about your experience. Would you be open to participating in a brief interview to share more about your experience with Focus on Energy programs? If you participate in one of these 30 minute phone conversations, our research team would provide an additional gift card incentive of $75.
1. Yes
2. No
98. (Don't know)
99. (Refused)

I4. **[IF I3=1]** The contact information we have for you is: [NAME], at [PHONE] or [EMAIL]. If our team reaches out to schedule an interview, would you prefer that we email you at that address, call that number, or reach you a different way?
1. Email at address listed
2. Call at phone number listed
3. Prefer other contact method: **[Open ended]**

Thank you again for your time. Have a great day!

J. Follow-Up Interview Guide

Thank you for taking the time to share a little bit more about your experience with Focus on Energy's programs. We have reviewed your survey responses, and they were very helpful. There were just a few items we wanted to hear more about. This additional detail will help us get a better understanding of what was behind some of the survey responses we received.

Before we begin, I'll be taking notes as we talk. Would you mind if I also record our conversation?

First of all, please tell me a little bit about your experience with Focus on Energy.

J1. **[If respondent has done multiple projects:]** I understand your organization has done multiple projects with Focus over the past few years. Do you always work with Focus on Energy when you are doing a project that might impact your facility's energy use?
   a. **[If yes:]** What are the main reasons you keep working with Focus on Energy?
   b. **[If no:]** How do you decide whether to work with Focus on Energy on a given project?

J2. **[If respondent has done a single project:]** From our records, it looks like the project you did at [Address] in [Month] was the first time your organization had worked with Focus on Energy. What motivated you to work with Focus on Energy on that project?
   a. Do you anticipate you will work with Focus on Energy on additional projects in the future? Why or why not?

J3. **[If not addressed:]** From your perspective, what are the benefits of working with Focus on Energy for your organization?
   a. **[If not addressed, and survey responses indicate respondent worked with an EA:]** What has been valuable about your interactions with the Focus on Energy Advisor?
   b. **[If not addressed, and survey responses indicate respondent worked with a registered TA:]** I understand you worked with a contractor who is registered as a Focus on Energy Trade Ally. What value did they bring to the project?
   c. What benefits of working with Focus on Energy, if any, were unexpected?

J4. What challenges, if any, have you experienced working with Focus on Energy?
   a. How, if at all, could your Energy Advisor work with you more effectively?
   b. What additional types of support could Focus on Energy provide that would help your organization complete energy efficiency projects?

Next, I'd like to talk about your organization's approach to the types of energy efficiency projects that Focus on Energy supports.

J5. What are the reasons that your organization pursues those types of projects?
   a. To what extent do you proactively complete projects to reduce your facilities' energy consumption, as opposed to including efficiency as part of upgrades or equipment replacements you are doing for other reasons?
   b. Where do energy efficiency improvements fall in the range of factors your organization considers when you are deciding which projects to prioritize with your capital budget?

J6. What benefits has your organization experienced from the energy efficiency projects you have completed with Focus on Energy's support?
   a. **[If cost savings are cited:]** How have those cost savings impacted your business? **[If not addressed:]** Have those energy cost savings allowed your organization to expand or invest in your business in Wisconsin in ways that you wouldn't have done otherwise? **[If so:]** How have you used those cost savings?
   b. **[If needed:]** Beyond energy cost savings, what have been the benefits? **[If needed, probe on benefits to tenants/staff/customers (e.g. comfort, air quality, aesthetics), productivity benefits or reduced operating costs, reputation/image benefits, etc.]**

J7. **[If organization has sustainability goals:]** I understand your organization has goals related to environmental sustainability. How important are projects on which you have worked with Focus on Energy to your efforts to meet those goals?
   a. Why do you say that?
   b. What offerings or support that Focus on Energy provides has been important from the perspective of your sustainability goals?
   c. How could Focus on Energy better support your sustainability goals? **[If needed:]** For example, would it be valuable if the project information provided by Focus on Energy included an estimated carbon emission reduction?
   d. What, if anything, prevents the types of energy efficiency improvements that Focus on Energy supports from playing a bigger role in meeting your sustainability goals?

J8. **[If organization has sustainability goals:]** How, if at all, do you think the strategies you pursue to achieve your organization's sustainability goals would be different if support from Focus on Energy were not available?
   a. **[If organization has facilities in multiple states:]** Are there differences in the strategies your organization's Wisconsin facilities use to pursue sustainability goals, compared to facilities in other states? If so, what are they?
   b. **[If organization has facilities in multiple states:]** Are there differences in your success in advancing your organization's sustainability goals between your facilities in Wisconsin and your facilities in other states? If so, what has led to those differences?

J9. How, if at all, does support from Focus on Energy impact the likelihood that your organization will move forward with a project?
    a. **[If not addressed:]** Looking beyond the incentives and their impact on the project cost and ROI, does the information you receive from Focus on Energy Advisors or Trade Allies impact the likelihood that you will move forward with a project? Why or why not?
    b. Does knowing that a project meets Focus on Energy's program requirements and QA/QC standards make a difference? Why or why not?

J10. Thank you for your responses. Those are all the questions I have prepared. Is there anything we haven't discussed that you would like me to know about your experience with Focus on Energy and your approach to energy efficiency projects?

J11. Focus on Energy may be interested in referencing some of the feedback that you've shared in reports or other materials. With your permission, would you allow us to share your name and organization with Focus on Energy along with this feedback? If not, the feedback will be shared anonymously.

Thanks again, we really appreciate your time and the information. Like with the survey, we will send your gift card through the Tango Rewards service. Feel free to reach out to me if you have any questions.

CADMUS

Focus on Energy Nonresidential Programs CY 2024
Large Energy User Non-Participant Interview Guide

This document serves as the interview guide for the Cadmus and Apex team's (the evaluation team) forthcoming interviews with non-participating large energy using industrial customers of Focus on Energy's Large Industrial Program. The primary goal of these interviews is to explore participation barriers and identify opportunities to overcome them.

A. Interview Parameters

- **Target completes:** Up to 10
- **Incentives:** $200/complete - $2,000 total
- **Interview medium:** Phone
- **Interview length: 30 minutes**

B. Phone Recruitment

Hello, my name is **[NAME]** and I am calling from **[COMPANY]** on behalf of Wisconsin's Focus on Energy. I'm calling because Focus on Energy and your utility, **[UTILITY]**, want to improve their offerings for large companies like yours. As one of the largest energy customers in your area, your feedback would be very valuable.

B1. **[IF NO CONTACT NAME, OR CONTACT NO LONGER WORKS FOR ORG]:** May I please speak with the Engineering Manager or someone similar who would be familiar with your company's capital investment decision making process or how your company manages its building efficiency or energy usage?

[IF CONTACT NAME PROVIDED]: May I please speak with **[CONTACT NAME]**?

B2. **[IF REFUSE TO CONNECT TO ENGINEERING MANAGER OR OTHER HIGH-LEVEL STAFF:]** Would it be possible to speak with a facilities director?

B3. **[WHEN CONNECTED TO DESIRED CONTACT:]** Just to confirm, are you involved in making decisions about capital projects or managing your organization's building efficiency or energy usage?

1. (Yes)
2. (No) **[ASK TO SPEAK WITH SOMEONE INVOLVED IN CAPITAL PROJECT DECISION-MAKING AND START AGAIN]**

B4. We really appreciate your help with this research, and to thank you for your time, we're offering a $200 gift card if you complete a 30-minute discussion. Is this a good time?

1. (Yes)
2. (Yes, call transferred) [START OVER WITH NEW RESPONDENT]
3. (No, not available) **[SCHEDULE CALLBACK]**

98. (DON'T KNOW) **[ASK TO SPEAK WITH SOMEONE WHO WOULD KNOW AND START AGAIN]**
99. (REFUSED) **[THANK AND TERMINATE]**

[IF NOT AVAILABLE, SEEK TO SET AN APPOINTMENT]

C. Introduction

C1. Do you have any questions before we begin?

C2. We would like to take an audio recording of this conversation for our own internal note taking purposes. These audio recordings will not be shared with anyone outside of our internal evaluation teams. Do we have your permission to record this call?

1. (Yes): [READ: Great, we will keep everything you tell us confidential – we won't report anything in a way that would identify individual respondents or companies] [START RECORDING]
2. (No): [READ: That's ok, we can proceed without the audio recording]

D. Background

D1. To begin, can you tell me a little bit about your company and your role there?

1. Where does your company have facilities? In Wisconsin? In the United States? Globally?
2. What types of work does your company do, broadly?
3. More specifically, what type of work happens at your facility/facilities in Wisconsin?
4. Approximately what percentage of operating costs would you estimate energy costs represent for your Wisconsin facilities?
5. How long have you been there?
6. What, if any, are your daily responsibilities?
7. What, if any, are your "bigger picture" responsibilities?

E. Barrier Identification

As we previously mentioned, Focus on Energy is trying to learn how they can better communicate with and assist customers who have not historically taken full advantage of their offerings related to energy efficiency and capital improvements: we'd like to start by asking some general questions about your awareness of those offerings.

E1. Before this call, were you aware of the Focus on Energy programs at all?

[Read IF E1= NO] Focus on Energy provides financial incentives for businesses across Wisconsin to improve the energy efficiency of their facilities, and directly supports large energy users with Energy Advisors who help customers to understand and leverage the Focus on Energy programs available to them.

E2. **[IF G1=Yes]** Overall, how familiar would you say that you are with the various incentives and services available through Focus on Energy? Please rate your familiarity using a 5-point scale where 1 means "not at all familiar" and 5 means "extremely familiar":
   1. **Record Response:**

E3. **[IF E2 <> 1]** What types of Focus on Energy offerings are you aware of?
   1. **[IF NOT ADDRESSED:]** Did you know that they offer financial incentives for energy efficiency improvements in your buildings and industrial processes?
   2. **[IF NOT ADDRESSED:]** Did you know that they offer financial incentives for installing solar or other renewable energy technologies?
   3. **[IF NOT ADDRESSED:]** Did you know that they offer financial and technical support for identifying energy efficiency opportunities?
   4. **[IF NOT ADDRESSED:]** Did you know that they offer financial and technical support for identifying, modeling, and including energy efficient design options for new construction and major renovation projects?
   5. **[IF NOT ADDRESSED:]** Did you know that Focus on Energy advisors are available to support utility customers as they navigate energy efficiency opportunities and leverage Focus on Energy programs?

E4. Our records indicate that your company has not received incentives from Focus on Energy for energy efficiency projects in the last 4 years at least. Is that correct?
   1. Yes
   2. No

E5. **[IF E4=2]** What projects did you do that received Focus on Energy incentives?

E6. Has/have the plant(s) or site(s) you are responsible for in Wisconsin done any assessments or audits to identify any potential energy savings projects in the last three years?
   1. **[IF SO:]** Did you do those audits or assessments through Focus on Energy?
   2. **[IF NOT:]** Who provided those audits or assessments?

E7. Has/have the plant(s) or site(s) you are responsible for in Wisconsin completed any projects in the last three years that would have meaningfully impacted the sites' energy consumption?

[FOR ANY NOT ADDRESSED, ASK:] Did you do any:
   1. Projects that impacted major utilities consumption like steam or compressed air.
   2. Projects that created new thermal loads either steam, hot water or natural gas
   3. Industrial/manufacturing processes improvements or installation of process equipment
   4. Lighting retrofits/replacements/redesigns/ or reconfigurations
   5. Replacements/redesigns/ or reconfigurations of HVAC equipment
   6. Addition of solar power or other renewable technologies
   7. Installation or improvement of energy management systems
   8. Installation or improvement of process control systems
      (1) **[Ask If not addressed:]**
   9. What was the primary motivation for these projects?
   10. How far in advance did planning begin on these projects?
   11. Did you explore any energy efficiency considerations in these projects?
      (1) **[IF E6.11 = Yes AND E1 <> No]** Did you have any discussions with a Focus on Energy representative about these projects?
      (2) **[IF E6.11 = No]** Why not?

E8. **[IF E4 <> 1]** Why didn't you **pursue** incentives from Focus on Energy for those projects? **[PROBE TO ADDRESS EACH PROJECT TYPE MENTIONED IN E6.]**
   1. **[IF NOT ADDRESSED:]** Was the equipment you installed the most efficient option? [*If not:*] Why did you choose not to install more efficient equipment?
   2. [IF NOT ADDRESSED:] **[IF E6.(1) = No]** Did you know that Focus on Energy offers incentives for that type of project?
   3. **[IF NOT ADDRESSED:]** Do you know how to access Focus on Energy incentives for that type of project?
   4. **[IF NOT ADDRESSED:]** What, if anything, about the application process prevented you from receiving incentives?

E9. Did you do any other facility renovation or construction projects within the last three years?

1. What was the primary motivation for these projects?
2. How far in advance did planning begin on these projects?
3. Did you explore any energy efficiency considerations in these projects?
   (1) **[IF E9.3 = Yes AND E1 <> No]** Did you have any discussions with a Focus on Energy representative about these projects?
   (2) **[IF E9.3 = No]** Why not?

F. Decision Making Processes

Stepping back to talk about capital improvement projects and the role of energy efficiency more broadly:

F1. Who is typically involved in the planning and decision-making for capital improvement projects in your facilities? **[PROBE FOR: CORPORATE EXECUTIVES, INTERNAL FACILITIES TEAMS, ENGINEERING TEAMS, CONTRACTORS, ARCHITECTS, EQUIPMENT MANUFACTURERS ANYONE ELSE]:**

1. How, if at all, do the people involved differ for different types of projects? **[IF NEEDED:]** For example, are different decision-makers involved in larger projects than in smaller projects? Are different people involved if the project will impact production processes?
2. What are the main differences, if any, in the things each of the people involved in the decision prioritize when considering a capital improvement?
3. What role do you play in the planning of the project? **[PROBE BY PROJECT TYPE IF APPROPRIATE]**
4. Who has the final decision-making authority? **[PROBE BY PROJECT TYPE IF APPROPRIATE]**
5. Do you have preferred contractors that you work with, or do you typically put projects out to bid?

F2. What are the most important considerations that determine whether your organization will implement a project? What are the reasons that a project might not move forward? **[IF NEEDED, PROBE:]** For example, are you assessing projects on ROI? Other criteria? To what extent are projects competing for limited capital improvement funds?

F3. **[IF SUSTAINABILITY GOALS ARE KNOWN:]** I understand your company has a sustainability goal to reduce greenhouse gas emissions by __% over 20__ levels by 20__.

F4. **[IF SUSTAINABILITY GOALS ARE NOT KNOWN:]** What types of sustainability goals, if any, has your company set around reducing greenhouse gas emissions?

F5. **[IF NO GHG GOALS:]** Has your company set any other goals related to energy savings or energy use? **[If not, skip to next question]**

F6. To what extent do those goals factor into your considerations around capital improvements?

1. **[IF NOT ADDRESSED IN F1:]** What role, if any, do the people in charge of tracking and meeting those goals – your sustainability manager or group – play in capital improvement decision-making?

F7. **[IF NOT ADDRESSED EARLIER:]** How far in advance does your company typically begin planning for different sizes of capital investment projects?

F8. What role, if any, do potential energy savings or efficiency improvements play in your company's decision to move forward with a capital investment project?
   1. Do you have specific payback periods that you target for efficiency improvements?
   2. Do you have any corporate policies or directives related to energy efficiency in capital improvement projects? If so, what are they?

G. Focus on Energy Potential Influence

G1. Within the decision-making process for capital improvement projects that you just described, what would be the best way for Focus on Energy to provide technical support and financial incentives for energy efficiency improvements?
   1. **[PROBE FOR:** Communication timing/medium, integration into decision making processes, provision of data or materials, provision of financial information, engagement with higher-ups, anything else]

G2. How, if at all, would identifying potential energy saving opportunities impact the way your company considers capital investments?
   1. Does your company have a Return on Investment (ROI) threshold before decision makers will consider a project? At what level of ROI would a potential project be likely to stand out from alternatives you might be considering?
   2. What are the best ways that Focus on Energy could help you identify energy savings opportunities when you are considering capital investments? **[PROBE FOR:** Communication timing/medium, integration into decision making processes, provision of data or materials, provision of financial information, engagement with higher-ups, anything else]

H. Energy Advisor Familiarity & Experience

H1. Have you interacted with a Focus on Energy Advisor before?

1. What can you tell me about those interactions?

H2. **[IF H1 = YES]** Do you know how to get in touch with your Focus on Energy Advisor?

H3. **[IF H1 = YES]** Is there anything your Focus on Energy Advisor can do to better support you in improving your company's energy efficiency efforts? **[PROBE FOR:** Communication timing/medium, integration into decision making processes, provision of data or materials, provision of financial information, engagement with higher-ups, anything else]

H4. **[IF H1 = YES]** If you had the opportunity to specify exactly what your relationship with Focus on Energy would be, what would you want that relationship to look like?

1. How often and through what channels would you prefer to receive communications?
2. How would you like to be made aware of potential opportunities for program support or available incentives?
3. How involved would you want them to be in your company's capital improvement decision making processes?
4. What would you need to know about their expertise? About their motivations?

H5. **[IF H1 = NO]** If Focus on Energy could provide you with resources to assist you with identifying energy saving opportunities and available financial incentives, what would you want that relationship to look like?

1. How often and through what channels would you prefer to receive communications?
2. How would you like to be made aware of potential opportunities or available incentives?
3. How involved would you want them to be in your company's capital improvement decision making processes?
4. What would you need to know about their expertise? About their motivations?

I. Organizational Goals

I1. **[IF SUSTAINABILITY GOALS ARE KNOWN:]** I understand your company has a sustainability goal to [fill in known sustainability goal other than GHG emissions or energy conservation]. Does your company have any other sustainability or energy related goals that we haven't discussed?

I2. **[IF SUSTAINABILITY GOALS ARE KNOWN:]** Aside from GHG emissions reductions or energy conservation goals that we already discussed, does your organization have any specific sustainability or energy related goals?

I3. Is there any tie between achieving sustainability, GHG emissions, or energy conservation goals and compensation for anyone within your organization?

I4. What other organizational goals are motivating priorities for your company leadership? **[PROBE FOR: EMPLOYEE COMFORT, SAFETY, AND RETENTION; COMMUNITY RELATIONS; PRODUCT SAFETY; OTHER]**

I5. **[IF I1=1]** How important are your organization's sustainability goals relative to other priorities? Would you say that meeting sustainability goals is:

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

98. (Don't know)
99. (Refused)

J. Closing

J1. Those are all the questions that we have for today! Do you have any other comments about Focus on Energy that you would like to share?

J2. Would you like a Focus on Energy Advisor to reach out to you to share more information about any of the opportunities we referenced today?

Thank you for your time today, we appreciate your help with this interview. As previously mentioned, we will be sending you a $200 gift card as a thank you for your participation in this effort. Gift cards are distributed through a service called "Tango Card". You will receive an electronic gift card via email, that you can redeem at various online retailers, or you also have the option to have a physical gift card mailed to you. Can you please provide me with the email address where you would like to have that gift card directed?

Desired Email Address:

Thank you again. Gift cards will be sent out within the next two weeks. I will send you a personal email directly once the gift cards are processed; feel free to contact me if you have any difficulties accessing or utilizing the gift card.

2024 Focus on Energy Community Impact Pilot Participant Survey

Research Objectives	Corresponding Section
Identify the primary motivations driving participants to engage with the pilot.	C
Assess the extent to which the pilot's incentives and other factors influence participants' decision-making.	D
Evaluate participants' overall experience and satisfaction with the pilot.	E
Identify the key barriers and challenges that prevent or hinder participation in the pilot.	F
Measure benefits experienced by participants due to energy-efficiency upgrades.	G

Target Quota: 18 completes

Target Length: 10-15 minutes

Incentive: None

General Instructions:

- Survey instructions are in green **[LIKE THIS]**.
- Skip patterns or variables are in red **[LIKE THIS]**.

Variables to be pulled into Survey:

- Email
- First Name
- Last Name
- CUSTOMER
- FUEL TYPE SAVED

Target Population:

- This research seeks to gather information from small business participants in the Community Impact Pilot.

A. Email Invitation

Subject: Your Input is Crucial: Focus on Energy Community Impact Pilot Survey

Dear **[FIRST NAME]**,

Thank you for partnering with Focus on Energy's Community Impact Pilot. We appreciate your involvement, and your feedback is crucial in helping improve Focus on Energy programs! We invite you to take a brief survey about your experience with the program. We assure you that your responses will be kept confidential.

The survey will take 10 to 15 minutes to complete.

To participate, please click the link below:

[auto-generated link]

Alternatively, you can copy and paste the following URL into your internet browser:

[auto-generated URL]

If you have any questions about this research or any difficulties taking the survey, please contact Madison Charrier Olson from The Cadmus Group, the research firm conducting this survey on our behalf, at Madison.CharrierOlson@cadmusgroup.com.

If you have any questions about the validity of this email or the survey, please contact Mitch Horrie of the Public Service Commission of Wisconsin at mitchell.horrie1@wisconsin.gov or (608) 267-3206.

Thank you in advance for your time and valuable insights,

[SIGNATURE]

Reminder Invitation

Subject: Don't forget to tell Focus on Energy about your Community Impact Pilot experience

Dear **[FIRST NAME]**,

We recently invited you to tell us about your experience with Focus on Energy's Community Impact Pilot. We would still like to hear from you. Your input will be used to improve Focus on Energy's programs and will be kept confidential. **Please take 10-15 minutes today to complete the survey**.

To participate, please click the link below:

[auto-generated link]

Alternatively, you can copy and paste the following URL into your internet browser:

[auto-generated URL]

If you have any questions about this research or any difficulties taking the survey, please contact Madison Charrier Olson from The Cadmus Group, the research firm conducting this survey on our behalf, at Madison.CharrierOlson@cadmusgroup.com.

If you have any questions about the validity of this email or the survey, please contact Mitch Horrie of the Public Service Commission of Wisconsin at mitchell.horrie1@wisconsin.gov or (608) 267-3206.

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

B. Introduction and Screener

[ALL QUESTIONS IN THIS SECTION ARE FORCED RESPONSE UNLESS OTHERWISE INDICATED]

Welcome! This survey will take 10 to 15 minutes to complete. If you encounter any questions you prefer not to answer, feel free to skip them. Your responses will remain confidential and will be used to improve Focus on Energy programs for businesses like yours.

If you are taking this survey on your mobile phone, you can easily use the dictation feature for text entry questions if desired. Just tap the microphone icon on the display keyboard to speak your responses.

B1. Our records show your business, **[CUSTOMER]**, completed an energy-saving upgrade as a result of Focus on Energy's Community Impact Pilot. Is this correct?

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

98. Don't know

B2. **[IF B1=98]** Is there someone else who would know that we could send this survey to?

1. Yes (What is their email: _____) **[TERMINATE]**
2. No **[TERMINATE]**

98. Don't know **[TERMINATE]**

[TERMINATION LANGUAGE] We're sorry, this survey is for businesses that participated in the Community Impact Pilot. Thank you for taking the time to participate.

C. Motivations

[ALL QUESTIONS IN THIS SECTION ARE SKIPPABLE UNLESS OTHERWISE INDICATED]

C1. What motivated you to participate in the pilot? **[SELECT ALL THAT APPLY]**

1. Cost savings on energy bills
2. Improved comfort for employees and customers
3. Addressed overdue or needed equipment replacements/upgrades
4. Proportion of out-of-pocket costs being covered
5. Support in coordinating with Trade Ally contractor(s) to complete the desired work
6. Other (Please specify) **[OPEN ENDED]**

98. Don't know

C2. **[IF C1=3+SELECTIONS]** Please arrange motivation factors into order of most importance, with 1 being most critical to participation **[HAVE THE ORDER OF RESPONSES ROTATE RANDOMLY, EXCEPT OTHER AND DON'T KNOW; ALLOW RESPONDENTS TO SELECT AND ORDER 3 OPTIONS]**

1. Cost savings on energy bills
2. Improved comfort for employees and customers
3. Addressed overdue or needed equipment replacements/upgrades
4. Proportion of out-of-pocket costs being covered
5. Support in coordinating with Trade Ally contractor(s) to complete the desired work
6. Other (Please specify) **[OPEN ENDED]**

98. Don't know

C1. On a scale from 1 to 5, where 1 indicates *not at all likely* and 5 indicates *very likely*, how likely would you have been to participate in a similar program had your incentive been:

1. 75% of what you received
2. 50% of what you received
3. 25% of what you received
4. Less than 25% of what you received

Not at all likely (1)	Not too likely (2)	Uncertain (3)	Somewhat likely (4)	Very likely (5)	Don't know (98)

C2. Did you receive any additional incentives from sources other than Focus on Energy for energy efficiency upgrades? For example: funding, discounts, technical assistance, equipment, or something else,

1. Yes
2. No

98. Don't know

C3. **[IF C2=1]** What other incentive(s) did you receive and who was it from?

1. **[OPEN ENDED]**

D. Pilot Influence

[ALL QUESTIONS IN THIS SECTION ARE SKIPPABLE UNLESS OTHERWISE INDICATED]

D1. Would your business have made the same energy efficiency upgrades without the Focus on Energy incentive?

1. Yes, would have made *all of the same* improvements
2. No, would have made *some or different* improvements
3. No, would *not have made any* improvements

98. Don't know

D2. **[IF D1=1]** Would your business have made the same energy efficiency upgrades *at the same time* without the Focus on Energy incentive?

1. Yes, would have made *all of the same* improvements at the same time
2. No, would have made *some* improvements at the same time
3. No, would *not have made any* improvements at the same time

98. Don't know

D3. **[IF D1=2]** What energy efficiency upgrades would you have made instead if you did not receive the Focus on Energy incentive?

1. **[OPEN ENDED]**

D4. Through your engagement with the Community Impact Pilot, did you learn about any Focus on Energy offerings that you were not already aware of?

1. Yes
2. No

98. Don't know

D5. **[IF D4=1]** What Focus on Energy offerings did you learn about?

1. **[OPEN ENDED]**

E. Pilot Experience

E1. How would you rate your satisfaction with each of the following elements of the Community Impact Pilot on a scale from 1 to 5, where 1 indicates *not at all satisfied* and 5 indicates *very satisfied?* **[RANDOMIZE]**

1. The Community Impact Pilot overall
2. Communication with Focus on Energy staff
3. The energy efficiency upgrades completed
4. Support from Focus on Energy staff
5. The Focus on Energy incentive amount
6. The Focus on Energy application process

Not at all satisfied (1)	Not too satisfied (2)	Neither satisfied nor dissatisfied (3)	Somewhat satisfied (4)	Very satisfied (5)	Don't know/not applicable (98)

E2. **[FOR EACH E1≤4]** Please explain any reasons you were less than very satisfied with the selections above.

1. **[OPEN ENDED]**

E3. How would you rate your satisfaction with the quality of each of the following elements performed by the *Energy Specialist* on a scale from 1 to 5, where 1 indicates *not at all satisfied* and 5 indicates *very satisfied?*

1. Overall experience with the energy specialist
2. Communication and responsiveness
3. Explanation of energy efficiency upgrades being offered
4. The energy audit process
5. Managing project installation
6. Coordinating with Trade Ally contractor(s)

Not at all satisfied (1)	Not too satisfied (2)	Neither satisfied nor dissatisfied (3)	Somewhat satisfied (4)	Very satisfied (5)	Don't know/not applicable (98)

E4. **[FOR EACH E7≤4]** Please explain any reasons you were less than very satisfied with the selections above.

1. **OPEN ENDED]**

E5. How would you rate your satisfaction with the quality of each of the following elements performed by the *Trade Ally contractor(s)* on a scale from 1 to 5, where 1 indicates *not at all satisfied* and 5 indicates *very satisfied?*

1. Overall experience with Trade Ally contractor(s)
2. Communication throughout the project(s)
3. Explanation of energy efficiency upgrades being made
4. The equipment that was installed
5. Timeliness of service
6. Follow-up support

Not at all satisfied (1)	Not too satisfied (2)	Neither satisfied nor dissatisfied (3)	Somewhat satisfied (4)	Very satisfied (5)	Don't know/not applicable (98)

E6. **[FOR EACH 1≤4]** Please explain any reasons you were less than very satisfied with the selections above.

1. **[OPEN ENDED]**

E7. Would you work with the same Trade Ally contractor(s) for future energy efficiency-related projects?

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

E8. **[IF 1=2]** Will you provide more information about *why* you would not work with the same Trade Ally contractor(s) for future energy efficiency-related projects?

1. **[OPEN ENDED]**

F. Barriers

F1. Did you experience any challenges participating in the Focus on Energy Community Impact Pilot?

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

F2. **[IF F1=1]** What challenges or delays did you experience?

1. **[OPEN ENDED]**

F3. Did you experience any delays on projects completed through the pilot?

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

F4. **[IF F3=1]** What caused the delay?

1. **[OPEN ENDED]**

G. Outcomes

G1. Have you noticed changes to your energy bills since making the energy efficiency upgrades through Focus on Energy?

1. Electric **[DISPLAY IF FUEL TYPE SAVED = ELECTRIC OR BOTH]**
    1. Significant decrease
    2. Moderate decrease
    3. No Change
    4. Increase

98. Don't know

2. Natural Gas [DISPLAY IF FUEL TYPE SAVED = BOTH]
    1. Significant decrease
    2. Moderate decrease
    3. No Change
    4. Increase

98. Don't know

G2. **[IF G1=(1) or (2)]** How soon after the energy efficiency upgrades did you notice cost savings on your **[ELECTRIC/GAS]** energy bills?

1. Immediately
2. Within 3 months
3. Within 6 months
4. Within 9 months
5. Other (Please specify) **[OPEN ENDED]**

98. Don't know

G3. **[IF G1=(1) or (2)]** By what percentage have your **[ELECTRIC/GAS]** energy costs *decreased* since the energy efficiency upgrades?

1. 0-10%
2. 10-20%
3. 20-30%
4. More than 30%

98. Don't know

G4. **[IF G1=(4)]** By what percentage have your **[ELECTRIC/GAS]** energy costs *increased* since the energy efficiency upgrades?

1. 0-10%
2. 10-20%
3. 20-30%
4. More than 30%

98. Don't know

G5. Beyond energy savings, what impact did the Community Impact Pilot, and the level of support provided, have on the overall success of your business? **[SELECT ALL THAT APPLY]**
1. Positive feedback from employees/customers
2. Expanded operating hours
3. Enhanced operational efficiency
4. Added new products/services
5. Hired new staff
6. Helped make progress toward achieving sustainability goals
7. Enhanced property value
8. Improved equipment performance
9. Increased comfort
10. Maintenance savings
11. System reliability
12. Competitive advantage (please specify) **[OPEN ENDED]**
13. Other (please specify) **[OPEN ENDED]**

98. Don't know

G6. In what ways, if at all, has the assistance from Focus on Energy allowed you to further support or contribute to your community?
1. Enhancing environmental awareness among community members
2. Providing opportunities for local job creation
3. Increased community engagement
4. Improved services to the community
5. Provided opportunities for educational outreach
6. Allowed for increased charitable donations
7. Strengthened local partnerships
8. Other (please specify) **[OPEN ENDED]**

98. Don't know

G1. Can you tell us more about *why* your selections above are important to you?
1. **[OPEN ENDED]**

G2. In what ways, if at all, has the Community Impact Pilot helped your business to continue pursuing its core mission and goals?
1. **[OPEN ENDED]**

H. Closing

H1. Is there any other feedback that you would like to provide about the Focus on Energy Community Impact Pilot?

1. **[OPEN ENDED]**

[END OF SURVEY MESSAGE] This completes the survey. Your responses are very important to Focus on Energy. We appreciate your participation and feedback. Thank you!

CADMUS

2024 Focus on Energy Life Sciences Midstream Pilot Distributor Interview Guide

Research Objectives	Corresponding Section
Assess distributors' experience and satisfaction with the pilot	D
Asses the pilot influence on sales of efficient measures	E
Identify is there are annual or longer-term cycles within the market for energy-efficient ultra-low temperature freezers	F
Identify barriers to rural pilot participation	G
Identify if there are additional measures carried by participating distributors that present savings opportunities	H

Target Quota: 3 completes
Target Length: 30 minutes
Incentive: $100

General Instructions:

- Interviewer instructions are in green **[LIKE THIS]**.
- Skip patterns or variables are in red **[LIKE THIS]**.

Variables to be pulled into Interview:

- Email
- Phone number
- FirstName
- LastName
- Organization
- Cadmus Account Key
- First Pilot Activity Date

Target Population:

- This research seeks to gather information from distributors who offer energy-efficient ultra-low temperature freezer incentives through the Focus on Energy Life Science Midstream Pilot Program.

Incentive Distribution:

- Interview participants will be offered a $100 incentive for their participation. Incentives will be distributed via email through the service "Tango."

A. Email Outreach

[INITIAL COMMUNICATION TO BE SENT BY IMPLEMENTER TO PARTICIPATING DISTRIBUTORS]

Hi **[FIRST NAME]:**

As a distributor participating in Focus on Energy's Life Science Midstream Pilot Program, your feedback is essential to making this a strong program that works well for organizations like yours. Please help Focus on Energy by participating in a phone interview to share your feedback.

The interview should take approximately **30 minutes**, and we are offering a **$100 electronic gift card** in appreciation of your time and insights. Your responses will be kept confidential and will only be used for research purposes.

Focus on Energy is working with Cadmus, an independent research firm, to conduct this research. If you would like to schedule a time to participate, please email Madison.CharrierOlson@cadmusgroup.com, and a member of the Cadmus team will reach out to coordinate a time to conduct the interview. If they do not hear from you, a member of the Cadmus team may reach out by phone or email.

If Cadmus does contact you, we would very much appreciate it if you would take the time to answer their questions. Your feedback will help to strengthen our program and ensure we are supporting our program partners. If there is someone else at your organization we should contact instead, please provide their contact information.

We appreciate your time and help with this and look forward to speaking with you.

Sincerely,
[Name]
[Email]
[Phone Number]
[Firm]

If you have any questions about the validity of this email or the interview, please contact Mitch Horrie of the Public Service Commission of Wisconsin at mitchell.horrie1@wisconsin.gov or (608) 267-3206.

B. Phone Outreach

[USE THIS INTRODUCTION IF CALL HAS NOT BEEN SCHEDULED. THE INTRODUCTION IS DESIGNED TO FIND THE CORRECT PERSON AND MAKE THE INTENDED RESPONDENT FEEL COMFORTABLE COMPLETING THE INTERVIEW.]

B1. May I speak with **[FIRST NAME]**? **[OR IF NO NAME]** May I speak with the person who handles participation in Focus on Energy's Life Science Midstream Pilot? **[IF THAT PERSON IS NOT AT THIS PHONE NUMBER, ASK FOR THEIR NAME AND PHONE NUMBER AND START AGAIN]**

1. Yes
2. No or not a convenient time **[ASK IF RESPONDENT WOULD LIKE TO ARRANGE A MORE CONVENIENT TIME OR IF YOU CAN LEAVE A MESSAGE FOR A MORE APPROPRIATE PERSON]**

98. Don't know **[ASK TO SPEAK WITH SOMEONE WHO KNOWS AND BEGIN AGAIN]**
99. Refused **[THANK AND TERMINATE]**

B2. Hello, I'm **[INSERT NAME]** calling on behalf of Focus on Energy. Are you the person responsible for working with Focus on Energy's Life Science Midstream Pilot for your organization?

1. Yes
2. No, person can come to phone **[START AGAIN WITH CORRECT PERSON]**
3. No, person is not able to come to phone **[GET NAME AND PHONE NUMBER, SCHEDULE CALL BACK]**

98. Don't know **[ASK TO SPEAK WITH SOMEONE WHO KNOWS AND BEGIN AGAIN]**
99. Refused **[THANK AND TERMINATE]**

B3. We are conducting an interview today about Focus on Energy's Life Science Midstream Pilot for energy-efficient ultra-low temperature freezers. This interview will take about 30 minutes to complete. Your responses will remain confidential and will be used to improve Focus on Energy's programs for customers like you. You will receive a $100 electronic gift card to thank you for your time and insight. This call may be monitored or recorded for quality assurance purposes.

[IF NEEDED, STATE "THIS SURVEY IS FOR RESEARCH PURPOSES ONLY AND THIS IS NOT A MARKETING CALL. THIS IS THE PRIMARY WAY FOR PARTICIPANTS TO PROVIDE INPUT INTO THE REBATE PROGRAMS FOCUS ON ENERGY OFFERS. YOUR PERSPECTIVE CAN HELP FOCUS ON ENERGY PLAN THEIR ENERGY-EFFICIENCY PROGRAM OFFERINGS."]

[ONLY IF ASKED FOR A FOCUS ON ENERGY CONTACT TO VERIFY THE SURVEY AUTHENTICITY, OFFER CONTACT NAME AND NUMBER]

C. Screeners

[SCREENERS ARE DESIGNED TO VERIFY WHETHER THE RESPONDENT IS QUALIFIED TO COMPLETE THE SURVEY AND TO FIND THE CORRECT PERSON TO COMPLETE THE SURVEY.]

C1. Our records show that your organization has participated in the Focus on Energy Life Science Midstream Pilot. Is this correct?

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

98. Don't know **[ASK TO SPEAK WITH SOMEONE WHO WOULD KNOW AND START AGAIN. IF NO ONE, THEN THANK AND TERMINATE]**
99. Refused **[THANK AND TERMINATE]**

[TERMINATION LANGUAGE] We're sorry, this survey is for people who have experience with the Focus on Energy Life Science Midstream Pilot. Thank you for taking the time to speak with me.

D. Pilot Experience

D1. On a scale of 1-5, with 1 being no effort and 5 being maximum effort, how would you describe the level of effort it takes to participate in this pilot?

No effort (1)	Minimal effort (2)	Moderate effort (3)	High effort (4)	Maximum effort (5)

1. **[FOR EACH ANSWER TO 1 >3]** What required more than moderate effort to participate?

D2. Have you experienced any challenges participating in this pilot?

1. What were those challenges? (Prompt: Supply chain issues? Reduced product availability?)
2. How did you manage those challenges?
3. Did the program provide any support to resolve barriers or challenges?

D3. How would you rank your satisfaction with the Life Science Midstream Pilot overall on a 1-5 scale with 1 being not at all satisfied and 5 being very satisfied?

D4. How would you rate your satisfaction with the following pilot components?

Item	Not at all satisfied (1)	Not too satisfied (2)	Neither satisfied nor dissatisfied (3)	Somewhat satisfied (4)	Very satisfied (5)	Don't know/not applicable (6)
a. Communication (from implementor, from Focus on Energy)						
b. Timeliness of payment						
c. Project documentation						
d. Incentive application requirements						
e. Incentive levels						
f. Clarity of pilot requirements						
g. Data submittal						
h. Onboarding process						
i. Number and quality of freezers eligible for Focus on Energy incentive						

1. **[FOR EACH ANSWER TO D4 <3]** Why were you less than very satisfied with **[OPTION FROM D4]**?

E. Pilot Influence

E1. Approximately what percentage of the energy-efficient ultra-low temperature freezers that you've sold in the last 12 months qualified for the Focus on Energy incentive?

E2. Has the share of sales for equipment that qualifies for incentives changed since you started participating in the pilot? [Prompt: ask for a percentage higher/lower than previous sales.]

E3. On a scale of 1-5, with 1 being not influential and 5 being transformative, how influential has the Life Science Midstream Pilot been in encouraging sales of more energy-efficient ultra-low temperature freezers?

No influence (1)	Minor influence (2)	Moderate influence (3)	Strong influence (4)	Transformative influence (5)

1. **[FOR EACH ANSWER to E3 >3]** Do you have any specific metrics that show this influence?

E4. Do you typically provide quotes for energy-efficient ultra-low temperature freezers?

E5. How do you communicate the Focus on Energy incentive to customers?

E6. What feedback, if any, have you received from customers about the energy-efficient ultra-low temperature freezers?

E7. What feedback, if any, have you received from customers about the pilot in general?

F. Energy-efficient Ultra-Low Temperature Freezer Sales Cycles

F1. Do sales of energy-efficient ultra-low temperature freezers fluctuate throughout the year? Are there specific times when you sell more or fewer units, or when demand shifts between low and high-efficiency models?"

1. **[IF YES]** Approximately when in the last year did you see the highest number of sales?
   (1) A quarter or month.

F2. Have you noticed any longer-term sales trends for energy-efficient ultra-low temperature freezers?

F3. Do you see any upcoming trends in this industry that you think will impact this pilot?

G. Accessibility

The next few questions are about customers in rural areas. For the purpose of this interview, we're talking about communities with a population of less than 50,000 people.

G1. What percentage of your total energy-efficient ultra-low temperature freezer sales would you estimate comes from customers in rural areas?

G2. What logistical or geographic challenges are rural customers facing in accessing the pilot?

G3. How effective are the current pilot's communication strategies in reaching rural customers?

G4. Is there any specific marketing to rural customers?

G5. Are the financial incentives offered by the pilot sufficient to motivate rural participation?

G6. What additional support can a future program offer rural customers to encourage participation?

H. Other Measures

H1. **[FOR LABORATORY DISTRIBUTORS ONLY]** Are there other types of large equipment similar in size to ultra-low temperature freezers that you frequently provide to customers?"
1. Do any of these types of equipment use a lot of energy?
2. **[IF YES]** Do you know if there are efficient models or standards for these types of equipment?

H2. **[FOR LABORATORY DISTRIBUTORS ONLY]** Are there any additional energy-efficient products or equipment that you think should be included in a future program?

I. Closing

I1. On occasion, Focus on Energy may want to contact a customer to learn more about their participation experience in the Life Science Midstream Pilot. Would it be okay for someone from Focus on Energy to contact you in the future?
1. Yes
2. No, do NOT contact me

I2. Do you have any other comments or questions for us or Focus on Energy at this time? **[OPEN-ENDED, PROBE FOR SPECIFICS]**
1. **[RECORD VERBATIM:_____]**
2. None

[END OF SURVEY MESSAGE] This completes the interview. Your responses are very important to Focus on Energy. We appreciate your participation and thank you for your time. You will be sent a $100 electronic gift card from Tango. The gift card will be sent from noreply@tangocard.com. Please check your spam folder if you cannot locate the email. You will receive your gift card within three weeks of completing the survey. If you have any questions, please reach out to Madison.CharrierOlson@cadmusgroup.com. Have a good day.

CADMUS

Focus on Energy Instant Discount Program
Participating HVAC Distributor Interview Guide

Interviewee Name:	[Participating Distributors]
Interviewee Organization:	
Interviewee Title:	
Date of Interview:	September-October 2024
Interviewer Name:	Daniela Stevens, The Cadmus Group

Research Objectives	Corresponding Question Sections
Company background	Sections A and B
Distributors' expectations of the Instant Discount Program	Section C
Baseline/NTG for stocking/upselling	Section D
Closing	Section E

Audience: HVAC distributors participating in the Instant Discount Program

Purpose: This research seeks to gather information (baseline, program expectations) from HVAC distributors who offer discounts through the Focus on Energy Instant Discount Program.

These in-depth interviews will be conducted by Cadmus staff. Interviews will be scheduled in advance of the call via email. The interview will take between 30 and 45 minutes. This information will be included in the email invitation.

Target: 10 completes

Draft Initial Email Communication from Implementor
To: **[EMAIL]**
From: **[YOUREMAIL]**
Subject: Help Strengthen Focus on Energy's Instant Discount Program

Hello **[NAME]**,

Thank you for participating in Focus on Energy's Instant Discount Program. As we establish this program, feedback from program partners is essential to making this a strong program that works well for businesses like yours. We would greatly appreciate it if you would help by participating in a phone interview to share your feedback.

Focus on Energy is working with Cadmus, an independent research firm, to conduct phone interviews with program distributors. Any feedback or information you share is kept confidential unless you ask for Focus on Energy to follow up with you.

The interview should take approximately **30 to 45 minutes**, and we are offering a **$150 electronic gift card** in appreciation of your time and insights.

If you would like to schedule a time to participate, please email daniela.stevens@cadmusgroup.com, and a member of the Cadmus team will reach out to coordinate a time to conduct the interview. If they do not hear from you, a member of the Cadmus team may reach out by phone or email.

If Cadmus does contact you, we would very much appreciate it if you would take the time to answer their questions. Your feedback will help to strengthen our program and ensure we are supporting our program partners. If there is someone else at your organization we should contact instead, please provide their contact information.

Sincerely,
[Name]
[Email]
[Phone Number]
[Firm]

Email Invitation from Cadmus
To: **[EMAIL]**
From: **[YOUREMAIL]**
Subject: Focus on Energy's Instant Discount Program

Hello **[NAME]**,

As a distributor participating in Focus on Energy's Instant Discount Program, your feedback is essential to making this a strong program that works well for businesses like yours. Focus on Energy is working with Cadmus, the independent research firm that I work with, to collect feedback from participants. I would like to set up a time to speak with you regarding your experience thus far with the program.

I expect the call to take **30 to 45 minutes**, and we are offering a **$150 electronic gift card** in appreciation of your time and insights. Any feedback or information you share is kept confidential unless you ask for Focus on Energy to follow up with you.

Please reply to this email to let me know if one of the openings listed below works for you. If none of the options work with your schedule, please offer several alternatives. If there is someone else at your company we should contact instead, please provide the contact information.

[LIST TIMES AND DATES OF AVAILABILITY].

I appreciate your time and help with this. Thank you in advance for participating in this research,

Daniela Stevens, PhD
Associate, The Cadmus Group
Office: 703-247-600

If you have any questions about the validity of this email or the interview, please contact Mitch Horrie at the Public Service Commission of Wisconsin (608-267-3206 or mitch.horrie@wisconsin.gov).

Calendar Invite
To: **[EMAIL]**
From: **[YOUREMAIL]**
Subject: Interview about Focus on Energy Instant Discount Program

Hello **[NAME]**,

Thank you for agreeing to speak with me about Focus on Energy's Instant Discount Program. Our call is scheduled for **[INSERT TIME AND DATE OF CALL]** and will take about 30 to 45 minutes.

As previously mentioned, we will ask about your experience with the Instant Discount Program so far and your expectations about the program. Your responses in this interview will be kept confidential unless you indicate that you would like Focus on Energy to follow up with you. As a thank you, we will send you a $150 electronic gift card upon completion of the interview.

You can join the call either from your computer (by clicking on the link below) or by calling the number provided.

If you need to reschedule, please let me know.

Thank you. I look forward to speaking with you.

[NAME
SIGNATURE]

A. Introduction and Interviewee Details

Hello **[FIRSTNAME]**. This is **[INTERVIEWER NAME]** from Cadmus. Thank you for making the time to speak with me today. For the Instant Discount Program evaluation, Cadmus is conducting interviews with distributors selling qualified HVAC equipment through the program.

The purpose of these interviews is to collect feedback about your early experiences with the program, hear your expectations or concerns, and learn about your stocking practices. We will use the information you provide to inform our understanding of the program so we can provide well-rounded and balanced observations and recommendations. Any references to your responses will be completely anonymized to maintain you and your company's confidentiality. The interview will take about 30 to 45 minutes. As I mentioned in the initial invitation, we will send you a $150 e-gift card upon completion of the interview as a thank you for your time and feedback.

A1. May I have your permission to record this call?

As you know, Focus on Energy recently launched the Instant Discount Program. As part of the program launch, Focus on Energy transitioned HVAC incentives from a downstream design (where incentives are submitted by and paid to homeowners or end-users) to a midstream design (where discounts are passed through the distributor to contractors and end-users). Your feedback is very important to ensuring that this restructuring is working well for customers, contractors, and program partners like yourself.

A2. To start, please tell me about your role at **[COMPANYNAME]**?

1. Has your role changed in the past year?

A3. What is your role working with the Instant Discount Program?

B. Company Background and Motivations for Participating

Next, I have general questions about **[COMPANYNAME]**.

B1. What types of HVAC equipment does **[COMPANYNAME]** sell?
1. **[RECORD VERBATIM**]

B2. Does your company sell HVAC equipment outside of Wisconsin?

B3. **[IF B2=YES]** Approximately what proportion of your HVAC equipment is sold in Wisconsin?
1. **[RECORD PERCENTAGE]**

B4. I'd like to talk about your typical customer mix; in other words, the proportion of customers that are contractors vs. business owners or managers. What proportion of your HVAC equipment sales (in dollars) are to: **[RECORD PERCENTAGE FOR EACH]**
1. Contractors
2. Retailers
3. Residential customers
4. Business owners or managers

B5. What would you say are the most common business types you serve?
[RECORD VERBATIM]

B6. In general, on a scale of 1 to 5 where 1 is not at all comfortable and 5 is very comfortable, how comfortable do you think your staff is with selling high-efficiency equipment that is eligible for the Instant Discount Program? **[RECORD ANSWERS IN THE TABLE BELOW]**
1. Not at all comfortable
2. Somewhat uncomfortable
3. Neither comfortable nor uncomfortable
4. Somewhat comfortable
5. Very comfortable

B7. **[IF B6 RESPONSE IS <4]** What areas are they uncomfortable with?
1. **[RECORD VERBATIM]**

B8. In general, on a scale of 1 to 5 where 1 is not at all comfortable and 5 is very comfortable, how comfortable do you think your customers are with high-efficiency equipment that is eligible for the Instant Discount Program? **[RECORD ANSWERS IN THE TABLE BELOW]**
1. Not at all comfortable
2. Somewhat uncomfortable
3. Neither comfortable nor uncomfortable
4. Somewhat comfortable
5. Very comfortable

B9. **[IF B8 RESPONSE IS <4]** What are they uncomfortable with?

1. **[RECORD VERBATIM]**

Comfort level with HE Equipment	1. Not at all Comfortable	2.Somewhat uncomfortable	3. Neiter Comf. Nor Umcomf.	4. Somewhat Comfortable	5. Very Comfortable	Refused to answer/Don't know
B6. Staff						
B8. Customers (contractors)						
B8. Customers (private)						

B10. Using the same 1-to-5 scale, how comfortable do you think your staff is with selling and supporting heat pump equipment?. **[RECORD ANSWERS IN THE TABLE BELOW]**

1. Not at all comfortable
2. Somewhat uncomfortable
3. Neither comfortable nor uncomfortable
4. Somewhat comfortable
5. Very comfortable

B11. Using the same 1-to-5 scale, how comfortable do you think your customers are with switching to electric HVAC equipment such as heat pumps? **[RECORD ANSWERS IN THE TABLE BELOW]**

1. Not at all comfortable
2. Somewhat uncomfortable
3. Neither comfortable nor uncomfortable
4. Somewhat comfortable
5. Very comfortable

Comfort level with Electrifying Homes or Businesses	1. Not at all Comfortable	2. Somewhat uncomfortable	3. Neiter Comf. Nor Umcomf.	4. Somewhat Comfortable	5. Very Comfortable	Refused to answer/Don't know
B10. Staff						
B11. Customers (contractors)						
B11. Customers (private)						

B12. Do you know how often residential heat pumps are installed in commercial building applications?

1. **[RECORD VERBATIM]**

B13.

1. **[IF B12=YES]** Are you aware of what equipment is replaced by heat pumps in these cases? **[RECORD VERBATIM]**

C. Program Expectations and Desired Changes

C1. What types of equipment are you selling through the new Instant Discount Program?

1. Water Heaters
2. Natural Gas Furnaces
3. Natural Gas Boilers
4. Air-Source Heat Pumps
5. Ductless Heat Pumps
6. Geothermal Heat Pumps
7. Other **[RECORD VERBATIM]**

C2. What are the main benefits you expect from participating in the Instant Discount Program?
[ASK AS OPEN-ENDED AND MARK OFF THE CATEGORIES BELOW IF MENTIONED]

1. Ability to provide discounts
2. Stay competitive in the market
3. Customer satisfaction/loyalty
4. Increase sales of high-efficiency equipment [probe for specific types]
5. Increased awareness/knowledge of efficient equipment
6. Training opportunities [What types of training?]
7. Other **[PLEASE SPECIFY]**

C3. So far, on a scale of 1 to 5 where 1 is not at all satisfied and 5 is very satisfied, how satisfied are you with the level of communication from the Instant Discount Program staff?

1. Not at all satisfied
2. Dissatisfied
3. Neither satisfied nor dissatisfied
4. Satisfied
5. Very satisfied

C4. **[IF C2<4]** How could communication be improved?

1. **[RECORD VERBATIM]**

During training for the program, you would have received some training materials from program staff. On a scale of 1 to 5 where 1 is not at all easy and 5 is very easy, how easy was it to understand the program information that you've received from Focus on Energy? **[RECORD IN TABLE BELOW]**

Material	1. Not at all easy	2. Somewhat difficult	3. Neither easy nor difficult	4. Somewhat easy	5. Very easy	Refused to answer/Don't know
1. HVAC Distributor Training						
2. Distributor Process Guide						
3. Iris Portal/Iris Process Guide						

C5. **[IF ANY 0 RESPONSES ARE <4]** How could the materials be changed to improve the reader's understanding?

C6. Did you have any concerns about becoming a participating distributor in the program? **[ASK AS OPEN-ENDED AND MARK OFF THE CATEGORIES BELOW IF MENTIONED]**

1. Setting up/managing point-of-sale system to collect the required data
2. Timely reimbursement for incentive payments
3. Calculating sales commissions
4. Barriers to involvement/participation requirements
5. Support from Focus on Energy
6. Other **[PLEASE SPECIFY]**

C7. Was there a reason for these concerns?

1. **[RECORD VERBATIM]**

C8. Before participating in the Instant Discount Program, did your company participate in the previous Focus on Energy Midstream Program?

C9. **[IF C8=YES]** What type of equipment did you sell through the Midstream Program?

1. Water heaters
2. Ductless Heat Pumps

C10. **[IF 9=YES]** What about the Midstream Program worked well and you hope it will remain the same?

1. **[RECORD VERBATIM]**

C11. **[IF C8=YES]** What in the Midstream Program did not work as well and you would like to see improved in the new Instant Discount Program? Why?

1. **[RECORD VERBATIM]**

D. Stocking and Promotional Practices

Now I'd like to ask you a couple questions about your company's typical stocking and promotional practices of high efficiency equipment before participating in the Focus on Energy Instant Discount program **[ASK ABOUT EACH EQUIPEMNT TYPE IN THE TABLE BELOW]**.

D1. Before you enrolled in the Focus on Energy Instant Discount program approximately how many **[READ EQUIPMENT TYPES IN TABLE BELOW]**, in terms of equipment count, did your company normally keep available in stock? **[RECORD FOR EACH EQUIPMENT TYPE IN TABLE BELOW; ESTIMATE SHOULD INCLUDE REGULAR AND HIGH-EFFICIENCY EQUIPMENT]**

D2. Of those, how many were high efficiency? **[RECORD FOR EACH EQUIPMENT TYPE IN TABLE BELOW]**

D3. How many high efficiency **[EQUIPMENT TYPE]** units do you anticipate you will stock through the end of 2024? **[RECORD NUMBER VERBATIM IN TABLE BELOW]**

D4. How are stocking decisions made for **[EQUIPMENT TYPE]s**? **[REPEAT FOR EACH EQUIPMENT TYPE IN TABLE BELOW]**

D5. Are the inventories for **[EQUIPMENT TYPE]s** relatively constant or are there seasonal fluctuations? **[REPEAT FOR EACH EQUIPMENT TYPE IN TABLE BELOW]**

1. Constant
2. Seasonal Variation
3. Stocked when ordered
4. Other **[RECORD VERBATIM]**

Equipment Type	D1. Total in Stock Before IDP	D2. High Efficiency in Stock Before IDP	D3. High Efficiency in Stock by End of 2024	D4. Stocking Decisions	D5.Stocking Fluctuations (constant, seasonal, stocked when ordered)
Water Heaters					
Natural Gas Furnaces					
Natural Gas Boilers					
Air-Source Heat Pumps					
Ductless Heat Pumps					
Geothermal Heat Pumps					
Other					

I'm going to read you a list of potential influences on your company's stocking decisions about various high-efficiency equipment types. For each influence, please rate how influential they are using a 1-5 scale, where 5 means very influential, and 1 means not at all influential.
[REPEAT FOR EACH EQUIPMENT TYPE]

Equipment Type	1. Not at all influential	2. Not too influential	3. Neutral	4. Somewhat influential	5. Very influential	Don't know
1. The Focus on Energy incentive						
2. Market demand or turns rate						
3. Competitive comparison/market competition						
4. Manufacturer rebates						
5. Energy Costs						
6. Sales marketing/education						
7. Vendor promotions						
8. New product line offering						
9. Warehouse size limitations						
10. Other **[RECORD VERBATIM]**						

D6. How much do you anticipate the percentage of stocked high efficiency equipment will change by the end of 2024?

1. I will stock higher % of HE
2. I will stock same % of HE
3. I will stock lower % of HE
4. Don't know.

D7. [IF D7=1] Why do you expect this change? **[ASK AS OPEN-ENDED]**

1. **[RECORD VERBATIM]**

D8. Thinking about contractor awareness, on a scale of 1 to 5, where 1 is *not* aware and 5 is *very* aware, how aware would you say contractors are of the Focus on Energy discount through the Instant Discount Program?

1. Not aware
2. Somewhat unaware
3. Neither/nor
4. Somewhat aware
5. Very aware

D9. What else do you think Focus can do to help promote or help sell more energy-efficient equipment?

1. **[RECORD VERBATIM]**

D10. How do you typically present equipment recommendations to contractors or buyers?

1. **[RECORD VERBATIM]**

D11. What percent of time does your company make any recommendations to contractors or buyers?

1. **[RECORD VERBATIM]**

D12. Before you enrolled in the Instant Discount Program, in situations where your customer sought guidance for **[EQUIPMENT TYPE]s** you sold, about what percent of the time did you recommend high-efficiency equipment? **[RECORD FOR EACH EQUIPMENT TYPE IN TABLE BELOW]**

D13. Does the program incentive influence the **[EQUIPMENT TYPE]** efficiency level your company recommends to contractors or buyers? **[REPEAT FOR EACH EQUIPMENT TYPE IN TABLE BELOW]**

Equipment Type	D12. Before you enrolled in IDP, when you sold [EQUIPMENT TYPE], about what percent of the time did you recommend HE equipment?	D13. Does IDP's incentive influence the efficiency level your company recommends?
1. Water Heaters		
2. Natural Gas Furnaces		
3. Natural Gas Boilers		
4. Air-Source Heat Pumps		
5. Ductless Heat Pumps		
6. Geothermal Heat Pumps		

E. Closing

E1. Is there anything we haven't discussed that you'd like to share with me about Focus on Energy or the Instant Discount Program?

E2. Would you like Focus on Energy to follow up with you regarding anything that we have discussed?

1. Yes
2. No

E3. Would you please confirm your email address, so we can send you your e-gift card?

1. [Email address]

Thank you for your input. We appreciate your time. Have a nice day.

CADMUS

Wisconsin Focus on Energy Renewable Rewards Program: CY 2024 Participant Survey

This survey is designed for residential and commercial customers who received a rebate for purchasing and installing a solar photovoltaic system solar PV through the Focus on Energy Renewable Rewards Program.

Target Quotas:

Subprogram	Capacity	Sum of Participants through June 2024	Target Completes
Renewable Rewards - Business	0-20	40	34%
	20-50	33	28%
	50-150	32	27%
	>150	14	12%
	Total	**119**	**As many as possible**
Renewable Rewards - Residential	0-5	223	14
	5-10	700	43
	10-15	251	15
	15-20	82	5
	>20	57	3
	Total	**1313**	**80**

SAMPLE Variables:

[FIRSTNAME] = CUSTOMER FIRST NAME
[LASTNAME] = CUSTOMER LAST NAME
[EMAIL] = CUSTOMER EMAIL
[ADDRESS] = BUSINESS ADDRESS
[MONTH] = MONTH OF PARTICIPATION
[OFFERING] = "BUSINESS" OR "RESIDENTIAL"
[SECTOR] = FOR BUSINESS [SCHOOLS & GOVERNMENT, COMMERCIAL, NC-SCHOOLS & GOVERNMENT, NC-COMMERCIAL, AGRICULTURE, NC-AGRICULTURE]; FOR RESIDENTIAL [RESIDENTIAL - SINGLE FAMILY, NC-RESIDENTIAL - SINGLE FAMILY, RESIDENTIAL – MULTIFAMILY]
[MULTIFAMILY] = YES OR NO (BASED ON SECTOR)

Invitation Email

To: **[EMAIL]**
From: Focus on Energy Feedback
Subject: Are you satisfied with your new Solar PV installation? Let us know and you could win $200!

Dear **[FIRSTNAME AND LASTNAME]**,

We hope you are enjoying the benefits of your new Solar PV system! Focus on Energy provided a rebate for the installation of this energy-saving system. Our programs are designed to help you and your [IF [OFFERING] = "Residential" AND NOT MF THEN "family" ELSE "Business"] make smart choices to manage your energy use. That's why we invite you to share **your important feedback** on your recent experience with Focus on Energy, by taking our brief survey.

The survey will take about 10 minutes to complete. **As our thanks for completing the survey, we will enter you in a drawing to win a $200 gift card.**

Just click the link below to get started.

[SURVEY LINK]

Your input is very important to us and will be kept confidential and only used for research purposes.

If you have problems with the survey link, please contact the survey coordinator, David Ladd, via email at David.Ladd@Cadmusgroup.com. If you would like to confirm the validity of the research effort, please contact Mitch Horrie at the Public Service Commission of Wisconsin at (608) 267-3206 or mitch.horrie@wisconsin.gov.

We hope you will take this opportunity to have your voice heard. Thank you in advance for your time and for sharing your experiences.

Reminder Invitation

To: [EMAIL]
From: Focus on Energy Feedback
Subject: There's still time to give Focus on Energy feedback and win $200!

Dear [FIRSTNAME AND LASTNAME],

We recently invited you to tell us about your experience with your solar PV installation incentivized by Focus on Energy. We would still like to hear from you – **your input is very important to us**! We use the information from participants like you to continue to improve our programs.

Please take about 10 minutes to complete our survey. **As our thanks for completing the survey, we will enter you in a drawing to win a $200 gift card.**

Just click the link below to get started.

[auto-generated link]

Your input will be kept confidential and only used for research purposes.

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We hope you will take this opportunity to have your voice heard. Thank you in advance for your time and for sharing your experiences.

A. Introduction

Records from Focus on Energy show that you received a rebate through the Renewable Rewards Program for installing a solar PV system [IF OFFERING=BUSINESS INSERT "at [ADDRESS]"]. The following survey will ask about that installation and your satisfaction with the rebate process. At the end, you will be given the opportunity to enter to win a $200 gift card as a token of our appreciation for your time.

A1. Before we begin, do you remember receiving a rebate from Focus on Energy in 2024 for installing a solar PV system [IF OFFERING=BUSINESS INSERT "at [ADDRESS]"]?

1. Yes, I received a rebate for installing a solar PV system
2. Yes, I installed a solar PV system, but did not receive a rebate from Focus on Energy
3. No, I did not install a solar PV system [THANK AND TERMINATE]

98. Don't know [THANK AND TERMINATE]

A2. Are you the person who is most familiar with that installation?

1. Yes
2. No [THANK AND TERMINATE]

98. Don't know [THANK AND TERMINATE]

TERMINATE MESSAGE: *WE ARE ONLY SURVEYING CUSTOMERS WHO RECALL INSTALLING A SOLAR PV SYSTEM. THANK YOU FOR YOUR TIME.*

B. Awareness and Motivation

B1. How satisfied are you with your solar PV system?

1. Very satisfied [SKIP TO B3]
2. Somewhat satisfied [SKIP TO B3]
3. Neither satisfied nor unsatisfied [SKIP TO B3]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO B3]

B2. [IF B1 = 4 OR 5] Why are you unsatisfied with your solar PV system?

1. [OPEN-ENDED RESPONSE]

B3. [IF A1 = 1] How satisfied are you with the rebate application process?

1. Very satisfied [SKIP TO B5]
2. Somewhat satisfied [SKIP TO B5]
3. Neither satisfied nor unsatisfied [SKIP TO B5]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO B5]

B4. [IF B3 = 4 OR 5] Why are you unsatisfied with the rebate application process?

1. [OPEN-ENDED RESPONSE]

B5. How satisfied are you with the process of scheduling an appointment with a contractor?

1. Very satisfied [SKIP TO B7]
2. Somewhat satisfied [SKIP TO B7]
3. Neither satisfied nor unsatisfied [SKIP TO B7]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO B7]

B6. [IF B5 = 4 OR 5] Why are you unsatisfied with the appointment scheduling process?

1. [OPEN-ENDED RESPONSE]

B7. How satisfied are you with the professionalism of the contractor who installed your equipment?

1. Very satisfied [SKIP TO B9]
2. Somewhat satisfied [SKIP TO B9]
3. Neither satisfied nor unsatisfied [SKIP TO B9]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO B9]

B8. [IF B7 = 4 OR 5] Why are you unsatisfied with the professionalism of the contractor?

1. [OPEN-ENDED RESPONSE]

B9. [IF A1=1] How satisfied are you with the value of the rebate you received?

1. Very satisfied [SKIP TO B11]
2. Somewhat satisfied [SKIP TO B11]
3. Neither satisfied nor unsatisfied [SKIP TO B11]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO B11]

B10. [IF B9 = 4 OR 5] Why are you unsatisfied with the rebate?

1. [OPEN-ENDED RESPONSE]

B11. How satisfied are you with Focus on Energy?

1. Very satisfied [SKIP TO B13]
2. Somewhat satisfied [SKIP TO B13]
3. Neither satisfied nor unsatisfied [SKIP TO B13]
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know [SKIP TO B13]

B12. [IF B11 = 4 OR 5] Why are you unsatisfied with Focus on Energy?

1. [OPEN-ENDED RESPONSE]

B13. * What factor was the most important motivation for you to purchase the new solar PV system?

1. Save energy/don't waste energy/be more energy efficient
2. This is a smart investment with a good payback
3. Reduce energy costs/lower bill
4. Good for the environment
5. Recommended by a friend/relative
6. Recommended by a retailer/dealer/contractor
7. Cash / rebate / incentive payment
8. Federal tax credit
9. Wanted the latest technology
10. Wanted to be less reliant on utilities / get off the grid
11. Advertisement [newspaper, radio, online, direct mail, email from FOE, paid search, etc.]
12. Utility sponsorship of the program
13. Other [SPECIFY: _____]

98. Don't know

B14. [IF B13=6] What information did the dealer/contractor provide that motivated you to install your solar PV system?

1. Save energy/don't waste energy/be more energy efficient
2. This is a smart investment with a good payback
3. Reduce energy costs/lower bill
4. Good for the environment
5. Cash / rebate / incentive payment
6. Federal tax credit
7. Focus on Energy / Utility sponsorship of the program
8. Other [SPECIFY: _____]

98. Don't know

B15. [IF FLAG FOR MULTIFAMILY = YES] Did the building tenants participate in any discussions before the decision was made to install the solar PV?

1. Yes
2. No

98. Don't know

B16. [IF FLAG FOR MULTIFAMILY = YES] Did you anticipate using benefits from the solar PV to attract tenants to your building?

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

B17. [IF B16 = 1] What types of benefits did you expect to attract tenants? [SELECT ALL THAT APPLY]

1. Cheaper utility bills for tenants
2. More appealing marketing materials
3. "Greener" building
4. Make the building look nicer/newer
5. Stable energy source
6. Other [SPECIFY: _____]

B18. [IF OFFERING = "Business"] Does your business have sustainability goals?

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

B19. [IF B18 = YES] How has the solar PV installation impacted your businesses' sustainability goals?

1. Helped exceed our goals
2. Helped meet our goals
3. Did not fully meet expectations
4. Did not impact our sustainability goals
98. Don't know

B20. *Where have you heard about the Focus on Energy rebate for solar PV systems? **[RANDOMIZE ITEMS 1-11, MULTIPLE RESPONSES ALLOWED]**

1. Mailing – (direct mail, brochure, postcard, bill insert, etc.)

A1a. Who sent the mailing?

1. My utility
2. Focus on Energy
3. Another Organization
4. I'm not sure

2. An email

A1b. Who sent the email?

1. My utility
2. Focus on Energy
3. Another Organization
4. I'm not sure

3. A social media app - Facebook, Twitter, LinkedIn, etc.
4. Online ad
5. Internet search

A1c. What were you searching for? [SPECIFY: _____]

6. A website

A1d. Which website?

1. My utility
2. Focus on Energy
3. Another Organization
4. I'm not sure

7. Family / friend / word-of-mouth
8. Focus on Energy representative
9. Utility representative
10. Installer/Contractor/Trade Ally
11. Community or utility event
12. Through participation in another Focus on Energy offering
13. A different source: [SPECIFY: _____]

98. Don't know

B21. *What do you think is the best way for Focus on Energy to inform the public about energy efficiency and renewable resource offerings? **[RANDOMIZE ITEMS 1-13] [MULTIPLE RESPONSE]**

1. Promotion through other Focus on Energy offerings
2. Television
3. Radio
4. Print media, such as magazine, newspaper article or advertisement
5. Billboard/outdoor ad
6. Bill insert
7. Direct mail/brochure/postcard
8. Family/friends/word-of-mouth
9. Email from Focus on Energy
10. Focus on Energy or Utility website
11. Community or utility event
12. Other website: [SPECIFY:_____]

13. Social Media such as Twitter, Facebook, or Instagram
14. Other: [SPECIFY_____]
15. Do not want to receive information **[EXCLUSIVE]**
98. Don't know **[EXCLUSIVE]**

B22. *Other than Focus on Energy's Renewable Rewards Program, are you aware of any other Focus on Energy programs or rebates?

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

B23. For the Focus on Energy programs listed below, please indicate which ones you are aware of and which you have participated in. [TABLE FORMAT; EACH PROGRAM LISTED HAS A DROP DOWN MENU WITH THE THREE OPTIONS BELOW] [IF OFFERING = "Residential" USE TABLE 1; IF OFFERING = "Business" USE TABLE 2]

1. Participated in this program
2. Aware but have not participated
3. Not aware of this program

[Table 1]

Program	Description
Insulation and Air Sealing	Rebates for weatherizing your home, with extra rebates for completing an energy assessment
Heating and Cooling	Rebates or Instant discounts for upgrading or replacing your heating and cooling equipment
New Construction	Rebates for builders to construct energy-efficient homes
Online Marketplace	Online store available through the Focus on Energy website, offering instant discounts on a range of energy-savings products for your home
Multifamily	A program for property owners that offers incentives for improvements that reduce energy use in units and common areas
Energy-Saving Packs	Free packs of energy saving items such as low-flow showerheads, aerators, LEDs, and weatherization products, delivered through the mail.

[Table 2]

Programs	Description
Commercial and Industrial	Available to businesses not classified as agribusiness, multifamily, or small- and medium-size industrial facilities this offering consists of prescriptive rebates for standard equipment and custom rebates for non-standard equipment installations
Energy Design Assistance/Energy Design Review (EDA/EDR)	Available to new construction, major renovations, and addition projects over 5,000 square feet. It provides a whole-building energy analysis of multiple design options and rebates based on the building's overall modeled energy savings.
Schools	Available to private and public K-12 schools and higher education institutions, including universities, colleges, and technical colleges. It provides technical assistance and prescriptive and custom rebates.
Government	Available to local government entities, including municipalities, counties, and wastewater facilities as well as non-local government entities, including Tribes, state, and federal facilities in Wisconsin. It provides technical assistance and prescriptive and custom rebates.
Large Industrial	This offering supports large industrial customers and provides prescriptive and custom rebates for installing energy-efficient measures in existing buildings or new construction projects.
Agribusiness	Technical assistance and prescriptive and custom rebates to businesses engaged in growing and producing grain, livestock, milk, poultry, fruits, vegetables, bees and honey, fish, shellfish, or other common agricultural products.

C. Residential Freeridership

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]
[ASK THIS SECTION ONLY IF PARTICIPANT IS A RESIDENTIAL CUSTOMER] For the next set of questions, please think about how you made your decisions to purchase and install the solar PV system.

C1. When did you first hear about the availability of the Focus on Energy rebate for solar PV systems?
1. Before you contacted your contractor to purchase a system [SKIP TO C3]
2. When the contractor provided the quote for purchase and installation [SKIP TO C3]
3. After your contractor installed your system [ASK C2]
4. When you received your rebate check from Focus on Energy [ASK C2]
5. After you purchased the system [ASK C2]
6. You had not heard of Focus on Energy before this survey [ASK C2]
98. Don't know [SKIP TO C3]

C2. [ASK IF C1=3, 4, 5 OR 6] Just to be clear, you purchased your solar PV system before you heard anything about the Focus on Energy rebate. Is that correct?
1. Yes, that's correct [SKIP TO C8]
2. No, that's not correct
99. Don't know

C3. Before you heard about the Focus on Energy rebate, had you already considered installing a solar PV system project?
1. Yes
2. No
98. Don't know

C4. Would you most likely have had the same solar PV system project completed without the rebate and information you received from Focus on Energy?
1. Yes
2. No
98. Don't know

C5. Without the rebate and information from Focus on Energy, what size of solar PV system project would you most likely have completed? Would you have…
1. Installed a smaller, less expensive solar PV system
2. Installed same size, same-cost solar PV system
3. Installed a larger, more expensive solar PV system
4. Not installed a solar PV system at all [SKIP TO C8]
98. Don't know

C6. [ASK IF C5=1 OR 3] How much [IF C5=1 THEN "smaller", ELSE IF C5= 3 "larger"] would your system have been, as a percentage? [NUMERIC TEXT BOX WITH 0-100 REQUIREMENT; ADD PERCENT SYMBOL AFTER TEXT BOX]

C7. Thinking about timing, without the rebate and information from Focus on Energy, when would you most likely have installed the solar PV system?

1. At the same time
2. Later, but within 12 months
3. One to two years out
4. More than two years out
5. Never

98. Don't know

C8. [ASK EVERYONE] We would like to know more about the factors that contributed to your purchase of the solar PV system. For the list of possible factors that could have contributed to your decision shown below, please rate how important each was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase and complete the solar PV system project. [1 to 6 - RANDOMIZE LIST]

1. [Response from B13 IF B13≠7]
2. The Focus on Energy rebate or discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a contractor or vendor
6. Previous participation in a Focus on Energy energy-efficiency program

C9. Were there any other major factors that contributed to your purchase of the solar PV system?

1. Yes [Please specify:__]
2. No

98. Don't know

C10. [ASK C9=1] Please rate how important the other major factor was in your decision to complete the solar PV system project. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase and complete the solar PV system project?

D. Nonresidential Freeridership

[FORCED RESPONSES ACCORDING TO PROGRAMMING INSTRUCTIONS]
[ASK THIS SECTION ONLY IF PARTICIPANT IS A NONRESIDENTIAL CUSTOMER]
For the next set of questions, please think about how you made your decisions to purchase and install the solar PV system.

D1. First, did your organization decide to install the PV system[s] before learning about the Focus on Energy rebate?
1. Yes [ASK D2]
2. No
98. Don't know

D2. [ASK IF D1=1] Prior to learning about the Focus on Energy rebate, was the purchase of the solar PV system[s] included in your business' capital budget for this property?
1. Yes [ASK D3]
2. No
98. Don't know

D3. [ASK IF D2=1] Had your business already ordered or purchased the PV system[s] for this property BEFORE you heard about the Focus on Energy rebate?
1. Yes
2. No
98. Don't know

D4. [ASK IF D3=1] So just to be clear, **BEFORE** you heard anything about the Focus on Energy rebate you had **ALREADY** purchased your solar PV system. Is that correct?
1. Yes, that's correct [SKIP TO D9]
2. No, that's not correct
98. Don't know

D5. Would you most likely have had the same solar PV system project completed without the rebate and information you received from Focus on Energy?
1. Yes
2. No
98. Don't know

D6. Without the rebate and information from Focus on Energy, what size of solar PV system project would you most likely have completed if the Focus on Energy rebate had not been available to you? Would you have…

1. Installed a smaller, less expensive solar PV system
2. Installed same size, same-cost solar PV system
3. Installed a larger, more expensive solar PV system
4. Not installed a solar PV system at all [SKIP TO D9]

98. Don't know

D7. [ASK IF D6=1 OR 3] How much [IF D6=1: "smaller", ELSE IF] D6=3] would your system have been, as a percentage? [NUMERIC TEXT BOX WITH 0-100 REQUIREMENT; ADD PERCENT SYMBOL AFTER TEXT BOX]

D8. Without the rebate for the solar PV system[s] and information or education from Focus on Energy, when would you most likely have installed the solar PV system[s]?

1. Within the same year?
2. Within one to two years?
3. Within three to five years?
4. In more than five years?

98. Don't know

D9. [ASK EVERYONE] We would like to know more about the factors that contributed to your purchase of the solar PV system[s]. For the list of possible factors that could have contributed to your decision shown below. For each of the factors listed, please rate how important each was in your decision. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase and complete the solar PV system[s] project. [1 to 6 - RANDOMIZE LIST]

1. [RESPONSE FROM B13 IF B13≠7]
2. The Focus on Energy program rebate or discount
3. Recommendation from Focus on Energy Staff
4. Information provided by Focus on Energy about energy savings opportunities
5. Recommendation from a contractor or vendor
6. Previous participation in a Focus on Energy program

D10. Were there any other major factors that contributed to your purchase of the solar PV system[s]?

1. Yes [Please specify:__]
2. No

98. Don't know

D11. [ASK D10=1] Please rate how important the other major factor was in your decision to complete the solar PV system[s] project. Use a scale from 1 to 5, with 1 meaning the factor was “not at all important” and 5 meaning the factor was “very important” in your decision to purchase and complete the solar PV system[s] project?

E. Financing

These next questions are designed to provide us with an understanding of how you paid for your new solar PV system.

E1. Aside from Focus on Energy, there are a variety of rebates available for solar PV system owners. Did you receive any rebates for your solar PV system[s] aside from the Focus on Energy rebate?

1. Yes
2. No [SKIP TO E5]

98. Don't Know [SKIP TO E5]

E2. [ASK IF E1=1] Which of the following other rebates did you also receive? [Select all that apply]

1. Federal Investment Tax Credit – an income tax credit
2. [IF OFFERING=Business] Federal Investment Tax Credit – Direct Pay or Refundable Tax Credit
3. Renewable Energy Sales Tax Exemption – a sales tax exemption
4. Residential Renewable Energy Tax Credit – a property tax credit
5. Utility rebate [other than the Focus on Energy rebate]
6. Other [Please specify: _____]
7. I did not receive any rebates besides the Focus on Energy rebate [SKIP TO E5] [EXCLUSIVE RESPONSE]

98. Don't know [SKIP TO E5] [EXCLUSIVE RESPONSE]

E3. [ASK IF E1= 1] How important was receiving multiple rebates in your decision to install your solar PV system? Was it…

1. Very important
2. Somewhat important
3. Neither important nor unimportant
4. Somewhat unimportant
5. Very unimportant

98. Don't know

E4. [ASK IF E1= 1] Would you have completed the same solar PV project if you had not received multiple rebates?

1. Yes
2. No

98. Don't know

E5. [ASK ALL RESPONDENTS] Considering all of the rebates and tax credits you received, how satisfied were you with the total dollar amount of the rebates and tax credits? Were you…

1. Very satisfied
2. Somewhat satisfied
3. Neither satisfied nor unsatisfied
4. Somewhat unsatisfied
5. Very unsatisfied

98. Don't know

E6. Please explain how you paid for your portion of the solar PV system costs – that is, how did you pay for remaining costs after rebates and other tax credits or incentives. Did you pay for it with … [Select all that apply. Percentages refer to the what percent of the of the respondent's portion of the cost was paid with that payment method. Total percentages should add up to 100%.][SLIDER 0-100 ADD UP TO 100]

1. Cash or debit [What percent of your portion? _____]
2. Home equity loan [What percent of your portion? _____]
3. Credit card [What percent of your portion? _____]
4. Another form of credit [What percent of your portion? _____]
5. Other [Please specify: _____]
6. Prefer not to answer [EXCLUSIVE RESPONSE]

98. Don't know [EXCLUSIVE RESPONSE]

E7. How long was the projected payback period for your solar PV system? Please respond in days or months

1. [SPECIFY UNITS DAYS, MONTHS]

98. Don't know

E8. How important was the length of the payback period in your decision to install your solar PV system? Was it…

1. Very important
2. Somewhat important
3. Neither important nor unimportant
4. Somewhat unimportant
5. Very unimportant

98. Don't know

F. Direct Pay Financing

[ASK THIS SECTION IF SECTOR = "Schools & Governments" and E2 = 2]

F1. How did you first learn about the direct pay tax credits for solar PV installations?

1. Utility company outreach
2. Online research
3. Word of mouth
4. Industry events or conferences
5. Other [Please specify: _____]

F2. Was the information provided about the direct pay tax credits clear and easy to understand?

1. Very clear and easy to understand
2. Mostly clear, but some aspects were confusing
3. Neither clear nor unclear
4. Somewhat unclear and difficult to understand
5. Very unclear and difficult to understand

98. Don't Know

F3. [ASK IF F2 = 2, 3, 4, OR 5] What was unclear or confusing about the information provided about the direct pay tax credits?

1. [OPEN RESPONSE]

F4. Did you receive any support and guidance from the utility or other relevant entities during the direct pay tax credit application process?

1. Yes
2. No

98. Don't Know

F5. [ASK IF F44 = 1] What type of assistance (e.g., technical support, informational resources) was most helpful to you?

1. Technical support
2. Informational resources
3. Financial guidance
4. Peer support or networking
5. Other [Please specify: _____]

F6. How satisfied were you with the support and guidance you received?
1. Very satisfied [SKIP TO F8]
2. Somewhat satisfied [SKIP TO F8]
3. Neither satisfied nor unsatisfied [SKIP TOF8]
4. Somewhat unsatisfied
5. Very unsatisfied
98. Don't know [SKIP TO F8]

F7. Why were you [F6 RESPONSE]?
1. [OPEN RESPONSE]

F8. Were there any unexpected costs or financial benefits associated with the direct pay tax credits?
1. No, everything was as expected
2. Yes, there were unexpected costs
3. Yes, there were unexpected financial benefits
4. Yes, both unexpected costs and benefits
98. Don't Know

F9. [ASK IF F8 = 2, 3, OR 4] What kinds of unexpected costs or financial benefits were associated with the direct pay tax credits?
1. [OPEN RESPONSE]

F10. How do the rebates from the direct pay tax credits compare to other financial rebates you received or may have used in the past for renewable energy installations?
1. Much better
2. Better
3. About the same
4. Worse
5. Much worse

F11. [ASK IF F10 = 1-2, 4-5] In what ways were the rebates from the direct tax credits [RESPONSE FROM F10] than the other financial rebates you received or may have used in the past for renewable energy installations?
1. [OPEN RESPONSE]

F12. Would you recommend the solar PV rebate program and direct pay tax credits to other schools or government entities? Why or why not?
1. Yes, highly recommend [Please specify: _____]
2. Yes, recommend [Please specify: _____]
3. No, do not recommend [Please specify: _____]
4. No, strongly do not recommend [Please specify: _____]
98. Don't Know

F13. Has the availability of direct pay tax credits influenced your decision to adopt additional renewable energy projects?

1. Yes, significantly
2. Yes, somewhat
3. No, not really
4. No, not at all

98. Don't Know

F14. Do you currently have plans to expand your solar PV installations or invest in other renewable energy technologies because of the direct pay tax credits?

1. Yes
2. No

98. Don't Know

G. System Operability

G1. Since your solar PV system was installed, have you had any unscheduled maintenance or downtime on your solar PV system?

1. Yes
2. No [SKIP to H1]

98. Don't know [SKIP to H1]

G2. [ASK IF G1 = 1] What would you estimate is the total amount of time your solar PV system was partially, or fully, inoperable since its installation? Please respond in hours, days, or months

1. [SPECIFY UNITS HOURS, DAYS, MONTHS]

98. Don't know

G3. [ASK IF G1 = 1] What percentage of your solar PV system was inoperable during that time? Rate on a scale of 0-100%, 100% being fully inoperable. [SLIDER 0-100]

[ASK IF G1 = 1] Is your system currently operating?

1. Yes
2. No

98. Don't know

H. Residential Spillover

[ASK THIS SECTION ONLY IF PARTICIPANT IS A RESIDENTIAL CUSTOMER] Now we would like to learn about any energy-saving improvements you may have made since installing the solar PV and receiving a cash-back rebate from Focus on Energy.

H1. Since installing the PV system and receiving a cash-back rebate from Focus on Energy, have you installed any other energy-efficient products in your home that you did NOT receive a Focus on Energy rebate for? By energy-efficient products, we mean appliances such as ENERGY STAR appliances, high efficiency water heaters, insulation, windows, or space heating and cooling equipment.

1. Yes
2. No [SKIP TO Section J]
98. Don't know [SKIP TO Section J]

H2. What products did you install without getting for free or with a rebate?

1. Gas boiler [How many did you install?]
2. Gas furnace [How many did you install?]
3. Gas tankless water heater [How many did you install?]
4. Gas storage water heater [How many did you install?]
5. Electric tankless water heater [How many did you install?]
6. Electric storage water heater [How many did you install?]
7. Insulation; attic [How many square feet?]
8. Insulation; floor [How many square feet?]
9. Insulation; ceiling [How many square feet?]
10. Air sealing [How many linear feet?]
11. Duct sealing [How many linear feet?]
12. ENERGY STAR windows [How many square feet?]
13. ENERGY STAR air purifier [How many did you install?]
14. ENERGY STAR dehumidifier [How many did you install?]
15. ENERGY STAR clothes washer [How many did you install?]
16. ENERGY STAR dishwasher [How many did you install?]
17. ENERGY STAR pool pump [How many did you install?]
18. ENERGY STAR room air conditioner [How many did you install?]
19. ENERGY STAR refrigerator [How many did you install?]
20. ENERGY STAR freezer [How many did you install?]
21. Smart thermostat [How many did you install?]
22. Heat pump water heater [How many did you install?]
23. Central air conditioner [How many did you install?]
24. Air source heat pump [How many did you install?]
25. Ductless heat pump [How many did you install?]
26. Ground source heat pump [How many did you install?]

27. Smart power strip [How many did you install?]
28. Other equipment, please specify the items and quantity below: [TEXT ENTRY]
98. Don't know [SKIP TO SECTION J]

H3. [REPEAT FOR EACH ITEM MENTIONED IN H2] Please rate how important your experience with the Focus on Energy Renewables Program was in your decision to install the [INSERT EACH ONE SELECTED IN H2]. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the [RESPONSE FROM H2] system

[RECORD "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT", "DON'T KNOW"]

H4. [REPEAT FOR EACH ITEM MENTIONED IN H2] In what year was the [INSERT ITEM FROM H2] purchased and installed?

[RECORD NUMERIC YEAR: "2024","2023","Before 2023"…, 98 FOR DON'T KNOW]

[ASK H5 FOR EACH ONE SELECTED IN H2 EXCEPT 3 gas tankless water heater , 4 gas storage water heater, 5 electric tankless water heater, 6 electric storage water heater, 12 ENERGY STAR windows, 13 ENERGY STAR air purifier, 14 ENERGY STAR dehumidifier, 15 ENERGY STAR clothes washer, 16 ENERGY STAR dishwasher, 17 ENERGY STAR pool pump, 18 ENERGY STAR room air conditioner, 19 ENERGY STAR refrigerator, 20 ENERGY STAR freezer, 22 Heat pump water heater, 27 smart power strip OR 28 other equipment.]

H5. Why didn't you apply for and receive a Focus on Energy rebate for the [INSERT EACH ONE SELECTED IN H2]?

1. Did not know rebate was available
2. Product did not qualify
3. Other [SPECIFY: _____]

98. Don't know

I. Nonresidential Spillover

[ASK THIS SECTION ONLY IF PARTICIPANT IS A NONRESIDENTIAL CUSTOMER]

I1. Since installing the solar PV systems[s] has your company installed any other energy-efficient products in your facility that you did NOT receive a Focus on Energy rebate for?

1. Yes [ASK I2]
2. No [SKIP TO NEXT SECTION]
98. Don't know [SKIP TO NEXT SECTION]

I2. What were the other energy-efficient products that you installed without getting an rebate? [MARK ALL THAT APPLY; 98=DON'T KNOW, , -96=N/A]

1. Efficient lighting controls occupancy sensors, daylighting, timers
2. High efficiency motors
3. Air source heat pumps
4. Ground source heat pumps
5. Central AC
6. VSD variable speed drive
7. Water heating equipment
8. Boiler
9. Compressed air equipment
10. Gas furnaces
11. Exit signs
12. Refrigeration equipment refrigerators, freezers
13. HVAC system controls
14. Operational improvements [SPECIFY:_____]
15. Other [SPECIFY:_____]
98. Don't know [SKIP TO NEXT SECTION]

I3. [REPEAT FOR EACH ITEM MENTIONED IN I2 WHERE I2≠1] How many [INSERT ITEM FROM I2] did you install? [RECORD NUMBER_____, 98 FOR DON'T KNOW, AND 96 FOR N/A]]

I4. [REPEAT FOR EACH ITEM MENTIONED IN I2] In what year was the [INSERT ITEM FROM I2] purchased and installed?

[RECORD NUMERIC YEAR: "2024","2023","Before 2023"…, 98 FOR DON'T KNOW, AND 96 FOR N/A]]

[ASK I2.11-I2.14 IF I2=1]

I2.11 In what location was it installed? 1. Wall 2. Ceiling 3. Outdoor **[RECORD/ALLOW MULTIPLE RESPONSES, 98=DON'T KNOW]**

I2.12 [REPEAT FOR EACH ITEM MENTIONED IN I2.11] What is the wattage of the [I2.11 RESPONSE] LED lighting? **[RECORD RESPONSE, 98=DON'T KNOW]**

I2.13 [REPEAT FOR EACH ITEM MENTIONED IN I2.11] How many [I2.11 RESPONSE] LED Lighting did you install? **[RECORD RESPONSE, 98=DON'T KNOW]**

I2.14 [REPEAT FOR EACH ITEM MENTIONED IN I2.11] What type of [I2.11 RESPONSE] lighting equipment was removed or replaced? **[RECORD RESPONSE, 98=DON'T KNOW]**

[ASK I2.21-I2.22 IF I2=2]

I2.21 How many lamps are controlled by the efficient lighting controls installed? **[RECORD RESPONSE, 98=DON'T KNOW]**

I2.22 What is the average wattage of the lamps controlled by the lighting controls installed? **[RECORD RESPONSE, 98=DON'T KNOW]**

[ASK I2.31-I2.33 IF I2=3]

I2.31 How is the high efficiency motor controlled? Always on, manual start/stop, VSD / ECM / VFD, Other? **[RECORD RESPONSE, 98=DON'T KNOW]**

I2.32 On what equipment was the high efficiency motor installed on? **[RECORD RESPONSE, 98=DON'T KNOW]**

I2.23 What is the horsepower of the high efficiency motor? **[RECORD RESPONSE, 98=DON'T KNOW]**

[ASK I2.41-I2.43 IF I2=4,5]
[ASK I2.42-I2.43 IF I2=6]

I2.41 [REPEAT FOR EACH ITEM MENTIONED IN I2] What is the heating efficiency rating HSPF of the [INSERT ITEM FROM I2]?**[RECORD NUMERIC RESPONSE: 0.1 TO 20.0 "HSPF RATING", 98=DON'T KNOW]**

I2.42 [REPEAT FOR EACH ITEM MENTIONED IN I2] What is the cooling efficiency rating SEER/EER of the [INSERT ITEM FROM I2]? **[RECORD NUMERIC RESPONSE: 0.1 TO 30.0 "SEER/EER RATING", 98=DON'T KNOW]**

I2.43 [REPEAT FOR EACH ITEM MENTIONED IN I2] What is the output capacity in BTUs of the equipment? **[RECORD NUMERIC RESPONSE: 0 TO 1,000,000 "BTUS", 98=DON'T KNOW]**

[ASK I2.51-I2.52 IF I2=7]

I2.51 On what type of equipment was the VSD variable speed drive or motor installed? **[RECORD RESPONSE, 98=DON'T KNOW]**

I2.52 What is the horsepower of the motor? **[RECORD RESPONSE, 98=DON'T KNOW]**

[ASK I2.61-I2.64 IF I2=8] [ASK I2.62-I2.64 IF I2=9]

I2.61 What type of water heating equipment was purchased and installed? [READ LIST]

16. Water heater with storage
17. Tankless water heater
18. Heat pump water heater
19. Condensing water heater
20. Boiler
98. Don't know

I2.62 What fuel type is used? **[RECORD RESPONSE, 98=DON'T KNOW]**

I2.63 What is the thermal efficiency rating of the water heating equipment? **[RECORD NUMERIC RESPONSE: 0.00 TO 0.99 "EFFICIENCY FACTOR EF", 98=DON'T KNOW]**

I2.64 [ASK IF I2.61 NOT EQUAL TO "TANKLESS WATER HEATER" OR I2=9] What is the capacity of the equipment in gallons? [**[RECORD NUMERIC RESPONSE: 0 TO 10,000 "CAPACITY IN GALLONS", 98=DON'T KNOW]**

[ASK I2.71-I2.72 IF I2=10]

I2.71 What is the compressed air equipment being used for? **[RECORD RESPONSE, 98=DON'T KNOW]**

1. Cycling refrigerated air dryers
2. Dewpoint demand controls for desiccant dryers
3. No air-loss condensate drains
4. Pressure/flow controllers
5. Compressed air mist eliminators
6. Air-entraining nozzles
7. Heat recovery
8. Other: **[RECORD RESPONSE]**

I2.72 What is the horsepower of the compressor motor? **[RECORD RESPONSE, 98=DON'T KNOW]**

[ASK I2.81-I2.82 IF I2=11]

I2.81 What is the annual fuel utilization efficiency AFUE rating of the gas furnace? **[RECORD RESPONSE, 98=DON'T KNOW]**

I2.82 What is the output capacity in BTUs of the gas furnace? **[RECORD RESPONSE, 98=DON'T KNOW]**

[ASK I2.91 IF I2=13]

I2.*91* What type of refrigeration equipment was purchased and installed? **[RECORD RESPONSE, 98=DON'T KNOW]**

[ASK I2.101 IF I2=14]

I2101 What type of HVAC system controls was purchased and installed? **[RECORD RESPONSE, 98=DON'T KNOW, 88=REFUSED]**

1. Smart thermostat
2. Building automation system
3. Other: **[RECORD RESPONSE]**

I2.92 What type of heating and cooling equipment are controlled by the HVAC system controls? **[RECORD RESPONSE, 98=DON'T KNOW]**

I5. [REPEAT FOR EACH ITEM MENTIONED IN I2] Please tell me how important your experience with the Focus on Energy Renewables Program was in your decision to install [ANSWER FROM I2]. Use a scale from 1 to 5, with 1 meaning the factor was "not at all important" and 5 meaning the factor was "very important" in your decision to purchase the [RESPONSE FROM I2] system?

[RECORD "1 – NOT AT ALL IMPORTANT", "2", "3", "4", "5 – VERY IMPORTANT", 98 FOR "DON'T KNOW"]

I6. Was [INSERT EACH ITEM FROM I2] installed at [SITE ADDRESS]?

1. Yes
2. No ASK: What is the address of the location where you installed [INSERT EACH ITEM FROM I2]? [SPECIFY_____]

98. Don't know

J. Demographics and Household Information/Business Firmographics

The last few questions are for statistical purposes only.

J1. What type of fuel does the water heater use where you installed the solar PV system?

1. Natural gas
2. Electricity [Please specify: standard electric, heat pump water heater, solar, ground-source heat pump desuperheater, other]
3. Propane/Bottled gas
4. Wood
5. Other [SPECIFY]

99. Don't know

J2. What type of fuel do you primarily use for space heating where you installed the solar PV system?

1. Natural Gas
2. Oil
3. Propane
4. Electricity
5. Wood
6. Other [specify:_____]

99. Don't know

J3. [ASK IF OFFERING = "Residential'] What type of home was the solar PV system installed at?

1. Mobile/manufactured home
2. Single-family home, detached house
3. Attached house townhouse, row house, or duplex
4. Multifamily apartment or condo building with 4 or more units
5. Co-op/retirement community
6. Other [SPECIFY]

99. Don't know

J4. [ASK IF OFFERING = "Business'] What is the primary building use where solar PV system was installed?

1. Retail
2. Office
3. Grocery
4. Restaurant
5. Public Safety police, fire house
6. Government non-public safety

7. Place of Worship
8. School
9. Hospital/health care
10. Agriculture
11. Warehouse
12. Factory/manufacturing
13. Vehicle repair
14. Military
15. Other [SPECIFY]

99. Don't know

J5. [ASK IF OFFERING = "Residential'] Do you or members of your household own or rent this home?

1. Own
2. Rent
3. Other: SPECIFY:_____

99. Don't know

J6. [ASK IF OFFERING = "Business'] Do you or members of your business own or rent the building where the solar PV system was installed?

1. Own
2. Rent
3. Other: SPECIFY:_____

99. Don't know

J7. [ASK IF J5=2 OR J6=2] How is your electric utility bill paid?

1. Your utility bills you directly
2. Your maintenance fees or rent includes utility costs
3. Your bill is split evenly between units within the complex
4. Other: SPECIFY:_____

99. Don't know

J8. [ASK IF J5=2 OR J6=2] How is your gas utility bill paid?

1. Your utility bills you directly
2. Your maintenance fees or rent includes utility costs
3. Your bill is split evenly between units within the complex
4. Other: SPECIFY:_____

99. Don't know

J9. [ASK IF OFFERING = "Residential'] What is the highest level of school that you have completed?

1. Less than 9th grade
2. 9th to 12th grade; no diploma
3. High school graduate [includes GED]
4. Some college, no degree
5. Associate's degree
6. Bachelor's degree
7. Graduate or professional degree

99. Prefer not to answer

J10. [ASK IF OFFERING = "Residential'] Which of the following categories best represents your age?

1. 18-24
2. 25-34
3. 35-44
4. 45-54
5. 55-64
6. 65-74
7. 75 or older

99. Prefer not to answer

J11. [ASK IF OFFERING = "Residential'] Which category best describes your total household income in 2024?

1. Less than $20,000
2. $20,000 to $49,999
3. $50,000 to $74,999
4. $75,000 to $99,999
5. $100,000 to $149,999
6. $150,000 to $199,999
7. $200,000 or more

99. Prefer not to answer

K. Closing/Thank and Terminate Language

CLOSING SCRIPT: Those are all of the survey questions we have.

K1. Do you have any other comments about your experience with Focus on Energy that you would like to share?

[RECORD RESPONSE:_____]

K2. On occasion, Focus on Energy may want to contact a customer to learn more about their participation experience. May we share your responses with a program manager, who may contact you regarding your experience?

1. Yes
2. No
99. I'm not sure

K3. Are you interested in entering the drawing for a $200 gift card?

1. Yes, please confirm the name and address where the card can be mailed if you're selected [record contact name and mailing address]

   [ADDRESS LINE 1]

   [ADDRESS LINE 2]

   [CITY]

   [ZIP]

   [STATE]

99. No, not interested

Focus on Energy appreciates your input. Thank you for your time.

CADMUS

Focus on Energy CY 2024 Trade Ally Interview Guide: Renewable Rewards Program

Respondent name:	
Respondent phone:	
Interview date:	Interviewer initials:

Introduction

Thank you for taking the time to speak with me. We are interviewing trade allies who participate in Focus on Energy's Solar PV Rebate Program to better understand how your business is interacting with the program and capture your thoughts on the solar PV market in general. We hope to get your perspective on things that are working well and any areas where you have experienced challenges. This information will inform potential program changes, so we encourage you to be as direct as possible and offer any suggestions you have for program improvement.

While we do not expect to ask you anything sensitive, your responses will be confidential; we will never use your name or your company's name in our reporting.

Finally, we do appreciate that you are very busy, so we are offering a $150 gift card as a thank you for sharing your time and feedback today. At the end of the call, we will confirm where to send the gift card.

Do you have any questions before we begin?

A. General Contractor/Company Information

First, I'd like to ask a few questions to understand your role and responsibilities within your company, as well as the markets you operate in and around Wisconsin.

A1. Please tell me your title and describe your role within your company and how long you have worked there.

A2. In what part of Wisconsin does your company generally work?

A3. Do you work in states outside of Wisconsin? Which ones? [REMINDER TO PLEASE FOCUS ON WISCONSIN FOR THIS INTERVIEW, UNLESS I SPECIFICALLY ASK ABOUT OTHER STATES.]

A4. Could you provide an estimate of the current number of employees at your company?

A5. Our records show your company completed [INSERT 2024 CUSTOMER OFFERING: BUSINESS, RESIDENTIAL, OR BOTH "Residential and Business"] solar PV projects that received an incentive from Focus on Energy in 2024. Does that sound correct?

1. [ASK IF ONLY RESIDENTIAL OR BUSINESS PROJECTS IN 2024 AND 2023 (if applicable), NOT BOTH] Does your company only specialize in [INSERT 2024 CUSTOMER OFFERING: BUSINESS OR RESIDENTIAL] solar PV projects?

A6. Roughly what percentage of your solar PV installations are in rural areas characterized by low population density, greater open spaces, and fewer developed properties, versus those in urban areas that are denser, more developed, and closer to major cities or towns?

A7. [ASK IF COMAPNY INSTALLS RESIDENTIAL SOLAR ENERGY PROJECTS] Roughly what percentage of your company's Wisconsin residential solar PV projects are in standard versus low/limited income areas?

B. Program Awareness and Participation

B1. Our records show that your company submitted [INSERT NUMBER OF APPLICATIONS IN SPECTRUM FOR EACH PARTICIPATING OFFERING: RESIDENTIAL, BUSINESS, OR BOTH] applications to the Focus on Energy Solar PV Rebate Program from the beginning of 2024 through September 2024. Does that sound about right?

B2. [IF PARTICIPATED IN 2023] According to our records, the number of solar PV projects your company completed in 2024 is [HIGHER THAN/LOWER THAN/SIMILAR TO] the number of projects it completed at this time in 2023. Does that sound correct?

B3. [IF B1 QUANTITY DIFFERENT THAN PREVIOUS YEAR] What do you think accounts for the difference in project volume between this year and last year? [PROBE: UPTAKE/DOWNTAKE REASONS. I.E. ECONOMY, MARKETING, LABOR SHORTAGE, PROGRAM INFLUENCE]

B4. Thinking about all the [INSERT 2024 CUSTOMER OFFERING: BUSINESS, RESIDENTIAL, OR BOTH "Residential and Business"] solar PV projects your company completes for *all* [INSERT 2024 CUSTOMER OFFERING: BUSINESS, RESIDENTIAL, OR BOTH "Residential and Business"] customers in Wisconsin, roughly what percentage *qualifies* for the Focus on Energy rebate? [IF NEEDED: JUST A BALLPARK OR ESTIMATION IS FINE]

B5. Do you ever complete applications for your customers? [IF NO, SKIP TO B7]

B6. Have you completed any qualified solar PV projects that were not submitted to Focus on Energy for an incentive?
1. If yes, what percent of projects are not submitted?
2. Why are some projects not submitted?

B7. Why do you participate in the Focus on Energy Solar PV Rebate Program?
1. What aspects of the Program are most valuable to you?

B8. How often do customers already know about the Focus on Energy incentive for solar PV projects before you tell them about it?

B9. When you are selling a job, at what point do you mention the Focus on Energy incentive?

B10. After introducing the Focus on Energy Incentive for solar PV projects, do you provide the customer with any print or digital materials regarding the program or incentives?

B11. Overall, how would you describe the Program's impact on the percentage of solar PV projects you sell in Wisconsin?

B12. Overall, how would you describe the Program's impact on your business? Why would you say that?

C. Feedback On Incentive Structure

C1. Aside from the Focus on Energy incentive, do your customers typically receive any other incentives or financing for their solar PV projects? Examples include tax credits and manufacturer incentives or discounts (Property tax or sales tax exemption, Solar group buy programs, Federal solar investment tax credit, etc.). [IF "NO" OR "DON'T KNOW," SKIP TO **ERROR! REFERENCE SOURCE NOT FOUND.**]

C2. [IF THEY MENTION CUSTOMERS USING ADDITIONAL FUNDING] From your perspective, how influential were these **additional** funding sources, excluding the Focus on Energy incentive, in your customers' decisions to move forward with their solar PV projects?

D. Barriers and Program Delivery

I'd like to ask you about customer barriers and program delivery aspects of the Solar PV Rebate Program.

D1. Beyond cost, what other factors make customers hesitant to complete solar PV projects?
   1. Do you notice these barriers in certain demographic groups? (regional, age, etc.)
   2. How well does the Focus on Energy program address these barriers?

D2. From your perspective, what more could Focus on Energy do in supporting customers to overcome these barriers?

D3. Besides Focus on Energy, are you aware of other programs or organizations that support customers overcoming these barriers? What are they?
   1. What services do those organizations provide to help customers overcome these barriers?

E. Feedback on IRA

E1. How familiar are you with the Inflation Reduction Act (IRA) tax credits for solar PV projects?

E2. What impact has the IRA tax credits for solar PV projects had on your 2024 sales?

E3. Have you adjusted, or do you plan to adjust your business because of IRA? [PROBE: additional staff, training, stocking, etc.]

E4. Are your customers generally aware of the IRA?

1. [ASK IF YES] If so, how do they display this awareness?

E5. Have you noticed any change in the length of time it takes to complete solar PV projects since the IRA was passed? [IF "NO CHANGE" OR "DON'T KNOW," SKIP TO **ERROR! REFERENCE SOURCE NOT FOUND.**]

E6. How much more/less time do solar PV projects typically take since the passage of the IRA?

1. Why are these projects taking [MORE/LESS FROM E8] time?

E7. Which elements of the solar PV project are typically affected in your experience?

F. Market Status

F1. How long have you and your company been installing [INSERT 2024 CUSTOMER OFFERING: BUSINESS, RESIDENTIAL, OR BOTH "Residential and Business"] solar PV projects?

F2. From your perspective, how has the solar PV market changed in the past three years?

F3. Thinking about the solar PV market in general, what are the largest changes you've seen in the market over the past 3 years?

1. What do you think has been the biggest driver of those changes?

F4. [ASK IF THE MARKET **HAS** CHANGED FROM THEIR PERSPECTIVE, F2 and F3] Has your company made any changes to address the changing solar PV market? [PROBE: technical training, sales training, promotions/marketing]

F5. [IF NOT ADDRESSED] Have you noticed a change in your customers' interest in or awareness of solar PV installations? Please describe.

F6. What are the main questions your customers have about solar PV?

F7. What are the most important factors affecting the solar PV market now?

F8. Looking ahead, how do you see the solar PV market changing in the next five years?

1. What do you see driving those changes? [PROBE FOR REASONS BESIDES IRA]

F9. Thinking ahead five years,

1. How do you think your overall sales of solar PV systems will change?
2. How do you expect your sales of solar PV systems to compare to today?

G. Wrap-up

G1. On a scale from 1-5 where 1 means "not at all satisfied" and 5 means "extremely satisfied," how satisfied are you with Focus on Energy's Solar PV Rebate Program overall? [RESPONSE CHOICES RANGING FROM 1-5, PLUS "DON'T KNOW"]

1. [PROBE FOR REASONS WHY IF ANSWERED 1 OR 2]

G2. What is one thing Focus on Energy can improve to increase your satisfaction with the Program?

G3. Is there anything we have not discussed about the Program that you would like to share?

G4. The last question I have is to confirm where we can send your $150 gift card. Could you please provide the address where we should mail it?

Those are all the questions we have for you today. Focus on Energy appreciates your time and your feedback. Have a good day.