

2022 ANNUAL REPORT

Energy Efficiency



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CleanVision and its relationship to Energy Efficiency¹

CleanVision is our ambitious goal of net zero carbon emissions by 2050. DTE will achieve our clean vision through many different efforts including clean energy sources, infrastructure improvements and by promoting energy efficiency.

Our bold net zero carbon emissions goal sets the framework for DTE to go beyond our prior commitments. Our new goals to reduce carbon emissions 65% by 2028 and 90% by 2040, ensure our medium- and long-term plans align with the scientific consensus around the importance of achieving significant economy-wide emissions reduction by 2050.

We are in the middle of an important and fundamental transformation in the way we provide energy in our state. Our Energy Efficiency (EE) programs provide options for customers to save money and energy and offer residential and business customers the opportunity to meet their own sustainability goals.

CleanVision is the bridge between DTE's legislative requirements for Michigan and our consumer and corporate efficiency initiatives. It ties the EE portfolio with DTE's other clean energy resources together under one banner.

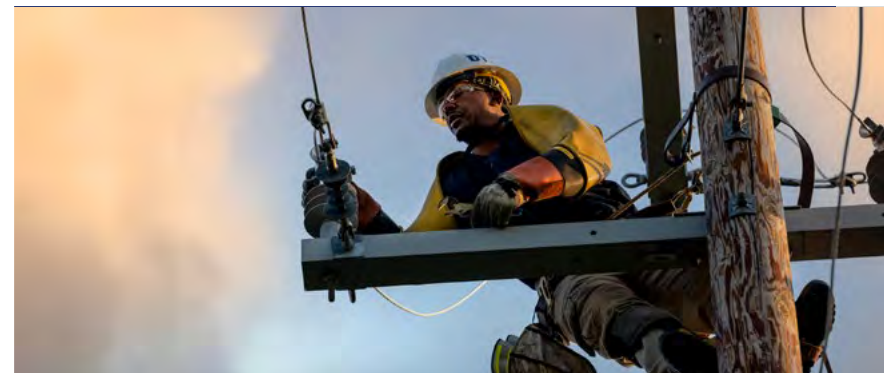
We all need to do our part to help protect the environment for our families and generations to come. Reducing carbon emissions is key to combatting climate change. DTE's EE programs help customers make a difference at a local or state level, at home or on the move.

¹ Please note, the terminology Energy Waste Reduction as referenced in Michigan's Public Act 342 is synonymously referred to as Energy Efficiency throughout this annual report.

Executive Summary



This annual report highlights the results of DTE Energy's (DTE's) 2022 Energy Efficiency (EE) Portfolio and summarizes changes and achievements of the portfolio's programs. The EE Portfolio comprises many specific programs within the Residential, Income-Qualified, Commercial and Industrial (C&I), Education and Awareness, and Pilot programs.





The EE Portfolio launched in June 2009 as a result of the Clean, Renewable and Efficient Energy Act, also known as Public Act 295 (PA 295), and as amended by Public Act 342 of 2016 (PA 342). Michigan's EE standard requires all gas and electric utilities in the state to implement programs to reduce overall energy usage to reduce the future costs of gas and electric service to customers. This report complies with Section 97(1) of PA 295. Figure 1 highlights the energy savings targets required by this legislation.

Since the initial 2009 EE Portfolio launch, DTE continues to enhance the scope of existing programs and add new program options to the portfolio. Customers have upgraded equipment in their homes and businesses, helping them to become more energy efficient. DTE has also provided its customers with education, tips, strategies and tools to help save money on their energy bills. As a result, customers have seen many benefits throughout the portfolio's existence, as Figure 1 indicates.

Figure 1

**PA 295
Legislation
Energy
Savings Target
Requirements**

	 Electric	 Gas
2009	0.3%	0.1%
2010	0.5%	0.25%
2011	0.75%	0.5%
2012-2022*	1%	0.75%

*Beyond 2021, the level of electric energy efficiency savings is determined by the utility's integrated resource plan.

**Cumulative
Customer
Benefits:
2009-2022**

Participants	8.9 million	4.5 million
Customer Savings	9,090 GWh	21,661 MMcf

**DTE EE
Portfolio
Benefits:
PY2022**

Total Verified Savings	887 GWh	2,086 MMcf
Minimum Legislative Requirement	886 GWh	1,886 MMcf
Percent of Planned Retail Sales	2.00%	1.00%
Lifecycle \$ Savings	\$341 million	\$76.5 million

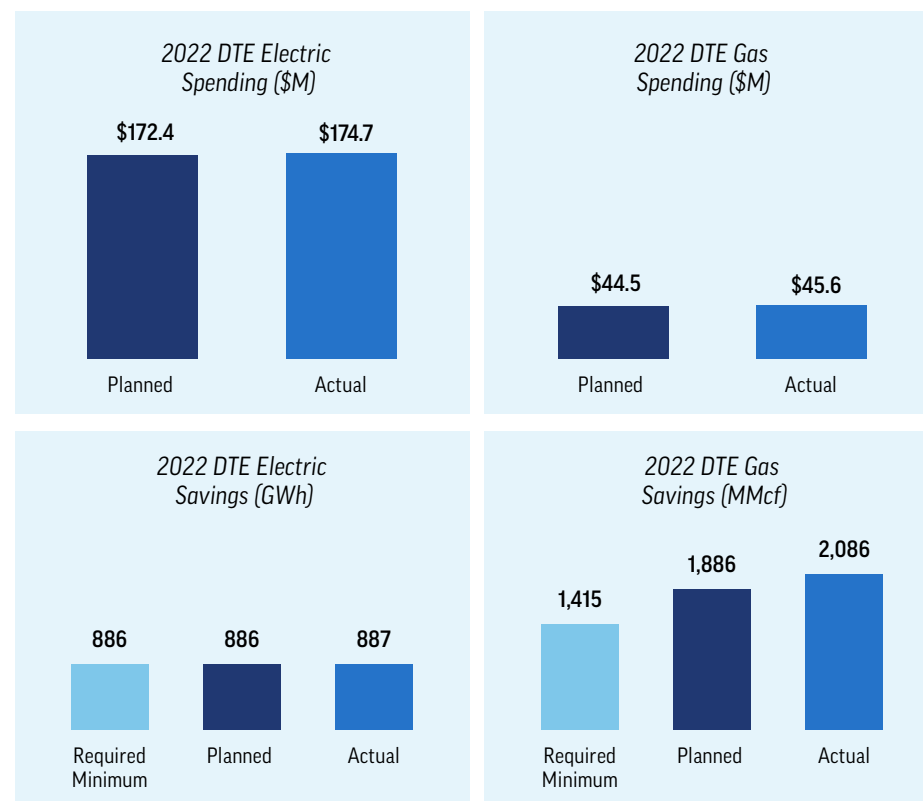
Chart 1 summarizes the overall EE Portfolio 2022 spending and verified net savings for DTE Electric and DTE Gas.

DTE performs cost-effectiveness tests to confirm the benefits of the EE Portfolio exceed the costs for DTE and its customers. DTE uses the Utility System Resource Cost Test (USRCT) to measure the effectiveness of the EE Portfolio. Specifically, the goal of the EE Portfolio (not including Income-Qualified programs) is to meet the minimum required USRCT ratio of 1.00.² In 2022, DTE Electric achieved a USRCT ratio of 1.84 and DTE Gas achieved a USRCT ratio of 1.83. In 2022, DTE's combined electric and gas savings equal lifetime greenhouse gas reductions of 6.4 million metric tons of carbon dioxide (CO₂), 3,122 metric tons of nitric oxide (NO_x), and 3,260 metric tons of sulfur dioxide (SO₂).

In 2022, DTE implemented its EE Portfolio as outlined in the 2022-2023 Energy Waste Reduction (EWR) Plan. DTE used implementation contractors and built strong networks to deliver energy efficiency programs throughout Michigan that focus on:

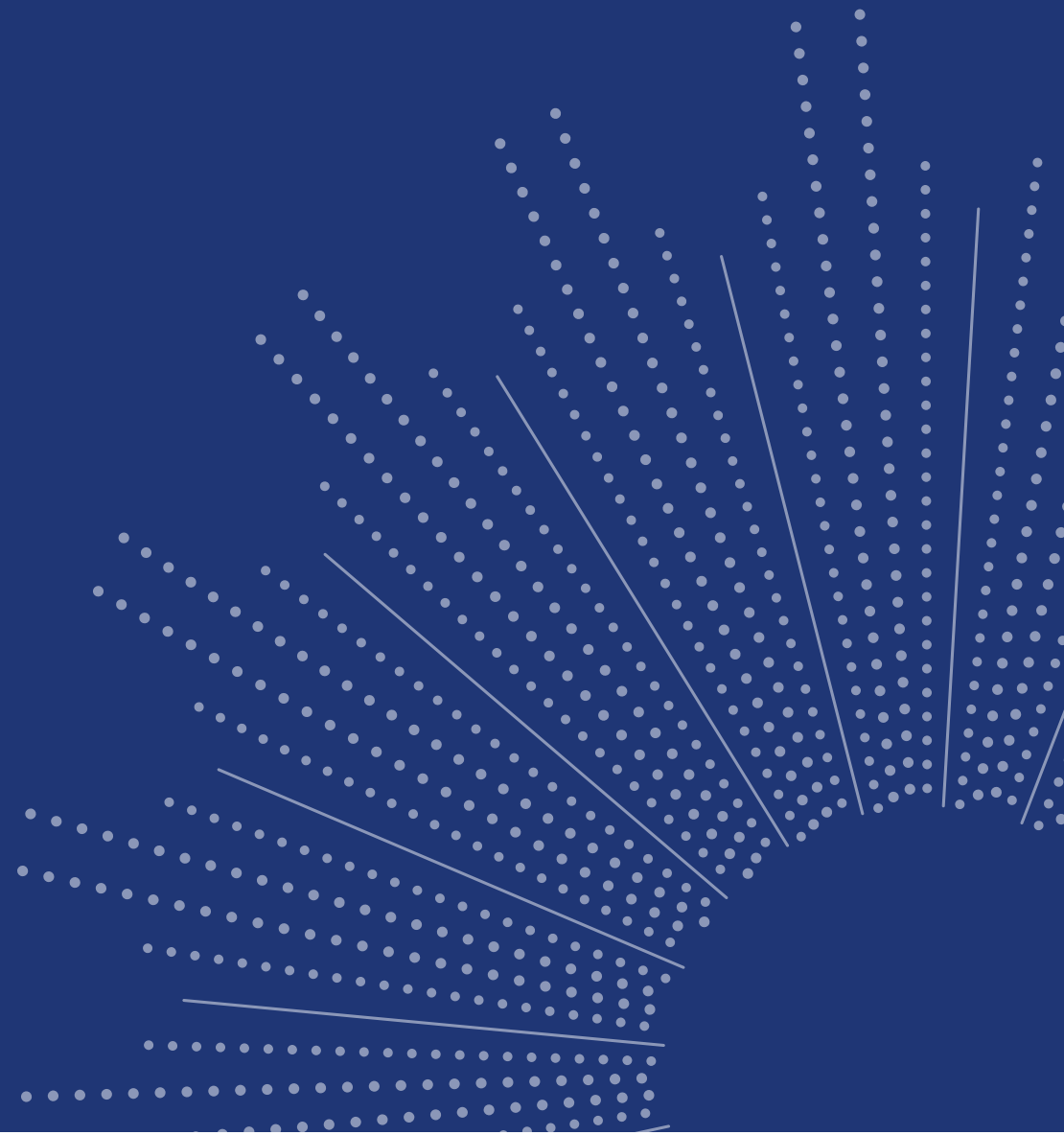
- **Residential:** Through its residential programs, DTE offers homeowners products, services and rebates including appliance recycling; lighting; appliances; heating, ventilating and air conditioning (HVAC); weatherization; home energy assessments; and income-qualified, energy education and behavioral programs.
- **Income-Qualified:** DTE works with government agencies and community organizations to bring energy and payment assistance to income-qualified residents. DTE is increasing its EE offerings to assist these customers in reducing their energy use and managing their utility costs.
- **C&I:** DTE launched several special offerings for its C&I programs in 2022 to broaden customer participation. These specials included commercial energy audits and an enhanced offer related to the Michigan Saves program. C&I programs also proactively focus on relationship development with organizations such as the U.S. Green Building Council and Leadership in Energy and Environmental Design to fully leverage new construction MEMD measures.
- **Education and Awareness:** DTE provides energy efficiency education and raising awareness of EE offerings by enhancing communications and messaging while leveraging new trends in digital and social media communication channels. DTE also is using targeted marketing to meet segment-specific needs for energy efficiency information while using traditional mass media focused on the non-energy benefits of energy efficiency improvements.
- **Pilots:** Over the years, DTE's ability to run the Pilot program effectively has continued to improve through the maturity of systems and back-office processes. In 2022, DTE continued increasing its Pilot program activity.

Chart 1 – 2022 EE Portfolio Spending and Verified Net Savings



² The calculations exclude Income-Qualified programs per Section 71(4) (g) of PA 295, which specifically excludes Income-Qualified in the cost-effectiveness requirement.

Portfolio Summary



Goals and Targets

The operational goal of DTE's 2022 Energy Efficiency (EE) Portfolio was to continue growing customer acceptance and adoption of EE measures. Specifically, the 2022 goals were to:

1. Achieve electric energy savings of 2% of 2021 planned retail sales, or 886 gigawatt-hours (GWh), and legislated gas energy savings of 1% of 2021, planned retail sales, or 1,886 million cubic feet (MMcf).
2. Ensure EE programs are cost-effective. DTE performs cost-effectiveness tests to confirm the benefits of the EE Portfolio exceed the costs for DTE and its customers. DTE uses the Utility System Resource Cost Test (USRCT) to measure the effectiveness of various EE programs. Specifically, the EE Portfolio's goal (not including Income-Qualified programs) is to meet the minimum required USRCT ratio of 1.0.

Chart 2 – 2022 EE Portfolio Spending and Verified Net Savings

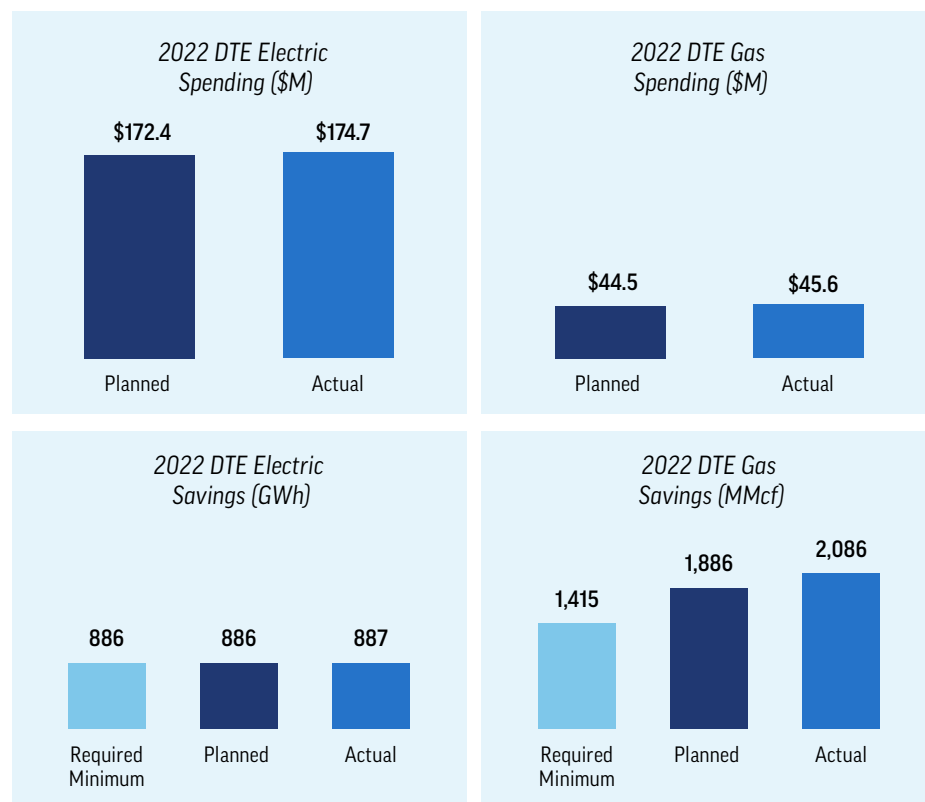
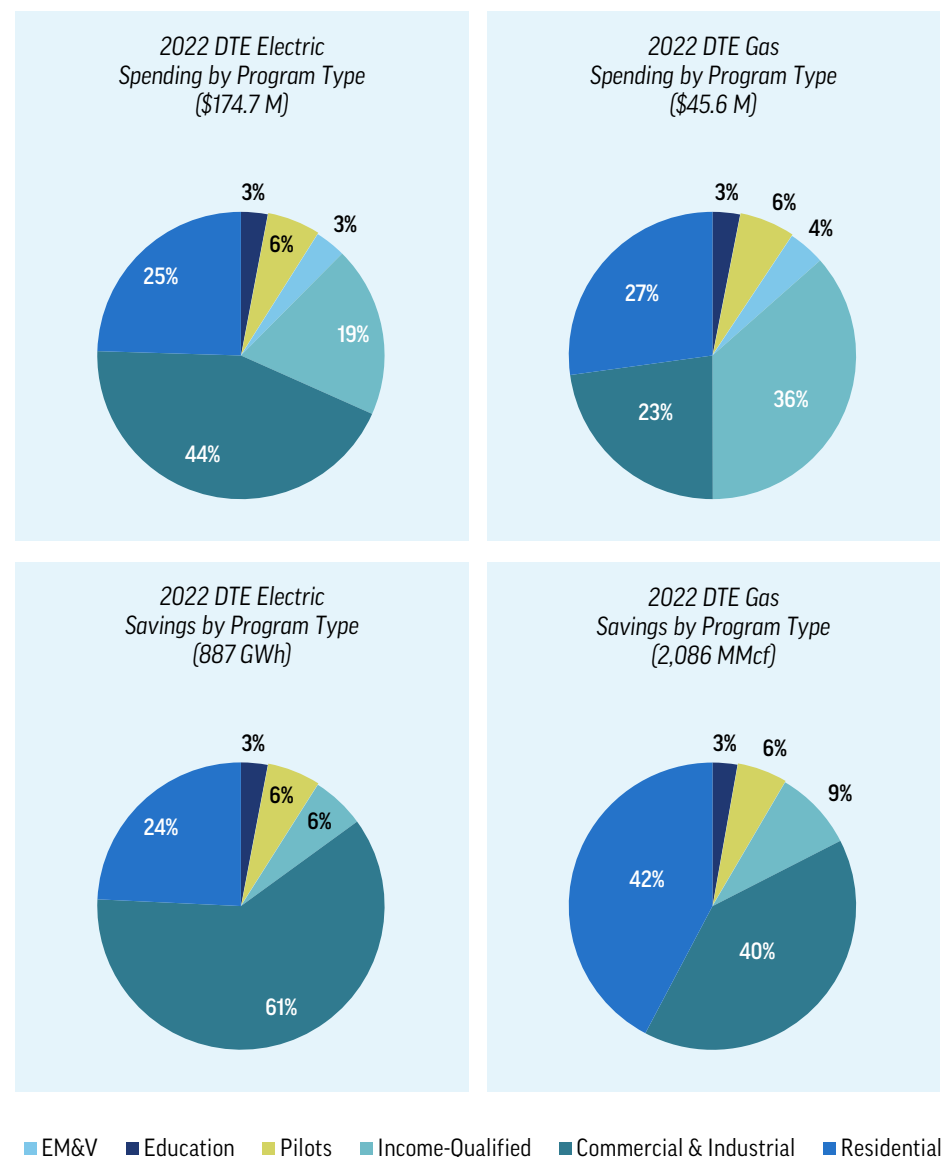


Chart 3 displays program spending and verified net savings for the various EE programs in 2022.

Chart 3 – 2022 EE Spending and Verified Net Energy Savings by Program Type



Evaluation, Measurement and Verification

Michigan's EE construct requires independent verification of utilities' claimed energy savings. This work is performed by an independent evaluation, measurement and verification (EM&V) contractor.

Verified net energy savings are DTE's reported savings after they have been adjusted based on the results of an evaluation and analysis by DTE's independent evaluation contractor, Guidehouse, Inc. (Guidehouse), and the installation rate adjustment factors (IRAFs) and net-to-gross ratios (NTGRs) have been applied.³ An IRAF is applied to account for rebated measures that are no longer or were never installed and operational. An NTGR is applied to account for the difference in energy consumption with the program in place versus what consumption would have been without the program in place.

In 2022, DTE applied a 0.92 NTGR to most programs. DTE applied different NTGRs to some programs or measures, including:

- 1.00 for Income-Qualified, Pilots and Education and Awareness
- 0.40 for standard and 0.50 for specialty light-emitting diode (LED) bulbs in the Residential ENERGY STAR® Products program as approved by the Michigan Public Service Commission (MPSC) on January 20, 2022, for DTE's 2022-2023 EWR Plan, Case No. U-20876
- An NTGR was not applied to the following programs or measures because savings represent verified net savings:
 - Tier 1 thermostats delivered by Commercial and Industrial (C&I) programs
 - Tier 2 and 3 thermostats delivered by Residential programs
 - Home Energy Reports program

EM&V work must be performed to industry standards and guidelines developed by the Evaluation Workgroup of the MPSC EE Collaborative. Guidehouse fills this role for DTE.

DTE and its evaluation contractor are active participants in the Evaluation Workgroup, along with Consumers Energy, other cooperative and municipal utilities and their respective evaluation contractors as well as the MPSC staff. In addition to developing guidelines for evaluation, members of the Evaluation Workgroup established a statewide resource for technical energy savings values for thousands of energy efficient measures, the Michigan Energy Measures Database (MEMD). The MEMD enables fast and efficient entry, tracking and evaluation for most measures installed in Michigan EWR programs regardless of program provider.

The MEMD is managed by the MPSC. The Technical Subcommittee oversees the management and updating of the MEMD. Updating measure values to reflect changes in standards, incorporating newer studies and making them more representative of Michigan follows a well-defined process involving all stakeholders. DTE and Consumers Energy work together with their evaluation contractors to conduct foundational research on important measures to develop up-to-date Michigan-based values. Since 2009, numerous additions and calibrations have been made to the MEMD to make the values more encompassing, accurate and Michigan-specific.

³ The IRAF is typically applied based on a 2-year lag of an evaluated result. For example, in 2022, the 2020 evaluated measure-level IRAF is applied to audited gross savings to determine verified gross savings. Exceptions to this rule include new measures, custom programs, deemed measures or programs (Pilots, Education and Awareness, etc.), and measures with MEMD savings that are verified net (Tier 1 commercial thermostats).

Long-Term EE Impacts

DTE also considers metrics beyond the first-year energy savings goals set out in Public Act 295 (PA 295 as amended by PA 342) toward longer-term impacts; these areas include overall lifecycle savings, both in dollars and energy; the average life of measures being installed; and reduction in future peak demand. This section provides definitions and the 2022 EE Portfolio results for these long-term metrics.

Lifecycle dollar savings: Represents the dollar savings resulting from current and future energy costs avoided as a result of an EE action over the effective life of that action. Lifecycle dollar savings may be presented for a collection of measures, an individual program or a portfolio of programs. The lifecycle dollar savings for DTE's programs are based on verified net savings. Lifecycle dollar savings are presented as the present value of those savings.⁴

Table 1 shows that DTE's 2022 EE programs produced significant dollar savings for its customers for future years.

Table 1 – DTE 2022 EE Portfolio – Lifecycle Dollar Savings (All Values in Dollars)

	Program	DTE Electric Present Value	DTE Gas Present Value
RESIDENTIAL	Appliance Recycling	\$11,113,287.99	-
	Audit and Weatherization	\$831,697.72	\$1,859,274.92
	ENERGY STAR® Products	\$15,722,287.49	\$598,739.61
	Heating, Ventilation, and Air Conditioning	\$3,229,549.39	\$10,882,028.17
	Home Energy Consultation	\$1,691,104.02	\$1,204,085.29
	Home Energy Efficiency Kits ⁵	\$106,521.53	\$0.00
	Home Energy Reports	\$3,081,513.04	\$1,127,337.37
	Multifamily	\$56,582.64	\$45,421.52
	New Home Construction	\$3,813,862.58	\$3,821,255.06
	School Program	\$4,752,668.53	\$2,611,459.50
INCOME-QUALIFIED	Utility Shared Savings ⁶	\$5,105,091.94	\$2,281,547.74
	Residential Subtotal	\$49,504,166.87	\$24,431,149.19
	Income-Qualified – Energy Efficiency Assistance	\$8,296,916.64	\$2,411,352.56
	Income-Qualified – Multifamily	\$3,589,194.08	\$3,107,154.66
	Income-Qualified – Home Energy Consultation	\$809,658.75	\$1,132,540.18
	Income-Qualified – Utility Shared Savings ⁶	\$796,896.36	\$344,363.37
	Income-Qualified Subtotal	\$13,492,665.84	\$6,995,410.77
C & I	Prescriptive	\$122,727,565.20	\$23,827,830.98
	Non-Prescriptive	\$40,445,119.79	\$1,727,847.51
	ENERGY STAR Retail Lighting	\$2,851,475.90	-
	C&I Multifamily Common Areas	\$673,879.56	\$32,825.33
	Midstream Lighting	\$37,026,034.57	-
	Midstream Food Service	\$721,668.35	\$441,251.36
	Midstream HVAC	\$7,977,480.31	\$4,432,798.55
	Retro-Commissioning	\$2,485,807.09	\$364,951.23
	Strategic Energy Management	\$2,626,890.11	\$1,032,484.19
	Self-Direct	\$1,105,056.10	-
	Business Energy Consultation	\$2,466,880.39	\$987,193.57
	Find and Fix	\$320,719.33	\$142,973.89
	Small Business Focus	\$20,201,465.42	\$173,217.91
	Emerging Measures and Approaches	\$861,644.81	\$0.00
	Utility Shared Savings ⁶	\$3,784,273.45	\$5,314,746.38
	C&I Subtotal	\$246,275,960.38	\$38,478,120.91
	Pilot Programs	\$21,302,724.44	\$4,420,870.13
	Education and Awareness Program	\$10,819,831.65	\$2,185,909.49
	Portfolio	\$341,395,349.18	\$76,511,460.49

⁴ Lifecycle dollar savings is not net of program expenses and includes line losses.

⁵ The Home Energy Efficiency Kits program concluded in 2021; values throughout this report represent spending and delayed savings that carried over into 2022.

⁶ Utility Shared Savings are those savings that are currently being created by an "originating" utility but remain unquantified and unclaimed by the utility providing the relevant fuel service (the "receiving" utility). Utility Shared Savings represents savings created by Consumers Energy (originating utility) in areas where Consumers Energy and DTE have overlapping service territory and Consumers Energy provides single fuel service.

Lifecycle energy savings: Represents the total cumulative program energy savings (GWh or MMcf) produced by the energy-saving actions taken for all years of the particular action's effective life. Lifecycle energy savings represent verified net energy savings.

Table 2 displays the long-term energy savings associated with the cost savings listed in Table 1.

Table 2 – DTE 2022 EE Portfolio – Lifecycle Energy Savings

	Program	DTE Electric MWh: Cumulative Savings (Losses Included)	DTE Gas Mcf: Cumulative Savings (Losses Included)
RESIDENTIAL	Appliance Recycling	272,802.21	-
	Audit and Weatherization	19,897.85	728,488.10
	ENERGY STAR® Products	383,634.59	171,801.79
	Heating, Ventilation, and Air Conditioning	59,537.11	3,547,401.73
	Home Energy Consultation	42,551.56	362,866.48
	Home Energy Efficiency Kits	2,638.34	0.00
	Home Energy Reports	76,973.48	270,935.52
	Multifamily	1,435.13	12,277.90
	New Home Construction	68,376.63	1,333,777.14
	School Program	125,003.95	779,410.97
	Utility Shared Savings	63,432.50	476,520.01
	Residential Subtotal	1,116,283.34	7,683,479.65
INCOME-QUALIFIED	Income-Qualified – Energy Efficiency Assistance	210,200.63	801,717.27
	Income-Qualified – Multifamily	100,762.06	951,997.54
	Income-Qualified – Home Energy Consultation	20,524.82	341,180.53
	Income-Qualified – Utility Shared Savings	9,676.60	69,440.60
	Income-Qualified Subtotal	341,164.12	2,164,335.94
C & I	Prescriptive	2,971,846.97	8,697,344.23
	Non-Prescriptive	1,051,411.81	582,139.73
	ENERGY STAR Retail Lighting	68,690.01	-
	C&I Multifamily Common Areas	18,552.63	9,171.99
	Midstream Lighting	954,732.12	-
	Midstream Food Service	18,140.97	141,101.28
	Midstream HVAC	164,003.66	1,581,314.02
	Retro-Commissioning	66,978.94	101,277.39
	Strategic Energy Management	68,995.37	268,090.74
	Self-Direct	24,659.41	-
	Business Energy Consultation	68,364.95	292,400.70
	Find and Fix	8,227.92	38,288.71
	Small Business Focus	521,596.54	51,370.45
	Emerging Measures and Approaches	24,343.89	0.00
	Utility Shared Savings	61,017.32	1,073,734.51
	C&I Subtotal	6,091,562.49	12,836,233.76
	Pilot Programs	473,913.56	1,346,498.29
	Education and Awareness Program	237,166.77	665,934.82
	Portfolio	8,260,090.28	24,696,482.46

Cost of conserved energy: Expresses the measure, program or portfolio costs in per-unit terms based on the total energy savings over the effective lifecycle of the specific measures or actions taken. The starting point is net energy savings.

Table 3 summarizes the levelized cost of energy and demand saved for each EE program per unit of the energy savings achieved.

Table 3 – DTE 2022 EE Portfolio – DTE Cost of Conserved Energy

	Program	DTE Electric \$/Lifetime Savings (kWh)	DTE Gas \$/Lifetime Savings (CCF)
RESIDENTIAL	Appliance Recycling	\$0.03	-
	Audit and Weatherization	\$0.06	\$0.24
	ENERGY STAR® Products	\$0.05	\$0.16
	Heating, Ventilation, and Air Conditioning	\$0.07	\$0.15
	Home Energy Consultation	\$0.13	\$0.48
	Home Energy Efficiency Kits	\$0.00	\$0.00
	Home Energy Reports	\$0.04	\$0.27
	Multifamily	\$0.10	\$1.16
	New Home Construction	\$0.02	\$0.13
	School Program	\$0.01	\$0.11
	Utility Shared Savings	\$0.00	\$0.00
	Residential Subtotal	\$0.05	\$0.25
INCOME-QUALIFIED	Income-Qualified – Energy Efficiency Assistance	\$0.09	\$1.31
	Income-Qualified – Multifamily	\$0.11	\$0.51
	Income-Qualified – Home Energy Consultation	\$0.16	\$0.35
	Income-Qualified – Utility Shared Savings	\$0.00	\$0.00
	Income-Qualified Subtotal	\$0.10	\$0.77
C & I	Prescriptive	\$0.01	\$0.05
	Non-Prescriptive	\$0.01	\$0.30
	ENERGY STAR Retail Lighting	\$0.01	-
	C&I Multifamily Common Areas	\$0.03	\$0.46
	Midstream Lighting	\$0.01	-
	Midstream Food Service	\$0.04	\$0.27
	Midstream HVAC	\$0.02	\$0.08
	Retro-Commissioning	\$0.05	\$0.40
	Strategic Energy Management	\$0.05	\$0.23
	Self-Direct	\$0.00	-
	Business Energy Consultation	\$0.04	\$0.18
	Find and Fix	\$0.13	\$1.86
	Small Business Focus	\$0.02	\$0.50
	Emerging Measures and Approaches	\$0.04	\$0.00
	Utility Shared Savings	\$0.00	\$0.00
	C&I Subtotal	\$0.02	\$0.11
	Pilot Programs	\$0.02	\$0.21
	Education and Awareness Program	\$0.02	\$0.21
	Portfolio	\$0.02	\$0.17

Weighted average measure life: Represents the average life, in years, of all measures installed or actions taken in a program or the entire portfolio when each measure's life is weighted by the energy savings it produces relative to the total energy savings in the program or portfolio.

Table 4 summarizes the weighted average measure life for the various 2022 EE programs at the individual program level and for the program as a whole.

Greenhouse gas reductions: In 2022, DTE's combined electric and gas verified net savings from EE programs equal lifetime greenhouse gas reductions of 6.4 million metric tons of carbon dioxide (CO₂), 3,122 metric tons of nitric oxide (NO_x), and 3,260 metric tons of sulfur dioxide (SO₂).

Table 4 – DTE 2022 EE Portfolio – DTE Weighted Average Measure Life

	Program	DTE Electric (kWh) Program Weighted Life	DTE Gas (CCF) Program Weighted Life
RESIDENTIAL	Appliance Recycling	7.99	-
	Audit and Weatherization	24.10	23.72
	ENERGY STAR® Products	4.67	5.89
	Heating, Ventilation, and Air Conditioning	13.60	14.05
	Home Energy Consultation	5.02	10.28
	Home Energy Reports	1.00	1.00
	Multifamily	3.27	2.98
	New Home Construction	18.00	18.00
	School	5.23	4.45
	Residential Subtotal	4.47	8.27
INCOME-QUALIFIED	Income-Qualified – Energy Efficiency Assistance	4.62	15.16
	Income-Qualified – Multifamily	10.75	9.07
	Income-Qualified – Home Energy Consultation	5.21	10.28
	Income-Qualified Subtotal	5.64	10.97
C & I	Prescriptive	11.53	16.81
	Non-Prescriptive	11.04	15.00
	ENERGY STAR Retail Lighting	3.00	-
	C&I Multifamily Common Areas	6.72	3.15
	Midstream Lighting	11.02	-
	Midstream Food Service	12.13	12.96
	Midstream HVAC	15.85	18.84
	Retro-Commissioning	3.91	5.79
	Strategic Energy Management	2.63	3.00
	Self-Direct Program	8.31	-
	Business Energy Consultation	8.46	9.92
	Small Business Focus	9.29	9.83
	Find and Fix	1.00	5.07
	Emerging Measures and Approaches	10.51	-
	C&I Subtotal	10.10	14.65
	Pilot Programs	8.31	11.29
	Education and Awareness Program	8.31	11.29
	Portfolio	8.31	11.29

Peak Demand Reduction (megawatts, or MW)

Electric EE programs can deliver peak demand reductions to minimize the need for future power plants. Peak demand reduction represents the aggregate reduction from EE program participants in DTE Electric's service area load at the time of the Michigan zone of the Midwest Independent System Operator market's expected peak demand.

Table 5 shows that the DTE Electric 2022 EE programs achieved significant demand reductions and energy savings.⁷

⁷ All values are shown as measured at customer meters. Line losses are not included.

⁸ The Home Energy Efficiency Kits program concluded in 2021; values throughout this report represent spending and delayed savings that carried over into 2022.

⁹ Utility Shared Savings are those savings that are currently being created by an "originating" utility but remain unquantified and unclaimed by the utility providing the relevant fuel service (the "receiving" utility). Utility Shared Savings represents savings created by Consumers Energy (originating utility) in areas where Consumers Energy and DTE have overlapping service territory and Consumers Energy provides single fuel service.

Table 5 – DTE 2022 EE Portfolio – DTE Electric Peak Demand Savings

	Program	2022 Verified Net Peak Demand Savings (MW)
RESIDENTIAL	Appliance Recycling	3.70
	Audit and Weatherization	0.22
	ENERGY STAR® Products	8.73
	HVAC	1.88
	Home Energy Consultation	0.80
	Home Energy Efficiency Kits ⁸	0.06
	Home Energy Reports	13.71
	Multifamily	0.02
	New Home Construction	2.12
	School Program	0.62
	Utility Shared Savings	1.06
	Residential Subtotal	32.92
INCOME-QUALIFIED	Income-Qualified – Energy Efficiency Assistance	3.88
	Income-Qualified – Multifamily	0.29
	Income-Qualified – Home Energy Consultation	0.36
	Income-Qualified – Utility Shared Savings	0.25
	Income-Qualified Subtotal	4.78
C & I	Prescriptive	56.28
	Non-Prescriptive	10.43
	ENERGY STAR Retail Lighting	3.81
	C&I Multifamily Common Areas	0.03
	Midstream Lighting	11.23
	Midstream Food Service	0.24
	Midstream HVAC	4.20
	Retro-Commissioning	0.00
	Strategic Energy Management	0.00
	Self-Direct	0.49
	Business Energy Consultation	0.45
	Find and Fix	0.00
	Small Business Focus	7.28
	Emerging Measures and Approaches	0.00
	Utility Shared Savings	0.62
	C&I Subtotal	95.04
	Pilot Programs	8.72
	Education and Awareness Program	4.36
	Portfolio	145.83

Cost-Effectiveness

Per Section 71(4) of PA 342, electric and gas utility providers must offer a cost-effective EWR portfolio to customers; while the portfolio must include income-qualified programs, these programs are not included in the cost-effectiveness tests. Cost-effectiveness tests are performed to confirm the benefits of DTE's EE Portfolio exceed the costs for DTE and its customers. Providers must demonstrate the EE programs (excluding offerings to income-qualified customers) meet the USRCT and are reasonable and prudent.

DTE used the DSMore¹⁰ cost analysis tool to calculate the USRCT cost-effectiveness at the program level and for groups of programs, including the Income-Qualified programs, Residential programs, and C&I programs. USRCT is a cost-effectiveness test that measures cost-effectiveness from the viewpoint of DTE and ensures the benefits for all programs will exceed the costs.

The two major groups of inputs used in DSMore are utility input assumptions and program inputs:

- Utility input assumptions contain information specific to DTE and include items such as load shape, the commodity and non-commodity cost of energy, customer energy rates, line losses, weather and discount rates. The utility input assumptions used are primarily the same as those used to develop DTE Electric's and DTE Gas's approved 2022-2023 EE Plans.
- Program inputs include measure-level electric and gas energy savings, measure-level coincident peak demand reductions, the number of measures adopted by participants, incremental participant costs, customer incentive costs, program costs, performance incentive costs, education costs and pilot costs.

Table 6 – Cost-Effectiveness Values

	Program	DTE Electric (USRCT)	DTE Gas (USRCT)
RESIDENTIAL	Appliance Recycling	1.40	-
	Audit and Weatherization	0.65	1.08
	ENERGY STAR® Products	0.90	2.14
	Heating, Ventilation, and Air Conditioning	0.75	2.11
	Home Energy Consultation	0.30	0.69
	Home Energy Efficiency Kits	8.27	0.00
	Home Energy Reports	0.91	1.53
	Multifamily	0.38	0.32
	New Home Construction	2.49	2.17
	School Program	3.81	3.01
	Utility Shared Savings	0.00	-
	Residential Subtotal	0.94	1.26
INCOME-QUALIFIED	Income-Qualified – Energy Efficiency Assistance	0.43	0.23
	Income-Qualified – Multifamily	0.33	0.64
	Income-Qualified – Home Energy Consultation	0.24	0.94
	Income-Qualified – Utility Shared Savings	-	-
	Income-Qualified Subtotal	0.40	0.42
C&I	Prescriptive	3.86	5.45
	Non-Prescriptive	2.92	0.98
	ENERGY STAR Retail Lighting	3.22	-
	C&I Multifamily Common Areas	1.11	0.78
	Midstream Lighting	6.47	-
	Midstream Food Service	0.90	1.16
	Midstream HVAC	2.55	3.33
	Retro-Commissioning	0.79	0.89
	Strategic Energy Management	0.74	1.68
	Self-Direct	21.67	-
	Business Energy Consultation	0.84	1.84
	Find and Fix	0.29	0.20
	Small Business Focus	2.52	0.67
	Emerging Measures and Approaches	0.87	0.00
	Utility Shared Savings	0.00	0.00
	C&I Subtotal	2.48	2.67
	Pilot Programs	2.04	1.55
	Education and Awareness Program	2.07	1.55
	Portfolio (Excluding Income-Qualified)	1.86	1.83

¹⁰ Demand Side Management Option Risk Evaluator (DSMore) is a financial analysis tool designed to evaluate the costs, benefits, and risks of demand side management programs, including energy efficiency, DR and smart grid programs and services.

Portfolio Revenue (Surcharges)

Base surcharge revenue reflects EE actual revenue realized excluding the revenue recovery for authorized performance incentives. These surcharges appear within the Other Delivery Surcharges line item on a customer's monthly bill statement.

The amount of the surcharge depends on the rate class – Residential, C&I Secondary or C&I Primary and End Use Transportation (EUT). Residential and C&I gas customers pay a volumetric rate, so a customer's individual surcharge depends on how much energy they use. For C&I electric customers, the total amount paid is also based on the number of meters because they pay a monthly per-meter charge determined by their monthly consumption. Funds received from a customer class – Residential, C&I Secondary and C&I Primary – should, to the extent possible, be spent on EE programs that benefit that rate class. All classes contribute to the Income-Qualified Residential program.

Chart 4 displays the actual amounts billed to DTE customers (excluding the performance incentive) in 2022 through the EE surcharges approved by the MPSC by customer type. Chart 5 displays revenue collected for the EE Portfolio in 2022 by customer type.

The actual electric revenue from the Residential class is higher than the plan due to the variance between actual and forecast sales. This variance is primarily driven by continued increased usage due to people working from home and general changes in usage patterns compared with the plan case. Secondary sales came in higher than forecasted due to most state-wide policies around business closures became relaxed for full year 2022. Primary sales came in lower than forecasted primarily due to most large office buildings continuing to offer remote work options for employees, a self-generation facility being built at a primary site, as well as a closure at an industrial plant. The actual gas revenue from all customer classes varies slightly from the plan due to the variance between actual and forecast sales, with revenue slightly lower for Residential and C&I/EUT.

Chart 4 – 2022 EE Portfolio Revenue (Surcharges)

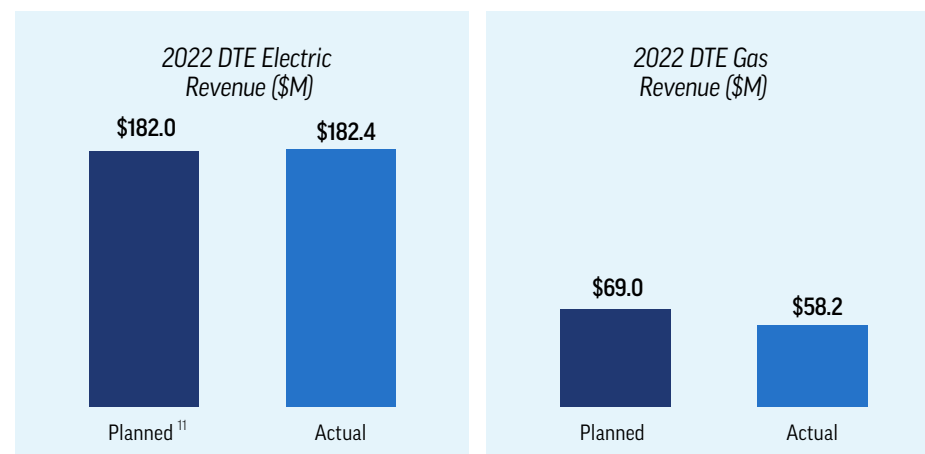
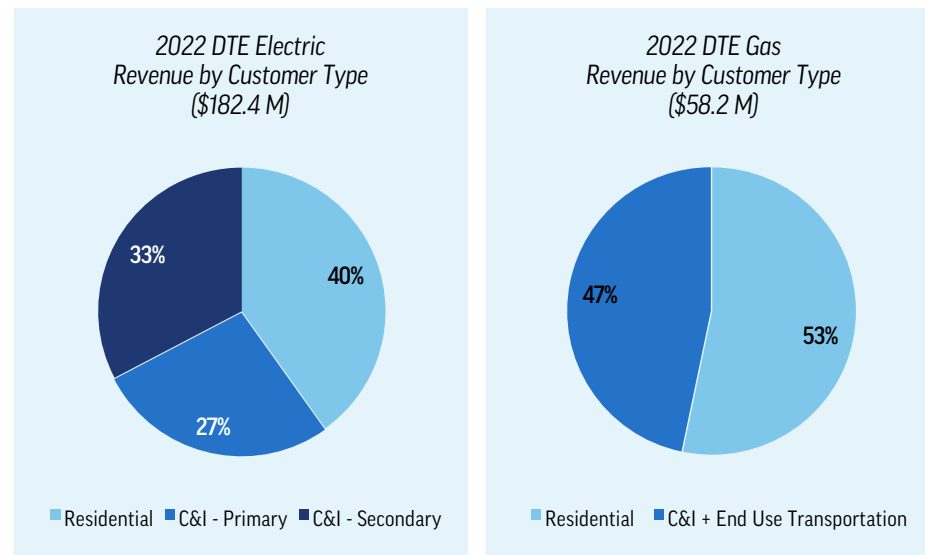


Chart 5 – Revenue Collected for EE Portfolio in 2022 by Customer Type



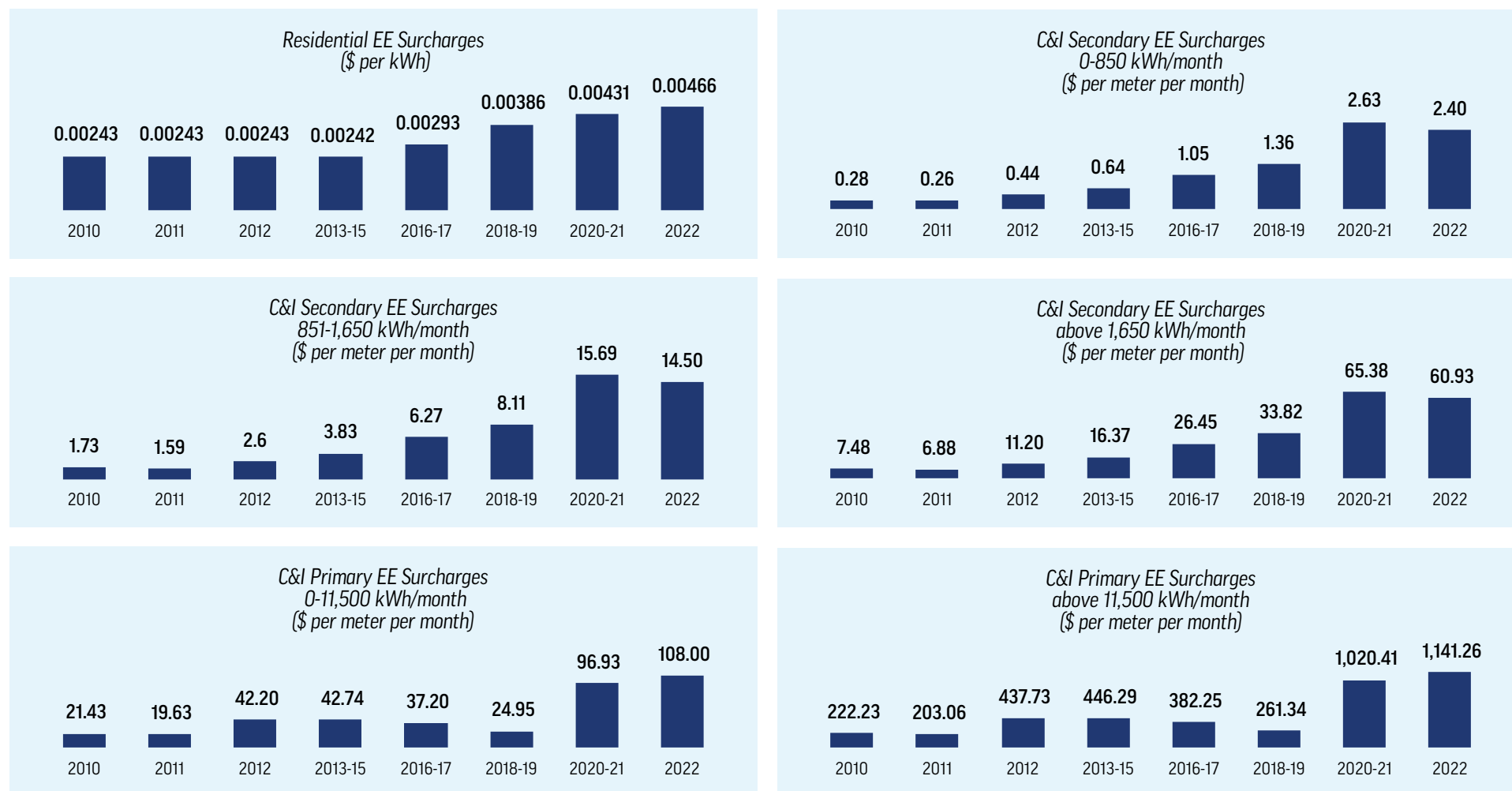
Electric Surcharge

During 2022, two EE electric base surcharges were authorized for collection:

- January 1, 2022 to January 31, 2022, per the Commission's September 10, 2020 order in Case No. U-20373 (Amended 2020-2021 EWR Plan).
- February 1, 2022 to December 31, 2022, per the Commission's January 20, 2022 order in Case No. U-20876 (2022-2023 EWR Plan).

Chart 6 outlines the 2022 EE base electric surcharges compared with previous years. These charts exclude the performance incentive.

Chart 6 – DTE Electric Surcharges



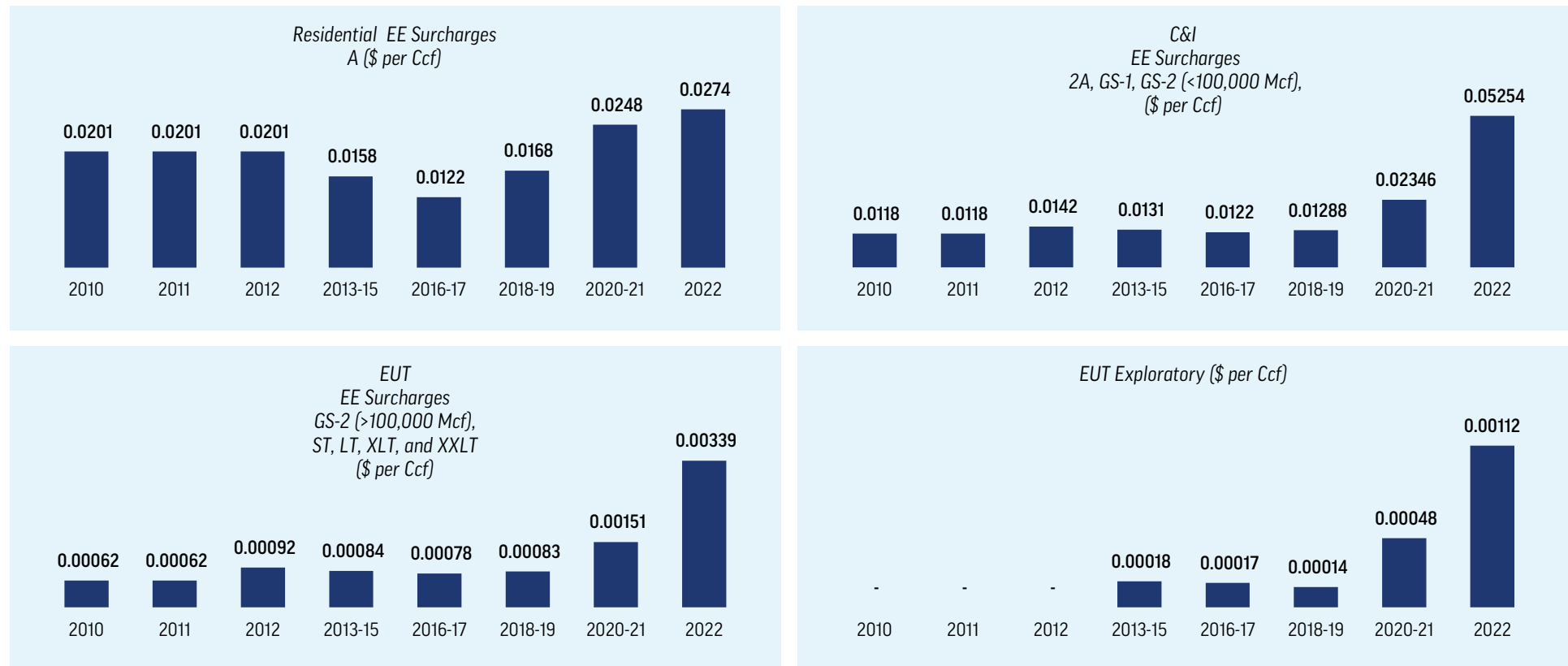
Gas Surcharge

During 2022, DTE Gas billed two base surcharges:

- January 1, 2022 to January 31, 2022, approved by the Commission on November 19, 2020 in Case No. U-20429 (2020-2021 EWR Plan).
- February 1, 2022 to December 31, 2022, per the Commission's January 10, 2022 order in Case No. U-20881 (2022-2023 EWR Plan).

Chart 7 outlines the 2022 EE base gas surcharges compared with previous years. These charts exclude the performance incentive.

Chart 7 – DTE Gas Surcharges



Program Participation

EE programs have experienced strong participation each year since 2009, with over 8.9 million electric and over 4.5 million gas customers directly participating in DTE's EE programs.¹¹

Chart 8 and Chart 9 summarize the number of customers participating in the EE Portfolio by year.

Chart 8 – 2022 EE Portfolio Electric Participation

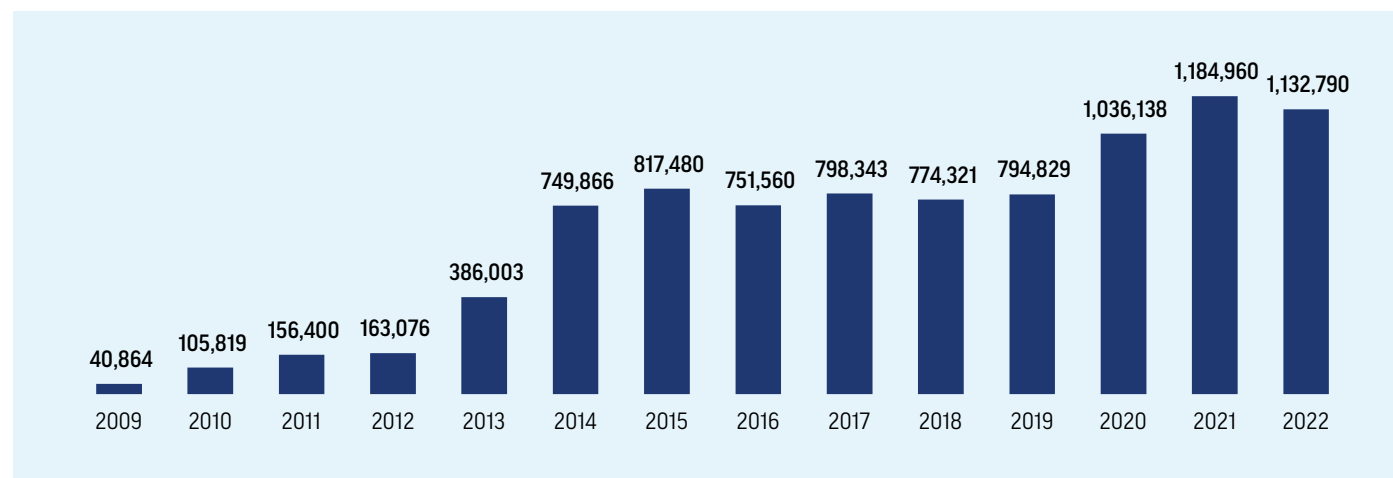
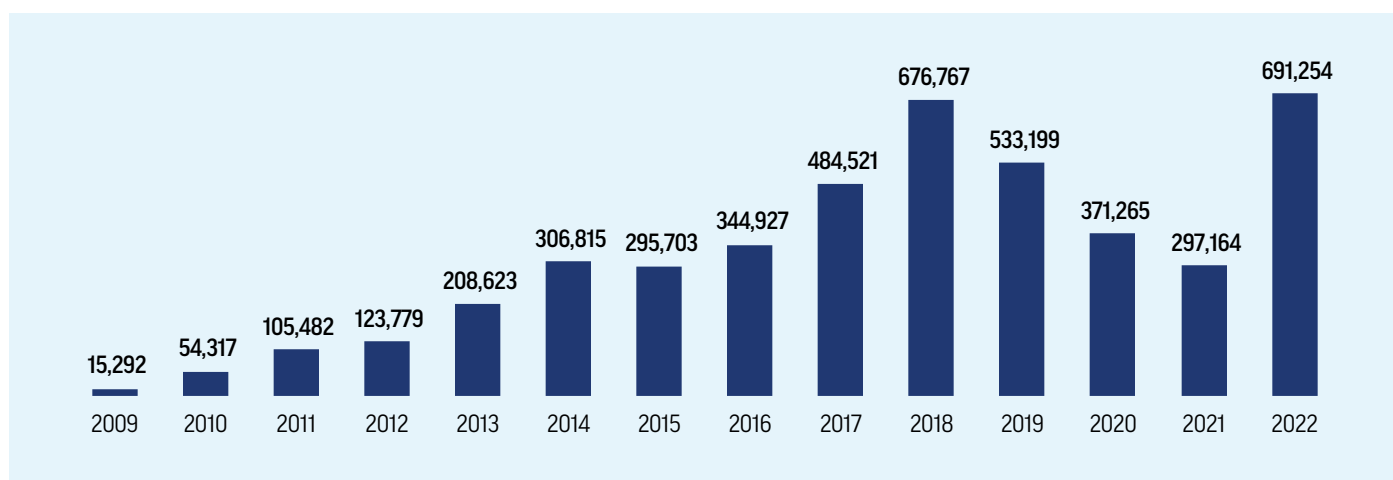
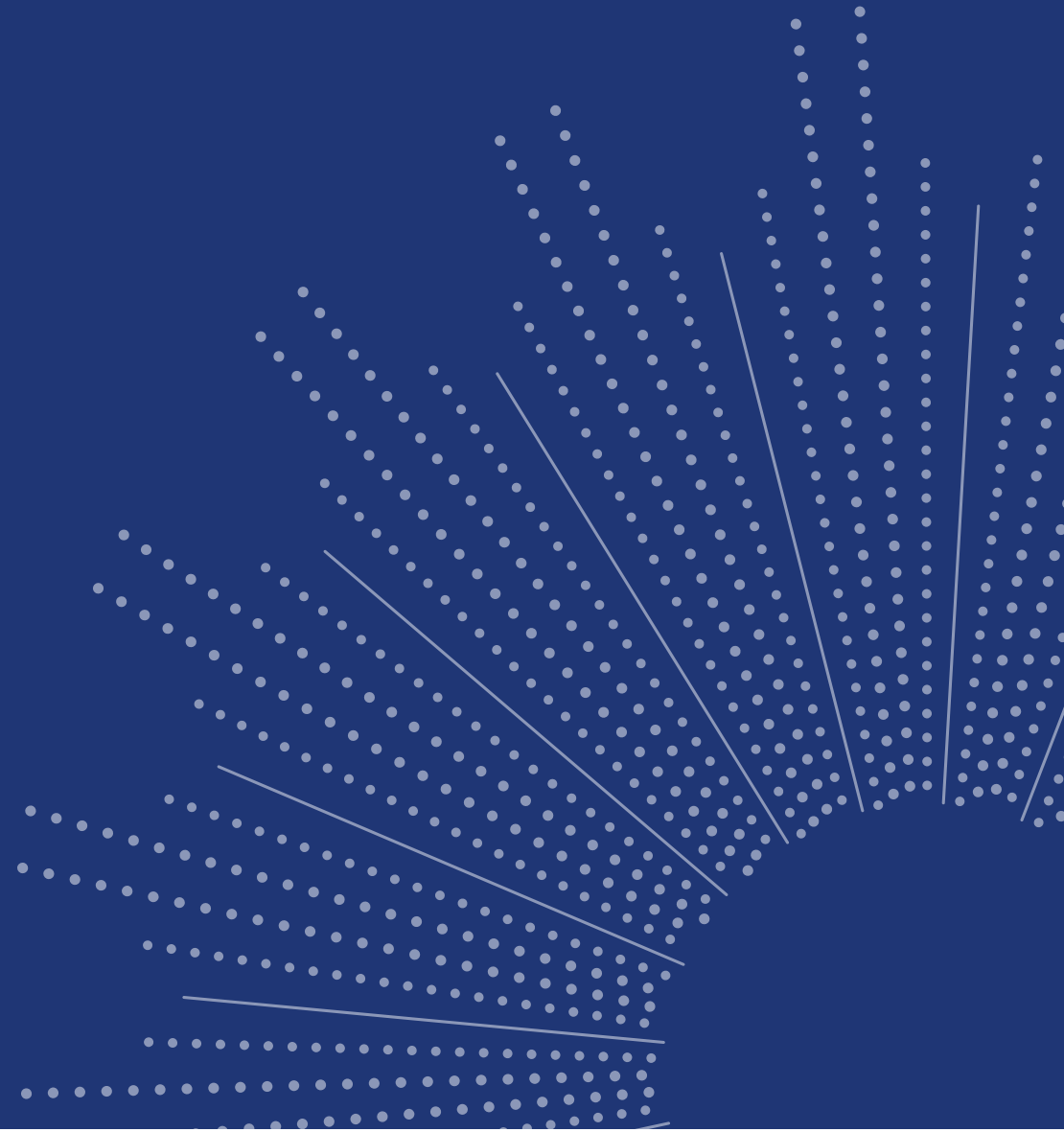


Chart 9 – 2022 EE Portfolio Gas Participation



¹¹ Customers may participate in more than one EE program.

EE Portfolio



DTE's EE Portfolio is designed to help reduce customer energy use by increasing customer awareness and use of energy-saving technologies. The portfolio provides products and services such as rebates, tips, tools, strategies and energy efficiency education to help customers make informed energy-saving decisions.

Many of the 2022 programs were continuations of successful programs launched in prior years, and several new programs moved out of the Emerging Measures and Approaches program. DTE continually works to offer EE programs that encourage participation from all customer segments. Programs are designed to capture electric and natural gas savings. For customers with only electric or only natural gas service, DTE coordinates and aligns with other utilities so these customers can easily participate in energy efficiency program offerings across both fuel types.

Portfolio Offerings

The EE Portfolio includes Residential, Income-Qualified, and C&I programs as well as Pilot and general Education and Awareness programs. The DTE EM&V function verifies net energy savings reported by the EE Portfolio. The programs are managed by DTE program managers and operated by implementation contractors, primarily using local labor and products.

Each program offers a combination of energy efficiency products, customer incentives or rebates and education. The following summarizes each program category:

- Residential programs offer homeowners products, services and rebates including appliance recycling; lighting; appliances; heating, ventilating and air conditioning (HVAC); weatherization; home energy assessments; and income-qualified, energy education and behavioral programs.
- Income-Qualified programs provide income-qualified DTE customers with recommendations, direct installation of qualified EE measures, major appliance replacements, weatherization measures and education to assist them in reducing their energy use and managing their utility costs.
- C&I programs offer businesses products and services; prescriptive rebates for specific equipment replacement such as lighting, boilers, pumps and compressors; custom programs providing rebates per kilowatt-hour (kWh) of electricity savings

or per thousand cubic feet (Mcf) of natural gas savings for a comprehensive system or industrial process improvement; and operational improvement programs.

- Pilot programs focus on new and emerging experimental programs to fit longer-term program portfolio needs, test the cost-effectiveness of emerging technologies and assess customer adoption of new technologies and market acceptance of existing technologies using new approaches.
- Education and Awareness programs are designed to raise customer energy efficiency awareness to help save energy and reduce energy costs. These programs also aim to raise awareness of the DTE website and other social media, which provide channels for customers to engage in specific EE programs.

New program options continue to be added to the EE Portfolio each year. Figure 2 lists all the programs offered in 2022.

The following sections summarize each EE program and provide a description, highlights, achievements, challenges and overall program results from 2022.

Figure 2– Programs in the EE Portfolio Offered in 2022

Appliance Recycling	RESIDENTIAL PROGRAMS
Audit and Weatherization	
ENERGY STAR® Products	
Heating, Ventilation, and Air Conditioning	
Home Energy Consultation	
Home Energy Reports	
Multifamily	
New Home Construction	
School Program	
Energy Efficiency Assistance	INCOME-QUALIFIED PROGRAMS
Home Energy Consultation	
Multifamily	
Downstream Platform	C&I PROGRAMS
Midstream Platform	
Operational Platform	
Self-Direct Program	
Small Business Platform	
Emerging Measures and Approaches	
Education & Awareness	NON-STANDARD PROGRAMS
Pilots	



Residential Programs

The Residential EE programs increase customer awareness and demand for energy efficient products and services. Details of each offering are provided in later sections of this report.

In 2022, DTE's Residential programs performed well and exceeded planned savings. Customer satisfaction was at 93% or higher for all but one program in 2022.

Chart 10 summarizes the electric and gas spending and verified net energy savings for the 2022 EE Residential and Income-Qualified programs.

Chart 10 – 2022 Residential and Income-Qualified Programs Spending and Verified Net Savings

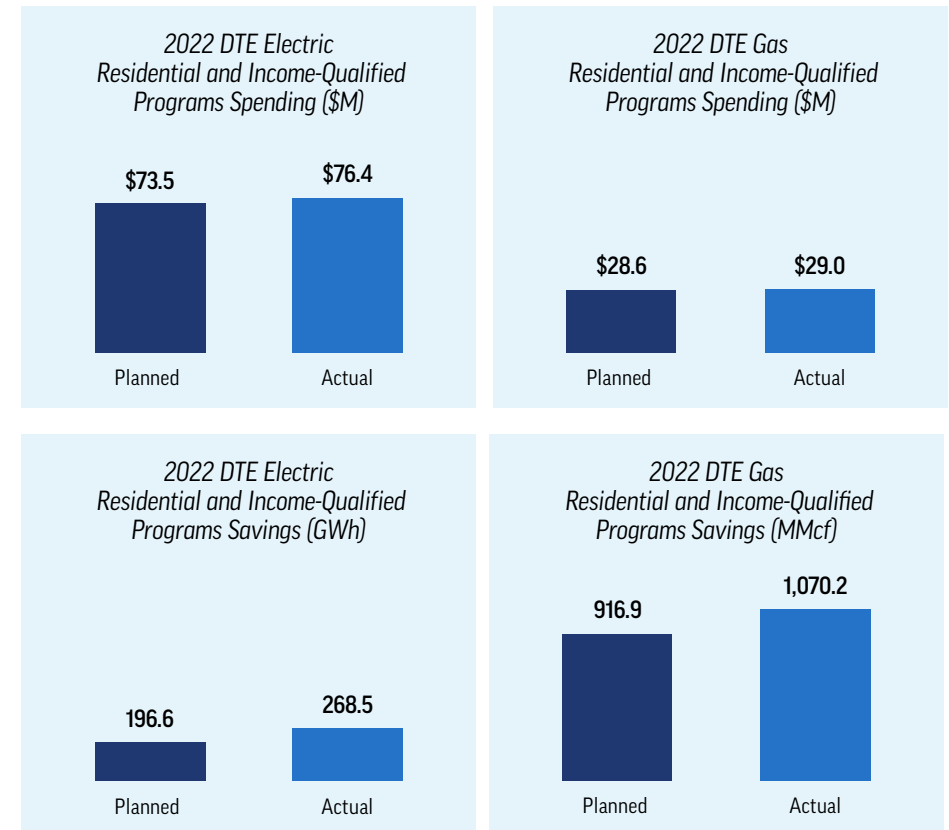
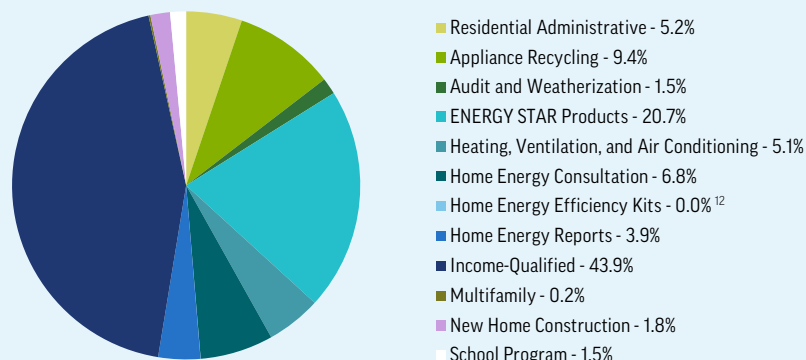


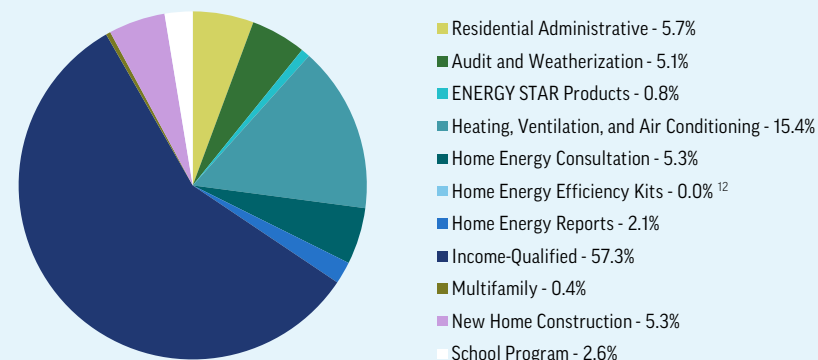
Chart 11 summarizes the spending and verified net energy savings achieved by each Residential and Income-Qualified program in 2022.

Chart 11 – 2022 Spending and Verified Net Savings by Residential and Income-Qualified Programs

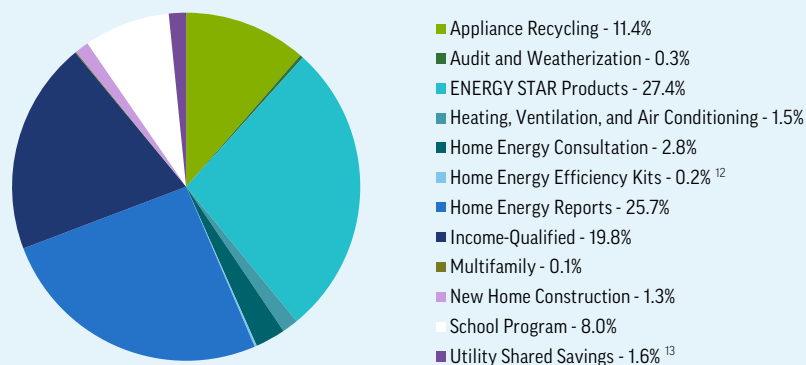
2022 DTE Electric Residential & Income-Qualified Spend by Program (\$76.4 M)



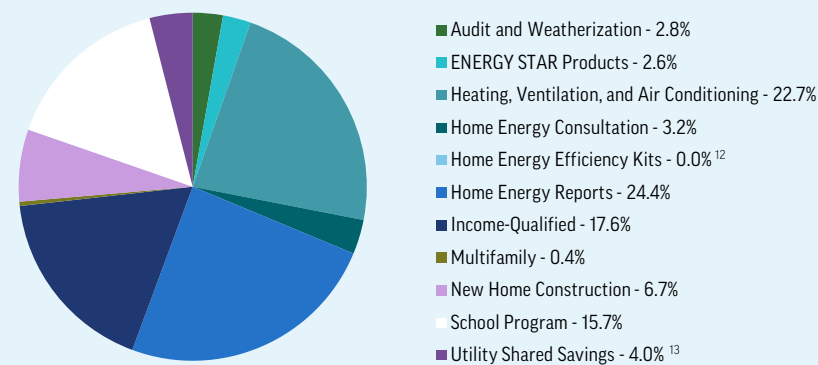
2022 DTE Gas Residential & Income-Qualified Spend by Program (\$29.0M)



2022 DTE Electric Savings by Residential & Income-Qualified Programs (268.5 GWh)



2022 DTE Gas Savings by Residential & Income-Qualified Programs (1,070.2 MMcf)



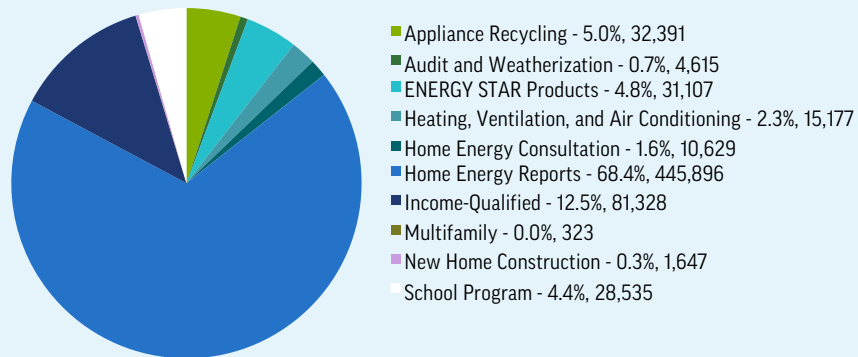
¹² The Home Energy Efficiency Kits program concluded in 2021; values throughout this report represent spending and savings that carried over into 2022.

¹³ Utility Shared Savings are those delayed savings that are currently being created by an "originating" utility but remain unquantified and unclaimed by the utility providing the relevant fuel service (the "receiving" utility). Utility Shared Savings represents savings created by Consumers Energy (originating utility) in areas where Consumers Energy and DTE have overlapping service territory and Consumers Energy provides single fuel service.

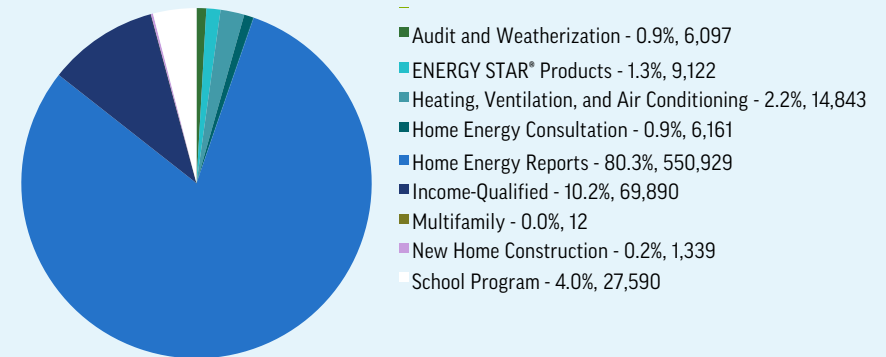
Chart 12 summarizes the number of customers that participated in the Residential and Income-Qualified programs in 2022.

Chart 12 – 2022 Residential and Income-Qualified Customer Participation by Program

*2022 DTE Electric Residential and Income-Qualified Programs Participation
(651,648)*



*2022 DTE Gas Residential and Income-Qualified Programs Participation
(685,983)*



DTE ELECTRIC ONLY

Appliance Recycling Program

The Appliance Recycling program produces cost-effective, long-term annual energy savings by promoting the early retirement and recycling of operable, inefficient and secondary appliances from DTE Electric households in an environmentally safe manner. Programs like this are imperative to helping DTE achieve its CleanVision goals.

Program Description

The program removes older inefficient working refrigerators and freezers and recycles 95% of the appliances. Customers can also recycle smaller appliances when a larger appliance is picked up. Smaller appliances include dehumidifiers, room air conditioners, and small refrigerators and freezers under 10 cubic feet. Drop-off events provide an opportunity for customers to recycle smaller appliances without a large freezer or refrigerator.

Key Takeaways

- Customers recycled 2,006 appliances at five drop-off events in 2022, an 89% increase from 1,060 appliances collected in 2021.
- DTE added verbiage to the pick-up schedule website that they would no longer receive Sub-Zero appliances due to size constraints.
- DTE added a drop-down option to customer surveying to understand where customers heard of the program if they heard of it via television. Nearly double the number of customers reported hearing about the Appliance Recycling program through network television versus cable television.
- Customers participating through ABC Warehouse increased in 2022, with 647 pick-ups compared with 319 pick-ups in 2021.
- In 2022, DTE employed alternative marketing strategies, such as an animated video, to ensure the timely meeting of program goals. DTE created a YouTube animated streaming video as a new marketing tactic.
- In 2022, customer satisfaction was 96%.

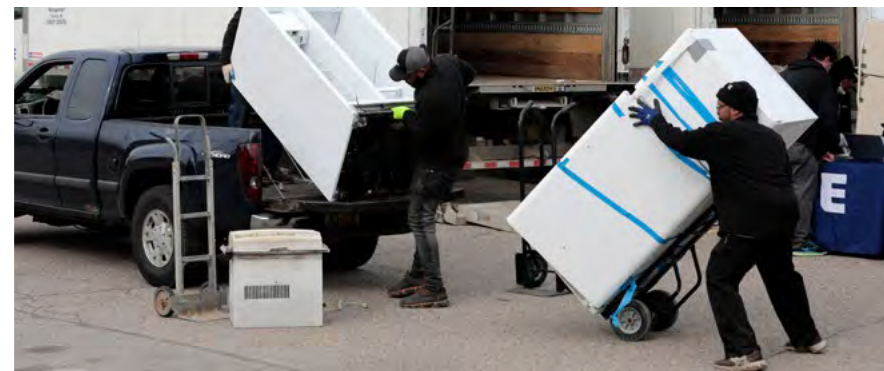
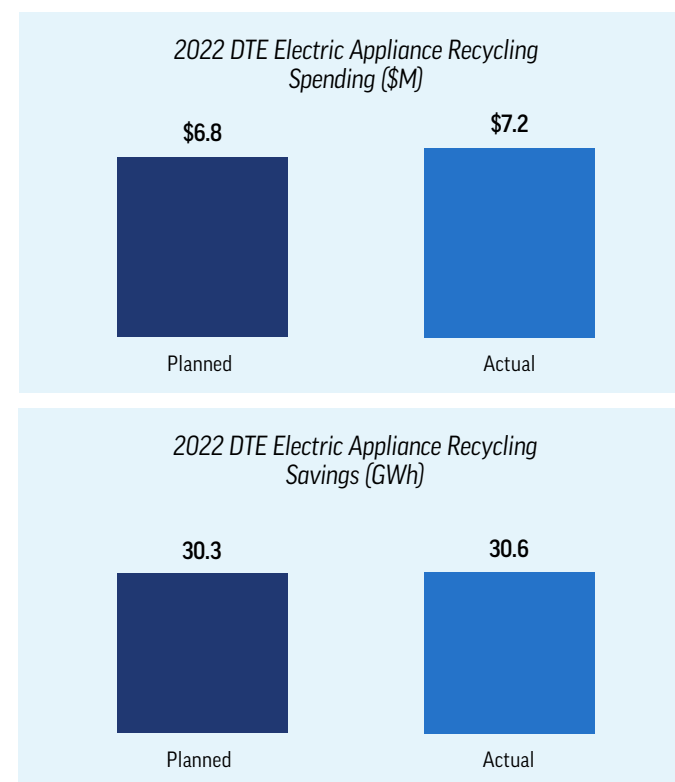


Chart 13 – 2022 Appliance Recycling Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Audit and Weatherization Program

The Audit and Weatherization program motivates customers by offering rebates to install qualified weatherization measures in their homes.



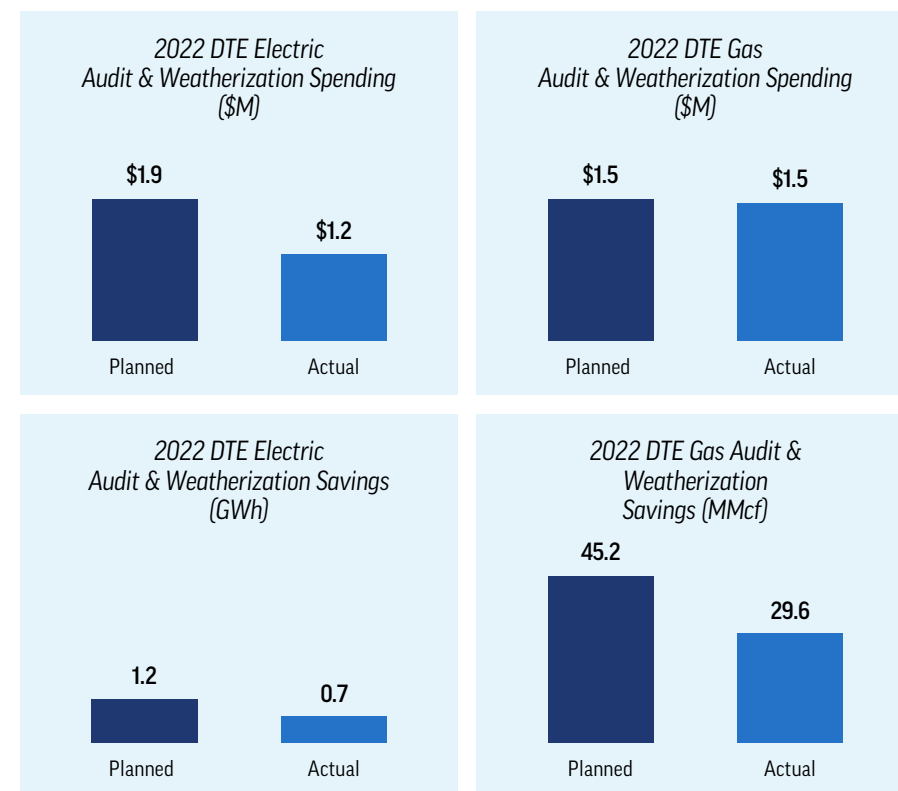
Program Description

The Audit and Weatherization program offers many products and services to DTE customers, including Home Performance, Comprehensive Energy Assessment, Insulation and Windows. Home Performance offers customers incentives for insulation, windows, HVAC and air sealing measures. Home Performance customers are encouraged to have one of DTE's participating contractors perform a comprehensive energy assessment. Insulation and Windows allows customers who do not want to perform a detailed energy assessment to receive rebates for insulation and window improvements either by using a licensed contractor or by doing it themselves.

Key Takeaways

- In 2022, the program increased participation in the gas-only service territory by 11%, as marketing efforts within the territory increased program visibility. It also added five new contractors to the program in 2022 to perform customer installation work.
- The program introduced the Online Intake Tool to provide customers an easier way to input information. The tool led to reduced delays and positive customer feedback.
- The Audit and Weatherization program faced several challenges, including labor shortages, supply chain issues, and inflationary pressures. For customers, these challenges contributed to longer project lead times and reduced the affordability of implementing energy efficient measures.
- The program's customer-facing educational literature proved to be effective for customer outreach and helped train new staff among participating contractors.
- In 2022, customer satisfaction was 93%.

Chart 14 – 2022 Audit and Weatherization Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

ENERGY STAR® Products Program

The ENERGY STAR Products program increases the awareness and sales of high efficiency ENERGY STAR products among residential customers.



Program Description

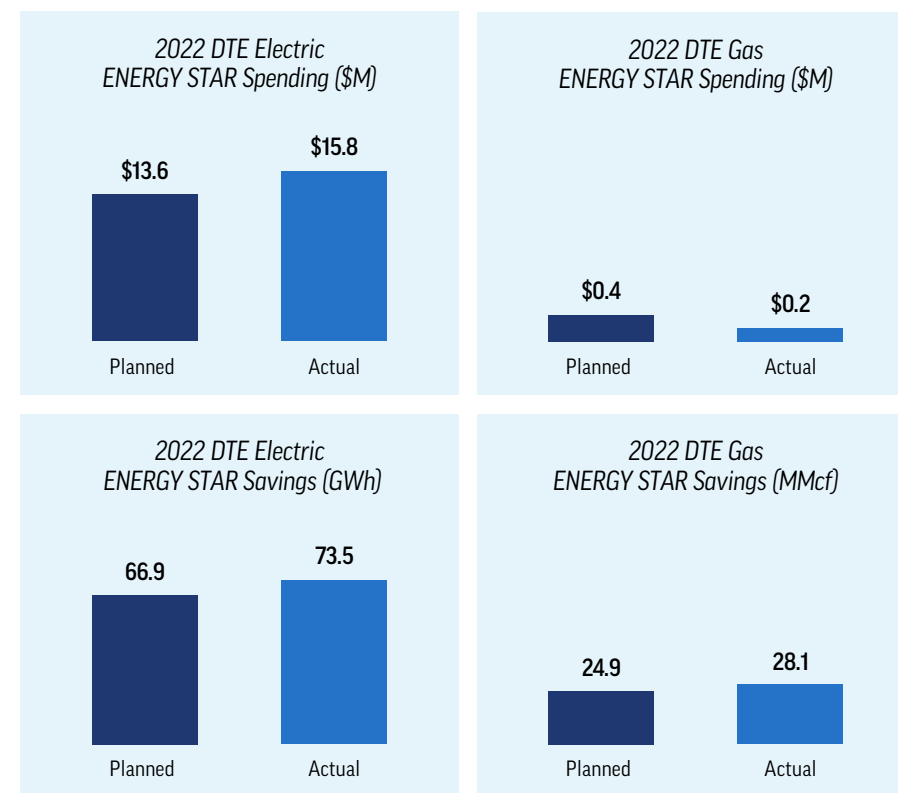
The program intends to spur customer interest by providing educational information and incentives to customers who purchase qualified ENERGY STAR equipment. In-store site visits, point-of-purchase material and digital and email campaigns help accomplish this objective.

The program helps customers reduce the cost of being energy efficient by providing rebates or discounts on ENERGY STAR-certified products via the DTE Marketplace website. It also provides upstream discounted LED light bulbs at over 400 retailer outlets. Midstream incentives are provided for personal computers and monitors, advanced power strips and small appliances such as room air conditioners, air purifiers and dehumidifiers. Downstream rebates are offered on certified appliances, such as clothes washers, clothes dryers, dehumidifiers, air purifiers, Wi-Fi and smart thermostats and pool pumps.

Key Takeaways

- DTE continued its relationship with The Home Depot; all of the locations in DTE's electric service territory hosted LED bulb kit giveaway events.
- The redesign of the Online Intake Tool (OIT) made for a more effective and efficient customer experience. The OIT helped determine customer rebate eligibility earlier in the application process, increased the ease of submitting application information and reduced the likelihood of multiple application attempts. Overall, the tool simplified the application process for multiple rebates on the same application when customers have multiple energy savings measures.
- In 2022, appliance rebates remained the same but there were changes with in-store LED incentives.
- Customers could purchase thermostats from an expanded product line on the DTE Marketplace website.
- Customers could order installation services through the website, after which a DTE approved contractor installs the thermostat.
- In 2022, customer satisfaction was 93%.

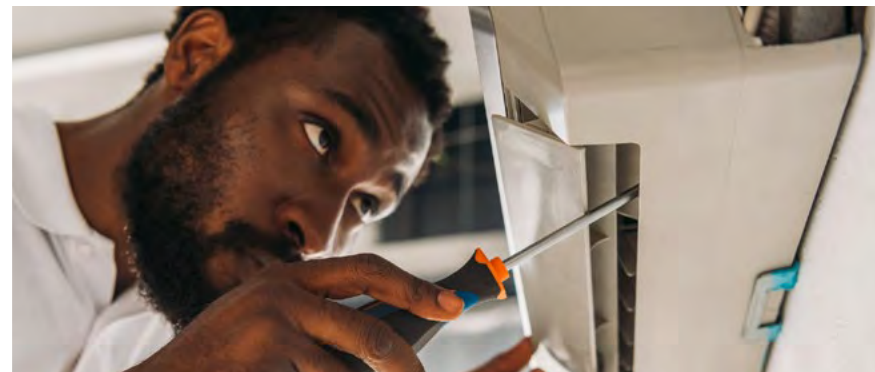
Chart 15 – 2022 ENERGY STAR Products Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

HVAC Program

The HVAC program increases demand for energy efficient heating and cooling equipment and high efficiency water heating equipment.



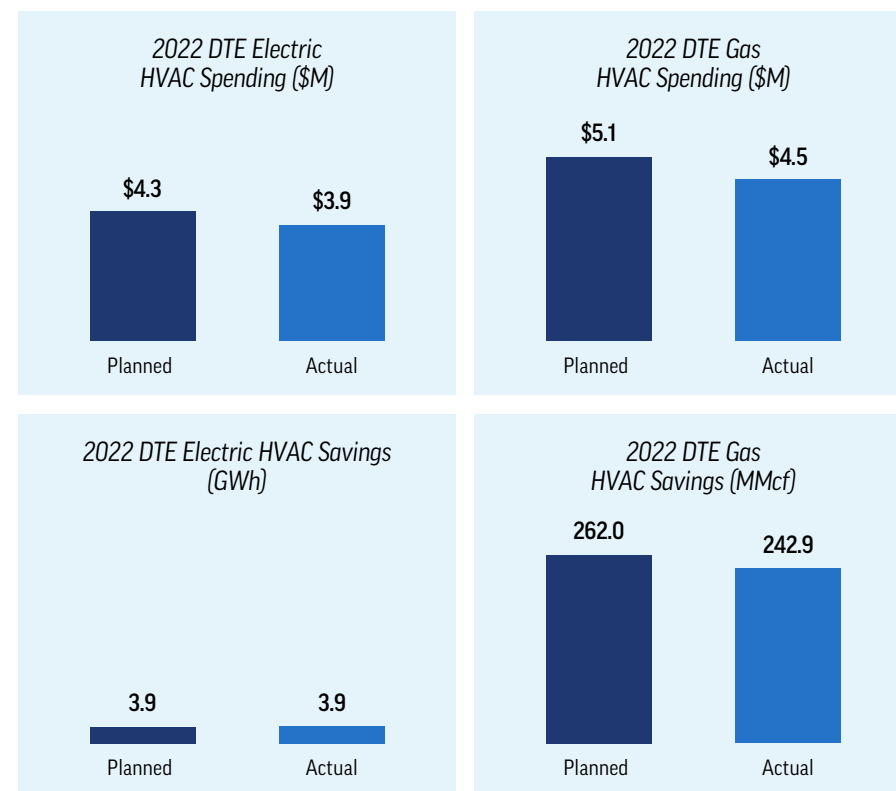
Program Description

The program serves residential customers in single-family dwellings of less than three units who purchase new high efficiency central air conditioning units, high efficiency natural gas furnaces or boilers, or water heating equipment. Electric measures offered in the residential HVAC program include high efficiency central air conditioning units and Wi-Fi-enabled thermostats. Gas measures include high efficiency natural gas heating equipment, Wi-Fi-enabled thermostats and water heaters. DTE established and uses a network of well-informed and educated HVAC industry professionals who understand the benefits of energy efficient products.

Key Takeaways

- The program improved customer satisfaction with contractors in 2022 through its address verification tool, which verifies rebate eligibility for customers before these rebates are offered. This tool has helped reduce the number of rebate discussions where customers are not eligible.
- The Midstream program increased the availability of heat pump measures, which resulted in increased program participation.
- The program improved customer outreach in 2022, using leave-behind brochures when contractors quote jobs and updating the customer-facing website with customer qualification and eligibility information.
- Labor shortages, supply chain issues, and inflationary pressures outside of DTE's control created challenges including longer project lead times due to supply shortages and reduced affordability for customers to implement energy efficient measures.
- In 2022, customer satisfaction was 93%.

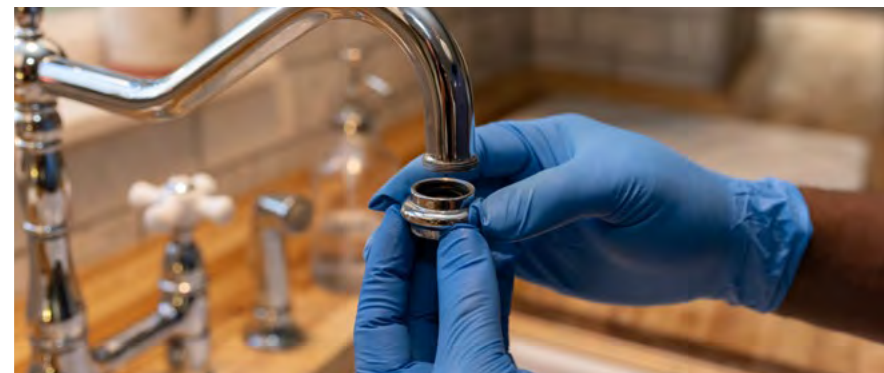
Chart 16 – 2022 HVAC Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Home Energy Consultation Program

The Home Energy Consultation program provides a no-cost energy education program to all DTE residential customers with a single-family home, duplex or condominium.



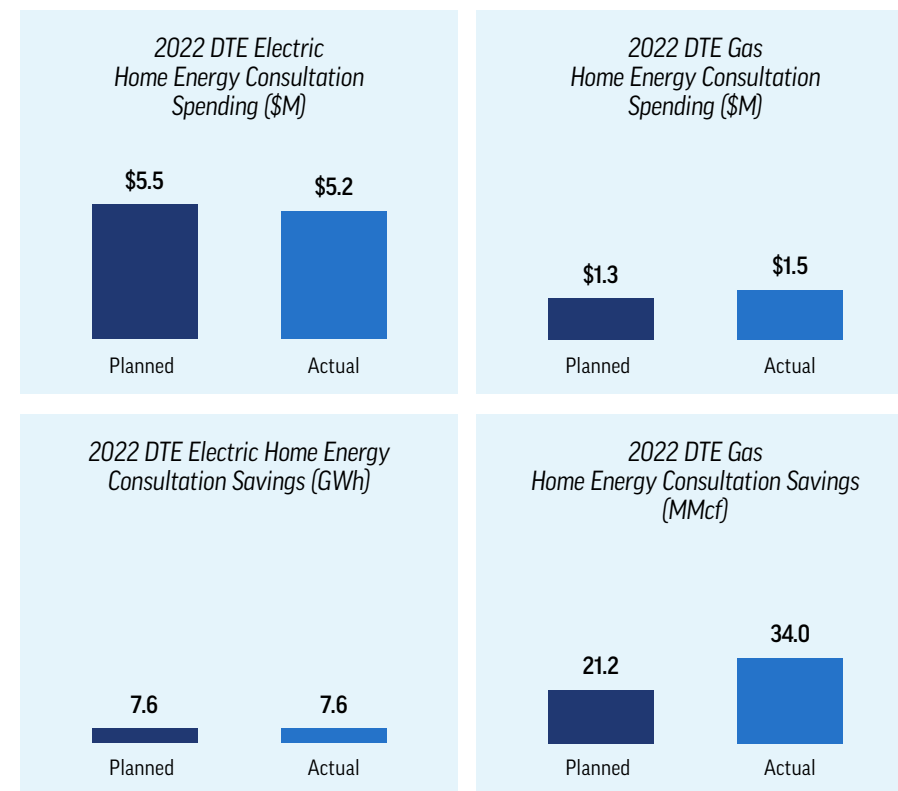
Program Description

The program aims to produce immediate energy savings through the direct installation of energy-saving measures in the home. An energy specialist does a basic walkthrough of the home and creates a personalized home energy profile that shows where the home uses and loses the most energy. During the walkthrough, the energy specialist identifies free products that can be installed in the home. Typical in-unit measures include LEDs, energy efficient showerheads, energy efficient kitchen and bath aerators, advanced power strips, programmable and Wi-Fi thermostats and pipe wrap insulation.

Key Takeaways

- The program implemented strategies to mitigate appointment cancellation rates and abandoned appointment scheduling.
- Customer escalations related to the Wi-Fi thermostat product were challenging in 2022. Some of these instances were user error, some were an installation error, and some were a need for new batteries. To ensure proper use, the implementer sends seasonal reminders to thermostat recipients and conducts seasonal trainings for energy specialists on thermostat installation.
- High satisfaction continues to be a reoccurring success of the Home Energy Consultation program. In 2022, customer satisfaction was 97%.

Chart 17 – 2022 Home Energy Consultation Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Home Energy Reports Program

The Home Energy Reports program encourages select customers to be more energy efficient by providing them with feedback about their energy use, comparing their energy use with other similar homes and more efficient homes and providing energy-saving tips.



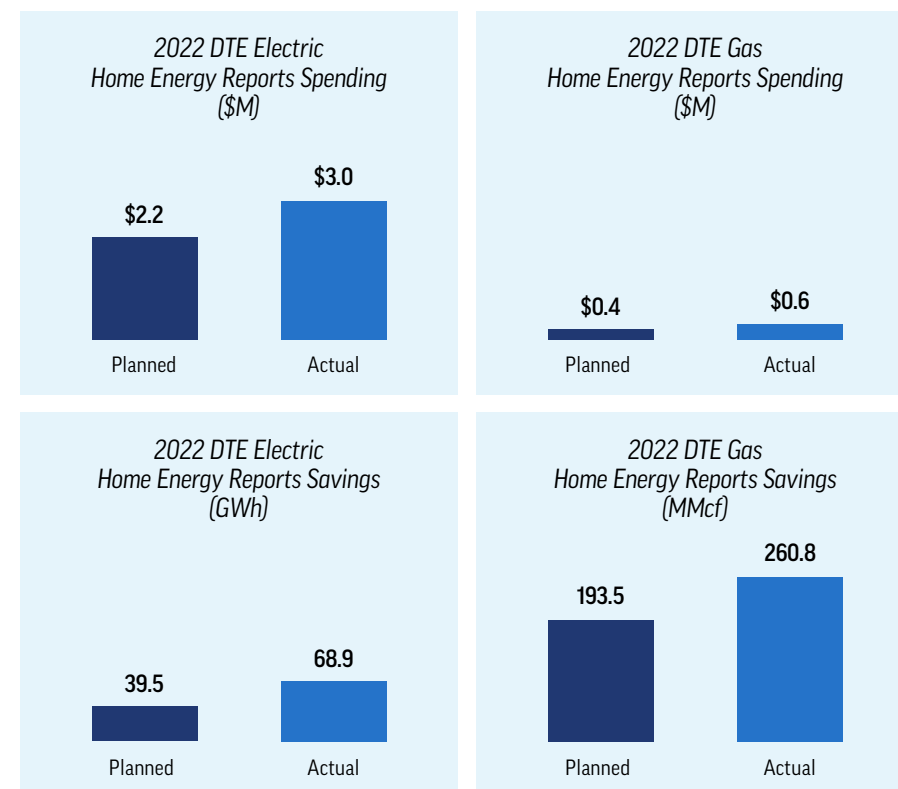
Program Description

The Home Energy Reports program offers printed and electronic reports that display a customer's energy usage compared with the average energy usage of approximately 100 nearby similar homes and a second comparison to the customer's most efficient nearby similar homes (the top 20%). The report also contains energy-saving tips and promotions for other DTE EE programs. DTE sends the home energy report (HER) to customers via the USPS; an abbreviated HER is sent via email to customers with an available email address. Deemed energy savings are based exclusively on printed reports.

Key Takeaways

- The Michigan Behavior Resource Manual was recalibrated in 2022, changes and impacts to the program were minimal.
- The EWR call center agents were provided training and access to the Oracle (program implementer) portal to respond to customer inquiries and opt-out requests more effectively.
- Oracle updated the energy savings tips included in the report, removing ineffective tips and updating tips regarding technical devices.
- Two new waves were added for 2022, one dual fuel and one gas. All waves were active at the end of 2022, some of which were reactivated after having been paused earlier.
- In 2022, customer satisfaction was 76%.

Chart 18 – 2022 HER Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Income-Qualified Program

The Income-Qualified program provides income-qualified DTE customers with recommendations, direct installation of qualified EE measures, major appliance replacements, weatherization measures and education to assist them in reducing their energy use and managing their utility costs.



Program Description

DTE's Income-Qualified program includes the Energy Efficiency Assistance (EEA) program as well as the income-qualified components of the Multifamily and Home Energy Consultation programs. The program leverages the services provided by member agencies of the Michigan Community Action Agency Association, municipalities, counties, public housing commissions, faith-based institutions, community development corporations and nonprofit organizations with existing housing and energy programs.

Instead of paying direct incentives, the EEA Income-Qualified program delivers in-kind services to customers, including furnace, water heater, and air conditioning replacements, appliances, tune-up services, and whole-home measures such as weatherization and insulation. The Income-Qualified Multifamily program offers generous incentives to property owners and managers to encourage installation of energy efficient measures. The program also works with a select number of independent contractors to offer premium direct installation of certain measures. The income-qualified component of the Home Energy Consultation program is identical to the market rate component of the program.

Key Takeaways

EEA

- The EEA program, through its implementers, directly serviced certain customers and provided whole-home assessment services to promote weatherization and insulation measures. This effort coordinated with the Payment Stability Plan pilot effort. Launched in 2022, the Payment Stability Plan pilot helps customers with a high energy burden better manage their energy bills. To support this initiative, the EEA program collaborated with the DTE Revenue Management and Protection division to conduct outreach to these pilot participants and enroll them in the EEA program to make homes more energy efficient. Over 1,800 customers enrolled, with approximately 1,200 eligible for the pilot program.

- The program undertook a neighborhood-level targeting effort to identify communities that experience the highest energy burdens and have the highest home weatherization potential. The program also received increased budget to target a substantial number of energy efficiency kits to vulnerable customers.
- The EEA program began a collaboration with the Detroit Home Repair Fund that will continue and expand in 2023. The fund provides substantial resources to address home repair needs in Detroit, which can often be a barrier to the installation of measures through EEA.
- In 2022, the EEA program introduced or continued several collaborative efforts including those with the Detroit Lead Hazard Reduction Program, Detroit Land Bank Authority, Humble Design, and Consumers Energy. These collaborations allow customers to receive more targeted and comprehensive improvements related to energy efficiency, health, safety and comfort.

Home Energy Consultation

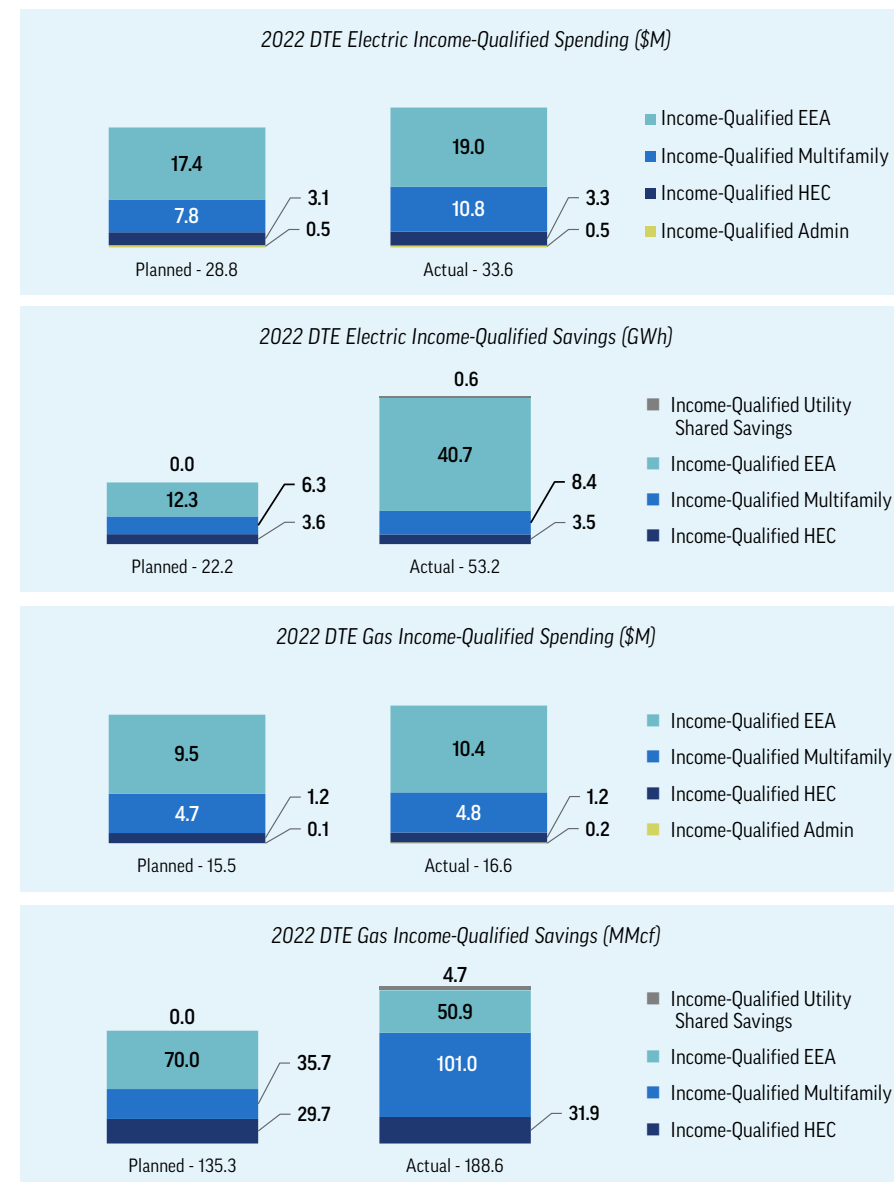
- The Home Energy Consultation program provides in-home consultation and installation of direct installation energy efficient measures for Income-Qualified program customers.
- DTE modified the program methodology to recognize customers with an income-qualified profile in the DTE billing system as part of the program's income-qualified demographic. This effort expands outreach and support to a larger percentage of income-qualified customers.
- In 2022, the program made several internal piloting efforts. Most notably, the program offered the Energy Bridge to income-qualified customers with electric service. The Energy Bridge is a device that connects to a customer's electrical box and delivers real-time feedback on a home's energy use through a smartphone app.

Multifamily

- The Income-Qualified Multifamily program expanded its measure offerings to include heat pumps, heat pump water heaters, insulation and infiltration reduction measures. The program's Energy Advisors worked with property owners and managers to coordinate selecting a contractor, measure installation and QA/QC of the final work. In 2022, the program installed over 400 electric measures and over 2,600 gas measures, which affected over 1,600 living units.

- The program offered a deep-dive energy coaching component to income-qualified buildings. This included an American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Level 2 audit, with the intent of uncovering as many energy-saving opportunities as possible for the properties. In 2022, the program funded 15 of these Level 2 audits, which led to six projects and additional project leads for 2023.
- The program continued collaborating with Consumers Energy on the direct install component of the program. In addition, the program is continuing its collaboration with the Michigan State Housing Development Authority (MSHDA) and is working to collaborate with them more going forward to refer participants in the Low Income Housing Tax Credit Program.

Chart 19 – 2022 Income-Qualified Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Multifamily Program

The Multifamily program produces energy savings in multifamily buildings with three or more units under one contiguous roof. The program provides a robust offering of incentives and the direct installation of energy-saving measures.



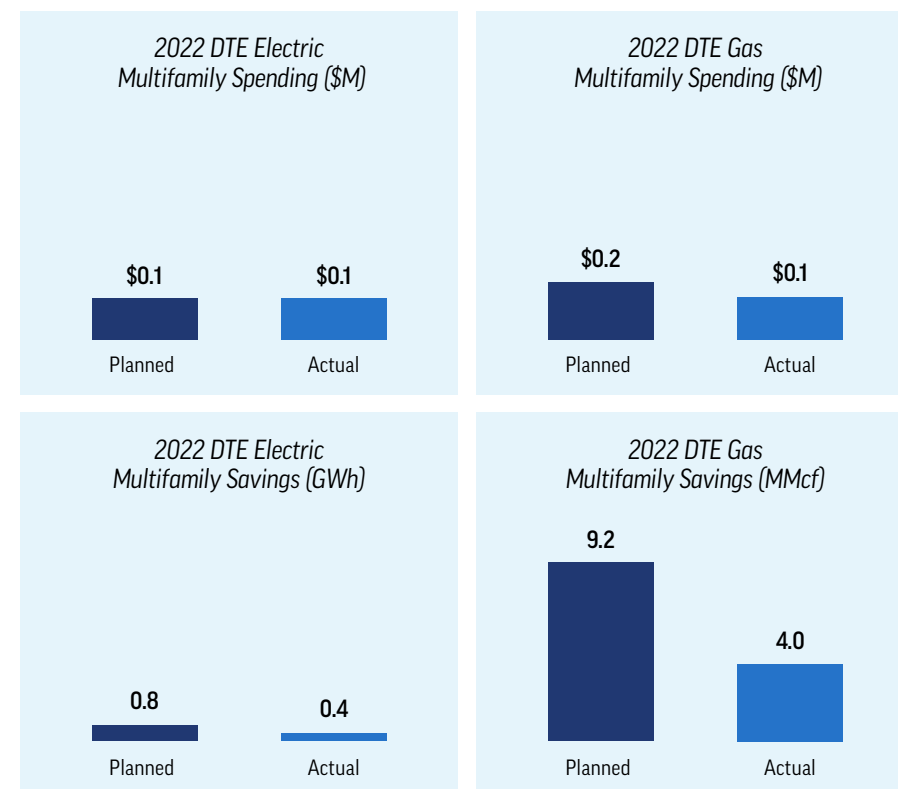
Program Description

The Multifamily program serves two channels (direct install in-unit and rebates, both prescriptive and custom). Typical in-unit measures include LEDs, energy efficient showerheads, energy efficient kitchen and bath aerators, Wi-Fi thermostats and pipe wrap insulation. There is no cost to customers for the in-unit installations, and tenants do not receive incentive payments. Energy efficiency education is also delivered throughout the project to property owners and managers and to individual tenants. For the rebate component, the program offers common area and in-unit rebates.

Key Takeaways

- Market saturation as well as challenges with property manager participation accelerated the transition away from direct install projects as a source of savings for the program. Major contributors to the program's success are rebated or custom projects and the continuation of the premium direct install component.
- The Multifamily program continued to shift a large portion of its activity over to the income-qualified component of the program in 2022.
- In 2022, the program focused on deeper retrofit weatherization measures and worked closely with contractors and suppliers to ensure timely project completion. Additionally, the program must be mindful of continuing supply chain issues going into 2023.
- In 2022, customer satisfaction was 100%.

Chart 20 – 2022 Multifamily Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

New Home Construction Program

The New Home Construction program promotes construction of energy efficient homes in the DTE service territory.



Program Description

The program provides participating builders with technical, marketing and training support as well as financial incentives. Participating builders construct energy efficient homes and work with certified Home Energy Rating System (HERS) raters. HERS raters upload home specifications to Ekotrope, a home design and energy rating software program, to confirm eligibility by achieving a HERS score of 60 or lower and to initiate processing through the program.

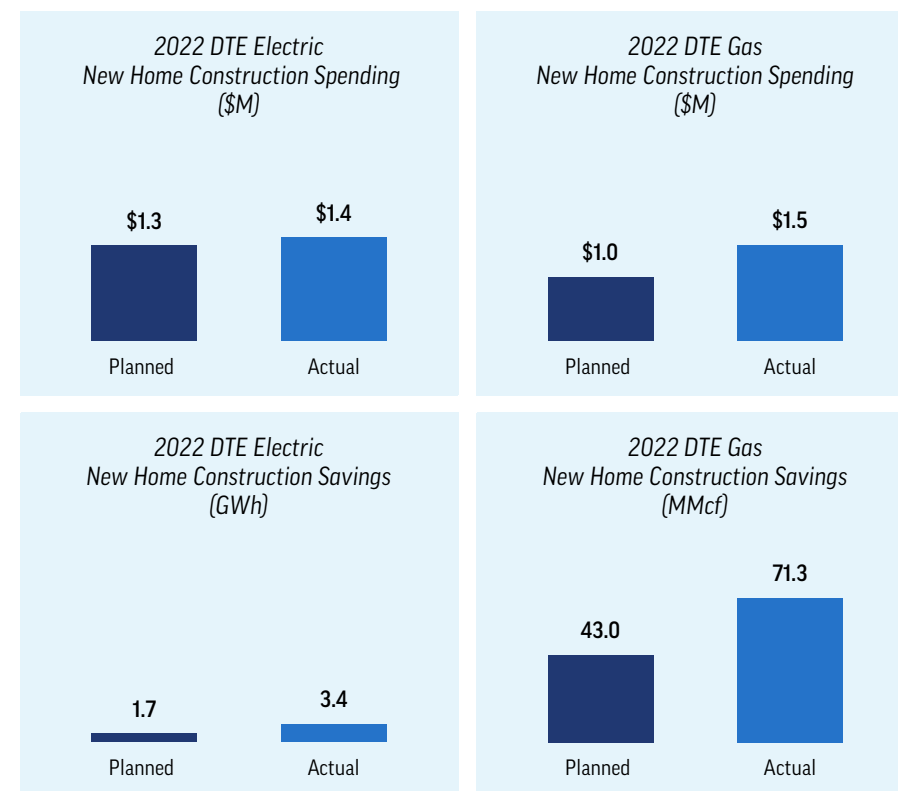
After meeting the HERS score prerequisite, builders are eligible for performance-based incentives and tiered incentives for specific measures including furnaces, water heaters and air sealing techniques. Savings are claimed on the difference between modeled energy usage for a standard code-built baseline home and the newly constructed efficient home.

Builders can receive incentives up to \$1,500 for a DTE Electric account, \$1,300 for a DTE Gas account, and \$2,100 for a combo DTE account. Builders that construct ENERGY STAR®-rated homes are eligible for an additional incentive of \$300-\$350. In 2022, the program incrementally increased rebate amounts across the board and made heat pump system rebates permanent. 2022 was the third full year of commercialization for the New Home Construction program.

Key Takeaways

- The program nearly doubled the number of participating builders in 2022, from 54 to 106. This participation increase helped the program meet its 2022 savings targets early and created an opportunity to expand the program to more builders.
- The program shares information with participating builders through monthly technical bulletins. In the first quarter of 2022, the New Home Construction program won an inspiring energy efficiency award for technical bulletins from the Midwest Energy Efficiency Alliance.
- In 2022, the program modified welcome kits for new homeowners; the previously included nightlights and power strip were replaced by a \$20 coupon for use in the DTE Marketplace. With this modification, DTE aims to better understand customer behavior and the customer experience in the Marketplace.

Chart 21 – 2022 New Home Construction Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

School Program

The School program develops a culture of energy efficiency with third through twelfth grade students, teachers, schools and families throughout the DTE service territory in the public and private sectors to deliver real, measurable energy savings.



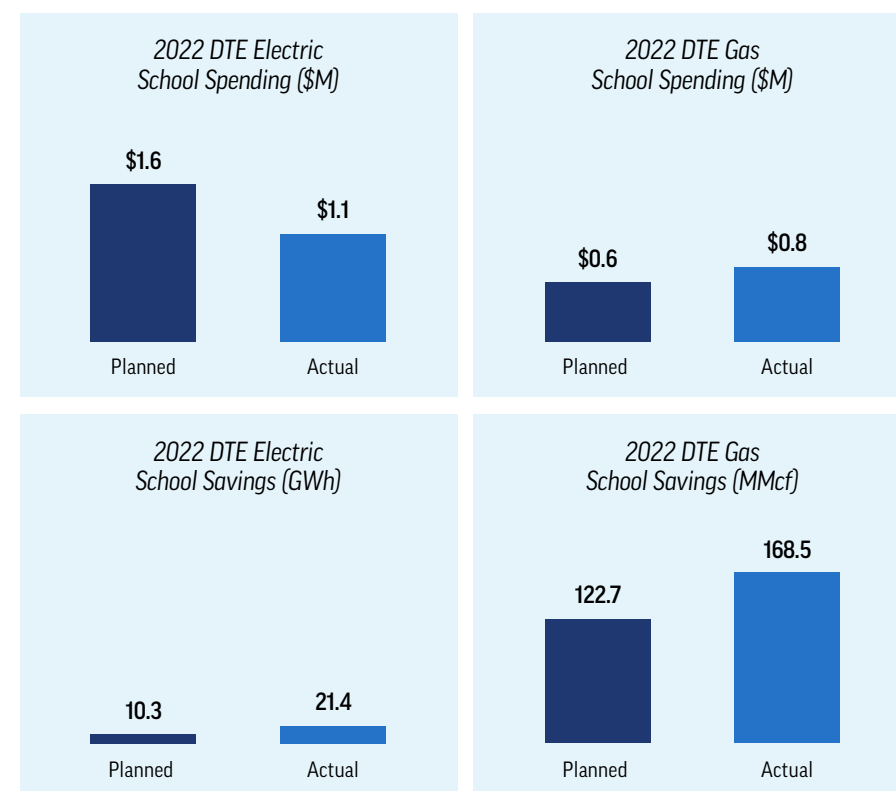
Program Description

The School program provides non-traditional opportunities to raise awareness and encourage the adoption of energy efficiency measures and behaviors to help the environment. It also contributes to DTE's ambitious CleanVision goal of net zero carbon emissions by 2050. Each participating teacher and student receive a kit filled with energy efficient technologies and a guide with information on energy resources and energy-saving tips. Students are instructed to install all products with adult supervision in their residence. Instructional materials are designed to correlate with the State of Michigan English, Math and Science curriculum for fourth through sixth grade students and the science and economics standards for seventh through twelfth grade students. Implementation contractors provide educational materials through online and in-person delivery channels.

Key Takeaways

- Collaborations to deliver programs across Michigan included Consumers Energy, SEMCO Gas, Energy United, UPPCO, and the City of Escanaba.
- DTE attended several special events including the Michigan Science Teachers Association conference and meetings with Lego Robotics groups at schools in the cities of Howell and Novi. In addition, the program provided kits and resources for the Summer Youth Internship Program.
- The program added PAR LED light bulbs and window insulation to some kits.
- After lower-than-expected installation rates for the window insulation from Spring kits, the program decided to place window insulation only in Fall kits moving forward.

Chart 22 – 2022 School Program Spending and Verified Net Savings





Commercial and Industrial Programs

The C&I EE programs provide incentives that encourage customers to install energy efficient equipment to reduce their overall energy consumption and to save on their energy bills. Programs like this are also imperative to making DTE's CleanVision goal a reality. DTE customers can take advantage of incentives for energy efficient upgrades tailored to reduce energy use in their business, improving their bottom line. The C&I programs offer customers incentives to replace existing equipment and fixtures with new energy efficient equipment and incentives for designing and building new or remodeling projects that are energy efficient.

The C&I programs are categorized under five platforms:

- **The C&I Downstream Platform** offers incentives to customers following the installation of prescriptive measures from the MEMD or nonstandard equipment and controls not contained in the MEMD. This platform includes the Prescriptive (including Multifamily Commercial, ENERGY STAR® Retail Lighting) and Non-Prescriptive programs.
- **The C&I Midstream Platform** offers a simplified delivery channel that targets equipment distributors, dealers and manufacturer representatives and offers customers instant discounts at the time of purchase. This platform includes the Midstream Lighting, Midstream Food Service and Midstream HVAC programs.
- **The C&I Operational Platform** consists of programs developed to control energy consumption through a systematic approach to identify and improve building deficiencies and processes. This platform includes the Retro-Commissioning and Strategic Energy Management programs.
- **The C&I Small Business Platform** provides small business customers with a path to energy savings and a means to begin their energy efficiency journey. This platform includes the Business Energy Consultation, the Small Business Focus, and the Find and Fix programs.
- **The C&I Emerging Measures and Approaches (EM&A) Platform** promotes the installation of energy efficient technologies and delivery channel strategies to validate recently commercialized pilot programs and build new ideas or concepts that support DTE's C&I program offerings. The Telecom program was the only program included during 2022.

To encourage equitable distribution of funds and wide and varied participation among as many C&I DTE customers as possible, incentives are subject to annual limits and caps. To further ensure incentive funds are used by many customers, special offers have funding participation limits and a time duration.

Table 7 displays the program year incentive limits. Actual payments per customer determine incentive limits regardless of whether the incentive is paid directly to the customer or to an intermediate party, such as the contractor performing the service for the customer.

Table 7 – 2022 C&I Incentive Caps

	Electric	Gas
Customer	\$1,000,000	\$300,000

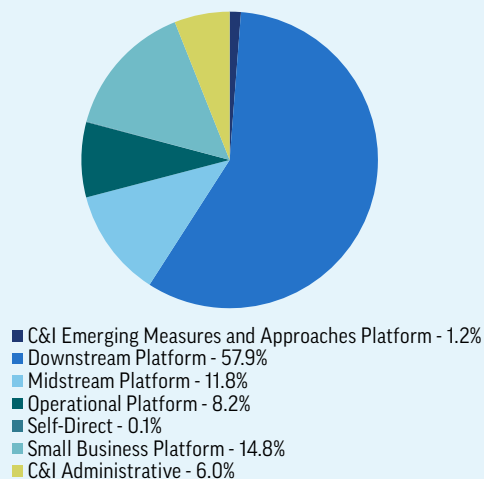
DTE launched several special offerings in 2022 to create broader customer participation. These specials included commercial energy audits and an enhanced offer related to the Michigan Saves program. C&I programs also proactively focus on relationship development with organizations such as the U.S. Green Building Council (USGBC) and Leadership in Energy and Environmental Design (LEED) to fully leverage new construction MEMD measures.

Chart 23 summarizes the spending and verified net energy savings achieved by each C&I program and platform in 2022.

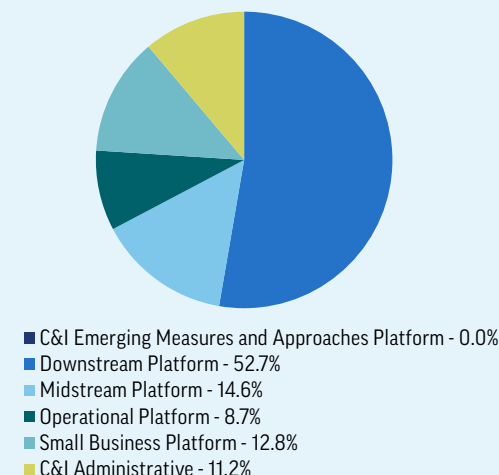
The C&I programs received 94% or higher customer satisfaction scores across all programs but one in 2022.

Chart 23 – 2022 C&I Program Spending and Verified Net Savings

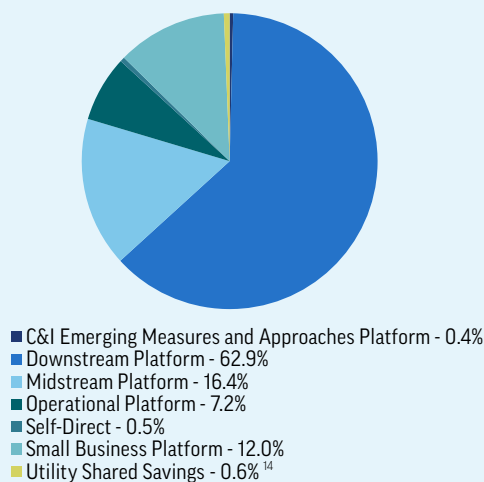
2022 DTE Electric Spend by C&I Program (\$76.5 M)



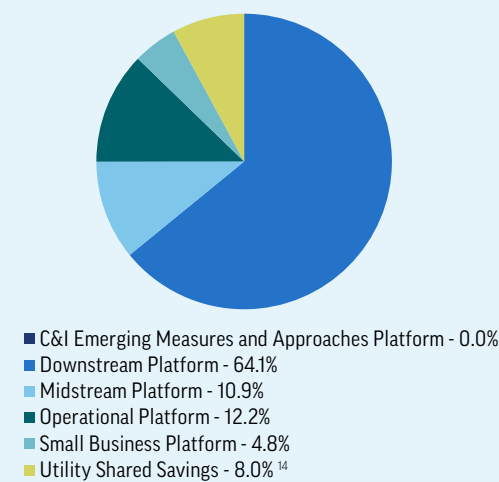
2022 DTE Gas Spend by C&I Program (\$10.4 M)



2022 DTE Electric Savings by C&I Program (538.8 GWh)



2022 DTE Gas Savings by C&I Program (839.7 MMcf)



¹⁴ Utility Shared Savings are those savings that are currently being created by an "originating" utility but remain unquantified and unclaimed by the utility providing the relevant fuel service (the "receiving" utility). Utility Shared Savings represents savings created by Consumers Energy (originating utility) in areas where Consumers Energy and DTE have overlapping service territory and Consumers Energy provides single fuel service.

Chart 24 summarizes the spending and verified net energy savings for the 2022 C&I programs combined.

Chart 24 – 2022 C&I Program Spending and Verified Net Savings

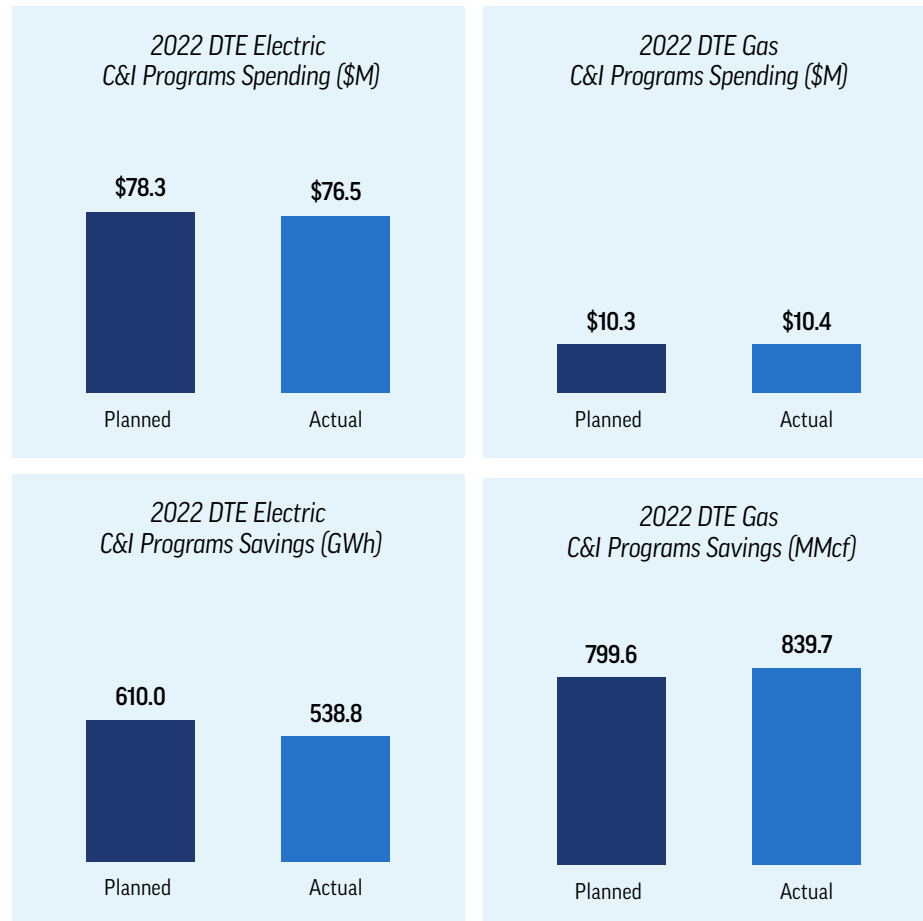
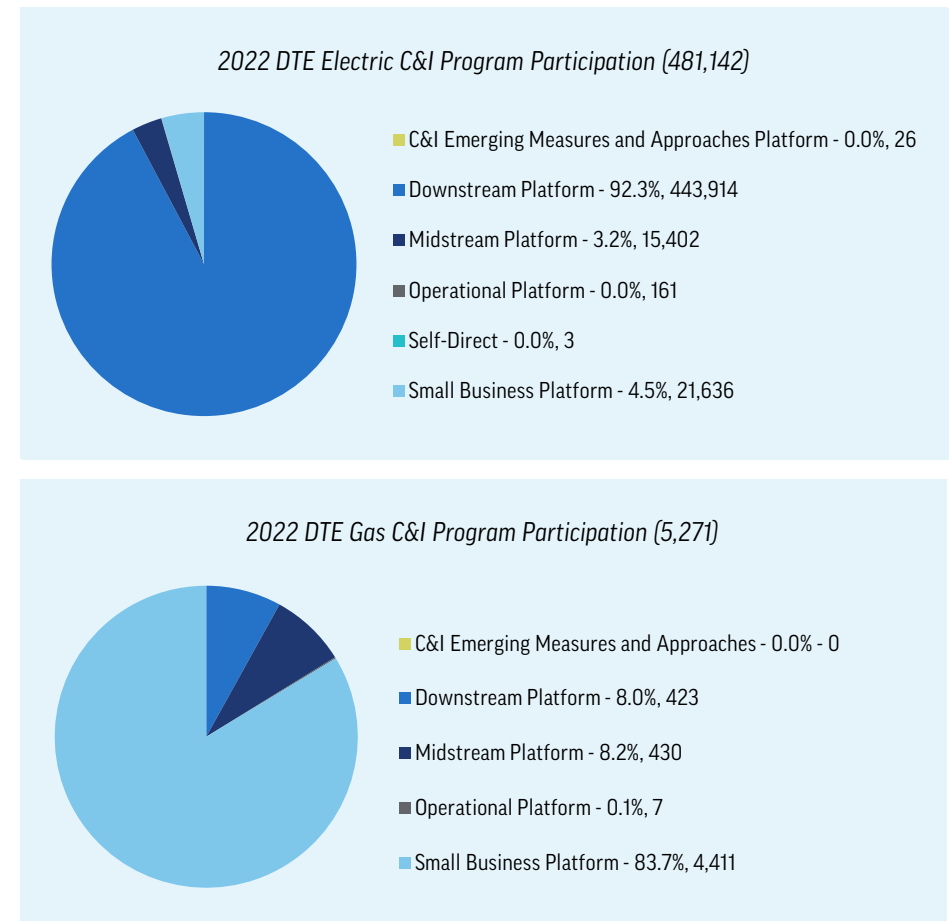


Chart 25 summarizes the share of customers that participated in each of the C&I platforms.

Chart 25 – C&I Program Participation





C&I Downstream Platform

The C&I Downstream Platform offers incentives to customers following the installation of prescriptive measures from the MEMD or nonstandard equipment and controls not contained in the MEMD.

DTE ELECTRIC AND DTE GAS

Prescriptive Program

The Prescriptive program provides predetermined measures and incentives to C&I customers for energy efficient equipment installation.



Program Description

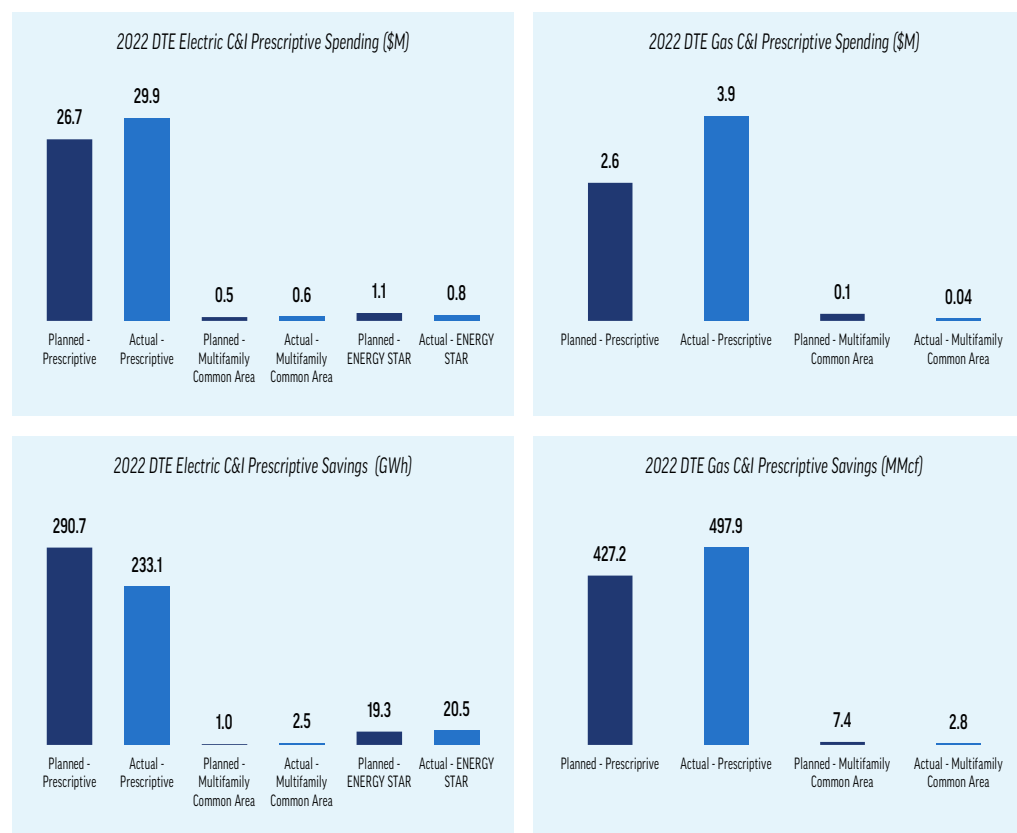
The Prescriptive program designed incentives to encourage C&I business customers to install energy efficient measures in existing facilities to reduce overall energy consumption and save money on energy bills. Incentives apply to qualified equipment commonly installed in a retrofit or equipment replacement project and are paid based on the quantity, size and efficiency of the technology installed. Prescriptive incentives are rebates paid after the installation of eligible measures.

The Electric and Gas Prescriptive programs include more than 400 prescriptive measures. Specifically, primary measures implemented include lighting fixtures, lamps, LED lighting systems and controls, motors and variable speed drives, food service and refrigeration equipment, air conditioning and ventilation equipment, boiler tune-ups and other common energy efficient equipment. The savings and spend for commercial common areas of the Multifamily program and the ENERGY STAR® Retail Lighting program are also included as Prescriptive components..

Key Takeaways

- Despite the challenging business environment in 2022, the C&I Downstream Platform program remained agile and efficient, conducting both in person and virtual meetings and adapting to a new hybrid way of doing business.
- The program encouraged contractor participation through bonuses. For example, DTE provided contractors a 30% bonus in March – April 2022 for early Spring chiller tune-ups. These were especially successful for school districts and universities, which have multiple pieces of equipment at different building sites.
- The program experienced supply chain bottlenecks and cost increases that affected project acquisition and completion timelines. Many of these projects rolled over into the 2023 program year.
- DTE shifted to an online application in 2022 and offered project bonuses and training sessions to encourage contractors and trade contractors to use the new tool.

Chart 26 – 2022 Prescriptive Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Non-Prescriptive Program

The Non-Prescriptive program provides customized incentives to C&I customers for the installation of innovative energy efficiency equipment and controls that decrease electricity or gas consumption.



Program Description

The program's components include custom measures that provide incentives to customers for measures they installed in qualified projects that are less common or more complex than prescriptive measures. As with prescriptive incentives, the custom incentive payment occurs after the equipment is installed and operational at the customer location.

Measure incentives were based on the estimated energy savings for the first 12 months:

- The Electric Non-Prescriptive program incentive was \$0.05 per kWh.
- The Gas Non-Prescriptive program incentive was \$3.50 per Mcf.

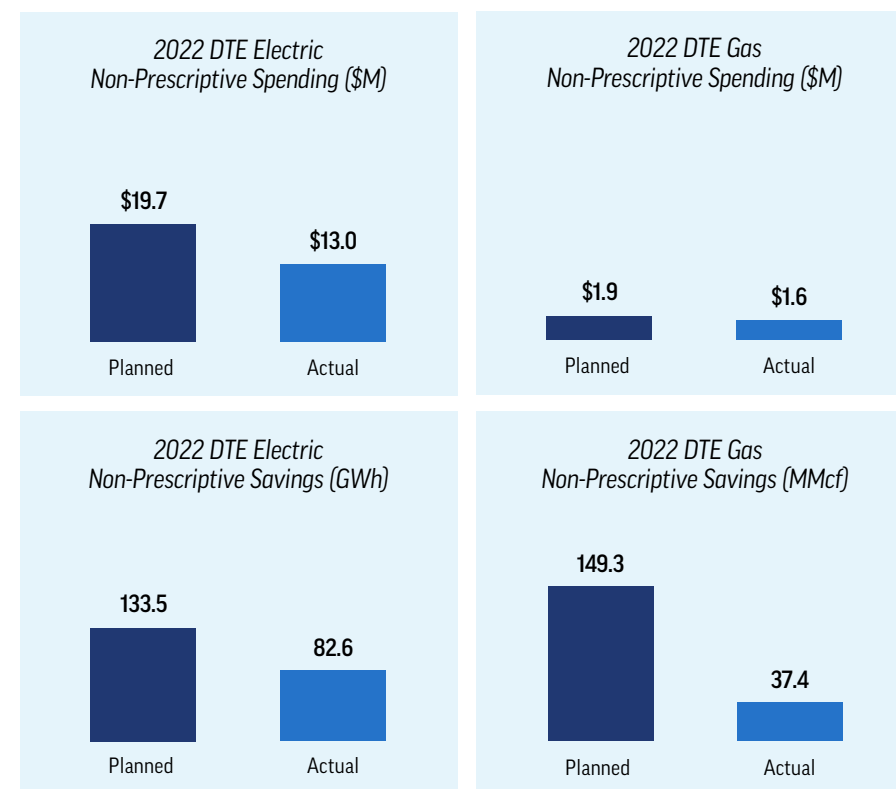
To qualify for the incentive, projects required a one to eight-year simple payback for electric, a minimum of one-year simple payback for both gas and electric projects and a maximum of eight-year payback for electric-only projects. Incentives are capped at 50% of the total project cost.

Examples of Non-Prescriptive program measures implemented during 2022 include energy management system controls, energy efficient motors and variable frequency drives, industrial process equipment improvements and custom lighting projects with extended hours of use. Measures not eligible for an incentive include fuel switching (i.e., electric to gas or gas to electric); changes in operational or maintenance practices or simple controls modifications not involving capital costs; onsite electricity generation; and projects that involve peak shifting but no kWh savings, renewable energy or those in which the payback did not meet the Non-Prescriptive requirements.

Key Takeaways

- The program experienced some supply chain bottlenecks and cost increases, affecting project acquisition and completion timelines. However, many of these projects rolled over into the 2023 program year.
- DTE shifted to an online application in PY2022 and offered project bonuses and training sessions to encourage contractors and trade contractors to use the new tool.
- Strong customer and program relationships are critical to fostering multi-year participation.

Chart 27 – 2022 Non-Prescriptive Program Spending and Verified Net Savings





C&I Midstream Platform

The C&I Midstream Platform offers a simplified marketing approach that targets equipment distributors and manufacturer representatives to encourage participating distributors to stock more energy efficient products and offer customers instant discounts at the time of purchase.

For all midstream programs in 2022, the implementation contractors' ongoing communications with distributors were well-received, and the program achieved high distributor satisfaction. Distributors reported that DTE did an excellent job making them feel cared for as individuals as opposed to businesses.

DTE ELECTRIC

Midstream Lighting Program

To achieve its goals, the program works with commercial lighting distributors across the state to offer discounts on energy efficient lighting products to C&I customers of all sizes.



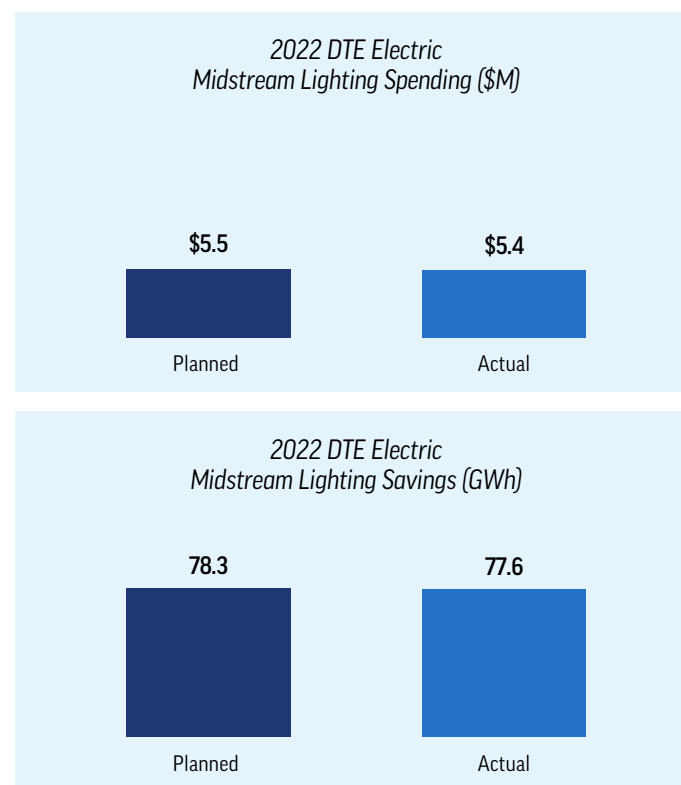
Program Description

Program incentives encourage energy savings by allowing customers to receive instant discounts on energy efficient lighting measures, including a variety of different LED lamp types and occupancy sensors. By reducing the purchase price of energy efficient lighting products at the register instead of requiring an application or scheduled appointment to participate, DTE captures program participation for customers that might not participate in other DTE C&I programs. The program also includes customer education and awareness about discounts through signage and other online means through which customers engage in the program.

Key Takeaways

- The program introduced several new measures in 2022 including Direct Linear Ambient Luminaires and Direct Linear Ambient Luminaires with controls.
- In 2022, DTE introduced several new marketing efforts including product spotlights in the program newsletter, creating new co-branding marketing materials for distributors, and creating new program branding materials for distributors to use on social media platforms.
- DTE removed incentive caps in the fourth quarter of 2022 and introduced a quarterly competition where distributors competed against their totals from previous quarters. Distributors noted that removing incentive caps was beneficial for them in making purchases through the program.
- In 2022, contractors played a larger role in reaching out to customers, which was well-received and had a positive impact on program savings.

Chart 28– 2022 Midstream Lighting Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Midstream Food Service Program

The Midstream Food Service program targets food service cooking equipment distributors and provides point-of-purchase incentives to C&I customers of all sizes that purchase and install energy efficient food service equipment.



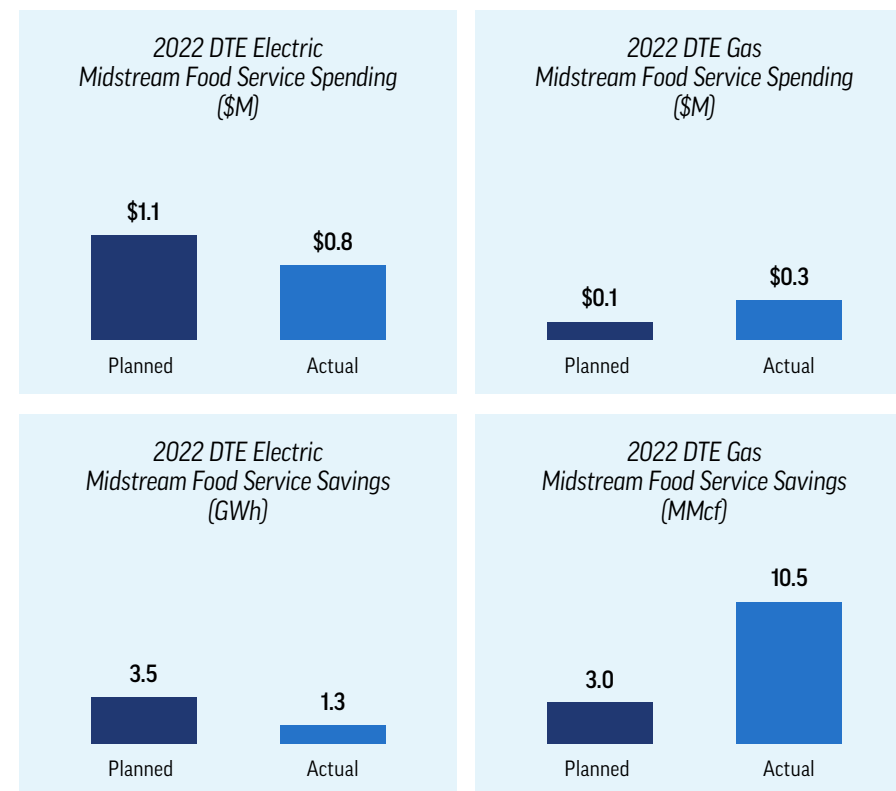
Program Description

The Midstream Food Service program works with commercial food service dealers to offer instant discounts on energy efficient (ENERGY STAR®-rated) food service equipment. Instant discounts encourage energy savings by reducing the purchase price of equipment at the point of purchase instead of requiring an application or scheduled appointment to participate. DTE hopes to capture program participation for customers that might not participate in other DTE C&I programs. Signage and an online portal promote discounts.

Key Takeaways

- The program introduced several new distributors, bringing the total to 28 distributors in the program.
- The program introduced new measures with significant success in the life sciences sector, such as lab grade refrigerators and freezers. Additionally, the program added High Efficient Condensing and Evaporator Units to the program.
- The program introduced a thank you postcard with a QR code that was mailed to customer installation addresses to recruit for an online customer feedback survey. Coupled with a \$50 incentive, the approach led to more customer responses than in previous years.

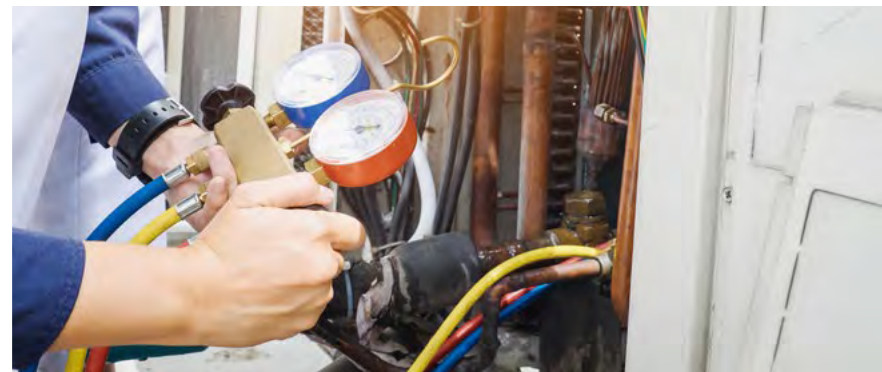
Chart 29 – 2022 Midstream Food Service Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Midstream HVAC Program

The Midstream HVAC program was designed to increase the market share of efficient HVAC systems by providing streamlined incentives to distributors, who leverage their sales and outreach capabilities.



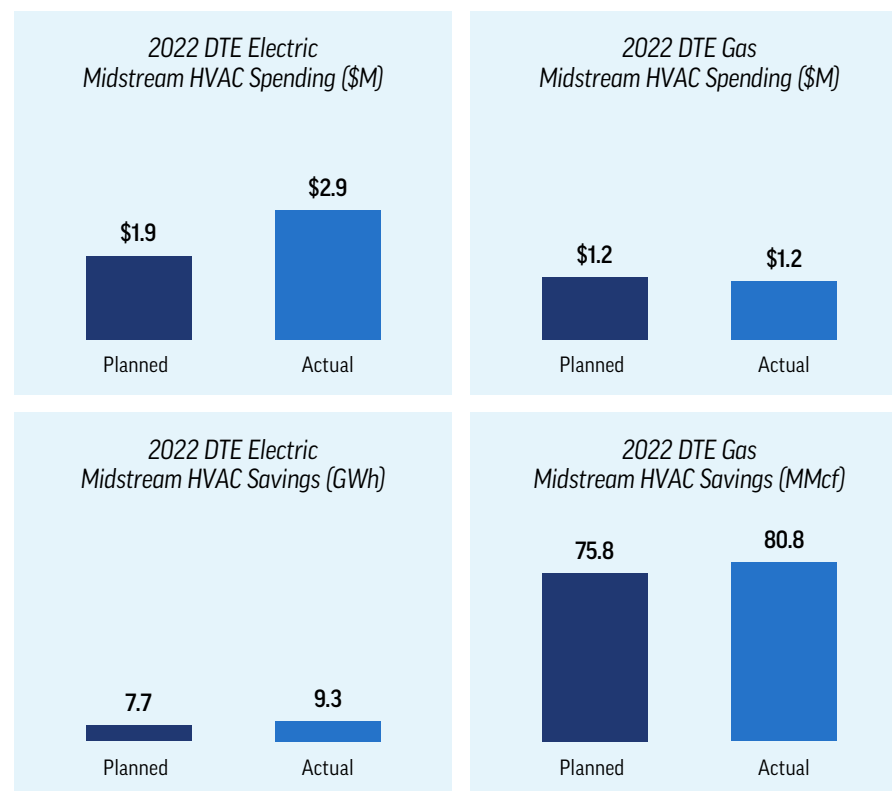
Program Description

The Midstream HVAC program works with commercial distributors across the state to offer discounts on energy efficient products. Incentives encourage energy savings by allowing customers to receive instant rebates on qualifying energy efficient Midstream HVAC equipment. By reducing the purchase price of energy efficient Midstream HVAC products at the register instead of requiring an application or scheduled appointment to participate, DTE hopes to capture program participation for customers that might not participate in other DTE C&I programs.

Key Takeaways

- In 2022, the program introduced several new distributors, bringing its total to 22.
- As part of DTE's at-home initiative, the program added the high-volume, low-speed fan category. Additionally, the program added variable refrigerant flow on the electric side and indirect water heaters on the gas side.
- The program introduced a mandatory 20% incentive pass through from distributors to customers in December 2022.
- In September 2022, the program introduced new marketing measures and hosted its first distributor round table event to increase distributor feedback and satisfaction.

Chart 30 – 2022 Midstream HVAC Program Spending and Verified Net Savings





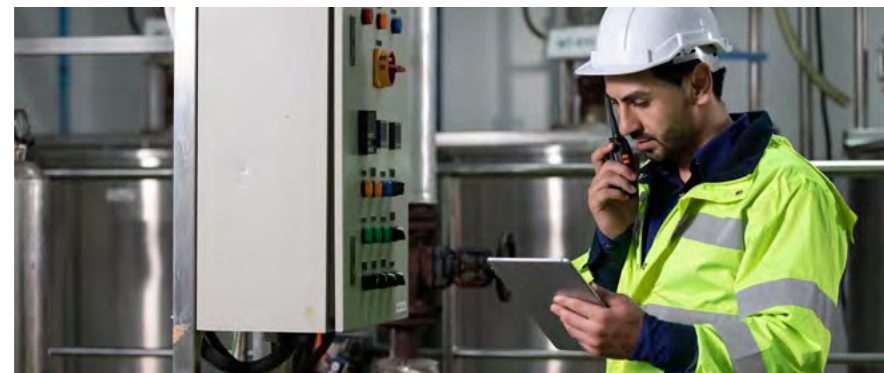
C&I Operational Platform

The C&I Operational Platform consists of programs developed to control energy consumption through a systematic approach to identify and improve building deficiencies and processes.

DTE ELECTRIC AND DTE GAS

Retro-Commissioning Program

The Retro-Commissioning program targets C&I buildings by providing a detailed energy audit and evaluation that identifies operational low-cost or no-cost, highly customized solutions to reduce operational energy consumption based on building-specific needs.



Program Description

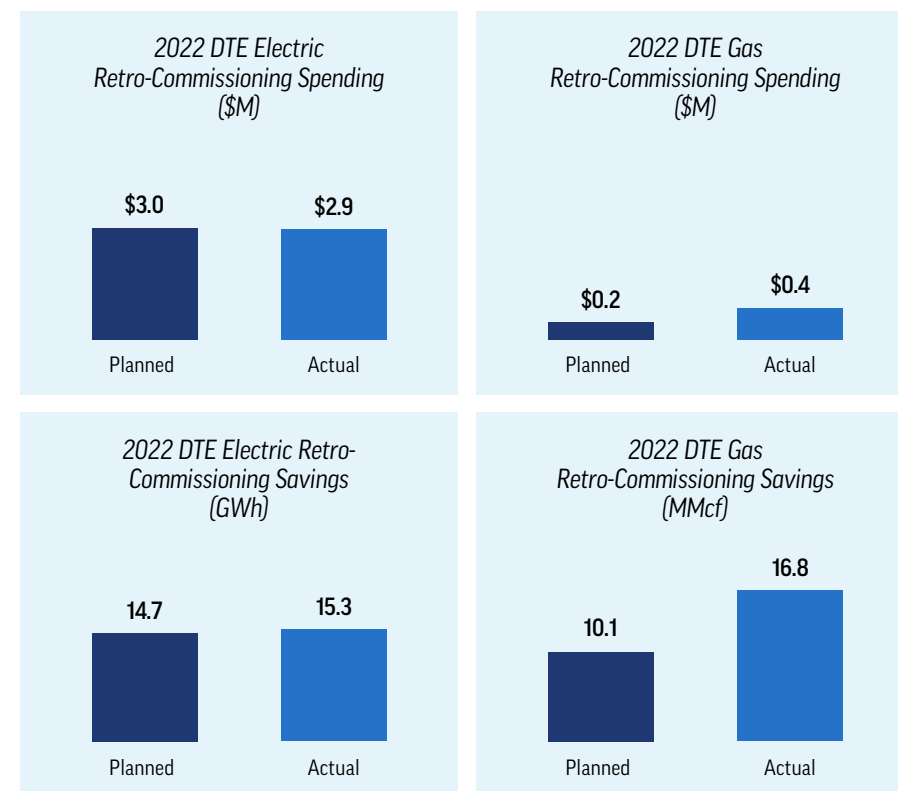
The program offers energy expertise and valuable incentives to help offset the initial cost of investment to make operational improvements to the customer's building. The Retro-Commissioning program also provides recommendations to customers for energy efficient capital investments they can implement and receive an incentive through the Prescriptive or Non-Prescriptive programs. In 2022, the program continued its coordination efforts with the Strategic Energy Management program to ensure specific customers participated in the most beneficial program for their needs.

DTE offers a Bonus Bank to encourage participation in DTE's C&I Prescriptive and Non-Prescriptive programs. For every kWh and therm saved from participating in the Retro-Commissioning program, DTE offers an additional bonus rebate of \$0.01 and \$0.10, respectively. Customers can use this bonus to obtain additional rebates for participating in these programs. The program increased the gas savings customer incentive from \$0.20/CCF to \$0.30/CCF in 2022.

Key Takeaways

- Utility-reported savings for the program was over two times greater for electric energy in 2022 compared with 2021. The program reported over 66% growth in 2022 for gas savings compared with 2021.
- In 2022, the program further expanded its service to industrial customers by building relationships and using a targeted customer outreach approach. The program continued serving the commercial sector in 2022.
- The program grew its capabilities in 2022, allowing DTE to offer customers more advanced energy savings measures in the heating and cooling operation area including system pressure setpoint adjustments.
- In 2022, the program increased coordination efforts between DTE's Strategic Energy Management and Find and Fix programs. This included the program channeling energy savings opportunities to the Strategic Energy Management program while performing the onsite Retro-Commissioning audit.
- The program continued to offer an express track where contractors audit and make operational changes to the site during a single visit. The express track represented an overwhelming majority of the reported savings in 2022.

Chart 31 – 2022 Retro-Commissioning Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Strategic Energy Management Program

The Strategic Energy Management program provides technical support and financial incentives for C&I customers interested in managing energy continuously in a holistic approach through Strategic Energy Management.



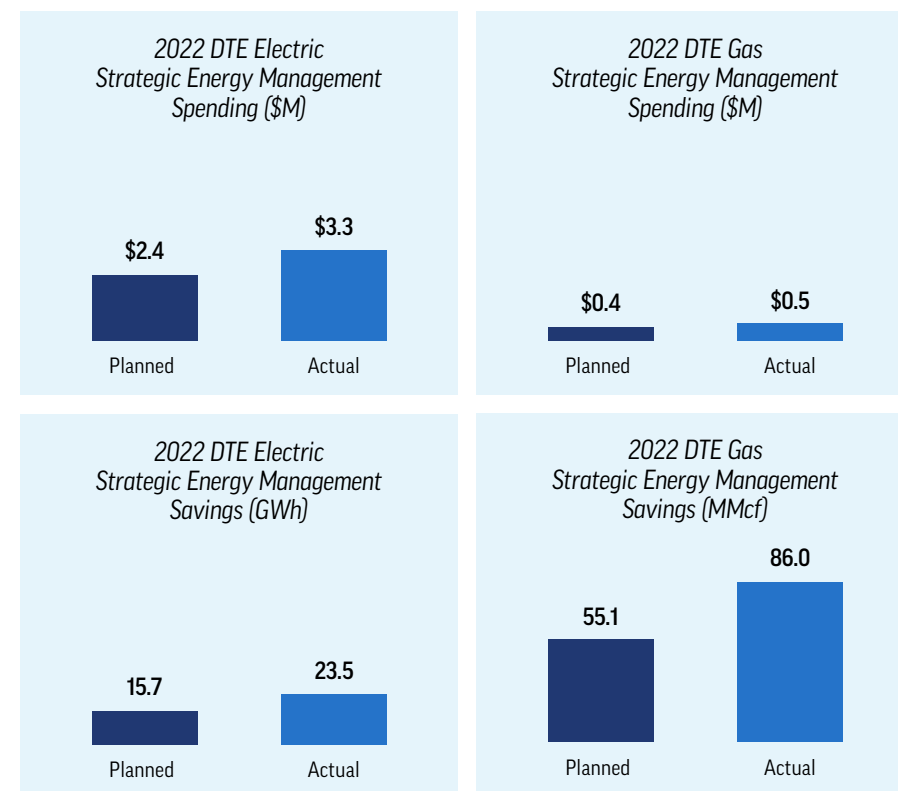
Program Description

The program provides incentives to C&I customers for making operational changes at their facilities. These operational changes primarily include HVAC and industrial process-related system adjustments that result in energy use reductions. This program offers up to 24 months of technical support, incentives for kWh and Mcf verified as well as major milestone achievement incentives.

Key Takeaways

- In 2022, the program's utility-reported savings were 51% and 43% greater for electric energy and gas savings, respectively, compared with 2021.
- All who completed their initial 24-month engagement in 2022 decided to continue participating in the program due to their positive experience and desire to achieve additional operational energy savings.
- The program continued to engage long-term participants with multiple sites for enrolling additional facilities in the program within their corporate portfolio.
- In 2022, the program refined measurement and verification (M&V) processes for projects completed through the program in 2022. This culminated in the program developing a comprehensive M&V plan document for the industrial component of the SEM program to streamline participant data collection needs and ensure that the program team uses a rigorous savings estimation method for each project.
- The program continued to offer virtual audits to access a customer's building management system remotely to identify opportunities for energy savings.

Chart 32 – 2022 Strategic Energy Management Program Spending and Verified Net Savings



DTE ELECTRIC

Self-Direct Program

This program gives DTE C&I electric customers the opportunity to choose to self-direct and implement their own EE Plan.



Program Description

DTE Electric placed a bill message on all commercial customer bills notifying them about the program and how to subscribe. All existing self-directed customers were sent personalized letters when it was time to reapply. Account managers followed up with a phone call after the letters were mailed to address customer questions. Program information was placed on the DTE website along with the required energy plan templates for customers to use to apply to the program. Customers choosing to self-direct are exempt from the mandatory EE electric surcharge(s), except for the portion of the surcharge that funds the Income-Qualified program and program administration costs.

Key Takeaways

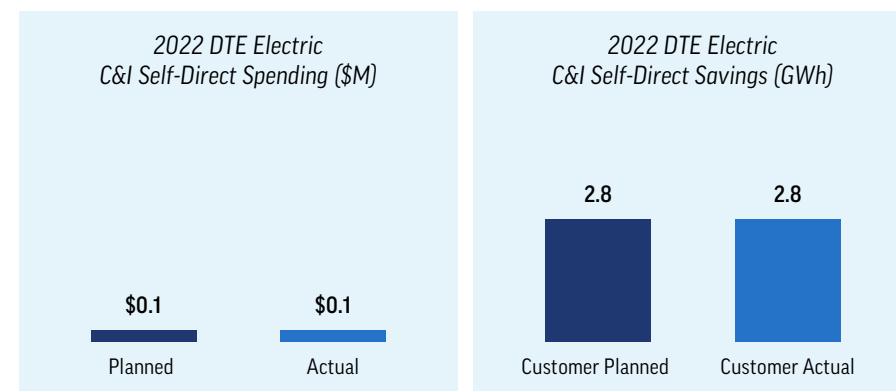
- In 2022, three electric customers enrolled in the Self-Direct program. Two participating customers submitted annual reports in compliance with program requirements, while one requested a one-week extension. All Self-Direct customer plans for 2022 met their total required savings targets.
- To be eligible, customers must have an annual peak demand of 1 MW or greater per single site or annual peak demand of 1 MW or greater per aggregated sites of customers. Customers cannot include sites or accounts that have received an EE rebate or incentive from an electric provider and are in the calculated waiting period in a Self-Direct plan.
- If the waiting period lapses after the Self-Direct plan filing deadline but before its plan year begins on January 1, a customer may include those sites or accounts during the upcoming plan period.
- The plan shall provide aggregate energy savings that for each year meet or exceed the energy optimization performance standards based on the electricity purchases in the previous year for the site or sites it covered.

Table 8 – Summary of the 2022 DTE Electric Self-Directed Program

Customers	Admin	Term of Self-Direct	Total Meters Associated		Annual Report Summary ¹		
		Years	Total Primary Meters	Total Secondary Meters	Supplied Annual Report	2022 MWh Savings Planned	2022 MWh Savings Achieved
Customer		3	137	0	✓	1,982	1982
Customer		5	4	0	✓	399	399
Customer		4	18	0	✓	378	378
Totals:	\$51,000		159	0		2,760	2,760

¹ Totals may not sum due to rounding

Chart 33 – 2022 C&I Self-Direct Program Spending and Verified Net Savings





C&I Small Business Platform

The Small Business Platform provides small business customers with a path to energy savings and a means to begin their energy efficiency journey.

DTE ELECTRIC AND DTE GAS

Business Energy Consultation Program

The Business Energy Consultation program targets small businesses (primarily nonprofits, houses of worship, and customers representing \$13,000 or less in revenue) by providing a no-cost energy assessment, direct install prescriptive measures, a report with energy savings recommendations and rebates for contractor-installed measures.



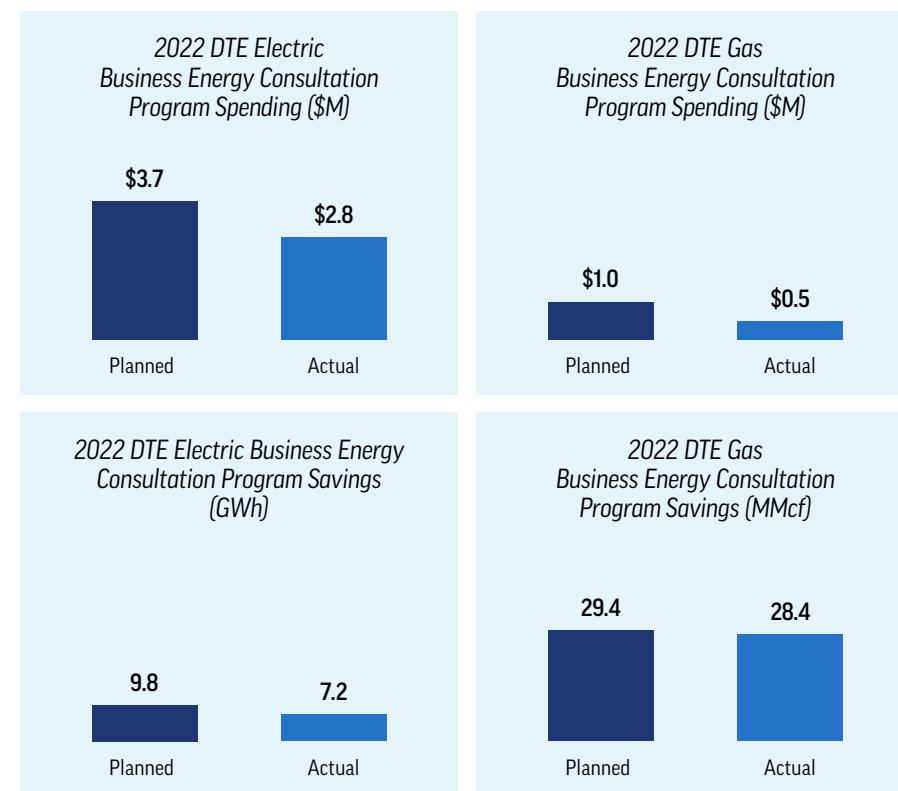
Program Description

Through the no-cost assessment, customers may receive prescriptive measures such as a programmable thermostat or LED bulbs at no cost. The Business Energy Consultation energy assessment report provides customers with energy efficiency recommendations and information on incentives and next steps. After completing the assessment, the program provides referrals to contractors who can install the recommended measures. The program focuses on direct install projects, with a goal to create energy efficiency engagement by providing an easy-to-follow process and eliminating barriers for customers who may have little energy experience.

Key Takeaways

- The base rate for small business incentives decreased from \$0.09 closer to \$0.07 in 2022. To address this, the program increased their bonus offerings during the program year.
- In 2022, the Business Energy Consultation program brought back their contractor channel and offered direct install customers the opportunity to increase their savings through rebated projects.
- The program's implementers partnered with Consumers Energy to share savings on thermostat installations. For example, if a thermostat was installed at a customer who was serviced by both providers, Consumers Energy was able to claim gas savings and DTE electric savings.
- In 2022, the C&I Small Business programs worked together more strategically, specifically having the Business Energy Consultation program take on all leads that were gas measure based, as their sister program phased out this offering.
- A collaborative effort between DTE and the evaluation team introduced and implemented a more transparent field work protocol to identify the location of direct install measures more clearly at each location. This improvement increased efficiency of evaluation efforts and improved all parties' understanding of the difficulties of onsite verification.
- In 2022, customer satisfaction was 95%.

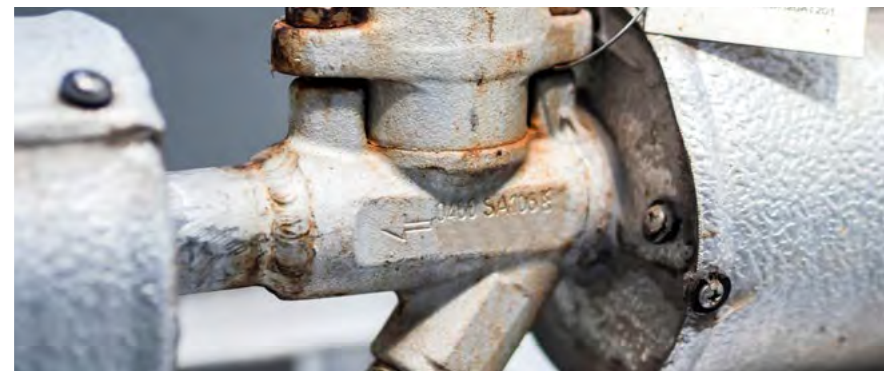
Chart 34 – 2022 Business Energy Consultation Program Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Find and Fix

The Find and Fix platform includes the Compressed Air and Steam Trap programs. The Compressed Air program targets small and medium C&I electric customers by identifying leaks in air compressor systems. The Steam Trap program targets small and medium C&I gas customers by identifying failed steam traps. Customers are responsible for fixing identified leaks and receive an incentive from DTE based on the volume of leaks fixed.



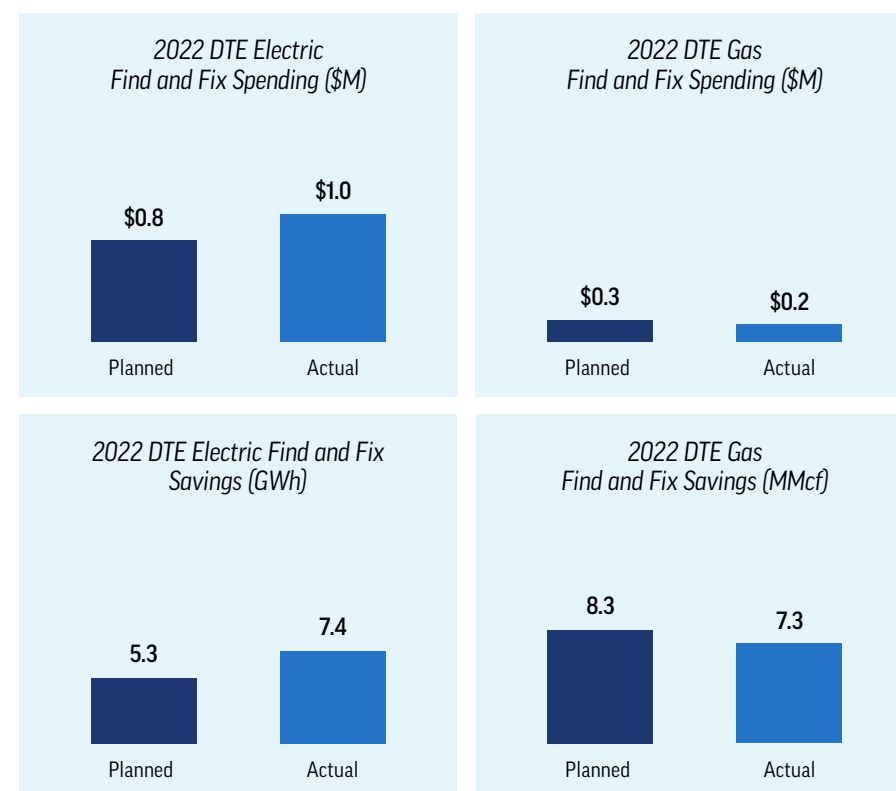
Program Description

Through no-cost compressed air and steam trap leak surveys, the Find and Fix platform helps customers identify leaks in their compressed air systems and failed steam traps in their facilities. The implementation contractor conducts a leak survey, places tags at the location of each identified leak, and then provides the customer with a list of identified leaks for repair. Customers are responsible for repairing leaks in their compressed air systems and fixing or replacing failed steam traps. Customers receive an incentive from DTE based on the volume of leaks fixed. The programs intend to help customers identify and mitigate inefficiencies in their existing systems.

Key Takeaways

- In 2022, DTE set the program's savings goal to 6,073 MWh and increased the goal in May by 2,000 MWh. The program achieved the increased target of 8,073 MWh of savings by year end. The Steam Trap program ultimately achieved 7,974.3 Mcf of the 21,310.8 Mcf goal.
- The Compressed Air program added three pilot measures including no-loss condensate drains, engineered nozzles, and centrifugal compressors. These three measures will be commercialized as part of the program for 2023.
- In 2022, DTE used prescriptive MEMD measures to claim savings for small dry-cleaning customers and implemented a custom savings calculator for non-dry-cleaning customers (e.g., breweries, distilleries, food processing). DTE also updated its incentive structure to provide small dry-cleaning facilities \$250 per steam trap and non-dry-cleaning customers receive \$0.60/CCF saved.
- Customers eligible to participate in the Steam Trap program are generally part of a network, so the program instituted a customer referral program that provides bonuses to customers that refer other businesses to participate. This model has been particularly successful for small dry-cleaning customers. The program also focused on customers with multiple business locations, as they were the primary business decision maker. This helped streamline the outreach process.

Chart 35 – 2022 Find and Fix Spending and Verified Net Savings



DTE ELECTRIC AND DTE GAS

Small Business Focus

The Small Business Focus program targets small businesses by providing a no-cost energy assessment, direct install prescriptive measures, a report with energy savings recommendations and rebates for contractor-installed measures.



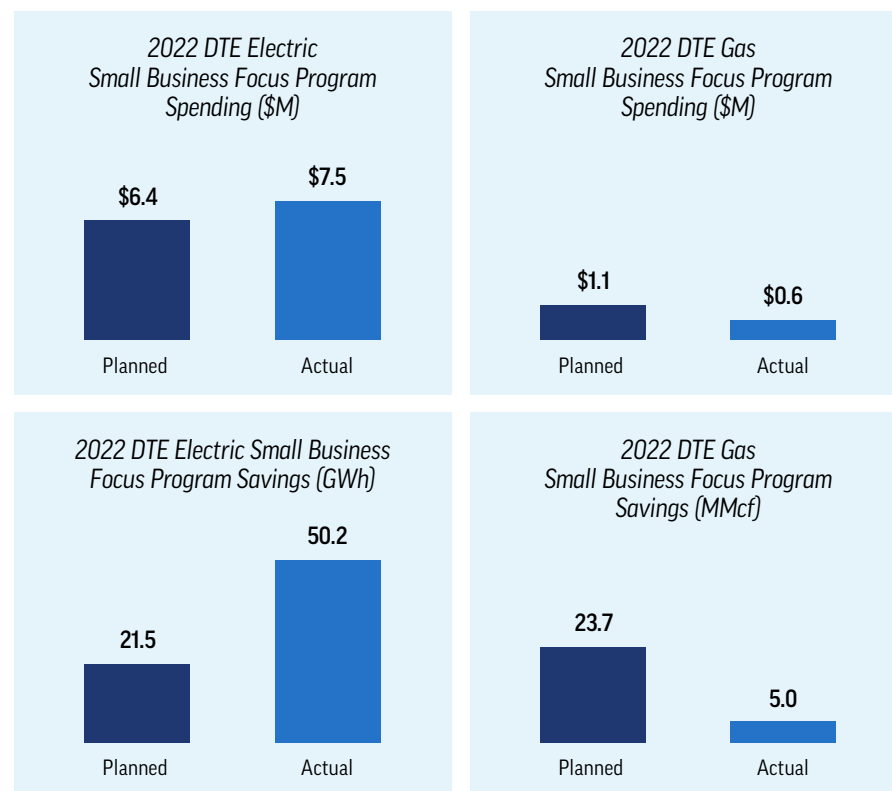
Program Description

Through the no-cost assessment, customers may receive prescriptive measures such as a programmable thermostat or LED bulbs at no cost. The Small Business Focus energy assessment report provides customers with energy efficiency recommendations and information on incentives and next steps. After completing the assessment, the program provides referrals to contractors who can install the recommended measures. The program primarily focuses on contractor projects, with a goal to create engagement with energy efficiency by providing an easy-to-follow process and eliminating barriers for customers who may have little energy experience.

Key Takeaways

- The base rate for small business incentives decreased from \$0.09 to around \$0.07 in 2022. To address this rate change, the program increased their bonus offerings and increased the number of kits distributed, which included light bulbs and a power strip measure.
- In 2022, the Small Business Focus program saw tremendous savings growth, largely due to the bonus offerings. At mid-year, the savings target was increased to 40,000 MWh, which the program further exceeded.
- The Small Business Focus program brought on a trade contractor outreach lead, which has helped grow their network considerably from 2021, diversify the types of contractors in the network, and provide a more direct contact for contractors to engage with at the program level.
- In 2022, the Small Business and Business Energy Consultation programs collaborated strategically, specifically having the Small Business Focus program transfer gas leads to the Business Energy Consultation program as they phased out this offering.
- Field verification efforts offer insights into customer preferred measures for the program as it continues to mature. These onsite visits have allowed the team to identify why customers may be removing particular measures and how the program can potentially adjust their offerings based on these findings.

Chart 36 – 2022 Small Business Focus Program Spending and Verified Net Savings





C&I Emerging Measures and Approaches Platform

The C&I Emerging Measures and Approaches (EM&A) Platform promotes the installation of energy efficient technologies or delivery channel strategies that were recently commercialized in DTE's C&I program offerings. In 2022, the EM&A Platform consisted of the Telecommunications (Telecom) program.

Telecom Program

The Telecom program provides incentives to consolidate telecommunications equipment to reduce load and improve the efficiency of HVAC equipment used to cool data center spaces. DTE and the implementer will leverage existing relationships and develop new relationships in the telecom industry to improve awareness of these energy reduction measures and reduce energy waste.



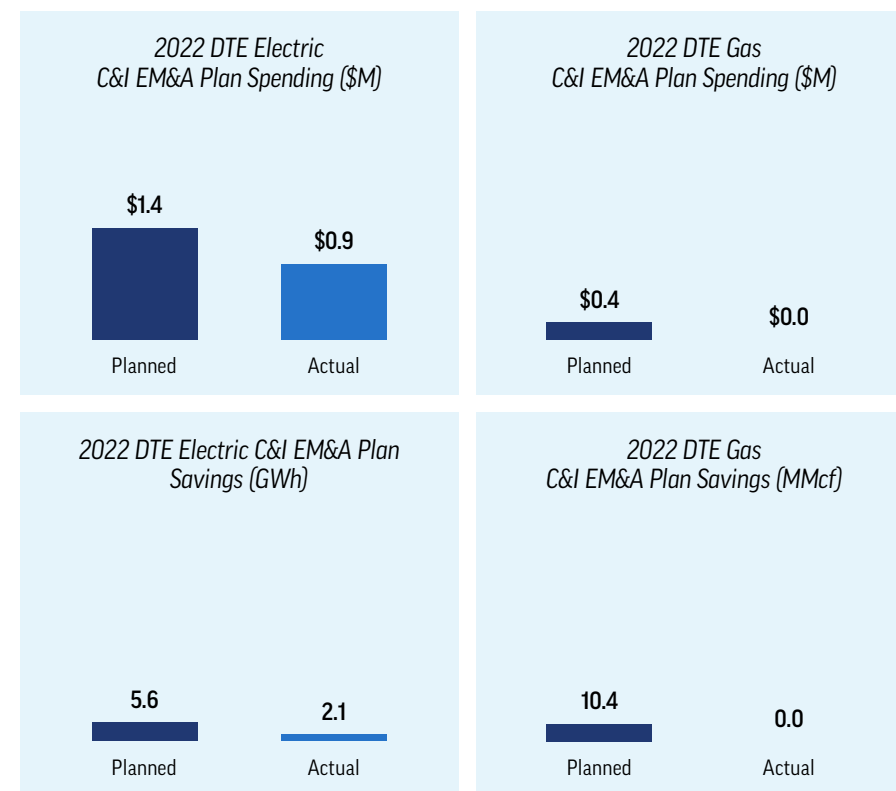
Program Description

The Telecom program is available to any C&I provider of wired or wireless telephone, Internet, cable, broadcasting or telecommunications data services within the DTE service area. The increase in remote employees boosted the need for data equipment across market segments. Data-intensive sectors such as hospitals, universities, automotive and retail present substantial energy efficiency savings opportunities for DTE.

Key Takeaways

- The Telecom program identified opportunities to pursue energy savings at data-intensive market sectors including universities and hospitals and increased program awareness with trade contractors in the DTE territory familiar with energy-saving measures eligible to telecom customers.
- The program tracked which market segments have increased data center footprints to support the remote work business trend. These segments represent new opportunities for program outreach and participation.
- The program continued building trust with data center facilities to identify energy efficiency opportunities and allow contractors with facility access to pursue waste reduction projects.

Chart 37 – 2022 C&I EM&A Platform Spending and Verified Net Savings





Education and Awareness Program

The Education and Awareness (E&A) program provides DTE residential and business customers with information and resources to help them learn how to use energy more efficiently and to better manage their energy costs. Promoting energy efficiency will also help DTE achieve its CleanVision goal.

DTE ELECTRIC AND DTE GAS

Education and Awareness Program

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Program Description

The DTE energy efficiency-specific website, mass media, social media and outreach campaigns engage customers with energy efficiency information. In 2022, DTE continued to rely on such campaigns to target specific customer segments to increase their awareness of energy efficiency.

Residential campaigns focused on low-cost or no-cost tips, ENERGY STAR® appliance tips and initiatives such as pool pump education and ENERGY STAR Day promotions, heating and cooling season messaging, estimated energy- and money-saving opportunities and environmentally focused calls to action. Messaging themes also encouraged energy efficient home improvements and behavioral changes to influence environmentally friendly energy consumption. Small business campaigns focused on how local small businesses used energy efficiency tactics to improve operations while maintaining comfort and ensuring environmentally conscious energy usage. DTE continued to highlight the non-energy benefits of making energy efficiency improvements to increase the comfort, and safety of their business and to improve the satisfaction of their customers and employees.

Key Takeaways

- DTE developed new lifestyle assets to be used in Residential customer campaigns aimed at delivering more targeted messaging based on customer segmentation, interests, energy usage behaviors and the channel they are consuming our message through.
- DTE utilized new customer focus group and research data to craft messaging and content specific to areas of interest for both Residential and Business customers.
- The Education & Awareness team continued to partner with Gas and Electric marketing partners to deliver co-branded content in support of seasonal campaigns aimed at driving up customer satisfaction with relevant and actionable energy efficiency messaging.

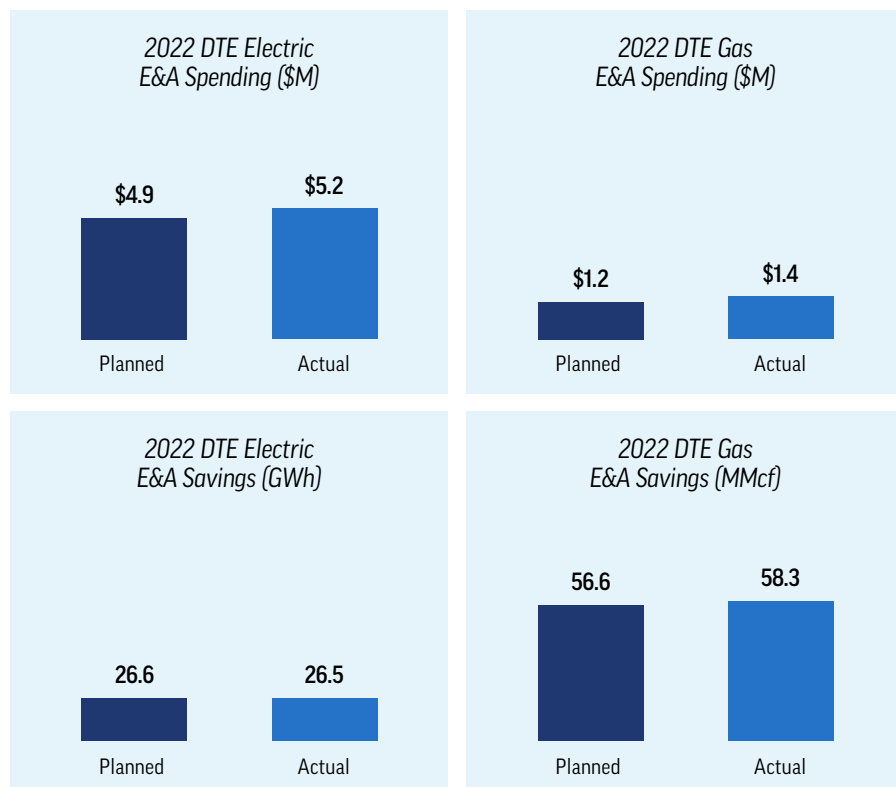
Residential

- DTE launched the Ms. Energy Saver Game which is an immersive and engaging on-site event experience used to educate customers on energy efficiency and the importance and benefit of utilizing these tools, resources and programs in their own homes and businesses.
- DTE developed multi-channel marketing assets for new areas of focus including heat pump and heat pump water heater education including blog posts, website updates, printed collateral and educational videos.
- DTE increased our presence at local community and larger state-wide events having a footprint across the state throughout the year delivering on-site activations, media interviews, promoting our programs and encouraging live onsite program sign ups, conducting customer satisfaction surveys and distributing printed educated collateral.

Small Business

- DTE continued the Business Pride contest, helping customers tell their story of energy efficiency improvements and share pride in their business via a virtual format. DTE selected three winners and provided them with a free energy consultation through the Business Energy Consultation program, prize money to put toward implementing energy efficiency upgrades and opportunities to be featured in future DTE marketing efforts.
- DTE delivered a suite of new small business-focused educational videos and case studies featuring program promotions, energy savings tips and calls to action and local customer interviews and testimonials.
- DTE increased our Energy Smarts printed and digital magazine distribution, reaching more small business customers throughout our territories across four quarterly issues. This publication delivers industry information, Michigan small business utility-related news and updates, energy efficiency tips and resources and DTE small business program and rebate information.

Chart 38 – 2022 E&A Spending and Verified Net Savings





Pilot Program

The purpose of DTE's Pilot program is to explore technologies and approaches not included in the commercialized programs described in the approved 2022-2023 EWR Plan.

Program Description

The program enabled DTE to measure energy savings and test the cost-effectiveness of emerging technologies. It also tested customer adoption of new technologies and market adoption of existing technologies using new approaches. As designed, this program supported Residential and C&I programs.

Residential and C&I Pilot

Gas Heat Pumps (DTE Electric and DTE Gas)

Ongoing, launched Q3 2022

The Gas Heat Pump pilot intends to demonstrate a new product category for fuel-fired natural gas absorption heat pump (GAHP) technologies in commercial and residential applications and develop measures for the MEMD. This technology will be commercially available in 2023 from multiple manufacturers. The pilot's goal is to time GAHP applicability with M&V in the near future to help develop a market for this new energy efficiency technology.

Residential Pilots

Advanced Keyboard (DTE Electric)

Ongoing, launched Q4 2022

The Advanced Keyboard pilot measures the change in runtime of computers before and after installation of a motion-sensing keyboard, which puts the computer to sleep in a pre-selected interval of time once no motion is detected after that set time. The goal of this pilot is to reduce energy waste from computers left on.

Codes and Standards Study (DTE Electric and DTE Gas)

Ongoing, launched Q3 2020

Phase 1 of this pilot, code adoption, is underway. In this phase, DTE is actively participating in Michigan's Building Energy Code update. The goal of this participation is to positively affect the codes and standards to be later codified in a measurable way. Code compliance is the second phase of this pilot and this phase develops programmatic framework and design to help builders and code officials understand and implement the newest Michigan residential building energy code. The goal of the code compliance phase is to increase compliance levels over historical baselines.

Comprehensive Attic Package (DTE Electric and DTE Gas)

Launched Q4 2021, commercialized Q4 2022

The Comprehensive Attic Package pilot measured naturally occurring air infiltration savings generated by standard insulation improvement installations. Insulation measures only account for the thermal savings generated. However, standard insulation improvements may also contribute to infiltration savings that can otherwise only be quantified with blower door testing. The pilot established relationships between standardized insulation improvements and associated infiltration savings.

Dryer Saver (DTE Electric and DTE Gas)

Ongoing, launched Q4 2022

The Dryer Saver pilot measures the change in runtime of electric dryers before and after installation of a hard-wired retrofit device for electric vented dryers. The device senses moisture for all ages of dryers; once no moisture is sensed, the device turns off the dryer automatically. The pilot's goal is to reduce energy waste from over-drying clothes.

HVAC Midstream Enhancement (DTE Electric and DTE Gas)

Ongoing, launched Q4 2023

The HVAC Midstream Enhancement pilot is developing a new program design framework, infrastructure, savings evaluations, and materials to transition the Residential HVAC program from downstream to midstream. This program design transition is focused on market transformation at the HVAC distributor level of the supply chain.

Manufactured Homes Weatherization (DTE Electric and DTE Gas)

Launched Q4 2021, commercialized Q4 2022

This pilot assessed market and program feasibility for forced air duct sealing in manufactured homes. Previous pilots were inconclusive due to the lack of duct sealing treatment.

Nationwide Midstream (DTE Electric)

Ongoing, launched Q1 2022

The Nationwide Midstream pilot engages independent retailers and promotes the sale of ENERGY STAR® and ENERGY STAR Most Efficient appliances using instant customer rebates and midstream retailer incentives. This pilot is being commercialized in 2023.

Non-Wires Alternative (DTE Electric)

Ongoing, launched Q1 2019

The Non-Wires Alternatives pilot tested the cost-effectiveness of a geo-targeted peak load reduction on a substation using energy efficiency, DR and a sub-transmission distribution facility upgrade to defer capital investments.

Real Estate Outreach and Education (DTE Electric and DTE Gas)

Ongoing, launched Q3 2022

The Real Estate Outreach and Education pilot built and is testing a new marketing channel for existing energy efficiency programs with real estate professionals and new homeowners. It established a DTE Real Estate Energy Consultant Network for real estate agents who completed training about energy efficiency and DTE energy efficiency programs. The real estate agents then received further support, including marketing and educational materials, some of which was shared with new homeowners to direct them to efficiency coupons, promos, and other DTE incentives for pursuing efficiency upgrades. This pilot is expected to commercialize in 2023.

C&I Pilots

Air Duct Sealing (DTE Electric and DTE Gas)

Ongoing, launched Q3 2022

The Air Duct Sealing pilot helps large commercial customers with leaking air ducts in their HVAC systems. This pilot collaborates with Aeroseal LLC, which developed a patented technology that injects sealant into pressurized ductwork to seal air leaks from the inside.

DTE offers customers an incentive to offset and make this a cost-effective solution. The pilot is focused on encouraging deeper customer relationships and broadening energy efficiency awareness and participation in the C&I Retro-Commissioning program.

Business Energy Report (DTE Electric and DTE Gas)

Ongoing, launched Q4 2020

The Business Energy Reports pilot offering is a solution to engage with select DTE Small and Medium business customers to improve customer understanding of their energy use, encourage participation in DTE's Energy Efficiency programs, provide no cost, energy saving tips and enhance their satisfaction with the DTE Energy brand. Bi-monthly custom reports are delivered to the businesses which:

- Presents the last three months of energy use
- Compares and contrasts customers' recent monthly usage with same period during the previous two years
- Spotlights changes in energy use
- Highlights reasons why a bill may have increased/decreased
- Provides a pie chart illustrating estimated energy use for customers' business type
- Provides specific self-serve solutions and program resources that will help save energy once implemented

DTE introduced the mailed documents to select small and medium businesses in Q4 2020; the reports will continue to be mailed on a bimonthly basis through December 2023.

C&I DIY (DTE Electric and DTE Gas)

Ongoing, launched 2021

Do It Yourself (DIY) is a pilot DTE is exploring outside of the participating contractor network model. It is geared directly toward commercial customers featuring simple, self-installed energy-saving measures that are easy to implement, require a minimal time investment and have no need for specialized tools or permits.

The pilot was rolled out in three phases. Phase one included testing, learning, and adjusting the DIY instructional materials with a small group of customers and was completed at the end of 2021. Phase two

included testing the DIY infrastructure with a limited number of customers through targeted marketing after the website went live. The last phase included testing the infrastructure with a larger number of customers, including small offices and retail, full-service restaurants and commercial cafeterias and kitchens, among others.

In Q2 2022, the DIY website launched. This educational website provides customers with step-by-step instructional videos, written instructions, and an online store where customers can buy the materials they'll need. The store offers free and discounted products as well as additional rebates for making other energy efficiency improvements. Improvement projects include switching out fluorescent light bulbs for LED tubes, installing pre-rinse spray valves with improved spray focus, and programming your thermostat to save energy automatically when your facility is unoccupied. Marketing campaigns ramped up to gain participation and increase awareness.

DNV Sub-Metering (DTE Electric)

Ongoing, launched Q1 2022

The DNV Sub-Metering pilot helps existing large industrial customers identify energy savings opportunities, improve the efficiency of major energy-using operations and reduce energy costs without adversely affecting production. Contractors evaluate customer metering data and provide an actionable plan to reduce energy use.

The pilot's goal is to coach customers and fine-tune their operations and processes by establishing baselines and using regression modeling. Pilot concepts for energy savings are validated through the C&I Operational Platform.

Failed Outside Air Dampers (DTE Electric)

Ongoing, launched Q2 2022

The Failed Outside Air Dampers (OADs) pilot assists large commercial customers using automatic OADs to distribute warm or cool air to their HVAC systems. When OADs fail, they can create more air ventilation than necessary, causing energy waste or even damage to the HVAC system. The pilot is working with the C&I Retro-Commissioning program to broaden customer relationships and participation. The pilot conducts an onsite assessment of DTE customers participating in the C&I Retro-Commissioning program to identify failed OADs, which the customer must repair.

Resolute Building Intelligence (DTE Electric and DTE Gas)

Ongoing, launched Q3 2022

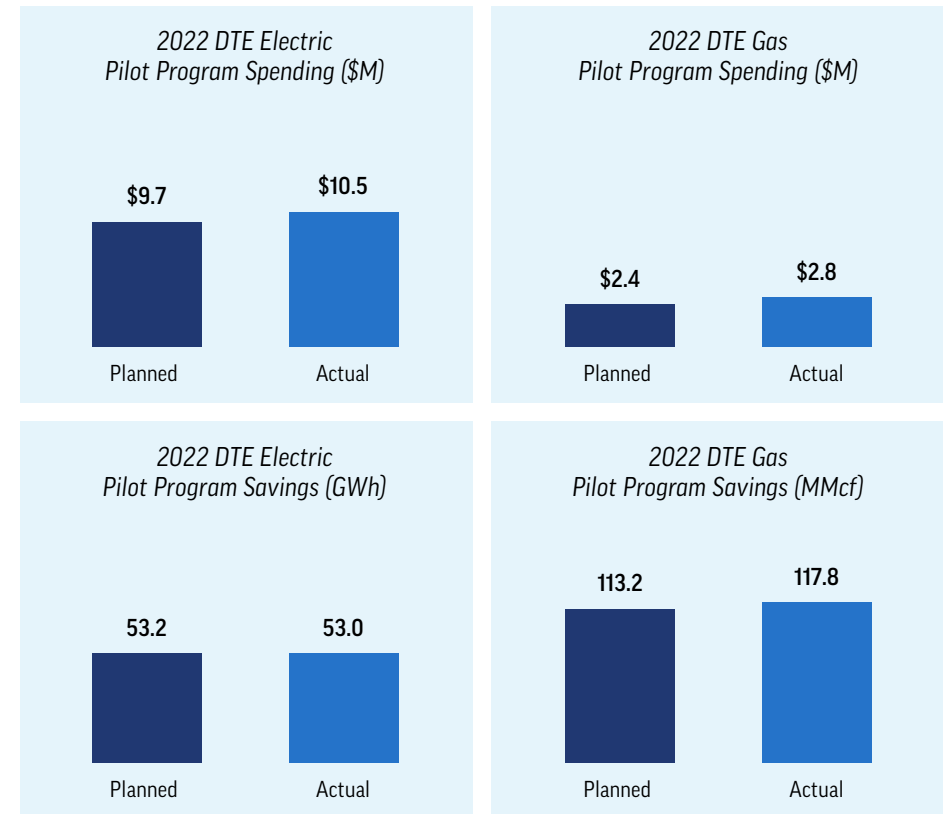
The Resolute Building Intelligence pilot is implemented along with the C&I Retro-Commissioning program to validate the results of participating customers. The pilot uses Resolute Building Intelligence (Resolute®) software to validate the energy conservation measures of the C&I Retro-Commissioning program results, helping shorten the overall program cycle time and save program cost.

Spending and Verified Net Savings Results

Pilot program funds were primarily spent on contracted services and incentives for the projects as well as on the cost of internal administration to manage the portfolio of projects.

Chart 39 summarizes the 2022 spending and verified net savings results of the Pilot program.

Chart 39 – 2022 Pilot Spending and Verified Net Savings



EE Program Achievements



Energy Savings

- Since the EE Portfolio's inception in 2009, over 8.9 million electric customers and over 4.5 million gas customers have directly participated in DTE's energy efficiency programs. DTE customers have saved over 9,000 GWh and over 21,600 MMcf since the program started. The savings achieved so far will continue to lead to savings for years into the future.
- The electric savings are equivalent to the energy required to power over 765,000 homes for 1 year.¹⁵
- The gas savings are equivalent to the energy required to power over 142,000 homes for 1 year.¹⁶
- DTE's EE programs will help make CleanVision a reality.

Monetary Savings

- DTE's customers have benefited as a result of its energy efficiency offerings. Residential customers pay an average of \$72 annually, or less than 3% of their total bill for combined energy efficiency gas and electric surcharges. Electric customers pay, on average, \$41 and gas customers pay, on average, \$31.

Economic Development Benefits

- DTE's EE Portfolio resulted in implementation contractors establishing local offices (in Detroit, Livonia, Lansing and Grand Rapids) and the hiring of local talent to operate and manage their respective programs.
- Through 2022, 408 Michigan-based jobs have been created by the implementation contractors under contract with DTE, as Table 9 summarizes. These jobs include field operations staff, appliance pick-up drivers, call center representatives and program managers.
- Customers and communities benefit from the new jobs and investment in the community.
- DTE highlighted workforce development in the energy efficiency space as an area of focus in 2022. As part of this focus, DTE facilitated a business incubator to enable its diverse certification application process and onboard contractors for DTE's EE programs. DTE also offered an eight-week certification program on Building Performance Institute's Building Analyst and Healthy Housing Principles.

Table 9 – Implementation Contractor Jobs

Implementation Contractor Name	Michigan-Based Jobs
Bradley+Company	17
CLEARresult	15
DNV	50
DTE	50
Energy Sciences	21
Energy Solutions	4
Franklin	2
ICF	34
Ignite	8
Leidos	3
NEF	11
Powerley	3
SEEL	82
Walker-Miller - Franklin	99
Guidehouse	9
Total	408

¹⁵ Equivalent home energy use is calculated using the U.S. Environmental Protection Agency Equivalency Calculator.

¹⁶ Equivalent home energy use is calculated using the U.S. Environmental Protection Agency Equivalency Calculator.

Diversity and Inclusion

DTE is committed to powering diversity. The collective efforts bring new businesses and jobs to Michigan while strengthening the vitality of our communities. Using innovative approaches to create meaningful business opportunities for minority- and women-owned firms, DTE has contributed to the growth of some of these firms now servicing the utility industry. DTE continues to provide minority- and women-owned firms with advocacy, training, mentoring and business opportunities and development experiences.

Table 10 – Diverse Suppliers

Name	Actual Spend	% Actual Spend
Dunamis Clean Energy Partners, LLC	\$627,515	0.3%
Energy Sciences Resource Partners	\$7,613,653	3.5%
Group O, Inc.	\$955,840	0.4%
Ignite Social Media	\$18,828,428	8.5%
Nationwide Envelope	\$85	0.0%
PES Group, Inc.	\$357,380	0.2%
REGROUP, Inc.	\$1,131,260	0.5%
SEEL, LLC	\$92,620,982	42.1%
Strategic Staffing Solutions	\$1,057,068	0.5%
The Bradley Co, Inc.	\$133,958	0.1%
The Harmon Group, LLC	\$360,291	0.2%
Walker-Miller Energy Services	\$28,068,661	12.7%
Total¹⁷	\$151,755,123	68.9%

¹⁷ Totals may not be exact due to rounding.

¹⁸ Public Use Microdata Areas 3208 and 3210 were identified as those with the greatest need.

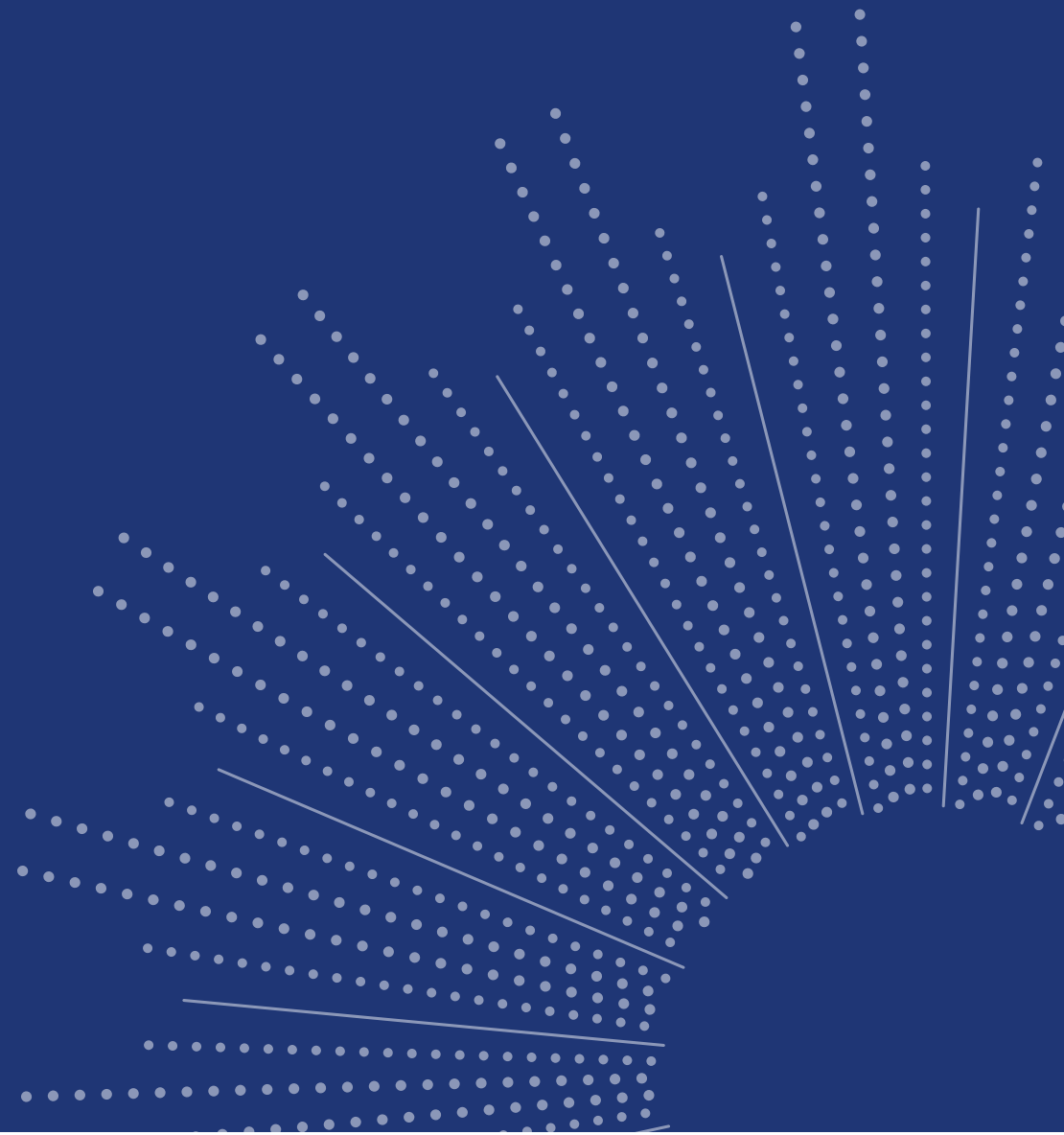
Program Accomplishments

Although many of the EE programs are mature and functioning well in the market, DTE continues to innovate and develop new program offerings. Many of the 2022 programs were continuations of successful programs launched in prior years, and several new programs moved out of the Emerging Measures and Approaches program. Customers have upgraded equipment, enabling them to be more energy efficient year after year. They have also been educated on actions they can take to save on their energy use on an ongoing basis. In 2022, over 1.1 million DTE Electric customers and over 690,000 DTE Gas customers took control of their energy use through the EE Portfolio and saved millions of dollars as a result.

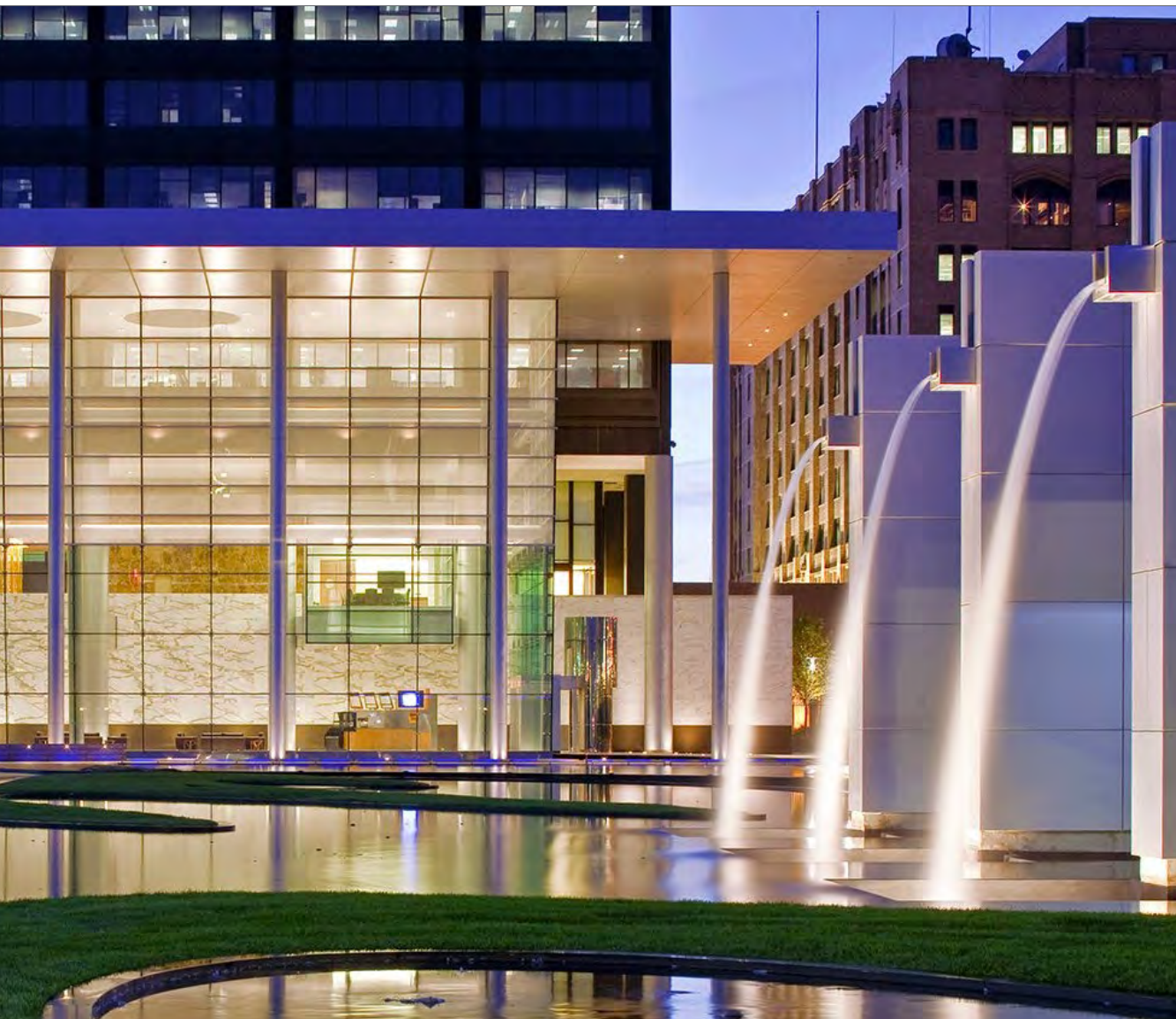
To give some perspective on the magnitude of this effort, the following are some of DTE's 2022 accomplishments:

- In 2022, DTE won ENERGY STAR® partner of the year.
- DTE continued to expand the channels through which customers can participate in the EE programs including the expansion of residential and commercial midstream program offerings.
- The Residential programs served over 651,000 electric households and over 685,000 gas households.
- The C&I programs served over 481,000 electric businesses and over 5,200 gas businesses.
- DTE redesigned the Online Intake Tool, which made for a more effective and efficient customer experience. Overall, the tool simplified the application process for multiple rebates on the same application when customers have multiple energy savings measures.
- Business applications served included lighting, lighting controls, HVAC and heating controls, food services and process electric.
- Most C&I markets were served, including light and heavy industry, retail, grocery, hospital, hotel and educational institutions.
- DTE invested over \$50 million on Income-Qualified programs and continued to identify new ways to engage this customer segment.
- Over 1,100 locations have had Health and Safety pilot measures installed between 2020 and 2022.
- DTE applied an interactive approach to engage, build rapport, and create an atmosphere of empowerment with approximately 48,000 high-needs customers in two specific Public Use Microdata Areas (or PUMAs).¹⁸ Each customer received a kit containing energy saving measures, as well as additional information on ways to save energy.

Conclusion



2022 was another successful year for DTE's EE Portfolio in all key areas: energy savings, spending and participation. Customers were made aware of energy efficiency benefits and the programs offered by DTE via innovative approaches and targeted marketing campaigns.



Customer experience was enhanced by improving the content of the website, creating new educational tools and resources and expanding social media and contests. Programs were upgraded and delivered with high quality, meeting the ever-rising level of customer expectations. Promising pilot programs were transitioned to full program offerings, and additional pilots were undertaken to stay ahead of the technology curve and to test innovative market approaches. Continuous improvement activity increased again in 2022 – several efforts were undertaken to eliminate defects and improve process efficiency. Collaboration with other utilities and the energy efficiency community at large provided additional benefit to DTE's customers.

Climate change is one of the defining issues of our era. That's why DTE Electric recently unveiled its 2022 CleanVision, our proposal to dramatically increase renewable energy and storage, hasten the retirement of our last two coal plants, and accelerate our carbon emissions reduction goals. DTE Gas plans to achieve net zero greenhouse gas emissions through an innovative plan that includes both its suppliers and customers by 2050. Our clean energy efforts are an important part of our mission in providing customers with clean, reliable and affordable power.

Opportunities and challenges lie ahead, and DTE is well-positioned to continue to provide value to its customers and other stakeholders through a robust and well-run energy efficiency program. DTE's strategic efforts have resulted in increased awareness, improved experiences and higher satisfaction among its customers.

In light of unprecedented industry and energy policy changes, 2023 will be another pivotal year for the EE Portfolio as DTE continues to work with key stakeholders on securing Michigan's energy future. These programs are also imperative because they will help DTE achieve its CleanVision goal of net zero carbon emissions by 2050. DTE will continue to innovate to become the best operated energy efficiency program in North America.