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June 16, 2023

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

RE: In the matter, on the Commission's own motion, regarding the regulatory reviews, revisions, determinations, and/or approvals necessary for **DTE ELECTRIC COMPANY** and **DTE GAS COMPANY** to fully comply with Public Act 295 of 2008, as amended by Public Act 342 of 2016.
MPSC Case No. U-21313

Dear Ms. Felice:

Attached for electronic filing in the above referenced matter is DTE Gas Company's and DTE Electric Company's Application, Direct Testimony and Exhibits of Witnesses, Reema A. Biel, Kevin L. Bilyeu, Brandon Murray, Joshua Rego, and Kirk M. Vangilder and Direct Testimony of Witnesses, Philip A. Guster, Rebecca M. Malfroid, and Thac K. Nguyen. Also attached is the Proof of Service.

Very truly yours,

Breanne K. Reitzel

BKR/erb
Encl.

cc: Service List

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission’s own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY AND)
DTE GAS COMPANY)
to fully comply with Public Act 295 of 2008,)
as amended by Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

DTE ELECTRIC COMPANY’S AND DTE GAS COMPANY’S
APPLICATION FOR APPROVAL OF THE
RECONCILIATION OF ITS ENERGY WASTE
REDUCTION PLAN EXPENSES FOR THE PLAN YEAR 2022

Applicants DTE Electric Company (“DTE Electric”) and DTE Gas Company (“DTE Gas”) (collectively “DTE”), file this Application pursuant to Michigan Clean, Renewable, and Efficient Energy Act, Public Act 295 of 2008 (“Act 295”) as amended by Public Act 342 of 2016 (“Act 342”), MCL 460.1001 *et seq*, requesting approval of the reconciliation of DTE’s Energy Waste Reduction (“EWR”) plan, for the plan year 2022, and authority to implement EWR surcharges, and other related relief. In support of the relief requested in this Application, DTE states:

1. DTE Electric is a subsidiary of DTE Energy Company, a Michigan corporation with its principal offices located at One Energy Plaza, Detroit, Michigan 48226. DTE Electric is a public utility subject to the jurisdiction of the Michigan Public Service Commission (“Commission” or “MPSC”) and is engaged in the generation and distribution of electricity and other related services to approximately two million residential, commercial and industrial customers within the State of Michigan.

2. DTE Gas is a subsidiary of DTE Energy Company, a Michigan corporation with its principal offices located at One Energy Plaza, Detroit, Michigan 48226. DTE Gas is a public utility subject to the jurisdiction of the Michigan Public Service Commission (“Commission” or “MPSC”) and is engaged in acquisition, storage, transportation, distribution and sale of natural gas and other related services to approximately 1.3 million residential, commercial and industrial customers within the State of Michigan.
3. Act 295 as amended by Act 342 requires certain electric providers and natural gas providers to file proposed EWR plans with the Commission for its review and approval. Act 295 as amended by Act 342 states that the overall goal of the EWR plan is to help a provider’s customers reduce energy waste and to reduce the future costs of provider service to customers.
4. On June 30, 2021, DTE Electric and DTE Gas filed their applications in MPSC Case No. U-20876 and U-20881, respectively, with supporting testimony and exhibits requesting approval of their respective 2022-2023 EWR Plans pursuant to the provision of Act 295 as amended by Act 342.
5. On January 20, 2022, the Commission issued orders in MPSC Case No. U-20876 and U-20881 approving settlement agreements for DTE Electric’s and DTE Gas’s 2022-2023 EWR Plans attached as Exhibit A to such orders.
6. The approved surcharges were implemented in February 2022 for both settlements.
7. On December 21, 2022, the Commission issued an Order directing DTE Electric and DTE Gas to file their 2022 EWR reconciliations by July 1, 2023.
8. Section 97 of Act 295 as amended by Act 342; MCL 460.1097 states that each provider whose rates are regulated by the Commission, “. . . shall submit to the Commission an annual report

that provides information relating to the actions taken by the provider to comply with the energy waste reduction standards.”

9. Section 74 of Act 295 as amended by Act 342; MCL 460.1074 provides that “Concurrent with the submission of each report under section 97, the Commission shall commence an annual proceeding, to be known as an energy waste reduction cost reconciliation, for each provider whose rates are regulated by the Commission.”
10. The Commission’s March 28, 2017 Order in Case No. U-18268 instructed utilities to include complete annual evaluation, measurement, and valuation (“EM&V”) reports for the provider’s entire portfolio of programs. DTE Electric and DTE Gas will file their EM&V reports by July 15, 2023.
11. Consistent with the Commission’s Order and statutory requirements referenced above, DTE Electric and DTE Gas have set forth in the testimony and exhibits attached to this Application the details of the reconciliation of their 2022 EWR performance and expenses.
12. During 2022, DTE Electric and DTE Gas implemented and operated their approved 2022 EWR plans, which include: (1) energy savings targets established by Act 295 as amended by Act 342; (2) offerings for each customer class, including income qualified residential; (3) specific funding levels; (4) cost recovery mechanisms allowing recovery of EWR plan costs; (5) EWR programs, excluding program offerings to income qualified residential customers, that are cost-effective; and (6) practical and effective administration of the programs.
13. DTE Electric’s reconciliation shows that during 2022, its Commission-approved EWR plan achieved compliance with the requirements of Act 295 as amended by Act 342 of a utility system resource cost test (“USRCT”) score of greater than one and the legislated energy savings of 0.75% of 2021 planned retail sales. DTE Electric exceeded these requirements by

accomplishing a USRCT score of 1.86 and by achieving 887 GWh of verified net energy savings.

14. DTE Gas's reconciliation shows that during 2022, its Commission-approved EWR plan achieved compliance with the requirements of Act 295 as amended by Act 342 of a utility system resource cost test ("USRCT") score of greater than one and the legislated energy savings of 0.75% of 2021 planned retail sales. DTE Gas exceeded these requirements by accomplishing a USRCT score of 1.83 and by achieving 2,086 MMcf of verified net energy savings.
15. The performance incentive for DTE Electric is calculated following the method approved by the Commission in its order issued January 20, 2022, in Case No. U-20876. The Company earned the performance incentive approved by the Commission in its Order in Case No. U-20876 and earned the performance incentive for 2022 by exceeding or meeting the legislated minimum first year savings, lifetime savings targets, Residential Income Qualified spend, and Income Qualified Electrically Heated Buildings and Weatherization Measures as outlined in Case No. U-20876 (and the accompanying settlement agreement). The details of these energy savings figures, and the computations of the performance incentive, are discussed in the accompanying testimony.
16. The performance incentive for DTE Gas is calculated following the method approved by the Commission in its order issued January 20, 2022, in Case No. U-20881. The Company earned the performance incentive approved by the Commission in its Order in Case No. U-20881 and earned the performance incentive for 2022 by exceeding or meeting the legislated minimum first year savings, lifetime savings targets, Residential Income Qualified spend, and Income Qualified Weatherization Measures as outlined in Case No. U-20881 (and the accompanying

settlement agreement). The details of these energy savings figures, and the computations of the performance incentive, are discussed in the accompanying testimony.

17. In 2022, the planned EWR program spend for DTE Electric was \$172.4 million and the actual EWR program spend was \$174.7 million.
18. In 2022, the planned EWR program spend for DTE Gas was \$44.5 million and the actual EWR program spend as \$45.6 million.
19. Based on the operation of the surcharge during 2022, DTE Electric has calculated a net over-recovery of \$11.3 million. DTE Electric is proposing that the calculated cumulative total net over-recovery for year end 2022 will be carried forward into 2023 on a customer class basis and used as beginning balances for the 2023 reconciliation.
20. Based on the operation of the surcharge during 2022, DTE Gas has calculated a net under-recovery of \$8.9 million. DTE Gas is proposing that the calculated cumulative total net under-recovery for year end 2022 will be carried forward into 2023 on a customer class basis and used as beginning balances for the 2023 reconciliation.
21. DTE maintains that the testimony and exhibits filed with this Application demonstrate that the reconciliations were conducted in a reasonable and prudent manner and consistent with the requirements of Act 295 as amended by Act 342, thus warranting Commission approval of the requested relief.
22. In support of its Application, DTE is filing the direct testimony and exhibits of eight witnesses (Reema A. Biel, Kevin L. Bilyeu, Philip A. Guster, Rebecca M. Malfroid, Brandon Murray, Thac K. Nguyen, Joshua Rego, and Kirk M. Vangilder) concurrently with this Application. The contents, recommendations and proposals set forth in the testimony and exhibits are attached to this Application and provide further support for the relief requested.

WHEREFORE, DTE respectfully requests that the Michigan Public Service Commission:

- A. Determine that DTE's reconciliations for its 2022 EWR plan year is just and reasonable, and that they meet all relevant requirements of Act 295 as amended by Act 342;
- B. Approve DTE's reconciliations for the 2022 EWR plan year, the performance incentives, and the associated proposed tariffs;
- C. Approve the necessary accounting authority described in DTE's testimony; and
- D. Grant such other and further relief as is just and reasonable.

Submitted by,

**DTE GAS COMPANY
DTE ELECTRIC COMPANY**

By: _____
Breanne K. Reitzel (P81107)
Attorney for DTE
One Energy Plaza, 1610 WCB
Detroit, Michigan 48226
(313) 235-3724

Dated: June 16, 2023

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
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Public Act 295 of 2008, as amended by)
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_____)

Case No. U-21313
(Paperless e-file)

QUALIFICATIONS

AND

DIRECT TESTIMONY

OF

KEVIN L. BILYEU

DTE ELECTRIC COMPANY AND DTE GAS COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF KEVIN L. BILYEU

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1 **Q1. What is your name, business address and by whom are you employed?**

2 A1. My name is Kevin L. Bilyeu (he/him/his). My business address is: One Energy
3 Plaza, Detroit, MI 48226. I am employed by DTE Electric Company.

4

5 **Q2. On whose behalf are you testifying?**

6 A2. I am testifying on behalf of DTE Electric Company (DTE Electric) and DTE Gas
7 Company (DTE Gas) (collectively, DTE).

8

9 **Q3. What is your educational background?**

10 A3. I graduated from Walsh College in 2008 with a Bachelor of Business
11 Administration. In 2012, I received a Master of Business Administration Degree
12 from the University of Michigan.

13

14 **Q4. What is your work experience?**

15 A4. Starting in 2006, I began my professional career with SEMCO Energy Gas
16 Company, progressing through a range of roles with increasing responsibility. In
17 2008, I took on the position of Billing Analyst, utilizing my expertise in the subject
18 matter to aid stakeholders, conducting reviews, managing projects, and devising
19 process enhancements. After that, I became Supervisor of Customer Accounting in
20 2011, leading tasks such as customer billing, remittance processing, inactive
21 collections, bad debt management, and financial reporting for the Customer
22 Accounting Department. Then, in 2013, I assumed the position of Manager,
23 Customer Energy Management, where I oversaw the administration, monitoring,
24 and development of Energy Waste Reduction (EWR) Programs, testified and

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1 supported EWR plan and reconciliation cases at the Michigan Public Service
2 Commission (MPSC), and managed the home protection warranty program.

3
4 In 2015, I transitioned to DTE Electric, taking on the role of Principal Marketing
5 Analyst of EWR Pilot Programs, where my responsibilities encompassed the
6 development and management of new EWR programs. In 2016, I accepted the
7 position of Principal Marketing Specialist of EWR Strategy, where my tasks
8 included modeling energy efficiency in Integrated Resource Plans (IRP) for long-
9 term strategy planning and developing sensitivities and recommendations to
10 support EWR plan filings with the MPSC.

11
12 Finally, in 2018, I advanced to the position of Principal Supervisor of EWR
13 Strategy, where I had overall responsibility for strategic development and planning
14 of EWR programs, including IRPs and EWR regulatory filings.

15
16 **Q5. What are your current job responsibilities?**

17 A5. Starting in 2021, I assumed the role of Manager for EWR Strategy and Evaluation
18 Measurement & Verification (EM&V). As Manager, I have overall responsibility
19 for strategic development and planning of EWR programs, which includes
20 Integrated Resource Plans (IRPs) and EWR regulatory filings. Additionally, I am
21 responsible for ensuring program cost-effectiveness, evaluating EWR programs,
22 and applying the results to further enhance DTE's offerings

23
24 **Q6. Do you hold any certifications and are you a member of any professional**
25 **organizations?**

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1 A6. I am a member of the Association of Energy Services Professionals (AESP). AESP
2 is an organization that provides professional development programs, a network of
3 energy practitioners, and promotes the transfer of knowledge and experience to
4 promote energy efficiency programs. I am a member of the Consortium for Energy
5 Efficiency (CEE), engaging on its benchmarking committee. CEE is the United
6 States and Canadian consortium of gas and electric efficiency program
7 administrators whose goal is to accelerate the development and availability of
8 energy efficient products and services.

9

10 **Q7. Have you previously testified before the Michigan Public Service Commission**
11 **(MPSC or Commission)?**

12 A7. Yes, I provided testimony in the following cases:

13	U-17362	SEMCO Energy Gas Company EO Plan Filing
14	U-18419	DTE Electric Certificate of Necessity
15	U-20471	2019 DTE Electric Integrated Resource Plan
16	U-20876	2021-2022 DTE Electric EWR Plan
17	U-20881	2021-2022 DTE Gas EWR Plan
18	U-21193	2022 DTE Electric Integrated Resource Plan

19

20 **Q8. What is the purpose of your testimony in this proceeding?**

21 A8. The purpose of my testimony is to support the overall results of DTE's 2022 EWR
22 programs, provide an overview of policy, and confirm compliance with the various
23 critical reporting requirements for the reconciliation process, organized as follows:

24 1. DTE 2022 EWR Annual Report.

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- 1 2. Summary of program implementation and program goals of DTE's EWR
- 2 programs, which exceeded the overall goals for the 2022 program year as
- 3 compared to DTE's approved EWR plans, including:
- 4 - Electric plan in Case No. U-20876 approved by the Commission on
- 5 January 20, 2022, which will be referred to as the approved 2022-2023
- 6 EWR Electric Plan.
- 7 - Gas plan in Case No. U-20881 approved by the Commission on January
- 8 20, 2022, which will be referred to as the approved 2022-2023 EWR
- 9 Gas Plan.
- 10 3. The reconciliation process required by Public Act 295 of 2008 (PA 295) as
- 11 amended by Public Act 342 of 2016 (PA 342) and the steps that were
- 12 performed to assure DTE's 2022 energy savings and spending met the
- 13 requirements of the law.
- 14 4. The method for determining the energy savings attributed to the electric and
- 15 gas pilot programs and the resulting calculated savings.
- 16 5. Results of DTE's EWR programs, including billed revenue, program spend,
- 17 and energy savings as compared to planned amounts. In addition, I provide
- 18 results for lifetime energy savings resulting from DTE's EWR programs.
- 19 6. A summary of the cost-effectiveness results showing DTE's 2022 EWR
- 20 programs were cost-effective.
- 21 7. EWR credit schedules, which show how many EWR credits are generated
- 22 and how many excess credits will be applied towards the performance
- 23 incentive and Renewable Energy Credits (RECs), if applicable.
- 24 8. Performance incentive calculations by company by customer class based on
- 25 actual EWR program spend and other items.

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1 9. DTE's proposal to roll the 2022 over/(under) recoveries of EWR program
2 costs into the 2023 over/(under) cost recovery balances, by customer class,
3 respectively.

4 10. The 2020 performance incentives collected in 2022 compared to the amount
5 awarded.

6 11. The status of various actions regarding the settlement agreements for the
7 approved 2022-2023 EWR Electric Plan and approved 2022-2023 EWR
8 Gas Plan.

9

10 **Q9. Are you sponsoring any exhibits in this proceeding?**

11 A9. Yes, I am sponsoring the following exhibits:

12	<u>Exhibit</u>	<u>Description</u>
13	A-1	DTE 2022 Annual Report on Energy Efficiency
14	A-2	DTE Electric and DTE Gas Program Costs, Energy Savings, and
15		Cost-Effectiveness
16	A-3	DTE Electric and DTE Gas Pilot and Education Program Savings
17		Calculations
18	A-4	DTE Electric and DTE Gas Energy Credits
19	A-5	DTE Electric and DTE Gas Performance Incentives

20

21 **Q10. Were these exhibits prepared by you or under your direction?**

22 A10. Yes.

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1

Annual Report

2

Q11. What is Exhibit A-1 entitled, “DTE 2022 Annual Report on Energy Efficiency”?

3

4

A11. PA 295, as amended by PA 342, requires EWR providers publish an annual report.

5

Exhibit A-1 is the 2022 annual report inclusive of EWR program year 2022 results

6

achieved. Please note, the terminology “Energy Waste Reduction” as referenced

7

in Michigan's Public Act 342 is synonymously referred to as Energy Efficiency

8

throughout this annual report.

9

10

Program Implementation and Goal Achievement

11

Q12. How did DTE implement its EWR programs in 2022?

12

A12. DTE implemented its EWR programs as outlined in the approved 2022-2023 EWR

13

Electric Plan and approved 2022-2023 EWR Gas Plan, respectively. DTE utilized

14

implementation contractors and strong networks that it has built over the past 13

15

years to deliver energy efficiency programs throughout Michigan.

16

17

Detailed descriptions of the ongoing implementation of DTE’s EWR programs

18

are provided in the testimony sponsored by Witnesses Nguyen and Guster.

19

Witness Nguyen provides detail for residential, income-qualified, and education

20

programs. Witness Guster provides detail for the Commercial & Industrial (C&I)

21

programs.

22

23

Q13. What were the goals of DTE’s 2022 EWR programs?

24

A13. The overall objective of DTE’s 2022 EWR programs was to reduce customer usage

25

through wide and varied opportunities to participate in EWR programs.

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1 Specifically, the goals of the 2022 EWR program year were to: (1) achieve energy
2 savings of 2% of 2021 planned electric retail sales, or 886 GWh, and 1.0% of 2021
3 planned gas retail sales, or 1,886 MMcf, as well as (2) meet the minimum required
4 Utility System Resource Cost Test (USRCT) score of 1.0 for DTE Electric and DTE
5 Gas's EWR portfolios. The planned electric spend was \$172.4 million and the
6 planned gas spend was \$44.5 million. Spend, as used in this testimony, refers to
7 the cash expenditures or commitments by DTE in implementing its EWR programs.
8 Spend does not contemplate the eventual treatment of costs such as operations and
9 maintenance or capitalization.

10

11 **Q14. Did DTE meet its EWR goals?**

12 A14. Yes. DTE Electric achieved 887 GWh in verified net energy savings equating to
13 2.0% of 2021 planned retail sales. A USRCT score of 1.86 was achieved based on
14 the verified net energy savings as detailed in DTE Witness Ms. Malfroid's
15 testimony and shown on my Exhibit A-2, page 1, column (b). DTE Gas achieved
16 2,086 MMcf in verified net energy savings equating to 1.11% of 2021 planned retail
17 sales. A USRCT score of 1.83 was achieved based on the verified net energy
18 savings as detailed in Witness Malfroid's testimony and shown on my Exhibit A-
19 2, page 2, column (b). The details of these accomplishments will be discussed
20 throughout my testimony.

21

22 **Q15. What is meant by verified net energy savings?**

23 A15. Verified net energy savings are DTE's reported savings after they have been
24 adjusted based on an audit by independent evaluation contractor, Guidehouse, Inc.
25 (Guidehouse), the application of an Installation Rate Adjustment Factor (IRAF),

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1 and the application of Net-to-Gross Ratios (NTGR). The determination of the
2 verified net energy savings is further discussed in Witness Rego's testimony.
3 Unless otherwise indicated by a witness, all savings values presented in direct
4 testimony are verified net savings values.

5

6 **Q16. What Installation Rate Adjustment Factor (IRAF) was utilized to calculate**
7 **achieved verified net energy savings?**

8 A16. The IRAFs primarily used were program and measure specific based on historical
9 results. Witness Rego explains the determination and application of the IRAFs in
10 his testimony.

11

12 **Q17. What Net-to-Gross Ratio (NTGR) was utilized to calculate achieved verified**
13 **net energy savings for electric and gas programs?**

14 A17. As approved by the Commission in the 2022-2023 EWR Electric Plan Order in
15 Case No. U-20876 and in the 2022-2023 EWR Gas Plan Order in Case No. U-
16 20881, DTE applied a 0.92 NTGR to most programs. NTGRs were not applied to:
17 (1) Tier 1 Thermostats delivered by Commercial & Industrial programs; (2) Tier 2
18 and Tier 3 Thermostats delivered by Residential programs; and (3) the Residential
19 Home Energy Report program as savings represent verified net savings. Exceptions
20 applicable to both DTE Electric and DTE Gas and approved within the respective
21 Orders are the application of a NTGR of 1.00 for income-qualified, pilots, and
22 education. Exceptions applicable to DTE Electric only and approved within the
23 respective Order are the application of a 0.40 NTGR for general purpose light
24 emitting diodes ("LED") bulbs and a 0.50 NTGR for candelabra/globe LED bulbs

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1 within the ENERGY STAR Products Program. The testimony of Witness Rego
2 explains the determination and application of NTGRs.

3
4 **Reconciliation Process**

5 **Q18. What reconciliation process did DTE use for the 2022 EWR program year?**

6 A18. The process DTE used consisted of the following steps:

- 7 1. Compile actual 2022 EWR surcharge revenue billed by customer class;
- 8 2. Compile all relevant EWR program costs related to the approved 2022-2023
9 EWR Electric Plan and approved 2022-2023 EWR Gas Plan;
- 10 3. Reconcile actual 2022 billed base surcharge revenue with actual costs for
11 the 2022 EWR program year;
- 12 4. Compile the results of the 2022 EWR programs including first year annual
13 incremental and lifetime energy savings;
- 14 5. Obtain third-party evaluation and verification of the resulting savings and
15 other results related to achievement of the respective performance
16 incentives;
- 17 6. Calculate the USRCT for the 2022 EWR program portfolios;
- 18 7. Determine the level of 2022 performance incentive earned; and
- 19 8. Compile the 2022 EWR Annual Report.

20
21 **Electric and Gas Pilot Programs**

22 **Q19. What was the objective of DTE's pilot program in 2022?**

23 A19. The objective of DTE's pilot program was to explore technologies and approaches
24 not included in the commercialized programs described in the approved 2022-2023
25 EWR Electric Plan and approved 2022-2023 EWR Gas Plan. The pilot program

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1 also enabled DTE to measure energy savings, test cost-effectiveness of emerging
2 technologies, and test customer adoption of new technologies and/or existing
3 technologies using new approaches. As designed, the program supports both
4 Residential and C&I programs. For additional detail on electric and gas pilots
5 performed in 2022 please see Exhibit A-1, pages 61-64.

6
7 **Q20. What amount did DTE spend on pilot programs and how did this compare to**
8 **planned amounts?**

9 A20. As shown in Witness Murray's Exhibit A-10, page 1, line 4, column (f), DTE
10 Electric spent \$10.5 million on the EWR electric pilot program. As approved in
11 the 2022-2023 EWR Plan, pilot spending was calculated as 6% of the overall EWR
12 electric program costs. As shown in Witness Murray's Exhibit A-14, page 1, line
13 4, column (f), DTE Gas spent \$2.8 million on the EWR gas pilot program. In the
14 approved 2022-2023 EWR Gas Plan, Pilot spending was calculated as 6% of the
15 overall EWR gas program costs. DTE pilot program funds were primarily spent on
16 contracted services and incentives for the projects described in Exhibit A-1, pages
17 62-63, as well as on the cost of internal administration to manage the portfolio of
18 projects.

19
20 **Q21. How were pilot program energy savings determined?**

21 A21. Pilot program energy savings were determined based on the method prescribed by
22 the Commission's December 4, 2008 Temporary Order in Case No. U-15800. In
23 that order the Commission determined utilities may designate up to five percent of
24 their EWR budget for pilot programs, future EWR program development or
25 assessment of emerging technologies and that the pilot funds will be deemed to

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1 generate proportionate energy savings per dollar of spend to that of the overall
2 portfolio up to five percent during each program year. Subsequently, in MPSC
3 Case Nos. U-18262 and U-18268 the Commission stated, "...the 5% spending
4 limitation on pilot programs may be reevaluated in the context of plans or plan
5 amendments. In other words, if a provider can demonstrate that additional spending
6 for pilot programs is reasonable, such spending may be approved."

7
8 **Q22. Did the income-qualified health and safety pilot result in total pilot program**
9 **spend exceeding the 5% spend limit described in Temporary Order, Case No.**
10 **U-15800?**

11 A22. Yes. The approved income-qualified health and safety pilot included projects that
12 are more costly than traditional EWR measures and were provided at no cost to the
13 customer. To ensure DTE could continue investing in emerging technologies that
14 make the current program as effective as possible, DTE increased its pilot program
15 spend from 5% of total EWR spend to 6% of total EWR spend in 2022; the
16 increased pilot spend was used exclusively to fund the income-qualified health and
17 safety pilot. Given the spending on Pilot projects and campaigns in 2022, electric
18 energy savings per Exhibit A-3, page 1, line 5 were determined to be 53.0 GWh
19 and gas savings per Exhibit A-3, page 2, line 5, were determined to be 117.8 MMcf.

20
21 **Revenue**

22 **Q23. What surcharges were billed for DTE's EWR programs for 2022?**

23 A23. During 2022, two separate electric base surcharges were billed throughout the year.
24 For the period January 1, 2022 to January 31, 2022, an electric base surcharge was
25 billed as approved by the Commission on September 10, 2020 in Case No. U-20373

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1 (2020-2021 Amended EWR Electric Plan). For the period February 1, 2022 to
2 December 31, 2022, an electric base surcharge was billed as approved by the
3 Commission on January 20, 2022 in Case No. U-20876 (2022-2023 EWR Electric
4 Plan). In addition, the Commission's September 24, 2021 Order in Case No. U-
5 20866, the 2020 DTE Electric EWR Reconciliation, authorized an incremental
6 surcharge to recover the 2020 EWR plan performance incentive. From January 1,
7 2022 through December 31, 2022, this incremental amount was added to the
8 respective base surcharges and billed to customers as one combined electric EWR
9 surcharge. The detail of the billing components is provided on DTE Witness
10 Vangilder's Exhibit A-27.

11

12 During 2022, two separate gas base surcharges were billed throughout the year. For
13 the period January 1, 2022 to January 31, 2022, a gas base surcharge was billed as
14 approved by the Commission on November 19, 2020 in Case No. U-20429 (2020-
15 2021 EWR Gas Plan). For the period February 1, 2022 to December 31, 2022, a
16 gas base surcharge was billed as approved by the Commission on January 20, 2022
17 in Case No. U-20881 (2022-2023 EWR Gas Plan). In addition, the Commission's
18 September 24, 2021 Order in Case No. U-20871, the 2020 DTE Gas EWR
19 Reconciliation, authorized an incremental surcharge to recover the 2020 EWR plan
20 performance incentive. From January 1, 2022 through December 31, 2022, this
21 incremental amount was added to the respective base surcharges and billed to
22 customers as one combined EWR surcharge. The detail of the billing components
23 is provided on Witness Vangilder's Exhibit A-38.

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1 **Q24. How did actual base surcharge revenues compare to the projections in the**
2 **respective EWR Plans approved for 2022?**

3 A24. The table below compares DTE Electric's planned revenue as per U-20876 Exhibit
4 A-22 Revised versus the actual base surcharge revenue (as detailed on Witness
5 Vangilder's Exhibit A-18 in the instant case):

6

7

Table 1: DTE Electric Surcharge Revenue

Revenue Class (\$M)	Plan	Actual	Over / (Under)
Residential	\$70.1	\$73.2	\$3.1
C&I Secondary	63.2	59.6	(3.6)
C&I Primary	48.7	49.6	0.9
Total Revenue	\$180.2	\$182.4	\$0.4

8

Note: Totals may not match due to rounding.

9

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

18

19 The table below compares DTE Gas's planned revenue as per U-20881 Exhibit A-
20 20 Revised versus the actual base surcharge revenue as detailed on Witness
21 Vangilder's Exhibit A-29:

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1 **Table 2: DTE Gas Surcharge Revenue**

Revenue Class (\$M)	Plan	Actual	Over / (Under)
Residential	\$34.3	\$31.0	\$(3.3)
C&I/EUT	34.7	27.2	(7.5)
Total Revenue	\$69.0	\$58.2	\$(10.8)

2 Note: Totals may not match due to rounding.

3

4 The actual gas revenue from all customer classes varies slightly from the plan due
5 to the variance between actual and forecast sales, with revenue slightly lower for
6 Residential and C&I/EUT.

7

8 **Q25. How did the actual program spend compare to the planned expenditures**
9 **identified in DTE's EWR Plans approved for 2022?**

10 A25. For 2022, the approved electric EWR planned spend was \$172.4 million per U-
11 20876, Exhibit A-4, line 40, column (f) and the actual spend was \$174.7 million.

12 Below is a table outlining the spend by program categories:

13 **Table 3: DTE Electric Program Spend**

Category (\$M)	Plan Spend	Actual Spend	Over / (Under)
Residential Programs	\$44.7	\$42.8	\$(1.9)
C&I Programs	78.3	76.5	(1.7)
Income-Qualified	28.8	33.6	4.8
Pilot	9.7	10.5	0.7
Education	4.9	5.2	0.4
EM&V	6.0	6.0	0.0
Total Spend	\$172.4	174.7	\$2.3

14 Note: Totals may not match due to rounding.

Line
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For 2022, the approved gas EWR planned spend was \$44.5 million per U-20881, Exhibit A-4, line 36, column (f). The actual spend was \$45.6 million. Below is a table outlining the spend by program categories:

Table 4: DTE Gas Program Spend

Category (\$M)	Plan Spend	Actual Spend	Over / (Under)
Residential Programs	\$13.1	\$12.4	\$(0.7)
C&I & EUT Programs	10.3	10.4	0.1
Income-Qualified	15.5	16.6	1.1
Pilot	2.4	2.8	0.4
Education	1.2	1.4	0.2
EM&V	1.9	1.9	(0.0)
Total Spend	\$44.5	\$45.6	\$1.1

Note: Totals may not match due to rounding.

Details of the electric and gas program spend are provided on Exhibit A-2, pages 1 and 2, respectively.

Q26. Were the spending revisions among electric and gas programs within the allowed reallocation limits?

A26. Yes. DTE remained within the 30% reallocation limit in 2022 as ordered by the Commission in 2010 in Case No. U-15806.

Q27. To the extent feasible, were dollars collected from a customer class spent on EWR programs for that customer class?

A27. Yes. DTE separated spending and revenue between residential and C&I programs. Witness Vangilder performs the over/(under) cost recovery calculations by

Line
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1 company and by class, based on the company and class expenses and revenue
2 provided to him by DTE Witness Murray.

3

4

Energy Savings

5 **Q28. Did the energy savings achieved in 2022 exceed both the legislated minimums**
6 **and planned verified net savings from the approved 2022-2023 EWR Electric**
7 **Plan and approved 2022-2023 EWR Gas Plan?**

8 A28. Yes. DTE Electric achieved verified net energy savings of 887 GWh, which
9 exceeds both the approved 2022-2023 EWR Electric Plan energy savings of 886
10 GWh and the minimum legislated savings of 443 GWh. DTE Gas achieved verified
11 net energy savings of 2,086 MMcf, which exceeds both the approved 2022-2023
12 EWR Gas Plan energy savings of 1,886 MMcf and the minimum legislated savings
13 of 1,415 MMcf. Refer to Exhibit A-2, pages 1 and 2, which compares planned
14 savings to verified net savings, by company, and by program.

15

16 **Q29. How were the electric savings from self-directed customers determined?**

17 A29. The electric savings from self-directed customer were based on the reported
18 planned savings, in accordance with PA 342. Per Section 93 (7) of PA 342,
19 “Projected energy savings from measures implemented under a self-directed plan
20 shall be attributed to the relevant provider’s energy waste reduction programs for
21 the purposes of determining annual incremental energy savings achieved by the
22 provider.” Therefore, the “actual” savings reported on Exhibit A-2, page 1, line 35,
23 from self-direct customers reflect the known self-direct plans at the beginning of
24 2022.

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1 Thus, included in the overall energy savings for the 2022 program year are the
2 planned self-direct electric savings. Accordingly, Exhibit A-1, page 51, includes a
3 comparison between the planned electric savings and the actual electric savings
4 realized by self-directed customers in 2022.

5
6 **Q30. Were DTE's EWR program savings validated by a third-party?**

7 A30. Yes. In 2022, DTE worked with third-party evaluator, Guidehouse, to review the
8 EWR program results. Guidehouse evaluated and verified the energy savings
9 associated with DTE's Residential and C&I programs. Witness Rego describes the
10 process Guidehouse underwent to evaluate and verify program savings in his
11 testimony.

12
13 **Q31. Were other EWR program results validated by a third-party?**

14 A31. Yes. In addition to the verification of energy savings, Guidehouse was engaged to
15 validate the results of the EWR electric program pertaining to the performance
16 incentive goals approved by the Commission in its January 20, 2022 Order in Case
17 No. U-20876. Specifically, Guidehouse validated first year annual incremental
18 energy savings and lifetime energy savings. Similarly, Guidehouse was engaged to
19 validate the results of the EWR gas program pertaining to the performance
20 incentive goals approved by the Commission in its January 20, 2022 Order in Case
21 No. U-20881. Specifically, Guidehouse validated both first year annual
22 incremental and lifetime energy savings.

23
24 **Cost-Effectiveness Tests**

25 **Q32. What is the purpose of the cost-effectiveness tests?**

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1 A32. Cost-effectiveness tests (CETs) are performed to ensure that energy savings are
2 achieved in a cost-effective manner for the utility and its customers. DTE uses the
3 Utility System Resource Cost Test (USRCT) to measure the cost-effectiveness of
4 its EWR programs.

5

6 **Q33. Were DTE's 2022 EWR programs cost-effective?**

7 A33. Yes. Based on the analysis performed using DSMore, DTE's EWR portfolio
8 passed the USRCT in accordance with the guidelines outlined by Attachment E,
9 Section 2f of the MPSC's December 4, 2008 Temporary Order, in Case No. U-
10 15800. As shown in Exhibit A-2, page 1, line 43, column (b), DTE Electric's
11 USRCT score for the portfolio without income-qualified was 1.86. Also, as shown
12 in my Exhibit A-2, page 2, line 39, column (b), DTE Gas's score for the portfolio
13 without income-qualified was 1.83. Please refer to Witness Malfroid's testimony
14 for additional details regarding the USRCT calculations.

15

16

Energy Credits

17 **Q34. What information is shown on Exhibit A-4 regarding Energy Credits?**

18 A34. Page 1 of Exhibit A-4 displays the summary of EWR credits for 2022 that DTE
19 Electric earned through its EWR program. The calculation provides the number of
20 EWR credits measured in MWh that were utilized towards the 2022 EWR standard
21 compliance and performance incentive. As shown on line 6 of Exhibit A-4, credits
22 in excess of the requirement and the incentive of 222,070 MWh are to be transferred
23 to DTE Electric's renewable portfolio requirement per PA 342 Section 28 (5).

Line
No.

Page 2 of Exhibit A-4 displays the summary of EWR credits for 2022 that DTE Gas earned through its EWR program. The calculation provides the number of EWR credits measured in MMcf that were utilized towards the 2022 EWR standard compliance and performance incentive.

Performance Incentive

Q35. How is DTE's EWR performance incentives calculated?

A35. The DTE Electric performance incentive is calculated following the method approved by the Commission in its order issued January 20, 2022 in Case No. U-20876. The details of the calculation are shown on Exhibit A-5, page 1.

The DTE Gas performance incentive is calculated following the method approved by the Commission in its order issued January 20, 2022 in Case No. U-20881. The details of the calculation are shown on Exhibit A-5, page 2.

Q36. Did DTE earn performance incentives in 2022?

A36. Yes. DTE Electric earned a performance incentive in 2022 of 20% as outlined in Exhibit A-5, page 1, by exceeding legislated first year annual incremental savings, lifetime savings, income-qualified spend, and income-qualified electrically heated buildings and weatherization measures as outlined in the settlement agreement for Case No. U-20876. The table below shows the performance incentive amounts in total and by customer class:

Line
No.

1 **Table 5: DTE Electric Performance Incentive**

Customer Class (\$M)	Actual Total Spend	Performance Incentive
Residential	\$66.0	\$13.2
C&I Secondary	\$84.8	\$17.0
C&I Primary	\$23.9	\$4.8
Total	\$174.7	\$34.9

2 Note: Totals may not match due to rounding.

3

4 DTE Gas earned a performance incentive in 2022 of 20% as outlined in Exhibit A-
5 5, page 2, by exceeding legislated first year savings, lifetime savings, income-
6 qualified spend, and income-qualified weatherization measures as outlined in Case
7 No. U-20881 (and the accompanying settlement agreement). The table below
8 shows the performance incentive amounts in total and by customer class:

9

10 **Table 6: DTE Gas Performance Incentive**

Customer Class (\$M)	Actual O&M Spend	Performance Incentive
Residential	\$25.5	\$5.1
C&I	\$9.8	\$2.0
EUT	\$10.2	\$2.0
Total	\$45.6	\$9.1

11

12 **Net Over-recovery of EWR Program Costs**

13 **Q37. Are you proposing any adjustments to the EWR electric base surcharge for**
14 **the cumulative over-recovery of \$11.3 million or the EWR gas base surcharge**
15 **for the cumulative under-recovery of \$8.9 million calculated by Witness**
16 **Vangilder on his Exhibit A-18 and Exhibit A-29, respectively?**

17 A37. No.

Line
No.

- 1 **Q38. Why are you not recommending any adjustments to the EWR base electric**
2 **and gas surcharges for DTE Electric's net over-recovery and DTE Gas's net**
3 **under-recovery for the 2022 EWR program that were calculated by Witness**
4 **Vangilder?**
- 5 A38. On January 20, 2022, the Commission issued an Order in Case No. U-20876
6 approving DTE Electric's 2022-2023 EWR Electric Plan and the proposed EWR
7 base surcharges. The surcharges approved in this Order were implemented
8 beginning with bills rendered on February 1, 2022. For each customer class, the
9 anticipated net over or under recovery through 2022 was included as a factor in the
10 program costs used in the derivation of the 2022-2023 EWR Electric Plan so there
11 is no need to adjust the base surcharges at this time.
- 12
- 13 On January 20, 2022, the Commission issued an Order in Case No. U-20887
14 approving DTE Gas's 2022-2023 EWR Plan and the proposed EWR base
15 surcharges. The surcharges approved in this Order were implemented beginning
16 with bills rendered on February 1, 2022. For each customer class, the anticipated
17 net over or under recovery through 2022 was included as a factor in the program
18 costs used in the derivation of the 2022-2023 EWR Gas Plan so there is no need to
19 adjust the base surcharges at this time.
- 20
- 21 **Q39. How will DTE Electric handle the \$11.3 million net over-recovery and DTE**
22 **Gas handle the \$8.9 million net under-recovery?**
- 23 A39. DTE Electric's calculated EWR over-recovery for 2022 will be carried forward into
24 2023 on a customer class basis and used as beginning balances for DTE Electric's
25 2023 EWR reconciliation. As stated above, the anticipated balance for each

Line
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1 customer class was included in the preparation of the 2022-2023 EWR Electric Plan
2 (Case No. U-20876) and reflected in the program costs used to derive the 2022-
3 2023 EWR Electric base surcharge.

4

5 DTE Gas's calculated EWR under-recovery for 2022 will be carried forward into
6 2023 on a customer class basis and used as beginning balances for the DTE Gas's
7 2023 EWR reconciliation. As stated above, the anticipated balance for each
8 customer class was included in the preparation of the 2022-2023 EWR Gas Plan
9 (Case No. U-20881) and reflected in the program costs used to derive the 2022-
10 2023 EWR Gas base surcharge.

11

12 **Q40. What is the status of the 2020 performance incentive?**

13 A40. DTE Electric began collecting the 2020 performance incentive in January 2022. As
14 shown on Witness Vangilder's Exhibit A-25, as of December 31, 2022, DTE
15 Electric had collected a total of \$27.3 million: \$12.1 million from the residential
16 class, \$5.9 million from the C&I Secondary and \$9.3 million from C&I Primary.
17 The total amount awarded was \$26.9 million. As shown in Witness Vangilder's
18 Exhibit A-26, DTE Electric is proposing to deduct the \$0.5 million net over-
19 collection from the \$34.9 million 2022 performance incentive earned.

20

21 DTE Gas began collecting the 2020 performance incentive in January 2022. As
22 shown on Witness Vangilder's Exhibit A-36, as of December 31, 2022 DTE Gas
23 had collected a total of \$8.5 million: \$5.6 million from the residential class, \$1.4
24 million from the C&I class, and \$1.5 million from the EUT class. The total amount
25 awarded was \$8.3 million. As shown in Witness Vangilder's Exhibit A-37, DTE

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1 Gas is proposing to deduct the \$0.2 million net over-collection to the \$9.1 million
2 2022 performance incentive earned.

3

4 **Settlement Agreements in Case Nos. U-20876 and U-20881**

5 **Q41. What is the status of the activities agreed to by all parties in the Settlement**
6 **Agreement in Case No. U-20876 and the Settlement Agreement in Case No. U-**
7 **20881?**

8 A41. DTE has performed several functions and actions regarding the settlement for the
9 approved 2022-2023 EWR Electric Plan filing and 2022-2023 EWR Gas Plan filing
10 including, but not limited to:

- 11 1. DTE implemented the Payment Stability Plan (PSP) outreach as outlined in
12 the Settlement Agreements.
- 13 2. DTE Electric increased investment in the Income Qualified Multifamily
14 Program by \$3,000,000 in 2022. DTE Gas increased investment in Income
15 Qualified Programs seven-hundred and fifty thousand dollars \$750,000 in
16 2022.
- 17 3. DTE continued the Income Qualified Health and Safety Pilot as set forth in
18 the Settlement Agreements.
- 19 4. DTE provided training, education, and made recommendations on the use
20 of healthy insulation and air-sealing materials for contractors. DTE tracked
21 and reported on the materials used in the EEA, Income Qualified
22 Multifamily, and Audit & Weatherization programs.
- 23 5. DTE implemented a workforce development and mentorship initiative that
24 emphasized diversity, equity, and inclusion as outlined in the Settlement
25 Agreements. In addition, DTE provided opportunities for contractors to

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- 1 obtain the Healthy Home Evaluator certification as part of DTE's Building
2 Performance Institute (BPI) certification trainings.
- 3 6. Geographic Targeting. DTE conducted three studies as detailed in the
4 Settlement Agreements that informed the prioritization of certain
5 neighborhoods for EWR assistance and a plan for increasing participation
6 in these areas. DTE publicly shared a summary of the results of its research.
7 In addition, DTE developed an implementation strategy for a geographic
8 targeting initiative that reflected insights gained through the above research
9 and advances the objectives outlined in Settlement Agreement.
- 10 7. DTE appended demographic data from third-party sources to EEA and
11 Income Qualified Multifamily participation data and surveyed customers to
12 collect primary demographic data. In addition, DTE Electric tracked and
13 reported demographic data for participants in all income-qualified programs
14 as set forth in the Settlement Agreements.
- 15 8. DTE monitored the above-mentioned data to identify opportunities, patterns
16 and strategies outlined in the Settlement Agreements.
- 17 9. DTE targeted past LIHTC applicants and implemented fifteen ASHRAE
18 Level II energy audits.
- 19 10. DTE continued reporting on Income Qualified Multifamily reporting items
20 per the settlement agreement in Case No. U-20373 Section 1, Attachment
21 B.
- 22 11. DTE continued the Non-Wire Alternative Pilot that was established in Case
23 No. U-18262.
- 24 12. DTE evaluated reducing leaks from commercial refrigeration systems, as
25 well as switching from refrigerants like hydrofluorocarbons (HFCs) to

Line
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1 lower polluting refrigerants like carbon dioxide. DTE implemented a
2 commercial refrigerants pilot program to help commercial customers switch
3 from refrigerants like hydrofluorocarbons (HFCs) to lower polluting
4 refrigerants like carbon dioxide.

5 13. DTE provided a report presenting and supporting estimated IT/billing costs
6 to implement an on-bill repayment program as detailed in the Settlement
7 Agreements.

8 14. DTE developed and made available a website that provides access to all
9 reporting items mentioned in the Attachment C of the Settlement
10 Agreements.

11

12 **Q42. Does this conclude your direct testimony?**

13 A42. Yes.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission’s own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

EXHIBITS

OF

KEVIN L. BILYEU

DTE CleanVision
Energy Efficiency

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.

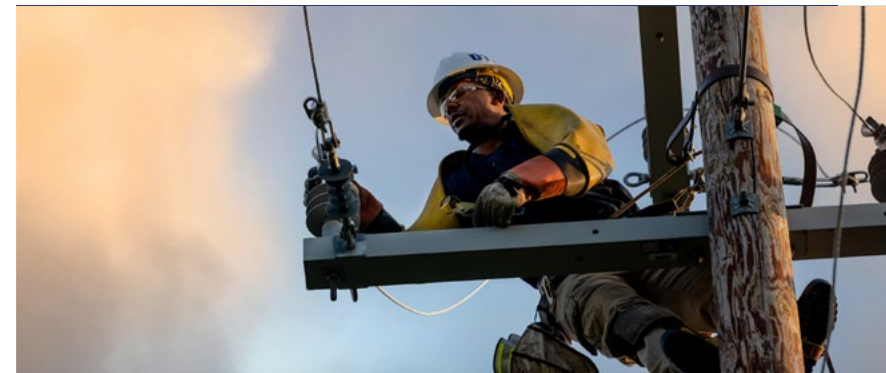
We all need to do our part to help protect the environment for our families and generations to come. Reducing carbon emissions is key to combatting climate change. DTE's EE programs help customers make a difference at a local or state level, at home or on the move.

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	\$337 million	\$76.5 million

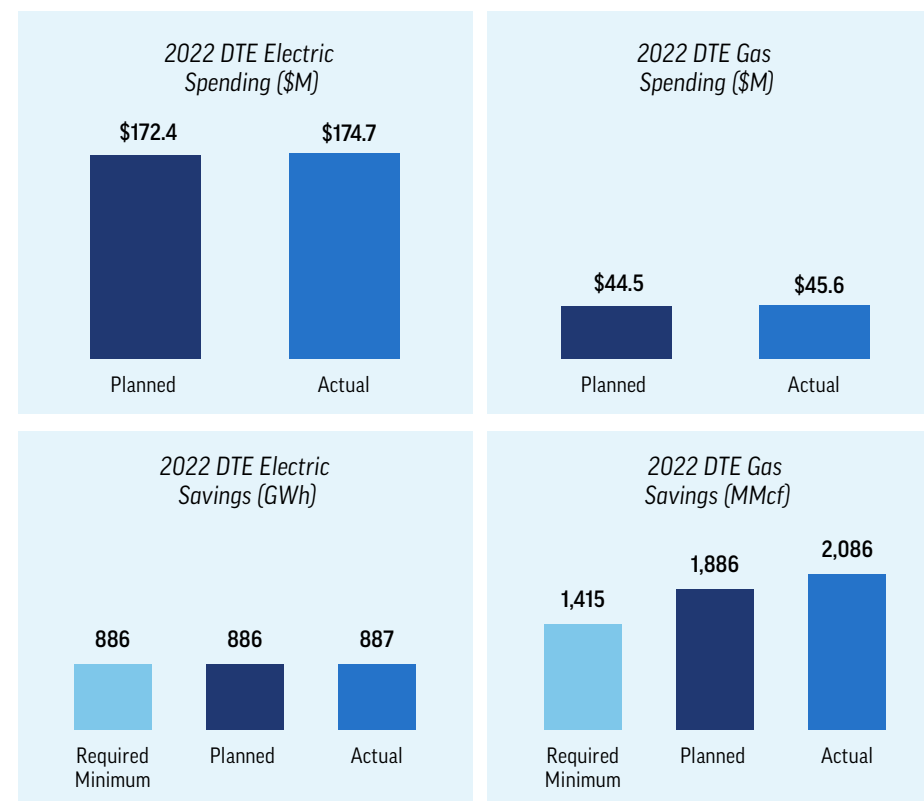
Chart 1 summarizes the overall EE Portfolio 2022 spending and verified net savings for DTE Electric and DTE Gas.

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:

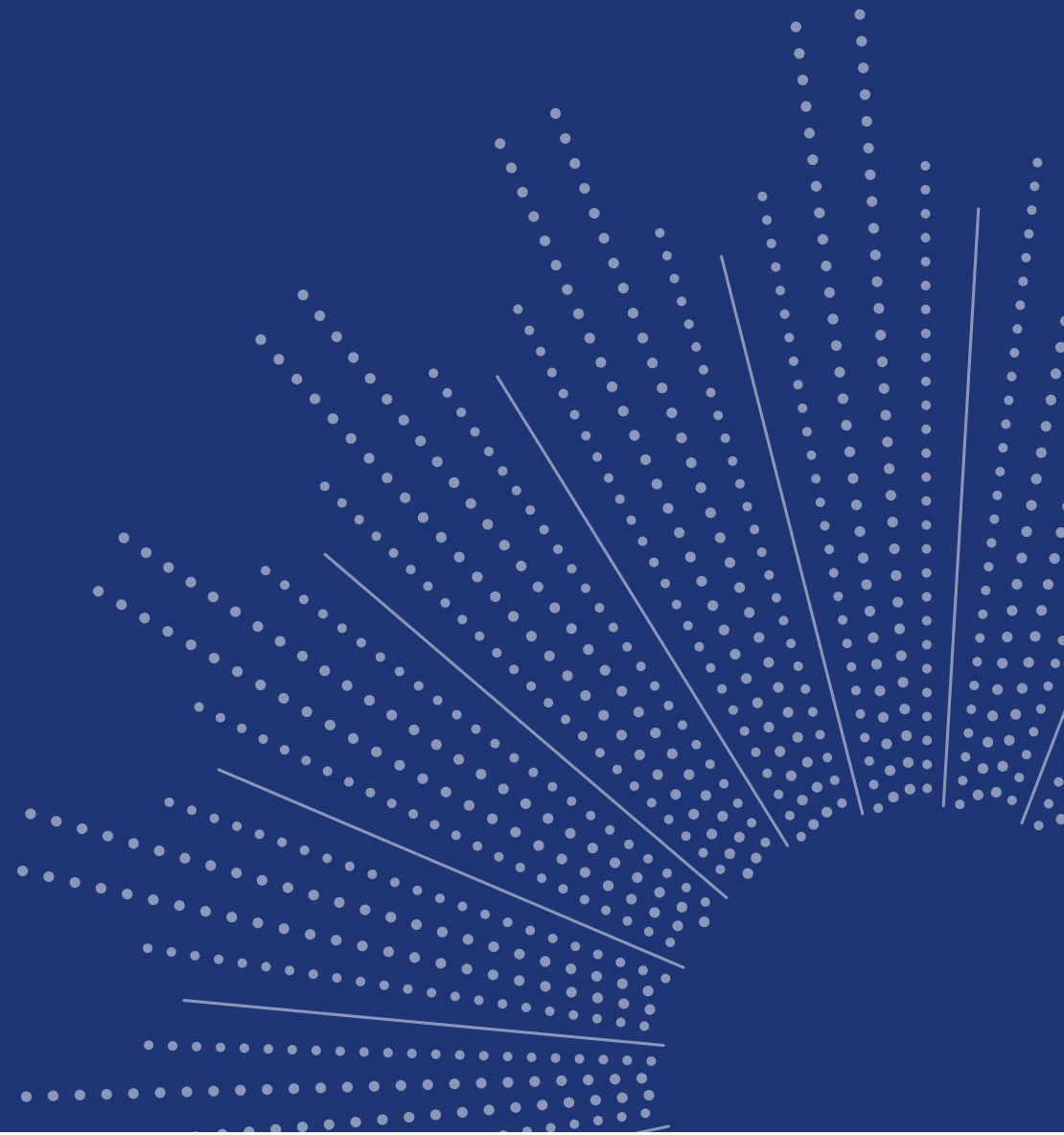
- **Residential:** Through its residential programs, DTE offers homeowners products, services and rebates including appliance recycling; lighting; appliances; heating, ventilating and air conditioning (HVAC); weatherization; home energy assessments; and income-qualified, energy education and behavioral 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

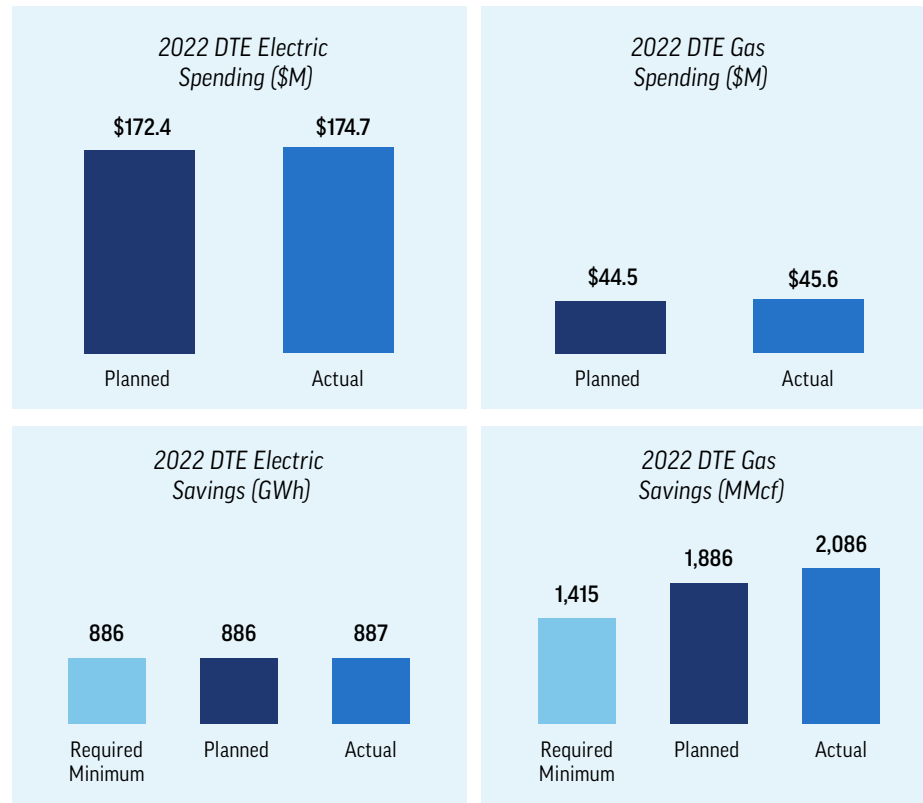
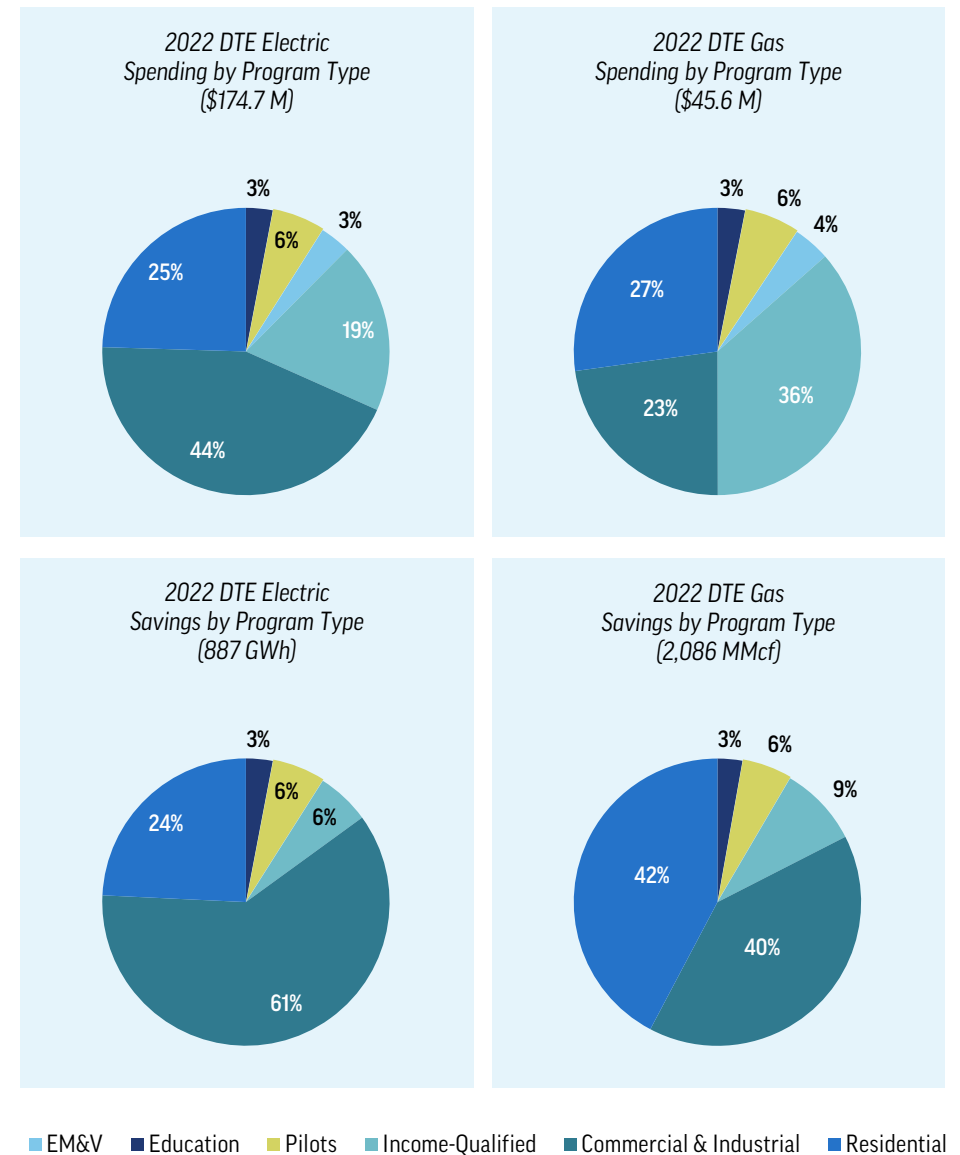


Chart 3 displays program spending and verified net savings for the various EE programs in 2022.

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 DSM¹⁰ 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 DSM¹⁰ 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.

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.

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

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)

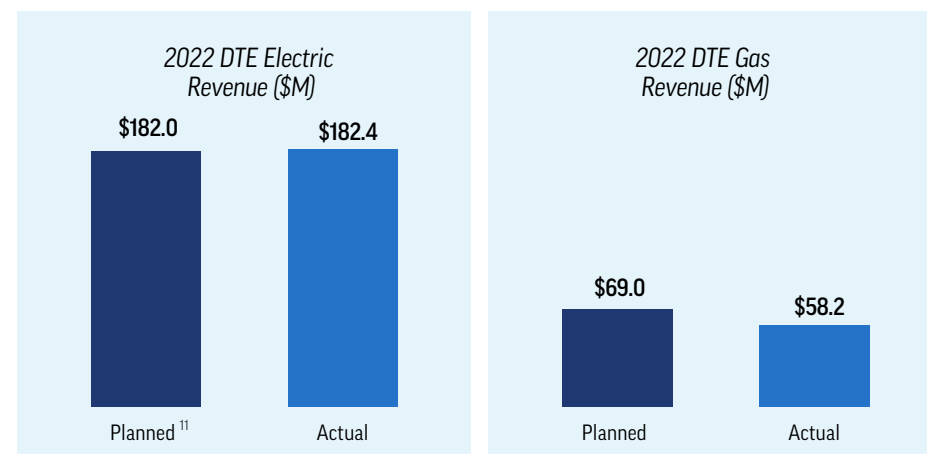
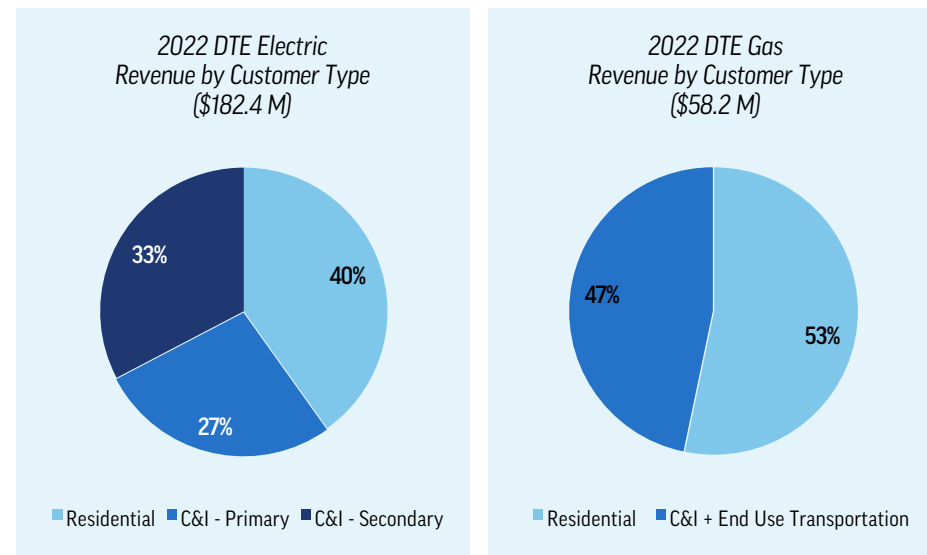


Chart 5 – Revenue Collected for EE Portfolio in 2022 by Customer Type



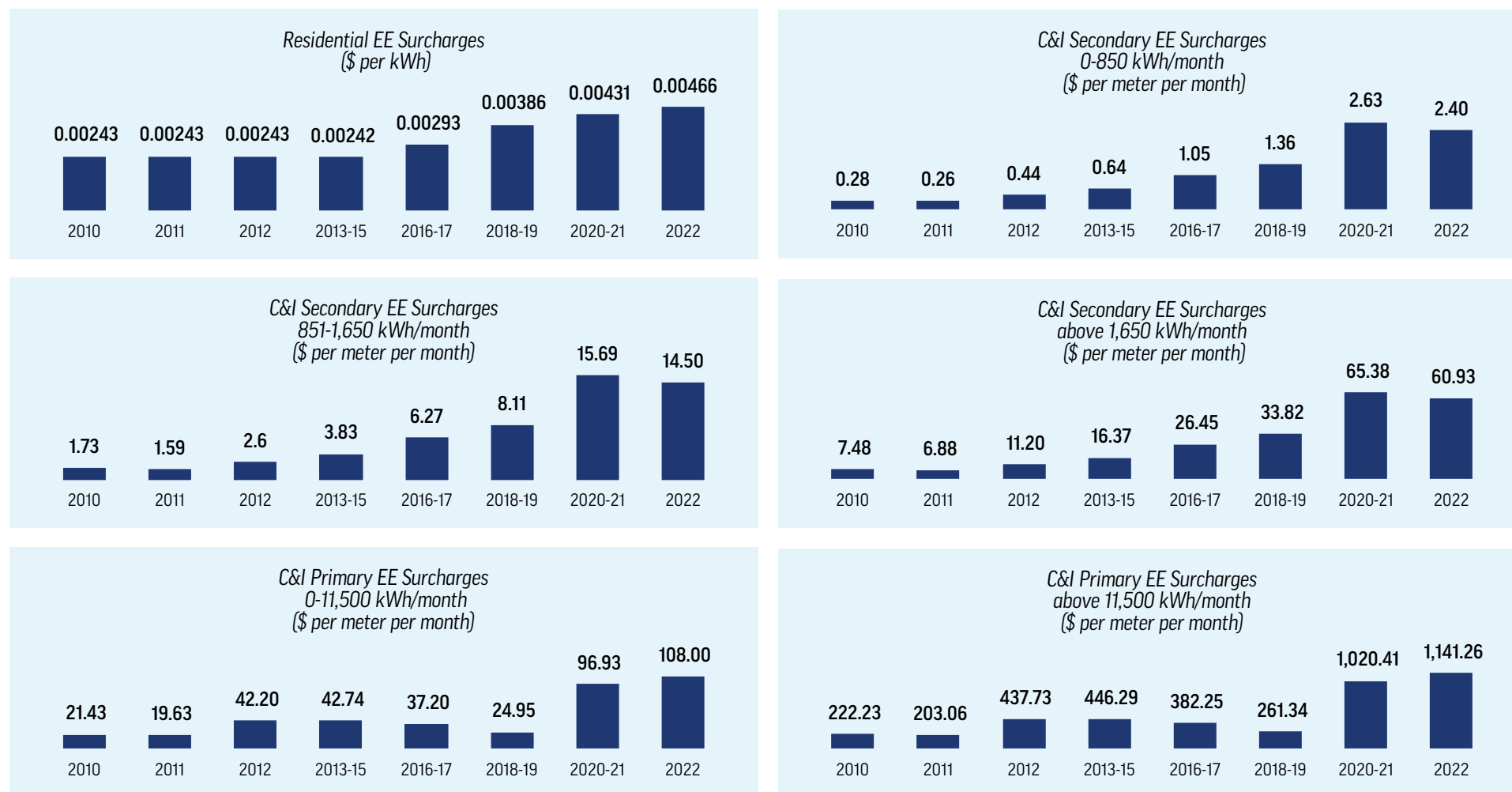
Electric Surcharge

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



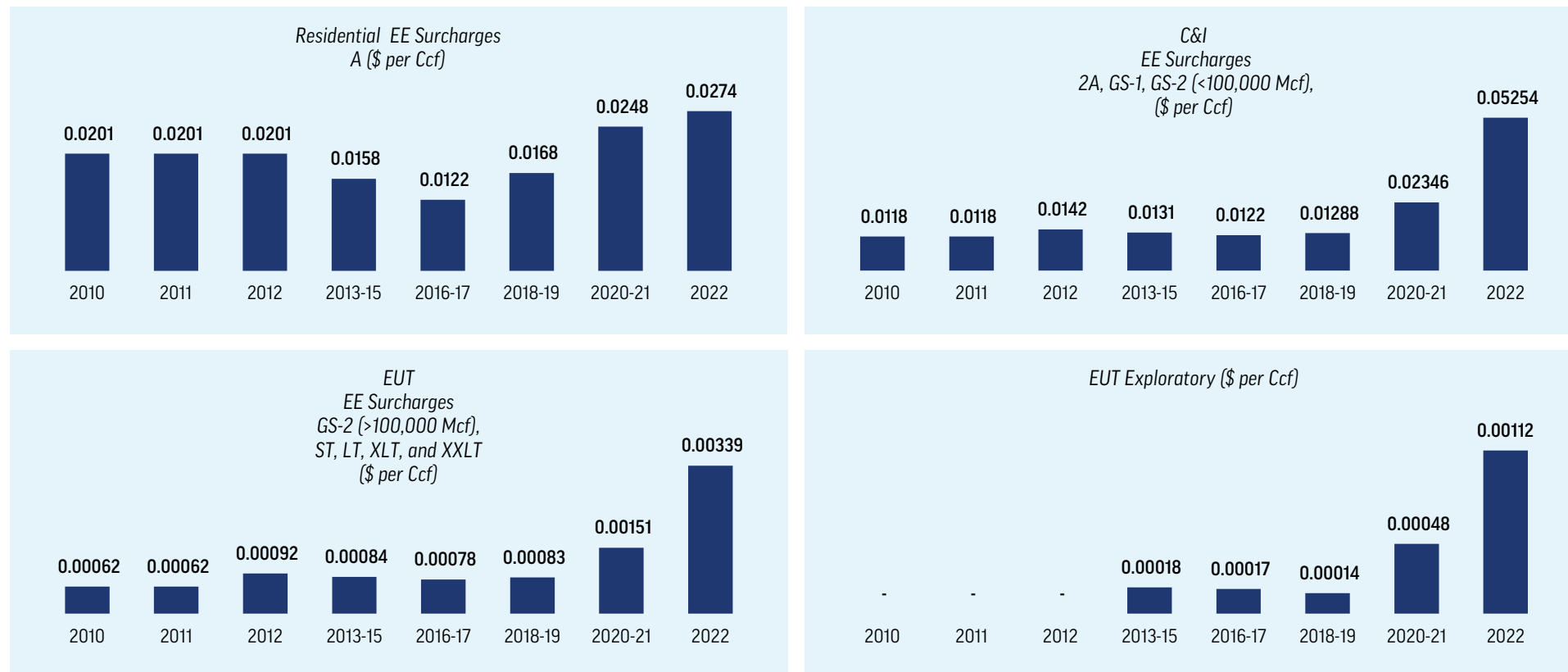
Gas Surcharge

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

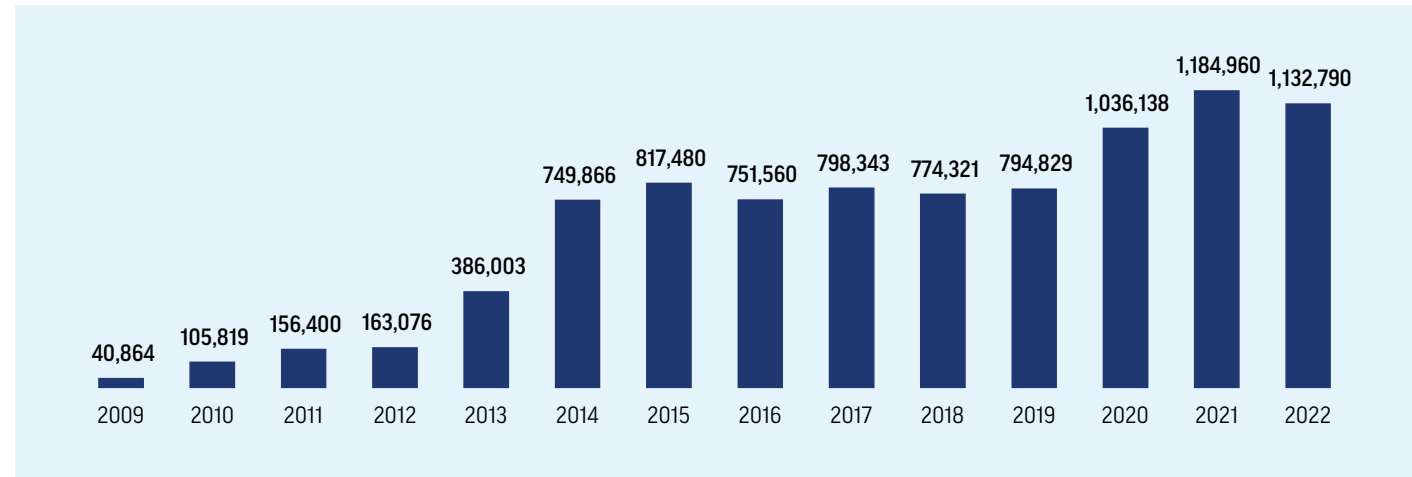
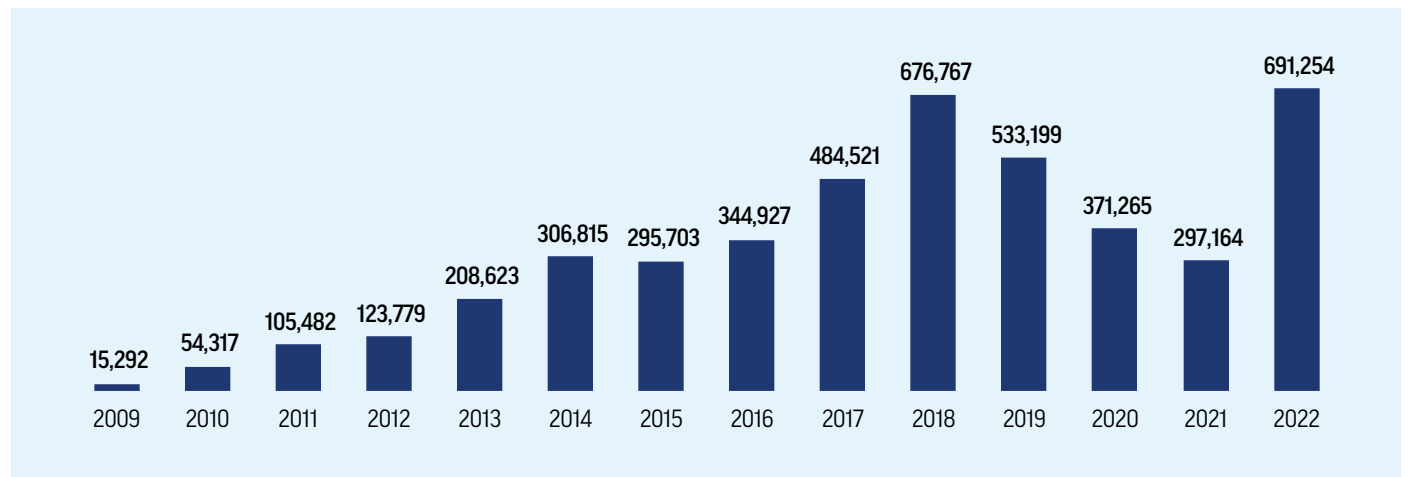
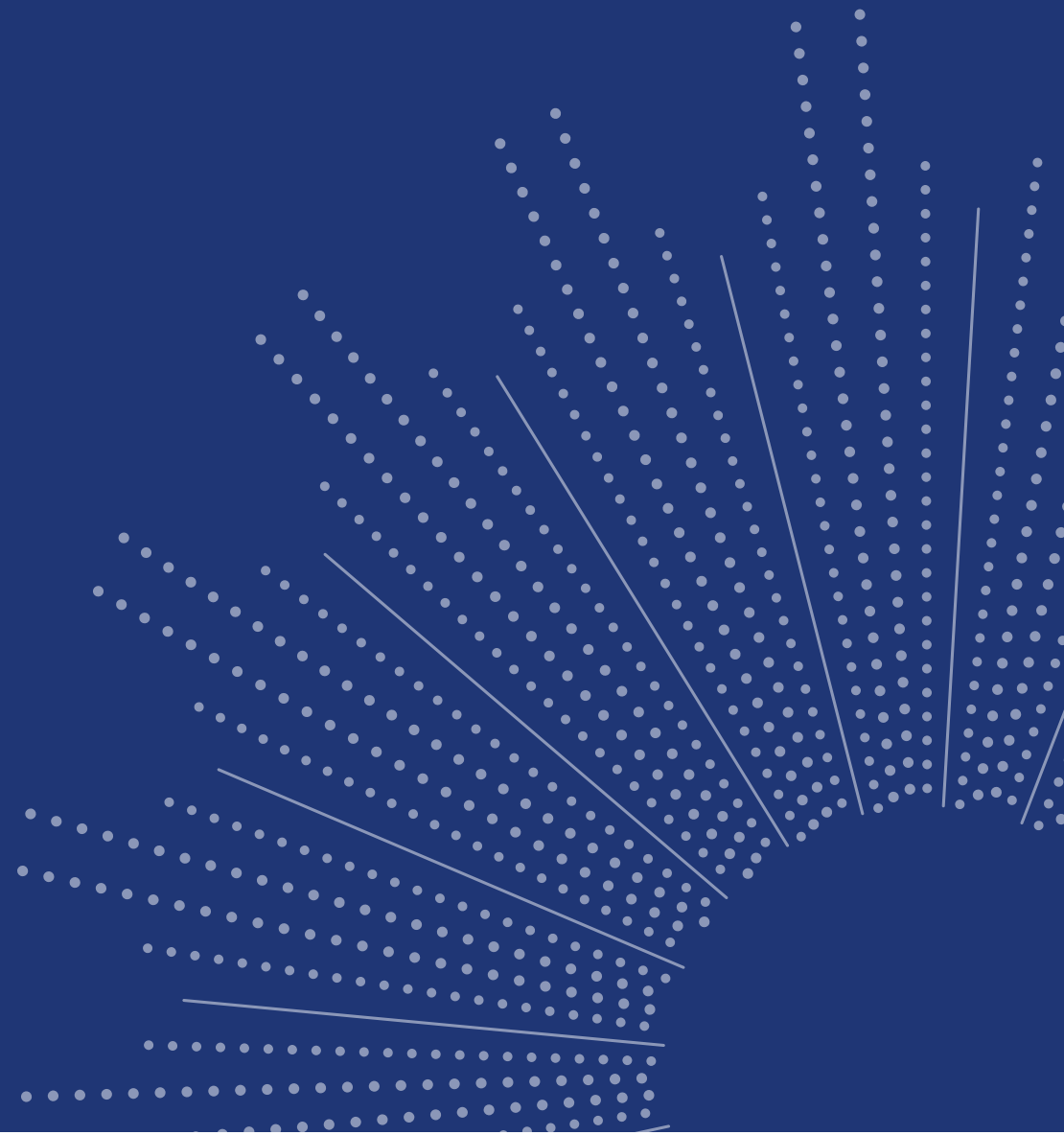


Chart 9 – 2022 EE Portfolio Gas Participation



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

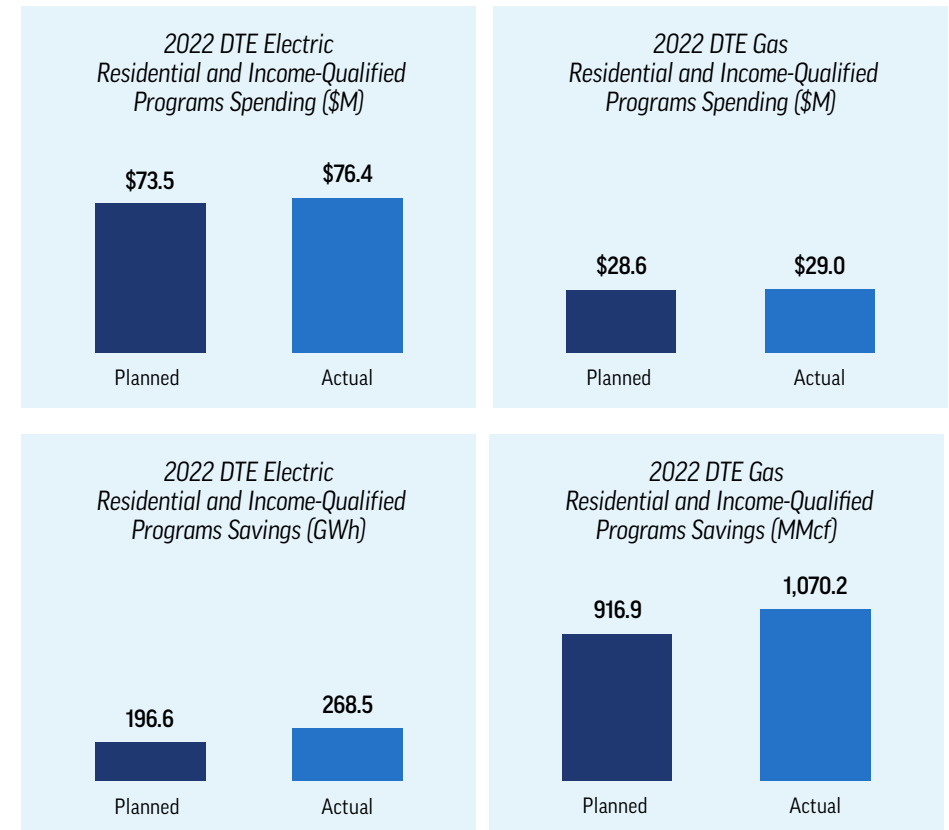
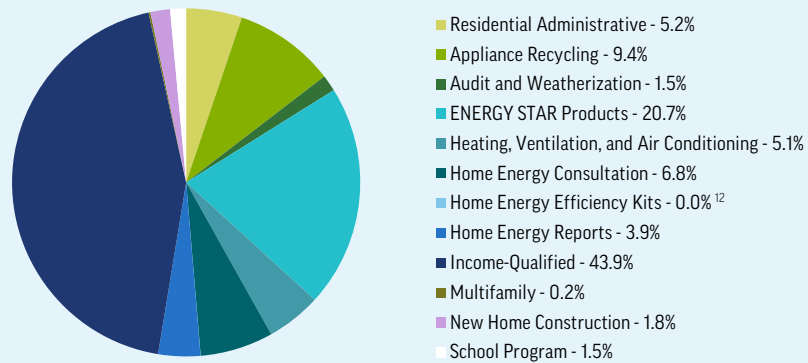


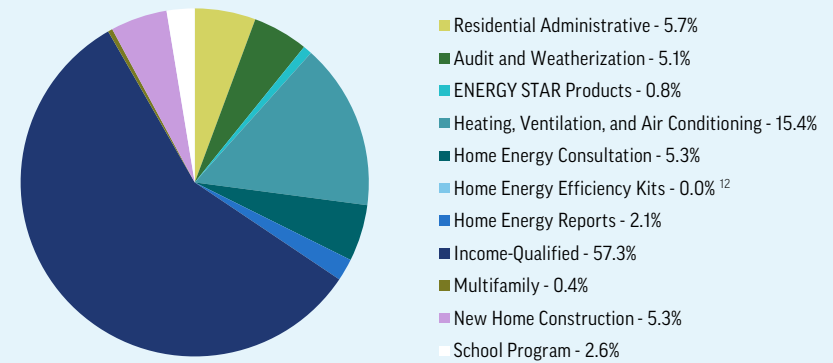
Chart 11 summarizes the spending and verified net energy savings achieved by each Residential and Income-Qualified program in 2022.

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

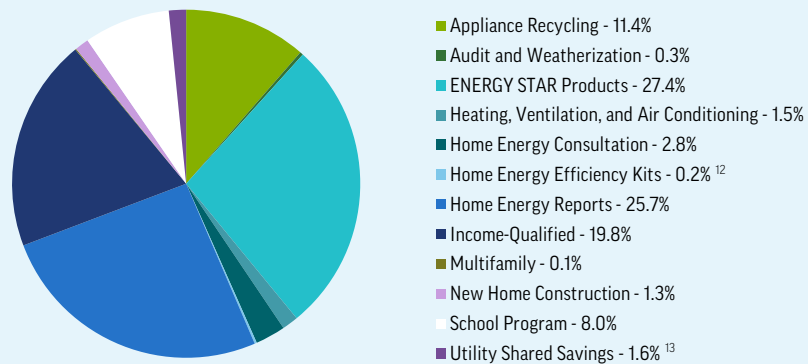
2022 DTE Electric Residential & Income-Qualified Spend by Program (\$76.4 M)



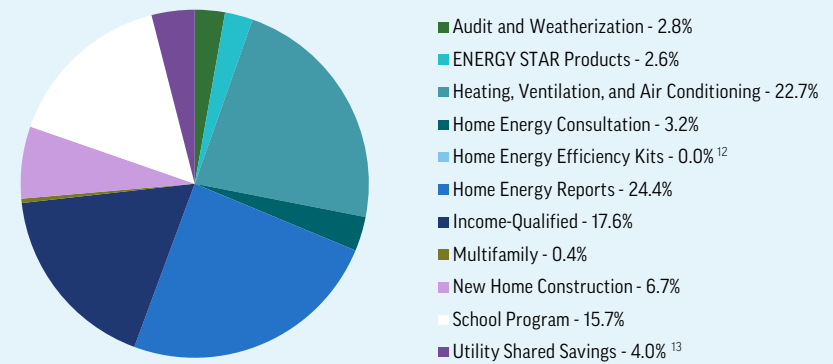
2022 DTE Gas Residential & Income-Qualified Spend by Program (\$29.0M)



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)



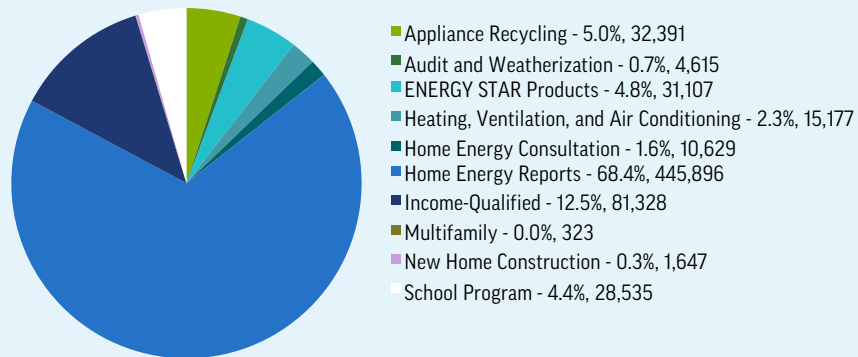
¹² The Home Energy Efficiency Kits program concluded in 2021; values throughout this report represent spending and savings that carried over into 2022.

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.

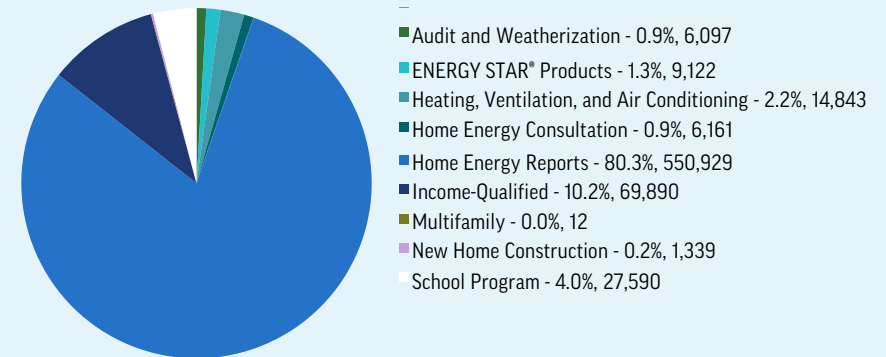
Chart 12 summarizes the number of customers that participated in the Residential and Income-Qualified programs in 2022.

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%.

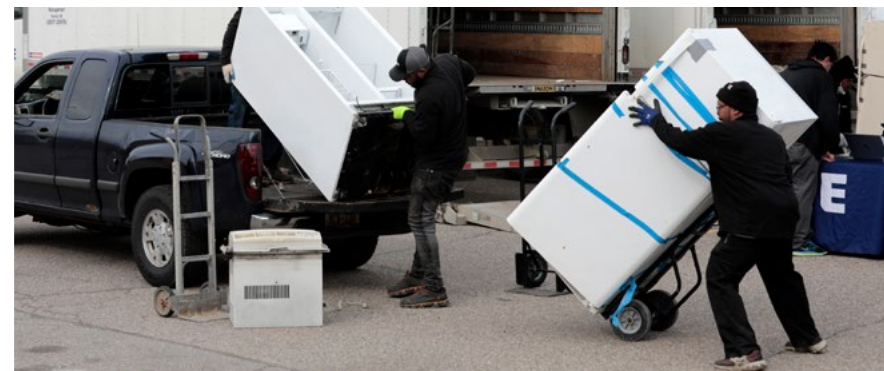
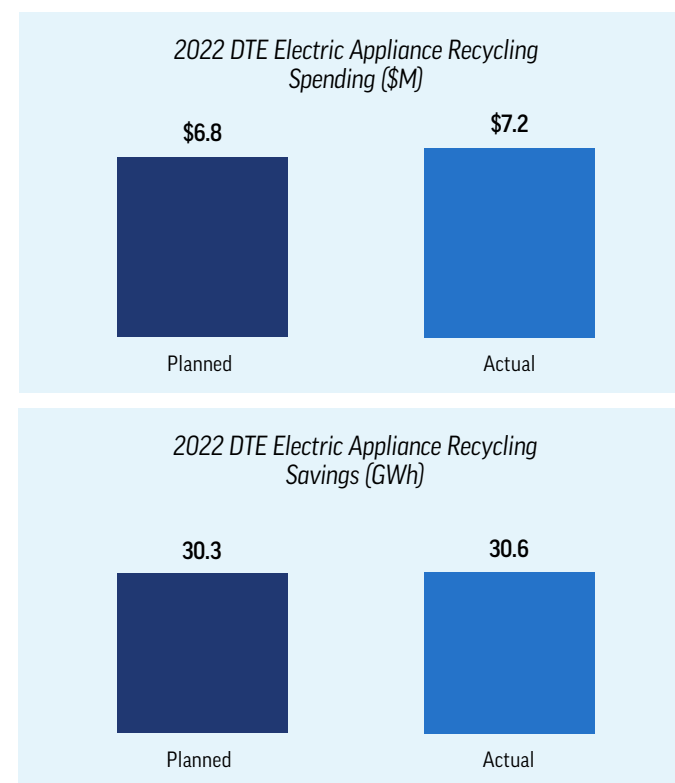


Chart 13 – 2022 Appliance Recycling Program Spending and Verified Net Savings



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.



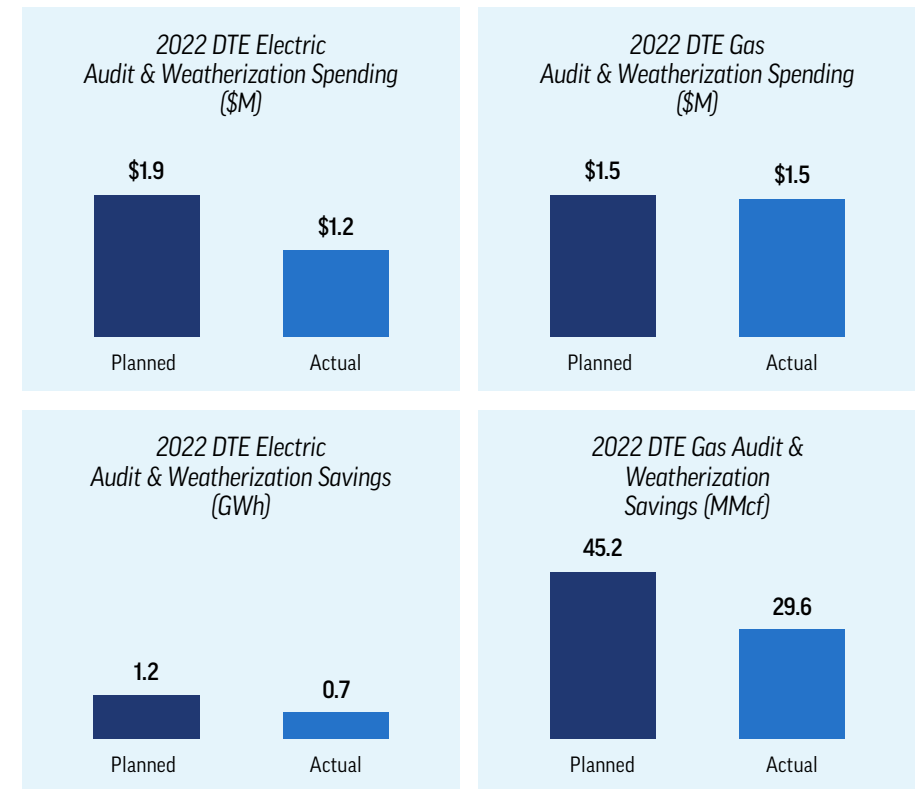
Program Description

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

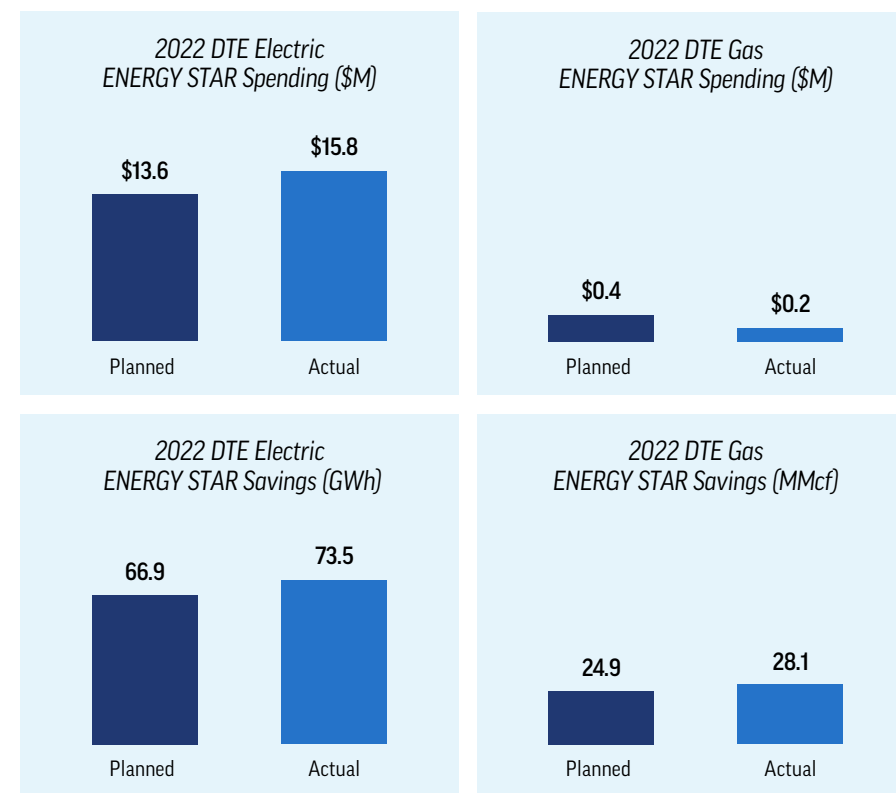
The program intends to spur customer interest by providing educational information and incentives to customers who purchase qualified ENERGY STAR equipment. In-store site visits, point-of-purchase material and digital and email campaigns help accomplish this objective.

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%.

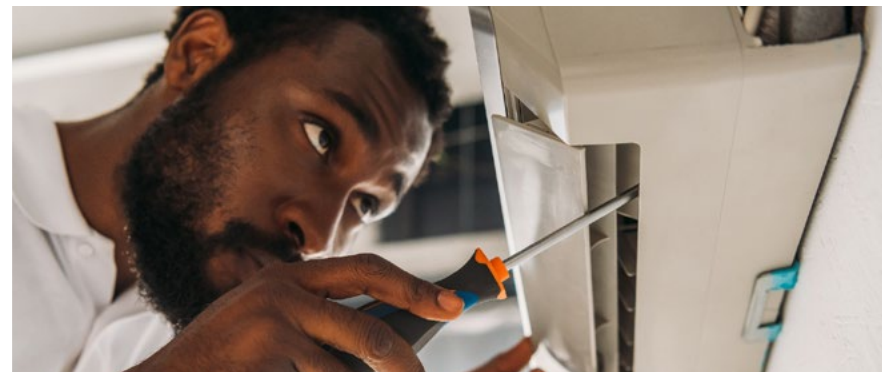
Chart 15 – 2022 ENERGY STAR Products Program Spending and Verified Net Savings



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.



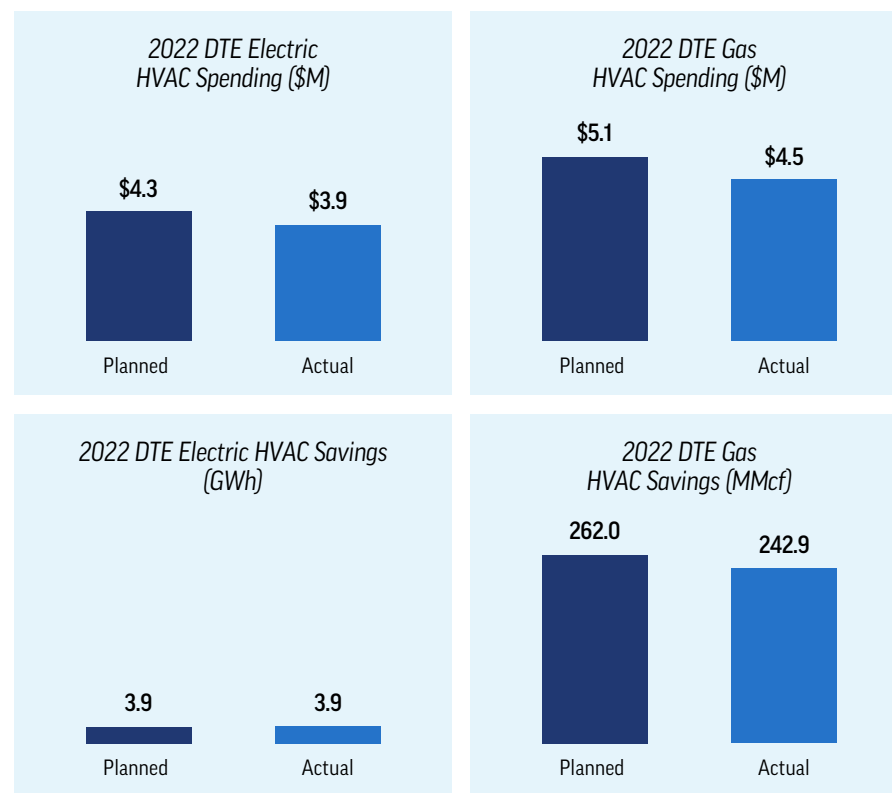
Program Description

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.



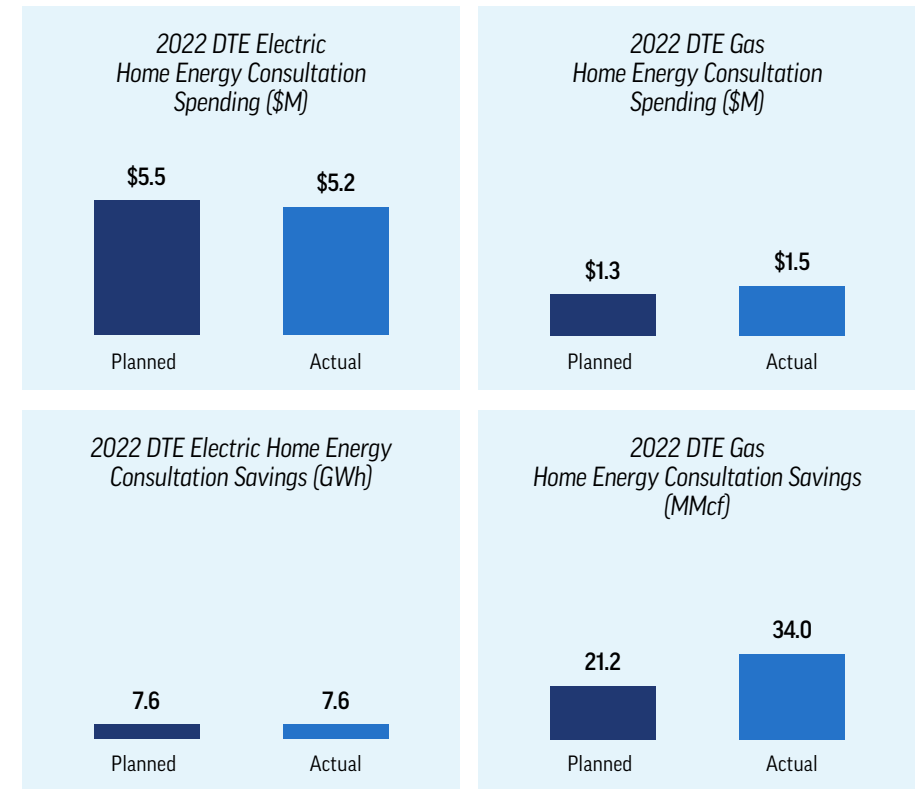
Program Description

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.



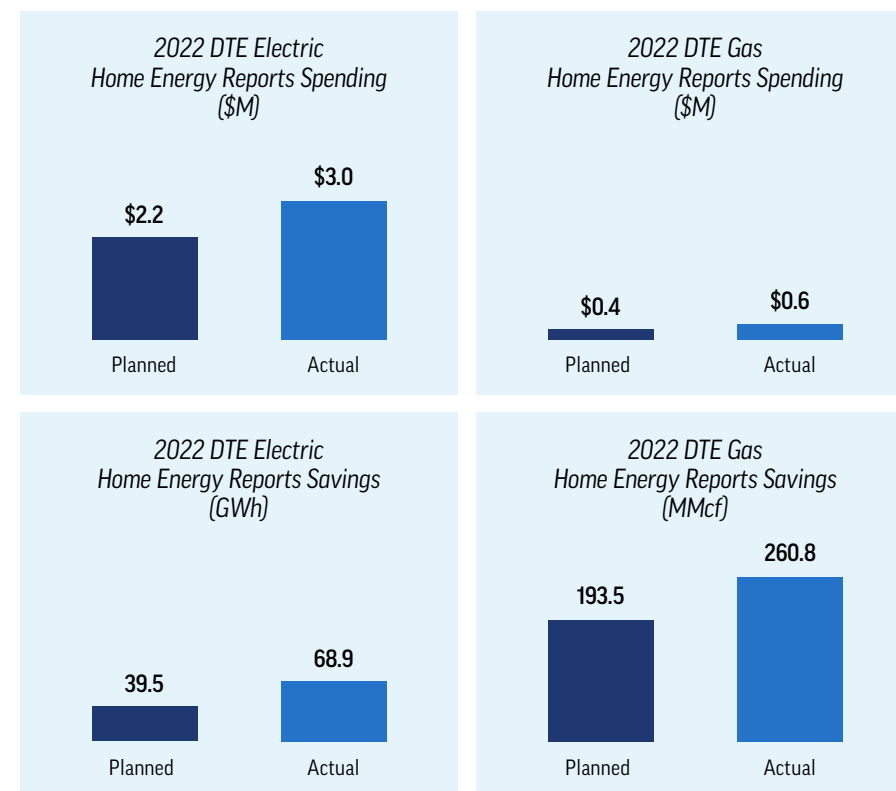
Program Description

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

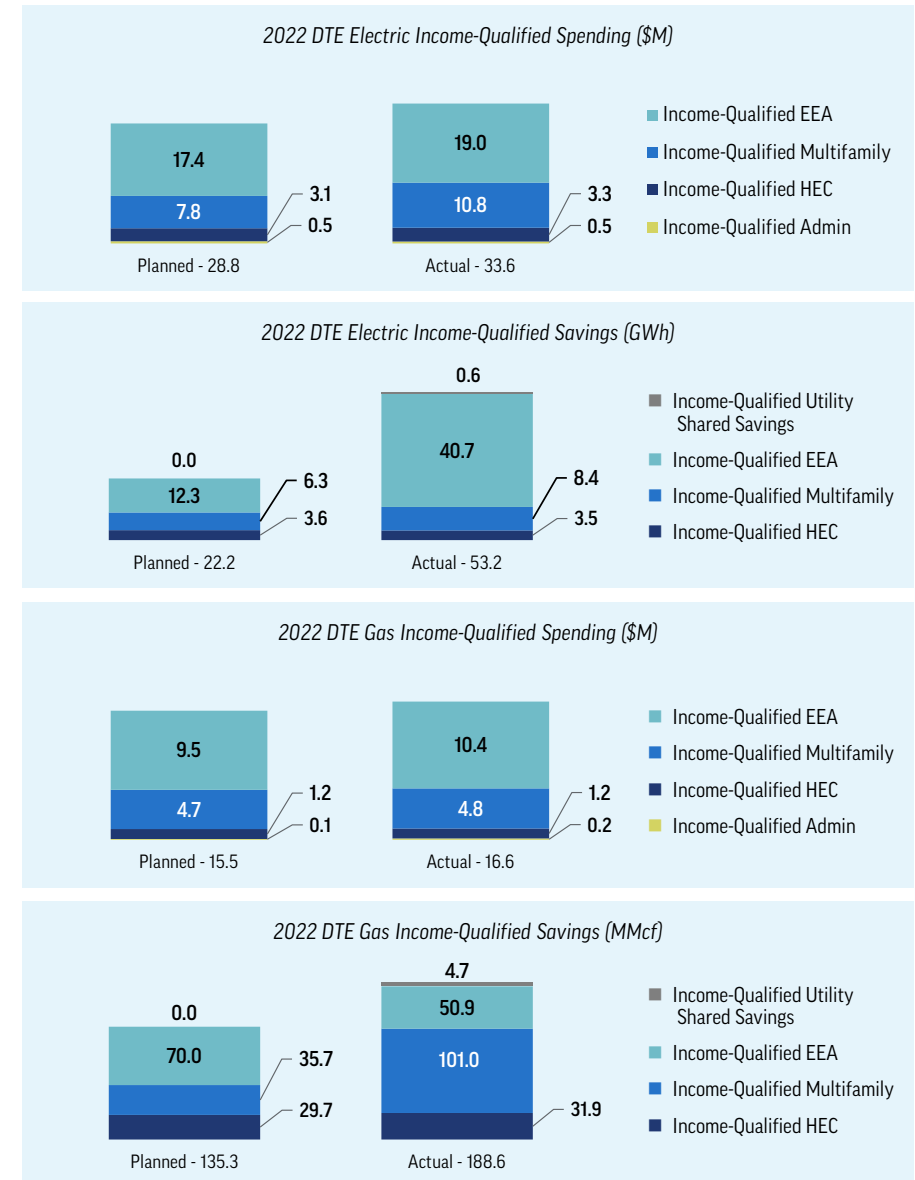
- The Home Energy Consultation program provides in-home consultation and installation of direct installation energy efficient measures for Income-Qualified program customers.
- DTE modified the program methodology to recognize customers with an income-qualified profile in the DTE billing system as part 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.



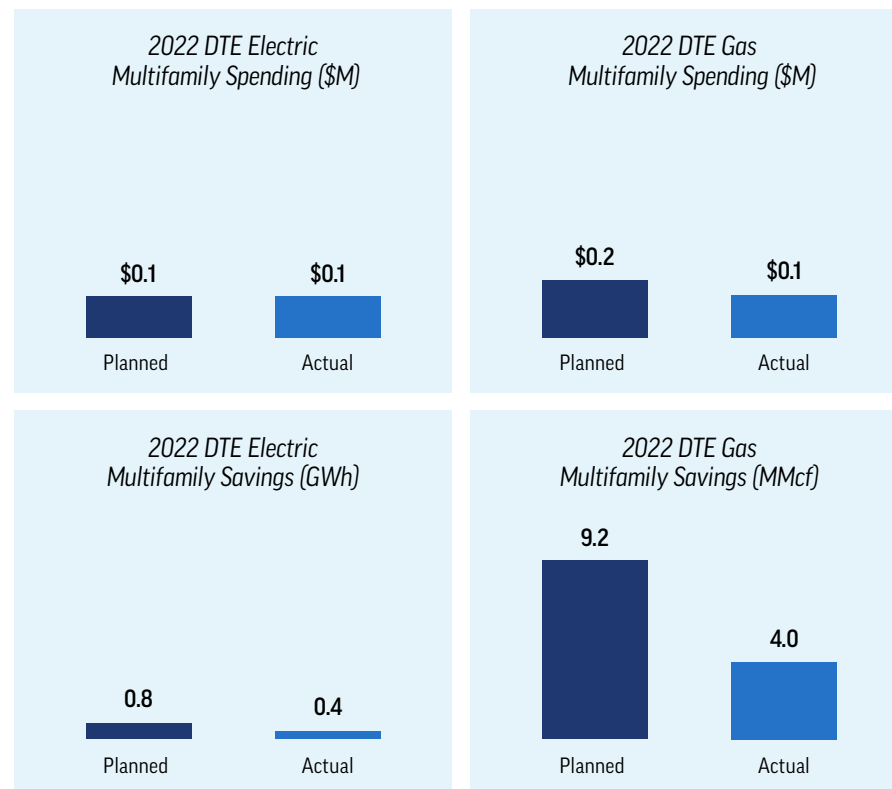
Program Description

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 Ektrope, 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.

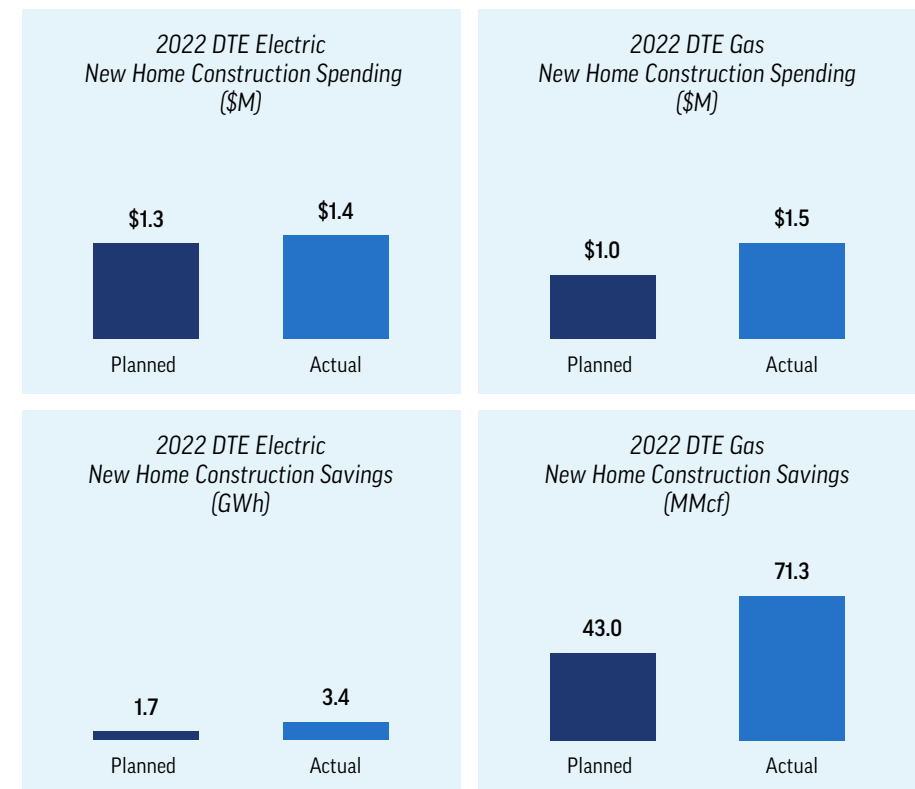
After meeting the HERS score prerequisite, builders are eligible for performance-based incentives and tiered incentives for specific measures including furnaces, water heaters and air sealing techniques. Savings are claimed on the difference between modeled energy usage for a standard code-built baseline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



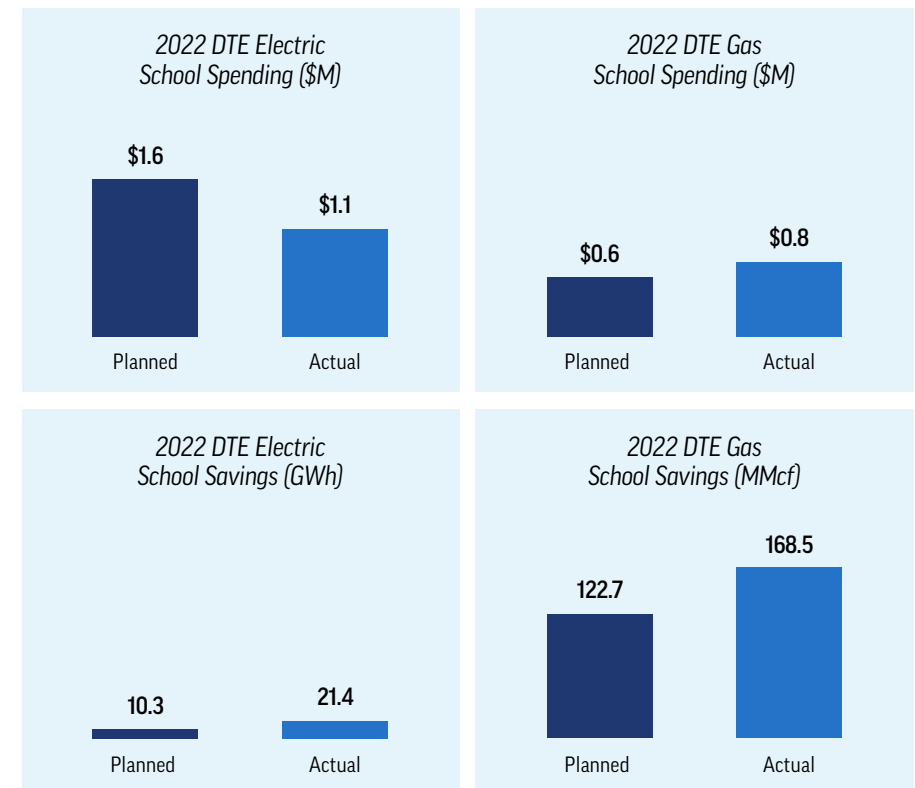
Program Description

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

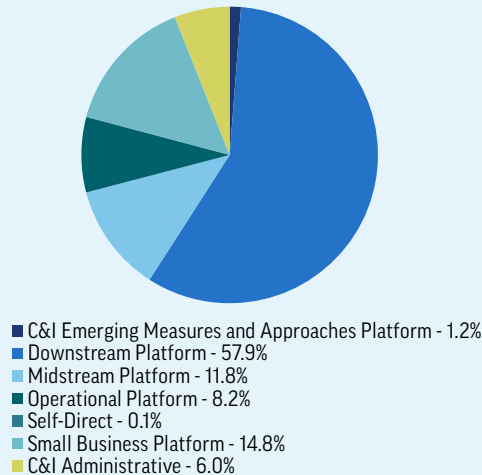
DTE launched several special offerings in 2022 to create broader customer participation. These specials included commercial energy audits and an enhanced offer related to the Michigan Saves program. C&I programs also proactively focus on relationship development with organizations such as the U.S. Green 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.

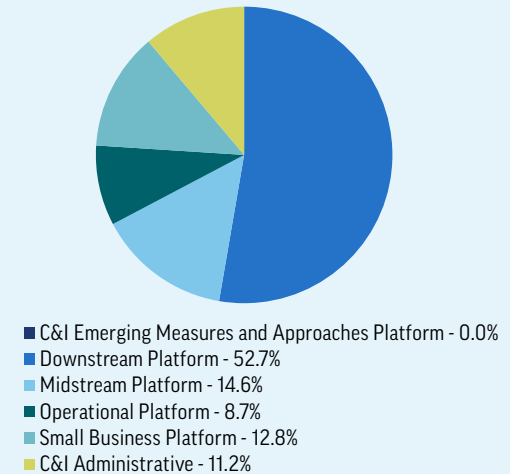
The C&I programs received 94% or higher customer satisfaction scores across all programs but one in 2022.

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

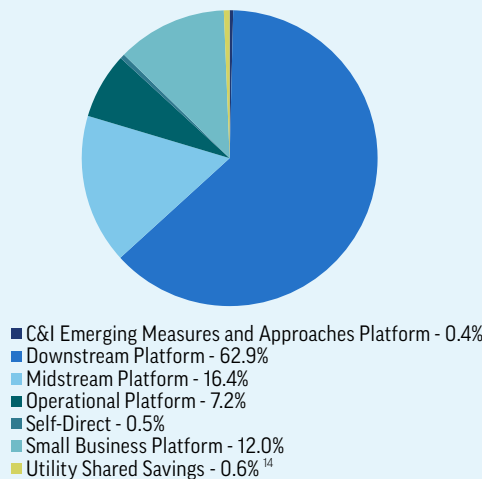
2022 DTE Electric Spend by C&I Program (\$76.5 M)



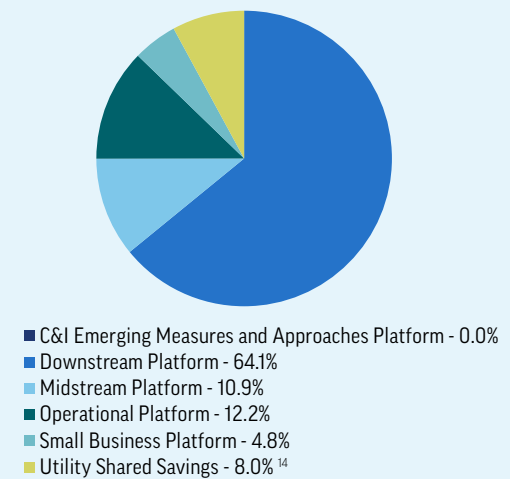
2022 DTE Gas Spend by C&I Program (\$10.4 M)



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

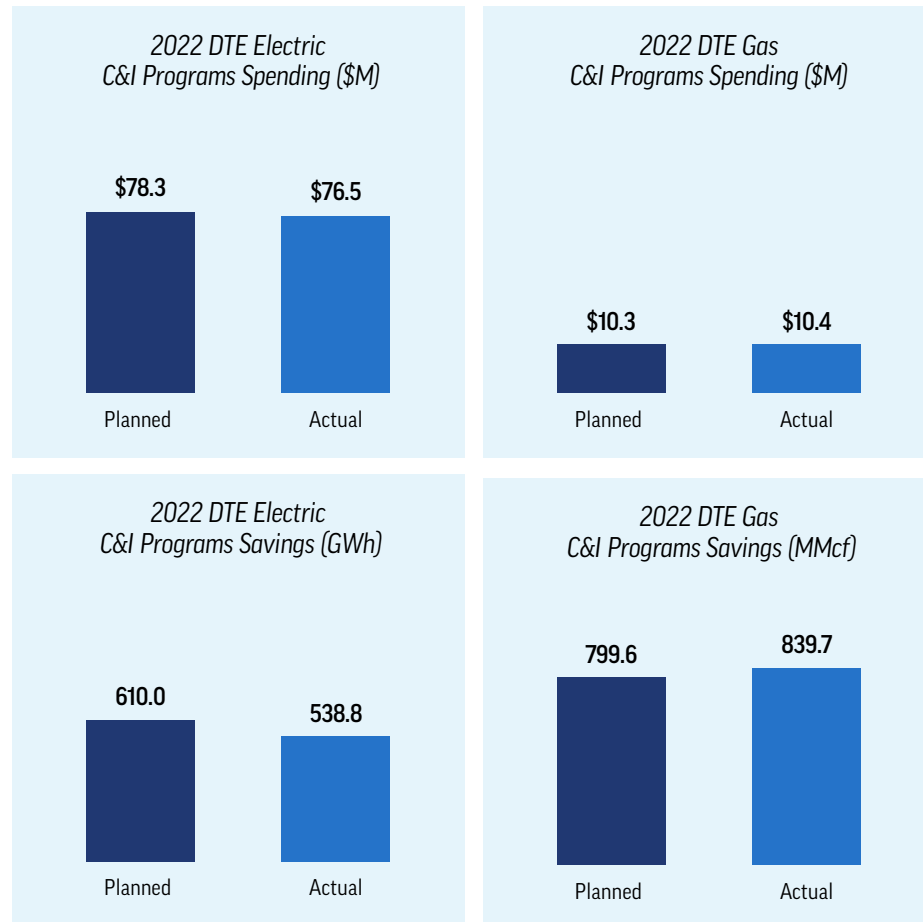
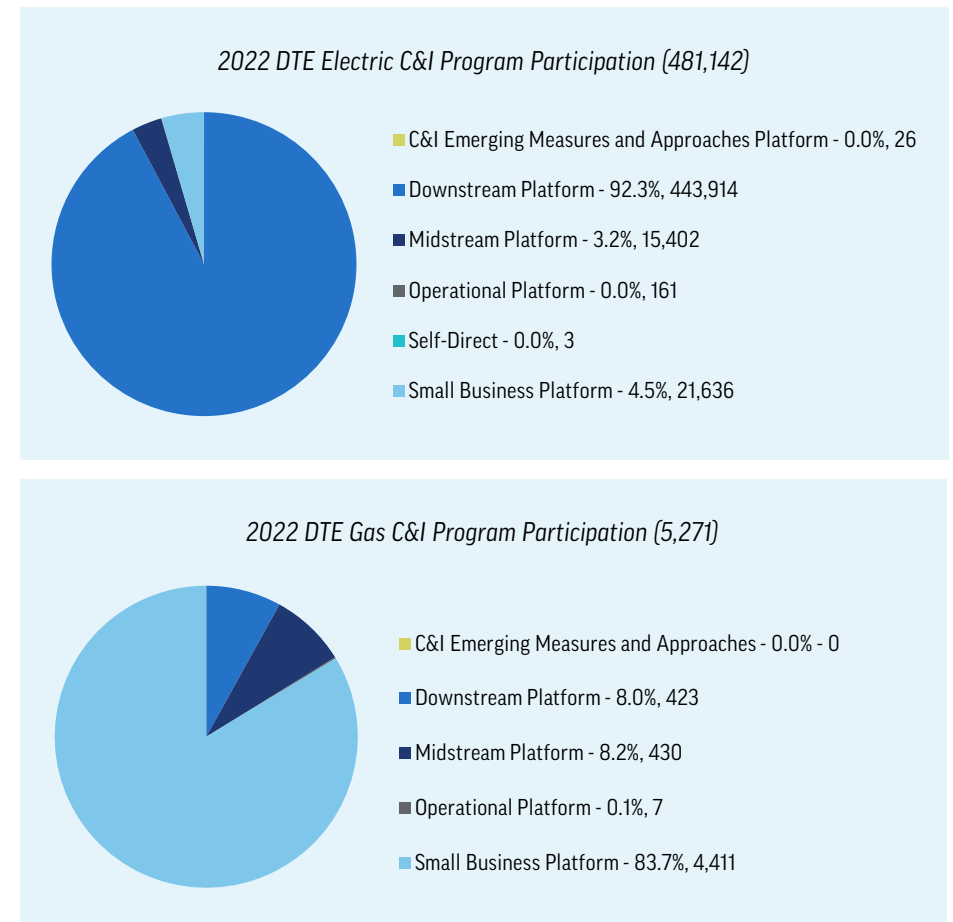


Chart 25 summarizes the share of customers that participated in each of the C&I platforms.

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

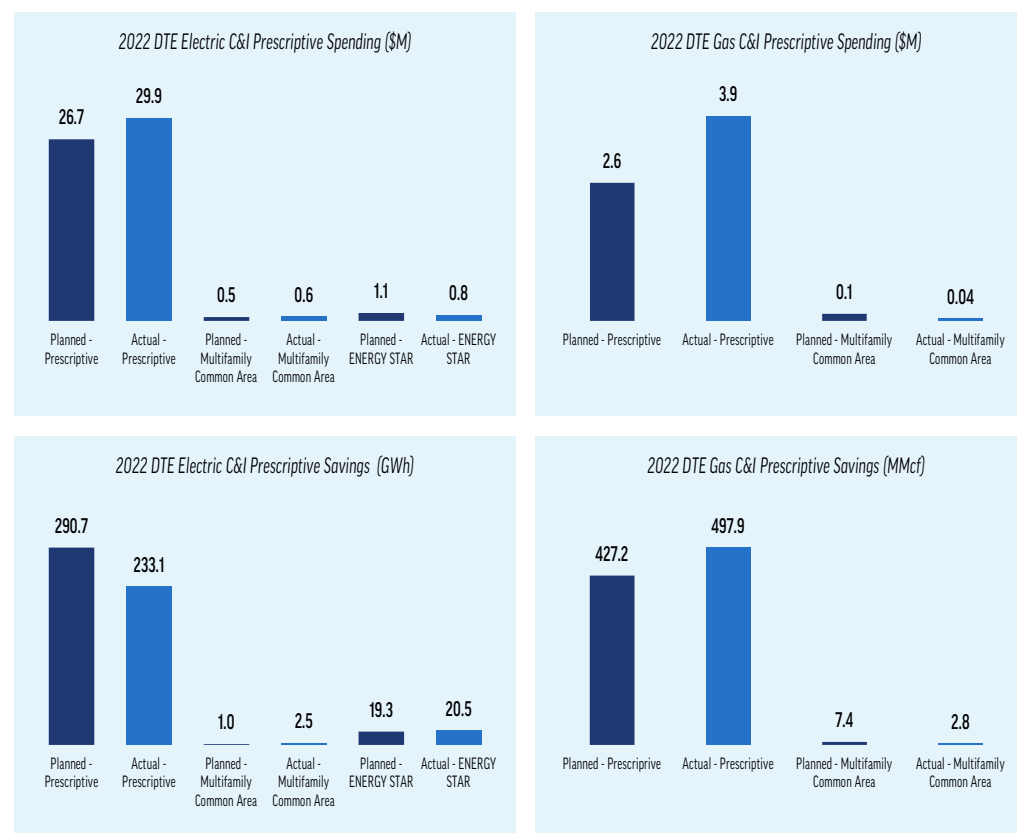
The Prescriptive program designed incentives to encourage C&I business customers to install energy efficient measures in existing facilities to reduce overall energy consumption and save money on energy bills. Incentives apply to qualified equipment commonly installed in a retrofit or equipment replacement 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.

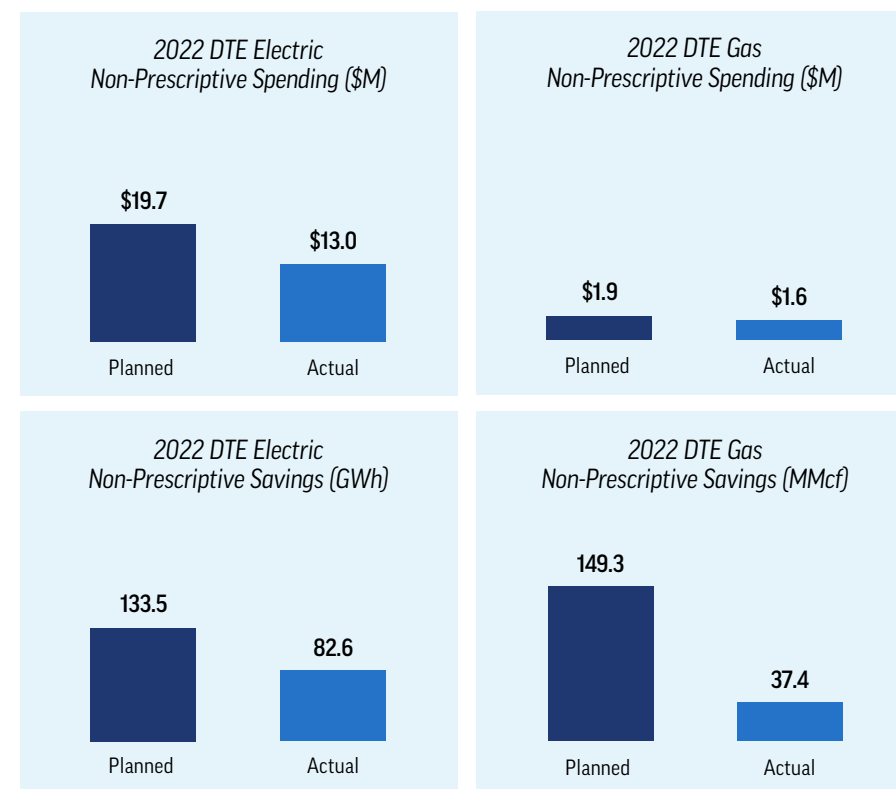
To qualify for the incentive, projects required a one to eight-year simple payback for electric, a minimum of one-year simple payback for both gas and electric projects and a maximum of eight-year payback for electric-only projects. Incentives are capped at 50% of the total project cost.

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.



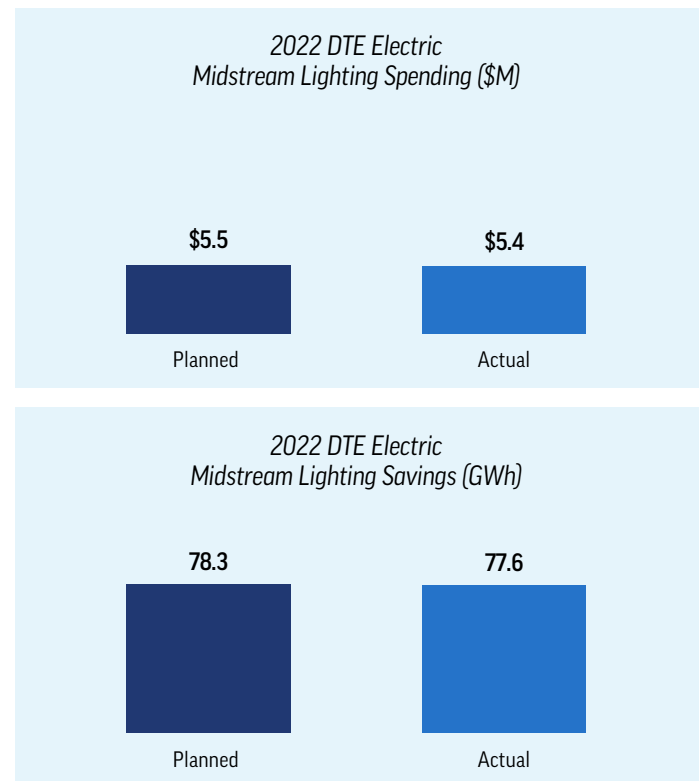
Program Description

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.



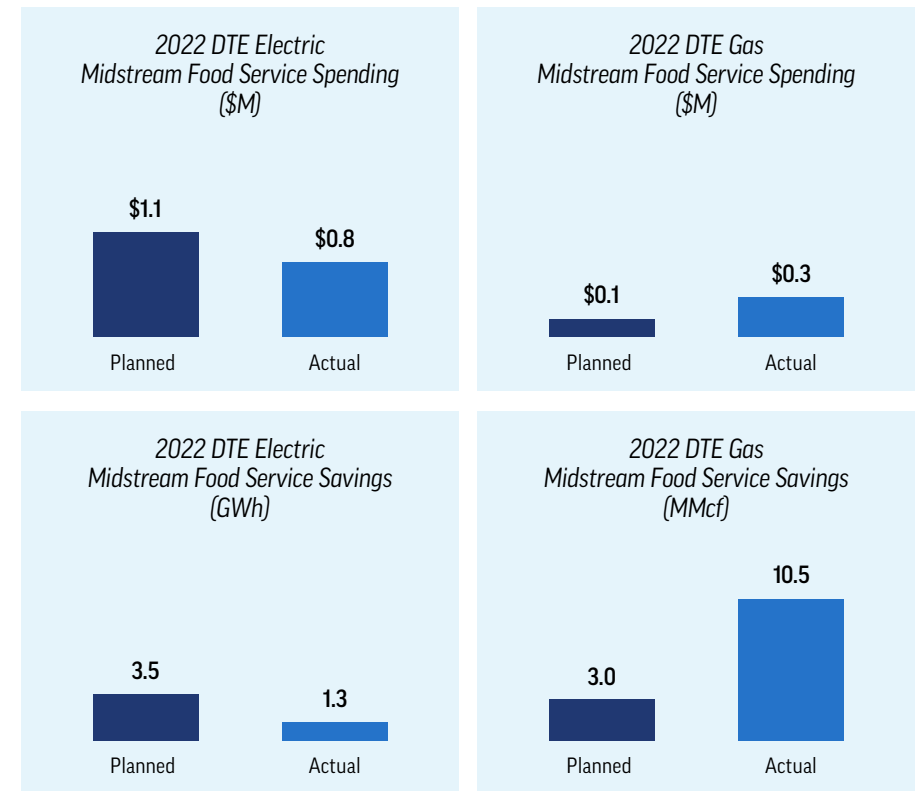
Program Description

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.



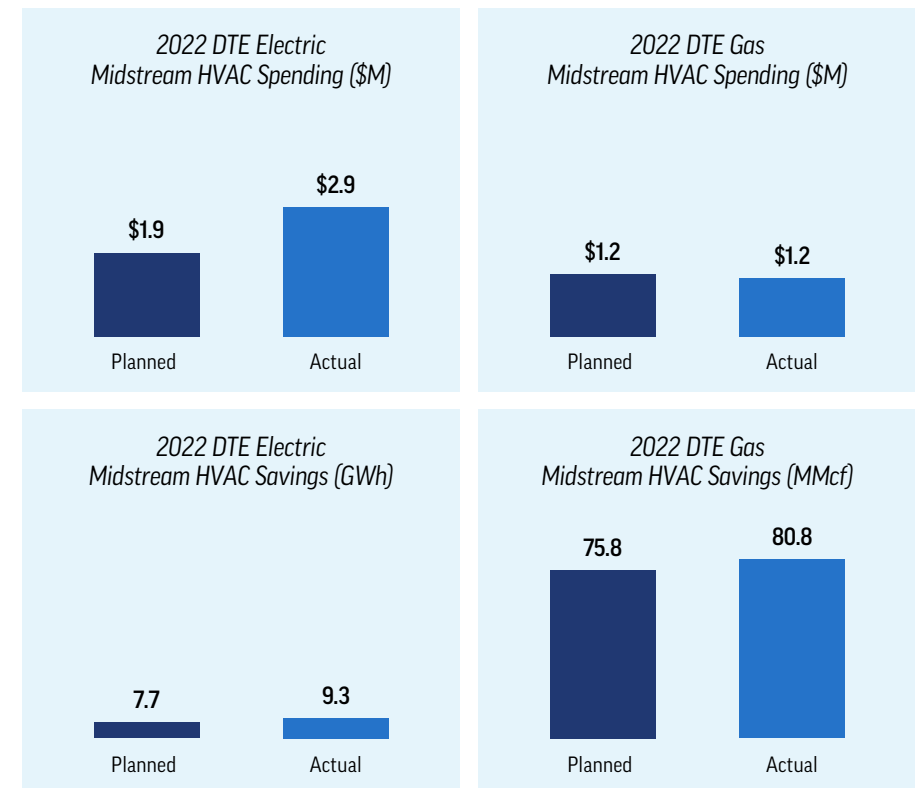
Program Description

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

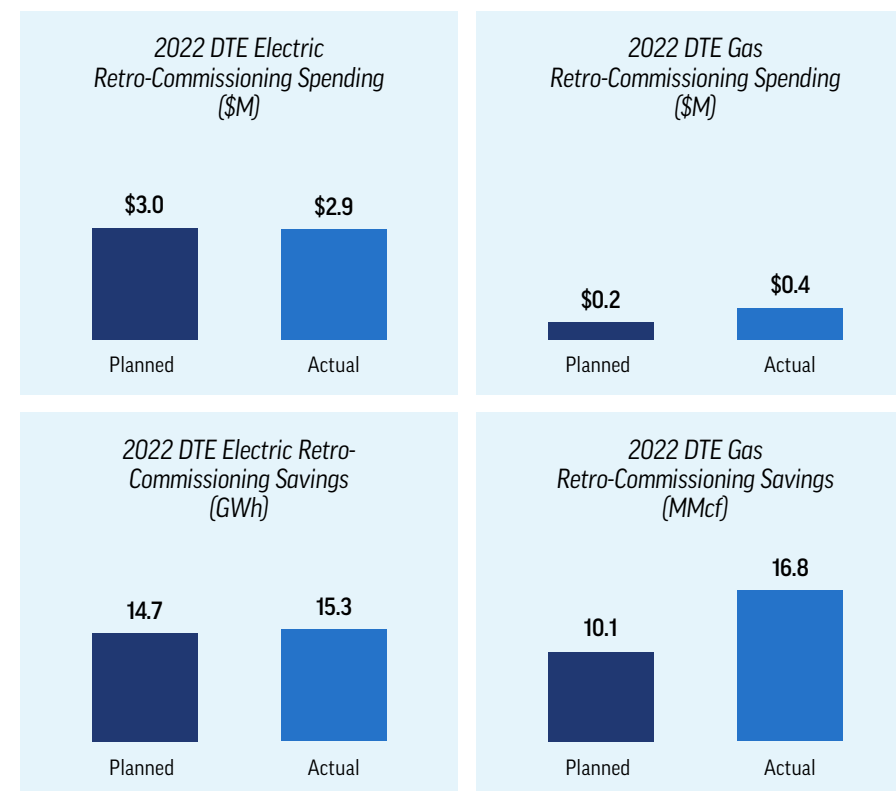
The program offers energy expertise and valuable incentives to help offset the initial cost of investment to make operational improvements to the customer's building. The Retro-Commissioning program also provides recommendations to customers for energy efficient capital investments they can implement 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.

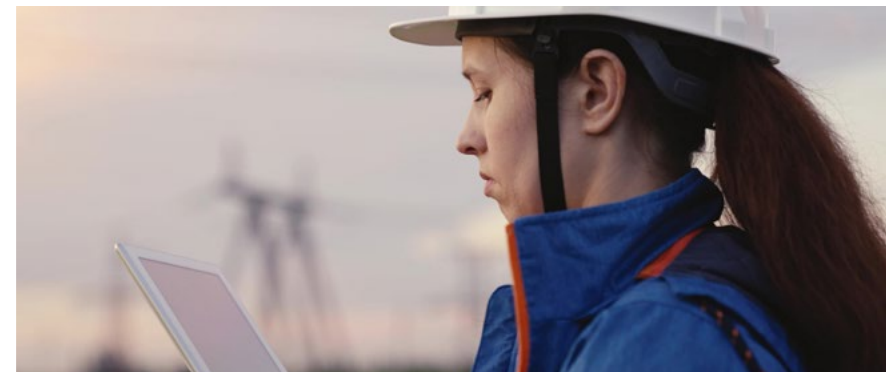
Chart 31 – 2022 Retro-Commissioning Spending and Verified Net Savings



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.



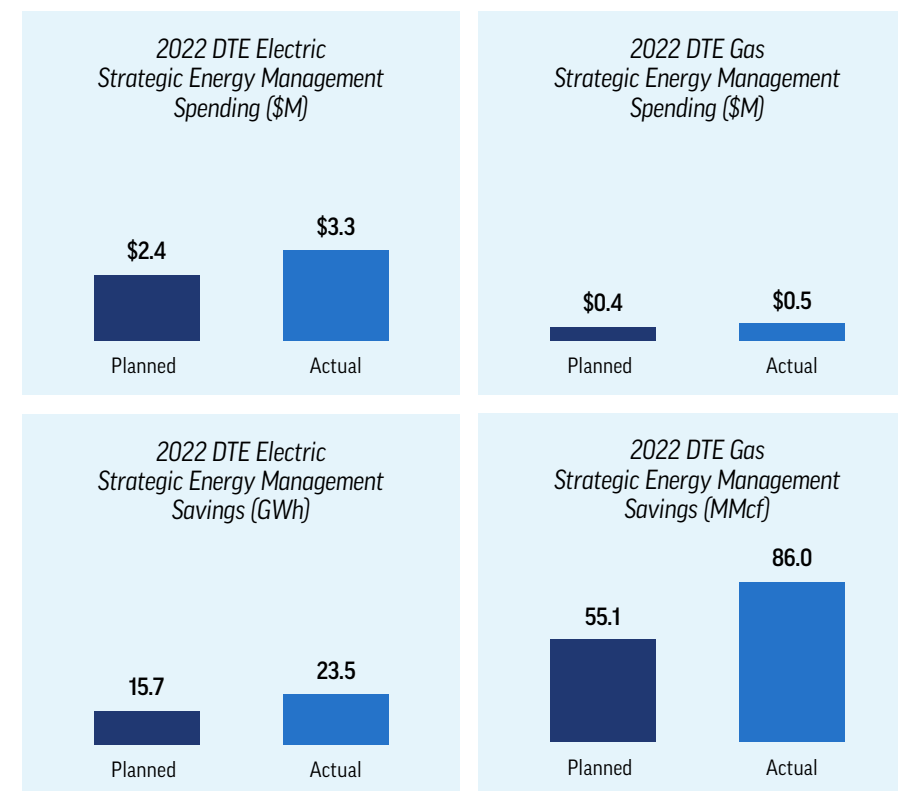
Program Description

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

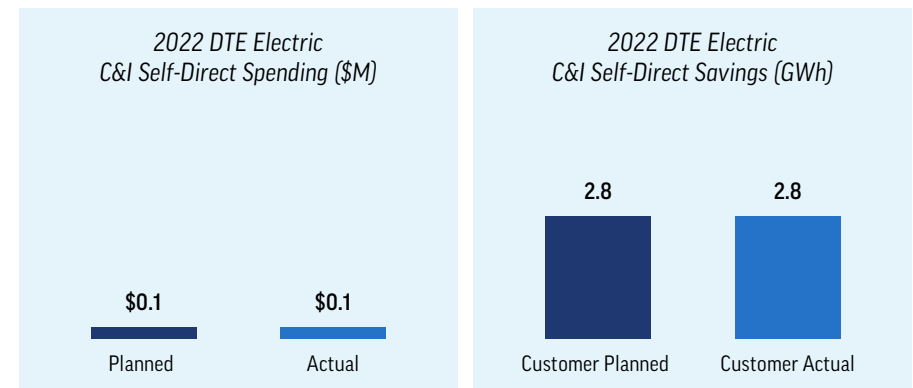
- In 2022, three electric customers enrolled in the Self-Direct program. Two participating customers submitted annual reports in compliance with program requirements, while one requested a one-week extension. All Self-Direct customer plans for 2022 met their total required savings targets.
- To be eligible, 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.



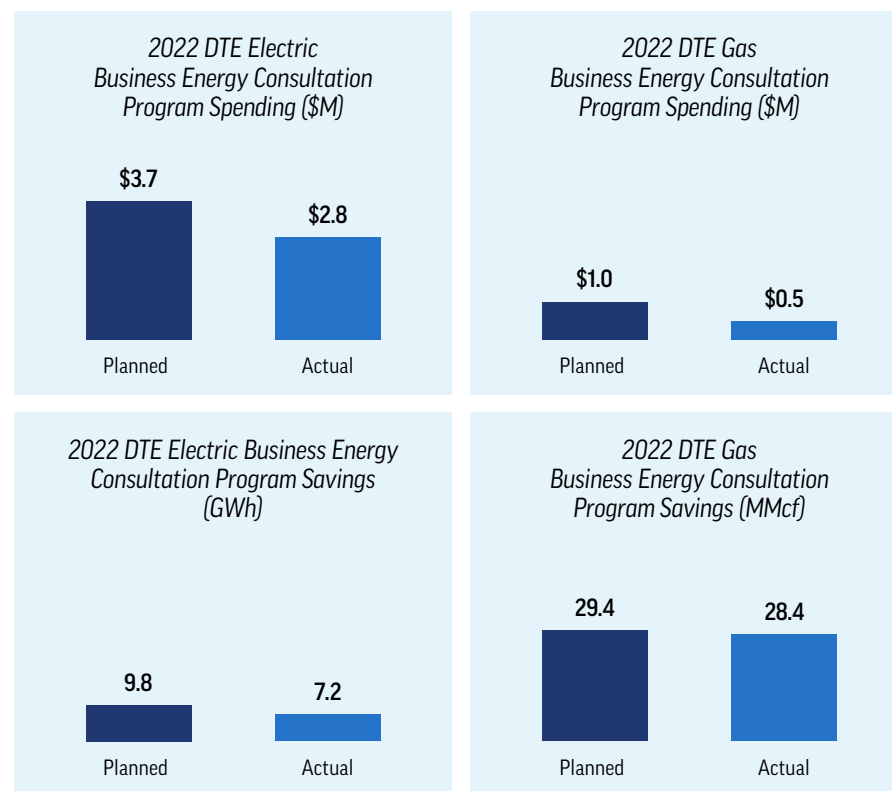
Program Description

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.



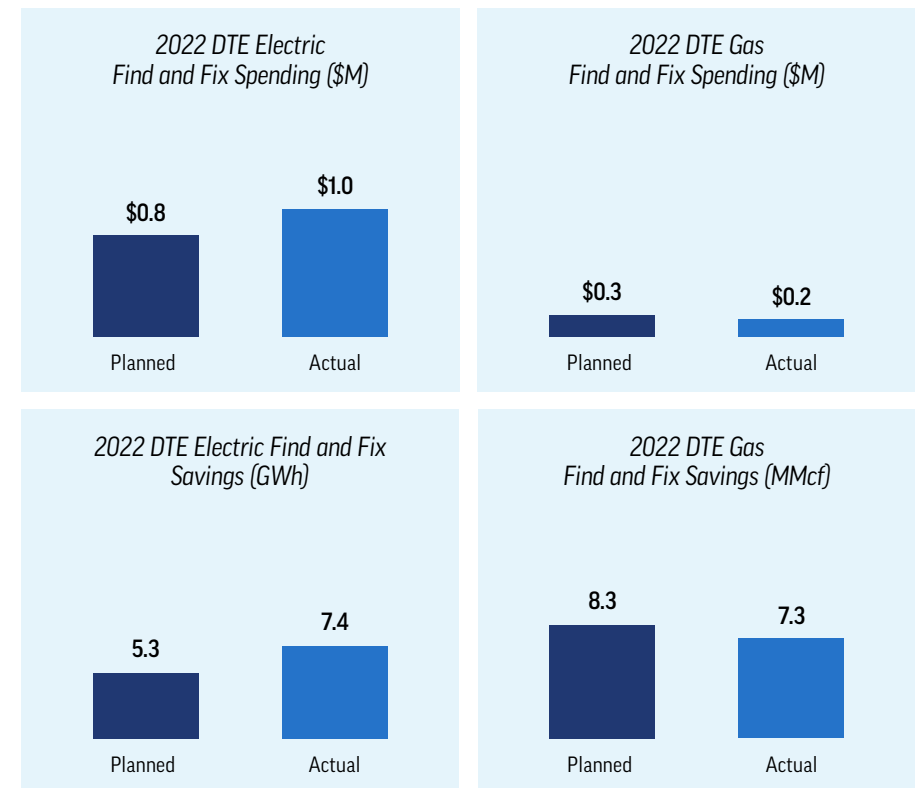
Program Description

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.



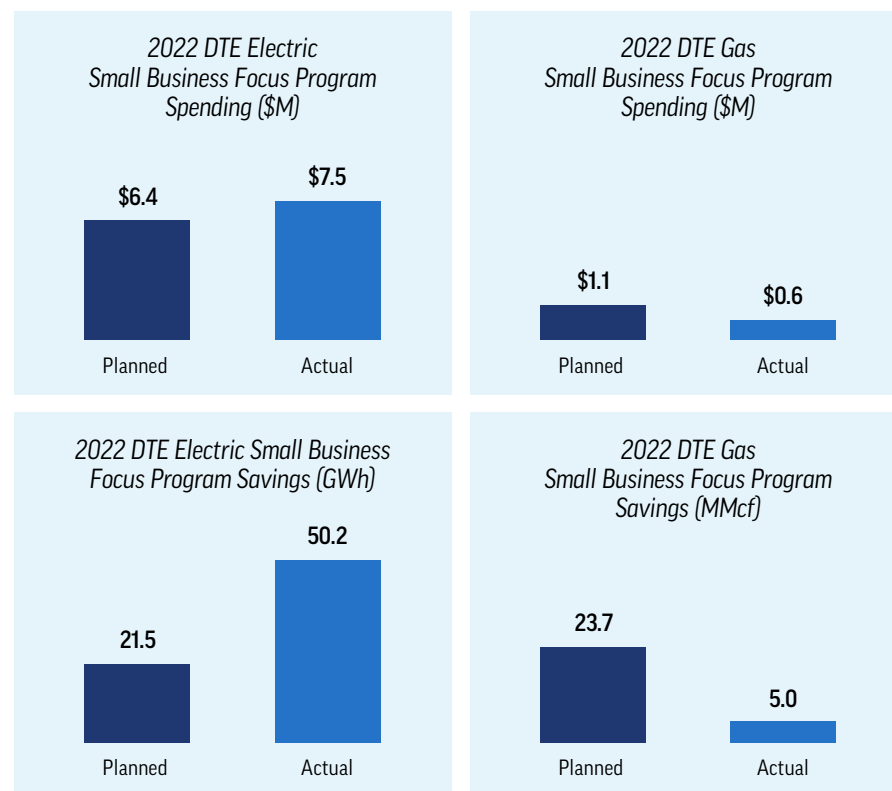
Program Description

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.



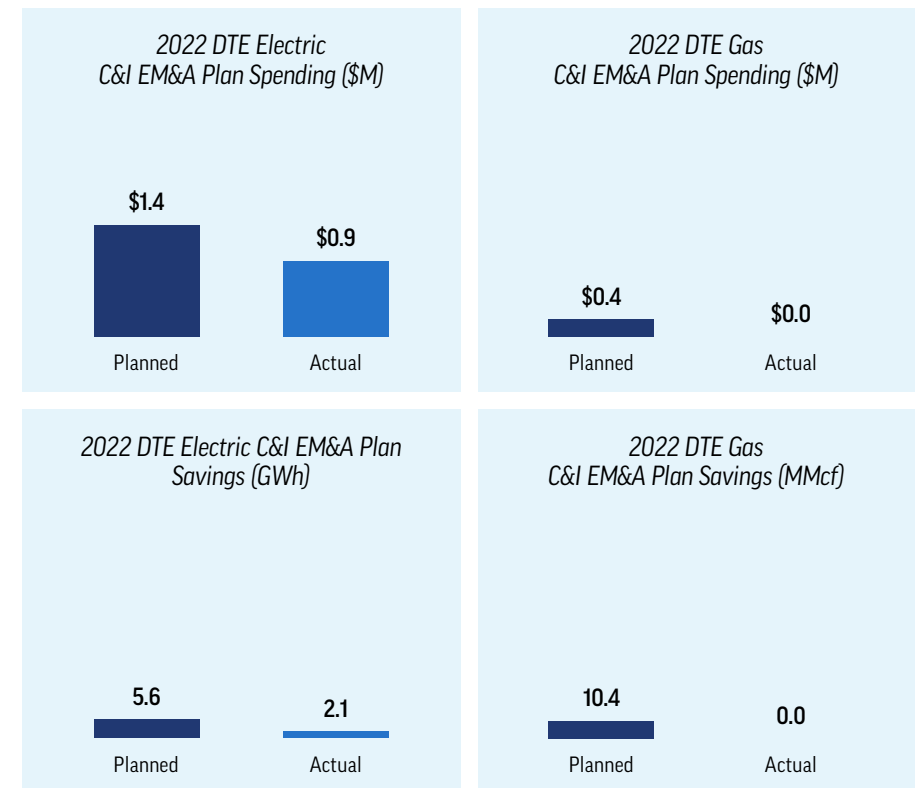
Program Description

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

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.



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.

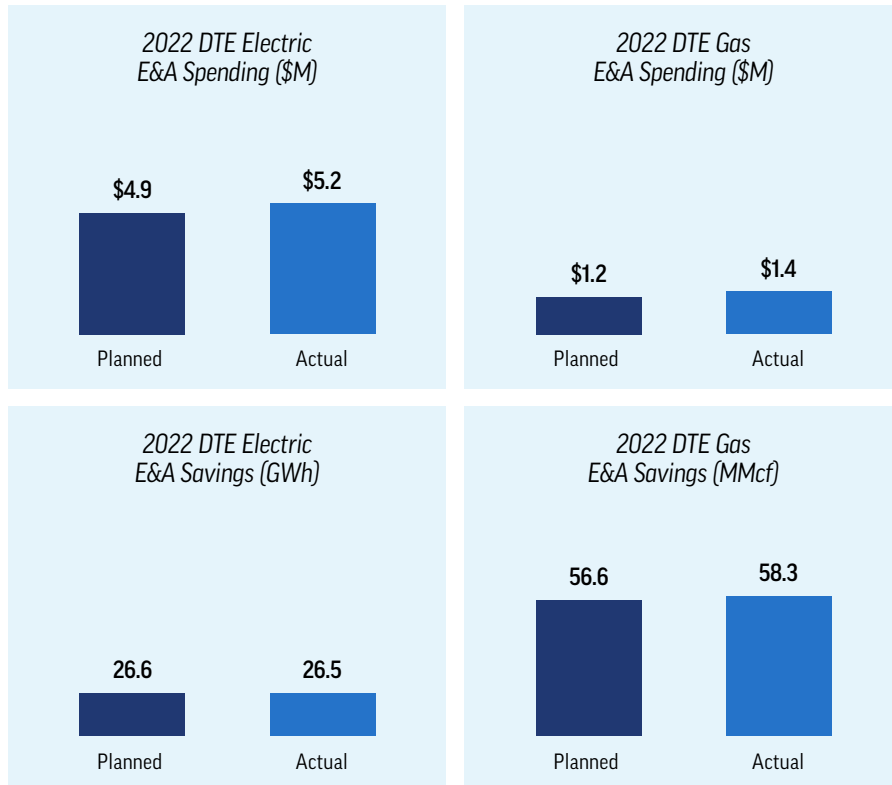
Residential

- 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

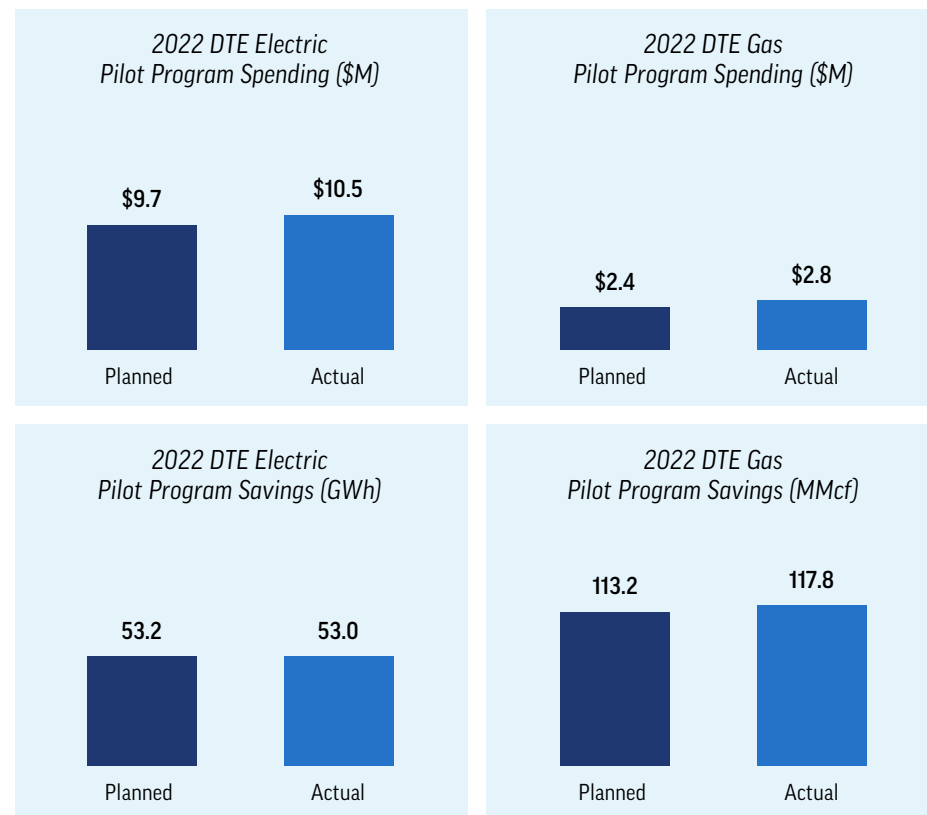
The Resolute Building Intelligence pilot is implemented along with the C&I Retro-Commissioning program to validate the results of participating customers. The pilot uses Resolute Building Intelligence (Resolute®) software to validate the energy conservation measures of the C&I Retro-Commissioning program 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
CLEAResult	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.

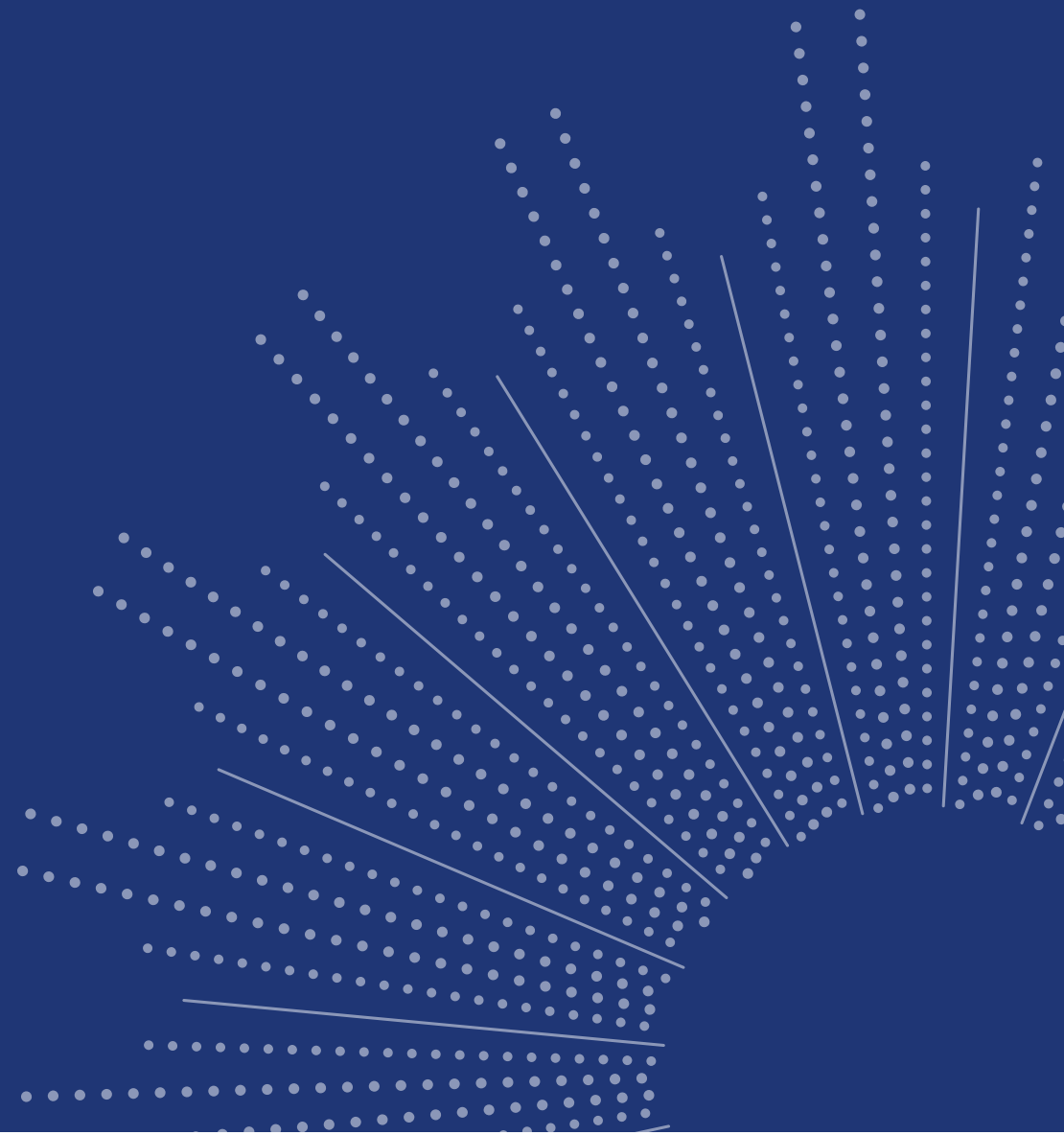
Program Accomplishments

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.

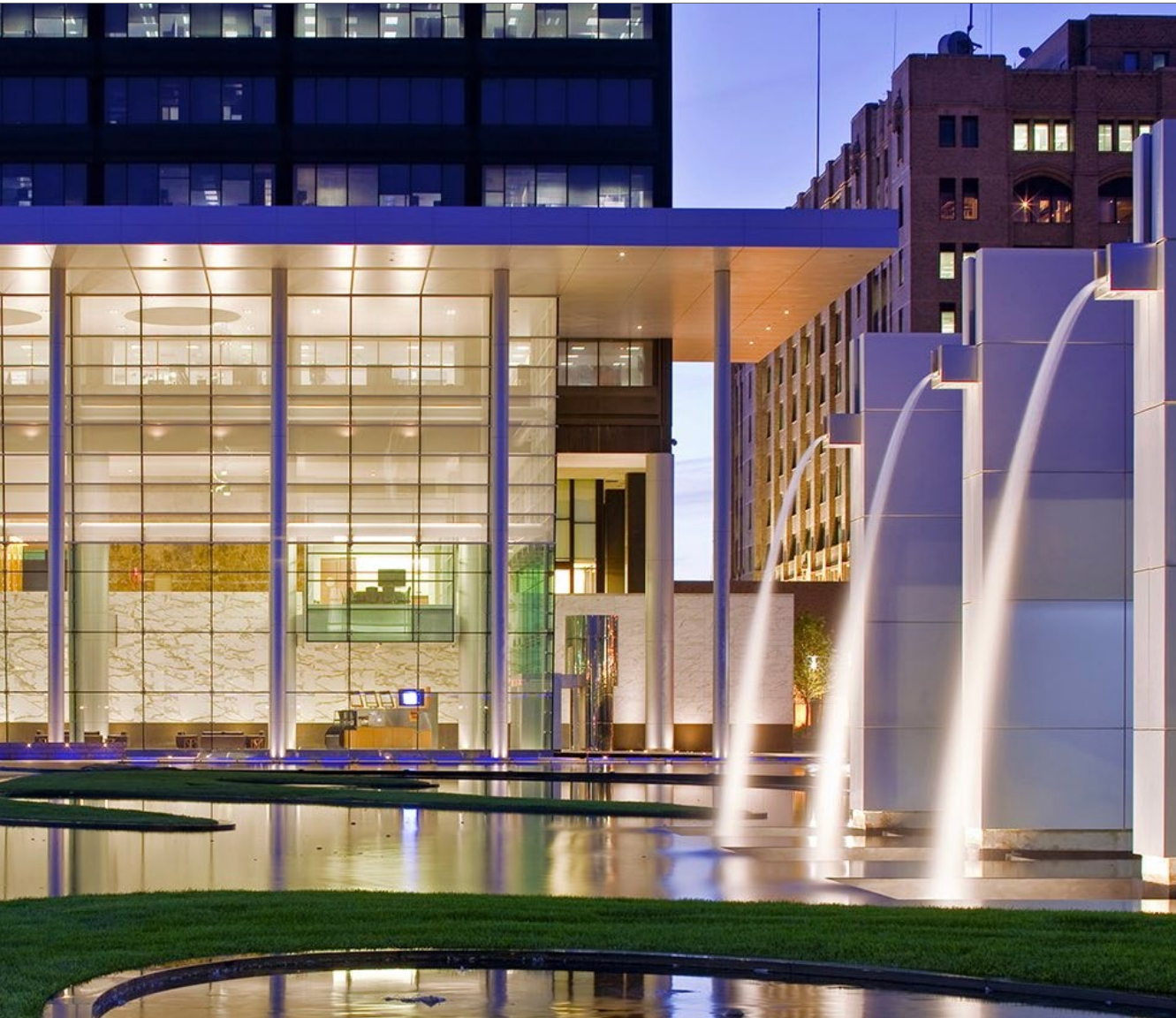
To give some perspective on the magnitude of this effort, the following are some of DTE's 2022 accomplishments:

- 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.

Michigan Public Service Commission
DTE Electric Company
DTE Electric Company and DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation

Case No.: U-21313
Witness: K.L. BILYEU
Exhibit: A-2
Page: 1 of 2

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Line No.	DTE Electric Energy Waste Reduction Programs	USRCT	CCE (\$/kWh)	2022 Planned MWh Savings	2022 Planned Cost (\$)	2022 Actual MWh Savings	2022 Actual Cost (\$)	Variance - Over / (Under) MWh Savings	Variance - Over / (Under) Cost (\$)
	Residential								
1	Residential ENERGY STAR Products	0.9	\$ 0.05	66,889	\$ 13,639,092	73,497	\$ 15,801,775	6,608	\$ 2,162,682
2	Appliance Recycling	1.4	\$ 0.03	30,276	6,828,790	30,574	7,178,830	298	350,041
3	Heating, Ventilation & Air Conditioning (HVAC)	0.8	\$ 0.07	3,865	4,331,377	3,920	3,893,866	55	(437,511)
4	Multifamily	0.4	\$ 0.10	774	135,726	393	135,287	(381)	(439)
5	Home Energy Consultation (HEC)	0.3	\$ 0.13	7,648	5,466,003	7,596	5,192,703	(52)	(273,300)
6	Audit and Weatherization	0.6	\$ 0.06	1,241	1,918,361	739	1,163,293	(502)	(755,067)
7	School Program	3.8	\$ 0.01	10,272	1,614,523	21,389	1,133,076	11,117	(481,446)
8	Home Energy Efficiency Kits	8.3	\$ 0.00	3,486	740,799	591	11,684	(2,896)	(729,115)
9	New Home Construction	2.5	\$ 0.02	1,663	1,281,890	3,401	1,387,826	1,738	105,936
10	Home Energy Reports	0.9	\$ 0.04	39,500	2,219,925	68,912	2,979,074	29,412	759,149
11	DTE Insight			8,000	2,282,881	-	806	(8,000)	(2,282,075)
12	Emerging Measures and Approaches			730	604,989	-	-	(730)	(604,989)
13	Residential Utility Shared Savings					4,255		4,255	-
14	Administration & Infrastructure				3,670,215		3,963,469		293,255
15	Residential Program Total	0.9	\$ 0.05	174,344	\$ 44,734,570	215,267	\$ 42,841,690	40,923	\$ (1,892,880)
	Income-Qualified								
16	Income-Qualified attributed to Energy Efficiency Assistance	0.4	\$ 0.09	12,311	\$ 17,407,961	40,739	\$ 18,961,102	28,428	\$ 1,553,141
17	Income-Qualified attributed to Multifamily Units	0.3	\$ 0.11	6,308	7,765,284	8,394	10,841,827	2,086	3,076,543
18	Income-Qualified attributed to Home Energy Consultation	0.2	\$ 0.16	3,624	3,138,268	3,528	3,309,762	(96)	171,494
19	Income-Qualified attributed to Utility Shared Savings					552		552	-
20	Income-Qualified Administration & Infrastructure				501,079		468,426		(32,653)
21	Income-Qualified Program Total	0.4	\$ 0.10	22,243	\$ 28,812,592	53,213	\$ 33,581,116	30,970	\$ 4,768,524
	Commercial & Industrial (C&I)								
22	Prescriptive	3.9	\$ 0.01	290,673	\$ 26,739,783	233,109	\$ 29,859,924	(57,564)	\$ 3,120,141
23	Non-Prescriptive	2.9	\$ 0.01	133,486	19,734,315	82,573	13,008,175	(50,913)	(6,726,140)
24	Retro-Commissioning	0.8	\$ 0.05	14,720	2,984,150	15,319	2,948,698	599	(35,452)
25	Strategic Energy Management	0.7	\$ 0.05	15,669	2,411,979	23,516	3,316,858	7,847	904,880
26	Business Energy Consultation	0.8	\$ 0.04	9,801	3,734,844	7,237	2,764,385	(2,564)	(970,459)
27	Mid-Stream Lighting	6.5	\$ 0.01	78,331	5,475,330	77,595	5,373,451	(736)	(101,878)
28	Mid-Stream Food Service	0.9	\$ 0.04	3,501	1,054,560	1,339	754,286	(2,162)	(300,274)
29	Mid-Stream HVAC	2.6	\$ 0.02	7,679	1,903,483	9,264	2,934,468	1,585	1,030,985
30	Energy Star Retail Lighting	3.2	\$ 0.01	19,316	1,149,796	20,510	842,911	1,193	(306,886)
31	Multifamily Common Areas	1.1	\$ 0.03	987	535,811	2,473	576,130	1,486	40,319
32	Find and Fix	0.3	\$ 0.13	5,275	816,856	7,366	1,035,409	2,092	218,553
33	Small Business Focus	2.5	\$ 0.02	21,545	6,448,546	50,243	7,519,157	28,698	1,070,611
34	Emerging Measures and Approaches	0.9	\$ 0.04	5,565	1,381,911	2,074	935,332	(3,492)	(446,579)
35	Self Direct	21.7	\$ 0.00	3,454	51,129	2,760	51,000	(694)	(129)
36	C&I Utility Shared Savings					3,407		3,407	-
37	Administration & Infrastructure				3,828,899		4,615,663		786,763
38	C&I Program Total	2.5	\$ 0.02	610,001	\$ 78,251,392	538,783	\$ 76,535,847	(71,218)	\$ (1,715,545)
	Other Programs and Costs								
39	Pilot Program	2.0	\$ 0.02	53,182	\$ 9,708,460	53,035	\$ 10,452,426	(147)	\$ 743,965
40	Education Program	2.1	\$ 0.02	26,591	4,854,230	26,541	5,230,757	(50)	376,526
41	Evaluation, Measurement & Verification (EM&V)				6,046,428		6,046,784		357
42	Other Programs and Costs Total			79,772	\$ 20,609,118	79,576	\$ 21,729,966	(196)	\$ 1,120,848
43	Total Costs & Energy Savings (1)	1.86	\$ 0.02	886,360	\$ 172,407,673	886,840	\$ 174,688,620	479	\$ 2,280,947

(1) Portfolio UCT includes performance incentive and excludes Income-Qualified

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Program Costs, Energy Savings, and Cost-Effectiveness

Case No.: U-21313
Witness: K.L. BILYEU
Exhibit: A-2
Page: 2 of 2

Line No.	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	DTE Gas Energy Waste Reduction Programs	USRCT	CCE (\$/Mcf)	2022 Planned Net Mcf Savings	2022 Planned Cost (\$)	2022 Actual Net Mcf Savings	2022 Actual Cost (\$)	Variance - Over / (Under) Net Mcf Savings	Variance - Over / (Under) Cost (\$)
	Residential								
1	Residential ENERGY STAR Products	2.1	\$ 0.16	24,895	\$ 400,443	28,086	\$ 242,200	3,192	\$ (158,243)
2	Heating, Ventilation & Air Conditioning (HVAC)	2.1	\$ 0.15	262,003	5,121,488	242,943	4,479,004	(19,060)	(642,484)
3	Multifamily	0.3	\$ 1.16	9,207	161,855	3,960	124,413	(5,248)	(37,442)
4	Home Energy Consultation (HEC)	0.7	\$ 0.48	21,160	1,259,095	33,966	1,524,680	12,805	265,585
5	Audit and Weatherization	1.1	\$ 0.24	45,192	1,531,350	29,556	1,492,021	(15,636)	(39,329)
6	School Program	3.0	\$ 0.11	122,668	599,309	168,524	752,251	45,856	152,942
7	Home Energy Efficiency Kits			7,200	110,598		(1)	(7,200)	(110,598)
8	New Home Construction	2.2	\$ 0.13	43,014	1,039,670	71,320	1,525,534	28,305	485,864
9	Home Energy Reports	1.5	\$ 0.27	193,547	441,331	260,774	597,437	67,227	156,106
10	DTE Insight			30,000	159,000	-	-	(30,000)	(159,000)
11	Emerging Measures and Approaches			22,665	448,436	-	-	(22,665)	(448,436)
12	Residential Utility Shared Savings					42,537		42,537	-
13	Administration & Infrastructure				1,824,075		1,641,500		(182,576)
14	Residential Program Total	1.3	\$ 0.25	781,551	\$ 13,096,651	881,666	\$ 12,379,039	100,115	\$ (717,612)
	Income-Qualified								
15	Income-Qualified attributed to Energy Efficiency Assistance	0.2	\$ 1.31	69,986	\$ 9,491,434	50,890	\$ 10,431,000	(19,096)	\$ 939,566
16	Income-Qualified attributed to Multifamily	0.6	\$ 0.51	35,661	4,715,168	101,027	4,833,649	65,366	118,481
17	Income-Qualified attributed to Home Energy Consultation	0.9	\$ 0.35	29,655	1,185,117	31,949	1,185,118	2,294	1
18	Income-Qualified attributed to Utility Shared Savings					4,717		4,717	-
19	Income-Qualified Administration & Infrastructure				102,856		164,521		61,665
20	Income-Qualified Program Total	0.4	\$ 0.77	135,302	\$ 15,494,575	188,584	\$ 16,614,288	53,282	\$ 1,119,713
	Commercial & Industrial (C&I) and End User Transport (EUT)								
21	Prescriptive	5.4	\$ 0.05	427,174	\$ 2,614,021	497,929	\$ 3,882,547	70,755	\$ 1,268,526
22	Non-Prescriptive	1.0	\$ 0.30	149,344	1,946,662	37,354	1,568,453	(111,990)	(378,209)
23	Retro-Commissioning	0.9	\$ 0.40	10,060	191,182	16,839	364,000	6,778	172,818
24	Strategic Energy Management	1.7	\$ 0.23	55,086	446,018	86,012	545,897	30,926	99,880
25	Business Energy Consultation	1.8	\$ 0.18	29,424	980,148	28,368	476,000	(1,056)	(504,148)
26	Mid-Stream Food Service	1.2	\$ 0.27	3,031	149,734	10,478	336,868	7,447	187,135
27	Mid-Stream HVAC	3.3	\$ 0.08	75,775	1,247,413	80,776	1,180,916	5,001	(66,496)
28	Multifamily Common Areas	0.8	\$ 0.46	7,375	133,916	2,805	38,088	(4,570)	(95,828)
29	Find and Fix	0.2	\$ 1.86	8,280	284,813	7,263	228,000	(1,017)	(56,813)
30	Small Business Focus	0.7	\$ 0.50	23,728	1,065,261	5,032	631,610	(18,696)	(433,651)
31	Emerging Measures and Approaches			10,366	416,658	-	-	(10,366)	(416,658)
32	C&I Utility Shared Savings					66,869		66,869	-
33	Administration & Infrastructure				863,973		1,161,967		297,993
34	C&I/EUT Program Total	2.7	\$ 0.11	799,642	\$ 10,339,799	839,724	\$ 10,414,347	40,082	\$ 74,548
	Other Programs and Costs								
35	Pilot Program	1.6	\$ 0.21	113,176	\$ 2,434,711	117,818	\$ 2,845,356	4,642	\$ 410,645
36	Education Program	1.6	\$ 0.21	56,588	1,217,356	58,269	1,407,214	1,681	189,858
37	Evaluation, Measurement & Verification (EM&V)				1,895,156		1,893,572		(1,584)
38	Other Programs and Costs Total			169,763	\$ 5,547,223	176,087	\$ 6,146,141	6,324	\$ 598,918
39	Total Costs & Energy Savings (1)	1.83	\$ 0.17	1,886,258	\$ 44,478,249	2,086,061	\$ 45,553,815	199,802	\$ 1,075,566

(1) Portfolio UCT includes performance incentive and excludes Income-Qualified

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Pilot and Education Program Savings Calculation

Case No.: U-21313
Witness: K.L. BILYEU
Exhibit: A-3
Page: 1 of 2

	(a)	(b)	(c)
Line No.	Pilot Program Savings Calculation	Source	Amount
1	Planned Energy Savings (MWh)	U-20876, Exhibit A-4, Col. (e), Line 40	886,360
2	Program Spend	Exhibit A-10, p1, Column (f) Line 9 + Line 12	\$ 174,688,620
3	MWh / Program Spend	Line 1 / Line 2	0.005074
4	Pilot Spend	Exhibit A-10 p1, Line 4, Column (f)	\$ 10,452,426
5	Pilot Savings (MWh) (1)	Line 3 * Line 4	<u><u>53,035</u></u>

Notes:
(1) Residential pilot savings 20,104 MWh (Line 5 * Exhibit A-13, Column (b) Line 8); C&I pilot savings 32,931 MWh (Line 5 * Exhibit A-13, Column (b) Line 9)

Line No.	Education Program Savings Calculation	Source	Amount
1	Planned Energy Savings (MWh)	U-20876, Exhibit A-4, Col. (e), Line 40	886,360
2	Program Spend	Exhibit A-10, p1, Column (f) Line 9 + Line 12	\$ 174,688,620
3	MWh / Program Spend	Line 1 / Line 2	0.005074
4	Education Spend	Exhibit A-10 p1, Line 5, Column (f)	\$ 5,230,757
5	Education Savings (MWh) (2)	Line 3 * Line 4	<u><u>26,541</u></u>

Notes:
(2) Residential education savings 22,560 MWh (Line 5 * 85%); C&I education savings 3,981 MWh (Line 5 * 15%)

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Pilot and Education Program Savings Calculation

Case No.: U-21313
Witness: K.L. BILYEU
Exhibit: A-3
Page: 2 of 2

	(a)	(b)	(c)
Line No.	Pilot Program Savings Calculation	Source	Amount
1	Planned Energy Savings (Mcf)	U-20881, Exhibit A-4, Col. (e), Line 36	1,886,258
2	Program Spend	Exhibit A-14, p.1, Column (f) Line 9 + Line 12	\$ 45,553,815
3	Mcf / Program Spend	Line 1 / Line 2	0.041407
4	Pilot Spend	Exhibit A-14 p1, Line 4, Column (f)	\$ 2,845,356
5	Pilot Savings (Mcf) (1)	Line 3 * Line 4	117,818

Notes:

(1) Residential pilot savings 66,021 Mcf (Line 5 * Exhibit A-17, Column (b) Line 8); C&I/EUT pilot savings 51,797 Mcf (Line 5 * Exhibit A-17, Column (b) Line 9)

Line No.	Education Program Savings Calculation	Source	Amount
1	Planned Energy Savings (Mcf)	U-20881, Exhibit A-4, Col. (e), Line 36	1,886,258
2	Program Spend	Exhibit A-14, p.1, Column (f) Line 9 + Line 12	\$ 45,553,815
3	Mcf / Program Spend	Line 1 / Line 2	0.041407
4	Education Spend	Exhibit A-14 p1, Line 5, Column (f)	\$ 1,407,214
5	Education Savings (Mcf) (2)	Line 3 * Line 4	58,269

Notes:

(2) Residential education savings 48,946 Mcf (Line 5 * 84%); C&I education savings 9,323 Mcf (Line 5 * 16%)

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Energy Credits

Case No.: U-21313
Witness: K.L. BILYEU
Exhibit: A-4
Page: 1 of 2

(a)		(b)	(c)
Line No.	Description	Source	EWR Credits (1 EWR Credit = 1 MWh saved)
1	EWR Credit Beginning year balance	(1)	-
2	Credits earned in current year	(2)	886,840
3	Credits needed for EWR standard compliance	(3)	<u>443,180</u>
4	EWR Credit Excess (deficiency) relative to standard	L1 + L 2 - L 3	<u>443,660</u>
5	Credits used for Performance Incentive	(4)	221,590
6	Credits substituted for Renewable Energy Credits	L4 - L5	<u>222,070</u>
7	EWR Ending year Credit Balance	L4 - L5 - L6	<u>-</u>

Source:

- (1) U-21206, Exhibit A-4, Line 7, Column (c)
- (2) Exhibit A-8 p1, Column (c), Line 39
- (3) U-20876 Exhibit A-4, line 42, Column (g)
- (4) Exhibit A-5 p1, Column (a), Line 2 - Line 1

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Energy Credits

Case No.: U-21313
 Witness: K.L. BILYEU
 Exhibit: A-4
 Page.: 2 of 2

	(a)	(b)	(c)
Line No.	Description	Source	EWR Credits (1 EWR Credit = 1 Mcf saved)
1	EWR Credit Beginning year balance	(1)	-
2	Credits earned in current year	(2)	2,086,061
3	Credits needed for EWR standard compliance	(3)	<u>1,414,694</u>
4	EWR Credit Excess (deficiency) relative to standard	L1 + L 2 - L 3	671,367
5	Credits used for Performance Incentive	Line 4	671,367
6	Credits substituted for Renewable Energy Credits	N/A	<u> </u>
7	EWR Ending year Credit Balance	L4 - L5	<u><u>-</u></u>

Source:

(1) U-21206, Exhibit A-4, line 7, Column (c)

(2) Exhibit A-8 p2, Column (c), Line 36

(3) U-20881, Exhibit A-4, line 38, Column (e)

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Performance Incentive

Case No.: U-21313
 Witness: K.L. BILYEU
 Exhibit: A-5
 Page: 1 of 2

Line No.	First Year Savings	(a)		Source:
1	Legislated Minimum First Year Savings	443,180	MWh	(1)
2	First Year Savings at 1.5%	664,770	MWh	(2)
3	Verified First Year Savings	886,840	MWh	(3)
4	Performance Incentive Earned	20%		(4)
<hr/>				
	Lifetime Savings			
5	Verified First Year Savings	886,840	MWh	(3)
6	Weighted Average Measure Life	8.31	Years	(5)
7	Verified Lifetime Savings	7,488,755	MWh	(6)
8	Lifetime Energy Savings required for Maximum Performance Incentive	8,420,420	MWh	(4)
9	Performance Incentive Earned	15.04%		(4)
	Income-Qualified Spend			
10	Income-Qualified Spend Target required for Maximum Performance Incentive	\$ 31,812,592		(4)
11	Income-Qualified Spend	\$ 33,581,116		(7)
12	Performance Incentive Earned	2%		(4)
	Income Qualified Electrically Heated Buildings & Wx Measures			
13	Income Qualified Electrically Heated Buildings & Wx Measures Target for Maximum Perfc	400	Count	(4)
14	Income Qualified Electrically Heated Buildings & Wx Measures	422	Count	(8)
15	Performance Incentive Earned	3%		(4)
16	Total Performance Incentive Earned	20%		(9)

Source:

- (1) (3) U-20876 Exhibit A-4, line 42, Column (g)
- (2) Line 1 x 1.5%
- (3) Exhibit A-8 p1, line 39, Column (c)
- (4) Attachment A of Settlement for case U-20876
- (5) Exhibit A-8 p1, line 42, Column (c)
- (6) Exhibit A-8 p1, line 45, Column (c)
- (7) Exhibit A-2 p1, line 20, Column (g)
- (8) Company records (Energy Optimization Program Tracker)
- (9) Attachment A of Settlement for case U-2076; Lesser of L4 or (L9+L12+L15)

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Performance Incentive

Case No.: U-21313
Witness: K.L. BILYEU
Exhibit: A-5
Page: 2 of 2

Line No.	First Year Savings	(a)		Source:
1	Legislated Minimum First Year Savings	1,414,694	Mcf	(1)
2	First Year Savings at 1.0%	1,886,259	Mcf	(2)
3	Verified First Year Savings	2,086,061	Mcf	(3)
4	Performance Incentive Earned	20%		(4)
<hr/>				
	Lifetime Savings			
5	Verified First Year Savings	2,086,061	Mcf	(3)
6	Weighted Average Measure Life	11.29	Years	(5)
7	Verified Lifetime Savings	25,111,242	Mcf	(6)
8	Lifetime Energy Savings required for Maximum Performance Incentive	21,497,973	Mcf	(4)
9	Performance Incentive Earned	16%		(4)
	Income-Qualified Spend			
10	Income-Qualified Spend Target required for Maximum Performance Incentive	\$ 16,244,575		(4)
11	Income-Qualified Spend	\$ 16,614,288		(7)
12	Performance Incentive Earned	2%		(4)
	Income Qualified Wx Measures			
13	Income Qualified Wx Measures Target for Maximum Performance Incentive	3,250	Count	(4)
14	Income Qualified Wx Measures	4,142	Count	(8)
15	Performance Incentive Earned	3%		(4)
16	Total Performance Incentive Earned	20%		(9)

Source:

- (1) U-20881, Exhibit A-4, line 38, Column (e)
- (2) U-20881, Exhibit A-4, line 37, Column (e)
- (3) Exhibit A-8 p2, line 36, Column (c)
- (4) Attachment A of Settlement for case U-20881
- (5) Exhibit A-8 p2, line 39, Column (c)
- (6) Exhibit A-8 p2, line 42, Column (c)
- (7) Exhibit A-2 p2, line 19, Column (g)
- (8) Company records (Energy Optimization Program Tracker)
- (9) Attachment A of Settlement for case U-20881; Lesser of L4 or (L9+L12+L15)

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

QUALIFICATIONS

AND

DIRECT TESTIMONY

OF

REBECCA M. MALFROID

DTE ELECTRIC COMPANY AND DTE GAS COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF REBECCA M. MALFROID

Line
No.

1 **Q1. What is your name, business address and by whom are you employed?**

2 A1. My name is Rebecca M. Malfroid (she/her/hers). My business address is: One
3 Energy Plaza, Detroit, MI 48226. I am employed by DTE Electric Company.

4

5 **Q2. On whose behalf are you testifying?**

6 A2. I am testifying on behalf of DTE Electric Company (DTE Electric) and DTE Gas
7 Company (DTE Gas) (collectively, DTE).

8

9 **Q3. What is your educational background?**

10 A3. I graduated from the Wayne State University with a Bachelor of Science Degree in
11 Mathematics in 2014.

12

13 **Q4. What is your work experience?**

14 A4. In January 2014, I was hired by DTE Electric as a Student Co-op in the Energy
15 Optimization (EO) Evaluation Measurement and Verification (EM&V) team, and
16 in September 2014, I was hired as an Associate Marketing Analyst for the same
17 team within the Business Planning and Development Department. My
18 responsibilities in this role included supporting the evaluation of the EO programs
19 through impact and process evaluation, participating in the state EO Collaborative,
20 and internal reporting. In 2017, I was promoted to the position of Marketing Analyst
21 for the Energy Waste Reduction (EWR, formerly EO) EM&V and my
22 responsibilities included leading the EM&V efforts for the residential programs,
23 supporting EWR regulatory filings, participating in the state EWR Collaborative
24 and technical subcommittee, running cost-effectiveness testing using DSM^{More},
25 Demand Side Management Option/Risk Evaluator. In 2018 I was promoted to

Line
No.

1 Principal Marketing Analyst for the EWR Strategy team. My responsibilities in this
2 role included running cost-effectiveness testing and building EWR models for plan
3 filings. One of my key responsibilities was providing support for EWR witnesses
4 in regulatory filings such as EWR reconciliations, EWR Plans, as well as the
5 Company's most recent IRP. My duties included drafting testimony, preparing
6 exhibits, researching and providing analysis for audit and discovery requests in
7 such cases. In 2021, I became a Principal Marketing Specialist and my
8 responsibilities included developing EWR plan modeling sensitivities, running
9 cost-effectiveness testing for EWR filings, and strategic planning.

10

11 **Q5. What is your current position?**

12 A5. In 2022, I became a Marketing Program Manager. I am responsible for developing
13 EWR models for planning, running cost-effectiveness testing, regulatory support,
14 and strategic planning.

15

16 **Q6. Are you a member of any professional organizations?**

17 A6. I am a member of the Association of Energy Services Professionals (AESP). AESP
18 is an organization that provides professional development programs, a network of
19 energy practitioners, and promotes the transfer of knowledge and experience to
20 promote energy efficiency programs.

21

22 **Q7. Have you previously testified before the Michigan Public Service Commission**
23 **(MPSC or Commission)?**

24 A7. Yes. I provided testimony in the following cases:

25 U-20866 2020 DTE Electric EWR Reconciliation

Line
No.

1 U-20871 2020 DTE Gas EWR Reconciliation

2 U-20876 DTE Electric 2022-2023 EWR Plan

3 U-20881 DTE Gas 2022-2023 EWR Plan

4 U-21206 2021 DTE Electric and DTE Gas EWR Reconciliation

5

6 **Q8. What is the purpose of your testimony in this proceeding?**

7 A8. The purpose of my testimony is to support DTE Electric's and DTE Gas's approach
8 to determining cost-effectiveness, including details concerning the method used to
9 determine cost-effectiveness and the tools used for its calculation. I also provide
10 the calculation results showing the 2022 EWR electric and gas programs were cost-
11 effective.

12

13 **Q9. Are you sponsoring any exhibits in this proceeding?**

14 A9. No.

15

16 **Cost-Effectiveness Tests**

17 **Q10. What is the purpose of the cost-effectiveness tests?**

18 A10. Cost-effectiveness tests (CETs) are performed to ensure that energy savings are
19 achieved in a cost-effective manner for the utility and its customers. DTE uses the
20 Utility System Resource Cost Test (USRCT) to measure the cost-effectiveness of
21 its EWR programs.

22

23 **Q11. How did DTE determine the cost-effectiveness of the 2022 EWR programs?**

24 A11. The DSMore cost analysis tool was used to calculate and report the cost-
25 effectiveness of the 2022 EWR programs using the USRCT. Consistent with PA

Line
No.

1 342, the USRCT is defined as the total net present value of life cycle avoided costs,
2 divided by the sum of program costs.

3

4 **Q12. What inputs are used in running DSMore?**

5 A12. There are two major groups of inputs used in DSMore. These include utility input
6 assumptions and the program inputs.

7

8 Utility input assumptions contain information that is specific to the utility and
9 include items such as load shape, the commodity and non-commodity cost of
10 electricity, customer energy rates, line losses, weather, and discount rates. The
11 utility input assumptions used in this reconciliation analysis are primarily the same
12 as those used in developing DTE Electric's approved 2022-2023 EWR Plan (Case
13 No. 20876) and DTE Gas's approved 2022-2023 EWR Plan (Case No. U-20881).

14

15 Program inputs contain specific information about individual energy efficiency
16 measures that were installed as a result of the EWR programs. The major program
17 inputs consist of the measure type, measure unit, measure size, energy and demand
18 savings, the operations/implementation costs, incentive costs, participant costs,
19 participation levels, measure life, assumed hours, and applicable time of day or
20 seasonal impact.

21

22 **Q13. Where did you obtain the measure installation, measure life, and energy**
23 **savings data used in DSMore?**

24 A13. Guidehouse, DTE's independent evaluation contractor, provided the number of
25 verified measure units that were installed for each measure used in DSMore. They

Line
No.

1 also provided the measure life information, total kWh, kW, and CCF savings per
2 measure, IRAF, NTGR, incremental cost, and installed cost information.

3

4 **Q14. Where did you obtain the cost data used in DSMore?**

5 A14. All EWR-related costs are separately identified and recorded in DTE's accounting
6 systems. Witness Murray discusses the detailed financial data in his testimony.

7

8 **Q15. What cost data was used in the CETs?**

9 A15. CETs were calculated using participant costs, customer incentive costs, program
10 administrative and implementation costs, performance incentive costs, education
11 costs, pilot costs, and evaluation costs. Participant costs are the incremental cost
12 that the customer pays to go from a baseline technology to an eligible energy
13 efficient technology. Customer incentive costs are the amounts that were paid to
14 the customer in the form of a discount or rebate. Program administrative and
15 implementation costs are incurred by DTE and third parties in order to execute the
16 EWR programs. Performance incentive costs are the incentive earned by the utility
17 for exceeding energy savings legislative goals and achieving other targets that make
18 up the incentive determination. The education, pilot, and evaluation costs were also
19 provided and factored into the entire DTE Electric and DTE Gas program portfolio
20 level of the USRCT results. Pursuant to the Commission-approved settlement
21 agreements in Case Nos. U-18262 and U-18268, the associated program evaluation
22 costs were also included in the program level USRCT test results for the Home
23 Energy Reports program.

24

25 **Q16. At what level of detail were the CETs calculated?**

Line
No.

1 A16. CETs were performed at the entire DTE Electric and DTE Gas EWR portfolio level
2 and at the program levels. The portfolio level includes all EWR programs except
3 for the income-qualified programs. Other levels tested include the aggregation of
4 1) residential programs (without income-qualified), 2) C&I programs, 3) pilot
5 programs, and 4) education programs. The income-qualified programs were
6 excluded from the aggregations as Section 71(4)(G) of PA 342 specifically
7 excludes income-qualified in the requirement for cost-effectiveness.
8

9 As indicated above, the CETs were also calculated at program levels. These levels
10 included the income-qualified programs, ten residential program groups, and
11 fourteen C&I program groups. The twelve residential program groups include: 1)
12 ENERGY STAR® products, 2) Appliance Recycling (DTE Electric only), 3)
13 Heating, Ventilation, and Air Conditioning (HVAC), 4) Multifamily, 5) Home
14 Energy Consultation, 6) Audit and Weatherization, 7) Schools Program, 8) Home
15 Energy Efficiency Kits, 9) New Home Construction, and 10) Home Energy
16 Reports. The fourteen C&I groups include: 1) Prescriptive, 2) Non-Prescriptive, 3)
17 Retro-Commissioning, 4) Strategic Energy Management, 5) Business Energy
18 Consultation, 6) Mid-Stream Lighting (DTE Electric only), 7) Mid-Stream Food
19 Service, 8) Mid-Stream HVAC, 9) Energy Star Retail Lighting (DTE Electric only),
20 10) Multifamily Common Areas, 11) Find and Fix, 12) Small Business Focus, 13)
21 Emerging Measures and Approaches, and 14) Self Direct (DTE Electric only).
22

23 **Q17. Were the 2022 DTE Electric and 2022 DTE Gas EWR programs cost-**
24 **effective?**

Line
No.

1 A17. Yes. DTE Electric's approved 2022-2023 EWR Plan and DTE Gas's approved
2 2022-2023 EWR Plan were designed to achieve planned energy savings minimums
3 at specific costs. Based on the analysis performed using DSMore, the DTE EWR
4 electric and gas portfolios of programs passed the CETs in accordance with the
5 guidelines outlined by Attachment E, Section 2f of the MPSC's December 4, 2008
6 Temporary Order, in Case No. U-15800.

7

8 As shown in Witness Bilyeu's Exhibit A-2, page 1, line 43, column (b), the USRCT
9 score for the entire DTE Electric portfolio without income-qualified was 1.86. The
10 electric CETs results in column (b) are: (1) aggregated by the entire portfolio of
11 DTE Electric EWR programs (without income-qualified) on line 43; (2) aggregated
12 by customer classes residential and C&I, pilot, and education on lines (15), (38),
13 (39) and (40) respectively. The electric results are also aggregated by programs
14 specific to the customer classes. The electric CET results for the residential
15 programs are shown on lines 1 through 10, and the electric CET results for C&I
16 programs are shown on lines 22 through 35. The income-qualified program's
17 electric cost-effectiveness results are provided on lines 16 through 18, and the
18 income-qualified aggregation is on line 21.

19

20 As shown in Witness Bilyeu's Exhibit A-2, page 2, line 39, column (b), the USRCT
21 score for the entire DTE Gas portfolio without income-qualified was 1.83. The gas
22 CETs results in column (b) are: (1) aggregated by the entire portfolio of DTE Gas
23 EWR programs (without income-qualified) on line 39; (2) aggregated by customer
24 classes residential and C&I, pilot, and education on lines (14), (34), (35) and (36)
25 respectively. The gas results are also aggregated by programs specific to the

Line
No.

1 customer classes. The gas CET results for the residential programs are shown on
2 lines 1 through 9, and the gas CET results for C&I programs are shown on lines 21
3 through 30. The income-qualified program's gas cost-effectiveness results are
4 provided on lines 15 through 17, and the income-qualified aggregation is on line
5 20.

6

7 **Q18. Does this conclude your direct testimony?**

8 A18. Yes, it does.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

QUALIFICATIONS

AND

DIRECT TESTIMONY

OF

THAC K. NGUYEN

DTE ELECTRIC COMPANY AND DTE GAS COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF THAC K. NGUYEN

Line
No.

1 **Q1. What is your name, business address and by whom are you employed?**

2 A1. My name is Thac K. Nguyen (he/him/his.) My business address is: One Energy
3 Plaza, Detroit, MI 48226. I am employed by DTE Electric Company with the
4 position of Manager of Residential, Commercial and Industrial Pilots in the Energy
5 Waste Reduction (EWR) group.

6
7 **Q2. On whose behalf are you testifying?**

8 A2. I am testifying on behalf of DTE Electric Company (DTE Electric) and DTE Gas
9 Company (DTE Gas) (collectively, DTE).

10

11 **Q3. What is your educational background?**

12 A3. I graduated from the Washington University John M. Olin School of Business with
13 a Bachelor of Science in Business Administration in 2001.

14

15 **Q4. What is your work experience?**

16 A4. In 2001, I was hired by The Detroit Edison Company, which is now known as DTE
17 Electric. Over the years my role and responsibilities included managing multiple
18 residential and Commercial and Industrial (C&I) programs and services. My areas
19 of work included Customer Marketing, Customer Research & Information, Energy
20 Distribution President's Staff, Strategy & Corporate Development, Gas Field
21 Services, Federal Affairs and Environmental Initiatives. In 2014, I accepted the
22 position of Principal Marketing Specialist with the Energy Optimization group. My
23 primary job responsibilities included the program management of the Company's
24 HVAC Program, Home Performance Program, and the Insulation and Windows

Line
No.

1 Program. In 2019, I assumed the position of Principal Supervisor; and in 2021, I
2 was promoted to Manager in the Energy Waste Reduction group.

3

4 **Q5. Do you hold any certifications or are you a member of any professional**
5 **organizations?**

6 A5. I am a member of the Association of Energy Services Professionals (AESP). AESP
7 is an organization that provides professional development programs, a network of
8 energy practitioners, and promotes the transfer of knowledge and experience to
9 promote energy efficiency programs. I am a member of the Consortium for Energy
10 Efficiency (CEE) engaging on its Emerging Tech Committee. CEE is the United
11 States and Canadian consortium of gas and electric efficiency program
12 administrators; whose goal is to accelerate the development and availability of
13 energy efficient products and services. Finally, I am a Certified Energy Manager
14 (CEM) by the Association of Energy Engineers (AEE).

15

16 **Q6. What are your current duties and responsibilities?**

17 A6. As the Manager of Residential, Commercial and Industrial Pilots, I am responsible
18 for the development of new electric and gas offerings within the market rate
19 programs. Additionally, I am responsible for the EWR Contact Center, which
20 supports all EWR residential programs.

21

22 **Q7. Have you previously sponsored testimony before the Michigan Public Service**
23 **Commission (MPSC or Commission)?**

24 A7. Yes. I have sponsored testimony and exhibits before the MPSC in the following
25 cases:

Line
No.

1	<u>Case No.</u>	<u>Description</u>
2	U-20703	2019 DTE Electric Waste Reduction Reconciliation
3	U-20708	2019 DTE Gas Waste Reduction Reconciliation
4	U-20836	2022 DTE Electric General Rate Case
5	U-21206	2021 DTE Waste Reduction Reconciliation
6	U-21297	2023 DTE Electric General Rate Case

Line
No.

1

Purpose of Testimony

2 **Q8. What is the purpose of your testimony in this proceeding?**

3 A8. The purpose of my testimony in this proceeding is to describe the performance and
4 accomplishments of DTE's 2022 Energy Waste Reduction Residential, Income-
5 qualified, Pilots, and Education programs. My testimony will cover the following:

6 1. The objective of each residential EWR program that was deployed to
7 increase customer awareness and demand for energy efficient products and
8 services.

9 2. A description of the energy efficient measures and customer incentives that
10 were offered in 2022. I will describe adjustments that were made to program
11 delivery approaches and changes to incentive levels to respond to market
12 conditions.

13 3. The energy savings achieved for each residential EWR program. The actual
14 energy savings that are shown have been validated and provided by Witness
15 Rego. I will also show the participation (or applications) levels that were
16 processed for each residential EWR program.

17 4. The actual amount spent on the residential EWR program and how the
18 program costs compared to the 2022 EWR expenses approved by MPSC
19 Order in electric Case No. U-20876 and in gas Case No. U-20881. The
20 program costs that I will reflect are further supported by Witness Murray.

21 5. A description of the Pilot program.

22 6. A description of the Education program. I specifically provide examples of
23 the types of actions and projects undertaken in this program. I also detail
24 the method for determining the energy savings attributed to the Education
25 program and the resulting calculated savings.

Line
No.

1 **Q9. Are you sponsoring any exhibits in this proceeding?**

2 A9. No.

3

4 **Residential and Income-qualified Programs**

5 **Q10. What was the overall performance for DTE's residential and income-qualified**
6 **EWR programs?**

7 A10. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, lines 15 and 21, column
8 (f) and page 2, lines 14 and 20, column (f)), in 2022, DTE's residential EWR
9 programs achieved electric savings of 215,267 MWh and gas savings of 881,666
10 Mcf; income-qualified EWR programs achieved electric savings of 53,213 MWh
11 and gas savings of 188,584 Mcf, totaling 268,480 MWh and 1,070,250 Mcf which
12 is 37% and 17% above the plan, respectively. As shown in DTE Witness Bilyeu's
13 Exhibit A-2 (page 1, lines 15 and 21, column (g) and page 2, lines 14 and 20,
14 column (g)), in total, the residential EWR electric programs cost \$42.8 million and
15 gas programs cost \$12.4 million; income-qualified EWR electric programs cost
16 \$33.6 million and gas programs cost \$16.6 million, totaling \$76.4 million electric
17 and \$29 million gas which is 4% and 1% above the plan, respectively. The results
18 are shown on Exhibit A-2 of DTE Witness Bilyeu and are discussed in more detail
19 below.

20

21 **Q11. How did DTE implement the residential EWR programs in 2022?**

22 A11. DTE managed the programs by subcontracting certain aspects of the operations
23 when necessary. DTE used the following implementation contractors (ICs) in 2022
24 to implement its residential programs, as listed respectively:

Line
No.

- 1 • Ignite – HVAC, Audit & Weatherization and New Homes Construction
- 2 programs
- 3 • Solutions for Energy Efficient Logistics, LLC (SEEL) – Residential
- 4 ENERGY STAR® Products, Appliance Recycling and Energy Efficiency
- 5 Assistance programs
- 6 • National Energy Foundation – School Program
- 7 • Walker-Miller Energy Services, LLC – Multifamily, Income-Qualified
- 8 Multifamily and Home Energy Consultation (HEC) programs
- 9 • Oracle – Home Energy Reports (HER)

10

11 **Q12. How were customers made aware of DTE’s residential EWR programs?**

12 A12. DTE used various marketing tactics and community outreach events to promote
 13 and inform customers of its residential EWR programs. These marketing tactics
 14 included specific program information conveyed through DTE’s website, e-mail,
 15 social media, direct mail, bill inserts, newsletters, radio and television ads,
 16 billboards, and advertisements in local newspapers. In addition, DTE continued to
 17 deploy program-specific campaigns as it had in prior program years and outreach
 18 to promote and educate customers on the benefits of purchasing energy efficient
 19 products. Examples of program-specific campaigns included targeted marketing
 20 campaigns for select neighborhoods to promote in-home energy consultations with
 21 direct install measures, targeted social media campaigns to promote energy
 22 efficient measures through the DTE Energy Marketplace (Marketplace), and
 23 coordination with the DTE Revenue Management and Protection group to target
 24 customers on rate assistance plans through the Energy Efficiency Assistance
 25 program.

Line
No.

1 **Q13. Which residential EWR programs did DTE implement in 2022?**

2 A13. DTE implemented the following residential EWR programs: Residential ENERGY
3 STAR® Products, Appliance Recycling (electric only), Heating, Ventilation & Air
4 Conditioning (HVAC), Multifamily, Home Energy Consultation (HEC), Audit and
5 Weatherization, School Program, New Home Construction, Emerging Measures
6 and Approaches, and Income-qualified programs. I will discuss each of these
7 programs in more detail within my testimony.

8

9 **Q14. What was the objective of the Residential ENERGY STAR® Products**
10 **program?**

11 A14. The objective of the Residential ENERGY STAR® Products program was to
12 increase the awareness and sales of high efficiency ENERGY STAR® products
13 among residential customers. The program was designed to spur customer interest
14 by providing educational information and incentives to customers who purchased
15 qualified ENERGY STAR® equipment. The primary means used to accomplish
16 this objective were in-store marketing, digital and social marketing. In 2022, DTE
17 continued its midstream incentive for retailers to increase shelf space and inventory
18 of ENERGY STAR® consumer electronics. The Marketplace online retail store
19 offered residential customers the opportunity to purchase energy efficient products
20 and apply instant rebates in a single and seamless experience.

21

22 **Q15. What measures were offered in the Residential ENERGY STAR® Products**
23 **program?**

24 A15. The program offered light emitting diode (LED) light bulbs, clothes washers and
25 dryers, dehumidifiers, room air conditioners, air purifiers, Wi-Fi enabled and smart

Line
No.

1 thermostats and pool pumps. Certified consumer electronics included personal
2 computers and monitors. In addition, the program offered water saving devices
3 such as, faucet aerators and highly efficient showerheads, pipe insulation and
4 weather stripping.

5

6 **Q16. What incentive amounts were offered under the Residential ENERGY STAR®**
7 **Products program?**

8 A16. DTE offered \$25 rebates for ENERGY STAR® qualified clothes washers and
9 dryers, dehumidifiers, air purifiers and room air conditioners, and \$50 rebates on
10 Wi-Fi-enabled and smart thermostats. DTE Electric offered \$400 rebates for
11 ENERGY STAR® qualified pool pumps. The rebates were available to customers
12 by mail, online application, or online retail. Mark-down discounts for LED light
13 bulbs were between \$0.53 and \$30.00 per bulb. Midstream consumer electronics
14 were \$5 per qualified unit.

15

16 **Q17. What results were achieved for the Residential ENERGY STAR® Products**
17 **program in 2022?**

18 A17. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 1, column (f) and
19 page 2, line 1, column (f)), DTE saved 73,497 MWh and 28,086 Mcf under the
20 Residential ENERGY STAR® Products program. In 2022, approximately 6.2
21 million LED bulbs were incentivized through manufacturer mark-downs with
22 retailers and on the Marketplace. Refer to DTE Witness Bilyeu's Exhibit A-1 (page
23 25, Chart 12) for customer participation in this program.

Line
No.

1 **Q18. What amounts did DTE spend for the Residential ENERGY STAR® Products**
2 **program in 2022?**

3 A18. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 1, column (g) and
4 page 2, line 1, column (g)), DTE Electric spent \$15.8 million and DTE Gas spent
5 \$0.2 million on the Residential ENERGY STAR® Products program. Collectively,
6 these amounts were \$2 million over the planned spends for 2022. The spends
7 include the rebates for the residential ENERGY STAR® measures, third party
8 vendor costs to manage the program such as call center activities, rebate processing,
9 online fulfillment and marketing and field activity to verify that signage and pricing
10 is correct and visible in retail stores.

11

12 **Q19. What was the objective of the Appliance Recycling program?**

13 A19. The objective of the Appliance Recycling program was to produce cost-effective,
14 long-term annual energy savings by promoting the early retirement and recycling
15 of operable, inefficient appliances from households served by DTE Electric in an
16 environmentally safe manner. At the same time, DTE Electric educated its
17 customers on the additional energy cost incurred by operating a second, inefficient
18 appliance.

19

20 **Q20. What appliances were included in the Appliance Recycling program?**

21 A20. The appliances included in the program were working condition refrigerators,
22 freezers, room air conditioners (ACs), dehumidifiers and small refrigerators and
23 freezers (under 10 cubic feet). Room ACs, dehumidifiers, small refrigerators and
24 small freezers were only accepted when a refrigerator/freezer (10-30 cubic feet)
25 was also being picked up.

Line
No.

1 **Q21. What incentive amounts were offered under the Appliance Recycling**
2 **program?**

3 A21. DTE Electric offered a \$50 rebate for each working refrigerator and freezer, and a
4 \$20 rebate for each working dehumidifier, room AC, small refrigerator and small
5 freezer. DTE Electric also established drop-off events for customers to transport
6 their appliances to specified locations instead of DTE picking up the appliances.
7 For the drop-off events, DTE Electric offered a \$100 rebate for each working
8 refrigerator and freezer and a \$30 rebate for each working dehumidifier, room AC,
9 small refrigerator and small freezer.

10

11 **Q22. What results were achieved for the Appliance Recycling program in 2022?**

12 A22. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 2, column (f)), DTE
13 Electric saved 30,574 MWh under the Appliance Recycling program. Refer to DTE
14 Witness Bilyeu's Exhibit A-1 (page 25, Chart 12) for customer participation count
15 in this program.

16

17 **Q23. What amount did DTE Electric spend for the Appliance Recycling program**
18 **in 2022?**

19 A23. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 2, column (g)), DTE
20 Electric spent \$7.2 million on the Appliance Recycling program. This amount was
21 approximately \$0.4 million over the planned spends in 2022. The spend includes
22 the customer rebates, third party vendor costs to manage the program, such as call
23 center activities, marketing, rebate processing, pick-up and recycling costs of the
24 appliances.

Line
No.

1 **Q24. What was the objective of the HVAC program?**

2 A24. The objective of the HVAC program was to increase customer demand for energy
3 efficient heating, cooling and high-efficiency water heating equipment. In addition,
4 DTE continued to leverage the active equipment seller and installer trade ally
5 network to maintain the momentum in participation. In addition, DTE continued
6 discussions with HVAC dealers and distributors to stock, promote, and sell high
7 efficiency water heating and boiler equipment using midstream incentives.

8

9 **Q25. What measures were offered in the HVAC program?**

10 A25. The measures offered in the HVAC program included high efficiency central AC
11 units; high efficiency furnaces; boiler units; heat pumps (air source and ground
12 source); AC diagnostic tune-ups; furnace and boiler diagnostic tune-ups with
13 combustion analysis; Wi-Fi enabled thermostats; gas water heaters; high efficiency
14 heat pump water heaters and hydronic ECM circulator pumps.

15

16 **Q26. What incentive amounts were offered under the HVAC program?**

17 A26. The incentive amounts were: \$100-\$500 for Seasonal Energy Efficiency Rating
18 (SEER) 15 and above central AC units; \$100-\$500 for furnaces; \$750-\$1000 for
19 heat pumps; \$900 for boilers; \$500 for heat pump water heaters; \$50-\$100 for gas
20 water heaters; \$65 per boiler ECM; \$75 per AC, furnace, or boiler tune-up; and \$50
21 for Wi-Fi enabled thermostats.

22

23 **Q27. What results were achieved for the HVAC program in 2022?**

24 A27. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 3, column (f) and
25 page 2, line 2, column (f)), DTE saved 3,920 MWh and 242,943 Mcf under the

Line
No.

1 HVAC program. Refer to DTE Witness Bilyeu's Exhibit A-1 (page 25, Chart 12)
2 for customer participation count in this program.

3

4 **Q28. What amounts did DTE spend for the HVAC program in 2022?**

5 A28. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 3, column (g) and
6 page 2, line 2, column (g)), DTE Electric spent \$3.9 million and DTE Gas spent
7 \$4.5 million on the HVAC program. Collectively, these amounts were
8 approximately \$1.1M under the planned spends for 2022. The spends include the
9 rebates for the HVAC measures, third party vendor costs to manage the program,
10 such as call center activities, rebate processing and fulfillment, field verification
11 activities, and contractor training and support.

12

13 **Q29. What was the objective of the Multifamily program?**

14 A29. The objective of the Multifamily program was to produce energy savings in
15 multifamily buildings with three or more units through the direct installation of
16 energy saving measures in the individual living units and provide prescriptive and
17 custom rebates for property owner/managers. Energy efficiency education was also
18 delivered to property owners, managers, and individual tenants.

19

20 **Q30. What measures were offered in the Multifamily program?**

21 A30. Typical in-unit measures included: LED lights; LED night lights; programmable
22 thermostats, energy efficient shower heads, pipe wrap insulation, and energy
23 efficient kitchen and bath aerators. Typical in-unit and common area prescriptive
24 rebates included measures in the following categories: lighting, HVAC and
25 controls, building shell (insulation, window, doors) and water heating.

Line
No.

1 **Q31. Were incentive payments directly paid to tenants under the multifamily**
2 **program?**

3 A31. No. The Multifamily program provides rebates to property owners/managers, or
4 direct-install installation of in-unit measures, so tenants did not receive incentive
5 payments. Direct-install measures were installed at no cost to customers.

6

7 **Q32. What results were achieved for the Multifamily program in 2022?**

8 A32. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 4, column (f) and
9 page 2, line 3, column (f)), DTE saved 393 MWh and 3,960 Mcf under the
10 Multifamily program. Refer to DTE Witness Bilyeu's Exhibit A-1 (page 25, Chart
11 12) for customer participation count in this program.

12

13 **Q33. What amounts did DTE spend for the Multifamily program in 2022?**

14 A33. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 4, column (g) and
15 page 2, line 3, column (g)), DTE Electric spent \$0.1 million and DTE Gas spent
16 \$0.1 million on the Multifamily program. Collectively, these amounts were \$0.04
17 million under the planned spends for 2022. The spends include the material cost
18 for direct install measures and labor to install those measures, in addition to third
19 party vendor costs to manage the program, such as call center activities, field
20 verification activities, collateral and educational pieces designed for outreach
21 events and program activities.

22

23 **Q34. What was the objective of the Home Energy Consultation (HEC) program?**

24 A34. The objective of the HEC program has two parts: 1) provide direct install energy
25 saving measures for single-family homes; and 2) during the installation process

Line
No.

1 provide a customer specific energy saving consultation, identifying energy saving
2 opportunities and program recommendations that are specific to the individual
3 home.

4

5 **Q35. What measures were offered in the HEC program?**

6 A35. Typical measures included: LEDs; LED night lights; power strips, programmable
7 and smart thermostats; energy efficient shower heads, energy efficient kitchen and
8 bath aerators, and pipe wrap insulation.

9

10 **Q36. Were incentive payments directly paid to homeowners or tenants under the**
11 **HEC program?**

12 A36. No. The HEC program is a direct-install program, so homeowners and tenants did
13 not receive incentive payments.

14

15 **Q37. What results were achieved for the HEC program in 2022?**

16 A37. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 5, column (f) and
17 page 2, line 4, column (f)), DTE saved 7,596 MWh and 33,966 Mcf under the HEC
18 program. Refer to DTE Witness Bilyeu's Exhibit A-1 (page 25, Chart 12) for
19 customer participation count in this program.

20

21 **Q38. What amounts did DTE spend for the HEC program in 2022?**

22 A38. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 5, column (g) and
23 page 2, line 4, column (g)), DTE Electric spent \$5.2 million and DTE Gas spent
24 \$1.5 million on the HEC program. Collectively, these amounts were approximately
25 the same as the planned amounts for 2022. The spends include the material cost

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1 for direct install measures and labor to install those measures, in addition to third
2 party vendor costs to manage the program, such as call center activities, field
3 verification activities, collateral and educational pieces designed for outreach
4 events and program activities.

5

6 **Q39. What was the objective of the Audit and Weatherization program?**

7 A39. The objective of the Audit and Weatherization program was two-fold: (1) to
8 encourage comprehensive energy audits, and (2) motivate customers by offering
9 rebates for the installation of qualified weatherization measures in their homes.

10

11 **Q40. What measures were offered in the Audit and Weatherization program?**

12 A40. The Audit and Weatherization program provided weatherization rebates for
13 insulation; window and patio door replacement; air sealing; and HVAC measures
14 as part of the comprehensive home performance projects.

15

16 **Q41. What incentive amounts were offered under the Audit and Weatherization
17 program in 2022?**

18 A41. Incentive amounts of installed insulation varied between \$25-\$125 based on the
19 type of measure. Window replacement incentives ranged from \$15-\$40. Air
20 infiltration reduction measure incentives ranged from \$75-\$150. HVAC measure
21 incentives ranged from \$50-\$1000.

22

23 **Q42. What results were achieved for the Audit and Weatherization program in
24 2022?**

Line
No.

1 A42. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 6, column (f) and
2 page 2, line 5, column (f)), DTE saved 739 MWh and 29,556 Mcf under the Audit
3 and Weatherization program. Refer to DTE Witness Bilyeu's Exhibit A-1 (page
4 25, Chart 12) for customer participation count in this program.

5
6 **Q43. What amounts did DTE spend for the Audit and Weatherization program in**
7 **2022?**

8 A43. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 6, column (g) and
9 page 2, line 5, column (g)), DTE Electric spent \$1.2 million and DTE Gas spent
10 \$1.5 million on the Audit and Weatherization program. Collectively, these amounts
11 were \$0.8 million under than the planned spends for 2022. The spends include
12 weatherization rebates, as well as third party vendor costs to manage the program,
13 activities such as call center operations, rebate processing and fulfillment, field
14 verification activities, contractor training and support, and community outreach
15 efforts.

16
17 **Q44. What was the objective of the School Program?**

18 A44. The objectives of the School Program are primarily to help develop and encourage
19 a culture of energy efficiency with 3rd – 12th grade students, teachers, schools, and
20 families throughout DTE's service territory, through both public and private
21 schools, and to deliver real, measurable energy savings. Each participating teacher
22 and student received a kit filled with energy-efficient technologies and a guide, in
23 both English and Spanish, with information on energy resources and energy saving
24 tips. Students are instructed to install all products with adult supervision in their
25 residence. Instructional materials have been designed to correlate with the State of

Line
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1 Michigan's English, Math, and Science curriculum for 3rd through 6th grade
2 students, and Science and Economics standards for 7th through 12th grades.
3

4 **Q45. What measures were offered in the School Program?**

5 A45. Measures offered included LED lightbulbs, LED night lights, energy efficient
6 shower heads, hot water pipe wrap, advanced power strip, window insulation kit,
7 door weatherstripping, and energy efficient kitchen and bath aerators.
8

9 **Q46. Were incentive payments directly paid to homeowners or tenants under the**
10 **School Program?**

11 A46. No. The School Program distributes the energy savings measures directly to the
12 students and they do not incur any costs.
13

14 **Q47. What results were achieved for the School program in 2022?**

15 A47. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 7, column (f) and
16 page 2, line 6, column (f)), DTE saved 21,389 MWh and 168,524 Mcf under the
17 School program. During 2022 DTE distributed 28,823 electric kits and 28,300 gas
18 kits. Refer to DTE Witness Bilyeu's Exhibit A-1 (page 25, Chart 12) for customer
19 participation count this program.
20

21 **Q48. What amounts did DTE spend for the School program in 2022?**

22 A48. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 7, column (g) and
23 page 2, line 6, column (g)), DTE Electric spent \$1.1 million and DTE Gas spent
24 \$0.8 million on the School program. Collectively, these amounts were \$0.3 million
25 under the planned spends for 2022. This is in addition to third party vendor costs

Line
No.

1 to manage the program, such as call center activities, field verification activities,
2 collateral and educational pieces designed for outreach events and program
3 activities.

4

5 **Q49. What was the objective of the New Homes Construction (NHC) program?**

6 A49. The objective of the NHC program was to engage certified Michigan home builders
7 and promote energy efficient upgrades to new construction single family home
8 building in DTE's service territories. Builders were offered financial incentives to
9 install high efficiency upgrades and building techniques above baseline building
10 code in the State of Michigan.

11

12 **Q50. What measures were offered in the NHC program?**

13 A50. The electric measures offered in the NHC program included air sealing, insulation,
14 furnaces, water heaters, ducted and ductless air source and ground source heat
15 pumps, and LED lighting.

16

17 **Q51. What incentive amounts were offered under the NHC program?**

18 A51. In order to qualify for an incentive, homes must meet a Home Energy Rating
19 System (HERS) Index score of 60 or less. The NHC program incentives are
20 structured into two categories - performance incentives and prescriptive. Builders
21 can combine both incentive structures into a maximum incentive from DTE Electric
22 of \$1,500 per home and \$1,300 per home from DTE Gas. The performance
23 incentive offered was \$0.25/kWh of electricity and \$10/Mcf of natural gas saved
24 over building code minimums. Savings are calculated based on the HERS Rater
25 submission in the program's online incentive system. Prescriptive incentives were

Line
No.

1 offered at the following ranges: Air Sealing of 3.25-2.25 ACH 50 or less rebates of
2 \$125-\$275, Water Heaters 0.66 UEF+ rebates of \$75-\$100, Furnaces of 96%
3 AFUE+ \$200-\$250, Air Source Heat Pump 18 SEER+ \$750-\$850, Ground Source
4 Heat Pump 17 EER+ \$800-\$950, and Lighting 100% LED \$100. The NHC
5 Program also offered an ENERGY STAR® Bonus up to \$350 for qualifying homes.

6

7 **Q52. What results were achieved for the NHC program in 2022?**

8 A52. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 9, column (f) and
9 page 2, line 8, column (f)), DTE saved 3,401 MWh and 71,320 Mcf under the NHC
10 program. During 2022 DTE processed 1,519 New Homes Construction rebate
11 applications. Refer to DTE Witness Bilyeu's Exhibit A-1 (page 25, Chart 12) for
12 customer participation count in this program.

13

14 **Q53. What amounts did DTE spend for the NHC program in 2022?**

15 A53. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 9, column (g) and
16 page 2, line 8, column (g)), DTE Electric spent \$1.4 million and DTE Gas spent
17 \$1.5 million on the NHC program. Collectively, these amounts were \$0.6 million
18 over the planned spends for 2022. The spends include program rebates, third party
19 vendor costs to manage the program, activities such as call center operation, rebate
20 processing and fulfillment, field verification activities, builder training support and
21 outreach efforts.

22

23 **Q54. What was the objective of Home Energy Reports (HER) program?**

24 A54. The HER program encouraged randomly selected customers to be more energy
25 efficient by the means of social competition and social norming. Encouragement

Line
No.

1 was provided by way of a printed HER that displayed the customer's energy usage
2 in comparison to average energy usage of approximately 100 similar homes (as
3 determined by factors such as square footage, type of home, and heating fuel) and
4 a second comparison with the most efficient similar homes nearby (the top 20%).
5 The HER also contained the customer's individual ranking within the similar home
6 set, energy savings tips, and promotions for other energy efficiency programs.

7

8 **Q55. How were the Home Energy Reports delivered to the customer?**

9 A55. Selected customers were mailed a paper Home Energy Report and an abbreviated
10 email version of the report was sent to customers if an email address was available.

11

12 **Q56. What results were achieved for the HER program in 2022?**

13 A56. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 10, column (f) and
14 page 2, line 9, column (f)), DTE saved 68,912 MWh and 260,774 Mcf under the
15 HER program. Refer to DTE Witness Bilyeu's Exhibit A-1 (page 25, Chart 12) for
16 customer participation count in this program.

17

18 **Q57. What amounts did DTE spend for the HER program in 2022?**

19 A57. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 10, column (g) and
20 page 2, line 9, column (g)), DTE Electric spent \$3.0 million and DTE Gas spent
21 \$0.6 million on the HER program. Collectively, these amounts were \$0.9 million
22 over the planned spends for 2022. Program spends include the printing and mailing
23 costs, software as a service fees, as well as the additional third-party vendor costs
24 to manage and support the program.

Line
No.

1 **Q58. What was the objective of the Emerging Measures and Approaches program?**

2 A58. The objective of this program was to enable DTE to commercialize piloted
3 measures and approaches prior to the next plan filing.
4

5 **Q59. What amounts did DTE spend for the Emerging Measures and Approaches
6 program in 2022?**

7 A59. While DTE Witness Bilyeu's Exhibit A-2 (page 1, line 12 and page 2, line 11) lists
8 Emerging Measures and Approaches, actual spends and savings are included in the
9 individual program totals.
10

11 **Q60. What programs were supported by the Emerging Measures and Approaches
12 program?**

13 A60. In 2022, the Emerging Measures and Approaches program funded heat pump
14 incentives for the New Home Construction program, midstream work for the
15 HVAC program and steam boilers for the Energy Efficiency Assistance program.
16

17 **Q61. What is the basis for the Administration and Infrastructure amounts shown
18 in DTE Witness Bilyeu's Exhibit A-2?**

19 A61. The amounts shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 14 and page
20 2, line 13) represent the internal administration costs directly associated with the
21 residential EWR programs and includes administration and infrastructure costs
22 allocated to the residential EWR programs as shown in DTE Witness Murray's
23 Exhibit A-11 and Exhibit A-15. The approved 2022 EWR Plan had an
24 administration budget of approximately \$3.7 million for DTE Electric and \$1.8
25 million for DTE Gas. In total, DTE spent approximately \$0.1 million more on

Line
No.

1 administration and infrastructure costs than planned. The administration and
2 infrastructure cost spend includes call center, organization memberships, additional
3 informational resources, and additional research and benchmarking information.

4

5 **Q62. What was the objective of the income-qualified programs?**

6 A62. The objective of the income-qualified programs was to provide savings measures
7 and education to income-qualified DTE Electric customers to assist in reducing
8 their energy use and managing their utility costs. This was achieved through three
9 components that are further detailed below.

10

11 **Income-qualified Energy Efficiency Assistance (EEA):** The program leveraged
12 the services provided by member agencies of the Michigan Community Action
13 Agency Association, municipalities, counties, faith-based institutions, community
14 development corporations and nonprofit organizations with existing housing and
15 energy programs. These vast networks of participating organizations not only
16 administer the installation of energy efficiency measures, but also assist DTE in
17 identifying income qualified customers.

18

19 **Income-qualified Multifamily:** The Multifamily component of the program
20 produces immediate energy savings in multifamily buildings with three or more
21 units through the direct installation of energy saving measures in the individual
22 living units, and prescriptive and custom rebates in the same manner as the
23 Multifamily program. The program also offered a premium direct installation
24 service of building air sealing, attic insulation, and heat pumps for qualified
25 multifamily buildings.

Line
No.

1 **Income-qualified Home Energy Consultation (HEC):** The HEC component of
2 the program includes two objectives: 1) provide direct install energy saving
3 measures for single-family homes; and 2) during the installation process provide a
4 customer specific energy saving consultation, identifying energy saving
5 opportunities that are specific to the individual home. This was delivered in the
6 same manner as the HEC program.

7

8 Each of the income-qualified program components are discuss in further detail
9 below.

10

11 **Q63. What measures were offered in the income-qualified EEA program?**

12 A63. The income-qualified EEA program offered various measures including LED light
13 bulbs; ENERGY STAR® refrigerators, pipe wrap, energy efficient showerheads,
14 kitchen and bathroom aerators; insulations and air sealing for attic, attic hatch, wall,
15 basement wall, knee wall, band joist, duct and crawl space; windows; heat pumps
16 for central heating and hot water; dehumidifiers; air purifying systems; water
17 heaters; programmable and smart thermostats, high efficiency furnaces; window
18 and central AC; furnace and boiler tune-ups; hot water and steam boiler
19 replacements.

20

21 **Q64. Were incentive payments directly paid to customers under the income-**
22 **qualified EEA program?**

23 A64. No.

24

25 **Q65. What results were achieved for the income-qualified EEA program in 2022?**

Line
No.

1 A65. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 16, column (f) and
2 page 2, line 15, column (f)), DTE saved 40,739 MWh and 50,890 Mcf under the
3 income-qualified EEA program. Refer to DTE Witness Bilyeu's Exhibit A-1 (page
4 25, Chart 12) for customer participation count in this program.

5

6 **Q66. What amounts did DTE spend in program cost for the income-qualified EEA**
7 **program in 2022?**

8 A66. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 16, column (g) and
9 page 2, line 15, column (g)), DTE Electric spent \$19 million and DTE Gas spent
10 \$10.4 million on the income-qualified EEA program. Collectively, these amounts
11 were \$2.5 million over the planned spend for 2022. The increase in DTE Gas spend
12 was primarily the result of the EWR plan filing settlement and was spent in
13 accordance with said settlement. The increase in DTE Electric spend supported
14 additional LED lighting kits for community events and direct mail. The spends
15 include third party vendor costs to manage the program, such as administrative
16 coordination with local agencies, application processing and fulfillment, and field
17 verification activities and internal cost directly associated with administering the
18 residential income-qualified program.

19

20 **Q67. What was the objective of the income-qualified Multifamily program?**

21 A67. The objective of the income-qualified Multifamily program was to produce electric
22 energy savings in multifamily buildings with three or more units through the direct
23 installation of energy saving measures in the individual living units and to provide
24 prescriptive and custom rebates for larger projects at a much higher incentive rate
25 than the market rate commercial program.

Line
No.

1 **Q68. What measures were offered in the income-qualified Multifamily program?**

2 A68. Typical in-unit measures included: LED lights; LED night lights; programmable
3 thermostats, and energy efficient shower heads, pipe wrap insulation, and energy
4 efficient kitchen and bath aerators. Typical in-unit and common area prescriptive
5 rebates included measures in the following categories: lighting, HVAC, and
6 controls, building shell (insulation, windows, doors) and water heating.

7

8 **Q69. Were incentive payments directly paid to tenants or properties under the**
9 **income-qualified Multifamily program?**

10 A69. No. The income-qualified Multifamily tenant program is a direct-install program,
11 so tenants did not receive incentive payments. Properties owners/or managers did
12 receive prescriptive and custom rebates.

13

14 **Q70. What results were achieved for the income-qualified Multifamily program in**
15 **2022?**

16 A70. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 17, column (f) and
17 page 2, line 16, column (f)), DTE saved 8,394 MWh and 101,027 Mcf under the
18 income-qualified Multifamily program. Refer to DTE Witness Bilyeu's Exhibit A-
19 1 (page 25, Chart 12) for customer participation count in this program.

20

21 **Q71. What amounts did DTE spend for the income-qualified Multifamily program**
22 **in 2022?**

23 A71. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 17, column (g) and
24 page 2, line 16, column (g)), DTE Electric spent \$10.8 million and DTE Gas spent
25 \$4.8 million on the income-qualified Multifamily program. Collectively, these

Line
No.

1 amounts were approximately \$3.2 million over the planned amounts for 2022. The
2 increased spend in this program was part of the EWR plan filing settlement and was
3 spent in accordance with said settlement. The spends include the material cost for
4 direct install measures and labor to install those measures, incentives, third party
5 vendor costs to manage the program, such as call center activities, field verification
6 activities, collateral and educational pieces designed for outreach events and
7 program activities.

8

9 **Q72. What was the objective of the income-qualified HEC program?**

10 A72. The objective of the income-qualified HEC program has two parts: 1) provide direct
11 install energy saving measures for single-family homes; and 2) during the
12 installation process provide a customer specific energy saving consultation,
13 identifying energy saving opportunities and program recommendations that are
14 specific to the individual home.

15

16 **Q73. What measures were offered in the income-qualified HEC program?**

17 A73. Typical measures included: LEDs; LED night lights; power strips, programmable
18 and smart thermostats; energy efficient shower heads, energy efficient kitchen and
19 bath aerators, and pipe wrap insulation.

20

21 **Q74. Were incentive payments directly paid to homeowners or tenants under the**
22 **income-qualified HEC program?**

23 A74. No. The Income-qualified HEC program is a direct-install program, so homeowners
24 or tenants did not receive incentive payments.

Line
No.

1 **Q75. What results were achieved for the income-qualified HEC program in 2022?**

2 A75. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 18, column (f) and
3 page 2, line 17, column (f)), DTE saved 3,528 MWh and 31,949 Mcf under the
4 income-qualified HEC program. Refer to DTE Witness Bilyeu's Exhibit A-1 (page
5 25, Chart 12) for customer participation count in this program.

6

7 **Q76. What amounts did DTE spend for the income-qualified HEC program in**
8 **2022?**

9 A76. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 18, column (g) and
10 page 2, line 17, column (g)), DTE Electric spent \$3.3 million and DTE Gas spent
11 \$1.2 million on the income-qualified HEC program. Collectively, these amounts
12 were \$0.2 million over the planned spend for 2022. The spends include the material
13 cost for direct install measures and labor to install those measures, in addition to
14 third party vendor costs to manage the program, such as call center activities, field
15 verification activities, collateral and educational pieces designed for outreach
16 events and program activities.

17

18 **Q77. What results were achieved for the combined total income-qualified program**
19 **in 2022?**

20 A77. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 21, column (f) and
21 page 2, line 20, column (f)), DTE saved 53,213 MWh and 188,584 Mcf under the
22 income-qualified program.

23

24 **Q78. What did DTE spend for the combined total income-qualified program in**
25 **2022?**

Line
No.

1 A78. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 21, column (g) and
2 page 2, line 20, column (g)), DTE Electric spent \$33.6 million and DTE Gas spent
3 \$16.6 million on the combined total income-qualified program. Collectively, these
4 amounts were \$5.9 million over than the planned spend for 2022. The variation in
5 spend is explained in the income-qualified program components above.

6

7 **Pilot Program**

8 **Q79. Did DTE offer residential customers any Pilot programs in 2022?**

9 A79. Yes, please see DTE Witness Bilyeu's Exhibit A-1 starting on page 62 for details
10 on key pilot programs implemented in 2022.

11

12 **Education Program**

13 **Q80. What was the objective of the Education program?**

14 A80. The objective of the Education program was to provide DTE residential and
15 business customers with information and resources to help them learn how to utilize
16 energy more efficiently and to better manage their energy costs. The DTE Energy
17 website, mass media, social media, and outreach campaigns such as outbound mail,
18 digital communications, community events, sponsorships and experiential
19 activations are key channels to engage customers with energy efficiency
20 information. In 2022, DTE continued to rely on its website, mass media and
21 outreach campaigns targeting specific customer segments to increase their
22 awareness of energy efficiency.

23

24 **Q81. How did DTE implement its Education program in 2022?**

Line
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1 A81. DTE continued to provide energy efficiency education and raised awareness of
2 EWR offerings through traditional mass media channels, community outreach
3 events, sponsorships, digital media including web and social media, and direct
4 outreach to increase awareness among customers. In 2022, DTE utilized target
5 marketing to meet segment specific needs for energy efficiency information. DTE
6 also introduced two educational initiatives – Heat Pump Collaborative and
7 Workforce Development, to build knowledge base and grow market capacity for
8 energy efficiency.

9

10 **Q82. What projects and campaigns were performed under the Education program**
11 **in 2022?**

12 A82. The following projects and campaigns were performed under the Education
13 program in 2022:

- 14 • Residential campaigns included radio, television, print, direct outreach, and
15 digital advertising focused on low-cost or no-cost tips, ENERGY STAR®
16 appliance and lighting tips, and heating and cooling messaging while
17 providing estimated energy and money saving opportunities.
18 Recommended temperature settings and other specific behaviors on
19 managing energy use were also given when possible. In addition, we
20 continued to include messages highlighting the non-energy benefits of
21 making energy efficiency improvements in and outside of their home,
22 including improved comfort, convenience, health, safety, and helping the
23 environment.

Line
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- 1 • Small business campaigns included radio, television, print, direct mail,
2 educational videos, and digital advertising focusing on low-cost or no-cost
3 tips, and case studies with suggestions that similar businesses could
4 complete for energy efficiency improvements. In addition, we continued to
5 highlight the non-energy benefits of making energy efficiency
6 improvements to increase the comfort, environment and safety of their
7 business and to improve satisfaction of their customers and employees.
8
9 • The Workforce Development and mentorship initiative launched in 2022,
10 with an emphasis on equity and inclusion to bolster participating trade
11 contractor engagement and growth in the space of energy efficiency. The
12 program included a technical training path designed to educate and train
13 individuals in Building Performance Institute's (BPI) Building Analyst
14 (BA) curriculum with the goal of achieving certification. The second path
15 was the Business Incubator Training, which was designed to assist local and
16 diverse contractors participate in DTE's energy efficiency programs and
17 build market capacity to serve customers with energy efficiency.
18
19 • The Michigan Heat Pump Collaborative (MIHPC) was also launched in
20 2022 in collaboration with other utilities across Michigan. The goal of the
21 MIHPC was to increase education around heat pump technology, benefits,
22 products and installation best practices for heating, cooling and water heater
23 applications.

Line
No.

1 • Virtual events such as trade association webinars, Energy Summit, National
2 Energy Efficiency Day, National ENERGY STAR® Day and virtual Earth
3 Day events were held for residential and business customers.

4

5 • Sports sponsorships with the PGA, Detroit Tigers, Detroit Red Wings,
6 Detroit Lions, West Michigan Whitecaps, Grand Rapids Griffins, and
7 Traverse City Pit Spitters allowed opportunities to share energy-saving
8 information in a fun and engaging way.

9

10 • Sponsorships with business chambers across our service area, the U.S.
11 Green Building Council's Michigan Battle of the Buildings Competition,
12 Small Business Association of Michigan (SBAM) and Detroit, Ann Arbor
13 and Grand Rapids 2030 Districts were continued, to reach businesses with
14 additional energy efficiency education.

15

16 A contest for small business customers was also executed, allowing business
17 owners to submit their energy efficiency story for a chance to be one of three (3)
18 final prize winners. Submissions were reviewed and judged on a variety of criteria
19 and three Michigan business from across the state were awarded energy efficiency
20 prizing, allowing them to implement additional energy efficiency measures and
21 share their story across a variety of marketing strategies.

22

23 The Education program continued to promote an online 3D Energy Efficient
24 Interactive Home. The Interactive Home provides relatable and realistic room by
25 room engagement where customers can discover tips, energy efficient products,

Line
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1 rebates and EWR programs available while navigating it. The Interactive Home has
2 been leveraged as an educational tool across a variety of marketing tactics and
3 channels.

4
5 Employee outreach through DTE's intranet, videos, virtual employee events, an
6 internal Energy Efficiency page for employee resources and electronic newsletters.
7 As in past years, new content with a fresh message was created to educate
8 customers on energy efficiency. These included brochures, case studies, giveaways,
9 ambassador cards, a carbon neutrality handout, and energy-saving tips handouts. In
10 addition, a print and digital magazine for business customers with in-depth
11 information of how energy efficiency can be applied in businesses was developed
12 in four editions. We also continued to utilize bill inserts, direct mail, email
13 newsletters and digital tools and communications (online calculators, targeted
14 videos, social media posts, and website information) to engage customers in
15 learning.

16

17 **Q83. What amounts did DTE spend for the Education program in 2022?**

18 A83. As shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 40, column (g) and
19 page 2, line 36, column (g)), DTE Electric spent \$5.2 million and DTE Gas spent
20 \$1.4 million on the Education program. Education funds were primarily spent on
21 contracted services, media and materials for the various projects and campaigns
22 implemented as well as on internal administration of the program.

23

24 **Q84. How were Education program energy savings determined?**

Line
No.

1 A84. Education energy savings were determined based on the method prescribed by the
2 Commission's December 4, 2008 Temporary Order in Case No. U-15800. In that
3 order, the Commission determined that EWR Education program may use up to
4 three percent of the annual EWR budget. Any funds spent on education will be
5 deemed to have generated a proportional amount of energy savings per dollar of
6 spend to that of the overall portfolio, up to three percent during each program year.
7 Given the spending completed on education projects and campaigns in 2022,
8 energy savings as shown in DTE Witness Bilyeu's Exhibit A-2 (page 1, line 40,
9 column (f) and page 2, line 36, column (f)), were determined based on the above
10 methodology to be 26,541 MWh and 58,269 Mcf.

11

12 **Q85. Does this conclude your direct testimony?**

13 A85. Yes, it does.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

QUALIFICATIONS

AND

DIRECT TESTIMONY

OF

PHILIP A. GUSTER

DTE ELECTRIC COMPANY AND DTE GAS COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF PHILIP A. GUSTER

Line
No.

1 **Q1. What is your name, business address and by whom are you employed?**

2 A1. My name is Philip A. Guster (he/him/his). My business address is: One Energy
3 Plaza, Detroit, MI 48226. I am employed by DTE Electric Company.

4
5 **Q2. On whose behalf are you testifying?**

6 A2. I am testifying on behalf of DTE Electric Company (DTE Electric) and DTE Gas
7 Company (DTE Gas) (collectively, DTE).

8
9 **Q3. What is your educational background?**

10 A3. I graduated from Western Michigan University, receiving a Bachelor of Science
11 Degree in Industrial Engineering. I also received a Master of Business
12 Administration from Walsh College.

13
14 **Q4. What is your work experience?**

15 A4. I was hired by DTE Electric in February 2013 as an energy engineer in the Energy
16 Partnership. In this role I was responsible for the development and implementation
17 of energy conservation projects at customer facilities. I was also responsible for
18 monitoring and forecasting utility budgets for those customers.

19 In 2014, I moved to the Energy Optimization organization as a marketing specialist
20 leading the electric Energy Efficiency program for commercial and industrial (C&I)
21 customers. I was responsible for marketing campaigns to drive customer
22 participation in the electric incentive program.

Line
No.

1 In 2017, I moved to DTE Gas as a marketing program manager for Gas Major
2 Accounts. My responsibilities included developing and executing marketing
3 strategies to drive market growth and support business growth.

4
5 In 2021, I moved back to DTE Electric in the Energy Waste Reduction
6 organization. My current role is the manager of program management for
7 commercial and industrial customers. I have a primary focus on the large customer
8 energy efficiency platforms.

9
10 **Q5. What are your current job responsibilities?**

11 A5. As the manager of program management, I am responsible for developing and
12 executing electric and gas strategies and product offerings for larger DTE C&I
13 customers supporting DTE's overall EWR strategies. I also am responsible for
14 evaluating emerging products and services before they are commercialized.

15
16 **Q6. Are you affiliated with any professional organizations?**

17 A6. Yes. I am affiliated with the Gas Technology Institute (GTI) and their Emerging
18 Technology Program (ETP).

19
20 **Q7. Have you previously provided testimony or supported cases before the**
21 **Michigan Public Service Commission (Commission)?**

22 A7. Yes. I provided direct testimony in the following cases:

23 U-21206 2021 EWR Electric & Gas Reconciliation

24
25 **Q8. What is the purpose of your testimony?**

Line
No.

1 A8. The purpose of my testimony is to present the results of DTE's 2022 EWR C&I
2 programs. I will also describe the impact of the electric Self-Direct program and
3 present the 2022 Self-Direct Report. My testimony will describe the following:

- 4 1. The overall implementation of EWR C&I programs.
- 5 2. The 2022 performance of DTE's EWR C&I Platforms and how the
6 customers were made aware of these programs. This will include a
7 discussion of the measures, incentives, spend, and energy savings achieved
8 for the C&I Downstream Platform's Prescriptive and Non-Prescriptive
9 programs, C&I component of the Multifamily and the Energy Star Retail
10 Lighting programs, Operational Platform, Small Business Platform, and
11 C&I Midstream Platform.
- 12 3. The C&I Emerging Measures and Approaches offerings and results.
- 13 4. The continued implementation of the Strategic Energy Plan.
- 14 5. The impact of the Self-Directed plans and the cost to administer that
15 program.
- 16 6. The Administration & Infrastructure cost allocated to C&I Portfolio.

17

18 **Q9. Are you sponsoring any exhibits in this proceeding?**

19 A9. No. In this testimony I will be referencing DTE Witness Bilyeu's Exhibit A-2 for
20 program costs and energy savings, and cost effectiveness.

21

22 **2022 EWR Plan C&I Portfolio Summary**

23 **Q10. What was the overall performance of DTE's EWR C&I portfolio in 2022?**

24 A10. DTE Electric was under its C&I energy savings goal and under its spend goals in
25 2022. The EWR Planned C&I portfolio was expected to achieve 610,001 MWh of

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1 energy savings with a budget of \$78.3 million. The C&I portfolio achieved 538,783
2 MWh of savings and spent \$76.5 million. The energy savings achieved was less
3 than the planned electric energy savings by 71,218 MWh, as shown on Exhibit A-
4 2, page 1, column (h), line 38 and spent \$1.7 million less than planned on incentives
5 and implementation, as shown on Exhibit A-2, page 1, column (i), line 38.

6
7 DTE Gas was over its C&I energy savings goal and was over its spend goal in 2022.
8 The EWR Plan C&I portfolio was expected to achieve 799,642 Mcf of energy
9 savings at a cost of \$10.3 million. The C&I portfolio achieved 839,724 Mcf of
10 savings and at a cost of approximately \$10.4 million. The energy savings achieved
11 was more than the planned natural gas energy savings by 40,082 Mcf, as shown on
12 Exhibit A-2, page 2, column (h), line 34 and spent slightly more than planned on
13 customer incentives and implementation, as shown on Exhibit A-2, page 2, column
14 (i), line 34.

15
16 Additional details regarding the C&I Portfolio's Platforms will be discussed further
17 in this testimony.

18
19 **Q11. How did DTE implement its EWR C&I programs?**

20 A11. DTE retains implementation contractors to implement its commercial and industrial
21 programs. DTE has worked with DNV to implement the Downstream Platform's
22 prescriptive & non-prescriptive programs since 2009. DNV currently provides
23 operational support including trade ally training, application review and processing,
24 rebate fulfillment, operations call center, downstream platform result tracking, and
25 trade ally satisfaction surveys for the programs. Guidehouse Inc. supplies customer

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satisfaction surveys for the programs. Other implementation contractors DTE works with include but are not limited to are: CLEAResult, Energy Sciences (Woman Owned Business), Franklin Energy, SEEL (Diverse company), and Leidos.

Q12. How did DTE inform customers of the C&I programs?

A12. DTE used several marketing channels to inform its business customers about the energy efficiency programs available to them. Key marketing channels included DTE account managers who are directly responsible for business relationships with assigned C&I customers, Energy Partnership & Services' energy managers and trade allies who were marketing energy efficiency technologies directly to business customers. Other marketing materials and mediums that are used include TV and radio advertisement, DTE's website, training seminars, technical product knowledge workshops, emails, press releases and periodicals. Throughout the year, virtual and in-person program presentations were shown to customers, professional associations/organizations, trade allies and engineering and architecture design firms.

C&I Downstream Platform

Q13. What is the objective of the Downstream Platform?

A13. The objective of a downstream program is to provide business customers with incentives for installing standard or new custom energy-efficient measures for numerous applications. Downstream programs enroll trade allies to participate because of their design and installation expertise for the products or measures that they sell. By targeting the trade ally network, DTE can focus on contractors that

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1 can impact a greater number of business customers. DTE business customers also
2 participate directly in downstream programs using their employees to design and
3 install the measures. Trade allies or the customer submit a program application,
4 DTE reviews the application and approves it for installation. When the project is
5 complete, DTE approves the final application, and the customer receives their
6 incentive for the project.

7

8 **Q14. What programs are included in the C&I Downstream Platform?**

9 A14. DTE C&I Downstream Platform consists of two programs: Prescriptive and Non-
10 Prescriptive. Details of each program's objectives and accomplishments are
11 discussed below.

12

13 **Prescriptive Program**

14 **Q15. What was the objective of the C&I prescriptive program?**

15 A15. The objective of the C&I prescriptive program is to encourage C&I business
16 customers to install energy efficient measures in their existing facilities. It provides
17 predetermined measures and incentives that are in the State of Michigan's approved
18 Michigan Energy Measures Database (MEMD) to business customers for the
19 installation of energy efficient equipment. The MEMD incentives were designed
20 to reduce the customers installations cost thereby removing barriers to
21 participation.

22

23 **Q16. What measures were included in the C&I prescriptive program?**

24 A16. The C&I prescriptive program included more than 400 electric and more than 75
25 gas prescriptive measures from the MEMD. The primary electric measures include,

Line
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1 but are not limited to, LED lighting fixtures and lamps, advanced lighting and
2 building control systems, motors and variable speed drives, refrigeration
3 equipment, HVAC equipment and other common electric energy efficient measures
4 that business customers could install. The primary gas measures include, but are
5 not limited to, control systems, HVAC equipment, insulation, hot water heaters,
6 and other common natural gas energy efficient measures that business customers
7 could install.

8

9 **Q17. What incentives were offered under the C&I prescriptive program?**

10 A17. Electric incentive levels varied for the list of MEMD prescriptive measures. For
11 example, incentives for approved LED lighting fixtures ranged from \$7 to \$186 per
12 fixture, variable frequency drives for process pumps were \$60 per horsepower, high
13 efficiency pumps were \$0.05/kwh saved, and Unitary and Split Air Conditioning
14 systems incentives ranged from \$4 per ton.

15

16 **Q18. How were the prescriptive program energy savings calculated?**

17 A18. The prescriptive energy savings are calculated based on the MEMD deemed
18 savings for each type of measure within the prescriptive program. Measures are
19 specific devices or practices that reduce the amount of electricity or gas used when
20 installed in a business. The deemed energy savings for this program were
21 determined from the state approved MEMD and have been validated by
22 Guidehouse Inc. and supported in the testimony of Company Witness Mr. Rego.

23

24 **Q19. What energy savings and customer participation were achieved in the**
25 **prescriptive program?**

Line
No.

1 A19. As shown in Exhibit A-2, page 1, line 22, column (f), DTE Electric achieved
2 233,109 MWh of energy savings in the C&I prescriptive program. The C&I Energy
3 Star Retail Lighting program added 20,510 MWh of savings and Multi-family
4 common areas added 2,473 MWh of savings, as shown on lines 30 and 31, column
5 (f) respectively.

6

7 As shown in Exhibit A-2, page 2, line 21, column (f), DTE Gas achieved 497,929
8 Mcf of energy savings in the C&I prescriptive program. The C&I Multi-family
9 common areas, line 28, column (f) contributed an additional 2,805 Mcf towards the
10 overall C&I prescriptive energy savings.

11

12 **Q20. What amount did DTE spend on the C&I prescriptive program?**

13 A20. As shown in Exhibit A-2, page 1, line 22, column (g), DTE Electric spent
14 approximately \$30 million on the C&I prescriptive program. Spend, as used in this
15 testimony, refers to the O&M expenditures by DTE Electric in implementing the
16 C&I program. It includes the implementation costs, customer incentives and
17 marketing costs. The EWR Plan approved for 2022 had an anticipated C&I
18 prescriptive cost of approximately \$27 million. DTE Electric spent approximately
19 \$3.1 million more than the plan for the C&I prescriptive program. .

20

21 As shown in Exhibit A-2, page 2, line 21, column (g), DTE Gas spent \$3.8 million
22 on the C&I prescriptive program. The EWR Plan approved for 2022 had an
23 anticipated C&I prescriptive cost of approximately \$2.6 million. DTE Gas spent
24 approximately \$1.3 million more than the plan for the C&I prescriptive program.

Line
No.

1 **Q21. What was the objective of the C&I Energy Star® Retail Lighting Program?**

2 A21. The C&I Energy Star® Retail Lighting program provided business customers with
3 the opportunity to purchase Energy Star® rated energy efficient lighting products
4 at discounted prices from retail stores to install in their businesses.

5

6 **Q22. What results were achieved for the C&I Downstream Platform component of**
7 **the Energy Star® Retail Lighting program?**

8 A22. DTE Electric saved 20,510 MWh through the C&I component of the Energy Star®
9 Retail Lighting program, which is included in the C&I program energy savings on
10 line 30, column (f) of Exhibit A-2, page 1.

11

12 **Q23. What did DTE Electric spend for the C&I component of the Energy Star®**
13 **Retail Lighting program?**

14 A23. DTE Electric spent approximately \$0.8 million on the C&I component of Energy
15 Star® Retail Lighting program on line 30, column (g) of Exhibit A-2, page 1. This
16 spend includes educational materials and the incentives applied to Energy Star®
17 rated lighting products at participating retailers.

18

19 **Q24. Why does the Multifamily program have a component within the C&I**
20 **Downstream Platform?**

21 A24. Energy savings and costs for measures installed in multifamily common areas are
22 included in the C&I prescriptive program because they are commercial facilities.
23 By offering specific incentives for those measures, property managers and building
24 owners were encouraged to install energy efficient equipment in their facility
25 common areas such as hallways, stairwells, lobbies, and parking lots.

Line
No.

1 **Q25. What measures were offered in common areas of the Multifamily program?**

2 A25. The measures included in the Multifamily common areas are found in the MEMD.
3 Examples of common area measures may include but are not limited to interior and
4 exterior lighting replacement, occupancy sensors, heating controls, and water
5 heating.

6

7 **Q26. What incentives were offered for common area measures in the Multifamily**
8 **program?**

9 A26. The incentive levels varied based on the type of energy efficient equipment or
10 retrofits that the property managers or building owners installed. The incentive
11 amounts varied between lower cost lighting products to higher cost measures such
12 as HVAC systems and central water heating systems.

13

14 **Q27. Are there unique challenges in marketing energy efficient measures to the**
15 **Multifamily vertical market?**

16 A27. Yes. Penetrating the multifamily market with energy efficient measures is
17 challenging since decision-makers of these properties are often hesitant to invest in
18 energy saving products when the benefits are shared among the tenants and
19 property owners, but the investment is wholly made by the owner. However,
20 installing energy efficient measures as an investment helps multifamily property
21 owners and managers enhance the value and marketability of their properties while
22 reducing their energy-related operating expenses.

23

24 **Q28. What C&I Multifamily Common Area results were achieved?**

Line
No.

1 A28. DTE Electric multifamily commercial customers saved 2,473 MWh by installing
2 energy efficient measures in their common areas, which is included in the C&I
3 program energy savings on line 31, column (f) of Exhibit A-2, page 1.

4
5 DTE Gas multifamily commercial customers saved 2,805 Mcf by installing energy
6 efficient measures in their common areas, which is included in the C&I program
7 energy savings on line 28, column (f) of Exhibit A-2, page 2.

8
9 **Q29. What did DTE spend on the C&I component of the Multifamily program?**

10 A29. DTE Electric spent approximately \$0.6 million on the C&I component of
11 multifamily program on line 31, column (g) of Exhibit A-2, page 1. DTE Gas spent
12 approximately \$0.04 million on the C&I component of multifamily program on line
13 28, column (g) of Exhibit A-2, page 2. The spend includes common area measures
14 only and includes implementation costs to maintain the C&I component of the
15 program, such as call center activities, rebate processing and fulfillment for
16 common areas, field verification activities, collateral and educational pieces
17 designed for outreach events and program activities, and contractor training and
18 support.

19

20

Non-Prescriptive Program

21 **Q30. What was the objective of the C&I non-prescriptive program?**

22 A30. The non-prescriptive program provided custom incentives to C&I customers for
23 installing measures that are generally not considered a prescriptive installation or
24 are innovative and unique energy efficiency equipment and controls that decrease
25 electric and/or gas use.

Line
No.

1 **Q31. What measures were included in the C&I non-prescriptive program?**

2 A31. The C&I non-prescriptive program components include custom measures and
3 Request for Proposal (RFP), which are special offerings designed to increase
4 customer participation. Examples of C&I electric non-prescriptive program
5 measures could include LED lighting upgrade that is not one to one replacement or
6 has extended hours of use, HVAC systems with extended hours of operation, or
7 even process systems and compressed air systems. Examples of C&I gas non-
8 prescriptive program measures could include process boilers or HVAC systems
9 with extended hours of operation or was not a one-to-one replacement.

10

11 **Q32. Were any measures excluded from the C&I non-prescriptive program?**

12 A32. Yes. Measures that were not eligible for a non-prescriptive incentive included fuel
13 switching (e.g., electric to gas or gas to electric), changes in operational and/or
14 maintenance practices or simple control modifications, on-site standby electric
15 generators, projects that involve kW peak-shifting but do not have a corresponding
16 kWh savings, Combined Heat and Power systems and projects involving renewable
17 energy. Project applications must also meet the non-prescriptive program
18 requirements.

19

20 **Q33. What incentives were offered under the C&I non-prescriptive program?**

21 A33. Measure incentives were based on twelve months engineering calculated energy
22 savings paid a rate of \$0.05 per kWh and \$3.50 per Mcf. To participate in the non-
23 prescriptive program and be eligible for an incentive, a pre- and post- inspection is
24 required. Additionally, incentives were capped at 50% of the project cost.

Line
No.

1 **Q34. What energy savings and customer participation were achieved in the C&I**
2 **non-prescriptive program?**

3 A34. As shown in Exhibit A-2, page 1, line 23, column (f), DTE Electric's C&I non-
4 prescriptive program achieved 82,573 MWh of reduced electric use. The EWR Plan
5 goal was 133,486 MWh. The electric energy savings were 50,913 MWh less than
6 the plan as shown in Exhibit A-2, page 1, line 23, column (h).

7

8 As shown in Exhibit A-2, page 2, line 22, column (f), DTE Gas's C&I non-
9 prescriptive program achieved 37,354 Mcf of reduced natural gas use. The 2022
10 EWR Plan goal was 149,344 Mcf. The gas energy savings were 111,990 Mcf less
11 than the plan as shown in Exhibit A-2 page 2, line 22, column (h).

12

13 **Q35. What amount did DTE spend on the C&I non-prescriptive program?**

14 A35. As shown in Exhibit A-2, page 1, line 23, column (g), DTE Electric spent
15 approximately \$13 million on the C&I non-prescriptive program. The non-
16 prescriptive program spend includes customer incentives, program implementation
17 and marketing costs. The EWR Plan had an anticipated cost of approximately \$20
18 million. The non-prescriptive program spend was approximately \$6.7 million less
19 than planned as shown in Exhibit A-2, page 1, line 23, column (i).

20

21 As shown in Exhibit A-2, page 2, line 22, column (g), DTE Gas spent
22 approximately \$1.6 million on the C&I non-prescriptive program. The EWR Plan
23 had an anticipated cost of approximately \$1.9 million. The non-prescriptive
24 program spend was approximately \$0.4 million less than planned as shown in
25 Exhibit A-2, page 2, line 22, column (i).

Line
No.

1

C&I Operational Platform

2

Q36. What is the objective of the Operational Platform?

3

A36. The Operational Platform's objective is to provide a comprehensive approach whereby businesses systematically manage energy use to continuously improve energy performance. The programs' purpose is to identify low cost/no cost operating change measures that customers can implement that will reduce their energy consumption and improve the facilities operating performance. The programs focus on changing business practices and operating schedules while establishing an organizational culture to reduce energy waste, improve energy efficiency and verify the results.

11

12

Q37. What programs are included in the Operational Platform?

13

A37. The C&I Operational Platform consists of two programs: Retro-Commissioning and Strategic Energy Management. Details of each program's objectives and accomplishments will be discussed below.

16

17

Retro-Commissioning Program

18

Q38. What was the objective of the Retro-Commissioning program?

19

A38. Retro-Commissioning (RCx) targets commercial buildings by providing a detailed energy audit and evaluation that identifies low cost/no cost operating change measure recommendations. Property managers and building owners could then implement these recommendations, thereby reducing the facilities operational energy consumption. Customers are expected to have a building management system, to provide a nominal commitment, and to implement recommendations that have an 18-month simple payback or less. In addition to the operational energy

25

Line
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1 saving recommendations, the Retro-Commissioning evaluation report provides
2 customers with recommendations for energy efficient capital investments that the
3 customer could implement and receive an incentive through the Downstream
4 Platform.

5

6 **Q39. What energy savings and customer participation were achieved in the Retro-**
7 **Commissioning program?**

8 A39. DTE Electric saved 15,319 MWh through the Retro-Commissioning program, as
9 shown on line 24, column (f) of Exhibit A-2, page 1. The EWR Plan energy savings
10 objective was 14,720 MWh. The RCx program exceeded the target energy savings
11 by 599 MWh, as shown on line 24, column (h) of Exhibit A-2, page 1.

12

13 DTE Gas saved 16,839 Mcf through the Retro-Commissioning program as shown
14 on line 23, column (f) of Exhibit A-2, page 2. The EWR Plan energy savings
15 objective was 10,060 Mcf. The RCx program's energy savings were higher than
16 the Plan by 6,778 Mcf as shown on line 23, column (h) of Exhibit A-2, page 2.

17

18 **Q40. What amount did DTE spend on the Retro-Commissioning program?**

19 A40. DTE Electric spent \$3.0 million on the Retro-Commissioning program as shown
20 on line 24, column (g) of Exhibit A-2, page 1. The EWR Plan cost was \$3.0 million.
21 The RCx program underspent their 2022 cost by \$0.04 million as shown on line 24,
22 column (i) of Exhibit A-2, page 1.

23

24 DTE Gas spent \$0.4 million on the Retro-Commissioning program as shown on
25 line 23, column (g) of Exhibit A-2, page 2. The EWR Plan cost was \$0.2 million.

Line
No.

1 The RCx program exceeded the planned cost by \$0.2 million as shown on line 23,
2 column (i) of Exhibit A-2, page 2.

3

4

Strategic Energy Management Program

5 **Q41. What was the objective of the Strategic Energy Management program?**

6 A41. Strategic Energy Management (SEM) targets commercial and industrial facilities
7 by providing a holistic view of the customer's energy performance. Strategic
8 Energy Management engages and commits executives and facility managers to
9 develop and implement long term strategic energy performance plan. The program
10 provides coaching and training for 12-24 months to build the foundation of a
11 continual improvement structure for driving year after year of improved energy
12 performance. Customers are expected to have a building management system and
13 provide a commitment to implement recommendations that have a nominal, simple
14 payback. In addition to the operational energy saving recommendations, the
15 Strategic Energy Management evaluation provides customers recommendations for
16 capital energy efficient investments that the customer could implement and receive
17 an incentive through the Downstream Platform.

18

19 **Q42. What energy savings and customer participation were achieved in the**
20 **Strategic Energy Management program?**

21 A42. DTE Electric saved 23,516 MWh through the Strategic Energy Management
22 program, as shown on line 25, column (f) of Exhibit A-2, p1. The EWR Plan energy
23 savings objective was 15,669 MWh. The SEM program exceeded the target energy
24 savings by 7,847 MWh as shown on line 25, column (h) of Exhibit A-2, p1.

Line
No.

1 DTE Gas saved 86,012 Mcf through the Strategic Energy Management program,
2 as shown on line 24, column (f) of Exhibit A-2, p2. The EWR Plan energy savings
3 objective was 55,086 Mcf. The SEM program exceeded the target energy savings
4 by 30,926 Mcf as shown on line 24, column (h) of Exhibit A-2, p2.

5
6 **Q43. What amount did DTE spend on the Strategic Energy Management program?**

7 A43. DTE Electric spent \$3.3 million on the SEM program as shown on line 25, column
8 (g) of Exhibit A-2, p1. The EWR Plan cost was \$2.4 million. The SEM program
9 exceeded the 2022 cost by \$0.9 as shown on line 25, column (i) of Exhibit A-2, p1.
10 The additional spend was directly related to customer savings verification and
11 incentives paid for the 7,847 MWh the program overachieved.

12
13 DTE Gas spent \$0.5 million on the SEM program as shown on line 24, column (g)
14 of Exhibit A-2, p2. The EWR Plan cost was approximately \$0.4 million. SEM
15 program cost was \$0.1 million more than planned as shown on line 24, column (i)
16 of Exhibit A-2, p2. The overspend was directly related to customer savings
17 verification and incentives paid for the additional 30,926 Mcf the program
18 achieved.

19

20 **C&I Small Business Platform**

21 **Q44. What is the objective of the Small Business Platform?**

22 A44. The objective of the Small Business Platform is to provide very small to medium
23 business customers with an opportunity to participate in DTE's energy efficiency
24 programs. Small Business Platform is segmented to strategically develop and
25 implement programs for these business customers. For example, a direct install

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No.

1 program will focus on very small business customers that usually cannot justify
2 installing energy efficient measures. Another program will enroll trade allies that
3 agree to focus on small-medium businesses to design and install energy efficient
4 measures. Targeting the trade ally network allows DTE to focus on contractors that
5 could impact a greater number of small-medium business customers. Small to
6 medium business customers can also participate directly in small business programs
7 using their employees to design and install the measures. These business customers
8 generally install the most common energy-efficient measures including but not
9 limited to LED lighting, motors, air conditioning, ventilation, thermostats,
10 furnaces, and insulation. When the project is completed, DTE will approve the
11 application and the customer will receive their incentive for the project.

12

13 **Q45. What programs are included in the C&I Small Business Platform?**

14 A45. DTE C&I Small Business Platform consists of three programs, Business Energy
15 Consultation, Find and Fix, and Small Business Focus. Details of this program's
16 objectives and accomplishments will be discussed below.

17

18 **Business Energy Consultation Program**

19 **Q46. What was the objective of the Business Energy Consultation (BEC) program?**

20 A46. The objective of the BEC program is to educate small business customers about
21 energy efficiency options and opportunities. The outreach team provides a walk-
22 through energy assessment along with complimentary direct install energy
23 efficiency measures.. It then helps the small business customer understand that they
24 can control their energy use and operating costs. The most basic objective is to help

Line
No.

1 small business customers begin their energy efficiency journey and make best
2 practice recommendations.

3

4 **Q47. What measures were included in the Business Energy Consultation Program?**

5 A47. The BEC program's most common electric measures include, but are not limited
6 to, programmable thermostat or Wi-Fi thermostat, LED screw in lamps or LED exit
7 sign. The most common gas measures include, but are not limited to, spray nozzles,
8 faucet aerators, and pipe wrap.

9

10 **Q48. What energy savings and customer participation were achieved in the Business**
11 **Energy Consultation program?**

12 A48. DTE Electric saved 7,237 MWh through the BEC program, shown on line 26,
13 column (f) of Exhibit A-2, page 1. The EWR Plan energy savings expectation was
14 9,801 MWh. The BEC program was under the target energy savings by 2,564 MWh
15 as shown on line 26, column (h) of Exhibit A-2, p1. DTE Gas saved 28,368 Mcf
16 through the Business Energy Consultation program, shown on line 25, column (f)
17 of Exhibit A-2, page 2. The EWR Plan energy savings expectation was 29,424
18 Mcf. The BEC program was under the target energy savings by 1,056 Mcf as
19 shown on line 25, column (h) of Exhibit A-2, page 2.

20

21 **Q49. What amount did DTE spend on the Business Energy Consultation program?**

22 A49. DTE Electric spent \$2.8 million on the BEC program, shown on line 26, column
23 (g) of Exhibit A-2, page 1. The EWR Plan cost was \$3.7 million. The BEC program
24 was under the 2022 cost by approximately \$1.0 million as shown on line 26, column
25 (i) of Exhibit A-2, page 1.

Line
No.

1 DTE Gas spent \$0.5 million on the Business Energy Consultation program, shown
2 on line 25, column (g) of Exhibit A-2, page 2. The EWR Plan budget was \$1.0
3 million. The BEC program cost was \$0.5 million less than Plan as shown on line
4 25, column (i) of Exhibit A-2, page 2.

5

6

Find and Fix Program

7

Q50. What was the objective of the Find and Fix program?

8 A50. The objective of the Find and Fix program is to help customers identify leaks using
9 an ultrasonic leak detector or thermal imaging camera, quantify savings, and
10 incentivize customers to fix the leaks or faulty steam traps.

11

12

Q51. What measures were included in the Find and Fix Program?

13 A51. The Find and Fix compressed air program most common electric measures include,
14 fixing compressed air leaks, no loss condensate drains, and compressed air nozzles.
15 The Find and Fix gas program most common gas measure included steam trap
16 repair or replacement.

17

18

**Q52. What energy savings and customer participation were achieved in the Find
19 and Fix program?**

20 A52. DTE Electric saved 7,366 MWh through the F&F compressed air program, shown
21 on line 32, column (f) of Exhibit A-2, page 1. The EWR Plan energy savings
22 expectation was 5,275 MWh. The Find and Fix program was over the target energy
23 savings by 2,092 MWh as shown on line 32, column (h) of Exhibit A-2, p1.

24

25

DTE Gas saved 7,263 Mcf through the Find and Fix gas program, shown on line
29, column (f) of Exhibit A-2, page 2. The EWR Plan energy savings expectation

Line
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1 was 8,280 Mcf. The Find and Fix gas program was under the target energy savings
2 by 1,017 Mcf as shown on line 29, column (h) of Exhibit A-2, page 2.

3

4 **Q53. What amount did DTE spend on the Find and Fix program?**

5 A53. DTE Electric spent \$1.0 million on the Find and Fix compressed air program,
6 shown on line 32, column (g) of Exhibit A-2, page 1. The EWR Plan cost was \$0.8
7 million. The Find and Fix compressed air program was over the 2022 cost by
8 approximately \$0.2 million as shown on line 32, column (i) of Exhibit A-2, page 1.

9

10 DTE Gas spent \$0.2 million on the Find and Fix gas program, shown on line 29,
11 column (g) of Exhibit A-2, page 2. The EWR Plan budget was \$0.3 million. The
12 Find and Fix gas program cost was \$0.06 million less than Plan as shown on line
13 29, column (i) of Exhibit A-2, page 2.

14

15 **Small Business Focus Program**

16 **Q54. What was the objective of the Small Business Focus program?**

17 A54. The objective of the Small Business Focus program is to provide small and medium
18 business customers with an opportunity to begin their energy efficiency journey.
19 These customers aren't sure where or how to start their energy efficiency journey.
20 This program is strategically designed to provide a concierge-based approach to
21 servicing these customers. The energy efficiency measures that customers install
22 could be provided by a trade contractor network or self-installed.

23

24 **Q55. What measures were included in the Small Business Focus Program?**

Line
No.

1 A55. The Small Business Focus program's most common electric measures include, but
2 are not limited to, interior and exterior LED lighting, HVAC tune ups, and
3 refrigeration measures. The most common gas measures include, but are not limited
4 to, HVAC tune ups including systems and controls and Wi-Fi or programmable
5 thermostats.

6
7 **Q56. What energy savings and customer participation were achieved in the Small**
8 **Business Focus program?**

9 A56. DTE Electric saved 50,243 MWh through the Small Business Focus program,
10 shown on line 33, column (f) of Exhibit A-2, page 1. The EWR Plan energy savings
11 expectation was 21,545 MWh. The Small Business Focus program was over the
12 target energy savings by 28,698 MWh as shown on line 33, column (h) of Exhibit
13 A-2, p1.

14 DTE Gas saved 5,032 Mcf through the Small Business Focus program, shown on
15 line 30, column (f) of Exhibit A-2, page 2. The EWR Plan energy savings
16 expectation was 23,728 Mcf. The Small Business Focus program was under the
17 target energy savings by 18,696 Mcf as shown on line 30, column (h) of Exhibit A-
18 2, page 2.

19

20 **Q57. What amount did DTE spend on the Small Business Focus program?**

21 A57. DTE Electric spent \$7.5 million on the Small Business Focus program, shown on
22 line 33, column (g) of Exhibit A-2, page 1. The EWR Plan cost was \$6.4 million.
23 The Small Business Focus program was over the 2022 cost by approximately \$1.1
24 million as shown on line 33, column (i) of Exhibit A-2, page 1.

Line
No.

1 DTE Gas spent \$0.6 million on the Small Business Focus program, shown on line
2 30, column (g) of Exhibit A-2, page 2. The EWR Plan budget was \$1.0 million.
3 The Small Business Focus program cost was \$0.4 million less than Plan as shown
4 on line 30, column (i) of Exhibit A-2, page 2.

5

6

C&I Midstream Platform

7

Q58. What is the objective of a midstream delivery channel?

8 A58. The objective of a midstream delivery channel is to develop and implement a
9 simplified product procurement method and delivery channel. Midstream
10 programs enroll distributors to participate because of their expertise and the fact
11 that they sell the products. By targeting the distributor delivery channel, DTE can
12 focus on fewer players while impacting a greater number of business customers.
13 Simplified product procurement method does not require the customer to submit a
14 program application, and the customer receives a point of purchase incentive.
15 Successful midstream programs can change the distributor's stocking habits to
16 include more readily available energy efficient products in the warehouse which
17 they can sell to their customers.

18

19

Q59. What programs are included in the C&I Midstream Platform?

20

A59. DTE Electric's C&I Midstream Platform consists of three programs: Midstream
21 Lighting, Midstream Food Service, and Midstream HVAC. DTE Gas's C&I
22 Midstream Platform consists of one program, Midstream Food Service. Details of
23 each program's objectives and accomplishments will be discussed below.

Line
No.

1

Midstream Lighting

2

Q60. What was the objective of the Midstream Lighting program?

3

A60. The Midstream Lighting program's objective is to enroll electric distributors that have a mix of energy efficient LED products that include, but are not limited to, A Line and PAR lamps, 2 and 4-foot LED linear tube, wall mounted, exterior wall packs and occupancy sensors. All LED products included in this program must be either certified by the Design Lights Consortium (DLC) or Energy Star® rated.

8

9

Q61. What energy savings and customer participation were achieved in the Midstream Lighting program?

10

11

A61. DTE Electric saved 77,595 MWh through the C&I Midstream Lighting program, shown on line 27, column (f) of Exhibit A-2, page 1. The EWR Plan expectation was 78,331 MWh. The Midstream Lighting program was 736 MWh less than targeted energy savings.

15

16

Q62. What amount did DTE Electric spend on the Midstream Lighting program?

17

A62. DTE Electric spent \$5.4 million on the Midstream Lighting program, shown on line 27, column (g) of Exhibit A-2, page 1. The EWR Plan cost was \$5.5 million. The Midstream Lighting program was \$0.1 million less than the 2022 cost as shown on line 27, column (i) of Exhibit A-2, p1.

21

22

Midstream Food Service

23

Q63. What was the objective of the Midstream Food Service programs?

24

A63. The Midstream Food Service program's objective is to enroll distributors and dealers that have a mix of energy efficient products that are Energy Star® rated that

25

Line
No.

1 include, but are not limited to, fryers, griddles, holding cabinets, combination
2 ovens, rack ovens, conveyor ovens, and refrigerators and freezers.

3

4 **Q64. What energy savings and customer participation were achieved in the**
5 **Midstream Food Service program?**

6 A64. DTE Electric saved 1,339 MWh through the C&I Midstream Food Service
7 program, shown on line 28, column (f) of Exhibit A-2, page 1. The EWR Plan
8 energy savings expectation was 3,501 MWh. Midstream Food Service program
9 was 2,162 MWh less than the targeted energy savings.

10

11 DTE Gas saved 10,478 Mcf through the C&I Midstream Food Service program,
12 shown on line 26, column (f) of Exhibit A-2, page 2. The EWR Plan energy savings
13 was 3,031 Mcf. The Midstream Food Service was 7,447 Mcf more than targeted
14 energy savings.

15

16 **Q65. What amount did DTE spend on the Midstream Food Service programs?**

17 A65. DTE Electric spent \$0.8 million on the Midstream Food Service program, shown
18 on line 28, column (g) of Exhibit A-2, page 1. The EWR Plan cost was \$1.0 million.
19 The Midstream Food Service program was under spent by \$0.3 million as shown
20 on line 28, column (i) of Exhibit A-2, page 1.

21

22 DTE Gas spent \$0.3 million on the Midstream Food Service program, shown on
23 line 26, column (g) of Exhibit A-2, page 2. The EWR Plan cost was \$0.1 million.
24 The Midstream Food Service program over spent the 2022 budget by \$0.2 million
25 as shown on line 26, column (i) of Exhibit A-2, page 2.

Line
No.

1

Midstream HVAC

2 **Q66. What was the objective of the Midstream HVAC program?**

3 A66. The Midstream HVAC program enrolls HVAC distributors and manufacturing
4 representatives with the objective of having a mix of energy efficient products that
5 are certified by Air-Conditioning, Heating and Refrigeration Institute that include,
6 but are not limited to, air-cooled air conditioners, heat pumps, ductless mini, and
7 multi-split systems.

8

9 **Q67. What energy savings and customer participation were achieved in the**
10 **Midstream HVAC program?**

11 A67. DTE Electric saved 9,264 MWh through the C&I Midstream HVAC program,
12 shown on line 29, column (f) of Exhibit A-2, page 1. The EWR Plan energy savings
13 expectation was 7,679 MWh. The Midstream HVAC program exceeded the
14 targeted energy savings by 1,585 MWh.

15

16 **Q68. What amount did DTE spend on the Midstream HVAC program?**

17 A68. DTE Electric spent \$2.9 million on the Midstream HVAC program, shown on line
18 29, column (g) of Exhibit A-2 page 1. The EWR Plan cost was approximately \$1.9
19 million. The Midstream HVAC program exceeded their 2022 cost by \$1.0 million
20 as shown on line 29, column (i) of Exhibit A-2 page 1.

21

22

C&I Emerging Measures & Approaches

23 **Q69. What C&I Emerging Measures and Approaches were developed and offered**
24 **to DTE customers?**

Line
No.

1 A69. The C&I Emerging Measures and Approaches Platform promotes new
2 commercialized programs that were previously C&I pilots that provide energy
3 efficiency technologies or delivery channel strategies and are cost effective. In the
4 2022 EWR program year, one C&I Emerging Measures and Approaches program
5 was commercialized. The only program is the C&I Telecommunications
6 (Telecom). For more information and details about this program, please refer to
7 the 2022 EWR Annual Report starting on page 56.

8

9 **Q70. What were the Emerging Measures and Approaches energy saving and**
10 **customer participation results?**

11 A70. As shown in Exhibit A-2, page 1, line 34, column (g), the DTE Electric Emerging
12 Measures & Approaches saved 2,074 MWh. The EWR Plan energy savings
13 objective was 5,565 MWh. These savings were 3,492 MWh less than planned, as
14 shown in Exhibit A-2, page 1, line 34, column (h).

15

16 As shown in Exhibit A-2, page 2, line 31, column (f), DTE Gas Emerging Measures
17 & Approaches saved 0 Mcf. The EWR Plan energy savings objective was 10,366
18 Mcf. These savings were 10,366 Mcf less than planned, as shown in Exhibit A-2,
19 page 2, line 31, column (h). In the 2022 EWR program year, no C&I Emerging
20 Measures and Approaches programs were commercialized for DTE Gas.

21

22 **Q71. What were the Emerging Measures and Approaches spend results?**

23 A71. The Emerging Measures and Approaches program spend includes customer
24 incentives, implementation costs and marketing costs. As shown in Exhibit A-2
25 page 1, line 34, column (g), DTE Electric spent approximately \$0.9 million on the

Line
No.

1 Emerging Measures and Approaches. The EWR Plan cost was \$1.4 million. The
2 Emerging Measures and Approaches spent \$0.4 million less, as shown on line 34,
3 column (i) of Exhibit A-2, page 1.

4
5 As shown in Exhibit A-2 page 2, line 31, column (g), DTE Gas spent \$0 million on
6 the Emerging Measures and Approaches. The EWR Plan cost was \$0.4 million.

7

8

C&I Strategic Energy Plan

9 **Q72. Has DTE continued to implement the C&I Strategic Energy Plan with its**
10 **business customers?**

11 A72. Yes. In 2016, DTE created and implemented the Strategic Energy Plan (SEP) to
12 assist C&I customers. The Strategic Energy Plan is a comprehensive energy
13 assessment tool that is designed to provide customers with the necessary
14 information and knowledge to create and implement a five-year energy efficiency
15 plan that meets their needs. DTE is continuing to assist companies in developing
16 and implementing a Strategic Energy Plan for their facilities so that they create a
17 continuous energy efficiency mindset at their company.

18

19

C&I Self-Directed Program

20 **Q73. Did DTE offer a Self-Direct program?**

21 A73. Yes. Please see Exhibit A-1 (page 51) of the Annual Report.

22

23 **Q74. What information does the 2022 Annual Report contain on Self-Directed**
24 **Customer energy efficiency plans?**

Line
No.

1 A74. The annual report, Exhibit A-1 (page 51) summarizes information from customers
2 that have implemented a self-directed customer energy optimization plan.

3

4 **Q75. Why is DTE Electric incorporating the projected energy savings from the**
5 **plans of Self-Directed customers into DTE Electric's 2022 actual energy**
6 **savings instead of incorporating the actual energy savings reported by these**
7 **customers?**

8 A75. As discussed by Witness Bilyeu, and per Section 93 (7) of Public Act 295 (PA 295),
9 as amended by PA 342, "Projected energy savings from measures implemented
10 under a self-directed plan shall be attributed to the relevant provider's energy
11 optimization programs for the purposes of determining annual incremental energy
12 savings achieved." Therefore, as instructed by Witness Bilyeu, I have included the
13 projected energy savings from self-directed customers' plans as part of the total
14 energy savings achieved by C&I customers.

15

16 **Q76. How were the required energy reductions for these customers determined?**

17 A76. Self-Directed customers determined their energy reductions by multiplying their
18 annual consumption by the percentage factor specified in PA 295.

19

20 **Q77. Are customers required to submit reports of their Self-Directed activities?**

21 A77. Yes. As of December 14, 2010, Section 93 (9) PA 295 requires customers who are
22 self-directing their energy efficiency plans to file a brief report every year to show
23 their plan's progress and provide sufficient data to allow their energy provider and
24 the Commission to develop reliable estimates of the energy savings they are
25 achieving. DTE Electric received three customers' 2022 annual reports. These

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1 customers' results have been incorporated into the 2022 Annual Report included in
2 Exhibit A-1, page 51.

3

4 **Q78. How many of the three customers that chose to continue to self-direct their**
5 **energy efficiency plan during 2022 achieved their energy savings goal?**

6 A78. All three self-direct customers reported achieving their energy saving goals in 2022,
7 as shown on page 51 of Exhibit A-1.

8

9 **Q79. What was the cost to administer the Self-Directed program?**

10 A79. The cost to administer the Self-Directed program for 2022 was \$51,000. These
11 costs are shown in Exhibit A-2 p1, line 35, column (g).

12

13 **C&I EUT (End Use Transportation) Exploratory Offer**

14 **Q80. What was the objective of the EUT Exploratory offer?**

15 A80. The objective for creating an EUT Exploratory offer was to continue to build
16 customer awareness regarding the benefits of energy efficiency and for customers
17 to make a long-term commitment to reduce their energy use. By having EUT
18 customers create and implement their own energy efficiency plans, these customers
19 would make a long-term commitment to developing energy efficiency strategies
20 that best suited their business needs.

21

22 **Q81. How many EUT customers participated in the EUT Exploratory offer?**

23 A81. Zero (0) customers elected to participate in the EUT Exploratory offer.

Line
No.

1 **Q82. If a customer would have participated would they have been required to**
2 **submit a report of their energy efficiency activities?**

3 A82. Yes.

4

5

C&I Pilot Programs

6 **Q83. Did C&I offer customers any Pilot programs in 2022?**

7 A83. Yes. Please see Witness Bilyeu's Exhibit A-1 starting on page 61.

8

9

C&I Administration & Infrastructure

10 **Q84. What is the basis for the administration & infrastructure amounts?**

11 A84. The amount shown in Exhibit A-2 page 1, line 37, column (g), DTE Electric spent
12 approximately \$4.6 million, represents internal administration and infrastructure
13 costs directly associated with the overall C&I Electric portfolio implementation. It
14 is the administration and infrastructure costs that Company Witness Mr. Murray
15 allocated to the C&I Portfolio as shown in Exhibit A-11 page 2. The 2022 EWR
16 Plan had an administration & infrastructure cost of approximately \$3.8 million.
17 DTE Electric spent approximately \$0.8 million more than planned on
18 administration and infrastructure costs. The spend was used for technology and
19 infrastructure program improvements as well as research for potentially new
20 programs that could be incorporated into the C&I Portfolio.

21

22 The amount shown in Exhibit A-2 page 2, line 33, column (g), DTE Gas spent
23 approximately \$1.2 million, represents internal administration and infrastructure
24 costs directly associated with the overall C&I Gas portfolio implementation. It is
25 the administration and infrastructure costs that Company Witness Mr. Murray

Line
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1 allocated to the C&I Portfolio as shown in Exhibit A-15 page 2. The 2022 EWR
2 Plan had an administration & infrastructure cost of approximately \$0.9 million.
3 DTE Gas spent approximately \$0.3 million more than planned on administration
4 and infrastructure costs. The spend was used for technology and infrastructure
5 program improvements as well as research for potentially new programs that could
6 be incorporated into the C&I Portfolio.

7

8 **Q85. Does this complete your direct testimony?**

9 A85. Yes, it does

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

QUALIFICATIONS

AND

DIRECT TESTIMONY

OF

JOSHUA REGO

DTE ELECTRIC COMPANY AND DTE GAS COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF JOSHUA REGO

Line
No.

1 **Q1. What is your name, business address, and by whom are you employed**

2 A1. My name is Joshua Rego (he/him/his). My business address is Guidehouse Inc.
3 (Guidehouse) 101 California Street, Suite 4100, San Francisco, CA 94111. I am a
4 Director in Guidehouse’s Energy, Sustainability & Infrastructure practice.
5 Guidehouse is the independent energy program evaluation contractor for DTE
6 Electric Company and DTE Gas Company.

7
8 **Q2. On whose behalf are you testifying?**

9 A2. I am testifying on behalf of DTE Electric Company (DTE Electric) and DTE Gas
10 Company (DTE Gas) (collectively, DTE).

11

12 **Q3. What is your educational background?**

13 A3. I have a Bachelor’s Degree in Environmental Policy from the University of
14 California - San Diego, and a Master of Science degree in Environmental Policy
15 from the University of Michigan.

16

17 **Q4. What is your professional experience?**

18 A4. I have been working in the energy industry for over a decade, and specifically
19 evaluating energy efficiency programs for over eight of those years. I currently
20 serve as Project Manager of DTE’s portfolio evaluation and have conducted
21 dozens of evaluations of energy efficiency programs such as the programs
22 currently being offered by DTE.

23

24 **Q5. Have you previously testified or supported testimony to the Michigan Public**
25 **Service Commission (MPSC or Commission)?**

DTE ELECTRIC COMPANY AND DTE GAS COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF JOSHUA REGO

Line
No.

1 A5. Yes. In Michigan, I had a role in supporting the development of Craig
2 McDonald's testimony in DTE's 2015 and 2016 Energy Optimization (EO)
3 Reconciliation Cases (No. U-18023, U-18024, U-18332, and U-18338). In
4 addition, I had a leading role in supporting the development of Deborah
5 Brannan's testimony in DTE's 2017, 2018, 2019, and 2020 Energy Waste
6 Reduction (EWR) Reconciliation Cases (No. U-20029, U-20035, U-20366, U-
7 20369, U-20703, U-20708, U-20866, and U-20871). Finally, I led and developed
8 the testimony in the DTE's 2021 Energy Waste Reduction Reconciliation Case
9 (U-21206).

Line
No.

1 **Q6. What are your current job responsibilities?**

2 A6. I oversee energy efficiency and evaluation strategy for clients throughout the
3 State of Michigan. In this role, I have overall responsibility for directing data
4 collection, analysis, and reporting efforts spanning all program types and
5 customer segments.

6

7 **Q7. What is the purpose of your testimony in this proceeding?**

8 A7. The purpose of my testimony is to verify DTE's 2022 EWR program electric,
9 coincident peak demand, and gas energy savings calculations. The purpose of the
10 verification is to confirm the energy savings claimed by DTE and provide revised
11 estimates where necessary. My testimony: (1) describes the verification process
12 that was performed for DTE's EWR programs; (2) states the verified electric,
13 coincident peak demand, and gas savings achieved for the 2022 EWR programs;
14 (3) describes the process for verifying savings shared between Consumers Energy
15 and DTE, and states the resulting savings achieved; (4) verifies the accuracy of
16 the performance incentive attributes; and (5) quantifies greenhouse gas emissions
17 reductions resulting from 2022 program activity.

18

19 **Q8. Were there any significant changes in the evaluation process used for program**
20 **year 2022 compared to program year 2021?**

21 A8. For the EWR programs, the measurement and verification approaches used to
22 quantify and verify savings were similar to the approaches and methods used in
23 program years 2012 through 2021.

24

25 In 2022, DTE collaborated with Consumers Energy to quantify, communicate, and

Line
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claim shared savings resulting from existing EWR activities in overlapping service territories. These “Utility Shared Savings” are energy savings resulting from utility EWR program activity that have historically gone unclaimed as they occur in the utility’s single-fuel (electric or gas) service territory. For additional information on Utility Shared Savings, please see Section 3.

Q9. Are you sponsoring any exhibits in this proceeding?

A9. Yes. I am sponsoring the following exhibits:

<u>Exhibit</u>	<u>Description</u>
A-6	2022 Energy Waste Reduction Validation Sample Selection
A-7	2022 Energy Waste Reduction Energy Savings
A-8	2022 Energy Waste Reduction Performance Incentive Attributes
A-9	2022 Energy Waste Reduction Emissions Reductions

Q10. Were these exhibits prepared by you or under your supervision?

A10. Yes.

Verification Process for Prescriptive Programs

Q11. How were the EWR prescriptive program’s verified energy savings determined?

A11. Verified energy savings for 2022 EWR prescriptive programs were evaluated using a three-step approach: (1) audit of reported EWR gross savings as reported by DTE compared to other data sources, including the values in the Michigan Energy Measures Database (MEMD), as well as a review of a statistically valid sample of applications, where applicable, to determine the audited gross savings;

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(2) application of 2020 Installation Rate Adjustment Factor (IRAF) values to determine verified gross savings, with a few exceptions as described below; and (3) application of appropriate Net-to-Gross Ratio (NTGR) values to each measure to determine verified net savings.

The audit step consists of two phases. In the first phase of the audit, DTE program tracking data (from DTE's Energy Optimization Program Tracker (EOPT) database) were compared to data from the Implementation Contractor (IC) program tracking database to check for inconsistencies. Program tracking data consists of information about program participants, the number, type and size of energy efficiency equipment installed, project completion date, paid incentives, and expected energy and demand savings. Once the program tracking data were compared and deemed consistent, DTE's energy and demand savings calculations were checked for use of the correct MEMD algorithm and associated inputs, or savings values. The audit's second phase consisted of a review of a statistically-significant sample of program applications for each EWR program, where applicable, to verify consistency with the data entered into program tracking databases. The findings from both phases were then used to calculate the total audited gross program savings for each program.

Once the audited gross savings were calculated, measure-level IRAF values were applied to determine verified gross savings. The applied IRAF values were developed during the 2020 evaluation via market research techniques including online surveys, telephone surveys and site visits to determine whether the measures listed in the program database for each customer were in place, in use, and matched

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1 the reported measure characteristics. These procedures were agreed upon in the
2 EWR Collaborative Evaluation Workgroup meetings organized by the Michigan
3 Public Service Commission and were used in the reconciliation results presented in
4 previous years. There are exceptions to applying the 2020 evaluated IRAF,
5 including for new programs/measures, measures targeting a new market and/or
6 using a new delivery mechanism, programs that underwent significant program
7 design changes, delayed installation of certain lighting measures, and finally, Tier
8 2 and 3 thermostat measures installed in a residential setting, and Tier 1, 2, and 3
9 thermostats installed in a C&I setting.

10
11 Finally, a deemed NTGR of 0.92 was applied to the verified gross savings for all
12 measures with some exceptions, including LEDs delivered through specific
13 programs (ENERGY STAR), Tier 1 (C&I only), 2 and 3 thermostat measures, and
14 income-qualified, pilots and education programs. The resulting verified net savings
15 values include any adjustments for inconsistencies in program tracking data,
16 corrections for misapplication of MEMD values and inputs, adjustments based on
17 any errors found in the application sample, as well as the application of IRAF and
18 NTGR values.

19
20 **Q12. What was the basis for the approach used to validate program savings for**
21 **prescriptive programs?**

22 A12. The approach developed for the validation of EWR program savings is based on
23 savings validation recommendations from the EWR Collaborative Evaluation
24 Workgroup, which include Data Tracking Validation and Application Tracking
25 Validation as described below.

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1 **Phase I - Data Tracking Verification for Prescriptive Programs**

2 **Q13. What was the first step of the Phase I verification process?**

3 A13. The first step in the Phase I verification process was to compare DTE's program
4 data to the data gathered by the ICs. Program savings, incentives, and quantities
5 were analyzed across both the DTE and IC databases. Any data entry errors, or
6 other discrepancies, were resolved and corrected in the EOPT database.

7

8 **Q14. How did the Guidehouse Evaluation Team ensure all savings claimed by DTE**
9 **occurred in 2022?**

10 A14. As part of the database review, Guidehouse reviewed project completion dates.
11 The project completion date was assumed to be the date at which an incentive was
12 processed by the IC, or the date of installation, sale or shipment of a measure. The
13 review verified that measures with savings attributed to program year 2022 were
14 distributed in 2022 based on the project completion date.

15

16 **Q15. What was the second step in the Phase I verification process?**

17 A15. The second step in the Phase I verification process was to recalculate savings
18 totals for the measures in DTE's program tracking database using the appropriate
19 savings value or algorithm from the DTE measures database. The measures
20 database is described below. This step was taken to ensure no entry or calculation
21 errors occurred and to double-check DTE's program-level total savings estimates.
22 The recalculated savings estimates were then compared to DTE's EOPT to
23 calculate the Phase 1 Realization Rate.

24

25 **Q16. What is DTE's measures database?**

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1 A16. The measures database consists of a list of all measures currently used in DTE's
2 EWR portfolio, including prescriptive (measures included in the MEMD) and
3 custom measures. For all measures, the measure database lists the savings values,
4 characteristics, assumptions, as well as a unique DTE measure identification
5 number. Prescriptive measures include the associated MEMD measure code as
6 well.

7
8 **Q17. Did you consider unit-level savings assumptions as part of the savings**
9 **verification process?**

10 A17. Yes. The Guidehouse Evaluation Team compared the unit-level savings
11 assumptions (e.g., kWh savings per ton of installed HVAC cooling capacity)
12 contained in DTE's measures database to corresponding assumptions from the
13 MEMD. The unit-level savings assumptions are specific to a technology (e.g.,
14 high efficiency HVAC unit), building type, and weather zone, and are expressed
15 in terms of energy savings (e.g., kWh or therms) or peak demand (e.g., kW) per
16 unit of measure used to describe the technology (e.g., tons of HVAC cooling
17 capacity). In instances where DTE's savings assumptions did not match the
18 MEMD value, the MEMD value was assumed to be correct. Once differences in
19 the unit-level savings assumptions were identified and corrected, program savings
20 were recalculated based on MEMD unit-level assumptions.

21

22 **Q18. How are custom measures handled during the second step of the Phase I**
23 **validation process?**

24 A18. Given that custom measure savings are not included in the MEMD, these
25 measures were individually reviewed and validated. In 2022 this applied to

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1 selected measures in ENERGY STAR® Products, Energy Efficiency Assistance,
2 Audit & Weatherization, Residential HVAC, Multifamily Residential,
3 Multifamily Common Area, Business Energy Consultation, Small Business
4 Focus, C&I Midstream Lighting, C&I Midstream HVAC, C&I Midstream Food
5 Service, and C&I Prescriptive programs.

6 Custom measures include both measures that are not included in the MEMD, as
7 well as quasi-custom measures that are based on MEMD savings values.

8 Examples include: (1) measures with some or all assumptions tailored to the
9 project site (e.g., site-specific hours of use), (2) measures with inputs based on
10 average program participation, and (3) measures where the baseline condition is
11 unknown, and therefore is a blended average of baselines for applicable existing
12 prescriptive measures based on state-specific baseline study data. The Guidehouse
13 Evaluation Team reviewed the assumptions used to report savings by ICs for
14 custom measures.

15
16 **Phase II - Application Verification for Prescriptive Programs**

17 **Q19. Which programs have applications that are reviewed and verified?**

18 A19. In 2022, the Guidehouse Evaluation Team reviewed applications for the following
19 programs: ENERGY STAR® Products, Energy Efficiency Assistance, New
20 Homes Construction, Business Energy Consultation, Small Business Focus, C&I
21 Prescriptive, and Telecom (represented in C&I Emerging Measures and
22 Approaches).

23
24 **Q20. How were the application samples chosen?**

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1 A20. The Guidehouse Evaluation Team requested applications for each program, where
2 applicable, using a stratified sampling approach. Using this approach, the
3 population (i.e., all applications for a given program in a given sampling period)
4 is divided into separate groups and a random sample is then drawn from each
5 group. Each program sample was stratified by application type. For example,
6 within the ENERGY STAR® Products Program, there are different application
7 types for appliances as opposed to thermostats.

8
9 Sampling was based on an assumed equal probability of an application or database
10 entry containing an error. In this context, “error” refers to either the inaccurate
11 transcription of data from the physical application into an electronic database, or
12 the inappropriate application of MEMD measures based on the information
13 reported in the applications.

14
15 The samples were chosen to achieve 90% confidence and 10% precision for the
16 energy savings estimates for the program. This means that the Guidehouse
17 Evaluation Team can conclude with 90% confidence that the actual energy savings
18 value for the population is +/-10% (or less) of the validated number. This level of
19 confidence adheres to industry standards. For specific programs with no significant
20 changes and stable IRAF values, the samples are designed to attain the targeted
21 precision over a rolling three-year period.

22
23 Exhibit A-6 titled “2022 Energy Waste Reduction Validation Sample Selection”
24 shows the sample frame (i.e., the level at which the sample was drawn) and size for
25 each EWR program (prescriptive and custom, where applicable).

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1 **Q21. Were separate samples taken for electric versus gas applications?**

2 A21. The sampling approach used for the review of program applications varied by
3 program, but in each case, explicitly accounted for savings from both fuel types.
4 For some programs this meant drawing different application samples for electric
5 and gas projects, while for others, Guidehouse drew a fuel-agnostic sample.

6
7 **Q22. What information was checked for in the statistical review of program**
8 **applications?**

9 A22. The applications were reviewed and checked against the DTE EOPT to confirm
10 all information was correct and the correct measure savings (i.e., the savings
11 associated with a particular piece of equipment, such as a clothes washer or
12 HVAC system) were assigned. The Guidehouse Evaluation Team checked
13 customer information, as well as project-level information to ensure consistency
14 with the DTE EOPT database. Project-level information includes measure types
15 installed, quantity by measure (i.e., the number of measures installed or removed),
16 per-unit energy and demand savings, install dates, and incentive amount.

17
18 **Q23. What types of errors did this review identify?**

19 A23. Two types of errors were examined: random errors and systematic errors. Random
20 errors refer generally to errors of transcription or data entry (“typo”) to an
21 individual record. Systematic errors refer to similar errors that are made in a
22 consistent fashion across multiple records.

23
24 A realization rate was calculated for the sample of each application type based on
25 errors or omissions identified as part of the review. The Guidehouse Evaluation

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1 Team then tested the hypothesis that the mean realization rate was equal to 100%
2 with a realization rate of 100% indicating no discrepancies between reported and
3 validated savings. If the sample mean did not significantly differ from 100%, the
4 sample program tracking data was adjusted as necessary to correct any errors found
5 in the sample of applications. If the sample mean did differ significantly from
6 100%, then the mean Phase II realization rate for the sample was applied to the
7 savings for the sampled population as determined in Phase I of the verification
8 process (i.e., the findings were extrapolated to the entire population). The difference
9 in realization rate was deemed to be significant when a two-tailed t-test indicated
10 the sample mean realization rate was significantly different from 100% at the 90%
11 confidence level.

12

13 **Q24. What was done after the review of the applications was completed?**

14 A24. After reviewing applications, DTE's total audited gross program savings were
15 recalculated based on the adjusted program tracking data.

16

17 **Q25. Did the results of your Phase I and Phase II audit activities change DTE's**
18 **savings values?**

19 A25. Yes. The Audited Gross Realization Rates (Audited Gross Savings/Utility
20 Reported Savings) were 101% for electric (MWh) savings, 102% for coincident
21 peak demand (MW) savings, and 107% for gas (MCF) savings. Exhibit A-7, titled
22 "2022 Energy Waste Reduction Energy Savings," shows the Audited Gross
23 Realization Rates by program in column (e). Page 1 shows electric Audited Gross
24 Realization Rate values, page 2 shows coincident peak demand values, and page 3
25 shows gas values.

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1 **Determination of Verified Gross Savings for Prescriptive Programs**

2 **Q26. How were verified gross savings determined for prescriptive programs?**

3 A26. Verified gross energy savings for the 2022 EWR prescriptive programs were
4 determined by applying the appropriate IRAF values to determine the verified
5 gross savings.

6

7 **Q27. What was the basis for the approach used in the determination of verified**
8 **gross savings?**

9 A27. The approach developed for the determination of verified gross savings is based
10 on recommendations from the EWR Collaborative Evaluation Workgroup.

11

12 **Q28. How were the IRAF values developed?**

13 A28. As part of the 2020 program year evaluation of DTE's EWR programs, the
14 Guidehouse Evaluation Team verified the installation and operation of individual
15 program measures based on responses to participant online surveys, telephone
16 surveys or site inspections. In general, the Guidehouse Evaluation Team first
17 asked customers to confirm the specific measures they received based on program
18 records. The Guidehouse Evaluation Team then divided the number of measures
19 verified by the respondent by the number reported in the program tracking data to
20 develop the first component of the IRAF (Installation Factor #1). Where
21 applicable, the Guidehouse Evaluation Team followed up with a question about
22 whether the measure was still installed, operating and matched the reported
23 measure characteristics. Based on this question, the Guidehouse Evaluation Team
24 developed Installation Factor #2, which is the number of measures in use divided
25 by the number of verified measures. For some measures subject to partial

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operation, as described below, the Guidehouse Evaluation Team also determined a part-use factor (PUF), which we used to adjust Installation Factor #2.

Guidehouse then developed a measure-specific IRAF for each respondent by multiplying these factors by the deemed savings value for each measure received. This resulted in a measure-level weighted average IRAF value, which Guidehouse applied to the measure-specific 2022 audited gross savings for each program to calculate the verified gross savings for that program.

IRAF values not only represent the verified installation but also the operation of program measures. The PUF value represents this verification of operation. A PUF was applied to Tier 1 programmable thermostats reflecting the portion of thermostats where the programmable feature had been overridden, as well as refrigerator and freezer recycling to reflect the seasonal or otherwise intermittent use of the appliance prior to being replaced.

Q29. Are there any exceptions to applying the IRAF determined by the 2020 evaluation?

A29. Yes, there are several exceptions to when the 2020 evaluated IRAF is applied (for detail regarding these exceptions please refer to the program-specific reconciliation reports submitted to the MPSC. In the instant case, the reports will be filed July 15, 2023).

The exceptions include:

- a. *Applying an IRAF of 1.00 during the first two program years.* An IRAF of 1.00 is applied to new measures during the first two program years if the

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- 1 measure offers distinctly different attributes from existing measures offered
2 in the portfolio (i.e., enhanced customer acceptance and is a significant
3 improvement in performance).
- 4 b. *Applying an IRAF of 1.00 during the first program year.* An IRAF of 1.00
5 is applied to measures upon first introduction to a program if the measure is
6 being delivered through a new delivery channel or is targeting a new market.
7 In the second year, the evaluated IRAF from the prior year is applied (i.e.,
8 a one-year delay).
- 9 c. *Applying an evaluated IRAF from another program.* In cases where a new
10 measure is introduced to an existing program but does not offer distinctly
11 different attributes from existing measures in the portfolio nor does it target
12 a new market, the Guidehouse Evaluation Team applied an evaluated value
13 from another, similar program.
- 14 d. *Other exceptions.* In cases where the IRAF was not evaluated in PY2020
15 due to limited or no sample, the Guidehouse Evaluation Team applied a
16 reasonable IRAF value based on evaluated IRAF from similar measures
17 across the portfolio, historical IRAF values, and expert judgement.
- 18 e. *Applying an IRAF of 1.00 to thermostats.* An IRAF is not applied to Tier 2
19 and Tier 3 Thermostats delivered by Residential programs, nor is it applied
20 to any thermostat delivered by C&I programs, as directed by the EWR
21 Collaborative, since deemed savings values represent verified net savings.
- 22 f. *Accounting for Delayed Installation.* Calculating the IRAF for lighting
23 includes accounting for the delayed installation from lamps sold in 2019,
24 2020 and 2021, but not installed within those program years.

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1 **Q30. How were dual-fuel savings accounted for?**

2 A30. For those programs that offered measures that produce both electric and gas
3 savings, the Guidehouse Evaluation Team applied the appropriate IRAF value to
4 both the gas and electric savings.

6 **Q31. How were income-qualified savings for the Home Energy Consultation and
7 Multi-family programs verified?**

8 A31. The Guidehouse Evaluation Team reviewed and verified income-qualified savings
9 calculations for the Home Energy Consultation and Multifamily Programs. If a
10 participant had an income-qualified designation in the DTE billing system, the
11 participant was located within an income-qualified census tract as
12 designated by the U.S. Department of Housing and Urban Development (HUD),
13 and/or the participant resided in an income-qualified multifamily dwelling
14 meeting HUD or Michigan State Housing Development Authority (MSHDA)
15 guidelines, savings were attributed to the income-qualified component of these
16 programs.

18 The Guidehouse Evaluation Team verified the designation of census tracts as
19 income-qualified per HUD guidelines, and for Multifamily, reviewed and verified
20 properties (not located in an income-qualified census tract) designated income-
21 qualified due to participation in a federal or state affordable housing program (such
22 as HUD and MSHDA).

24 **Determination of Verified Net Savings for Prescriptive Programs**

25 **Q32. How were verified net savings determined for Prescriptive programs?**

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1 A32. Once the verified gross savings were determined, a deemed NTGR was applied to
2 calculate the verified net savings values. These verified net savings values
3 represent the official savings achieved by DTE's EWR programs that are used to
4 determine DTE's performance versus mandated targets. For almost all
5 prescriptive programs and initiatives (except income-qualified, pilots, and
6 education which are assigned a NTGR of 1.00), the deemed NTGR for 2022 was
7 0.92. The measure-level exceptions are: standard LEDs which have a deemed
8 NTGR of 0.40 and specialty LEDs which have a deemed NTGR of 0.50 for bulbs
9 distributed through the ENERGY STAR Products program; and Tier 2 and Tier 3
10 thermostats delivered through residential programs, and Tier 1, 2, and 3
11 thermostats delivered through C&I programs, to which a NTGR is not applied as
12 savings represent verified net savings.

13 **Verification Process for Custom (Non-Prescriptive) Programs**

14 **Q33. Does the approach for determining verified energy savings for custom**
15 **programs differ from the approach used for prescriptive programs?**

16 A33. Yes. Programs delivering custom measures or measures included in the Behavior
17 Resource Manual (BRM) require a different approach than the one outlined above
18 to determine verified energy savings. In 2022, this applies to the Home Energy
19 Report Program, the Residential New Home Construction Program, the C&I Non-
20 Prescriptive programs, the Retro-Commissioning Program, the Strategic Energy
21 Management Program, the Find & Fix – Compressed Air Program, the Find & Fix
22 – Steam Trap Program, and the Telecom Program (represented in C&I Emerging
23 Measures and Approaches).

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1 **Q34. How were verified energy savings determined for the Home Energy Report**
2 **Program?**

3 A34. For the Home Energy Report Program, average per participant savings are
4 included in the BRM. Verified energy savings were determined through the
5 validation of average annual energy use using billing data, and the number of
6 active participants. The average per participant savings values included in the
7 BRM represent verified net savings. Therefore, no separate IRAF value or NTGR
8 value is applied.

9

10 **Q35. How were verified energy savings determined for the Virtual Commissioning**
11 **sub-program of the Retro-Commissioning Program?**

12 A35. For the Virtual Commissioning sub-program, verified net savings were estimated
13 using regression analysis. Using hourly whole-building meter data, the
14 Guidehouse Evaluation Team developed participant-specific regression models
15 comparing energy consumption before and after the program intervention,
16 accounting for changes in weather and non-routine events in accordance with the
17 International Performance Measurement and Verification Protocol (IPMVP)
18 Option C. The energy savings estimates resulting from this analysis represent
19 gross verified savings. The deemed NTGR was applied to determine verified net
20 savings.

21

22 **Q36. How were verified energy savings determined for the Residential New Home**
23 **Construction, C&I Non-Prescriptive, Retro-Commissioning Program,**
24 **Strategic Energy Management, Find & Fix – Compressed Air, and Find & Fix**
25 **– Steam Trap Programs?**

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1 A36. Verified net savings were determined for each of these programs through a three-
2 step approach: (1) the audit of program tracking data as reported by DTE; (2)
3 calculation of a Realization Rate (RR) based on an engineering review of project
4 files, and some combination of telephone surveys, site visits, and/or analysis of
5 metering data of a statistically valid sample of projects to determine verified gross
6 savings; and (3) application of appropriate NTGR to determine verified net
7 savings.

8

9 1. The first step of the verification process is Data Tracking Verification. DTE
10 program tracking data (from DTE's EOPT database) were compared to the
11 IC program tracking data to check for inconsistencies. Program tracking
12 data consists of information about program participants, the number, type,
13 and size of energy efficiency measures installed, project completion date,
14 paid incentives, and expected energy and demand savings. This analysis
15 checked for consistency between DTE's EOPT and the IC's databases. Any
16 data entry errors, or other discrepancies, were addressed.

17

18 2. The second step of the verification process began with an engineering
19 review of a statistically valid sample of project files from the current
20 program year. Once project files are reviewed, a sample of projects may be
21 selected for telephone surveys and/or site visits during which field engineers
22 verify installations and determine any differences in parameters from those
23 in the project files. In some cases, field engineers also gathered operational
24 data by installing data loggers, performing site measurements, and verifying
25 other operating parameters. Any adjustments made as a result of the visits

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1 and review of project files are then reflected in the calculation of a stratum
2 and/or program-level Realization Rate (RR). The RR is calculated by
3 dividing verified energy savings by utility reported gross savings for
4 sampled projects. The resulting value is applied to the current year's utility
5 reported savings.

6
7 3. Finally, a deemed NTGR of 0.92 was applied to the verified gross savings.

8
9 Thus, the verified net savings include any adjustments for inconsistencies in
10 program tracking data, corrections based on engineering review of project files and
11 telephone surveys and/or site visits, as well as the application of NTGR values.

12
13 **Q37. How was the sample for project files and site visits chosen?**

14 A37. In most cases, custom projects were selected for engineering review and
15 telephone surveys and/or site visits to achieve a 90% confidence level and 10%
16 precision rate for the energy savings estimates at the program level. This means
17 the Guidehouse Evaluation Team can conclude with 90% confidence that the
18 actual energy savings value for the population is +/-10% of the validated number.
19 This level of confidence adheres to industry standards.

20
21 In a handful of cases, sampling to achieve 90% confidence and 10% precision was
22 not feasible. In these cases, the Guidehouse Evaluation Team instead designed a
23 representative sample.

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- 1 1. For Residential New Home Construction, the sample was stratified by builder
2 and chosen to produce results that achieved 90% confidence level and 10%
3 precision for the program.
4
- 5 2. For C&I Non-Prescriptive, the sample was stratified by project size and
6 chosen to produce results that achieved 90% confidence and 10% precision
7 for the energy savings estimates using a three-year rolling average (i.e., over
8 a three-year period) since RRs have been stable historically and there were no
9 substantial program changes in 2022.
10
- 11 3. For the Find & Fix – Compressed Air, Find & Fix – Steam Trap, and Telecom
12 programs (represented in C&I Emerging Measures and Approaches), the
13 samples were chosen to achieve a 90% confidence level and 10% precision
14 for the program.
15
- 16 4. For the Retro-Commissioning and Strategic Energy Management programs,
17 the Guidehouse Evaluation Team developed a sample designed to provide
18 results representative of the program population. The Guidehouse Evaluation
19 Team further minimized uncertainty by evaluating the largest-impact and
20 highest-uncertainty projects, ultimately striking an appropriate balance
21 between evaluation rigor and cost. The sampled projects ended up
22 representing the majority of electric and gas savings for both programs.

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1 Exhibit A-6 titled “2022 Energy Waste Reduction Validation Sample Selection”
2 shows the sample frame (i.e., the level at which the sample was drawn) and size for
3 each EWR program (prescriptive and custom).
4

5 **Q38. Were separate samples taken for gas versus electric projects?**

6 A38. The samples were drawn to simultaneously meet the statistical precision criteria
7 for gas and electric measures. The sampling approach used for the review of
8 project files explicitly accounts for savings from both fuel types.
9

10 **Q39. How did the Guidehouse Evaluation Team ensure all savings claimed by DTE**
11 **occurred in 2022?**

12 A39. As part of the database review, Guidehouse reviewed project completion dates.
13 The project completion date was assumed to be the date at which an incentive was
14 processed by the IC, or the date of installation, sale or shipment of a measure. The
15 review verified that measures with savings attributed to program year 2022 were
16 distributed in 2022 based on the project completion date.
17

18 **Q40. What was the basis for the approach used to validate program savings for**
19 **custom programs?**

20 A40. The approach used to verify savings for custom programs adhere to industry
21 evaluation protocols including – the International Performance Measurement and
22 Verification Protocol (IPMVP) and the Department of Energy’s Uniform Methods
23 Project (UMP).
24

25 **2022 Verified Net Energy and Demand Savings**

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1 **Q41. Are the same calculations performed for the determination of demand savings**
2 **as well as for energy savings?**

3 A41. Yes, the same calculations were performed for both energy and demand savings.
4 The results are presented in Exhibit A-7, on pages 1 through 3. Page 1 of Exhibit
5 A-7 summarizes the adjustments made at each step of the verification process for
6 electric savings. Page 2 of Exhibit A-7 shows the corresponding information for
7 coincident peak demand savings, while page 3 of Exhibit A-7 shows the
8 corresponding information for gas savings.

9
10 **Q42. How are the verified net energy and demand savings associated with ENERGY**
11 **STAR® lighting presented within the residential and commercial sectors?**

12 A42. The Guidehouse Evaluation Team verified all savings associated with ENERGY
13 STAR lighting under the ENERGY STAR Products Program. The final savings
14 numbers presented show results broken down by sector after the verification
15 process was completed. Page 1 of Exhibit A-7 provides the total verified net
16 savings associated with the ENERGY STAR Products Program split between the
17 residential and C&I sectors. Page 2 of Exhibit A-7 provides the same information
18 for demand savings.

19
20 **Q43. What are the verified net electric, coincident peak demand, and gas savings**
21 **associated with the EWR Residential (excluding income-qualified) programs**
22 **for 2022?**

23 A43. Exhibit A-7 shows the total 2022 verified net electric, coincident peak demand,
24 and gas savings from EWR Residential programs excluding income-qualified, as
25 well as totals at the portfolio level. As shown in column (j) on each page of this

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exhibit, the Guidehouse Evaluation Team validated DTE Residential EWR programs, excluding income-qualified, to determine annual verified net savings values for each program and for the portfolio overall. These results are summarized in Table 1.

Table 1: Final 2022 Verified Net Annual EWR Residential Program Savings

EWR Residential Program	Verified Net Electric Savings (MWh)	Verified Net Demand Savings (MW)	Verified Net Gas Savings (MCF)
Residential ENERGY STAR Products	73,497	8.73	28,086
Appliance Recycling	30,574	3.70	0
Heating, Ventilation & Air Conditioning (HVAC)	3,920	1.88	242,943
Multifamily	393	0.02	3,960
Home Energy Consultation (HEC)	7,596	0.80	33,966
Audit and Weatherization	739	0.22	29,556
School Program	21,389	0.62	168,524
Home Energy Efficiency Kits	591	0.06	0
New Home Construction	3,401	2.12	71,320
Home Energy Reports	68,912	13.71	260,774
DTE Insight	0	0.00	0
Emerging Measures and Approaches ¹	0	0.00	0
Utility Shared Savings	4,255	1.06	42,537
Residential Total	215,267	32.92	881,666

Q44. What are the verified net savings achieved in income-qualified households for 2022?

A44. As shown in column (j) on each page of Exhibit A-7, the Guidehouse Evaluation Team verified the DTE income-qualified programs, including the Energy

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1 Efficiency Assistance program, as well as the income-qualified components of the
2 Multifamily and Home Energy Consultation (HEC) programs, to determine
3 annual verified net savings values for each program and for the portfolio overall.
4 These results are summarized in Table 2.

Table 2: Final 2022 Verified Net Annual EWR Income-Qualified Program

Savings			
EWR Income Qualified Program	Verified Net Electric Savings (MWh)	Verified Net Demand Savings (MW)	Verified Net Gas Savings (MCF)
Income-Qualified attributed to Energy Efficiency Assist	40,739	3.88	50,890
Income-Qualified attributed to Multifamily Units	8,394	0.29	101,027
Income-Qualified attributed to Home Energy Consultat	3,528	0.36	31,949
Income-Qualified attributed to Utility Shared Savings	552	0.25	4,717
Low Income Total	53,213	4.78	188,584

7

8 **Q45. What are the verified savings associated with the EWR C&I programs for**
9 **2022?**

10 A45. As shown in column (j) on each page of Exhibit A-7, the Guidehouse Evaluation
11 Team verified the DTE C&I EWR programs, excluding self-direct, to determine
12 annual verified net savings values for each program and for the portfolio overall.
13 These results are summarized in Table 3. Emerging Measures and Approaches
14 includes the C&I Telecom program.

1 **Table 3: Final 2022 Verified Net Annual EWR C&I Program Savings**

EWR C&I Program	Verified Net Electric Savings (MWh)	Verified Net Demand Savings (MW)	Verified Net Gas Savings (MCF)
Prescriptive	233,109	56.28	497,929
Non-Prescriptive	82,573	10.43	37,354
Retro-Commissioning	15,319	0.00	16,839
Strategic Energy Management	23,516	0.00	86,012
Business Energy Consultation	7,237	0.45	28,368
Mid-Stream Lighting	77,595	11.23	0
Mid-Stream Food Service	1,339	0.24	10,478
Mid-Stream HVAC	9,264	4.20	80,776
Energy Star Retail Lighting	20,510	3.81	0
Multifamily Common Areas	2,473	0.03	2,805
Find and Fix	7,366	0.00	7,263
Small Business Focus	50,243	7.28	5,032
Emerging Measures and Approaches	2,074	0.00	0
Utility Shared Savings	3,407	0.62	66,869
C&I Total (exluding Self Direct)	536,024	94.56	839,724
Self Direct	2,760	0.49	0
C&I Total	538,783	95.04	839,724

2

3 Neither Guidehouse nor DTE independently verified the savings reported by self-

4 direct customers.

5

6 **Q46. What is the overall conclusion based on the Guidehouse Evaluation Team's**

7 **evaluation processes as they pertain to DTE's 2022 EWR programs?**

Line
No.

1 A46. The Guidehouse Evaluation Team has reviewed DTE's 2022 electric, coincident
2 peak demand, and gas savings claims and verifies that DTE's verified net savings
3 claims are accurate.
4

5 **2022 Utility Shared Savings**

6 **Q47. What are "Utility Shared Savings?"**

7 A47. Each year, utilities in Michigan perform EWR-related work that generates both
8 electric and gas savings at premises where they only provide single fuel service.
9 Historically, utilities have only claimed savings based on the service they provide,
10 despite quantifiable savings being realized for multiple fuel types. Utility Shared
11 Savings are those savings that are currently being created by an "originating"
12 utility but remain unquantified and unclaimed by the utility providing the relevant
13 fuel service (the "receiving" utility). For the purposes of this testimony, Utility
14 Shared Savings represents savings created by Consumers Energy (originating
15 utility) in areas where Consumers Energy and DTE have overlapping service
16 territory and Consumers Energy provides single fuel service.
17

18 **Q48. Which projects and activities are considered "eligible" when quantifying**
19 **Utility Shared Savings?**

20 A48. Utility Shared Savings-eligible projects must occur in the originating utility's
21 single-fuel service territory and generate savings of the opposite fuel type (e.g.,
22 the project must occur in a utility's electric-only service territory but generate gas
23 savings).
24

25 **Q49. What was the methodology used to quantify Utility Shared Savings created by**
26 **Consumers Energy and claimed by DTE?**

Line
No.

1 A49. Guidehouse reviewed data provided by Consumers Energy’s third-party
2 evaluation contractors after it had undergone a data tracking audit similar to the
3 process described above. To determine Verified Net Utility Shared Savings,
4 Guidehouse used a four-step approach.

5
6 1. The jurisdictional allocation identifies which projects are eligible for shared
7 savings and includes mapping the “originating” utility’s projects and
8 comparing that against the “receiving” utility’s service territory shape file
9 (map). In 2022, to determine project eligibility based on utility jurisdiction,
10 Consumers Energy’s evaluators mapped all single-fuel projects against a map
11 of DTE’s electric and gas service territories. Consumers Energy projects that
12 were within DTE’s service territory *and* created matching unclaimed saving
13 were eligible for shared savings. For example, a prescriptive insulation project
14 in Consumers Energy electric-only territory is eligible for shared savings only
15 if that project *also* was within DTE gas service territory.

16 2. To account for residential customers that use propane as their primary fuel,
17 we apply a delivered fuels adjustment factor. This factor is based on estimates
18 from the U.S. Energy Information Administration of the number of Michigan
19 households (approximately 320,000) using propane as their primary heating
20 fuel and represents approximately 8% of the households in the state¹. To
21 account for this, gas Utility Shared Savings values resulting from Residential
22 and Income-Qualified programs were reduced by 8%.

¹ Michigan Public Service Commission: Propane & Petroleum,
<https://www.michigan.gov/mpsc/consumer/petroleum#:~:text=An%20estimated%20320%2C000%20Michigan%20households%20use%20propane%20as%20their%20primary%20heating%20fuel.>

3. To determine Verified Gross Utility Shared Savings, Guidehouse applied measure-level installation rate adjustment factors to account for measures that were not installed and operating. The installation rate adjustment factors were provided by Consumers Energy's evaluators, and were based on their evaluation of Consumers Energy's EWR programs.

4. Consistent with DTE's commercialized EWR programs, Guidehouse applied a deemed NTGR of 0.92 (with some exceptions similar to those described earlier in this testimony) to determine Verified Net Utility Shared Savings.

12 A50. No. Behavior and custom programs were not included in the 2022 Utility Shared
13 Savings analysis. As 2022 is the first year Utility Shared Savings are being
14 claimed, the scope of this effort was initially limited to measures with deemed
15 electric and gas savings values.

19 A51. As shown on pages 1 and 2 of Exhibit A-8, the Guidehouse Evaluation Team
20 determined the verified net annual Utility Shared Savings for 2022 EWR
21 program.

23 **Q52. What additional tasks did the Guidehouse Evaluation Team perform for the**
24 **2022 program year to verify the Performance Incentive calculations?**

Line
No.

- 1 A52. There were two key performance incentive attributes that required verification.
- 2 1. Determination of base energy savings required that the Guidehouse
- 3 Evaluation Team calculate first-year savings, inclusive of Utility Shared
- 4 Savings.
- 5 2. Determination of lifetime savings required that the Guidehouse Evaluation
- 6 Team multiply total first-year savings by the weighted average measure life
- 7 (WAML). The weighted average measure life is calculated by weighting
- 8 measure life by first year verified net savings.

9

10 **Q53. What are DTE's EWR achievements relative to performance incentives?**

- 11 A53. Tables 4 and 5 summarize DTE's performance relative to the metrics established
- 12 in the EWR Plan applicable to 2022. More detail is provided in Exhibit A-8,
- 13 pages 1 and 2.

14

15 **Table 4: DTE Electric's EWR 2022 Performance Summary**

Performance Metric	Target (Min)	Target (Max)	Achieved
Base Energy Savings			
1.00% – 1.50% first-year verified net electric savings relative to Legislative Minimum Requirement	443,180	886,360	886,840
Lifetime Energy Savings			
1.00% – 1.50% lifetime verified net electric savings relative to target	4,210,210	8,420,420	7,488,755

16

Line
No.

1

Table 5: DTE Gas's EWR 2022 Performance Summary

Performance Metric	Target (Min)	Target (Max)	Achieved
Base Energy Savings			
1.00% – 1.50% first-year verified net gas savings relative to Legislative Minimum Requirement	1,414,694	1,886,258	2,086,061
Lifetime Energy Savings			
1.00% – 1.50% lifetime verified net gas savings relative to target	16,127,512	21,497,973	25,111,242

2

3 As shown above in Tables 4 and 5, DTE met or exceeded nearly all annual and
4 lifetime electric and gas savings targets. DTE exceeded the minimum lifetime target
5 but fell short of the maximum lifetime target for electric savings.

6

7

2022 Greenhouse Gas Emissions Reductions

8 **Q54. What tasks did the Guidehouse Evaluation Team perform to determine the**
9 **greenhouse gas emissions reductions resulting from the verified electric**
10 **savings associated with the 2022 EWR programs?**

11 A54. The Guidehouse Evaluation Team used one of the industry-standard
12 commercially available market dispatch models, Power System Optimizer (PSO),
13 to forecast the average generation mix, marginal generation mix, heat rates and
14 greenhouse gas emission rates of generation plants in the MISO market for 2023
15 through 2031. Page 1 of Exhibit A-9 provides the marginal emissions factors.

16

17 To determine emissions reductions resulting from the verified electric energy
18 savings associated with the 2022 EWR programs and Utility Shared Savings, the
19 Guidehouse Evaluation Team used the calculated marginal emissions factors in
20 2022. These are presented on page 1 of Exhibit A-9 and are shown in metric tons
21 per MWh.

Line
No.

1 To determine cumulative greenhouse gas reductions over the lifetime of savings for
2 the 2022 EWR programs, the Guidehouse Evaluation Team used the market
3 model's forecasted marginal emissions factors each year from 2022 through 2031,
4 based on the calculated electric WAML value.

5

6 **Q55. What tasks did the Guidehouse Evaluation Team perform to determine the**
7 **greenhouse gas emissions reductions resulting from the verified gas savings**
8 **associated with the 2022 EWR programs?**

9 A55. Using greenhouse gas emissions reduction information available from the
10 Environmental Protection Agency's Greenhouse Gas Emission Factors Hub², the
11 Guidehouse Evaluation Team calculated total emissions reductions for gas energy
12 savings resulting from the 2022 EWR programs, as shown on page 2 of Exhibit
13 A-9.

14

15 To determine total verified net annual emissions reductions for the 2022 EWR
16 programs and Utility Shared Savings, the Guidehouse Evaluation Team multiplied
17 the marginal emissions factor by total gas energy savings (Mcf).

18

19 To determine total verified net lifetime emissions reductions for the 2022 EWR
20 programs, the Guidehouse Evaluation Team multiplied annual emissions
21 reductions by the calculated gas WAML value.

22

23 **Q56. What are DTE's verified net annual greenhouse gas emissions reductions**
24 **associated with the 2022 EWR programs?**

² <https://www.epa.gov/climateleadership/center-corporate-climate-leadership-ghg-emission-factors-hub>

Line
No.

1 A56. As shown on pages 1 and 2 of Exhibit A-9, the Guidehouse Evaluation Team
2 determined the verified net annual greenhouse gas emissions reductions for 2022
3 EWR program activities in terms of metric tons of Carbon Dioxide (CO₂),
4 Nitrogen Oxide (NO_x) and Sulfur Dioxide (SO₂) offset. These results are
5 summarized below in Table 6.

7 **Table 6: EWR 2022 Annual Greenhouse Gas Emissions Reductions**

Greenhouse Gas	Electric	Gas
Carbon Dioxide Metric Tons Reduced	610,766	110,686
Nitrogen Oxide Metric Tons Reduced	403	N/A
Sulfur Dioxide Metric Tons Reduced	398	N/A

8
9 **Q57. Does this complete your direct testimony?**
10 A57. Yes, it does.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

EXHIBITS

OF

JOSHUA REGO

Michigan Public Service Commission
DTE Electric Company and DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Energy Waste Reduction Validation Sample Selection

Case No.: U-21313
Witness: J. Rego
Exhibit: A-6
Page: 1 of 1

		Number of Unique Applications	Sample Size
Residential Portfolio	Appliance Recycling	n/a	n/a
	Audit and Weatherization	n/a	n/a
	Heating, Ventilation & Air Conditioning (HVAC)	n/a	n/a
	Home Energy Consultation (HEC)	n/a	n/a
	Home Energy Efficiency Kits	n/a	n/a
	Home Energy Report	n/a	n/a
	Multifamily ¹	n/a	n/a
	New Homes Construction	2,121	16
	Residential ENERGY STAR Products		
	Appliances		
	Air Conditioner	1	1
	Air Purifier	2	2
	Clothes Washer	86	10
	Dehumidifier	20	5
	Clothes Dryer	31	10
	Pool Pump	6	6
	Thermostat	16	6
	Lighting	n/a	n/a
	Consumer Electronics ²	11	8
	School Program	n/a	n/a
	Emerging Measures and Approaches ³	n/a	n/a
	Income Qualified attributed to Energy Efficiency Assistance	10,328	75
	Residential Program Subtotal	12,622	139
C&I Portfolio	Business Energy Consultation	33	13
	ENERGY STAR Retail Lighting	n/a	n/a
	Find and Fix ⁴	86	43
	Mid-Stream Food Service	n/a	n/a
	Mid-Stream HVAC	n/a	n/a
	Mid-Stream Lighting	n/a	n/a
	Multifamily Common Areas	n/a	n/a
	Non-Prescriptive		
	Custom and RFP	509	55
	Prescriptive	3,762	40
	Retro-Commissioning ⁵	90	66
	Small Business Focus	1,499	59
	Strategic Energy Management	64	31
	Emerging Measures and Approaches ⁶	26	20
	C&I Subtotal	6,069	327
TOTAL PORTFOLIO		18,691	466

n/a = program did not have customer applications or applications were not reviewed

¹ Multifamily Income Qualified is not sampled separately from the Residential Multifamily program

² Refers to the number of unique invoices that were audited, not a count of individual measure records

³ No programs are categorized as "Residential Emerging Measures & Approaches" in PY2022

⁴ Find and Fix includes the C&I Find and Fix Compressed Air and C&I Find and Fix Steam Trap programs

⁵ Includes the C&I Retro-Commissioning program and its C&I Virtual Commissioning sub-program

⁶ Includes the C&I Telecom program

Michigan Public Service Commission
DTE Electric Company (DTE Electric) and DTE Gas Company (DTE Gas)
Energy Waste Reduction - 2022 Plan Reconciliation
2022 Energy Waste Reduction Energy Savings
(MWh)

Case No.: U-21313
Witness: J. Rego
Exhibit: A-7
Page: 1 of 3

(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	
Line No.	Description	Source	2022 Utility Reported Gross Annual MWh Savings	Database Review: 2022 Phase I Audited Gross Annual MWh Savings	Application Review: 2022 Phase II MWh Adjusted	Audited Gross Realization Rate	2022 Audited Gross Savings	Installation Rate Adjustment Factor	2022 Verified Gross Savings	Net-to-Gross Ratio	2022 Verified Net Savings
<u>Residential Programs</u>											
1	Residential ENERGY STAR Products		193,911	190,120	0.00	98%	190,120	0.91	172,189	0.43	73,497
2	Appliance Recycling		39,240	39,231	0.00	100%	39,231	0.85	33,233	0.92	30,574
3	Heating, Ventilation & Air Conditioning (HVAC)		4,189	4,189	0.00	100%	4,189	1.00	4,189	0.94	3,920
4	Multifamily		446	446	0.00	100%	446	0.96	427	0.92	393
5	Home Energy Consultation (HEC)		9,948	9,956	0.00	100%	9,956	0.83	8,243	0.92	7,596
6	Audit and Weatherization		803	803	0.00	100%	803	1.00	803	0.92	739
7	School Program		26,476	26,476	0.00	100%	26,476	0.88	23,249	0.92	21,389
8	Home Energy Efficiency Kits		0	0	0.00	0%	0	0.00	642	0.92	591
9	New Home Construction		3,697	3,697	0.00	100%	3,697	1.00	3,697	0.92	3,401
10	Home Energy Reports		0	0	0.00	0%	0	0.00	0	0.00	68,912
11	DTE Insight		0	0	0.00	0%	0	0.00	0	0.00	0
12	Emerging Measures and Approaches ¹		0	0	0.00	0%	0	0.00	0	0.00	0
13	Utility Shared Savings		0	0	0.00	0%	4,418	1.00	4,410	0.96	4,255
14	Residential Program Subtotal	Sum L1 - L13	278,710	274,918	0.00	100%	279,335		251,082		215,267
<u>Income-Qualified Programs</u>											
15	Income-Qualified attributed to Energy Efficiency Assistance		48,471	48,471	0.00	100%	48,471	0.84	40,739	1.00	40,739
16	Income-Qualified attributed to Multifamily Units		8,360	8,433	0.00	101%	8,433	1.00	8,394	1.00	8,394
17	Income-Qualified attributed to Home Energy Consultation		4,344	4,342	0.00	100%	4,342	0.81	3,528	1.00	3,528
18	Income-Qualified attributed to Utility Shared Savings		0	0	0.00	0%	552	1.00	552	1.00	552
19	Income-Qualified Program Subtotal	Sum L15 - L18	61,175	61,245	0.00	101%	61,798		53,213		53,213
<u>Commercial Programs</u>											
20	Prescriptive		268,164	260,954	0.00	97%	260,954	0.97	253,190	0.92	233,109
21	Non-Prescriptive ²		101,100	100,204	0.00	99%	100,204	0.90	89,753	0.92	82,573
22	Retro-Commissioning ³		16,683	16,683	0.00	100%	16,683	1.00	16,651	0.92	15,319
23	Strategic Energy Management		26,083	26,083	0.00	100%	26,083	0.98	25,561	0.92	23,516
24	Business Energy Consultation		8,687	8,688	0.00	100%	8,688	0.89	7,714	0.94	7,237
25	Mid-Stream Lighting		87,114	87,114	0.00	100%	87,114	0.97	84,343	0.92	77,595
26	Mid-Stream Food Service		1,473	1,473	0.00	100%	1,473	0.99	1,455	0.92	1,339
27	Mid-Stream HVAC		10,202	10,202	0.00	100%	10,202	0.99	10,069	0.92	9,264
28	Energy Star Retail Lighting		42,639	54,697	0.00	128%	54,697	0.91	49,885	0.41	20,510
29	Multifamily Common Areas		2,688	2,688	0.00	100%	2,688	1.00	2,688	0.92	2,473
30	Find and Fix ⁴		8,073	8,088	0.00	100%	8,088	0.99	8,007	0.92	7,366
31	Small Business Focus		56,044	56,048	0.00	100%	56,048	0.97	54,595	0.92	50,243
32	Emerging Measures and Approaches ⁵		2,457	2,324	0.00	95%	2,324	0.97	2,254	0.92	2,074
33	Self Direct ⁶		0	0	0.00	0%	0	0.00	0	0.00	2,760
34	Utility Shared Savings		0	0	0.00	0%	4,166	0.89	3,695	0.92	3,407
35	C&I Program Subtotal	Sum L20 - L34	631,407	635,245	0.00	101%	639,411		609,861		538,783
36	Total	L14 + L19 + L35	971,292	971,408	0.00	101%	980,544		914,156		807,264

Note: Totals may not match due to rounding

¹ No programs are categorized as "Residential Emerging Measures & Approaches" in PY2022

² Includes C&I Custom and C&I RFP programs

³ Includes the C&I Retro-Commissioning program and its C&I Virtual Commissioning sub-program

⁴ Find and Fix includes the C&I Find and Fix Compressed Air and C&I Find and Fix Steam Trap programs

⁵ Includes the C&I Telecom program

⁶ Self Direct energy savings were not evaluated by DTE or Guidehouse

Michigan Public Service Commission
DTE Electric Company (DTE Electric) and DTE Gas Company (DTE Gas)
Energy Waste Reduction - 2022 Plan Reconciliation
2022 Energy Waste Reduction Demand Savings
(MW)

Case No.: U-21313
Witness: J. Rego
Exhibit: A-7
Page: 2 of 3

	(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Line No.	Description	Source	2022 Utility Reported Gross Annual MW Savings	Database Review: 2022 Phase I Audited Gross Annual MW Savings	Application Review: 2022 Phase II MW Adjusted	Audited Gross Realization Rate	2022 Audited Gross Savings	Installation Rate Adjustment Factor	2022 Verified Gross Savings	Net-to-Gross Ratio	2022 Verified Net Savings
	<u>Residential Programs</u>										
1	Residential ENERGY STAR Products		22.37	21.93	0.00	98%	21.93	0.91	19.91	0.44	8.73
2	Appliance Recycling		4.75	4.75	0.00	100%	4.75	0.85	4.02	0.92	3.70
3	Heating, Ventilation & Air Conditioning (HVAC)		2.04	2.04	0.00	100%	2.04	1.00	2.04	0.92	1.88
4	Multifamily		0.03	0.03	0.00	100%	0.03	0.93	0.02	0.92	0.02
5	Home Energy Consultation (HEC)		1.06	1.06	0.00	100%	1.06	0.82	0.87	0.92	0.80
6	Audit and Weatherization		0.23	0.23	0.00	100%	0.23	1.00	0.23	0.92	0.22
7	School Program		1.01	1.01	0.00	100%	1.01	0.67	0.67	0.92	0.62
8	Home Energy Efficiency Kits		0.00	0.00	0.00	0%	0.00	0.00	0.07	0.92	0.06
9	New Home Construction		2.35	2.35	0.00	100%	2.35	0.98	2.31	0.92	2.12
10	Home Energy Reports		0.00	0.00	0.00	0%	0.00	0.00	0.00	0.00	13.71
11	DTE Insight		0.00	0.00	0.00	0%	0.00	0.00	0.00	0.00	0.00
12	Emerging Measures and Approaches ¹		0.00	0.00	0.00	0%	0.00	0.00	0.00	0.00	0.00
13	Utility Shared Savings		0.00	0.00	0.00	0%	1.16	1.00	1.16	0.92	1.06
14	Residential Program Subtotal	Sum L1 - L13	33.84	33.41	0.00	102%	34.56		31.30		32.92
	<u>Income-Qualified Programs</u>										
15	Income-Qualified attributed to Energy Efficiency Assistance		4.69	4.69	0.00	100%	4.69	0.83	3.88	1.00	3.88
16	Income-Qualified attributed to Home Energy Consultation		0.45	0.45	0.00	100%	0.45	0.81	0.36	1.00	0.36
17	Income-Qualified attributed to Multifamily Units		0.28	0.29	0.00	104%	0.29	0.99	0.29	1.00	0.29
18	Income-Qualified attributed to Utility Shared Savings		0.00	0.00	0.00	0%	0.25	1.00	0.25	1.00	0.25
19	Income-Qualified Program Subtotal	Sum L15 - L18	5.42	5.43	0.00	105%	5.68		4.78		4.78
	<u>Commercial Programs</u>										
20	Prescriptive		63.98	63.06	0.00	99%	63.06	0.97	61.17	0.92	56.28
21	Non-Prescriptive ²		14.02	13.65	0.00	97%	13.65	0.83	11.33	0.92	10.43
22	Retro-Commissioning ³		0.00	0.00	0.00	0%	0.00	0.00	0.00	0.00	0.00
23	Strategic Energy Management		0.00	0.00	0.00	0%	0.00	0.00	0.00	0.00	0.00
24	Business Energy Consultation		0.60	0.60	0.00	100%	0.60	0.82	0.49	0.92	0.45
25	Mid-Stream Lighting		12.51	12.51	0.00	100%	12.51	0.98	12.21	0.92	11.23
26	Mid-Stream Food Service		0.26	0.26	0.00	100%	0.26	0.99	0.26	0.92	0.24
27	Mid-Stream HVAC		4.61	4.61	0.00	100%	4.61	0.99	4.56	0.92	4.20
28	Energy Star Retail Lighting		7.92	10.17	0.00	128%	10.17	0.91	9.27	0.41	3.81
29	Multifamily Common Areas		0.03	0.03	0.00	100%	0.03	1.00	0.03	0.92	0.03
30	Find and Fix ⁴		0.00	0.00	0.00	0%	0.00	0.00	0.00	0.00	0.00
31	Small Business Focus		8.11	8.11	0.00	100%	8.11	0.97	7.91	0.92	7.28
32	Emerging Measures and Approaches ⁵		0.00	0.00	0.00	100%	0.00	0.97	0.00	0.92	0.00
33	Self Direct ⁶		0.00	0.00	0.00	0%	0.00	0.00	0.00	0.00	0.49
34	Utility Shared Savings		0.00	0.00	0.00	0%	0.72	0.94	0.68	0.92	0.62
35	C&I Program Subtotal	Sum L20 - L34	112.04	113.00	0.00	101%	113.72		107.91		95.04
36	Total	L14 + L19 + L35	151.31	151.84	0.00	102%	153.97		144.00		132.75

Note: Totals may not match due to rounding.

¹ No programs are categorized as "Residential Emerging Measures & Approaches" in PY2022

² Includes C&I Custom and C&I RFP programs

³ Includes the C&I Retro-Commissioning program and its C&I Virtual Commissioning sub-program

⁴ Find and Fix includes the C&I Find and Fix Compressed Air and C&I Find and Fix Steam Trap programs

⁵ Includes the C&I Telecom program

⁶ Self Direct energy savings were not evaluated by DTE or Guidehouse

Michigan Public Service Commission
DTE Electric Company (DTE Electric) and DTE Gas Company (DTE Gas)
Energy Waste Reduction - 2022 Plan Reconciliation
2022 Energy Waste Reduction Gas Savings
(MCF)

Case No.: U-21313
Witness: J. Rego
Exhibit: A-7
Page: 3 of 3

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
			Database Review: 2022 Phase I	Application Review: 2022 Phase II	Audited Gross Realization Rate		Installation Rate Adjustment Factor			
Line No.	Description	Source	2022 Utility Reported Gross Annual MCF Savings	Audited Gross Annual MCF Savings	Adjusted	2022 Audited Gross Savings		2022 Verified Gross Savings	Net-to-Gross Ratio	2022 Verified Net Savings
	<u>Residential Programs</u>									
1	Residential ENERGY STAR Products		29,958	29,990	0	29,990	0.97	29,197	0.96	28,086
2	Heating, Ventilation & Air Conditioning (HVAC)		262,321	262,328	0	262,328	1.00	262,328	0.93	242,943
3	Multifamily		4,304	4,304	0	4,304	1.00	4,304	0.92	3,960
4	Home Energy Consultation (HEC)		38,291	38,419	0	38,419	0.92	35,424	0.96	33,966
5	Audit and Weatherization		32,120	32,125	0	32,125	1.00	32,125	0.92	29,556
6	School Program		230,379	230,379	0	230,379	0.80	183,179	0.92	168,524
7	Home Energy Efficiency Kits		0	0	0	0	0.00	0	0.00	0
8	New Home Construction		76,754	76,754	0	76,754	1.01	77,521	0.92	71,320
9	Home Energy Reports		0	0	0	0	0.00	0	0.00	260,774
10	DTE Insight		0	0	0	0	0.00	0	0.00	0
11	Emerging Measures and Approaches ¹		0	0	0	0	0.00	0	0.00	0
12	Utility Shared Savings		0	0	0	43,297	1.00	43,297	0.98	42,537
13	Residential Program Subtotal	Sum L1 - L12	674,126	674,299	0	717,596	0.93	667,374		881,666
	<u>Income-Qualified Programs</u>									
14	Income-Qualified attributed to Energy Efficiency Assistance		59,007	59,012	0	59,012	0.86	50,890	1.00	50,890
15	Income-Qualified attributed to Home Energy Consultation		36,897	36,848	0	36,848	0.87	31,949	1.00	31,949
16	Income-Qualified attributed to Multifamily Units		113,189	101,566	0	101,566	0.99	101,027	1.00	101,027
17	Income-Qualified attributed to Utility Shared Savings		0	0	0	4,717	1.00	4,717	1.00	4,717
18	Income-Qualified Program Subtotal	Sum L14 - L17	209,094	197,426	0	202,142	0.93	188,584		188,584
	<u>Commercial Programs</u>									
19	Prescriptive		541,259	541,227	0	541,227	1.00	541,227	0.92	497,929
20	Non-Prescriptive ²		40,602	40,602	0	40,602	1.00	40,602	0.92	37,354
21	Retro-Commissioning ³		18,869	18,869	0	18,869	0.97	18,303	0.92	16,839
22	Strategic Energy Management		95,399	95,399	0	95,399	0.98	93,491	0.92	86,012
23	Business Energy Consultation		29,038	30,638	0	30,638	0.96	29,453	0.96	28,368
24	Mid-Stream Food Service		9,794	11,389	0	11,389	1.00	11,389	0.92	10,478
25	Mid-Stream HVAC		71,541	89,592	0	89,592	0.98	87,800	0.92	80,776
26	Multifamily Common Areas		3,049	3,049	0	3,049	1.00	3,049	0.92	2,805
27	Find and Fix ⁴		7,974	7,974	0	7,974	0.99	7,895	0.92	7,263
28	Small Business Focus		5,270	5,270	0	5,270	0.99	5,235	0.96	5,032
29	Emerging Measures and Approaches ⁵		0	0	0	0	0.00	0	0.00	0
30	Self Direct ⁶		0	0	0	0	0.00	0	0.00	0
31	Utility Shared Savings		0	0	0	73,733	0.98	72,322	0.92	66,869
32	C&I Program Subtotal	Sum L19 - L31	822,796	844,010	0	917,743	0.99	910,766		839,724
33	Total	L13 + L18 + L32	1,706,016	1,715,735	0	1,837,481	0.96	1,766,724		1,909,974

Note: Totals may not match due to rounding.

¹ No programs are categorized as "Residential Emerging Measures & Approaches" in PY2022

² Includes C&I Custom and C&I RFP programs

³ Includes the C&I Retro-Commissioning program and its C&I Virtual Commissioning sub-program

⁴ Find and Fix includes the C&I Find and Fix Compressed Air and C&I Find and Fix Steam Trap programs

⁵ Includes the C&I Telecom program

⁶ Self Direct energy savings were not evaluated by DTE or Guidehouse

Michigan Public Service Commission
DTE Electric Company (DTE Electric) and DTE Gas Company (DTE Gas)
Energy Waste Reduction - 2022 Plan Reconciliation
2022 Energy Waste Reduction Performance Incentive Attributes
(MWh)

Case No.: U-21313
Witness: J. Rego
Exhibit: A-8
Page: 1 of 2

(a)		(b)	(c)
Line No.	Description	Source	2022 Verified Net Savings MWh
<u>Residential Programs</u>			
1	Residential ENERGY STAR Products		73,497
2	Appliance Recycling		30,574
3	Heating, Ventilation & Air Conditioning (HVAC)		3,920
4	Multifamily		393
5	Home Energy Consultation (HEC)		7,596
6	Audit and Weatherization		739
7	School Program		21,389
8	Home Energy Efficiency Kits		591
9	New Home Construction		3,401
10	Home Energy Reports		68,912
11	DTE Insight		0
12	Residential Emerging Measures and Approaches ¹		0
13	Residential Utility Shared Savings		4,255
14	Residential Program Subtotal	Sum L1 - L13	215,267
<u>Income-Qualified Programs</u>			
15	Income-Qualified attributed to Energy Efficiency Assistance		40,739
16	Income-Qualified attributed to Home Energy Consultation		3,528
17	Income-Qualified attributed to Multifamily Units		8,394
18	Income-Qualified attributed to Utility Shared Savings		552
19	Income-Qualified Program Subtotal	Sum L15 - L18	53,213
<u>Commercial Programs</u>			
20	Prescriptive		233,109
21	Non-Prescriptive ²		82,573
22	Retro-Commissioning ³		15,319
23	Strategic Energy Management		23,516
24	Business Energy Consultation		7,237
25	Mid-Stream Lighting		77,595
26	Mid-Stream Food Service		1,339
27	Mid-Stream HVAC		9,264
28	Energy Star Retail Lighting		20,510
29	Multifamily Common Areas		2,473
30	Find and Fix ⁴		7,366
31	Small Business Focus		50,243
32	C&I Emerging Measures and Approaches ⁵		2,074
33	Self Direct ⁶		2,760
34	C&I Utility Shared Savings		3,407
35	C&I Program Subtotal	Sum L20 - L34	538,783
36	Total without Non-Standard	L14 + L19 + L35	807,264
37	Savings from Pilots	A2	53,035
38	Savings from Education	A3	26,541
39	Total First Year Savings	L36 + L37 + L38	886,840
40	Weighted Average Measure Life (Income Qualified) ⁷		5.64
41	Weighted Average Measure Life (Utility Shared Savings) ⁸		14.63
42	Weighted Average Measure Life (Portfolio) ⁹		8.31
43	Total Income-Qualified Lifetime Savings¹⁰		299,883
44	Total Lifetime Utility Shared Savings¹¹		120,156
45	Total Lifetime Savings¹²		7,488,755

Note: Totals may not match due to rounding.

¹ No programs are categorized as "Residential Emerging Measures & Approaches" in PY2022

² Includes C&I Custom and C&I RFP programs

³ Includes the C&I Retro-Commissioning program and its C&I Virtual Commissioning sub-program

⁴ Find and Fix includes the C&I Find and Fix Compressed Air and C&I Find and Fix Steam Trap programs

⁵ Includes the C&I Telecom program

⁶ Self Direct energy savings were not evaluated by DTE or Guidehouse

⁷ Weighted average measure life based on first year savings for Income-Qualified programs

⁸ Weighted average measure life based on first year savings for Utility Shared Savings-eligible projects

⁹ Weighted average measure life based on first year savings for all programs

¹⁰ Total Income-Qualified lifetime savings is calculated by multiplying total first year Income Qualified savings by the weighted average measure life

¹¹ Total lifetime utility shared savings is calculated by multiplying total first year savings by the weighted average measure life

¹² Total lifetime savings is calculated by multiplying total first year savings by the weighted average measure life

Michigan Public Service Commission
DTE Electric Company (DTE Electric) and DTE Gas Company (DTE Gas)
Energy Waste Reduction - 2022 Plan Reconciliation
2022 Energy Waste Reduction Performance Incentive Attributes
(MCF)

Case No.: U-21313
Witness: J. Rego
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Page: 2 of 2

	(a)	(b)	(c)
Line No.	Description	Source	2022 Verified Net Savings MCF
	<u>Residential Programs</u>		
1	Residential ENERGY STAR Products		28,086
2	Heating, Ventilation & Air Conditioning (HVAC)		242,943
3	Multifamily		3,960
4	Home Energy Consultation (HEC)		33,966
5	Audit and Weatherization		29,556
6	School Program		168,524
7	Home Energy Efficiency Kits		0
8	New Home Construction		71,320
9	Home Energy Reports		260,774
10	DTE Insight		0
11	Residential Emerging Measures and Approaches ¹		0
12	Residential Utility Shared Savings		42,537
13	Residential Program Subtotal	Sum L1 - L12	881,666
	<u>Income-Qualified Programs</u>		
14	Income-Qualified attributed to Energy Efficiency Assistance		50,890
15	Income-Qualified attributed to Home Energy Consultation		31,949
16	Income-Qualified attributed to Multifamily Units		101,027
17	Income-Qualified attributed to Utility Shared Savings		4,717
18	Income-Qualified Program Subtotal	Sum L14 - L17	188,584
	<u>Commercial Programs</u>		
19	Prescriptive		497,929
20	Non-Prescriptive ²		37,354
21	Retro-Commissioning ³		16,839
22	Strategic Energy Management		86,012
23	Business Energy Consultation		28,368
24	Mid-Stream Food Service		10,478
25	Mid-Stream HVAC		80,776
26	Multifamily Common Areas		2,805
27	Find and Fix ⁴		7,263
28	Small Business Focus		5,032
29	C&I Emerging Measures and Approaches ⁵		0
30	Self Direct ⁶		0
31	C&I Utility Shared Savings		66,869
32	C&I Program Subtotal	Sum L19 - L31	839,724
33	Total without Non-Standard	L13 + L18 + L32	1,909,974
34	Savings from Pilot	A2	117,818
35	Savings from Education	A3	58,269
36	Total First Year Savings	L33 + L34 + L35	2,086,061
37	Weighted Average Measure Life (Income Qualified) ⁷		10.97
38	Weighted Average Measure Life (Utility Shared Savings) ⁸		13.66
39	Weighted Average Measure Life (Portfolio) ⁹		11.29
40	Total Income-Qualified Lifetime Savings¹⁰		2,068,049
41	Total Lifetime Utility Shared Savings¹¹		1,558,949
42	Total Lifetime Savings¹²		25,111,242

Note: Totals may not match due to rounding.

¹ No programs are categorized as "Residential Emerging Measures & Approaches" in PY2022

² Includes C&I Custom and C&I RFP programs

³ Includes the C&I Retro-Commissioning program and its C&I Virtual Commissioning sub-program

⁴ Find and Fix includes the C&I Find and Fix Compressed Air and C&I Find and Fix Steam Trap programs

⁵ Includes the C&I Telecom program

⁶ Self Direct energy savings were not evaluated by DTE or Guidehouse

⁷ Weighted average measure life based on first year savings for Income Qualified programs

⁸ Weighted average measure life based on first year savings for Utility Shared Savings-eligible projects

⁹ Weighted average measure life based on first year savings for all programs

¹⁰ Total Income-Qualified lifetime savings is calculated by multiplying total first year Income-Qualified savings by the weighted average measure life

¹¹ Total lifetime utility shared savings is calculated by multiplying total first year savings by the weighted average measure life

¹² Total lifetime savings is calculated by multiplying total first year savings by the weighted average measure life

Michigan Public Service Commission
DTE Electric Company (DTE Electric) and DTE Gas Company (DTE Gas)
Energy Waste Reduction - 2022 Plan Reconciliation
2022 Energy Waste Reduction Performance Incentive Attributes & Emissions Reductions
(MWh)

Case No.: U-21313
Witness: J. Rego
Exhibit: A-9
Page: 1 of 2

Line No.	(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)
	Year	Source	2022 Verified Net Savings	Marginal Emissions Factor (metric tons per MWh): CO ₂ ¹	Marginal Emissions Factor (metric tons per MWh): NOx ¹	Marginal Emissions Factor (metric tons per MWh): SO ₂ ¹	Annual Emissions Reductions (metric tons): CO ₂	Annual Emissions Reductions (metric tons): NOx	Annual Emissions Reductions (metric tons): SO ₂
1	2022		886,840	0.6887	0.0005	0.0004	610,766	403	398
2	2023		886,840	0.6887	0.0005	0.0004	610,766	403	398
3	2024		886,840	0.7967	0.0004	0.0007	706,564	369	613
4	2025		886,840	0.7288	0.0004	0.0004	646,311	388	388
5	2026		886,840	0.7035	0.0005	0.0004	623,880	418	318
6	2027		886,840	0.6946	0.0004	0.0005	615,956	363	421
7	2028		886,840	0.6698	0.0004	0.0004	594,041	344	320
8	2029		886,840	0.6563	0.0004	0.0004	582,074	353	331
9	2030 ²		886,840	0.6136	0.0003	0.0003	168,046	83	74
10	Total Emissions Reductions (first year)		L1				610,766	403	398
11	Total Emissions Reductions (lifetime) ¹		Sum L1 - L9				5,158,403	3,122	3,260

Note: Totals may not match due to rounding.

¹ Marginal emissions reduction factors for 2022 - 2030 are forecasted using PSO and Guidehouse's Portfolio Optimization Model

² Values from the 2030 year represents 50% of the full year's projected reductions based on a calculated weighted average measure life of 8.5

Michigan Public Service Commission
DTE Electric Company (DTE Electric) and DTE Gas Company (DTE Gas)
Energy Waste Reduction - 2022 Plan Reconciliation
2022 Energy Waste Reduction Performance Incentive Attributes & Emissions Reductions
(MCF)

Case No.: U-21313
Witness: J. Rego
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Page: 2 of 2

(a)		(b)		(c)	(d)
Line No.	Year	Source	2022 Verified Net Savings	Marginal Emissions Factor (metric tons/MCF): CO ₂ ¹	Annual Emissions Reductions (metric tons): CO ₂
1	2022		2,086,061	0.05306	110,686
2	2023		2,086,061	0.05306	110,686
3	2024		2,086,061	0.05306	110,686
4	2025		2,086,061	0.05306	110,686
5	2026		2,086,061	0.05306	110,686
6	2027		2,086,061	0.05306	110,686
7	2028		2,086,061	0.05306	110,686
8	2029		2,086,061	0.05306	110,686
9	2030		2,086,061	0.05306	110,686
10	2031		2,086,061	0.05306	110,686
11	2032		2,086,061	0.05306	110,686
12	2033 ²		2,086,061	0.05306	32,134
13	Total Emissions Reductions (first year)		L1		110,686
14	Total Emissions Reductions (lifetime) ¹		Sum L1 - L12		1,249,685

Note: Totals may not match due to rounding.
¹ https://www.epa.gov/sites/default/files/2021-04/documents/emission-factors_apr2021.pdf
² Values from the 2033 year represents 29% of the full year's projected reductions based on a calculated weighted average measure life of 11.29

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

QUALIFICATIONS

AND

DIRECT TESTIMONY

OF

BRANDON MURRAY

DTE ELECTRIC COMPANY AND DTE GAS COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF BRANDON MURRAY

Line
No.

1 **Q1. What is your name, business address, and by whom are you employed?**

2 A1. My name is Brandon Murray (he/him/his). My business address is One Energy
3 Plaza, Detroit, MI 48226-1221. I am employed by DTE Energy Corporate
4 Services, LLC, a subsidiary of DTE Energy Company (DTE Energy), within the
5 Controllers Organization.

6

7 **Q2. On whose behalf are you testifying?**

8 A2. I am testifying on behalf of DTE Electric Company (DTE Electric) and DTE Gas
9 Company (DTE Gas), (collectively, DTE).

10

11 **Q3. What is your educational background?**

12 A3. I graduated from Western Michigan University with a Bachelor of Business
13 Administration degree. In addition, I received a Master of Business Administration
14 degree from Walsh College.

15

16 **Q4. What is your work experience?**

17 A4. I was hired by DTE in April 2017 to work in Energy Supply located in the St. Clair
18 power plant as a Senior Business Financial Analyst. My primary role was to
19 perform business financial processes including project evaluation, activity-based
20 management, budgeting, forecasting, and performance reporting.

21

22 In early 2018, some of my efforts were shifted to our Major Enterprise Projects
23 group to oversee the financial reporting of our new Blue Water Energy Center
24 project. Most of my time involved ensuring that we are in line with month-end and
25 year-end targets while working with vendors to ensure the most accurate data is

Line
No.

1 available. I also worked with plant staff and contractors to form a five-year budget
2 and forecast for the construction of the site. In addition, I ensured that the project
3 staff knew of any risks associated with our target for each month and at completion.

4

5 In late 2021, I was transitioned to Distribution Operations for a consolidation role
6 working with each facet of that organization. My main responsibility included
7 working with each analyst within Distribution Operations to consolidate all
8 financials and ensure their accuracy. I also reported variance commentary for the
9 entire group on a weekly and monthly basis along with updating various reporting
10 structures used within the DTE Electric financials.

11

12 In 2022, I became a Principal Supervisor in the Controllers Group, supporting
13 Energy Waste Reduction (EWR).

14

15 **Q5. What is your current position?**

16 A5. I am currently a Principal Supervisor in the Controllers Organization, supporting
17 Business Planning & Development for EWR. My primary responsibilities include
18 leading a finance team in providing budgeting, forecasting, reporting and analysis
19 on the performance of EWR financials and supporting reconciliation for the DTE
20 Electric and DTE Gas EWR programs.

21

22 **Q6. Are you a member of any professional organizations?**

23 A6. No.

Line
No.

1 **Q7. Have you previously sponsored testimony in cases before the Michigan Public**
2 **Service Commission?**

3 A7. No.

4 **Q8. What is the purpose of your testimony in this proceeding?**

5 A8. The purpose of my testimony is to present the 2022 financial results for DTE
6 Electric's and DTE Gas' EWR programs by each customer class. This information
7 is used by DTE Witness Vangilder in the calculation of the over/(under) cost
8 recovery by customer class, as shown on Exhibit A-18 for DTE Electric and Exhibit
9 A-29 for DTE Gas. I also present the mechanism that is used to allocate costs to
10 each of the customer classes. My testimony covers the following:

- 11 1) Brief description of the revenue and program costs included within each
12 customer class.
13 2) Types of costs that are capitalized and the method in which these capitalized
14 costs are amortized.
15 3) The calculation and utilization of allocation factors used to assign pilot program
16 costs; education and awareness program costs; income qualified program costs;
17 administrative and infrastructure costs; and evaluation, measurement &
18 verification (EM&V) costs to each customer class.
19

20 **Q9. Are you sponsoring any exhibits in this proceeding?**

21 A9. Yes. I am sponsoring the following exhibits:

22	<u>Exhibit</u>	<u>Description</u>
23	A-10	Electric Surcharge Revenue, Program Costs, and Plant Balance
24		(By Class and Total)
25	A-11	Electric Administrative Costs by EWR Program

Line
No.

1	A-12	Electric Capital Detail by EWR Program
2	A-13	Electric Allocation Factors
3	A-14	Gas Surcharge Revenue, Program Costs, and Plant Balance
4		(By Class and Total)
5	A-15	Gas Administrative Costs by EWR Program
6	A-16	Gas Capital Detail by EWR Program
7	A-17	Gas Allocation Factors

8

9 **Q10. Were these exhibits prepared by you or under your supervision?**

10 A10. Yes, they were.

11

12 **Q11. Where did you get the data displayed on your exhibits?**

13 A11. DTE Electric's and DTE Gas' EWR revenues and expenses are separately
14 identified and recorded in DTE Electric's and DTE Gas' billing and accounting
15 systems. The revenues identified on my exhibits are the actual results from the
16 Commission approved EWR surcharges billed to DTE Electric's and DTE Gas'
17 customers in 2022. The expenses shown in my exhibits reflect the amounts
18 recorded by DTE Electric and DTE Gas and identified as EWR expenses during
19 2022. In this case, DTE Witnesses Bilyeu, Nguyen and Guster explain and support
20 the details related to each type of EWR expense. Some of the EWR expenses are
21 not recorded directly to a customer class. Later in my testimony, I will support how
22 DTE Electric allocates these expenses to each of the following customer classes:
23 Residential, C&I Primary and C&I Secondary. I will also support how DTE Gas
24 allocates expenses to each of the following customer classes: Residential, C&I and
25 EUT.

Line
No.

1 **Q12. What is the purpose of the information shown on Exhibits A-10 and A-14?**

2 A12. Exhibits A-10 and A-14 show the 2022 financial results pertaining to: surcharge
3 revenue, program expenses, capitalized program costs, amortization of capitalized
4 costs and the 2022 year-end plant balance for each customer class for DTE Electric
5 and DTE Gas. Page 1 of each exhibit is a summary of the full year financial results
6 for all customer classes and pages 2 through 4 provide monthly detail of the 2022
7 financial results by individual customer class. This information is utilized by
8 Witness Vangilder for purposes of calculating DTE Electric's and DTE Gas'
9 over/(under) cost recovery amounts for each customer class on Exhibit A-18 for
10 DTE Electric and Exhibit A-29 for DTE Gas.

11

12 **Q13. What does line 1 of Exhibits A-10 and A-14 entitled "Surcharge Revenue"**
13 **represent?**

14 A13. The surcharge revenue on line 1 in Exhibits A-10 and A-14 represents the amount
15 billed in 2022 to each of the customer classes through the EWR surcharges.

16

17 **Q14. What is included in these surcharge revenue values?**

18 A14. The surcharge values include both base EWR surcharge revenue and EWR
19 performance incentive revenue. The total billed revenues within Exhibits A-10 and
20 A-14 are provided to Witness Vangilder so he can allocate the total EWR revenue
21 amounts between base surcharge revenue and performance incentive revenue by
22 customer class.

23

24 **Q15. What does line 3 of Exhibits A-10 and A-14 entitled "Program Costs**
25 **Expensed" represent?**

Line
No.

- 1 A15. The program costs expensed on line 3 in Exhibits A-10 and A-14 represents the
2 direct program costs expensed during 2022. Direct program costs include customer
3 incentives and rebates, and third-party implementation contractor (IC) costs.
4 Witness Nguyen provides detail regarding the types of costs associated with EWR
5 residential and income-qualified programs and Witness Guster provides detail
6 regarding the types of costs associated with EWR C&I programs.
7
- 8 **Q16. What does line 4 of Exhibits A-10 and A-14 entitled “Pilot Programs”**
9 **represent?**
- 10 A16. The pilot programs costs on line 4 in Exhibits A-10 and A-14 represent services,
11 materials and administrative costs associated with the EWR pilot programs.
12 Witness Nguyen provides detail regarding the costs associated with EWR pilot
13 programs.
14
- 15 **Q17. What does line 5 of Exhibits A-10 and A-14 entitled “Education and**
16 **Awareness Programs” represent?**
- 17 A17. The education and awareness programs costs on line 5 in Exhibits A-10 and A-14
18 represent services, materials and administrative costs associated with customer
19 education and awareness. Witness Nguyen provides detail regarding the types of
20 costs associated with EWR education and awareness programs.
21
- 22 **Q18. What does line 6 of Exhibits A-10 and A-14 entitled “Income-Qualified**
23 **Programs” represent?**
- 24 A18. The Income-Qualified programs costs on line 6 in Exhibits A-10 and A-14
25 represent customer incentive (grants), third-party administrator costs and

Line
No.

1 administrative costs associated with Income-Qualified programs. Witness Nguyen
2 provides detail regarding the types of costs associated with Income-Qualified
3 programs.

4

5 **Q19. What does line 7 of Exhibits A-10 and A-14 entitled “Administrative and**
6 **Infrastructure” represent?**

7 A19. The administration and infrastructure costs on line 7 in Exhibits A-10 and A-14
8 represent internal EWR labor costs, information technology (IT) activities, and
9 products, materials, and services such as EWR consultants. These administration
10 and infrastructure costs are associated with the program costs.

11

12 **Q20. What does line 8 of Exhibits A-10 and A-14 entitled “Evaluation,**
13 **Measurement, and Verification” represent?**

14 A20. The EM&V costs on line 8 in Exhibits A-10 and A-14 represent the activities
15 associated with the third-party evaluation of energy savings realized and
16 achievement of other EWR program goals associated with the performance
17 incentive. In addition, administrative costs associated with EM&V are also
18 included on line 8. Witness Bilyeu provides detail regarding the types of costs
19 associated with EM&V.

20

21 **Q21. What does line 10 of Exhibits A-10 and A-14 entitled “Program Costs**
22 **Unitized” represent?**

23 A21. Any amounts unitized on line 10 in Exhibits A-10 and A-14 represent customer
24 incentives and rebates, and third-party IC costs deemed to be capitalized, Case No.
25 U-15806 approved by the Commission on June 3, 2010 (Amended EWR Plan), and

Line
No.

1 DTE Gas' EWR Plan, Case No. U-20429 approved by the Commission on
2 November 19, 2020.

3

4 **Q22. Did DTE Electric and DTE Gas capitalize any costs in 2022?**

5 A22. No. DTE Electric and DTE Gas ceased capitalizing new C&I/EUT program costs
6 starting in 2022.

7

8 **Q23. What does the Amortization Expense that is shown on line 13 of Exhibits A-10**
9 **and A-14 represent?**

10 A23. The amortization expense on line 13 in Exhibits A-10 and A-14 represents the
11 amortization associated with program costs capitalized during 2017 through 2021
12 Capitalized costs are amortized over a five-year amortization period with costs
13 being amortized for a half-year period in the year that the costs were incurred and
14 the final year the costs are fully amortized. This is consistent with the policy
15 established in DTE Electric's Amended EWR Plan Case No. U-15806, and DTE
16 Gas' EWR Plan, Case No. U-20429 approved by the Commission on November
17 19, 2020.

18

19 **Q24. What does the Plant Balance section on lines 15 through 21 of Exhibits A-10**
20 **and A-14 represent?**

21 A24. The plant balance section on lines 15 through 21 in Exhibits A-10 and A-14
22 represents the capitalized cost components utilized by Witness Vangilder in
23 deriving the return on capitalized costs.

24

25 **Q25. What information is shown on Exhibits A-13 and A-17?**

Line
No.

1 A25. The exhibits show the derivation of the allocation factors used to allocate certain
2 costs to the customer classes for DTE Electric and DTE Gas, respectively. Pilot
3 program costs, education and awareness program costs, income-qualified program
4 costs, administrative and infrastructure costs, and EM&V costs were all allocated
5 to the individual customer classes.

6

7 **Q26. Were all the costs mentioned in the previous response allocated the same way?**

8 A26. No. The education and awareness program costs were allocated using different
9 allocation factors than the factors used for allocating the remaining costs. First, the
10 electric education and awareness program costs were allocated as 85% to the
11 residential class (as shown on line 2 of Exhibit A-13), and 15% to the C&I class (as
12 shown on line 5) based on the methodology approved in DTE Electric's 2018 EWR
13 Reconciliation Case No. U-20366. The costs allocated to the C&I class were then
14 further allocated between Primary (32.4%) and Secondary (67.6%) classes based
15 on the incentive costs incurred for these classes in 2022. The derivation of the C&I
16 class allocation factors is shown on Exhibit A-13, lines 11-16. This methodology
17 is consistent with DTE Electric's previous EWR reconciliation cases approved by
18 the Commission.

19

20 The gas education and awareness program costs were first allocated as 84% to the
21 residential class (as shown on line 2 of Exhibit A-17), and 16% to the C&I class (as
22 shown on line 5) based on the methodology approved in DTE Gas' 2018 EWR
23 Reconciliation Case No. U-20369. The costs allocated to the C&I/EUT class were
24 then further allocated between C&I (42.4%) and EUT (57.6%) classes based on the
25 incentive costs incurred for these classes in 2022. The derivation of the C&I/EUT

Line
No.

class allocation factors is shown on Exhibit A-17, lines 11-16. This methodology is consistent with DTE Gas' previous EWR reconciliation cases approved by the Commission.

Q27. How were the remaining costs allocated to the customer classes?

A27. Electric Pilot program costs, income-qualified program costs, administrative and infrastructure costs and EM&V costs were allocated to each of the customer classes using a two-step allocation process. The first step of the allocation process allocated 37.9% of these costs to the residential class and 62.1% of these costs to the C&I class as shown on lines 1-10 of Exhibit A-13. This first allocation was based on program incentive costs, program implementation costs, direct program administration costs and education and awareness program costs. The costs allocated to the C&I class were further allocated between Primary (32.4%) and Secondary (67.6%) classes based on the incentive costs incurred for these classes in 2022. The derivation of these allocation factors is shown on lines 11-16 on Exhibit A-13. This methodology is consistent with DTE Electric's previous EWR reconciliation cases approved by the Commission.

Gas Pilot program costs, low-income program costs, administrative and infrastructure costs and EM&V costs were allocated to each of the customer classes using a two-step allocation process. The first step of the allocation process allocated 56.0% of these costs to the residential class and 44.0% of these costs to the C&I/EUT class as shown on lines 1-10 of Exhibit A-17. This first allocation was based on program incentive costs, program implementation costs, direct program administration costs and education and awareness program costs. The

Line
No.

1 costs allocated to the C&I/EUT class were further allocated between C&I (42.4%)
2 and EUT (57.6%) classes based on the incentive costs incurred for these classes in
3 2022. The derivation of these allocation factors is shown on lines 11-16 on Exhibit
4 A-17. This methodology is consistent with DTE Gas' previous EWR reconciliation
5 cases approved by the Commission.

6

7 **Q28. How are over or under recovery EWR balances, calculated by Witness**
8 **Vangilder, being treated by DTE Electric and DTE Gas?**

9 A28. DTE Electric and DTE Gas calculate the cumulative net amount of base revenues
10 compared to expenses. If the cumulative amount is an over recovery, then a
11 regulatory liability is accrued. If the cumulative amount represents an under
12 recovery, then a regulatory asset is recognized. Witness Vangilder provides detail
13 regarding how these balances are calculated and the associated carrying charges
14 recorded by DTE Electric and DTE Gas for these balances.

15

16 **Q29. Does this conclude your direct testimony?**

17 A29. Yes, it does.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)

Case No. U-21313
(Paperless e-file)

EXHIBITS

OF

BRANDON MURRAY

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Surcharge Revenue, Program Costs and Plant Balance - By Class and Total

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-10
Page: 1 of 4

Line No.	(a) Description	(b) Source	(c) Residential	(d) C&I Secondary	(e) C&I Primary	(f) Total Col (c)+(d)+(e)
1	Surcharge Revenue (5)	A-10 pgs 2-4, L1 Col (p)	\$ 85,332,502	\$ 65,446,477	\$ 58,936,990	\$ 209,715,968
2	Program Expenses:					
3	Program Costs Expensed	A-10 pgs 2-4, L3 Col (p)	\$ 38,878,221	\$ 55,502,858	\$ 16,417,326	\$ 110,798,405.32
4	Pilot Programs (1)	A-10 pgs 2-4, L4 Col (p)	3,962,203	5,166,307	1,323,915	\$ 10,452,425.58
5	Education and Awareness Programs (2)	A-10 pgs 2-4, L5 Col (p)	4,393,836	666,201	170,720	\$ 5,230,756.68
6	Low-Income Programs (3)	A-10 pgs 2-4, L6 Col (p)	12,729,600	16,598,096	4,253,420	\$ 33,581,116.33
7	Administration & Infrastructure	A-10 pgs 2-4, L7 Col (p)	3,730,950	3,859,221	988,962	\$ 8,579,132.09
8	Evaluation, Measurement, and Verification (4)	A-10 pgs 2-4, L8 Col (p)	2,292,156	2,988,736	765,892	\$ 6,046,784.22
9	Total Program Expenses	Sum of lines 3 through 8	<u>\$ 65,986,965</u>	<u>\$ 84,781,419</u>	<u>\$ 23,920,237</u>	<u>\$ 174,688,620.22</u>
10	Program Costs Unitized	A-10 pgs 2-4, L10 Col (p)	\$ -	\$ -	\$ -	\$ -
11	Construction Work in Progress	A-10 pgs 2-4, L11 Col (p)	-	(0)	(0)	\$ (0.00)
12	Total Program Costs Capitalized	Sum of lines 10 and 11	<u>\$ -</u>	<u>\$ (0)</u>	<u>\$ (0)</u>	<u>\$ (0.00)</u>
13	Amortization Expense	A-10 pgs 2-4, L13 Col (p)	\$ -	\$ 7,070,731	\$ 13,555,588	\$ 20,626,319.40
14	<u>Plant Balance</u>					
15	Plant in Service	A-10 pgs 2-4, L15 Col (o)	\$ 3,762,277	\$ 77,503,392	\$ 108,257,416	\$ 189,523,085
16	Retired Plant in Service	A-10 pgs 2-4, L16 Col (o)	(3,762,277)	(17,316,708)	(24,717,696)	(45,796,680)
17	Construction Work in Progress	A-10 pgs 2-4, L17 Col (o)	-	(0)	(0)	(0)
18	Gross Plant	Sum of lines 15, 16 & 17	<u>\$ (0)</u>	<u>\$ 60,186,684</u>	<u>\$ 83,539,721</u>	<u>\$ 143,726,405</u>
19	Accumulated Amortization	A-10 pgs 2-4, L19 Col (o)	(3,762,277)	(56,603,917)	(83,357,775)	(143,723,969)
20	Retired Accumulated Amortization	A-10 pgs 2-4, L20 Col (o)	3,762,277	17,316,708	24,717,696	45,796,680
21	Net Plant	Sum of lines 18, 19 & 20	<u>\$ 0</u>	<u>\$ 20,899,474</u>	<u>\$ 24,899,641</u>	<u>\$ 45,799,116</u>

Note: Administrative costs included above:

(1) Pilot	\$ 755,861
(2) Education and Awareness	1,053,373
(3) Low-Income	468,426
(4) Evaluation, Measurement, and Verification	923,677
Total	<u>\$ 3,201,336</u>

(5) Base EWR surcharge revenue and EWR performance incentive revenue

Line No.	(a) Description	(b) Source	(c) 2021 Ending Balance	(d) Jan-22	(e) Feb-22	(f) Mar-22	(g) Apr-22	(h) May-22	(i) Jun-22	(j) Jul-22	(k) Aug-22	(l) Sep-22	(m) Oct-22	(n) Nov-22	(o) Dec-22	(p) Total 2022
1	Surcharge Revenue (1)	WP JLC-1, Line 1		\$ 7,269,139	\$ 6,467,430	\$ 7,476,789	\$ 5,682,554	\$ 5,695,601	\$ 7,629,363	\$ 8,848,313	\$ 10,290,051	\$ 8,099,954	\$ 5,613,604	\$ 5,261,523	\$ 6,998,179	\$ 85,332,502
2	Program Expenses:															
3	Program Costs Expensed	WP JLC-2, Line 8		\$ 3,517,854	\$ 2,194,856	\$ 2,423,987	\$ 2,917,864	\$ 2,445,694	\$ 2,353,454	\$ 3,648,430	\$ 3,332,463	\$ 3,826,080	\$ 4,448,370	\$ 3,407,831	\$ 4,361,338	\$ 38,878,221
4	Pilot Programs	WP JLC-2, Line 9		172,339	349,981	176,377	192,294	275,388	316,893	270,678	331,354	223,254	636,016	329,833	687,796	3,962,203
5	Education and Awareness Programs	WP JLC-2, Line 10		295,254	200,590	164,576	187,331	330,933	143,833	340,283	284,873	386,773	765,607	626,127	667,656	4,393,836
6	Low-Income Programs	WP JLC-2, Line 11		545,262	483,745	616,814	630,716	655,695	1,009,462	1,178,858	1,288,387	1,227,993	1,132,397	1,547,645	2,412,626	12,729,600
7	Administration & Infrastructure	WP JLC-2, Line 12		324,727	173,638	292,195	243,535	352,678	210,993	273,519	256,937	345,766	366,905	330,251	559,805	3,730,950
8	Evaluation, Measurement, and Verification	WP JLC-2, Line 13		188,561	96,677	359,566	29,870	270,350	207,665	106,268	100,329	87,373	117,131	152,461	575,905	2,292,156
9	Total Program Expenses	Sum of Lines 3 through 8		<u>\$ 5,043,996</u>	<u>\$ 3,499,488</u>	<u>\$ 4,033,515</u>	<u>\$ 4,201,610</u>	<u>\$ 4,330,738</u>	<u>\$ 4,242,299</u>	<u>\$ 5,818,036</u>	<u>\$ 5,594,343</u>	<u>\$ 6,097,239</u>	<u>\$ 7,466,426</u>	<u>\$ 6,394,149</u>	<u>\$ 9,265,126</u>	<u>\$ 65,986,965</u>
10	Program Costs Unitized	WP JLC-2, Line 4		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11	Construction Work in Progress	WP JLC-2, Line 5		-	-	-	-	-	-	-	-	-	-	-	-	-
12	Total Program Costs Capitalized	Sum of Lines 10 and 11		<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
13	Amortization Expense	WP JLC-3, Line 1		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
14	Plant Balance															
15	Plant in Service (2)	Prior Bal. + L10	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277	\$ 3,762,277
16	Retired Plant in Service (3)		(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)
17	Construction Work in Progress	Prior Bal. + L11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Gross Plant	Sum of Lines 15 , 16 & 17	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)	\$ (0)
19	Accumulated Amortization (4)	Prior Bal. + L13	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)	(3,762,277)
20	Retired Accumulated Amortization		3,762,277	3,762,277	3,762,277	3,762,277	3,762,277	3,762,277	3,762,277	3,762,277	3,762,277	3,762,277	3,762,277	3,762,277	3,762,277	3,762,277
21	Net Plant	Sum of Lines 18 ,19 & 20	<u>\$ (0)</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>

Notes:

- (1) Base EWR surcharge revenue and EWR performance incentive revenue
- (2) 2020 Ending Balance Line 15 col (c) Source: U-20866, Exh A-16 p.2, Line 15, col (o)
- (3) 2020 Ending Balance Line 16 col (c) Source: U-20866, Exh A-16 p.2, Line 16, col (o)
- (4) 2020 Ending Balance Line 19 col (c) Source: U-20866, Exh A-16 p.2, Line 19, col (o)

Line No.	(a) Description	(b) Source	(c) 2021 Ending Balance	(d) Jan-22	(e) Feb-22	(f) Mar-22	(g) Apr-22	(h) May-22	(i) Jun-22	(j) Jul-22	(k) Aug-22	(l) Sep-22	(m) Oct-22	(n) Nov-22	(o) Dec-22	(p) Total 2022
1	Surcharge Revenue (1)	WP JLC-1, Line 2		\$ 6,145,582	\$ 5,140,982	\$ 5,927,675	\$ 5,031,304	\$ 5,198,567	\$ 5,617,309	\$ 5,419,661	\$ 6,131,223	\$ 5,544,798	\$ 4,917,299	\$ 4,917,004	\$ 5,455,073	\$ 65,446,477
2	Program Expenses:															
3	Program Costs Expensed	WP JLC-2, Line 22		\$ 3,295,096	\$ 3,070,335	\$ 3,501,509	\$ 3,318,798	\$ 3,495,449	\$ 3,278,463	\$ 3,731,835	\$ 3,116,772	\$ 4,504,654	\$ 5,325,836	\$ 5,470,780	\$ 13,393,330	\$ 55,502,858
4	Pilot Programs	WP JLC-2, Line 23		224,712	456,340	229,978	250,732	359,078	413,196	352,936	432,051	291,100	829,299	430,069	896,816	5,166,307
5	Education and Awareness Programs	WP JLC-2, Line 24		44,767	30,414	24,953	28,403	50,177	21,808	51,594	43,193	58,643	116,083	94,934	101,231	666,201
6	Low-Income Programs	WP JLC-2, Line 25		710,966	630,754	804,263	822,390	854,959	1,316,235	1,537,110	1,679,925	1,601,177	1,476,530	2,017,971	3,145,817	16,598,096
7	Administration & Infrastructure	WP JLC-2, Line 26		214,890	147,384	287,360	322,263	303,052	191,838	281,671	253,994	370,878	496,999	337,473	651,419	3,859,221
8	Evaluation, Measurement, and Verification	WP JLC-2, Line 27		245,864	126,057	468,837	38,947	352,509	270,773	138,562	130,819	113,926	152,727	198,794	750,921	2,988,736
9	Total Program Expenses	Sum of Lines 3 through 8		<u>\$ 4,736,295</u>	<u>\$ 4,461,283</u>	<u>\$ 5,316,900</u>	<u>\$ 4,781,534</u>	<u>\$ 5,415,224</u>	<u>\$ 5,492,313</u>	<u>\$ 6,093,708</u>	<u>\$ 5,656,754</u>	<u>\$ 6,940,378</u>	<u>\$ 8,397,474</u>	<u>\$ 8,550,021</u>	<u>\$ 18,939,535</u>	<u>\$ 84,781,419</u>
10	Program Costs Unitized	WP JLC-2, Line 18		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11	Construction Work in Progress	WP JLC-2, Line 19		(0)	(0)	0	0	(0)	-	-	-	(0)	-	-	-	(0)
12	Total Program Costs Capitalized	Sum of Lines 10 and 11		<u>\$ (0)</u>	<u>\$ (0)</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ (0)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (0)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (0)</u>
13	Amortization Expense	WP JLC-3, Line 2		\$ 577,033	\$ 577,033	\$ 577,034	\$ 577,034	\$ 577,035	\$ 577,036	\$ 601,420	\$ 601,420	\$ 601,421	\$ 601,421	\$ 601,422	\$ 601,422	\$ 7,070,731
14	Plant Balance															
15	Plant in Service (2)	Prior Bal. + L10	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392	\$ 77,503,392
16	Retired Plant in Service (3)		(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)	(17,316,708)
17	Construction Work in Progress (4)	Prior Bal. + L11	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
18	Gross Plant	Sum of Lines 15 , 16 & 17	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684	\$ 60,186,684
19	Accumulated Amortization (5)	Prior Bal. + L13	(49,533,186)	(50,110,219)	(50,687,252)	(51,264,286)	(51,841,321)	(52,418,356)	(52,995,391)	(53,596,811)	(54,198,231)	(54,799,652)	(55,401,073)	(56,002,495)	(56,603,917)	(56,603,917)
20	Retired Accumulated Amortization		17,316,708	17,316,708	17,316,708	17,316,708	17,316,708	17,316,708	17,316,708	17,316,708	17,316,708	17,316,708	17,316,708	17,316,708	17,316,708	17,316,708
21	Net Plant	Sum of Lines 18 ,19 & 20	<u>\$ 27,970,206</u>	<u>\$ 27,393,173</u>	<u>\$ 26,816,140</u>	<u>\$ 26,239,106</u>	<u>\$ 25,662,071</u>	<u>\$ 25,085,036</u>	<u>\$ 24,508,001</u>	<u>\$ 23,906,581</u>	<u>\$ 23,305,161</u>	<u>\$ 22,703,740</u>	<u>\$ 22,102,319</u>	<u>\$ 21,500,897</u>	<u>\$ 20,899,474</u>	

Notes:

- (1) Base EWR surcharge revenue and EWR performance incentive revenue
(2) 2020 Ending Balance Line 15 col (c) Source: U-20866, Exh A-16 p.3, Line 15, col (o)
(3) 2020 Ending Balance Line 16 col (c) Source: U-20866, Exh A-16 p.3, Line 16, col (o)
(4) 2020 Ending Balance Line 17 col (c) Source: U-20866, Exh A-16 p.3, Line 17, col (o)
(5) 2020 Ending Balance Line 19 col (c) Source: U-20866, Exh A-16 p.3, Line 19, col (o)

Line No.	(a) Description	(b) Source	(c) 2021 Ending Balance	(d) Jan-22	(e) Feb-22	(f) Mar-22	(g) Apr-22	(h) May-22	(i) Jun-22	(j) Jul-22	(k) Aug-22	(l) Sep-22	(m) Oct-22	(n) Nov-22	(o) Dec-22	(p) Total 2022
1	Surcharge Revenue (1)	WP JLC-1, Line 3		\$ 4,561,008	\$ 4,956,270	\$ 5,017,602	\$ 5,040,604	\$ 5,061,619	\$ 4,916,606	\$ 5,107,569	\$ 4,957,940	\$ 5,046,920	\$ 4,495,462	\$ 4,704,703	\$ 5,070,685	\$ 58,936,990
2	Program Expenses:															
3	Program Costs Expensed	WP JLC-2, Line 36		\$ 974,841	\$ 988,781	\$ 1,149,582	\$ 1,012,335	\$ 1,055,692	\$ 1,202,536	\$ 1,030,137	\$ 1,209,192	\$ 1,477,803	\$ 1,451,161	\$ 1,735,050	\$ 3,130,217	\$ 16,417,326
4	Pilot Programs	WP JLC-2, Line 37		57,585	116,941	58,934	64,253	92,017	105,885	90,443	110,717	74,597	212,516	110,209	229,818	1,323,915
5	Education and Awareness Programs	WP JLC-2, Line 38		11,472	7,794	6,395	7,279	12,858	5,589	13,222	11,069	15,028	29,747	24,328	25,941	170,720
6	Low-Income Programs	WP JLC-2, Line 39		182,192	161,637	206,100	210,745	219,091	337,298	393,899	430,497	410,317	378,375	517,124	806,146	4,253,420
7	Administration & Infrastructure	WP JLC-2, Line 40		55,068	37,768	73,639	82,583	77,660	49,160	72,181	65,088	95,041	127,361	86,481	166,932	988,962
8	Evaluation, Measurement, and Verification	WP JLC-2, Line 41		63,005	32,303	120,144	9,981	90,334	69,388	35,508	33,524	29,195	39,138	50,943	192,431	765,892
9	Total Program Expenses	Sum of Lines 3 through 8		<u>\$ 1,344,162</u>	<u>\$ 1,345,225</u>	<u>\$ 1,614,793</u>	<u>\$ 1,387,175</u>	<u>\$ 1,547,653</u>	<u>\$ 1,769,856</u>	<u>\$ 1,635,389</u>	<u>\$ 1,860,086</u>	<u>\$ 2,101,980</u>	<u>\$ 2,238,298</u>	<u>\$ 2,524,134</u>	<u>\$ 4,551,485</u>	<u>\$ 23,920,237</u>
10	Program Costs Unitized	WP JLC-2, Line 32		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11	Construction Work in Progress	WP JLC-2, Line 33		(0)	(0)	0	0	(0)	-	-	-	(0)	-	-	-	(0)
12	Total Program Costs Capitalized	Sum of Lines 10 and 11		<u>\$ (0)</u>	<u>\$ (0)</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ (0)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (0)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (0)</u>
13	Amortization Expense	WP JLC-3, Line 3		\$ 1,141,827	\$ 1,141,827	\$ 1,141,826	\$ 1,141,825	\$ 1,141,825	\$ 1,141,824	\$ 1,117,440	\$ 1,117,440	\$ 1,117,439	\$ 1,117,439	\$ 1,117,438	\$ 1,117,438	\$ 13,555,588
14	Plant Balance															
15	Plant in Service (2)	Prior Bal. + L10	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416	\$ 108,257,416
16	Retired Plant in Service (3)		(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)	(24,717,696)
17	Construction Work in Progress (4)	Prior Bal. + L11	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
18	Gross Plant	Sum of Lines 15 , 16 & 17	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721	\$ 83,539,721
19	Accumulated Amortization (5)	Prior Bal. + L13	(69,802,187)	(70,944,014)	(72,085,841)	(73,227,667)	(74,369,492)	(75,511,317)	(76,653,141)	(77,770,582)	(78,888,021)	(80,005,461)	(81,122,899)	(82,240,337)	(83,357,775)	(83,357,775)
20	Retired Accumulated Amortization		24,717,696	24,717,696	24,717,696	24,717,696	24,717,696	24,717,696	24,717,696	24,717,696	24,717,696	24,717,696	24,717,696	24,717,696	24,717,696	24,717,696
21	Net Plant	Sum of Lines 18 ,19 & 20	<u>\$ 38,455,229</u>	<u>\$ 37,313,402</u>	<u>\$ 36,171,576</u>	<u>\$ 35,029,750</u>	<u>\$ 33,887,924</u>	<u>\$ 32,746,099</u>	<u>\$ 31,604,275</u>	<u>\$ 30,486,835</u>	<u>\$ 29,369,395</u>	<u>\$ 28,251,956</u>	<u>\$ 27,134,517</u>	<u>\$ 26,017,079</u>	<u>\$ 24,899,641</u>	

Notes:

- (1) Base EWR surcharge revenue and EWR performance incentive revenue
(2) 2020 Ending Balance Line 15 col (c) Source: U-20866, Exh A-16 p.4, Line 15, col (o)
(3) 2020 Ending Balance Line 16 col (c) Source: U-20866, Exh A-16 p.4, Line 16, col (o)
(4) 2020 Ending Balance Line 17 col (c) Source: U-20866, Exh A-16 p.4, Line 17, col (o)
(5) 2020 Ending Balance Line 19 col (c) Source: U-20866, Exh A-16 p.4, Line 19, col (o)

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Administrative Costs by Residential EWR Program

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-11
Page: 1 of 2

Line No.	(a) Residential - Capital and O&M	(b) Source	(c) As Filed	(d) Actuals (1)	(e) Col (d) - Col (c)
1	Residential ENERGY STAR Products	WP JLC-6, Line 1	\$ 13,639,092	\$ 15,801,775	\$ 2,162,682
2	Administration & Infrastructure	WP JLC-6, Line 26	1,219,023	1,631,347	412,324
3	Total		<u>\$ 14,858,115</u>	<u>\$ 17,433,121</u>	<u>\$ 2,575,006</u>
4	Appliance Recycling	WP JLC-6, Line 2	\$ 6,828,790	\$ 7,178,830	\$ 350,041
5	Administration & Infrastructure	WP JLC-6, Line 27	610,338	734,752	124,414
6	Total		<u>\$ 7,439,127</u>	<u>\$ 7,913,582</u>	<u>\$ 474,455</u>
7	Heating, Ventilation & Air Conditioning (HVAC)	WP JLC-6, Line 3	\$ 4,331,377	\$ 3,893,866	\$ (437,511)
8	Administration & Infrastructure	WP JLC-6, Line 28	387,126	398,536	11,410
9	Total		<u>\$ 4,718,503</u>	<u>\$ 4,292,402</u>	<u>\$ (426,100)</u>
10	Multifamily	WP JLC-6, Line 4	\$ 135,726	\$ 135,287	\$ (439)
11	Administration & Infrastructure	WP JLC-6, Line 29	12,131	12,554	423
12	Total		<u>\$ 147,857</u>	<u>\$ 147,841</u>	<u>\$ (16)</u>
13	Home Energy Consultation (HEC)	WP JLC-6, Line 5	\$ 5,466,003	\$ 5,192,703	\$ (273,300)
14	Administration & Infrastructure	WP JLC-6, Line 30	488,536	502,880	14,345
15	Total		<u>\$ 5,954,539</u>	<u>\$ 5,695,583</u>	<u>\$ (258,955)</u>
16	Audit and Weatherization	WP JLC-6, Line 6	\$ 1,918,361	\$ 1,163,293	\$ (755,067)
17	Administration & Infrastructure	WP JLC-6, Line 31	171,458	119,063	(52,395)
18	Total		<u>\$ 2,089,818</u>	<u>\$ 1,282,356</u>	<u>\$ (807,462)</u>
19	School Program	WP JLC-6, Line 7	\$ 1,614,523	\$ 1,133,076	\$ (481,446)
20	Administration & Infrastructure	WP JLC-6, Line 32	144,301	115,970	(28,331)
21	Total		<u>\$ 1,758,824</u>	<u>\$ 1,249,046</u>	<u>\$ (509,778)</u>
22	Home Energy Efficiency Kits	WP JLC-6, Line 8	\$ 740,799	\$ 11,684	\$ (729,115)
23	Administration & Infrastructure	WP JLC-6, Line 33	66,211	1,196	(65,015)
24	Total		<u>\$ 807,010</u>	<u>\$ 12,880</u>	<u>\$ (794,129)</u>
25	New Home Construction	WP JLC-6, Line 10	\$ 1,281,890	\$ 1,387,826	\$ 105,936
26	Administration & Infrastructure	WP JLC-6, Line 33	114,572	142,181	27,610
27	Total		<u>\$ 1,396,462</u>	<u>\$ 1,530,008</u>	<u>\$ 133,546</u>
28	Home Energy Reports	WP JLC-6, Line 11	\$ 2,219,925	\$ 2,979,074	\$ 759,149
29	Administration & Infrastructure	WP JLC-6, Line 33	198,411	304,908	106,497
30	Total		<u>\$ 2,418,336</u>	<u>\$ 3,283,982</u>	<u>\$ 865,646</u>
31	DTE Insight	WP JLC-6, Line 12	\$ 2,282,881	\$ 806	\$ (2,282,075)
32	Administration & Infrastructure	WP JLC-6, Line 34	204,037	82	(203,955)
33	Total		<u>\$ 2,486,919</u>	<u>\$ 889</u>	<u>\$ (2,486,030)</u>
34	Emerging Measures and Approaches	WP JLC-6, Line 10	\$ 604,989	\$ -	\$ (604,989)
35	Administration & Infrastructure	WP JLC-6, Line 35	54,072	-	(54,072)
36	Total		<u>\$ 659,061</u>	<u>\$ -</u>	<u>\$ (659,061)</u>
37	Low-Income (includes A&G and Low-Income Multifamily & Low-Income Audit-Wx)	(2)	<u>\$ 28,812,592</u>	<u>\$ 33,581,116</u>	<u>\$ 4,768,524</u>
38	Total Residential before Pilot, Education and EM&V	L3 + L6 + L9 +L12 + L15 + L18 + L21 +L24 + L27 + L30 + L33 + L36 + L39 + L40	\$ 73,547,163	\$ 76,422,807	\$ 2,875,644
39	Pilot (includes A&G)	(3)	3,662,882	3,962,203	299,320
40	Education (includes A&G)	(4)	4,126,096	4,393,836	267,740
41	EM&V (includes A&G)	(5)	<u>2,281,243</u>	<u>2,292,156</u>	<u>10,913</u>
42	Total Residential	L41 + L42 + L43 + L44	<u>\$ 83,617,384</u>	<u>\$ 87,071,001</u>	<u>\$ 3,453,617</u>
43	Reallocated Value Residential (Sum of positive lines 9, 12, 18, 21, 24, 27, 30, 33, 37, 39, 40, 41, 42)				<u>\$ 9,395,150</u>

Source:

- (1) Company Records
(2) U-20373 Amended, DTE Electric EWR Plan, Exhibit No: A-10, Col. (g), Line 22
(3) U-20373 Amended, DTE Electric EWR Plan, Exhibit No: A-11, Col. (e), Line 3
(4) U-20373 Amended, DTE Electric EWR Plan, Exhibit No: A-11, Col. (e), Line 4
(5) U-20373 Amended, DTE Electric EWR Plan, Exhibit No: A-11, Col. (e), Line 7

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Administrative Costs by C&I EWR Program

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-11
Page: 2 of 2

Line No.	(a) Commercial and Industrial - Capital & O&M	(b) Source	(c) As Filed	(d) Actuals (1)	(e) Col (d) - Col (c)
1	Prescriptive	WP JLC-8, Line 1	\$ 26,739,783	\$ 29,859,924	\$ 3,120,141
2	Administration & Infrastructure	WP JLC-8, Line 28	1,375,712	1,924,763	549,051
3	Total		<u>\$ 28,115,495</u>	<u>\$ 31,784,687</u>	<u>\$ 3,669,192</u>
4	Non-Prescriptive	WP JLC-8, Line 2	\$ 19,734,315	\$ 13,008,175	\$ (6,726,140)
5	Administration & Infrastructure	WP JLC-8, Line 29	1,015,294	839,138	(176,156)
6	Total		<u>\$ 20,749,609</u>	<u>\$ 13,847,313</u>	<u>\$ (6,902,296)</u>
7	Retro-Commissioning	WP JLC-8, Line 3	\$ 2,984,150	\$ 2,948,698	\$ (35,452)
8	Administration & Infrastructure	WP JLC-8, Line 30	153,529	190,072	\$ 36,543
9	Total		<u>\$ 3,137,680</u>	<u>\$ 3,138,771</u>	<u>\$ 1,091</u>
10	Strategic Energy Management	WP JLC-8, Line 4	\$ 2,411,979	\$ 3,316,858	\$ 904,880
11	Administration & Infrastructure	WP JLC-8, Line 31	124,092	213,804	\$ 89,712
12	Total		<u>\$ 2,536,070</u>	<u>\$ 3,530,662</u>	<u>\$ 994,592</u>
13	Business Energy Consultation	WP JLC-8, Line 5	\$ 3,734,844	\$ 2,764,385	\$ (970,459)
14	Administration & Infrastructure	WP JLC-8, Line 32	192,151	178,192	\$ (13,959)
15	Total		<u>\$ 3,926,995</u>	<u>\$ 2,942,576</u>	<u>\$ (984,418)</u>
16	Mid-Stream Lighting	WP JLC-8, Line 6	\$ 5,475,330	\$ 5,373,451	\$ (101,878)
17	Administration & Infrastructure	WP JLC-8, Line 33	281,696	346,371	\$ 64,676
18	Total		<u>\$ 5,757,026</u>	<u>\$ 5,719,823</u>	<u>\$ (37,203)</u>
19	Mid-Stream Food Service	WP JLC-8, Line 7	\$ 1,054,560	\$ 754,286	\$ (300,274)
20	Administration & Infrastructure	WP JLC-8, Line 34	54,255	48,621	\$ (5,634)
21	Total		<u>\$ 1,108,815</u>	<u>\$ 802,907</u>	<u>\$ (305,908)</u>
22	Mid-Stream HVAC	WP JLC-8, Line 8	\$ 1,903,483	\$ 2,934,468	\$ 1,030,985
23	Administration & Infrastructure	WP JLC-8, Line 35	97,931	189,155	\$ 91,224
24	Total		<u>\$ 2,001,414</u>	<u>\$ 3,123,623</u>	<u>\$ 1,122,209</u>
25	Energy Star Retail Lighting	WP JLC-8, Line 9	\$ 1,149,796	\$ 842,911	\$ (306,886)
26	Administration & Infrastructure	WP JLC-8, Line 36	59,155	43,855	(15,300)
27	Total		<u>\$ 1,208,951</u>	<u>\$ 886,766</u>	<u>\$ (322,185)</u>
28	Multifamily Common Areas	WP JLC-8, Line 10	\$ 535,811	\$ 576,130	\$ 40,319
29	Administration & Infrastructure	WP JLC-8, Line 37	27,566	29,975	\$ 2,409
30	Total		<u>\$ 563,377</u>	<u>\$ 606,106</u>	<u>\$ 42,728</u>
31	Find and Fix	WP JLC-8, Line 11	\$ 816,856	\$ 1,035,409	\$ 218,553
32	Administration & Infrastructure	WP JLC-8, Line 38	42,026	66,742	\$ 24,716
33	Total		<u>\$ 858,882</u>	<u>\$ 1,102,151</u>	<u>\$ 243,269</u>
34	Small Business Focus	WP JLC-8, Line 12	\$ 6,448,546	\$ 7,519,157	\$ 1,070,611
35	Administration & Infrastructure	WP JLC-8, Line 39	331,766	484,683	\$ 152,917
36	Total		<u>\$ 6,780,312</u>	<u>\$ 8,003,840</u>	<u>\$ 1,223,528</u>
37	Emerging Measures and Approaches	WP JLC-8, Line 14	\$ 1,381,911	\$ 935,332	\$ (446,579)
38	Administration & Infrastructure	WP JLC-8, Line 41	71,097	60,291	(10,805)
39	Total		<u>\$ 1,453,007</u>	<u>\$ 995,623</u>	<u>\$ (457,384)</u>
40	Self Direct	(2)	\$ 51,129	\$ 51,000	\$ (129)
41	Administration & Infrastructure		2,630	-	\$ (2,630)
42	Total		<u>\$ 53,759</u>	<u>\$ 51,000</u>	<u>\$ (2,759)</u>
		L3 + L6 + L9 + L12 + L15 + L18 + L21 + L24 + L27 + L30 + L33 + L36			
43	Total C&I before Pilot, Education and EM&V		<u>\$ 78,251,392</u>	<u>\$ 76,535,847</u>	<u>\$ (1,715,545)</u>
44	Pilot (includes A&G)	(3)	6,045,578	6,490,223	444,645
45	Education (includes A&G)	(4)	728,135	836,921	108,787
46	EM&V (includes A&G)	(5)	3,765,185	3,754,629	(10,556)
47	Total C&I	L37 + L38 + L39 + L40	<u>\$ 88,790,290</u>	<u>\$ 87,617,619</u>	<u>\$ (1,172,670)</u>
48	Reallocated Value C&I (Sum of positive lines 3, 9, 12, 24, 33, 38, 39, 40)				<u>\$ 7,850,040</u>

Source:

- (1) Company Records
- (2) Estimate of administering the Self Direct Program
- (3) Sum of U-20373 Amended, DTE Electric EWR Plan, Exhibit No: A-14 p1, Col. (d), Line 3 and Exhibit No: A-14 p2, Col. (e), Line 3
- (4) Sum of U-20373 Amended, DTE Electric EWR Plan, Exhibit No: A-14 p1, Col. (d), Line 4 and Exhibit No: A-14 p2, Col. (e), Line 4
- (5) Sum of U-20373 Amended, DTE Electric EWR Plan, Exhibit No: A-14 p1, Col. (d), Line 7 and Exhibit No: A-14 p2, Col. (e), Line 7

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Capital Detail by EWR Program

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-12
Page: 1 of 1

	(a)	(b)	(c)	(d)
		2022	2022	2022
Line No.	Energy Waste Reduction Programs	Capital - Incentive ¹	Capital - Implementation ¹	Capital - Total
	Residential			
1	Residential ENERGY STAR Products	\$ -	\$ -	\$ -
2	Appliance Recycling	-	-	-
3	Heating, Ventilation & Air Conditioning (HVAC)	-	-	-
4	Multifamily	-	-	-
5	Home Energy Consultation (HEC)	-	-	-
6	Audit and Weatherization	-	-	-
7	School Program	-	-	-
8	Home Energy Efficiency Kits	-	-	-
9	Revolving Loan Program	-	-	-
10	New Home Construction	-	-	-
11	Home Energy Reports	-	-	-
12	DTE Insight	-	-	-
13	Emerging Measures and Approaches	-	-	-
14	Administrative and Infrastructure	-	-	-
15	Residential Program Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
	Low Income			
16	Low Income attributed to Energy Efficiency Assistance	\$ -	\$ -	\$ -
17	Low Income attributed to Multifamily Units	-	-	-
18	Low Income attributed to Home Energy Consultation	-	-	-
19	Low Income Administrative and Infrastructure	-	-	-
20	Low Income Program Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
	Commercial & Industrial (C&I)			
21	Prescriptive			\$ -
22	Non-Prescriptive			-
23	Retro-Commissioning	-	-	-
24	Strategic Energy Management	-	-	-
25	Business Energy Consultation	-	-	-
26	Mid-Stream Lighting	-	-	-
27	Mid-Stream Food Service			-
28	Mid-Stream HVAC			-
29	Energy Star Retail Lighting	-	-	-
30	Multifamily Common Areas	-	-	-
31	Emerging Measures and Approaches	-	-	-
32	Self Direct	-	-	-
33	Administrative and Infrastructure	-	-	-
34	C&I Program Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
	Other Programs and Costs			
35	Pilot Program	\$ -	\$ -	\$ -
36	Education Program	-	-	-
37	Evaluation, Measurement & Verification (EM&V)	-	-	-
38	Administrative and Infrastructure	-	-	-
39	Other Programs and Costs Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
40	Total Costs & Energy Savings	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
41	Portfolio USRCT & CCE			

Notes:
(1) Company Records

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Allocation Factors

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-13
Page: 1 of 1

(a)		(b)	(c)
Line No.	Allocation 1 - Residential and Commercial & Industrial (C&I) Rate Class Allocation	Actuals	Source
1	Residential (1)	\$ 40,864,038	(6)
2	85% of Education (2)	4,393,836	(6)
3	Total Residential	\$ 45,257,874	Line 1 + Line 2
4	C&I (1)	\$ 73,297,011	(6)
5	15% of Education (2)	836,921	(6)
6	Total C&I	\$ 74,133,932	Line 4 + Line 5
7	Total Residential & C&I	\$ 119,391,806	Line 3 + Line 6
	Allocation Percentage		
8	Residential (3)	37.9%	Line 3 / Line 7
9	C&I (3)	62.1%	Line 6 / Line 7
10	Total	100.0%	Line 8 + Line 9
<u>Allocation 2 - C&I Primary and C&I Secondary Rate Class Allocation</u>		<u>Company Records</u>	
11	C&I Primary (4)	\$ 29,972,914	(7)
12	C&I Secondary (4)	62,573,589	(8)
13	Total	\$ 92,546,504	Line 11 + Line 12
	Allocation Percentage		
14	C&I Primary (5)	32.4%	Line 11 / Line 13
15	C&I Secondary (5)	67.6%	Line 12 / Line 13
16	Total	100.0%	Line 14 + Line 15

Notes:

- (1) Line 1 & Line 4 are all program incentive costs, program implementation costs and direct program administration costs
- (2) Line 2 & Line 5 are Education costs allocated at the noted percentages in DTE Electric's Amended EWR Plan
- (3) Percentages on Lines 8 & 9 were used to allocate Pilot, EM&V, Low-Income and administrative costs between Residential & C&I
- (4) Line 11 & Line 12 are program and amortization expenses for C&I Primary and C&I Secondary customers
- (5) Percentages on Lines 14 & 15 were used to allocate Pilot, EM&V, Low-Income and administrative costs between C&I Primary & C&I Secondary
- (6) Company Records
- (7) Exhibit A-10, p.1, Col. (e), Ln. 3 + Ln. 13
- (8) Exhibit A-10, p.1, Col. (d), Ln. 3 + Ln. 13

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Surcharge Revenue, Program Costs and Plant Balance - By Class and Total

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-14
Page: 1 of 4

Line No.	(a) Description	(b) Source	(c) Residential	(d) C&I	(e) EUT	(f) Total Col (c)+(d)+(e)
1	Surcharge Revenue (5)	A-14 pgs 2-4, L1 Col (p)	\$ 36,646,586	\$ 24,225,663	\$ 5,873,468	\$ 66,745,717
2	Program Expenses:					
3	Program Costs Expensed	A-14 pgs 2-4, L3 Col (p)	\$ 10,737,539	\$ 4,011,903	\$ 5,240,477	\$ 19,989,919
4	Pilot Programs (1)	A-14 pgs 2-4, L4 Col (p)	1,594,430	671,796	579,130	2,845,356
5	Education and Awareness Programs (2)	A-14 pgs 2-4, L5 Col (p)	1,196,132	113,359	97,723	1,407,214
6	Low Income Programs (3)	A-14 pgs 2-4, L6 Col (p)	9,310,017	3,922,680	3,381,591	16,614,288
7	Administration & Infrastructure	A-14 pgs 2-4, L7 Col (p)	1,616,702	637,339	549,425	2,803,466
8	Evaluation, Measurement, and Verification (4)	A-14 pgs 2-4, L8 Col (p)	1,061,086	447,078	385,408	1,893,572
9	Total Program Expenses	Sum of lines 3 through 8	\$ 25,515,905	\$ 9,804,155	\$ 10,233,754	\$ 45,553,815
10	Program Costs Unitized	A-14 pgs 2-4, L10 Col (p)	\$ -	\$ -	\$ -	\$ -
11	Construction Work in Progress	A-14 pgs 2-4, L11 Col (p)	-	-	-	-
12	Total Program Costs Capitalized	Sum of lines 10 and 11	\$ -	\$ -	\$ -	\$ -
13	Amortization Expense	A-14 pgs 2-4, L13 Col (p)	\$ -	\$ 339,465	\$ 666,153	\$ 1,005,617
14	<u>Plant Balance</u>					
15	Plant in Service	A-14 pgs 2-4, L15 Col (o)	\$ -	\$ 1,215,506	\$ 2,360,528	\$ 3,576,034
16	Retired Plant in Service	A-14 pgs 2-4, L16 Col (o)	-	-	-	-
17	Construction Work in Progress	A-14 pgs 2-4, L17 Col (o)	-	481,818	970,235	1,452,053
18	Gross Plant	Sum of lines 15,16 and 17	\$ -	\$ 1,697,324	\$ 3,330,763	\$ 5,028,087
19	Accumulated Amortization	A-14 pgs 2-4, L19 Col (o)	-	(525,274)	(1,030,434)	(1,555,707)
20	Retired Accumulated Amortization	A-14 pgs 2-4, L20 Col (o)	-	-	-	-
21	Net Plant	Sum of lines 18,19 and 20	\$ -	\$ 1,172,051	\$ 2,300,329	\$ 3,472,380

Notes:

Administrative Costs included above:

(1) Pilot	\$ 164,521
(2) Education and Awareness	337,817
(3) Low Income	164,521
(4) Evaluation, Measurement, and Verification	226,207
Total	\$ 893,066

(5) Base EWR surcharge revenue and EWR performance incentive revenue

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-14
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[illegible]

- (1) Base EO surcharge revenue and EO performance incentive revenue
(2) 2020 Ending Balance Line 15 col (c) Source: U-20871, Exhibit A-14 p.2, Line 15, col (o)
(3) 2020 Ending Balance Line 19 col (c) Source: U-20871, Exhibit A-14 p.2, Line 19, col (o)

Line No.	(a) Description	(b) Source	(c) 2021 Ending Balance	(d) Jan-22	(e) Feb-22	(f) Mar-22	(g) Apr-22	(h) May-22	(i) Jun-22	(j) Jul-22	(k) Aug-22	(l) Sep-22	(m) Oct-22	(n) Nov-22	(o) Dec-22	(p) Total 2022
1	Surcharge Revenue (1)	WP JLC-9, Line 2		\$ 2,061,085	\$ 4,583,070	\$ 4,386,636	\$ 2,990,583	\$ 1,719,941	\$ 746,410	\$ 539,403	\$ 494,283	\$ 528,343	\$ 966,407	\$ 1,764,119	\$ 3,445,383	\$ 24,225,663
2	Program Expenses:															
3	Program Costs Expensed	WP JLC-10, Line 22		\$ 507,805	\$ 172,254	\$ 487,544	\$ 295,422	\$ 241,066	\$ 244,839	\$ 241,786	\$ 460,111	\$ 217,176	\$ 408,029	\$ 215,023	\$ 520,847	\$ 4,011,903
4	Pilot Programs	WP JLC-10, Line 23		69,210	44,191	24,148	40,913	44,562	46,908	34,703	42,076	47,988	63,459	87,368	126,272	671,796
5	Education and Awareness Programs	WP JLC-10, Line 24		7,023	4,667	4,165	4,737	7,967	3,624	8,487	6,779	9,903	19,625	15,741	20,641	113,359
6	Low Income Programs	WP JLC-10, Line 25		179,786	264,395	227,721	210,885	307,829	267,576	228,364	369,327	264,003	302,727	502,077	797,991	3,922,680
7	Administration & Infrastructure	WP JLC-10, Line 26		47,318	9,314	30,708	41,187	31,701	22,464	39,179	68,989	38,574	64,329	35,089	208,487	637,339
8	Evaluation, Measurement, and Verification	WP JLC-10, Line 27		31,981	15,380	61,834	4,481	47,727	35,841	17,473	16,377	14,507	18,926	21,331	161,220	447,078
9	Total Program Expenses	Sum of Lines 3 through 8		\$ 843,123	\$ 510,201	\$ 836,120	\$ 597,626	\$ 680,851	\$ 621,251	\$ 569,992	\$ 963,658	\$ 592,151	\$ 877,095	\$ 876,629	\$ 1,835,458	\$ 9,804,155
10	Program Costs Unitized	WP JLC-10, Line 18		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11	Construction Work in Progress	WP JLC-10, Line 19		-	-	-	-	-	-	-	-	-	-	-	-	-
12	Total Program Costs Capitalized	Sum of Lines 10 and 11		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13	Amortization Expense	WP JLC-11, Line 2		\$ 28,289	\$ 28,289	\$ 28,289	\$ 28,289	\$ 28,289	\$ 28,289	\$ 28,289	\$ 28,289	\$ 28,289	\$ 28,289	\$ 28,289	\$ 28,289	\$ 339,465
14	Plant Balance															
15	Plant in Service (2)	Prior Bal. + L10	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506	\$ 1,215,506
16	Retired Plant in Service		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
17	Construction Work in Progress	Prior Bal. + L11	481,818	481,818	481,818	481,818	481,818	481,818	481,818	481,818	481,818	481,818	481,818	481,818	481,818	481,818
18	Gross Plant	Sum of Lines 15,16 and 17	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324	\$ 1,697,324
19	Accumulated Amortization (3)	Prior Bal. + L13	(185,809)	(214,098)	(242,386)	(270,675)	(298,964)	(327,253)	(355,541)	(383,830)	(412,119)	(440,408)	(468,696)	(496,985)	(525,274)	(525,274)
20	Retired Accumulated Amortization		-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	Net Plant	Sum of Lines 18, 19 and 20	\$ 1,511,516	\$ 1,483,227	\$ 1,454,938	\$ 1,426,649	\$ 1,398,361	\$ 1,370,072	\$ 1,341,783	\$ 1,313,494	\$ 1,285,206	\$ 1,256,917	\$ 1,228,628	\$ 1,200,339	\$ 1,172,051	

Notes:

- (1) Base EO surcharge revenue and EO performance incentive revenue
(2) 2020 Ending Balance Line 15 col (c) Source: U-20871, Exhibit A-14 p.3, Line 15, col (o)
(3) 2020 Ending Balance Line 19 col (c) Source: U-20871, Exhibit A-14 p.3, Line 19, col (o)

Line No.	(a) Description	(b) Source	(c) 2021 Ending Balance	(d) Jan-22	(e) Feb-22	(f) Mar-22	(g) Apr-22	(h) May-22	(i) Jun-22	(j) Jul-22	(k) Aug-22	(l) Sep-22	(m) Oct-22	(n) Nov-22	(o) Dec-22	(p) Total 2022
1	Surcharge Revenue (1)	WP JLC-9, Line 3		\$ 264,798	\$ 447,648	\$ 602,861	\$ 604,182	\$ 499,048	\$ 491,371	\$ 490,085	\$ 520,726	\$ 496,847	\$ 455,140	\$ 500,168	\$ 500,594	\$ 5,873,468
2	Program Expenses:															
3	Program Costs Expensed	WP JLC-10, Line 36		\$ 786,358	\$ 384,383	\$ 413,565	\$ 324,685	\$ 299,964	\$ 281,500	\$ 205,307	\$ 450,423	\$ 286,130	\$ 427,999	\$ 339,742	\$ 1,040,421	\$ 5,240,477
4	Pilot Programs	WP JLC-10, Line 37		59,663	38,095	20,817	35,270	38,415	40,437	29,916	36,272	41,369	54,705	75,316	108,854	579,130
5	Education and Awareness Programs	WP JLC-10, Line 38		6,054	4,023	3,591	4,084	6,868	3,124	7,317	5,844	8,537	16,918	13,570	17,794	97,723
6	Low Income Programs	WP JLC-10, Line 39		154,986	227,925	196,309	181,796	265,367	230,667	196,864	318,383	227,587	260,969	432,821	687,917	3,381,591
7	Administration & Infrastructure	WP JLC-10, Line 40		40,791	8,029	26,472	35,506	27,328	19,366	33,774	59,473	33,253	55,455	30,249	179,729	549,425
8	Evaluation, Measurement, and Verification	WP JLC-10, Line 41		27,570	13,259	53,304	3,863	41,143	30,897	15,063	14,118	12,506	16,316	18,389	138,981	385,408
9	Total Program Expenses	Sum of Lines 3 through 8		\$ 1,075,423	\$ 675,715	\$ 714,059	\$ 585,203	\$ 679,085	\$ 605,990	\$ 488,241	\$ 884,512	\$ 609,381	\$ 832,362	\$ 910,087	\$ 2,173,696	\$ 10,233,754
10	Program Costs Unitized	WP JLC-10, Line 32		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11	Construction Work in Progress	WP JLC-10, Line 33		-	-	-	-	-	-	-	-	-	-	-	-	-
12	Total Program Costs Capitalized	Sum of Lines 10 and 11		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13	Amortization Expense	WP JLC-11, Line 3		\$ 55,513	\$ 55,513	\$ 55,513	\$ 55,513	\$ 55,513	\$ 55,513	\$ 55,513	\$ 55,513	\$ 55,513	\$ 55,513	\$ 55,513	\$ 55,513	\$ 666,153
14	Plant Balance															
15	Plant in Service (2)	Prior Bal. + L10	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	\$ 2,360,528	
16	Retired Plant in Service		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
17	Construction Work in Progress	Prior Bal. + L11	970,235	970,235	970,235	970,235	970,235	970,235	970,235	970,235	970,235	970,235	970,235	970,235	970,235	
18	Gross Plant	Sum of Lines 15,16 and 17	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	\$ 3,330,763	
19	Accumulated Amortization (3)	Prior Bal. + L13	(364,281)	(419,794)	(475,307)	(530,819)	(586,332)	(641,845)	(697,357)	(752,870)	(808,383)	(863,896)	(919,408)	(974,921)	(1,030,434)	
20	Retired Accumulated Amortization		-	-	-	-	-	-	-	-	-	-	-	-	-	
21	Net Plant	Sum of Lines 18, 19 and 20	\$ 2,966,482	\$ 2,910,969	\$ 2,855,456	\$ 2,799,944	\$ 2,744,431	\$ 2,688,918	\$ 2,633,406	\$ 2,577,893	\$ 2,522,380	\$ 2,466,868	\$ 2,411,355	\$ 2,355,842	\$ 2,300,329	

Notes:

- (1) Base EO surcharge revenue and EO performance incentive revenue
- (2) 2020 Ending Balance Line 15 col (c) Source:U-20871, Exhibit A-14 p.4, Line 15, col (o)
- (3) 2020 Ending Balance Line 19 col (c) Source:U-20871, Exhibit A-14 p.4, Line 19, col (o)

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Administrative Costs by Residential EWR Program

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-15
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	(a)	(b)	(c)	(d)	(e)
Line No.	Residential - Capital & O&M	Source	As Filed	Actuals (1)	Col (d) - Col (c)
1	Residential ENERGY STAR Products	WP JLC-14, Line 1	\$ 400,443	\$ 242,200	\$ (158,243)
2	Administration & Infrastructure	WP JLC-14, Line 30	64,796	37,038	(27,758)
3	Total		<u>\$ 465,240</u>	<u>\$ 279,239</u>	<u>\$ (186,001)</u>
4	Heating, Ventilation & Air Conditioning (HVAC)	WP JLC-14, Line 2	\$ 5,121,488	\$ 4,479,004	\$ (642,484)
5	Administration & Infrastructure	WP JLC-14, Line 31	828,715	684,950	(143,765)
6	Total		<u>\$ 5,950,203</u>	<u>\$ 5,163,954</u>	<u>\$ (786,250)</u>
7	Multifamily	WP JLC-14, Line 3	\$ 161,855	\$ 124,413	\$ (37,442)
8	Administration & Infrastructure	WP JLC-14, Line 32	26,190	17,750	(8,440)
9	Total		<u>\$ 188,045</u>	<u>\$ 142,163</u>	<u>\$ (45,882)</u>
10	Home Energy Consultation (HEC)	WP JLC-14, Line 4	\$ 1,259,095	\$ 1,524,680	\$ 265,585
11	Administration & Infrastructure	WP JLC-14, Line 33	203,736	229,046	25,310
12	Total		<u>\$ 1,462,831</u>	<u>\$ 1,753,726</u>	<u>\$ 290,895</u>
13	Audit and Weatherization	WP JLC-14, Line 5	\$ 1,531,350	\$ 1,492,021	\$ (39,329)
14	Administration & Infrastructure	WP JLC-14, Line 34	247,790	232,937	(14,853)
15	Total		<u>\$ 1,779,140</u>	<u>\$ 1,724,958</u>	<u>\$ (54,182)</u>
16	School Program	WP JLC-14, Line 6	\$ 599,309	\$ 752,251	\$ 152,942
17	Administration & Infrastructure	WP JLC-14, Line 35	96,975	115,038	18,063
18	Total		<u>\$ 696,284</u>	<u>\$ 867,289</u>	<u>\$ 171,005</u>
19	Home Energy Efficiency Kits	WP JLC-14, Line 7	\$ 110,598	\$ (1)	\$ (110,598)
20	Administration & Infrastructure	WP JLC-14, Line 36	17,896	(0)	(17,896)
21	Total		<u>\$ 128,493</u>	<u>\$ (1)</u>	<u>\$ (128,495)</u>
22	New Home Construction	WP JLC-14, Line 9	\$ 1,039,670	\$ 1,525,534	\$ 485,864
23	Administration & Infrastructure	WP JLC-14, Line 38	168,231	233,378	65,148
24	Total		<u>\$ 1,207,901</u>	<u>\$ 1,758,912</u>	<u>\$ 551,011</u>
25	Home Energy Reports	WP JLC-14, Line 10	\$ 441,331	\$ 597,437	\$ 156,106
26	Administration & Infrastructure	WP JLC-14, Line 39	71,412	91,363	19,950
27	Total		<u>\$ 512,743</u>	<u>\$ 688,800</u>	<u>\$ 176,056</u>
28	DTE Insight	WP JLC-14, Line 11	\$ 159,271	\$ -	\$ (159,271)
29	Administration & Infrastructure	WP JLC-14, Line 40	25,772	-	(25,772)
30	Total		<u>\$ 185,043</u>	<u>\$ -</u>	<u>\$ (185,043)</u>
31	Emerging Measures and Approaches	WP JLC-14, Line 12	\$ 448,436	\$ -	\$ (448,436)
32	Administration & Infrastructure	WP JLC-14, Line 41	72,562	-	(72,562)
33	Total		<u>\$ 520,998</u>	<u>\$ -</u>	<u>\$ (520,998)</u>
34	Low Income (includes A&G and Low Income Multifamily & Low Income Audit-Wx)	(2)	<u>\$ 15,494,575</u>	<u>\$ 16,614,288</u>	<u>\$ 1,119,713</u>
35	Total Residential before Pilot, Education and	L3 + L6 + L9 + L12 + L15 + L18 +L21 + L24 + L27 + L30 + L33 + L36 + L37	\$ 28,591,497	\$ 28,993,327	\$ 401,830
36	Pilot (includes A&G)	(3)	1,346,926	1,594,430	247,504
37	Education (includes A&G)	(4)	1,022,579	1,182,059	159,481
38	EM&V (includes A&G)	(5)	<u>1,048,434</u>	<u>1,061,086</u>	<u>12,651</u>
39	Total Residential	L38 + L39 + L40 + L41	<u>\$ 32,009,436</u>	<u>\$ 32,830,902</u>	<u>\$ 821,466</u>
40	Reallocated Value Residential (Sum of positives. Lines 9, 15, 18, 27, 27, 37, 39, 40)				<u>\$ 2,728,316</u>

Source:

- (1) Company Records
- (2) U-20429, DTE Gas EWR Plan, Exhibit No: A-4, Col. (h), Line 19
- (3) U-20429, DTE Gas EWR Plan, Exhibit No: A-11, Col. (e), Line 3
- (4) U-20429, DTE Gas EWR Plan, Exhibit No: A-11, Col. (e), Line 4
- (5) U-20429, DTE Gas EWR Plan, Exhibit No: A-11, Col. (e), Line 7

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Administrative Costs by C&I EWR Program

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-15
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Line	(a)	(b)	(c)	(d)	(e)
No.	Commercial and Industrial (C&I) - Capital & O&M	Source	As Filed	Actuals (1)	Col (d) - Col (c)
1	Prescriptive	WP JLC-16, Line 1	\$ 2,614,021	\$ 3,882,547	\$ 1,268,526
2	Administration & Infrastructure	WP JLC-16, Line 22	238,338	487,938	249,600
3	Total		<u>\$ 2,852,359</u>	<u>\$ 4,370,485</u>	<u>\$ 1,518,126</u>
4	Non-Prescriptive	WP JLC-16, Line 2	\$ 1,946,662	\$ 1,568,453	\$ (378,209)
5	Administration & Infrastructure	WP JLC-16, Line 23	177,490	197,091	19,601
6	Total		<u>\$ 2,124,152</u>	<u>\$ 1,765,544</u>	<u>\$ (358,608)</u>
7	Retro-Commissioning	WP JLC-16, Line 3	\$ 191,182	\$ 364,000	\$ 172,818
8	Administration & Infrastructure	WP JLC-16, Line 24	17,431	45,740	28,309
9	Total		<u>\$ 208,613</u>	<u>\$ 409,740</u>	<u>\$ 201,127</u>
10	Strategic Energy Management	WP JLC-16, Line 4	\$ 446,018	\$ 545,897	\$ 99,880
11	Administration & Infrastructure	WP JLC-16, Line 25	40,666	68,597	27,931
12	Total		<u>\$ 486,684</u>	<u>\$ 614,495</u>	<u>\$ 127,811</u>
13	Business Energy Consultation	WP JLC-16, Line 5	\$ 980,148	\$ 476,000	\$ (504,148)
14	Administration & Infrastructure	WP JLC-16, Line 26	89,367	59,814	(29,553)
15	Total		<u>\$ 1,069,515</u>	<u>\$ 535,814</u>	<u>\$ (533,701)</u>
16	Mid-Stream Food Service	WP JLC-16, Line 6	\$ 149,734	\$ 336,868	\$ 187,135
17	Administration & Infrastructure	WP JLC-16, Line 27	13,652	42,331	28,679
18	Total		<u>\$ 163,386</u>	<u>\$ 379,199</u>	<u>\$ 215,813</u>
19	Mid-Stream HVAC	WP JLC-16, Line 7	\$ 1,247,413	\$ 1,180,916	\$ (66,496)
20	Administration & Infrastructure	WP JLC-16, Line 28	113,735	148,393	34,659
21	Total		<u>\$ 1,361,148</u>	<u>\$ 1,329,310</u>	<u>\$ (31,838)</u>
19	Multifamily Common Areas	WP JLC-16, Line 8	\$ 133,916	\$ 38,088	\$ (95,828)
20	Administration & Infrastructure	WP JLC-16, Line 29	12,210	4,044	(8,166)
21	Total		<u>\$ 146,126</u>	<u>\$ 42,132</u>	<u>\$ (103,994)</u>
22	Find and Fix	WP JLC-16, Line 9	\$ 284,813	\$ 228,000	\$ (56,813)
23	Administration & Infrastructure	WP JLC-16, Line 30	25,968	28,650	2,682
24	Total		<u>\$ 310,782</u>	<u>\$ 256,650</u>	<u>\$ (54,131)</u>
25	Small Business Focus	WP JLC-16, Line 10	\$ 1,065,261	\$ 631,610	\$ (433,651)
26	Administration & Infrastructure	WP JLC-16, Line 31	97,127	79,368	(17,759)
27	Total		<u>\$ 1,162,387</u>	<u>\$ 710,978</u>	<u>\$ (451,410)</u>
28	Emerging Measures and Approaches	WP JLC-16, Line 11	\$ 416,658	\$ -	\$ (416,658)
29	Administration & Infrastructure	WP JLC-16, Line 32	37,989	-	(37,989)
30	Total		<u>\$ 454,648</u>	<u>\$ -</u>	<u>\$ (454,648)</u>
31	Total C&I before Pilot, Education and EM&V	L3 + L6 + L9 + L12 + L15 + L18 + L21 + L24	\$ 10,339,799	\$ 10,414,347	\$ 74,548
32	Pilot (includes A&G)	(2)	1,087,785	1,250,926	163,141
33	Education (includes A&G)	(3)	194,777	225,154	30,377
34	EM&V (includes A&G)	(4)	846,722	832,486	(14,236)
35	Total C&I	L25 + L26 + L27 + L28	<u>\$ 12,469,083</u>	<u>\$ 12,722,913</u>	<u>\$ 253,830</u>
36	Reallocated Value C&I (Sum of positives. Lines 6, 9, 12, 24, 26, 27)				<u>\$ 2,256,395</u>

Source:

- (1) Company Records
(2) U-20429, DTE Gas EWR Plan, Exhibit No: A-14, Col. (e), Line 3
(3) U-20429, DTE Gas EWR Plan, Exhibit No: A-14, Col. (e), Line 4
(4) U-20429, DTE Gas EWR Plan, Exhibit No: A-14, Col. (e), Line 7

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Capital Detail by EWR Program

Case No.: U-21313
Witness: B. MURRAY
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Line No.	(a) Energy Waste Reduction Programs	(b)	(c)	(d)
		2022 Capital - Incentive ¹	2022 Capital - Implementation ¹	2022 Capital - Total
	Residential			
1	Residential ENERGY STAR Products	\$ -	\$ -	\$ -
2	Residential HVAC	-	-	-
3	Multifamily	-	-	-
4	Home Energy Consultation (HEC)	-	-	-
5	Residential Audit and Weatherization	-	-	-
6	School Program	-	-	-
7	Home Energy Efficiency Kits	-	-	-
8	Revolving Loan Program	-	-	-
9	New Home Construction	-	-	-
10	Home Energy Reports	-	-	-
11	DTE Insight	-	-	-
12	Emerging Measures and Approaches	-	-	-
13	Administration & Infrastructure	-	-	-
14	Residential Program Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
	Low Income			
15	Low Income attributed to Energy Efficiency Assistance	\$ -	\$ -	\$ -
16	Low Income attributed to Multifamily Units	-	-	-
17	Low Income attributed to Home Energy Consultation	-	-	-
18	Low Income Administrative and Infrastructure	-	-	-
19	Low Income Program Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
	Commercial & Industrial (C&I)			
20	C&I Prescriptive		\$ -	\$ -
21	C&I Non-Prescriptive		-	-
22	Retro-Commissioning	-	-	-
23	Strategic Energy Management	-	-	-
24	Business Energy Consultation	-	-	-
25	Mid-Stream Food Service	-	-	-
26	Mid Stream HVAC		-	-
27	Multifamily Common Areas	-	-	-
28	Emerging Measures and Approaches	-	-	-
29	Administration & Infrastructure	-	-	-
30	C&I Program Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
	Other Programs and Costs			
31	Pilot Program	\$ -	\$ -	\$ -
32	Education Program	-	-	-
33	Evaluation, Measurement & Verification (EM&V)	-	-	-
34	Administrative and Infrastructure	-	-	-
35	Other Programs and Costs Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
36	Total Costs & Energy Savings	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
37	Portfolio USRCT & CCE			

Notes:
(1) Company Records

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Allocation Factors

Case No.: U-21313
Witness: B. MURRAY
Exhibit: A-17
Page: 1 of 1

	(a)	(b)	(c)
Line No.	Allocation 1 - Residential and Commercial & Industrial (C&I) / End User Transport (EUT) Rate Class Allocation	Actuals	Source
1	Residential (1)	\$ 11,149,055	(6)
2	84% of Education (2)	1,182,059	(6)
3	Total Residential	\$ 12,331,114	Line 1 + Line 2
4	C&I & EUT (1)	\$ 9,449,350	(6)
5	16% of Education (2)	225,154	(6)
6	Total C&I / EUT	\$ 9,674,504	Line 4 + Line 5
7	Total	\$ 22,005,618	Line 3 + Line 6
	Allocation Percentage		
8	Residential (3)	56.0%	Line 3 / Line 7
9	C&I / EUT(3)	44.0%	Line 4 / Line 7
10	Total	100.0%	Line 8 + Line 9
	Allocation 2 - C&I and EUT Rate Class Allocation	Company Records	
11	C&I (4)	4,351,368	(6)
12	EUT (4)	5,906,629	(6)
13	Total	\$10,257,998	Line 11 + Line 12
	Allocation Percentage		
14	C&I (5)	42.4%	Line 11 / Line 13
15	EUT (5)	57.6%	Line 12 / Line 13
16	Total	100.0%	Line 14 + Line 15

Notes:

- (1) Line 1 & Line 4 are all program incentive costs, program implementation costs and direct program administration costs
- (2) Line 2 & Line 5 are Education costs allocated at the noted percentages in DTE Gas's Plan
- (3) Percentages on Lines 8 & 9 were used to allocate Pilot, EM&V, Low Income and administrative costs between Residential & C&I / EUT
- (4) Line 11 & Line 12 are incentive costs for C&I and EUT customers
- (5) Percentages on Lines 14 & 15 were used to allocate Pilot, EM&V, Low Income and administrative costs between C&I and EUT
- (6) Company Records

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

QUALIFICATIONS

AND

DIRECT TESTIMONY

OF

KIRK M. VANGILDER

DTE ELECTRIC COMPANY AND DTE GAS COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF KIRK M. VANGILDER

Line
No.

1 **Q1. What is your name, title, business address and by whom are you employed?**

2 A1. My name is Kirk M. Vangilder (he/him/his). My business address is One Energy
3 Plaza, Detroit, Michigan 48226. I am employed by DTE Energy Corporate
4 Services, LLC, a subsidiary of DTE Energy Company (DTE Energy), within the
5 Regulatory Affairs organization as a Principal Financial Analyst for Revenue
6 Requirements.

7

8 **Q2. On whose behalf are you testifying?**

9 A2. I am testifying on behalf of DTE Electric Company (DTE Electric) and DTE Gas
10 Company (DTE Gas) (collectively, DTE).

11

12 **Q3. What is your educational background?**

13 A3. I received a Bachelor of Arts Degree in Accounting from Michigan State
14 University's Eli Broad College of Business in 2004 and a Master of Science Degree
15 in Accounting from Michigan State University's Eli Broad Graduate School of
16 Management in 2006.

17

18 **Q4. Have you completed any seminars or other training courses?**

19 A4. Yes, I have. I completed a utility finance and ratemaking course taught by Excidian,
20 LLC. Additionally, I attended trainings hosted by Electric Utility Consultants, Inc,
21 (EUCI) on utility cost of service and ratemaking. I also completed the ratemaking
22 program conducted by the Institute of Public Utilities at Michigan State University.

23

24 **Q5. What is your work experience?**

Line
No.

1 A5. From 2006 to 2011, I practiced public accounting with the international accounting
2 firm Grant Thornton LLP where I had positions of increasing responsibility.
3 During this time, I received my Certified Public Accountant license. In October
4 2011, I joined DTE Energy as a Financial Auditor in the Audit Services department.
5 In March 2013, I was promoted to Senior Financial Auditor where I performed
6 substantive testing and controls testing to support DTE Energy's financial
7 statement audits and regulatory filings process. In August 2014, I accepted a
8 position within DTE Energy's Controllers organization as a Senior Business
9 Financial Analyst with responsibility for various accounting, budgeting, and
10 reporting activities for DTE Gas Company, including financial and revenue
11 requirement modeling. In 2018, I transferred to Regulatory Affairs as a Senior
12 Rates Analyst in their Revenue Requirements group, and in 2019 I was promoted
13 to my current position as Principal Financial Analyst.

14

15 **Q6. Do you hold any certifications or are you a member of any professional**
16 **organizations?**

17 A6. I received my Certified Public Accountant license in 2008 and am currently a
18 registered accountant within the State of Michigan.

19

20 **Q7. What are your duties and responsibilities in your current position?**

21 A7. As Principal Financial Analyst for Revenue Requirements within DTE Energy's
22 Regulatory Affairs organization, I am responsible for revenue requirement studies
23 for regulatory filings, regulatory analysis and research, and for supporting certain
24 MPSC filings such as general rate cases.

Line
No.

- 1 **Q8. Have you previously sponsored testimony in cases before the Michigan Public**
2 **Service Commission (MPSC or Commission)?**
- 3 A8. Yes, I have. I have sponsored testimony in the following cases:
- 4 U-20373 DTE Electric 2020-2021 Energy Waste Reduction (EWR) Plan
5 U-20373-A DTE Electric 2020-2021 Amended EWR Plan
6 U-20429 DTE Gas 2020-2021 EWR Plan
7 U-20642 DTE Gas 2019 General Rate Case
8 U-20703 DTE Electric 2019 EWR Reconciliation
9 U-20708 DTE Gas 2019 EWR Reconciliation
10 U-20711 DTE Electric 2019 PLD/TRM Reconciliation
11 U-20836 DTE Electric 2022 General Rate Case
12 U-20876 DTE Electric 2022-2023 EWR Plan
13 U-20881 DTE Gas 2022-2023 EWR Plan
14 U-20940 DTE Gas 2021 General Rate Case
15 U-20987 DTE Electric 2020 PLD/TRM Reconciliation
16 U-21206 DTE Electric & DTE Gas 2021 EWR Reconciliation
17 U-21242 DTE Electric 2021 Demand Response Reconciliation
18 U-21297 DTE Electric 2023 General Rate Case
19 U-21307 DTE Electric 2021 & 2022 PLD/TRM Reconciliations

Line
No.

1 **Q9. What is the purpose of your testimony in this proceeding?**

2 A9. The purpose of my 2022 EWR reconciliation testimony is to:

3 1. Calculate and support the cumulative EWR program over/(under) cost
4 recovery (based on the comparison of base surcharge revenue vs. defined
5 program costs as discussed later in my testimony) in total and by customer
6 class, including carrying costs, for the 12 months ending December 31,
7 2022 (Reconciliation Year), separately, for both DTE Electric and DTE
8 Gas.

9 2. Show that DTE Electric had a cumulative over-recovery at year-end for all
10 customers, including carrying costs, as summarized on Exhibit A-18, and
11 that DTE Gas had a cumulative under-recovery at year-end for all
12 customers, including carrying costs, as summarized on Exhibit A-29.

13 3. Calculate and support the cumulative over/(under) revenue recovery for the
14 2020 performance incentive and propose that any residual balance be added
15 to the 2022 performance incentive beginning balance, for both DTE Electric
16 and DTE Gas. I will show that at the end of the 12-month recovery period,
17 approved by the MPSC for collection of the 2020 performance incentive,
18 DTE Electric and DTE Gas experienced a cumulative over-recovery for all
19 customers. The year-end cumulative totals are summarized on Exhibits A-
20 25 and A-36, respectively.

21 4. Present and support how DTE Electric and DTE Gas propose to recover the
22 2022 EWR Program Performance Incentive and the residual balances from
23 the 2020 performance incentive surcharges. I will calculate the incremental
24 surcharges needed to recover DTE Electric and DTE Gas's 2022
25 performance incentives (combined with the 2020 performance incentive

Line
No.

1 residual balances), by class, using the rate design methodology previously
2 approved by the Commission. In addition to approved EWR base
3 surcharges, DTE Electric and DTE Gas customers would pay one
4 incremental 12-month surcharge to recover their respective proposed 2022
5 performance incentive as calculated on Exhibits A-26 and A-37,
6 respectively.

7

8 **Q10. Are you sponsoring any exhibits in this proceeding?**

9 A10. Yes. I am sponsoring the following exhibits for DTE Electric:

10	<u>Exhibit</u>	<u>Description</u>
11	A-18	Summary of Cumulative Over/(Under) Cost Recovery
12	A-19	Monthly Over/(Under) Cost Recovery
13	A-20	Allocation of Surcharge Revenue
14	A-21	Revenue Allocation Factor Calculations
15	A-22	Return on Capitalized Costs
16	A-23	Pre-Tax Rate of Return by Month
17	A-24	Revenue Conversion Factors
18	A-25	Performance Incentive Reconciliation
19	A-26	Calculation of Surcharges to Recover Performance Incentive
20	A-27	History of Billed Surcharges
21	A-28	Proposed Tariff Sheets

22

23 And I am sponsoring the following exhibits for DTE Gas:

24	A-29	Summary of Cumulative Over/(Under) Cost Recovery
25	A-30	Monthly Over/(Under) Cost Recovery

Line
No.

1	A-31	Allocation of Surcharge Revenue
2	A-32	Revenue Allocation Factor Calculations
3	A-33	Return on Capitalized Costs
4	A-34	Pre-Tax Rate of Return by Month
5	A-35	Revenue Conversion Factors
6	A-36	Performance Incentive Reconciliation
7	A-37	Calculation of Surcharges to Recover Performance Incentive
8	A-38	History of Billed Surcharges
9	A-39	Proposed Tariff Sheets

10

11 **Q11. Were these exhibits prepared by you or under your direction?**

12 A11. Yes, they were.

13

14 **DTE ELECTRIC: ENERGY WASTE REDUCTION PROGRAM**

15 **Calculation of Cumulative EWR Program Over/(Under) Cost Recovery**

16 **Q12. How was DTE Electric's year-end EWR cumulative over/(under) cost**
 17 **recovery calculated for the Reconciliation Year?**

18 A12. In general, this effort entails comparing base surcharge revenue to actual EWR
 19 program costs for the Reconciliation Year. "Base" surcharge revenue is total
 20 EWR actual revenue excluding the revenue recovery for authorized performance
 21 incentives. The actual EWR program costs include: O&M expenses, pre-tax
 22 return on capitalized costs, return of capitalized costs (amortization), and
 23 amortization of the regulatory liability associated with the Tax Cuts and Jobs Act
 24 (TCJA), plus carrying charges on over/(under) recovered balances. Specifically,
 25 as detailed later in my discussion regarding Exhibit A-19, DTE Electric's year-

Line
No.

1 end cumulative EWR over/(under) cost recovery amount is calculated on a class
2 specific basis and is the net combination of: 1) the 2021 ending over/(under) cost
3 recovery balance (i.e., 2022 beginning balance); 2) the incremental Reconciliation
4 Year EWR program over/(under) cost recovery and 3) Reconciliation Year carrying
5 charges. DTE Electric's Reconciliation Year year-end EWR program over/(under)
6 cost recovery was calculated on a monthly basis as a comparison of the actual
7 program costs incurred to actual billed base surcharge revenue. Carrying charges
8 were calculated based on the average monthly cumulative over/(under) recovery
9 balance.

10

11 **Q13. What is DTE Electric's year-end cumulative EWR over/(under) cost recovery**
12 **balance in total and for each customer class?**

13 A13. As summarized on Exhibit A-18, DTE Electric's EWR Program was over-
14 recovered by \$11.3 million at year-end. As shown on line 11 of Exhibit A-18, the
15 Residential class was over-recovered by \$26.4 million; the C&I Secondary class
16 was over-recovered by \$18.3 million; and the C&I Primary class was under-
17 recovered by \$33.3 million.

18

19 **Q14. How are the class-specific over/(under) recoveries (referenced above) derived**
20 **within Exhibit A-18 entitled "Summary of Cumulative Over/(Under) Cost**
21 **Recovery - All Classes"?**

22 A14. Exhibit A-18 shows DTE Electric's year-end summary of the cumulative EWR
23 over/(under) cost recovery balances by customer class (columns (c) through (e))
24 and in total (column (f)) for the Reconciliation Year. Line 1 shows the 2022
25 beginning over/(under) recovery balances inclusive of accrued interest through the

Line
No.

1 end of 2021. These over/(under) recovery balances are as of December 31, 2021
2 and were approved by the Commission in its order on January 19, 2023 in DTE
3 Electric's 2021 EWR Reconciliation Case (Case No. U-21206). Line 2 represents
4 the actual base surcharge revenue for the Reconciliation Year. Line 4 represents
5 the actual program costs that were expensed (O&M expenses) for the
6 Reconciliation Year. Line 5 shows the Reconciliation Year pre-tax return on the
7 program costs that were capitalized. Line 6 shows the amortization of the
8 capitalized costs. Line 7 shows the amortization of the regulatory liability related
9 to the TCJA that is supported by DTE Witness Biel. Line 8 shows the total program
10 costs for the Reconciliation Year, which is a summation of lines 4 through 7. The
11 cumulative year-end EWR program over/(under) cost recovery is shown on line 9
12 as the sum of lines 1 and 2 minus line 8. Line 10 shows the carrying charges
13 calculated on the EWR program over/(under) cost recovery shown on line 9. Line
14 11 shows the year-end cumulative EWR program over/(under) cost recovery
15 including carrying charges. The revenue, costs, and carrying charge amounts are
16 carried forward from column (o) of the respective customer class monthly detail
17 pages 1-3 of Exhibit A-19.

18
19 **Q15. What is shown on Exhibit A-19 entitled "Monthly Over/(Under) Cost**
20 **Recovery"?**

21 A15. Exhibit A-19 is a three-page exhibit, which shows the calculation on a monthly
22 basis of the 2022 EWR program over/(under) cost recovery for the three customer
23 classes (Residential, C&I Secondary and C&I Primary). This exhibit also
24 calculates the carrying charges on the monthly cumulative over/(under) cost
25 recovery. Page 1 of Exhibit A-19 shows the calculation of the over/(under)

Line
No.

1 recovery for the Residential class. Page 2 of Exhibit A-19 shows the calculation of
2 the over/(under) recovery for the C&I Secondary class. Page 3 of Exhibit A-19
3 shows the calculation of the over/(under) recovery for the C&I Primary class. Each
4 page of Exhibit A-19 has an identical layout and line references, so all the following
5 information and responses apply to the residential, C&I secondary, and C&I
6 Primary respective pages. Lines 1 through 7 show the same revenue and program
7 costs information as Exhibit A-18 lines 2 through 8, but on a monthly basis. Line
8 8 of Exhibit A-19 shows the monthly and total over/(under) recovery for the
9 Reconciliation Year. Lines 10 through 13 calculate the average program
10 over/(under) cost recovery balance that is used to calculate the monthly carrying
11 charges shown on lines 15 and 16. The beginning balance for January 2022 on line
12 10, column (c) is the 2021 year-end balance. Line 17 reflects the cumulative
13 over/(under) cost recovery balance, which is the sum of the program over/(under)
14 cost recovery ending balance (line 12) and the cumulative carrying charges (line
15 16). Line 19 shows the monthly short-term interest rate that is used in deriving the
16 carrying charges.

17
18 **Q16. What is the source of the line 1 base surcharge revenue data used in calculating**
19 **the over/(under) cost recovery amounts on Exhibit A-19?**

20 A16. For each of the pages 1 through 3 of Exhibit A-19, the actual base surcharge revenues
21 shown on line 1 are calculated on the corresponding page of Exhibit A-20. Exhibit
22 A-20, which is discussed in more detail later in my testimony, allocates the total EWR
23 actual billed surcharge revenue provided by DTE Witness Murray between the
24 program's EWR performance incentive revenue and the base surcharge revenue
25 designed to recover the program costs.

Line
No.

1 **Q17. What is the source of the cost data used in calculating the over/(under) cost**
2 **recovery amounts on Exhibit A-19?**

3 A17. The cost amounts shown on lines 3 and 5, O&M expenses and Return of Asset,
4 respectively, are supported by Witness Murray on Exhibit A-10. The cost amounts
5 shown on line 6, TCJA Regulatory Liability Amortization (including Gross-up) are
6 supported by Witness Biel on Exhibit A-40. The pre-tax return on capitalized costs
7 shown on line 4 was calculated on my Exhibit A-22.

8

9 **Q18. How was the pre-tax return on capitalized costs shown on line 4 of Exhibit A-**
10 **19 calculated?**

11 A18. The pre-tax return on capitalized costs shown on line 4 of Exhibit A-19 is
12 calculated on Exhibit A-22 by multiplying the average capitalized costs amount
13 by the pre-tax rate of return.

14

15 **Q19. How are carrying charges on Exhibit A-19 calculated?**

16 A19. Monthly carrying charges are calculated on line 15 of Exhibit A-19 by multiplying
17 the simple average of the cumulative over/(under) recovery month-end balances
18 shown on line 13 by DTE Electric's monthly short-term incremental borrowing rate
19 on line 19. The monthly rates shown on line 19 are based on the actual annual
20 interest rates shown on line 18 as provided to me by DTE's Treasury Department.

21

22 **Q20. Are the carrying charges compounded monthly?**

23 A20. No, carrying charges are not added to the monthly program over/(under) cost
24 recovery balance. Carrying charges are only compounded on an annual basis.

Line
No.

1 **Q21. What is shown on Exhibit A-22?**

2 A21. Exhibit A-22 is a three-page exhibit that calculates average capitalized costs and
3 the pre-tax return on capitalized costs on a monthly basis, for each of the three
4 customer classes. The calculated pre-tax return on capitalized costs is shown on
5 line 4 of this exhibit and carried forward to Exhibit A-19, line 4 for the respective
6 customer classes. Page 1 of the exhibit reflects the calculated amounts for the
7 Residential class. Page 2 of the exhibit reflects the calculated amounts for the C&I
8 Secondary class. Page 3 of the exhibit reflects the calculated amounts for the C&I
9 Primary class.

10

11 **Q22. How are average capitalized costs derived?**

12 A22. Capitalized costs are computed as gross capitalized costs less accumulated
13 amortization and less accumulated deferred taxes as shown on lines 6 through 10
14 of Exhibit A-22. Column (c) of Exhibit A-22 shows the prior year-end balance for
15 these components while columns (d) through (o) show the month-end balances for
16 these same components throughout the Reconciliation Year. Line 11 represents the
17 average capitalized costs balances that are based on a simple average of the
18 beginning and ending month balances. Line 9 shows the monthly balances for
19 accumulated deferred income taxes, are calculated by adjusting the prior month's
20 balance by the monthly change, which were provided by Witness Biel for each
21 customer class on Exhibit A-40.

22

23 **Q23. What is the basis for the pre-tax rate of return you are using to calculate the**
24 **return on capitalized costs?**

Line
No.

1 A23. Exhibit A-23 titled “Pre-Tax Rate of Return by Month” shows the calculation of
2 DTE Electric’s pre-tax rate of return on permanent capital for each month and
3 serves as the basis for the pre-tax rate of return used on Exhibit A-22. For the
4 month of January, this rate of return reflects the rate of return on equity and the
5 debt-to-equity ratio authorized in the DTE Electric’s EWR 2020-2021 Amended
6 Plan (Case No. U-20373) in the Commission’s September 10, 2020 Order. For the
7 remainder of the Reconciliation Year, this rate of return reflects the rate of return
8 on equity and the debt-to-equity ratio authorized in the DTE Electric’s EWR 2022-
9 2023 Plan (Case No. U-20876) in the Commission’s January 20, 2022 Order. The
10 monthly long-term debt rate component has been updated to reflect actual 2022
11 monthly values obtained from DTE’s Treasury Department. The revenue
12 conversion factors used to calculate the pre-tax rates are derived on Exhibit A-24.

13

14

Base Surcharge Revenue Determination

15 **Q24. Why is it necessary to allocate EWR surcharge revenue on Exhibit A-20,**
16 **“Allocation of Surcharge Revenue”?**

17 A24. Since all currently approved EWR surcharges are billed to customers as one charge
18 (for the Reconciliation Year this is the summation of the base surcharge and the
19 2020 performance incentive surcharge discussed later in my testimony), the
20 revenues are recorded on DTE Electric’s books in total. Pages 2 through 4 of
21 Exhibit A-20 show the allocation of the total billed EWR surcharge revenue
22 (supported by Witness Murray on Exhibit A-10) between the base surcharge
23 revenue and the 2020 performance incentive revenue by class. Page 1, lines 1-4 of
24 this exhibit summarizes the monthly data calculated on pages 2 through 4 of Exhibit
25 A-20 for the three customer classes.

Line
No.

1 **Q25. How do you allocate the total billed surcharge revenue for the Residential**
2 **class?**

3 A25. Page 2 of Exhibit A-20 shows the allocation of the total Residential EWR surcharge
4 revenue into the individual surcharge revenue streams of which it is comprised.
5 Total billed surcharge revenue for the Reconciliation Year (line 1) is multiplied by
6 the appropriate allocation factors shown on line 2, resulting in the corresponding
7 performance incentive surcharge revenue shown on line 3.

8

9 For the month of January, 15.11% of total revenue was allocated as 2020
10 performance incentive revenue as derived on Exhibit A-21 lines 1 through 3,
11 column (d). For the remainder of the Reconciliation Year, 14.14% of total revenue
12 was allocated as 2020 performance incentive revenue as derived on Exhibit A-21
13 lines 1 through 3, column (f). The Residential base surcharge revenue for the
14 Reconciliation Year which is shown on line 4 of Exhibit A-20 is then calculated as
15 the difference between the total billed surcharge revenue on line 1 and the total
16 performance incentive revenue on line 3.

17

18 **Q26. How were the Residential performance incentive allocation factors, shown on**
19 **lines 1 and 2 of Exhibit A-21, columns (d) and (f) derived?**

20 A26. The allocation factors shown on lines 1 and 2 of columns (d) and (f) of Exhibit A-
21 21 are simply the ratios of the individual performance incentive surcharge to the
22 total EWR surcharge in effect for 2022 for the Residential class. As shown on
23 Exhibit A-21, the 2020 performance incentive surcharges was \$0.000767 per kWh
24 during all of the Reconciliation Year, and the 2022 base surcharge was \$0.004310
25 per kWh for January, resulting in a total surcharge of \$0.005077 per kWh for the

Line
No.

1 Residential class, and \$0.004656 per kWh for the remainder of the Reconciliation
2 Year, resulting in a total surcharge of \$0.005423 per kWh for the Residential class.
3 The 2020 performance incentive surcharge (line 1, column (e)) divided by the total
4 EWR surcharge (line 3, column (e)) is 14.14%.

5

6 **Q27. How do you allocate the total C&I Secondary 2022 billed surcharge revenue**
7 **between the performance incentive revenue and the base surcharge revenue?**

8 A27. The total 2022 C&I Secondary billed surcharge revenue is allocated between the
9 2020 performance incentive revenue and base surcharge revenue similar to the
10 methodology used for the Residential class as described above. However, before
11 the total 2022 EWR billed surcharge revenue could be apportioned between
12 performance incentive revenue and base surcharge revenue, the total 2022 monthly
13 billed surcharge revenue needed to be assigned to the stratified usage levels that
14 make up the EWR C&I Secondary class.

15

16 **Q28. Why is it necessary to allocate the total C&I secondary revenue into the**
17 **stratified usage levels shown on Exhibit A-20, page 3?**

18 A28. The 2020 performance incentive surcharges represent different percentages of each
19 stratified C&I Secondary usage level's total surcharge, so it was not possible to
20 simply apply one allocation factor for each surcharge to the total C&I Secondary
21 total billed surcharge revenue. Therefore, on lines 2 through 4 of Exhibit A-20
22 page 3, the total 2022 billed surcharge revenue shown on line 1 is allocated to one
23 of the three C&I Secondary stratified usage levels by applying the appropriate
24 allocation factor as calculated in Exhibit A-21. The resultant monthly EWR
25 surcharge revenue shown by usage level in columns (d) through (o) of these lines

Line
No.

1 is then used to derive the 2020 performance incentive revenue for each usage level
2 by applying the appropriate allocation factor. The allocation factors were derived
3 on Exhibit A-21.

4

5 For 2022, the allocated performance incentive revenue for 2020 is calculated on
6 lines 6 through 8. Line 9 shows the total 2020 performance incentive revenue for
7 all usage levels of the C&I Secondary class.

8

9 The C&I Secondary base surcharge revenue shown on line 10 is then calculated as
10 the difference between the total 2022 billed surcharge revenue, on line 1, and the
11 total performance incentive revenues, on line 9.

12

13 **Q29. How were the C&I Secondary consumption level allocation factors derived?**

14 A29. The consumption level allocation factors used in lines 2 through 4 of Exhibit A-20
15 page 3 are derived on columns (d) and (f) of Exhibit A-21, lines 19 through 21. The
16 basis for these factors is the EWR surcharge design in the two EWR Plans approved
17 by the Commission for 2022. Each consumption level is assumed to have been
18 billed the same percentage of the total class's revenue as set forth in that plan. For
19 example, line 19, column (f) of Exhibit A-21 shows that of the 2022 EWR base
20 revenue that DTE Electric planned to collect from C&I Secondary customers in
21 2022, 5.02% was to be collected from those customers using 0 to 850 kWhs per
22 month. This percentage is then brought forward to Exhibit A-20 page 3, line 2, and
23 applied to the C&I Secondary class's 2022 billed surcharge revenue to assign the
24 total billed surcharge revenue attributable to the 0 to 850 kWh usage stratum in that
25 class.

Line
No.

1 **Q30. How were the C&I Secondary performance incentive allocation factors on**
2 **Exhibit A-21 derived?**

3 A30. The C&I Secondary performance incentive allocation factors are simply the ratios
4 of the individual performance incentive surcharge to the total EWR surcharge in
5 effect. Columns (d) and (f), lines 4 through 12, of Exhibit A-21 derive the
6 allocation factors for the Reconciliation Year.

7
8 **Q31. How do you allocate the total C&I Primary billed surcharge revenue for the**
9 **Reconciliation Year between the performance incentive revenue and the base**
10 **surcharge revenue?**

11 A31. The C&I Primary class total billed surcharge revenue for the Reconciliation Year
12 is allocated between the 2020 performance incentive revenue and base surcharge
13 revenue on Exhibit A-20, page 4 using a similar methodology to the one described
14 above for the C&I Secondary class. The only difference between the two
15 methodologies is that there are customers within the C&I Primary class who self-
16 direct their EWR programs and are thus exempt from the performance incentive.
17 As such, the surcharge from these customers (line 2) is excluded from the Total
18 Billed Surcharge Revenue (line 1) when determining the allocation between
19 performance incentive and base surcharge revenue. Applying this methodology to
20 the 2022 billed surcharge revenue for the C&I Primary class shown on line 3 of
21 Exhibit A-20, page 4 results in the 2020 performance incentive revenue, and base
22 surcharge revenue shown on, respectively, lines 9 and 10. The respective allocation
23 factors are derived on Exhibit A-21. The C&I Primary consumption level
24 allocation factors are derived on lines 23 and 24 of Exhibit A-21 while the C&I

Line
No.

1 Primary performance incentive revenue allocation factors are derived on lines 13
2 through lines 18 of Exhibit A-21.

3

4 **Q32. What is the purpose of Exhibit A-24?**

5 A32. Exhibit A-24 contains the conversion factors that convert debt costs and after-tax
6 return on equity to their pre-tax equivalents.

7

8 **Q33. What are the revenue conversion factors shown on Exhibit A-24?**

9 A33. Given that DTE Electric's debt costs on line 2 of Exhibit A-23 are reflected on a
10 pre-tax basis already the debt revenue multiplier as shown on line 9, column (c) of
11 Exhibit A-24 is 1.0000. Revenue collected to cover DTE Electric's equity return
12 is subject to Michigan Corporate Income Taxes (MCIT), Municipal Income Taxes,
13 and Federal Income Taxes. Line 9, column (d) of Exhibit A-24 shows DTE
14 Electric's current equity revenue multiplier of 1.3495, which means that DTE
15 Electric is required to collect \$1.3495 in order to produce \$1.00 of after-tax income.
16 The revenue conversion factors are carried forward to Exhibit A-23 and used in the
17 calculation of pre-tax rate of return.

18

19

Performance Incentive

20 **Q34. What is the purpose of Exhibit A-25, "Performance Incentive Reconciliation"?**

21 A34. The purpose of Exhibit A-25 is to calculate the over/(under) recovery, by class,
22 for the 2020 performance incentive. The recovery period for the 2020
23 performance incentive surcharge ended December 31, 2022. In the Case U-20866
24 order, dated September 24, 2021, the MPSC authorized DTE Electric to collect

Line
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1 \$26.9 million for its 2020 performance incentive. The surcharge was authorized
2 for 12 months starting January 1, 2022 and ending December 31, 2022.

3

4 **Q35. What is shown on Exhibit A-25, “Performance Incentive Reconciliation”?**

5 A35. Line 1 of Exhibit A-25 shows the revenue collected during 2022 as derived in this
6 reconciliation case and shown on Exhibit A-20. In total, DTE Electric collected
7 \$27.3 million of revenue attributed to the 2020 performance incentive (line 1)
8 compared to the \$26.9 million (line 3) that DTE Electric was authorized to
9 recover. This results in a total net over-recovery of the 2020 performance
10 incentive of \$0.5 million, shown on line 5, column (f). Line 3, columns (c)
11 through (e) show the over/(under) recovery by the respective customer classes.

12

13 **Q36. Is interest included in the performance incentive over/(under) balances?**

14 A36. No. On page 11 of the Commission’s order in Case U-16358 DTE Electric was
15 ordered to calculate the performance incentive balances without interest.
16 Therefore, none of the over/(under) recovery balances include interest.

17

18 **Q37. How do you recommend the net over-recovery balance of \$0.5 million for the**
19 **2020 performance incentive be treated?**

20 A37. Consistent with the treatment of the residual balances from the 2009 through 2019
21 performance incentives approved by the Commission in Case Nos. U-17282, U-
22 17602, U-17832, U-18023, U-18332, U-20029, U-20366, U-20703, U-20866 and
23 U-21206, I recommend that the total net over-recovery (maintained by each
24 customer class balance as detailed on the exhibit), be subtracted from the 2022

Line
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1 performance incentive awarded in this case for DTE Electric to eliminate these
2 residuals balances in an expedited manner.

3

4 **Q38. How did you calculate the proposed 2022 performance incentive surcharge on**
5 **Exhibit A-26?**

6 A38. I calculated the proposed surcharges for recovering the 2022 performance incentive
7 earned on Exhibit A-26 by taking the \$34.9 million performance incentive earned
8 in 2022 as supported by DTE Witness Murray and adjusting it for the \$0.5 million
9 over-recovery of the 2020 performance incentive. Lines 1 through 3 show the
10 derivation of the net performance incentive to be recovered by class and in total.
11 Line 4 provides the annual billing determinants which are used to calculate the
12 surcharge amounts for each class. For the Residential class the EWR surcharge
13 is volumetric, so the determinant in column (c) is in GWh. For the C&I classes,
14 customers are billed a flat amount per meter each month, so this determinant
15 represents the number of meter counts forecasted to be used for billing in 2024.
16 The total number of C&I Secondary meter counts is allocated between columns
17 (d), (e) and (f), and the total number of C&I Primary meter counts is allocated
18 between columns (g) and (h). The proposed 12-month incremental surcharge for
19 the Residential class is on line 5, and the 12-month incremental per meter charges
20 for the C&I classes are on line 6.

21

22 **Q39. In developing the incremental performance incentive surcharges on Exhibit**
23 **A-26, did you use the same rate design methodology used in previous EWR/EO**
24 **plan and reconciliation cases?**

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1 A39. Yes, I did. I followed the same rate design methodology that was approved by the
2 Commission in each of DTE Electric's approved EWR/EO plans (U-15806, U-
3 15806 amended, U-17049, U-17762, U-18262, U-20373, U-20373 Amended, and
4 U-20876) as well as in the 2009 through 2021 EWR/EO Reconciliation Cases.
5

6 **Q40. How will the 2022 performance incentive EWR surcharge be applied?**

7 A40. I am proposing that the incremental surcharges calculated on Exhibit A-26 be added
8 to the approved EWR base surcharges, to be collected over a 12-month period
9 beginning January 1, 2024.
10

11 **Q41. What happens at the end of the proposed 12-month performance incentive**
12 **recovery period?**

13 A41. At the end of the 12-month proposed recovery period, the EWR surcharge would
14 be reduced by any 2022 performance incentive surcharge amount approved in this
15 case. DTE Electric would then submit revised tariff sheets reflecting the EWR
16 surcharge excluding the 2022 performance incentive component.
17

18 **Q42. How will any remaining over/(under) recovery of the performance incentive**
19 **be treated at the end of the proposed 12-month performance incentive**
20 **collection period?**

21 A42. Any over/(under) recovery of the 2022 performance incentive will be rolled into
22 any future EWR performance incentive balance. If there is no future EWR
23 performance incentive awarded, then DTE Electric will propose, at a future date,
24 an appropriate mechanism for recovery of the over or under performance incentive
25 balance.

Line
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1 **Q43. Will customers who are self-directing an EWR program be subject to this**
2 **performance incentive charge?**

3 A43. No, customers who self-direct an EWR plan are only charged to recover the low-
4 income program costs, so they will not be charged to recover the 2022 performance
5 incentive. Their meters are not included in the meter counts used to calculate the
6 surcharge.

7
8 **Q44. What information is provided on Exhibit A-27?**

9 A44. Exhibit A-27 is a four-page exhibit, which shows the EWR surcharge rate history
10 by class for the three customer classes (Residential, C&I Secondary and C&I Primary)
11 and for C&I self-direct customers. Columns (c) through (g) of this exhibit show, by
12 effective date, the surcharges approved by the Commission in every EWR plan or
13 reconciliation case approved for DTE Electric since 2021. For illustrative purposes,
14 column (h) shows the surcharges that would be in effect in 2024 if the proposed 2022
15 performance incentive is approved and the 2022-2023 base surcharge approved on
16 January 20, 2022 in Case No. U-20876 remains in place during 2024. The exhibit
17 assumes, as discussed above, that any 2022 performance incentive awarded in this case
18 would be effective for a 12-month period beginning January 1, 2024.

19
20 The source column (b) shows the case number and briefly describes the case type
21 resulting in the surcharges shown in columns (c) through (h). Page 1 of Exhibit A-27
22 shows the Residential EWR surcharge history. Page 2 of shows the EWR surcharge
23 history for the C&I Secondary class. Page 3 shows the EWR surcharge history for the
24 C&I Primary class. Page 4 of shows the EWR surcharge history for those C&I
25 Secondary and Primary customers that are self-directing their own plans.

Line
No.

1 **Q45. What information is presented on Exhibit A-28?**

2 A45. Exhibit A-28 is an illustrative example of the tariff sheet that would be effective
3 upon implementation of the proposed EWR performance incentive surcharges.
4 This tariff sheet is representative of the EWR surcharges that would be included on
5 customers actual bills after the proposed surcharges are implemented; however, it
6 assumes the EWR base surcharges approved on January 20, 2022 in Case No. U-
7 20876 will continue to bill in 2024 (consistent with the rates shown on Exhibit A-
8 27, column (h)). As explained earlier in my testimony, the proposed EWR
9 surcharges are the result of adding the 2022-2023 base surcharge approved on
10 January 20, 2022 in Case No. U-20876 and the incremental surcharge rates calculated
11 on Exhibit A-26.

12

13 I am proposing these surcharges be implemented on a bills rendered basis for all
14 classes.

15 **DTE GAS: ENERGY WASTE REDUCTION PROGRAM**

16

17 **Calculation of Cumulative EWR Program Over/(Under) Cost Recovery**

18 **Q46. How was DTE Gas's year-end EWR cumulative over/(under) cost recovery**
19 **calculated for the Reconciliation Year?**

20 A46. In general, this effort entails comparing base surcharge revenue to actual EWR
21 program costs for the Reconciliation Year. "Base" surcharge revenue is total EWR
22 actual revenue excluding the revenue recovery for authorized performance
23 incentives. The actual EWR program costs include O&M expenses plus carrying
24 charges on over/(under) recovered balances. The actual EWR program costs
25 include: O&M expenses, pre-tax return on capitalized costs, and return of

Line
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capitalized costs (amortization), plus carrying charges on over/(under) recovered balances. Specifically, as detailed later in my discussion regarding Exhibit A-30, DTE Gas's year-end cumulative EWR over/(under) cost recovery amount is calculated on a class-specific basis and is the net combination of: 1) the 2021 ending over/(under) cost recovery balance (i.e., 2022 beginning balance); 2) the incremental Reconciliation Year EWR program over/(under) cost recovery and 3) Reconciliation Year carrying charges. DTE Gas's Reconciliation Year year-end EWR program over/(under) cost recovery was calculated on a monthly basis as a comparison of the actual program costs incurred to actual billed base surcharge revenue. Carrying charges were calculated based on the average monthly cumulative over/(under) recovery balance.

Q47. What is DTE Gas's year-end cumulative EWR over/(under) cost recovery balance in total and for each customer class?

A47. As summarized on Exhibit A-29, DTE Gas's EWR Program was under-recovered by \$8.9 million at year-end. As shown on line 10 of Exhibit A-29, the Residential class was under-recovered by \$0.9 million; the combined C&I class and EUT class was under-recovered by \$8.0 million.

Q48. How are the class-specific over/(under) recoveries (referenced above) derived within Exhibit A-29 entitled "Summary of Cumulative Over/(Under) Cost Recovery All Classes?"

A48. Exhibit A-29 shows DTE Gas's year-end summary of the cumulative EWR over/(under) cost recovery by customer class (columns (c) through (d)) and in total (column (e)) for the Reconciliation Year. Line 1 shows the 2022 beginning

Line
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1 over/(under) recovery balances inclusive of accrued interest through the end of
2 2021. These over/(under) recovery balances are as of December 31, 2021 and were
3 approved by the Commission in its order on January 19, 2023 in DTE Gas's 2021
4 EWR Reconciliation Case (Case No. U-21206). Line 2 represents the actual base
5 surcharge revenue for the Reconciliation Year. Line 4 represents the actual
6 program costs that were expensed (O&M expenses) for the Reconciliation Year.
7 Line 5 shows the Reconciliation Year pre-tax return on the program costs that were
8 capitalized. Line 6 shows the amortization of the capitalized costs. Line 7 shows
9 the total program costs for the Reconciliation Year which is a summation of lines
10 4 through 6. The cumulative year-end EWR program over/(under) cost recovery is
11 shown on line 8 as the sum of lines 1 and 2 minus line 7. Line 9 shows the carrying
12 charges calculated on the EWR program over/(under) cost recovery shown on line
13 8. Line 10 shows the year-end cumulative EWR program over/(under) cost
14 recovery including carrying charges. The revenue, costs, and carrying charge
15 amounts are carried forward from column (o) of the appropriate customer class
16 monthly detail pages of Exhibit A-30.

17
18 **Q49. What is shown on Exhibit A-30 entitled "Monthly Over/(Under) Cost**
19 **Recovery?"**

20 A49. Exhibit A-30 is a four-page exhibit, which shows the calculation on a monthly basis
21 of the 2022 EWR program over/(under) cost recovery for the three customer classes
22 (Residential, C&I and EUT). This exhibit also calculates the carrying charges on
23 the monthly cumulative over/(under) cost recovery. Page 1 of Exhibit A-30 shows
24 the calculation of the over/(under) recovery for the Residential class. Page 2 of
25 Exhibit A-30 shows the calculation of the over/(under) recovery for the C&I class.

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1 Page 3 of Exhibit A-30 shows the calculation of the over/(under) recovery for the
2 EUT class. Page 4 of Exhibit A-30 combines the calculations of the C&I and EUT
3 classes from pages 2 and 3 to show the net over/(under) recovery. Each page of
4 Exhibit A-30 has the identical layout and line references, so all of the following
5 information and responses apply to the residential, C&I and EUT respective pages.
6 Lines 1 through 6 show the same revenue and program costs information as Exhibit
7 A-29 lines 2 through 7 but on a monthly basis. Line 7 of Exhibit A-30 shows the
8 monthly over/(under) recovery results and the total balance for the Reconciliation
9 Year. Lines 9 through 12 calculate the average program over/(under) cost recovery
10 balance that is used to calculate the monthly carrying charges shown on lines 14
11 and 15. The beginning balance for January 2022 on line 9, column (c) is the 2021
12 year-end balance. Line 16 reflects the cumulative over/(under) cost recovery
13 balance which is the sum of the program over/(under) cost recovery ending balance
14 (line 11) and the cumulative carrying charges (line 15). Line 17 shows the monthly
15 short-term interest rate that is used in deriving the carrying charges.

16

17 **Q50. What is the source of the line 1 base surcharge revenue data used in calculating**
18 **the over/(under) cost recovery amounts on Exhibit A-30?**

19 A50. The actual base surcharge revenues shown on line 1 are calculated on Exhibit A-31.
20 Exhibit A-31, which is discussed in more detail later in my testimony, allocates the
21 total EWR actual billed surcharge revenue provided by Witness Murray between
22 the program's EWR performance incentive revenue and the base surcharge
23 revenue designed to recover the program costs.

Line
No.

1 **Q51. What is the source of the cost data used in calculating the over/(under) cost**
2 **recovery amounts on Exhibit A-30?**

3 A51. The cost amounts shown on lines 3 and 5, O&M expenses and Return of Asset,
4 respectively, are supported by Witness Murray on Exhibit A-14. The pre-tax return
5 on capitalized costs shown on line 4 was calculated on my Exhibit A-33.

6

7 **Q52. How was the pre-tax return on capitalized costs shown on line 4 of Exhibit A-**
8 **30 calculated?**

9 A52. The pre-tax return on capitalized costs shown on line 4 of Exhibit A-30 is
10 calculated on Exhibit A-33 by multiplying the average capitalized costs amount
11 by the pre-tax rate of return.

12

13 **Q53. How are carrying charges on Exhibit A-30 calculated?**

14 A53. Monthly carrying charges are calculated on line 14 of Exhibit A-30 by multiplying
15 the simple average of the cumulative over/(under) recovery month-end balances
16 shown on line 12 by DTE Gas's monthly short-term incremental borrowing rate on
17 line 18. The monthly rates shown on line 17 are based on the actual annual interest
18 rates shown on line 18 as provided to me by DTE's Treasury Department.

19

20 **Q54. Are the carrying charges compounded monthly?**

21 A54. No, carrying charges are not added to the monthly program over/(under) cost
22 recovery balance. Carrying charges are only compounded on an annual basis.

23

24 **Q55. What is shown on Exhibit A-33?**

Line
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1 A55. Exhibit A-33 is a three-page exhibit that calculates average capitalized costs and
2 the pre-tax return on capitalized costs on a monthly basis, for each of the three
3 customer classes. The calculated pre-tax return on capitalized costs is shown on
4 line 4 of this exhibit and carried forward to Exhibit A-30, line 4 for the respective
5 customer classes. Page 1 of the exhibit reflects the calculated amounts for the
6 Residential class. Page 2 of the exhibit reflects the calculated amounts for the C&I
7 class. Page 3 of the exhibit reflects the calculated amounts for the EUT class.

8

9 **Q56. How are average capitalized costs derived?**

10 A56. Capitalized costs are computed as gross capitalized costs less accumulated
11 amortization and less accumulated deferred taxes as shown on lines 6 through 10
12 of Exhibit A-33. Column (c) of Exhibit A-33 shows the prior year-end balance for
13 these components while columns (d) through (o) show the month-end balances for
14 these same components throughout the Reconciliation Year. Line 11 represents the
15 average capitalized costs balances that are based on a simple average of the
16 beginning and ending month balances. Line 9 shows the monthly balances for
17 accumulated deferred income taxes calculated by adjusting the prior month's
18 balance by the monthly change, which were provided by Witness Biel for each
19 customer class on Exhibit A-40.

20

21 **Q57. What is the basis for the pre-tax rate of return you are using to calculate the**
22 **return on capitalized costs?**

23 A57. Exhibit A-34 titled "Pre-Tax Rate of Return by Month" shows the calculation of
24 DTE Gas's pre-tax rate of return on permanent capital for each month and serves
25 as the basis for the pre-tax rate of return used on Exhibit A-33. For January, this

Line
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1 rate of return reflects the rate of return on equity and the debt-to-equity ratio
2 authorized in the DTE Gas's EWR 2020-2021 Plan (Case No. U-20429) in the
3 Commission's March 5, 2020 Order. For the remainder of the Reconciliation Year,
4 this rate of return reflects the rate of return on equity and the debt-to-equity ratio
5 authorized in the DTE Gas's EWR 2022-2023 Plan (Case No. U-20881) in the
6 Commission's January 20, 2022 Order. The monthly long-term debt rate
7 component has been updated to reflect actual 2022 monthly values obtained from
8 DTE's Treasury Department. The revenue conversion factors used to calculate the
9 pre-tax rates are derived on Exhibit A-35.

10

11

Base Surcharge Revenue Determination

12

**Q58. Why is it necessary to allocate EWR surcharge revenue on Exhibit A-31,
13 "Allocation of Surcharge Revenue"?**

14

A58. Since all currently approved EWR surcharges are billed to customers as one charge
15 (for the Reconciliation Year this is the summation of the base surcharge and the
16 2020 performance incentive surcharge, as discussed later in my testimony), the
17 revenues are recorded on DTE Gas's books in total. Exhibit A-32 shows how the
18 allocation percentages were calculated, and Exhibit A-31 uses these percentages to
19 allocate the total billed EWR surcharge revenue (supported by Witness Murray on
20 Exhibit A-14) between the base surcharge revenue and the 2020 performance
21 incentive revenue by class.

22

23

**Q59. How do you allocate the total billed surcharge revenue for the Residential
24 class?**

Line
No.

1 A59. Lines 1-6 of Exhibit A-31 shows the allocation of the total Residential EWR
2 surcharge revenue into the individual surcharge revenue streams of which it is
3 comprised. Total 2022 billed surcharge revenue, line 1, is multiplied by the
4 appropriate allocation factors shown on line 3, resulting in the corresponding
5 performance incentive surcharge revenue shown on line 4.

6

7 For January, 16.49% of total revenue was allocated as 2020 performance incentive
8 revenue as derived on Exhibit A-32 lines 1 through 3, column (d). For the remainder
9 of 2022, 15.14% of total revenue was allocated as 2020 performance incentive
10 revenue as derived on Exhibit A-32 lines 1 through 3, column (f). The Residential
11 base surcharge revenue for the Reconciliation Year, which is shown on line 6 of
12 Exhibit A-31, is then calculated as the difference between the total billed surcharge
13 revenue on line 1 and the total performance incentive revenue on line 4.

14

15 **Q60. How were the Residential performance incentive allocation factors, shown on**
16 **lines 1 and 2 of Exhibit A-32, columns (d) and (f) derived?**

17 A60. The allocation factors shown on lines 1 and 2 of columns (d) and (f) of Exhibit A-
18 32 are simply the ratio of the individual performance incentive surcharge to the
19 total EWR surcharge in effect for 2022 for the Residential class. As shown on
20 Exhibit A-32, the 2020 performance incentive surcharge was \$0.00489 per Ccf
21 during all of the Reconciliation Year, and the 2022 base surcharge was \$0.02476
22 per Ccf for January, resulting in a total surcharge of \$0.02965 per Ccf for the
23 Residential class, and \$0.02742 per Ccf for the remainder of the Reconciliation
24 Year, resulting in a total surcharge of \$0.03231 per Ccf for the Residential class.
25 As shown in column (f), the 2020 performance incentive surcharge (line 1, column

Line
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1 (e)) divided by the total EWR surcharge (line 3, column (e)) is 15.14% for this
2 period.

3

4 **Q61. Were the allocation factors shown on lines 11 and 19 of Exhibit A-31, for C&I**
5 **and EUT, derived in the same manner as Residential?**

6 A61. Yes. The allocation factors for C&I and EUT are displayed on lines 11 and 19 of
7 Exhibit A-31, respectively. These factors are derived on lines 6 through 13 of
8 Exhibit A-32. The factors are simply the ratio of the 2020 performance incentive
9 surcharges to the total EWR surcharge in effect for January through December of
10 2022 for each class.

11

12 **Q62. What are the revenue conversion factors shown on Exhibit A-35?**

13 A62. Given that DTE Gas's debt costs on line 2 of Exhibit A-34 are reflected on a pre-
14 tax basis already, the debt revenue multiplier as shown on line 9, column (c) of
15 Exhibit A-35 is 1.0000. Revenue collected to cover DTE Gas's equity return is
16 subject to Michigan Corporate Income Taxes (MCIT), Municipal Taxes, and
17 Federal Income Taxes. Line 9, column (d) of Exhibit A-35 shows DTE Gas's
18 current equity revenue multiplier of 1.3550, which means that DTE Gas is required
19 to collect \$1.3550 in order to produce \$1.00 of after-tax income. The revenue
20 conversion factors are carried forward to Exhibit A-34 and used in the calculation
21 of pre-tax rate of return.

22

23 **Performance Incentive**

24 **Q63. What is the purpose of Exhibit A-36, "Performance Incentive Reconciliation"?**

Line
No.

1 A63. The purpose of Exhibit A-36 is to calculate the over/(under) recovery, by class, for
2 the 2020 performance incentive. In the Case No. U-20871 order, dated September
3 24, 2021, the MPSC authorized DTE Gas to collect \$8.3 million for its 2020
4 performance incentive. The surcharge to collect the 2020 performance incentive
5 was authorized for 12 months starting January 1, 2022 and ending December 31,
6 2022.

7

8 **Q64. What is shown on Exhibit A-36, “Performance Incentive Reconciliation”?**

9 A64. Line 1 of Exhibit A-36 summarizes the revenue collected during 2022, as derived
10 in this reconciliation case and calculated on Exhibit A-31. In total, DTE Gas
11 collected \$8.5 million of revenue attributed to the 2020 performance incentive (line
12 1) compared to the \$8.3 million (line 3) that DTE Gas was authorized to recover.
13 This results in a total net over-recovery of the 2020 performance incentive of \$0.2
14 million, shown on line 5, column (f). Line 5, columns (c) through (e) show the
15 over/(under) recovery by the respective customer classes.

16

17 **Q65. Is interest included in the performance incentive over/(under) balances?**

18 A65. No. On page 8 of the Commission’s order in Case No. U-16289 DTE Gas was
19 ordered to calculate the performance incentive balances without interest.
20 Therefore, neither of the over/(under) recovery balances includes interest.

21

22 **Q66. How do you recommend the net over-recovery balance for the 2020**
23 **performance incentive be treated?**

24 A66. Consistent with the treatment of the residual balances from the 2009 through 2019
25 performance incentives approved by the Commission in Case Nos. U-17288,

Line
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1 U17608, U-17841, U-18024, U-18338, U-20035, U-20369, U-20708, U-20871,
2 and U-21206, I recommend that the total net over-recovery be subtracted from the
3 2022 performance incentive awarded in this case, in order for DTE Gas to eliminate
4 these residuals balances in an expedited manner.

5

6 **Q67. How did you calculate the proposed 2022 performance incentive surcharge on**
7 **Exhibit A-37?**

8 A67. I calculated the proposed surcharges for recovering the 2022 performance incentive
9 portion by taking the \$9.1 million performance incentive earned in 2022 as
10 supported by DTE Witness Murray and adjusting it for the \$0.2 million over-
11 recovery of the 2020 performance incentive. Lines 1 through 3 show the details of
12 the net performance incentive to be recovered by class and in total. Line 5 provides
13 the annual billing determinant detail for each class, which is used to calculate the
14 surcharge amounts. For all three customer classes, line 5 reflects the projected
15 2024 billed volumes (in MMcf) for GCR, Gas Customer Choice (GCC),
16 Aggregates, and EUT customers. The proposed 12-month incremental surcharges
17 for the three classes are on line 7.

18

19 **Q68. In developing the incremental performance incentive surcharges on Exhibit**
20 **A-37, did you use the same rate design methodology used in previous EWR/EO**
21 **plan and reconciliation cases?**

22 A68. Yes, I did. I followed the same rate design methodology that was approved by the
23 Commission in each of the approved EWR/EO plans (U-15890, U-15890 amended,
24 U-17050, U-17763, U-18268, U-20429, and U-20881) as well as in the 2009
25 through 2021 EWR/EO Reconciliation Cases.

Line
No.

1 **Q69. How will the 2022 EWR performance incentive surcharge be applied?**

2 A69. I am proposing that the incremental surcharges calculated on Exhibit A-37 be added
3 to the approved EWR base surcharges, to be collected over a 12-month period
4 beginning January 1, 2024.

5

6 **Q70. What happens at the end of the proposed 12-month performance incentive**
7 **recovery period?**

8 A70. At the end of the 12-month proposed recovery period, the EWR surcharge would
9 be reduced by any 2022 performance incentive surcharge amount approved in this
10 case. DTE Gas would then submit revised tariff sheets reflecting the EWR
11 surcharge excluding the 2022 performance incentive component.

12

13 **Q71. How will any remaining over/(under) recovery of the performance incentive**
14 **be treated at the end of the proposed 12-month performance incentive**
15 **collection period?**

16 A71. Any over/(under) recovery of the 2022 performance incentive will be rolled into
17 any future EWR performance incentive balance. If there is no future EWR
18 performance incentive awarded, then DTE Gas will propose at a future date an
19 appropriate mechanism for recovery of the over or under performance incentive
20 balance.

21

22 **Q72. What information is provided on Exhibit A-38?**

23 A72. Exhibit A-38 shows the EWR surcharge rate history by class for the three customer
24 classes (Residential, C&I and EUT) and for EUT Exploratory Program. Columns
25 (c) through (g) of this exhibit show, by effective date, the surcharges approved by

Line
No.

1 the Commission in every EWR/EO plan or reconciliation case approved for DTE
2 Gas since 2021. For illustrative purposes, column (h) shows the surcharges that
3 will be in effect in 2024 if the proposed 2022 performance incentive is approved
4 and the 2022-2023 base surcharge approved on January 20, 2022 in Case No. U-
5 20881 remains in place. The exhibit assumes, as discussed above, that any 2022
6 performance incentive awarded in this case would be effective for a 12-month
7 period beginning January 1, 2024.

8
9 The source column (b) shows the case number and briefly describes the case type
10 that resulted in the surcharges shown in columns (c) through (h).

11
12 **Q73. What information is presented on Exhibit A-39?**

13 A73. Exhibit A-39 is an illustrative example of the tariff sheet that would be effective
14 upon implementation of the proposed EWR surcharges. This tariff sheet shows the
15 EWR surcharges that will be included on customers actual bills after the proposed
16 surcharges are implemented; however, it assumes the EWR base surcharges
17 approved in Case No. U-20881 continue to bill in 2023 (consistent with the rates
18 shown on Exhibit A-38, column (h)). As explained earlier in my testimony, the
19 proposed EWR surcharges are the result of adding the 2022-2023 base surcharge
20 approved on January 20, 2022 in Case No. U-20881 and the incremental surcharge
21 rates calculated on Exhibit A-37.

22
23 I am proposing these surcharges be implemented on a bills rendered basis for all
24 classes.

Line
No.

1 **Q74. Does this complete your direct testimony?**

2 A74. Yes, it does.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)

Case No. U-21313
(Paperless e-file)

EXHIBITS

OF

KIRK M. VANGILDER

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Summary of Cumulative Over/(Under) Cost Recovery - All Classes
(\$)

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-18
Page: 1 of 1

Line No.	(a) Description	(b) Source	(c) Residential	(d) C&I Secondary	(e) C&I Primary	(f) Total Col. (c)+(d)+(e)
<u>Summary</u>						
1	Beginning Over/(Under) Recovery Balance	A-19 pgs 1-3 line 10 col (c)	18,578,706	51,045,513	(43,075,097)	\$ 26,549,121
2	Base Surcharge Revenue	A-19 pgs 1-3 line 1 col (o)	73,193,543	59,573,122	49,602,855	\$ 182,369,520
3	2022 Program Costs:					
4	O&M Expenses	A-19 pgs 1-3 line 3 col (o)	65,986,965	84,781,419	23,920,237	\$ 174,688,620
5	Pre-Tax Return on Capitalized Costs	A-19 pgs 1-3 line 4 col (o)	0	1,418,025	1,907,001	\$ 3,325,026
6	Return of Capitalized Costs - Amortization	A-19 pgs 1-3 line 5 col (o)	-	7,070,731	13,555,588	\$ 20,626,319
7	Amortization of TCJA Reg. Liability	A-19 pgs 1-3 line 6 col (o)	-	(199,179)	(150,131)	\$ (349,310)
8	Total - 2022 Program Costs	Sum lines 4 thru 7	65,986,965	93,070,996	39,232,695	\$ 198,290,656
9	Program Over/(Under) Cost Recovery	Line 1 + Line 2 - Line 8	25,785,284	17,547,639	(32,704,937)	\$ 10,627,986
10	Carrying Charges	A-19 pgs 1-3 line 16 col (o)	565,490	749,361	(637,028)	\$ 677,823
11	Cumulative Over/(Under) Cost Recovery	Line 9 + Line 10	26,350,774	18,297,000	(33,341,965)	\$ 11,305,809

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Monthly Over/(Under) Cost Recovery - Residential
(\$)

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-19
Page: 1 of 3

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Line No.	Description	Source	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Total 2022
1	Base Surcharge Revenue	A-20 , pg 2 Line 4	6,170,972	5,552,718	6,419,319	4,878,850	4,890,051	6,550,314	7,596,863	8,834,691	6,954,348	4,819,651	4,517,366	6,008,401	73,193,543
2	Program Costs:														
3	O&M Expenses	A-10 , pg 2 Line 9	5,043,996	3,499,488	4,033,515	4,201,610	4,330,738	4,242,299	5,818,036	5,594,343	6,097,239	7,466,426	6,394,149	9,265,126	65,986,965
4	Pre-tax Return on Capitalized Costs	A-22 , pg 1 Line 4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Return of Asset - Amortization (5-yrs)	A-10 , pg 2 Line 13	-	-	-	-	-	-	-	-	-	-	-	-	-
6	TCJA Reg. Liability Amortization including Gross-up	Not applicable	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Total - Program Costs		5,043,996	3,499,488	4,033,515	4,201,610	4,330,738	4,242,299	5,818,036	5,594,343	6,097,239	7,466,426	6,394,149	9,265,126	65,986,965
8	Monthly Over/(Under) Cost Recovery	Line 1 - Line 7	1,126,976	2,053,230	2,385,804	677,239	559,313	2,308,015	1,778,827	3,240,348	857,109	(2,646,775)	(1,876,782)	(3,256,726)	7,206,578
9	<u>Program Over/(Under) Cost Recovery</u>														
10	Over/(Under) Recovery Beg.Bal.	Line 12 Prior Month (1)	18,578,706	19,705,682	21,758,912	24,144,716	24,821,956	25,381,269	27,689,284	29,468,111	32,708,459	33,565,568	30,918,793	29,042,010	18,578,706
11	Change in Balance	Line 8	<u>1,126,976</u>	<u>2,053,230</u>	<u>2,385,804</u>	<u>677,239</u>	<u>559,313</u>	<u>2,308,015</u>	<u>1,778,827</u>	<u>3,240,348</u>	<u>857,109</u>	<u>(2,646,775)</u>	<u>(1,876,782)</u>	<u>(3,256,726)</u>	<u>7,206,578</u>
12	Over/(Under) Recovery Ending Bal.	Line 10 + Line 11	19,705,682	21,758,912	24,144,716	24,821,956	25,381,269	27,689,284	29,468,111	32,708,459	33,565,568	30,918,793	29,042,010	25,785,284	25,785,284
13	Over/(Under) Recovery Average Bal.	(Line 10 + Line 12)/2	19,142,194	20,732,297	22,951,814	24,483,336	25,101,612	26,535,276	28,578,697	31,088,285	33,137,013	32,242,180	29,980,402	27,413,647	
14	<u>Carrying Charges</u>														
15	Carrying Charges, Monthly	L13 x L19	2,429	2,963	10,478	11,742	20,446	30,604	49,739	65,620	75,485	95,233	100,017	100,734	565,490
16	Carrying Charges, Cumulative	Cumul. Line 15	2,429	5,391	15,869	27,611	48,057	78,662	128,400	194,021	269,506	364,739	464,756	565,490	565,490
17	Cumulative Program Over/(Under) Cost Recovery	L12 + L16	19,708,111	21,764,304	24,160,585	24,849,567	25,429,326	27,767,945	29,596,511	32,902,480	33,835,074	31,283,532	29,506,766	26,350,774	26,350,774
18	Annual Short Term Interest Rate	(2)	0.1522%	0.1715%	0.5478%	0.5755%	0.9774%	1.3840%	2.0885%	2.5329%	2.7336%	3.5444%	4.0033%	4.4095%	
19	Monthly Short Term Interest Rate	Line 18 / 12 mo.	0.0127%	0.0143%	0.0457%	0.0480%	0.0815%	0.1153%	0.1740%	0.2111%	0.2278%	0.2954%	0.3336%	0.3675%	

Notes:
(1) January 2022 beginning balance is the December 2021 cumulative ending balance approved in U-21206 (A-18 line 11)
(2) Provided by DTE Treasury Department

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Line No.	Description	Source	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Total 2022
1	Base Surcharge Revenue	A-20 , pg 3 Line 10	5,626,122	4,676,836	5,392,503	4,577,060	4,729,222	5,110,159	4,930,355	5,577,674	5,044,194	4,473,348	4,473,079	4,962,570	59,573,122
2	Program Costs:														
3	O&M Expenses	A-10 , pg 3 Line 9	4,736,295	4,461,283	5,316,900	4,781,534	5,415,224	5,492,313	6,093,708	5,656,754	6,940,378	8,397,474	8,550,021	18,939,535	84,781,419
4	Pre-tax Return on Capitalized Costs	A-22 , pg 2 Line 4	134,789	131,589	128,775	125,808	122,840	119,872	116,840	113,744	110,647	107,550	104,332	101,239	1,418,025
5	Return of Asset - Amortization (5-yrs)	A-10 , pg 3 Line 13	577,033	577,033	577,034	577,034	577,035	577,036	601,420	601,420	601,421	601,421	601,422	601,422	7,070,731
6	TCJA Reg. Liability Amortization including Gross-up	A-40, pg 1 Line 28 + Gross-up	(16,598)	(16,598)	(16,598)	(16,598)	(16,598)	(16,598)	(16,598)	(16,598)	(16,598)	(16,598)	(16,598)	(16,598)	(199,179)
7	Total - Program Costs		5,431,519	5,153,307	6,006,111	5,467,778	6,098,501	6,172,623	6,795,370	6,355,319	7,635,847	9,089,847	9,239,176	19,625,598	93,070,996
8	Monthly Over/(Under) Cost Recovery	Line 1 - Line 7	194,603	(476,472)	(613,608)	(890,717)	(1,369,279)	(1,062,464)	(1,865,015)	(777,645)	(2,591,653)	(4,616,499)	(4,766,097)	(14,663,028)	(33,497,874)
9	<u>Program Over/(Under) Cost Recovery</u>														
10	Over/(Under) Recovery Beg.Bal.	Line 12 Prior Month (1)	51,045,513	51,240,116	50,763,644	50,150,036	49,259,319	47,890,040	46,827,576	44,962,561	44,184,916	41,593,263	36,976,764	32,210,666	51,045,513
11	Change in Balance	Line 8	194,603	(476,472)	(613,608)	(890,717)	(1,369,279)	(1,062,464)	(1,865,015)	(777,645)	(2,591,653)	(4,616,499)	(4,766,097)	(14,663,028)	(33,497,874)
12	Over/(Under) Recovery Ending Bal.	Line 10 + Line 11	51,240,116	50,763,644	50,150,036	49,259,319	47,890,040	46,827,576	44,962,561	44,184,916	41,593,263	36,976,764	32,210,666	17,547,639	17,547,639
13	Over/(Under) Recovery Average Bal.	(Line 10 + Line 12)/2	51,142,814	51,001,880	50,456,840	49,704,678	48,574,679	47,358,808	45,895,068	44,573,738	42,889,089	39,285,013	34,593,715	24,879,152	
14	<u>Carrying Charges</u>														
15	Carrying Charges, Monthly	L13 x L19	6,489	7,288	23,035	23,838	39,566	54,621	79,876	94,085	97,700	116,035	115,408	91,421	749,361
16	Carrying Charges, Cumulative	Cumul. Line 15	6,489	13,777	36,812	60,649	100,215	154,836	234,712	328,797	426,497	542,533	657,940	749,361	749,361
17	Cumulative Program Over/(Under) Cost Recovery	L12 + L16	51,246,604	50,777,421	50,186,848	49,319,968	47,990,255	46,982,412	45,197,273	44,513,713	42,019,760	37,519,296	32,868,607	18,297,000	18,297,000
18	Annual Short Term Interest Rate	(2)	0.1522%	0.1715%	0.5478%	0.5755%	0.9774%	1.3840%	2.0885%	2.5329%	2.7336%	3.5444%	4.0033%	4.4095%	
19	Monthly Short Term Interest Rate	Line 18 / 12 mo.	0.0127%	0.0143%	0.0457%	0.0480%	0.0815%	0.1153%	0.1740%	0.2111%	0.2278%	0.2954%	0.3336%	0.3675%	

Notes:
(1) January 2022 beginning balance is the December 2021 cumulative ending balance approved in U-21206 (A-18 line 11)
(2) Provided by DTE Treasury Department

Line No.	(a) Description	(b) Source	(c) Jan-22	(d) Feb-22	(e) Mar-22	(f) Apr-22	(g) May-22	(h) Jun-22	(i) Jul-22	(j) Aug-22	(k) Sep-22	(l) Oct-22	(m) Nov-22	(n) Dec-22	(o) Total 2022
1	Base Surcharge Revenue	A-20 , pg 4 Line 8	3,773,978	4,177,226	4,228,896	4,248,274	4,265,978	4,143,775	4,304,727	4,178,635	4,253,595	3,788,911	3,965,263	4,273,597	49,602,855
2	Program Costs:														
3	O&M Expenses	A-10 , pg 4 Line 9	1,344,162	1,345,225	1,614,793	1,387,175	1,547,653	1,769,856	1,635,389	1,860,086	2,101,980	2,238,298	2,524,134	4,551,485	23,920,237
4	Pre-tax Return on Capitalized Costs	A-22 , pg 3 Line 4	191,758	185,450	179,686	173,706	167,727	161,747	155,832	149,981	144,130	138,280	132,274	126,431	1,907,001
5	Return of Asset - Amortization (5-yrs)	A-10 , pg 4 Line 13	1,141,827	1,141,827	1,141,826	1,141,825	1,141,825	1,141,824	1,117,440	1,117,440	1,117,439	1,117,439	1,117,438	1,117,438	13,555,588
6	TCJA Reg. Liability Amortization including Gross-up	A-40, pg 1 Line 29 + Gross-up	(12,511)	(12,511)	(12,511)	(12,511)	(12,511)	(12,511)	(12,511)	(12,511)	(12,511)	(12,511)	(12,511)	(12,511)	(150,131)
7	Total - Program Costs		2,665,236	2,659,990	2,923,795	2,690,196	2,844,694	3,060,916	2,896,150	3,114,996	3,351,039	3,481,505	3,761,336	5,782,842	39,232,695
8	Monthly Over/(Under) Cost Recovery	Line 1 - Line 7	1,108,742	1,517,236	1,305,102	1,558,079	1,421,285	1,082,859	1,408,576	1,063,639	902,556	307,406	203,927	(1,509,246)	10,370,160
9	<u>Program Over/(Under) Cost Recovery</u>														
10	Over/(Under) Recovery Beg.Bal.	Line 12 Prior Month (1)	(43,075,097)	(41,966,355)	(40,449,119)	(39,144,018)	(37,585,939)	(36,164,654)	(35,081,795)	(33,673,219)	(32,609,580)	(31,707,023)	(31,399,618)	(31,195,691)	(43,075,097)
11	Change in Balance	Line 8	1,108,742	1,517,236	1,305,102	1,558,079	1,421,285	1,082,859	1,408,576	1,063,639	902,556	307,406	203,927	(1,509,246)	10,370,160
12	Over/(Under) Recovery Ending Bal.	Line 10 + Line 11	(41,966,355)	(40,449,119)	(39,144,018)	(37,585,939)	(36,164,654)	(35,081,795)	(33,673,219)	(32,609,580)	(31,707,023)	(31,399,618)	(31,195,691)	(32,704,937)	(32,704,937)
13	Over/(Under) Recovery Average Bal.	(Line 10 + Line 12)/2	(42,520,726)	(41,207,737)	(39,796,568)	(38,364,978)	(36,875,296)	(35,623,224)	(34,377,507)	(33,141,399)	(32,158,302)	(31,553,321)	(31,297,654)	(31,950,314)	
14	<u>Carrying Charges</u>														
15	Carrying Charges, Monthly	L13 x L19	(5,395)	(5,889)	(18,168)	(18,399)	(30,036)	(41,086)	(59,831)	(69,954)	(73,256)	(93,198)	(104,412)	(117,405)	(637,028)
16	Carrying Charges, Cumulative	Cumul. Line 15	(5,395)	(11,283)	(29,451)	(47,851)	(77,887)	(118,973)	(178,804)	(248,758)	(322,013)	(415,212)	(519,623)	(637,028)	(637,028)
17	Cumulative Program Over/(Under) Cost Recovery	L12 + L16	(41,971,749)	(40,460,403)	(39,173,469)	(37,633,789)	(36,242,541)	(35,200,768)	(33,852,023)	(32,858,337)	(32,029,037)	(31,814,830)	(31,715,314)	(33,341,965)	(33,341,965)
18	Annual Short Term Interest Rate	(2)	0.1522%	0.1715%	0.5478%	0.5755%	0.9774%	1.3840%	2.0885%	2.5329%	2.7336%	3.5444%	4.0033%	4.4095%	
19	Monthly Short Term Interest Rate	Line 18 / 12 mo.	0.0127%	0.0143%	0.0457%	0.0480%	0.0815%	0.1153%	0.1740%	0.2111%	0.2278%	0.2954%	0.3336%	0.3675%	

Notes:
(1) January 2022 beginning balance is the December 2021 cumulative ending balance approved in U-21206 (A-18 line 11)
(2) Provided by DTE Treasury Department

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Allocation of Surcharge Revenue - All Classes
(\$)

Case No.: U-21313
 Witness: K. M. Vangilder
 Exhibit: A-20
 Page: 1 of 4

Line No.	(a) Description	(b) Source	(c) Residential	(d) C&I Secondary	(e) C&I Primary	(f) Total Col (c)+(d)+(e)
1	Total 2022 Surcharge Revenue	A-20 pgs 2 - 4 line 1	85,332,502	65,446,477	58,936,990	209,715,968
2	2020 Performance Incentive Revenue	A-20 pgs 2-4	12,138,958	5,873,355	9,334,135	27,346,448
3	Base Surcharge Revenue	Line 1 - Line 2	73,193,543	59,573,122	49,602,855	182,369,520
4	Total Surcharge Revenue	Line 2 + Line 3	85,332,502	65,446,477	58,936,990	209,715,968

	(a)	(b)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
Line No.	Description	Source	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Total 2022
Residential															
1	Total 2022 Billed Surcharge Revenue	A-10 , pg 2 Line 1	7,269,139	6,467,430	7,476,789	5,682,554	5,695,601	7,629,363	8,848,313	10,290,051	8,099,954	5,613,604	5,261,523	6,998,179	85,332,502
2	2020 Performance Incentive Revenue Percentage	A-21, pg 1 Line 1	15.11%	14.14%	14.14%	14.14%	14.14%	14.14%	14.14%	14.14%	14.14%	14.14%	14.14%	14.14%	
3	Total Performance Incentive Revenue	Line 1 x Line 2	1,098,167	914,713	1,057,470	803,705	805,550	1,079,049	1,251,450	1,455,360	1,145,607	793,953	744,157	989,778	12,138,958
4	Residential Base Surcharge Revenue	Line 1 - Line 3	6,170,972	5,552,718	6,419,319	4,878,850	4,890,051	6,550,314	7,596,863	8,834,691	6,954,348	4,819,651	4,517,366	6,008,401	73,193,543

Line No.	(a) Description	(b) Source	(c) Allocation Factor	(d) Jan-22	(e) Feb-22	(f) Mar-22	(g) Apr-22	(h) May-22	(i) Jun-22	(j) Jul-22	(k) Aug-22	(l) Sep-22	(m) Oct-22	(n) Nov-22	(o) Dec-22	(p) Total 2022
Commercial & Industrial (C&I) Secondary																
1	Total 2022 Billed Revenue	A-10 , pg 3 Line 1		6,145,582	5,140,982	5,927,675	5,031,304	5,198,567	5,617,309	5,419,661	6,131,223	5,544,798	4,917,299	4,917,004	5,455,073	65,446,477
Total Billed Surcharge Revenue by consumption																
2	0-850 kwh monthly consumption	Line 1 x col (c) (1)	(1)	302,730	258,121	297,620	252,614	261,012	282,037	272,113	307,840	278,396	246,890	246,876	273,891	3,280,142
3	851-1650 monthly consumption	Line 1 x col (c) (1)	(1)	504,422	412,919	476,106	404,110	417,544	451,177	435,302	492,454	445,353	394,953	394,929	438,147	5,267,417
4	> 1650 kwh monthly consumption	Line 1 x col (c) (1)	(1)	5,338,430	4,469,941	5,153,949	4,374,580	4,520,010	4,884,095	4,712,246	5,330,928	4,821,049	4,275,456	4,275,199	4,743,035	56,898,918
5	Total 2022 Billed Surcharge Revenue	Sum of Lines 2 through 4		6,145,582	5,140,982	5,927,675	5,031,304	5,198,567	5,617,309	5,419,661	6,131,223	5,544,798	4,917,299	4,917,004	5,455,073	65,446,477
2020 Performance Incentive Revenue																
6	0-850 kwh monthly consumption	Line 2 x col (c) (2)	(2)	25,315	23,466	27,056	22,965	23,728	25,640	24,738	27,985	25,309	22,445	22,443	24,899	295,989
7	851-1650 monthly consumption	Line 3 x col (c) (2)	(2)	42,673	37,538	43,282	36,737	37,959	41,016	39,573	44,769	40,487	35,905	35,903	39,832	475,672
8	> 1650 kwh monthly consumption	Line 4 x col (c) (2)	(2)	451,472	403,142	464,833	394,542	407,658	440,495	424,996	480,795	434,809	385,602	385,579	427,773	5,101,694
9	Total 2020 Performance Incentive Revenue	Sum of Lines 6 through 8		519,460	464,146	535,171	454,244	469,345	507,151	489,306	553,549	500,604	443,951	443,925	492,503	5,873,355
10	C&I Secondary Base Surcharge Revenue	Line 1 - Line 9		5,626,122	4,676,836	5,392,503	4,577,060	4,729,222	5,110,159	4,930,355	5,577,674	5,044,194	4,473,348	4,473,079	4,962,570	59,573,122

Notes:
(1) The allocation factors on lines 2 - 4 column (c) are brought forward from Exhibit A-21 columns (d) and (f) lines 19 - 21. These factors allocate total class revenue to the indicated monthly consumption levels.

(2) The allocation factors on lines 6 - 8 column (c) are brought forward from Exhibit A-21 columns (d) and (f) lines 4, 7, and 10 respectively. These factors are used to determine the amount of total billed revenue that is allocated to the Performance Incentive Revenue for each consumption level.

Line No.	(a) Description	(b) Source	(c) Allocation Factor	(d) Jan-22	(e) Feb-22	(f) Mar-22	(g) Apr-22	(h) May-22	(i) Jun-22	(j) Jul-22	(k) Aug-22	(l) Sep-22	(m) Oct-22	(n) Nov-22	(o) Dec-22	(p) Total 2022
Commercial & Industrial (C&I) Primary																
1	Total 2022 Billed Surcharge Revenue	A-10 , pg 4 Line 1		4,561,008	4,956,270	5,017,602	5,040,604	5,061,619	4,916,606	5,107,569	4,957,940	5,046,920	4,495,462	4,704,703	5,070,685	58,936,990
2	Billed Surcharge Revenue from Self-Direct Customers	WP KMV-3		11,538	11,895	11,911	11,911	11,911	11,668	12,154	11,911	11,911	11,182	11,688	11,789	141,469
3	Billed Surcharge Revenue Subject to Performance Incentive	Line 1 - Line 2		4,549,470	4,944,375	5,005,691	5,028,694	5,049,708	4,904,938	5,095,415	4,946,029	5,035,009	4,484,280	4,693,015	5,058,896	58,795,521
Total Billed Surcharge Revenue by consumption																
4	0-11,500 monthly consumption	Line 3 x col (c) (1)	(1)	3,383	3,680	3,726	3,743	3,758	3,651	3,792	3,681	3,747	3,338	3,493	3,765	43,757
5	>11,500 monthly consumption	Line 3 x col (c) (1)	(1)	4,546,087	4,940,695	5,001,965	5,024,951	5,045,950	4,901,288	5,091,623	4,942,348	5,031,262	4,480,943	4,689,522	5,055,131	58,751,764
6	Total 2022 Billed Surcharge Revenue	Sum of Lines 4 through 5		4,549,470	4,944,375	5,005,691	5,028,694	5,049,708	4,904,938	5,095,415	4,946,029	5,035,009	4,484,280	4,693,015	5,058,896	58,795,521
2020 Performance Incentive Revenue																
7	0-11,500 monthly consumption	Line 4 x col (c) (2)	(2)	585	582	589	592	594	577	600	582	592	528	552	595	6,968
8	>11,500 monthly consumption	Line 5 x col (c) (2)	(2)	786,444	778,463	788,117	791,738	795,047	772,254	802,243	778,723	792,733	706,024	738,888	796,493	9,327,167
9	Total 2020 Performance Incentive Revenue	Sum of Lines 7 through 8		787,030	779,045	788,706	792,330	795,641	772,831	802,843	779,305	793,325	706,551	739,440	797,089	9,334,135
10	C&I Primary Base Surcharge Revenue	Line 1 - Line 7		3,773,978	4,177,226	4,228,896	4,248,274	4,265,978	4,143,775	4,304,727	4,178,635	4,253,595	3,788,911	3,965,263	4,273,597	49,602,855

Notes:

(1) The allocation factors on lines 4 - 5 column (c) are brought forward from Exhibit A-21 columns (d) and (f) lines 23 and 24, respectively. These factors allocate total class revenue to the indicated monthly consumption levels.

(2) The allocation factors on lines 7 - 8 column (c) are brought forward from Exhibit A-21 columns (d) and (f) lines 13 and 16 respectively. These factors are used to determine the amount of total billed revenue that is allocated to the Performance Incentive Revenue for each consumption level.

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Revenue Allocation Factor Calculations

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-21
Page: 1 of 1

(a)		(b)	(c)	(d)	(e)	(f)
			Factors to allocate total revenue to base revenue or performance incentive revenue Jan 1 - Jan 31 2022		Factors to allocate total revenue to base revenue or performance incentive revenue Feb 1 - Dec 31 2022	
Line No.	Description	Source	Surcharge	% of total	Surcharge	% of total
Residential			\$/kWh	% of total surcharge design	\$/kWh	% of total surcharge design
1	2020 Performance Incentive	A-27, pg 1, Col (d) to (e)	0.000767	15.11%	0.000767	14.14%
2	2022 Base Surcharge	A-27, pg 1, Col (d) to (e)	<u>0.004310</u>	<u>84.89%</u>	<u>0.004656</u>	<u>85.86%</u>
3	Total EWR Surcharge in effect		0.005077	100.00%	0.005423	100.00%
Commercial & Industrial (C&I) Secondary Base Surcharge Revenue design			\$/meter/month	% of total surcharge design	\$/meter/month	% of total surcharge design
0-850 kwh monthly consumption						
4	2020 Performance Incentive	A-27, pg 2, Col (d) to (e)	0.24	8.36%	0.24	9.09%
5	2022 Base Surcharge	A-27, pg 2, Col (d) to (e)	<u>2.63</u>	<u>91.64%</u>	<u>2.40</u>	<u>90.91%</u>
6	Total EO Surcharge in effect		2.87	100.00%	2.64	100.00%
851-1650 monthly consumption						
7	2020 Performance Incentive	A-27, pg 2, Col (d) to (e)	1.45	8.46%	1.45	9.09%
8	2022 Base Surcharge	A-27, pg 2, Col (d) to (e)	<u>15.69</u>	<u>91.54%</u>	<u>14.50</u>	<u>90.91%</u>
9	Total EO Surcharge in effect		17.14	100.00%	15.95	100.00%
> 1650 kwh monthly consumption						
10	2020 Performance Incentive	A-27, pg 2, Col (d) to (e)	6.04	8.46%	6.04	9.02%
11	2022 Base Surcharge	A-27, pg 2, Col (d) to (e)	<u>65.38</u>	<u>91.54%</u>	<u>60.93</u>	<u>90.98%</u>
12	Total EO Surcharge in effect		71.42	100.00%	66.97	100.00%
Commercial & Industrial (C&I) Primary Base Surcharge Revenue design			\$/meter/month	% of total surcharge design	\$/meter/month	% of total surcharge design
0-11,500 monthly consumption						
13	2020 Performance Incentive	A-27, pg 3, Col (d) to (e)	20.28	17.30%	20.28	15.81%
14	2022 Base Surcharge	A-27, pg 3, Col (d) to (e)	<u>96.93</u>	<u>82.70%</u>	<u>108.00</u>	<u>84.19%</u>
15	Total EO Surcharge in effect		117.21	100.00%	128.28	100.00%
>11,500 monthly consumption						
16	2020 Performance Incentive	A-27, pg 3, Col (d) to (e)	213.45	17.30%	213.45	15.76%
17	2022 Base Surcharge	A-27, pg 3, Col (d) to (e)	<u>1020.41</u>	<u>82.70%</u>	<u>1141.26</u>	<u>84.24%</u>
18	Total EO Surcharge in effect		1,233.86	100.00%	1,354.71	100.00%
Commercial & Industrial (C&I) Secondary Base Surcharge Revenue as designed			U-20373 2021 Amended Base Revenue as Planned	% of designed class revenue	U-20876 2022 Base Revenue as Planned	% of designed class revenue
19	0-850 kwh monthly consumption	1/ 3/	2,453,222	4.93%	2,609,510	5.02%
20	851-1650 monthly consumption	1/ 3/	4,087,670	8.21%	4,174,460	8.03%
21	> 1650 kwh monthly consumption	1/ 3/	<u>43,260,858</u>	<u>86.87%</u>	<u>45,189,461</u>	<u>86.95%</u>
22	Total		49,801,750	100.00%	51,973,431	100.00%
Commercial & Industrial (C&I) Primary Base Surcharge Revenue as designed						
23	0-11,500 monthly consumption	2/ 4/	26,780	0.07%	32,746	0.07%
24	>11,500 monthly consumption	2/ 4/	<u>35,988,311</u>	<u>99.93%</u>	<u>43,963,737</u>	<u>99.93%</u>
25	Total		36,015,092	100.00%	43,996,482	100.00%

1/- Column (c): U-20373 Amended Exh. A-22, page 4 col. (c) lines 27-29
2/- Column (c): U-20373 Amended Exh. A-22, page 5 col. (c) lines 23-24
3/- Column (e): U-20876 Exh. A-22, page 4 col. (c) lines 27-29
4/- Column (e): U-20876 Exh. A-22, page 5 col. (c) lines 23-24

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Line No.	Description	Source	2021 Year-End Balance (1)	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
1	Return on Capitalized Costs														
2	Average Capitalized Costs	Line 11		0	0	0	0	0	0	0	0	0	0	0	0
3	Monthly Pre-Tax Rate of Return	A-23 line 10		0.715%	0.714%	0.715%	0.715%	0.715%	0.715%	0.715%	0.715%	0.715%	0.715%	0.714%	0.714%
4	Return on Capitalized Costs	Line 2 x Line 3		0	0	0	0	0	0	0	0	0	0	0	0
5	Ending Capitalized Costs														
6	Gross Plant	A-10 pg 2 Line 18	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
7	Accumulated Amortization	A-10 pg 2 Line 19 & 20	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Net Plant	Line 6 + Line 7	(0)	0	0	0	0	0	0	0	0	0	0	0	0
9	Accumulated Deferred Taxes	Prior Bal. - A-40 Pg 1 Ln 5	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Ending Capitalized Costs	Line 8 + Line 9	(0)	0	0	0	0	0	0	0	0	0	0	0	0
11	Average Capitalized Costs	Simple avg of Line 10		0	0	0	0	0	0	0	0	0	0	0	0

Notes:
(1) Values in column (c) are taken from the approved 2021 EWR Reconciliation 2021 ending balance in Case No. U-21206

Line No.	(a) Description	(b) Source	(c) 2021 Year-End Balance (1)	(d) Jan-22	(e) Feb-22	(f) Mar-22	(g) Apr-22	(h) May-22	(i) Jun-22	(j) Jul-22	(k) Aug-22	(l) Sep-22	(m) Oct-22	(n) Nov-22	(o) Dec-22
1	Return on Capitalized Costs														
2	Average Capitalized Costs	Line 11		18,851,521	18,436,239	18,020,956	17,605,673	17,190,390	16,775,106	16,350,788	15,917,435	15,484,082	15,050,728	14,617,374	14,184,019
3	Monthly Pre-Tax Rate of Return	A-23 line 10		0.715%	0.714%	0.715%	0.715%	0.715%	0.715%	0.715%	0.715%	0.715%	0.715%	0.714%	0.714%
4	Return on Capitalized Costs	Line 2 x Line 3		134,789	131,589	128,775	125,808	122,840	119,872	116,840	113,744	110,647	107,550	104,332	101,239
5	Ending Capitalized Costs														
6	Gross Plant	A-10 pg 3 Line 18	60,186,684	60,186,684	60,186,684	60,186,684	60,186,684	60,186,684	60,186,684	60,186,684	60,186,684	60,186,684	60,186,684	60,186,684	60,186,684
7	Accumulated Amortization	A-10 pg 3 Line 19 & 20	(32,216,478)	(32,793,511)	(33,370,544)	(33,947,578)	(34,524,613)	(35,101,648)	(35,678,683)	(36,280,103)	(36,881,523)	(37,482,944)	(38,084,365)	(38,685,787)	(39,287,210)
8	Net Plant	Line 6 + Line 7	27,970,206	27,393,173	26,816,140	26,239,106	25,662,071	25,085,036	24,508,001	23,906,581	23,305,161	22,703,740	22,102,319	21,500,897	20,899,474
9	Accumulated Deferred Taxes	Prior Bal. - A-40 Pg 1 Line 10 & A-40 Pg 1 Line 28	(8,911,043)	(8,749,293)	(8,587,542)	(8,425,791)	(8,264,039)	(8,102,288)	(7,940,536)	(7,772,469)	(7,604,402)	(7,436,335)	(7,268,268)	(7,100,200)	(6,932,132)
10	Ending Capitalized Costs	Line 8 + Line 9	19,059,162	18,643,880	18,228,598	17,813,315	17,398,032	16,982,748	16,567,464	16,134,111	15,700,758	15,267,405	14,834,051	14,400,697	13,967,342
11	Average Capitalized Costs	Simple avg of Line 10		18,851,521	18,436,239	18,020,956	17,605,673	17,190,390	16,775,106	16,350,788	15,917,435	15,484,082	15,050,728	14,617,374	14,184,019

Notes:
(1) Values in column (c) are taken from the approved 2021 EWR Reconciliation 2021 ending balance in Case No. U-21206

Line No.	(a) Description	(b) Source	(c) 2021 Year-End Balance (1)	(d) Jan-22	(e) Feb-22	(f) Mar-22	(g) Apr-22	(h) May-22	(i) Jun-22	(j) Jul-22	(k) Aug-22	(l) Sep-22	(m) Oct-22	(n) Nov-22	(o) Dec-22
1	Return on Capitalized Costs														
2	Average Capitalized Costs	Line 11		26,819,174	25,982,351	25,145,528	24,308,706	23,471,884	22,635,063	21,807,276	20,988,523	20,169,771	19,351,019	18,532,268	17,713,517
3	Monthly Pre-Tax Rate of Return	A-23 line 10		0.715%	0.714%	0.715%	0.715%	0.715%	0.715%	0.715%	0.715%	0.715%	0.715%	0.714%	0.714%
4	Return on Capitalized Costs	Line 2 x Line 3		<u>191,758</u>	<u>185,450</u>	<u>179,686</u>	<u>173,706</u>	<u>167,727</u>	<u>161,747</u>	<u>155,832</u>	<u>149,981</u>	<u>144,130</u>	<u>138,280</u>	<u>132,274</u>	<u>126,431</u>
					191,758										
5	Ending Capitalized Costs														
6	Gross Plant	A-10 pg 4 Line 18	83,539,721	83,539,721	83,539,721	83,539,721	83,539,721	83,539,721	83,539,721	83,539,721	83,539,721	83,539,721	83,539,721	83,539,721	83,539,721
7	Accumulated Amortization	A-10 pg 4 Line 19 & 20	<u>(45,084,491)</u>	<u>(46,226,318)</u>	<u>(47,368,145)</u>	<u>(48,509,971)</u>	<u>(49,651,796)</u>	<u>(50,793,621)</u>	<u>(51,935,446)</u>	<u>(53,052,886)</u>	<u>(54,170,326)</u>	<u>(55,287,765)</u>	<u>(56,405,204)</u>	<u>(57,522,642)</u>	<u>(58,640,079)</u>
8	Net Plant	Line 6 + Line 7	38,455,229	37,313,402	36,171,576	35,029,750	33,887,924	32,746,099	31,604,275	30,486,835	29,369,395	28,251,956	27,134,517	26,017,079	24,899,641
9	Accumulated Deferred Taxes	Prior Bal. - A-40 Pg 1 Line 15 & A-40 Pg 1 Line 29	<u>(11,217,644)</u>	<u>(10,912,640)</u>	<u>(10,607,636)</u>	<u>(10,302,633)</u>	<u>(9,997,629)</u>	<u>(9,692,626)</u>	<u>(9,387,623)</u>	<u>(9,088,935)</u>	<u>(8,790,248)</u>	<u>(8,491,561)</u>	<u>(8,192,873)</u>	<u>(7,894,186)</u>	<u>(7,595,499)</u>
10	Ending Capitalized Costs	Line 8 + Line 9	27,237,586	26,400,762	25,563,939	24,727,117	23,890,295	23,053,473	22,216,652	21,397,899	20,579,147	19,760,395	18,941,644	18,122,892	17,304,142
11	Average Capitalized Costs	Simple avg of Line 10		26,819,174	25,982,351	25,145,528	24,308,706	23,471,884	22,635,063	21,807,276	20,988,523	20,169,771	19,351,019	18,532,268	17,713,517

Notes:
(1) Values in column (c) are taken from the approved 2021 EWR Reconciliation 2021 ending balance in Case No. U-21206

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Pre-Tax Rate of Return by Month

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-23
Page: 1 of 1

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
Line No.	Description	Source	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
1	Debt Ratio	(1)	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%
2	Debt Cost	(2)	3.80%	3.77%	3.79%	3.79%	3.79%	3.79%	3.79%	3.79%	3.79%	3.79%	3.77%	3.77%
3	Revenue Conversion Factor	A-24 Col c, L9	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>
4	Debt Component	L1 x L2 x L3	1.90%	1.89%	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	1.89%	1.89%
5	Equity Ratio	(1)	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%
6	Equity Cost	(1)	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%
7	Revenue Conversion Factor	A-24 Col d, L9	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>	<u>1.3495</u>
8	Equity Component	L5 x L6 x L7	6.68%	6.68%	6.68%	6.68%	6.68%	6.68%	6.68%	6.68%	6.68%	6.68%	6.68%	6.68%
9	Annual Pre-Tax Rate of Return	Line 4 + Line 8	<u>8.58%</u>	<u>8.57%</u>	<u>8.58%</u>	<u>8.58%</u>	<u>8.58%</u>	<u>8.58%</u>	<u>8.58%</u>	<u>8.58%</u>	<u>8.58%</u>	<u>8.58%</u>	<u>8.57%</u>	<u>8.57%</u>
10	Monthly Pre-Tax Rate of Return	Line 9/12	<u>0.715%</u>	<u>0.714%</u>	<u>0.715%</u>	<u>0.715%</u>	<u>0.715%</u>	<u>0.715%</u>	<u>0.715%</u>	<u>0.715%</u>	<u>0.715%</u>	<u>0.715%</u>	<u>0.714%</u>	<u>0.714%</u>

Source

(1) Commission Order in DTE Electric's EWR Plans: U-20373 Amended Plan (Jan) and U-20876 (Feb-Dec)

(2) Provided by DTE Treasury Department

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Revenue Conversion Factors

Case No.: U-21313
 Witness: K. M. Vangilder
 Exhibit: A-24
 Page: 1 of 1

(a)		(b)	(c)	(d)
Line No.	Description	Source	Debt Conversion Percent	Equity Conversion Percent
1	Base		100.00%	100.00%
2	MCIT	(1)	0.00%	5.88%
3	Municipal Tax Base	(L1 - L2)	100.00%	94.12%
4	Municipal Tax Rate	(1)		0.33%
5	FIT Base	(L3 - L4)	100.00%	93.79%
6	FIT Rate	(1)		21.00%
7	FIT Tax	(L5 x L6)	0.00%	19.70%
8	Income	(L5 - L7)	100.00%	74.10%
9	Revenue Conversion Factor (Revenue Multiplier)	(L1 / L8)	1.0000	1.3495
10	Composite Federal, State, and Local Tax Rate	L1 - L8		25.90%

(1) Provided by DTE Tax Department

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric Performance Incentive Reconciliation - All Classes
(\$)

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-25
Page: 1 of 1

Line No.	(a) Description	(b) Source	(c) Residential	(d) C&I Secondary	(e) C&I Primary	(f) Total Col (c)+(d)+(e)
<u>2020 Performance Incentive (PI)</u>						
1	PI Revenue Collected in 2022	Exhibit A-20, Page 1, Line 2	12,138,958	5,873,355	9,334,135	\$ 27,346,448
2						
3	Approved 2020 Performance Incentive Revenue	(1)	<u>11,523,321</u>	<u>6,229,822</u>	<u>9,125,988</u>	<u>\$ 26,879,131</u>
4						
5	Over/(Under) Recovery of 2020 PI	Line 1 - Line 3	<u>\$ 615,637</u>	<u>\$ (356,467)</u>	<u>\$ 208,146</u>	<u>\$ 467,317</u>

(1) Approved 2020 PI per U-20866 Order adjusted for 2018 PI over/(under) recovery calculated within that case
(Case No. U-20866, Exhibit A-26, Line 3)

Line No.	(a) Description	(b) Source	(c) Residential	(d) C&I Secondary	(e)	(f)	(g) C&I Primary	(h)	(i) Total
1	2022 Performance Incentive	(1)	\$ 13,197,393	\$ 16,956,284			\$ 4,784,047		\$ 34,937,724
2	2020 Performance Incentive Over/(Under) recovery balance	A-25 line 5	<u>615,637</u>	<u>(356,467)</u>			<u>208,146</u>		<u>467,317</u>
3	Total Performance Incentive	Line 1 - Line 2	\$ 12,581,756	\$ 17,312,751			\$ 4,575,901		\$ 34,470,408
			C&I Secondary Meters Monthly Consumption				C&I Primary Meters Monthly Consumption		
			GWh	0-850 kWh	851-1,650 kWh	>1,650 kWh	0-11,500 kWh	>11,500 kWh	
4	2024 Billing Determinants	(2)	15,684	1,283,242	353,634	909,920	337	42,106	
5	Residential per kWh Rate for 2022 Performance Incentive	Line 3 / Line 4	\$ 0.000802						
6	C&I Per Meter Monthly Charge for 2022 Performance Incentive			\$ 0.65	\$ 3.94	\$ 16.57	\$ 10.28	\$ 108.59	

(1) Total Spend per Exhibit A-10 for respective rate class X performance incentive % (Exhibit A-5)
(2) Billing determinants provided by DTE Corporate Energy Forecsating

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Line No.	Description	Source						
1	Surcharge Beginning date		1/1/2021 to 12/31/2021	1/1/2022 to 1/31/2022	2/1/2022 to 12/31/2022	1/1/2023 to 1/31/2023	2/1/2023 to 12/31/2023	1/1/2024 to 12/31/2024
2	Surcharge End Date							
Residential Surcharge								
3	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge	\$ 0.004310	\$ 0.004310	\$ -	\$ -	\$ -	\$ -	\$ -
4	(2) U-20703 - 2019 Performance Incentive	0.000766	-	-	-	-	-	-
5	(3) U-20866 - 2020 Performance Incentive	-	0.000767	0.000767	-	-	-	-
6	(4) U-20876 - 2022-2023 Base EWR Surcharge	-	-	0.004656	0.004656	0.004656	0.004656	0.004656
7	(5) U-21206 - 2021 Performance Incentive	-	-	-	-	0.000805	-	-
8	(6) U-21313 - 2022 Performance Incentive	-	-	-	-	-	-	0.000802
9	Total Effective Surcharge	Sum of Lines 3 through 8	\$ 0.005076	\$ 0.005077	\$ 0.005423	\$ 0.004656	\$ 0.005461	\$ 0.005458

(1) 2020/2021 Amended Base Surcharge approved September 10, 2020 - billed beginning October 1, 2020
(2) 2019 Performance Incentive approved December 17, 2020 - billed beginning on January1, 2021 (effective through December 2021)
(3) 2020 Performance Incentive approved September 24, 2021 - billed beginning on January 1, 2022 (effective through December 2022)
(4) 2022/2023 Base Surcharge approved January 20, 2022 - billed beginning February 1, 2022
(5) 2021 Performance Incentive approved January 19, 2023 - billed beginning on February 1, 2023 (effective through December 2023)
(6) 2022 Performance Incentive pending approval

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric History of Billed Surcharges - C&I Secondary

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-27
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Line No.	(a) Description	(b) Source	(c)	(d)	(e)	(f)	(g)	(h)
1	Surcharge Beginning date		1/1/2021 to 12/31/2021	1/1/2022 to 1/31/2022	2/1/2022 to 12/31/2022	1/1/2023 to 1/31/2023	2/1/2023 to 12/31/2023	1/1/2024 to 12/31/2024
2	Surcharge End Date							
C&I Secondary:								
Usage of 0 - 850 kWh/month								
3	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge	\$	2.63	\$ 2.63	\$ -	\$ -	\$ -	\$ -
4	(2) U-20703 - 2019 Performance Incentive		0.16	-	-	-	-	-
5	(3) U-20866 - 2020 Performance Incentive		-	0.24	0.24	-	-	-
6	(4) U-20876 - 2022-2023 Base EWR Surcharge		-	-	2.40	2.40	2.40	2.40
7	(5) U-21206 - 2021 Performance Incentive		-	-	-	-	0.34	-
8	(6) U-21313 - 2022 Performance Incentive		-	-	-	-	-	0.65
9	Total Effective Surcharge	Sum of Lines 3 through 8	<u>\$ 2.79</u>	<u>\$ 2.87</u>	<u>\$ 2.64</u>	<u>\$ 2.40</u>	<u>\$ 2.74</u>	<u>\$ 3.05</u>
C&I Secondary:								
Usage of 851 - 1,650 kWh/month								
10	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge	\$	15.69	\$ 15.69	\$ -	\$ -	\$ -	\$ -
11	(2) U-20703 - 2019 Performance Incentive		0.97	-	-	-	-	-
12	(3) U-20866 - 2020 Performance Incentive		-	1.45	1.45	-	-	-
13	(4) U-20876 - 2022-2023 Base EWR Surcharge		-	-	14.50	14.50	14.50	14.50
14	(5) U-21206 - 2021 Performance Incentive		-	-	-	-	2.00	-
15	(6) U-21313 - 2022 Performance Incentive		-	-	-	-	-	3.94
16	Total Effective Surcharge	Sum of Lines 10 through 15	<u>\$ 16.66</u>	<u>\$ 17.14</u>	<u>\$ 15.95</u>	<u>\$ 14.50</u>	<u>\$ 16.50</u>	<u>\$ 18.44</u>
C&I Secondary:								
Usage Above 1,650 kWh/month								
17	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge	\$	65.38	\$ 65.38	\$ -	\$ -	\$ -	\$ -
18	(2) U-20703 - 2019 Performance Incentive		4.04	-	-	-	-	-
19	(3) U-20866 - 2020 Performance Incentive		-	6.04	6.04	-	-	-
20	(4) U-20876 - 2022-2023 Base EWR Surcharge		-	-	60.93	60.93	60.93	60.93
21	(5) U-21206 - 2021 Performance Incentive		-	-	-	-	8.33	-
22	(6) U-21313 - 2022 Performance Incentive		-	-	-	-	-	16.57
23	Total Effective Surcharge	Sum of Lines 17 through 22	<u>\$ 69.42</u>	<u>\$ 71.42</u>	<u>\$ 66.97</u>	<u>\$ 60.93</u>	<u>\$ 69.26</u>	<u>\$ 77.50</u>

- (1) 2020/2021 Amended Base Surcharge approved September 10, 2020 - billed beginning October 1, 2020
(2) 2019 Performance Incentive approved December 17, 2020 - billed beginning on January1, 2021 (effective through December 2021)
(3) 2020 Performance Incentive approved September 24, 2021 - billed beginning on January 1, 2022 (effective through December 2022)
(4) 2022/2023 Base Surcharge approved January 20, 2022 - billed beginning February 1, 2022
(5) 2021 Performance Incentive approved January 19, 2023 - billed beginning on February 1, 2023 (effective through December 2023)
(6) 2022 Performance Incentive pending approval

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric History of Billed Surcharges - C&I Primary

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-27
Page: 3 of 4

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Line No.	Description	Source						
1	Surcharge Beginning date		1/1/2021	1/1/2022	2/1/2022	1/1/2023	2/1/2023	1/1/2024
2	Surcharge End Date		to 12/31/2021	to 1/31/2022	to 12/31/2022	to 1/31/2023	to 12/31/2023	to 12/31/2024
C&I Primary								
Usage of 0 - 11,500 kWh/month								
3	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge		\$ 96.93	\$ 96.93	\$ -	\$ -	\$ -	\$ -
4	(2) U-20703 - 2019 Performance Incentive		13.45	-	-	-	-	-
5	(3) U-20866 - 2020 Performance Incentive		-	20.28	20.28	-	-	-
6	(4) U-20876 - 2022-2023 Base EWR Surcharge		-	-	108.00	108.00	108.00	108.00
7	(5) U-21206 - 2021 Performance Incentive		-	-	-	-	32.44	-
8	(6) U-21313 - 2022 Performance Incentive		-	-	-	-	-	10.28
9	Total Effective Surcharge	Sum of Lines 3 through 8	<u>\$ 110.38</u>	<u>\$ 117.21</u>	<u>\$ 128.28</u>	<u>\$ 108.00</u>	<u>\$ 140.44</u>	<u>\$ 118.28</u>
C&I Primary								
Usage Above 11,500 kWh/month								
10	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge		\$ 1,020.41	\$ 1,020.41	\$ -	\$ -	\$ -	\$ -
11	(2) U-20703 - 2019 Performance Incentive		140.85	-	-	-	-	-
12	(3) U-20866 - 2020 Performance Incentive		-	213.45	213.45	-	-	-
13	(4) U-20876 - 2022-2023 Base EWR Surcharge		-	-	1,141.26	1,141.26	1,141.26	1,141.26
14	(5) U-21206 - 2021 Performance Incentive		-	-	-	-	341.52	-
15	(6) U-21313 - 2022 Performance Incentive		-	-	-	-	-	108.59
16	Total Effective Surcharge	Sum of Lines 10 through 15	<u>\$ 1,161.26</u>	<u>\$ 1,233.86</u>	<u>\$ 1,354.71</u>	<u>\$ 1,141.26</u>	<u>\$ 1,482.78</u>	<u>\$ 1,249.85</u>

- (1) 2020/2021 Amended Base Surcharge approved September 10, 2020 - billed beginning October 1, 2020
(2) 2019 Performance Incentive approved December 17, 2020 - billed beginning on January1, 2021 (effective through December 2021)
(3) 2020 Performance Incentive approved September 24, 2021 - billed beginning on January 1, 2022 (effective through December 2022)
(4) 2022/2023 Base Surcharge approved January 20, 2022 - billed beginning February 1, 2022
(5) 2021 Performance Incentive approved January 19, 2023 - billed beginning on February 1, 2023 (effective through December 2023)
(6) 2022 Performance Incentive pending approval

Michigan Public Service Commission
DTE Electric Company
Energy Waste Reduction - 2022 Plan Reconciliation
Electric History of Billed Surcharges - C&I Self Direct

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-27
Page: 4 of 4

Line No.	(a) Description	(b) Source	(c)	(d)	(e)	(f)	(g)	(h)
1	Surcharge Beginning date		1/1/2021 to 12/31/2021	1/1/2022 to 1/31/2022	2/1/2022 to 12/31/2022	1/1/2023 to 1/31/2023	2/1/2023 to 12/31/2023	1/1/2024 to 12/31/2024
2	Surcharge End Date							
Commercial Secondary:								
Usage of 0 - 850 kWh/month								
3	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge		\$ 0.55	\$ 0.55	\$ -	\$ -	\$ -	\$ -
4	(2) U-20876 - 2022-2023 Base EWR Surcharge		-	-	0.45	0.45	0.45	0.45
5	Total Effective Surcharge	Sum of Lines 3 through 4	<u>\$ 0.55</u>	<u>\$ 0.55</u>	<u>\$ 0.45</u>	<u>\$ 0.45</u>	<u>\$ 0.45</u>	<u>\$ 0.45</u>
Commercial Secondary:								
Usage of 851 - 1,650 kWh/month								
6	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge		\$ 3.14	\$ 3.14	\$ -	\$ -	\$ -	\$ -
7	(2) U-20876 - 2022-2023 Base EWR Surcharge		-	-	2.90	2.90	2.90	2.90
8	Total Effective Surcharge	Sum of Lines 6 through 7	<u>\$ 3.14</u>	<u>\$ 3.14</u>	<u>\$ 2.90</u>	<u>\$ 2.90</u>	<u>\$ 2.90</u>	<u>\$ 2.90</u>
Commercial Secondary:								
Usage Above 1,650 kWh/month								
9	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge		\$ 13.78	\$ 13.78	\$ -	\$ -	\$ -	\$ -
10	(2) U-20876 - 2022-2023 Base EWR Surcharge		-	-	12.20	12.20	12.20	12.20
11	Total Effective Surcharge	Sum of Lines 9 through 10	<u>\$ 13.78</u>	<u>\$ 13.78</u>	<u>\$ 12.20</u>	<u>\$ 12.20</u>	<u>\$ 12.20</u>	<u>\$ 12.20</u>
C&I Primary:								
Usage of 0 - 11,500 kWh/month								
12	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge		\$ 11.58	\$ 11.58	\$ -	\$ -	\$ -	\$ -
13	(2) U-20876 - 2022-2023 Base EWR Surcharge		-	-	10.00	10.00	10.00	10.00
14	Total Effective Surcharge	Sum of Lines 12 through 13	<u>\$ 11.58</u>	<u>\$ 11.58</u>	<u>\$ 10.00</u>	<u>\$ 10.00</u>	<u>\$ 10.00</u>	<u>\$ 10.00</u>
C&I Primary:								
Usage Above 11,500 kWh/month								
15	(1) U-20373 Amended - 2020-2021 Base EWR Surcharge		\$ 118.95	\$ 118.95	\$ -	\$ -	\$ -	\$ -
16	(2) U-20876 - 2022-2023 Base EWR Surcharge		-	-	121.54	121.54	121.54	121.54
17	Total Effective Surcharge	Sum of Lines 15 through 16	<u>\$ 118.95</u>	<u>\$ 118.95</u>	<u>\$ 121.54</u>	<u>\$ 121.54</u>	<u>\$ 121.54</u>	<u>\$ 121.54</u>

(1) 2020/2021 Amended Base Surcharge approved September 10, 2020 - billed beginning October 1, 2020
(2) 2022/2023 Base Surcharge approved January 20, 2022 - billed beginning February 1, 2022

M.P.S.C. No. 1 - Electric
DTE Electric Company
(Update EWRs)

Nineteenth Revised Sheet No. C-68.00
Cancels Eighteenth Revised Sheet No. C-68.00

(Continued from Sheet No. C-67.00)

C9 SURCHARGES AND CREDITS APPLICABLE TO DELIVERY SERVICE (Contd.)

C9.6 Energy Waste Reduction Surcharge (EWRs)

On June 2, 2009, in Case No. U-15806, the MPSC authorized the implementation of an Energy Optimization Surcharge (EOS) for electric customers in accordance with the Clean, Renewable, and Energy Efficiency Act, PA295 of 2008. In compliance with PA 342 of 2016, the surcharge has been renamed as the Energy Waste Reduction (EWR) Surcharge. The EWR will be used to fund energy efficiency programs for DTE Electric customers. The EWR rates approved by the MPSC on _____, **2023 in Case No. U-21313** will be effective beginning with bills rendered in **January 2024**. The total EWRs for all residential customers is **\$0.005458** per kWh. The EWRs for all metered Commercial, Industrial, and Governmental customers is a per meter, per month charge which is based on the total monthly energy consumption by rate as shown in the table below.

<u>Voltage</u>	<u>Monthly Consumption</u>	Customers Without Self Directed Plans Energy Waste Reduction <u>Surcharge</u>	Customers With Self Directed Plans Energy Waste Reduction <u>Surcharge</u>
Secondary	0 – 850 kWh	\$3.05/meter/month	\$0.45/meter/month
Secondary	851 – 1,650 kWh	\$18.44/meter/month	\$2.90/meter/month
Secondary	Above 1,650 kWh	\$77.50/meter/month	\$12.20/meter/month
Primary	0 – 11,500 kWh	\$118.28/meter/month	\$10.00/meter/month
Primary	Above 11,500 kWh	\$1,249.85/meter/month	\$121.54/meter/month

C9.7.6 HOLD FOR FUTURE USE

(Continued on Sheet No. C-69.00)

Issued _____, 202__
M. Bruzzano
Vice President
Corporate Strategy & Regulatory Affairs
Detroit, Michigan

Effective for bills rendered on
and after January 1, 2024

Issued under authority of the
Michigan Public Service Commission
dated _____, 202__
in Case No. U-21313

M.P.S.C. No. 1 - Electric
DTE Electric Company
(Update EWRs)

Sixty-First Revised Sheet No. C-70.00
Cancels Sixtieth Revised Sheet No. C-70.00

(Continued from Sheet No. C-69.00)

C9 SURCHARGES AND CREDITS APPLICABLE TO DELIVERY SERVICE: (Contd.)

SURCHARGES AND CREDITS APPLICABLE TO DELIVERY SERVICE: (Contd.)

C9.8 Summary of Surcharges and Credits: Summary of surcharges and credits, pursuant to sub-rules C9.1, C9.2, C9.6, C9.7.9, and C.9.7.14. Cents per kilowatthour or percent of base bill, unless otherwise noted.

	<u>NS</u> ¢/kWh	<u>EWRs</u> ¢/kWh	<u>Base Securitization</u> ¢/kWh	<u>Total Delivery Surcharges</u> ¢/kWh	<u>LIEAF Factor</u> \$/Billing Meter
Residential					
D1 Non Transmitting Meter	0.0852	<i>0.5458</i>	<i>0.1630</i>	<i>0.7940</i>	\$0.90
D1.1 Int. Space Conditioning	0.0852	<i>0.5458</i>	<i>0.1514</i>	<i>0.7824</i>	N/A
D1.2 Enhanced TOU	0.0852	<i>0.5458</i>	<i>0.1493</i>	<i>0.7803</i>	\$0.90
D1.6 Special Low Income Pilot	0.0852	<i>0.5458</i>	<i>0.1630</i>	<i>0.7940</i>	\$0.90
D1.7 Geothermal Time-of-Day	0.0852	<i>0.5458</i>	<i>0.1411</i>	<i>0.7721</i>	N/A
D1.8 Dynamic Peak Pricing	0.0852	<i>0.5458</i>	<i>0.1628</i>	<i>0.7938</i>	\$0.90
D1.9 Electric Vehicle	0.0852	<i>0.5458</i>	<i>0.1595</i>	<i>0.7905</i>	N/A
D1.11 Standard TOU	0.0852	<i>0.5458</i>	<i>0.1630</i>	<i>0.7940</i>	\$0.90
D2 Space Heating	0.0852	<i>0.5458</i>	<i>0.1583</i>	<i>0.7893</i>	\$0.90
D5 Wtr Htg	0.0852	<i>0.5458</i>	<i>0.1561</i>	<i>0.7871</i>	N/A
D9 Outdoor Lighting	0.0852	<i>0.5458</i>	<i>0.1371</i>	<i>0.7681</i>	N/A
Commercial					
D1.1 Int. Space Conditioning	0.0852	See C9.6	<i>0.1086</i>		\$0.90
D1.7 Geothermal Time -of- day	0.0852	See C9.6	<i>0.0734</i>		\$0.90
D1.8 Dynamic Peak Pricing	0.0852	See C9.6	<i>0.0908</i>		\$0.90
D1.9 Electric Vehicle	0.0852	See C9.6	<i>0.1920</i>		\$0.90
D3 General Service	0.0852	See C9.6	<i>0.0999</i>		\$0.90
D3.1 Unmetered	0.0852	See C9.6	<i>0.0939</i>		N/A
D3.2 Educ. Inst.	0.0852	See C9.6	<i>0.0877</i>		\$0.90
D3.3 Interruptible	0.0852	See C9.6	<i>0.0899</i>		\$0.90
D3.5 Charging	0.0852	See C9.6	<i>0.0999</i>		\$0.90
D4 Large General Service	0.0852	See C9.6	<i>0.1044</i>		\$0.90
D5 Wtr Htg	0.0852	See C9.6	<i>0.0988</i>		\$0.90
D9 Outdoor Lighting	0.0852	See C9.6	<i>0.1371</i>		N/A
R3 Standby Secondary	0.0852	See C9.6	<i>0.0140</i>		\$0.90
R7 Greenhouse Lighting	0.0852	See C9.6	<i>0.0896</i>		\$0.90
R8 Space Conditioning	0.0852	See C9.6	<i>0.0977</i>		\$0.90
Industrial					
D6.2 Educ. Inst.	0.0852	See C9.6	<i>0.0167</i>		\$0.90
D8 Interruptible Primary	0.0852	See C9.6	0.0096		\$0.90
D10 Schools	0.0852	See C9.6	<i>0.0230</i>		\$0.90
D11 Primary Supply	0.0852	See C9.6	<i>0.0082</i>		\$0.90
D12 Large Low Peak	0.0852	See C9.6	<i>0.0082</i>		\$0.90

(Continued on Sheet No. C-71.00)

Issued _____, 202__
M. Bruzzano
Vice President
Corporate Strategy & Regulatory Affairs

Detroit, Michigan

Effective for bills rendered on
and after January 1, 2024

Issued under authority of the
Michigan Public Service Commission
dated _____, 202__
in Case No. U-21313

M.P.S.C. No. 1 - Electric
DTE Electric Company
(Update EWRs)

Sixty-First Revised Sheet No. C-70.00
Cancels Sixtieth Revised Sheet No. C-70.00

(Continued from Sheet No. C-70.00)

C9 SURCHARGES AND CREDITS APPLICABLE TO DELIVERY SERVICE: (Contd.)

C9.8 Summary of Surcharges and Credits (Contd.):

	<u>NS</u> ¢/kWh	<u>EWRs</u> ¢/kWh	<u>Base</u> <u>Securitization</u> ¢/kWh	<u>LIEAF Factor</u> \$/Billing Meter
Governmental				
E1 Streetlighting Option I	0.0852	See C9.6	0.1882	N/A
E1 Streetlighting Option II & III	0.0852	See C9.6	0.1882	N/A
E1.1 Energy Only	0.0852	See C9.6	0.0922	\$0.90
E2 Traffic Lights	0.0852	See C9.6	0.0407	N/A
Electric Choice				
EC2 <i>Residential</i>	0.0852	See C9.6	Note 1	\$0.90
EC2 <i>Commercial</i>	0.0852	See C9.6	Note 1	\$0.90
EC2 <i>Primary</i>	0.0852	See C9.6	Note 1	\$0.90

NOTE 1: Electric choice tariffs will be billed the Base Securitization and Bill Credit for corresponding full service tariff.

(Continued on Sheet No. C-72.00)

Issued _____, 202__
M. Bruzzano
Vice President
Corporate Strategy & Regulatory Affairs
Detroit, Michigan

Effective for bills rendered on
and after January 1, 2024

Issued under authority of the
Michigan Public Service Commission
dated _____, 202__
in Case No. U-21313

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Summary of Cumulative Over/(Under) Cost Recovery - All Classes
(\$)

Case No.: U-21313
 Witness: K. M. Vangilder
 Exhibit: A-29
 Page: 1 of 1

Line No.	(a) Description	(b) Source	(c) Residential	(d) C&I/EUT	(e) Total Col. (c) + (d)
1	Beginning Over/(Under) Recovery balance	A-30 pgs 1 & 4 line 9 col (c)	(6,474,641)	(13,757,905)	(20,232,547)
2	Base Surcharge Revenue	A-30 pgs 1 & 4 line 1 col (o)	31,021,008	27,204,203	58,225,210
3	Program Costs:				
4	O&M Expenses	A-30 pgs 1 & 4 line 3 col (o)	25,515,905	20,037,910	45,553,815
5	Pre-Tax Return on Capitalized Costs	A-30 pgs 1 & 4 line 4 col (o)	-	261,309	261,309
6	Return of Capitalized Costs - Amortization	A-30 pgs 1 & 4 line 5 col (o)	-	1,005,617	1,005,617
7	Total - 2022 Program Costs	Sum lines 4 thru 6	25,515,905	21,304,836	46,820,741
8	Program Over/(Under) Cost Recovery	Line1+ Line 2 - Line 7	(969,539)	(7,858,538)	(8,828,078)
9	Carrying Charges	A-30 pgs 1 & 4 line 15 col (o)	20,642	(133,470)	(112,828)
10	Cumulative Program Over/(Under) Cost Recovery	Line 8 + Line 9	<u>(948,897)</u>	<u>(7,992,008)</u>	<u>(8,940,905)</u>

Line No.	(a) Description	(b) Source	(c) Jan-22	(d) Feb-22	(e) Mar-22	(f) Apr-22	(g) May-22	(h) Jun-22	(i) Jul-22	(j) Aug-22	(k) Sep-22	(l) Oct-22	(m) Nov-22	(n) Dec-22	(o) Total 2022
1	Base Surcharge Revenue	A-31, pg 1 Line 6	4,826,377	5,513,498	5,252,271	3,490,584	1,997,367	788,539	510,995	506,062	520,892	1,200,516	2,125,972	4,287,937	31,021,008
2	Program Costs:														
3	O&M Expenses	A-14 , pg 2 Line 9	2,536,689	1,779,953	1,670,390	1,606,558	1,856,396	1,538,513	1,622,879	2,002,019	1,614,393	2,374,434	2,829,187	4,084,495	25,515,905
4	Pre-tax Return on Capitalized Costs	A-33, pg 1 Line 4	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Return of Asset - Amortization	A-14, pg 2 Line 13	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Total - Program Costs		2,536,689	1,779,953	1,670,390	1,606,558	1,856,396	1,538,513	1,622,879	2,002,019	1,614,393	2,374,434	2,829,187	4,084,495	25,515,905
7	Monthly Over (Under) Cost Recovery	Line 1 - Line 6	2,289,688	3,733,545	3,581,881	1,884,026	140,971	(749,975)	(1,111,884)	(1,495,957)	(1,093,501)	(1,173,919)	(703,215)	203,442	5,505,102
8	<u>Program Over/(Under) Cost Recovery</u>														
9	Over (Under) Recovery Beg.Bal.	Line 11 Prior Month (1)	(6,474,641)	(4,184,954)	(451,409)	3,130,473	5,014,498	5,155,469	4,405,494	3,293,610	1,797,654	704,153	(469,766)	(1,172,981)	(6,474,641)
10	Change in Balance	Line 7	2,289,688	3,733,545	3,581,881	1,884,026	140,971	(749,975)	(1,111,884)	(1,495,957)	(1,093,501)	(1,173,919)	(703,215)	203,442	5,505,102
11	Over (Under) Recovery Ending Bal.	Line 9 + Line 10	(4,184,954)	(451,409)	3,130,473	5,014,498	5,155,469	4,405,494	3,293,610	1,797,654	704,153	(469,766)	(1,172,981)	(969,539)	(969,539)
12	Over (Under) Recovery Average Bal.	(Line 9 + Line 11)/2	(5,329,797)	(2,318,181)	1,339,532	4,072,485	5,084,984	4,780,482	3,849,552	2,545,632	1,250,903	117,193	(821,374)	(1,071,260)	
13	<u>Carrying Charges</u>														
14	Carrying Charges, Monthly	L12 x L18	(835)	(357)	364	2,091	4,181	5,928	7,294	5,471	2,857	348	(2,786)	(3,913)	20,642
15	Carrying Charges, Cumulative	Cumul. Line 14	(835)	(1,191)	(828)	1,263	5,444	11,372	18,666	24,137	26,993	27,341	24,555	20,642	20,642
16	Cumulative Program Over/(Under) Cost Recovery	L11 + L15	(4,185,788)	(452,600)	3,129,645	5,015,761	5,160,913	4,416,866	3,312,276	1,821,790	731,146	(442,425)	(1,148,426)	(948,897)	(948,897)
17	Annual Short Term Interest Rate	(2)	0.19%	0.18%	0.33%	0.62%	0.99%	1.49%	2.27%	2.58%	2.74%	3.56%	4.07%	4.38%	
18	Monthly Short Term Interest Rate	Line 17 / 12 mo.	0.02%	0.02%	0.03%	0.05%	0.08%	0.12%	0.19%	0.21%	0.23%	0.30%	0.34%	0.37%	

Notes:
(1) January 2022 beginning balance is the December 2021 cumulative ending balance approved in U-21206 (A-30, Page 1, Line 16)
(2) Provided by DTE Treasury Department

Line No.	(a) Description	(b) Source	(c) Jan-22	(d) Feb-22	(e) Mar-22	(f) Apr-22	(g) May-22	(h) Jun-22	(i) Jul-22	(j) Aug-22	(k) Sep-22	(l) Oct-22	(m) Nov-22	(n) Dec-22	(o) Total 2022
1	Base Surcharge Revenue	A-31, pg 1 Line 14	1,837,140	4,346,488	4,160,194	2,836,206	1,631,156	707,880	511,558	468,767	501,070	916,521	1,673,054	3,267,529	22,857,563
2	Program Costs:														
3	O&M Expenses	A-14, pg 3 Line 9	843,123	510,201	836,120	597,626	680,851	621,251	569,992	963,658	592,151	877,095	876,629	1,835,458	9,804,155
4	Pre-tax Return on Capitalized Costs	A-33, pg 2 Line 4	8,246	8,027	7,872	7,718	7,563	7,409	7,254	7,100	6,986	6,831	6,675	6,520	88,202
5	Return of Asset - Amortization	A-14, pg 3 Line 13	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	339,465
6	Total - Program Costs		879,658	546,517	872,281	633,633	716,703	656,948	605,535	999,047	627,426	912,215	911,593	1,870,266	10,231,822
7	Monthly Over (Under) Cost Recovery	Line 1 - Line 6	957,482	3,799,971	3,287,913	2,202,574	914,453	50,931	(93,977)	(530,279)	(126,356)	4,306	761,460	1,397,263	12,625,741
8	<u>Program Over/(Under) Cost Recovery</u>														
9	Over (Under) Recovery Beg.Bal.	Line 11 Prior Month (1)	33,228,868	34,186,351	37,986,322	41,274,235	43,476,808	44,391,262	44,442,193	44,348,216	43,817,936	43,691,580	43,695,886	44,457,346	33,228,868
10	Change in Balance	Line 7	957,482	3,799,971	3,287,913	2,202,574	914,453	50,931	(93,977)	(530,279)	(126,356)	4,306	761,460	1,397,263	12,625,741
11	Over (Under) Recovery Ending Bal.	Line 9 + Line 10	34,186,351	37,986,322	41,274,235	43,476,808	44,391,262	44,442,193	44,348,216	43,817,936	43,691,580	43,695,886	44,457,346	45,854,609	45,854,609
12	Over (Under) Recovery Average Bal.	(Line 9 + Line 11)/2	33,707,610	36,086,336	39,630,278	42,375,521	43,934,035	44,416,727	44,395,204	44,083,076	43,754,758	43,693,733	44,076,616	45,155,978	
13	<u>Carrying Charges</u>														
14	Carrying Charges, Monthly	L12 x L18	5,278	5,554	10,758	21,753	36,124	55,080	84,115	94,740	99,927	129,665	149,491	164,937	857,419
15	Carrying Charges, Cumulative	Cumul. Line 14	5,278	10,832	21,590	43,342	79,466	134,546	218,661	313,401	413,327	542,992	692,483	857,419	857,419
16	Cumulative Program Over/(Under) Cost Recovery	L11 + L15	34,191,628	37,997,153	41,295,824	43,520,151	44,470,728	44,576,739	44,566,877	44,131,337	44,104,907	44,238,878	45,149,829	46,712,028	46,712,028
17	Annual Short Term Interest Rate	(2)	0.19%	0.18%	0.33%	0.62%	0.99%	1.49%	2.27%	2.58%	2.74%	3.56%	4.07%	4.38%	
18	Monthly Short Term Interest Rate	Line 17 / 12 mo.	0.02%	0.02%	0.03%	0.05%	0.08%	0.12%	0.19%	0.21%	0.23%	0.30%	0.34%	0.37%	

Notes:
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(2) Provided by DTE Treasury Department

Line No.	(a) Description	(b) Source	(c) Jan-22	(d) Feb-22	(e) Mar-22	(f) Apr-22	(g) May-22	(h) Jun-22	(i) Jul-22	(j) Aug-22	(k) Sep-22	(l) Oct-22	(m) Nov-22	(n) Dec-22	(o) Total 2022
1	Base Surcharge Revenue	A-31, pg 1 Line 22	150,950	334,873	450,984	451,972	373,324	367,581	366,619	389,540	371,677	340,478	374,162	374,480	4,346,640
2	Program Costs:														
3	O&M Expenses	A-14, pg 3 Line 9	1,075,423	675,715	714,059	585,203	679,085	605,990	488,241	884,512	609,381	832,362	910,087	2,173,696	10,233,754
4	Pre-tax Return on Capitalized Costs	A-33, pg 3 Line 4	16,184	15,754	15,450	15,147	14,844	14,541	14,237	13,934	13,712	13,406	13,101	12,796	173,107
5	Return of Asset - Amortization	A-14, pg 4 Line 13	55512.71116	55512.71116	55512.71116	55512.71116	55512.71116	55512.71116	55512.71116	55512.71116	55512.71116	55512.71116	55512.71116	55,513	666,153
6	Total - Program Costs		1,147,120	746,981	785,022	655,863	749,442	676,043	557,991	953,958	678,606	901,281	978,701	2,242,005	11,073,014
7	Monthly Over (Under) Cost Recovery	Line 1 - Line 6	(996,170)	(412,108)	(334,038)	(203,891)	(376,118)	(308,462)	(191,372)	(564,418)	(306,928)	(560,803)	(604,539)	(1,867,525)	(6,726,374)
8	<u>Program Over/(Under) Cost Recovery</u>														
9	Over (Under) Recovery Beg.Bal.	Line 11 Prior Month (1)	(46,986,774)	(47,982,943)	(48,395,052)	(48,729,090)	(48,932,981)	(49,309,099)	(49,617,562)	(49,808,934)	(50,373,352)	(50,680,280)	(51,241,083)	(51,845,623)	(46,986,774)
10	Change in Balance	Line 7	(996,170)	(412,108)	(334,038)	(203,891)	(376,118)	(308,462)	(191,372)	(564,418)	(306,928)	(560,803)	(604,539)	(1,867,525)	(6,726,374)
11	Over (Under) Recovery Ending Bal.	Line 9 + Line 10	(47,982,943)	(48,395,052)	(48,729,090)	(48,932,981)	(49,309,099)	(49,617,562)	(49,808,934)	(50,373,352)	(50,680,280)	(51,241,083)	(51,845,623)	(53,713,147)	(53,713,147)
12	Over (Under) Recovery Average Bal.	(Line 9 + Line 11)/2	(47,484,859)	(48,188,998)	(48,562,071)	(48,831,036)	(49,121,040)	(49,463,330)	(49,713,248)	(50,091,143)	(50,526,816)	(50,960,682)	(51,543,353)	(52,779,385)	
13	<u>Carrying Charges</u>														
14	Carrying Charges, Monthly	L12 x L18	(7,435)	(7,417)	(13,183)	(25,067)	(40,388)	(61,338)	(94,191)	(107,652)	(115,392)	(151,230)	(174,815)	(192,782)	(990,890)
15	Carrying Charges, Cumulative	Cumul. Line 14	(7,435)	(14,851)	(28,034)	(53,101)	(93,489)	(154,828)	(249,018)	(356,670)	(472,062)	(623,292)	(798,108)	(990,890)	(990,890)
16	Cumulative Program Over/(Under) Cost Recovery	L11 + L15	(47,990,378)	(48,409,903)	(48,757,124)	(48,986,082)	(49,402,589)	(49,772,389)	(50,057,952)	(50,730,022)	(51,152,342)	(51,864,376)	(52,643,730)	(54,704,037)	(54,704,037)
17	Annual Short Term Interest Rate	(2)	0.19%	0.18%	0.33%	0.62%	0.99%	1.49%	2.27%	2.58%	2.74%	3.56%	4.07%	4.38%	
18	Monthly Short Term Interest Rate	Line 17 / 12 mo.	0.016%	0.02%	0.03%	0.05%	0.08%	0.12%	0.19%	0.21%	0.23%	0.30%	0.34%	0.37%	

Notes:
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(2) Provided by DTE Treasury Department

Line No.	(a) Description	(b) Source	(c) Jan-22	(d) Feb-22	(e) Mar-22	(f) Apr-22	(g) May-22	(h) Jun-22	(i) Jul-22	(j) Aug-22	(k) Sep-22	(l) Oct-22	(m) Nov-22	(n) Dec-22	(o) Total 2022
1	Base Surcharge Revenue	Page 2 + Page 3	1,988,091	4,681,361	4,611,178	3,288,178	2,004,480	1,075,461	878,177	858,308	872,747	1,256,998	2,047,216	3,642,009	27,204,203
2	Program Costs:														
3	O&M Expenses	Page 2 + Page 3	1,918,546	1,185,916	1,550,179	1,182,829	1,359,936	1,227,241	1,058,234	1,848,170	1,201,532	1,709,457	1,786,716	4,009,154	20,037,910
4	Pre-tax Return on Capitalized Costs	Page 2 + Page 3	24,431	23,781	23,323	22,865	22,407	21,949	21,491	21,033	20,698	20,237	19,777	19,316	261,309
5	Return of Asset - Amortization	Page 2 + Page 3	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	1,005,617
6	Total - Program Costs	Page 2 + Page 3	2,026,778	1,293,498	1,657,303	1,289,496	1,466,145	1,332,992	1,163,527	1,953,005	1,306,031	1,813,496	1,890,294	4,112,271	21,304,836
7	Monthly Over (Under) Cost Recovery	Line 1 - Line 6	(38,687)	3,387,863	2,953,875	1,998,682	538,335	(257,531)	(285,349)	(1,094,698)	(433,284)	(556,498)	156,921	(470,262)	5,899,367
8	<u>Program Over/(Under) Cost Recovery</u>														
9	Over (Under) Recovery Beg.Bal.	Page 2 + Page 3 (1)	(13,757,905)	(13,796,593)	(10,408,730)	(7,454,855)	(5,456,173)	(4,917,838)	(5,175,369)	(5,460,718)	(6,555,416)	(6,988,700)	(7,545,198)	(7,388,276)	(13,757,905)
10	Change in Balance	Line 7	(38,687)	3,387,863	2,953,875	1,998,682	538,335	(257,531)	(285,349)	(1,094,698)	(433,284)	(556,498)	156,921	(470,262)	5,899,367
11	Over (Under) Recovery Ending Bal.	Line 9 + Line 10	(13,796,593)	(10,408,730)	(7,454,855)	(5,456,173)	(4,917,838)	(5,175,369)	(5,460,718)	(6,555,416)	(6,988,700)	(7,545,198)	(7,388,276)	(7,858,538)	(7,858,538)
12	Over (Under) Recovery Average Bal.	(Line 9 + Line 11)/2	(13,777,249)	(12,102,661)	(8,931,793)	(6,455,514)	(5,187,005)	(5,046,603)	(5,318,043)	(6,008,067)	(6,772,058)	(7,266,949)	(7,466,737)	(7,623,407)	
13	<u>Carrying Charges</u>														
14	Carrying Charges, Monthly	L12 x L18	(2,157)	(1,863)	(2,425)	(3,314)	(4,265)	(6,258)	(10,076)	(12,912)	(15,466)	(21,565)	(25,324)	(27,845)	(133,470)
15	Carrying Charges, Cumulative	Cumul. Line 14	(2,157)	(4,020)	(6,444)	(9,758)	(14,023)	(20,281)	(30,357)	(43,269)	(58,735)	(80,301)	(105,625)	(133,470)	(133,470)
16	Cumulative Program Over/(Under) Cost Recovery	L11 + L15	(13,798,750)	(10,412,750)	(7,461,300)	(5,465,931)	(4,931,861)	(5,195,650)	(5,491,075)	(6,598,685)	(7,047,435)	(7,625,498)	(7,493,901)	(7,992,008)	(7,992,008)
17	Annual Short Term Interest Rate	(2)	0.19%	0.18%	0.33%	0.62%	0.99%	1.49%	2.27%	2.58%	2.74%	3.56%	4.07%	4.38%	
18	Monthly Short Term Interest Rate	Line 17 / 12 mo.	0.02%	0.02%	0.03%	0.05%	0.08%	0.12%	0.19%	0.21%	0.23%	0.30%	0.34%	0.37%	

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	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Line No.	Description	Source	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Total 2022
	<u>Residential</u>														
1	Total 2022 Billed Revenue	A-14, pg 2 Line 1	5,779,740	6,496,915	6,189,095	4,113,183	2,353,628	929,187	602,139	596,326	613,801	1,414,646	2,505,172	5,052,756	36,646,586
2															
3	2020 PI Allocator	(1)	16.49%	15.14%	15.14%	15.14%	15.14%	15.14%	15.14%	15.14%	15.14%	15.14%	15.14%	15.14%	
4	Total Performance Incentive Revenue	Line 1 X Line 3	953,363	983,417	936,823	622,599	356,261	140,648	91,144	90,264	92,909	214,130	379,200	764,819	5,625,578
5															
6	Residential Base Surcharge Revenue	Line 1 - Line 4	4,826,377	5,513,498	5,252,271	3,490,584	1,997,367	788,539	510,995	506,062	520,892	1,200,516	2,125,972	4,287,937	31,021,008
7															
8	<u>C&I</u>														
9	Total 2022 Billed Revenue	A-14, pg 3 Line 1	2,061,085	4,583,070	4,386,636	2,990,583	1,719,941	746,410	539,403	494,283	528,343	966,407	1,764,119	3,445,383	24,225,663
10															
11	2020 PI Allocator	(1)	10.87%	5.16%	5.16%	5.16%	5.16%	5.16%	5.16%	5.16%	5.16%	5.16%	5.16%	5.16%	
12	Total Performance Incentive Revenue	Line 9 X Line 11	223,945	236,582	226,442	154,377	88,785	38,530	27,844	25,515	27,274	49,887	91,065	177,854	1,368,100
13															
14	C&I Base Surcharge Revenue	Line 9 - Line 12	1,837,140	4,346,488	4,160,194	2,836,206	1,631,156	707,880	511,558	468,767	501,070	916,521	1,673,054	3,267,529	22,857,563
15															
16	<u>EUT</u>														
17	Total 2022 Billed Revenue	A-14, pg 4 Line 1	264,798	447,648	602,861	604,182	499,048	491,371	490,085	520,726	496,847	455,140	500,168	500,594	5,873,468
18															
19	2020 PI Allocator	(1)	42.99%	25.19%	25.19%	25.19%	25.19%	25.19%	25.19%	25.19%	25.19%	25.19%	25.19%	25.19%	
20	Total Performance Incentive Revenue	Line 17 X Line 19	113,847	112,775	151,878	152,210	125,724	123,790	123,466	131,185	125,170	114,663	126,006	126,114	1,526,828
21															
22	EUT Base Surcharge Revenue	Line 17 - Line 20	150,950	334,873	450,984	451,972	373,324	367,581	366,619	389,540	371,677	340,478	374,162	374,480	4,346,640
23															
24	<u>Total</u>														
25	Performance Incentive Revenue	Lines 4, 12 and 20	1,291,155	1,332,774	1,315,143	929,186	570,770	302,969	242,455	246,965	245,352	378,680	596,272	1,068,787	8,520,507
26	Base Surcharge revenue	Lines 6, 14 and 22	6,814,467	10,194,859	9,863,449	6,778,762	4,001,846	1,863,999	1,389,172	1,364,370	1,393,638	2,457,514	4,173,187	7,929,946	58,225,210
27	Total Billed Revenue	Sum Lines 25-26	8,105,623	11,527,633	11,178,592	7,707,948	4,572,617	2,166,968	1,631,627	1,611,334	1,638,991	2,836,194	4,769,459	8,998,733	66,745,717

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas EWR Revenue Allocation Factor Calculations

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-32
Page: 1 of 1

	(a)	(b)	(c)	(d)	(e)	(f)
Line No.	Description	Source Exhibit A-38	Jan 1 - Jan 31 2022		Feb 1 - Dec 31 2022	
			Surcharge \$/Ccf	% of total	Surcharge \$/Ccf	% of total
Allocation Factors to allocate total revenue to base revenue and incentive revenue						
	<u>Residential</u>					
1	2020 Performance Incentive Surcharge	Col. (d) to (e)	0.00489	16.49%	0.00489	15.14%
2	2022 Base Surcharge 1/	Col. (d) to (e)	<u>0.02476</u>	<u>83.51%</u>	<u>0.02742</u>	<u>84.86%</u>
3	Total Surcharge in effect		0.02965	100.00%	0.03231	100.00%
4						
5	<u>C&I</u>					
6	2020 Performance Incentive Surcharge	Col. (d) to (e)	0.00286	10.87%	0.00286	5.16%
7	2022 Base Surcharge 1/	Col. (d) to (e)	<u>0.02346</u>	<u>89.13%</u>	<u>0.05254</u>	<u>94.84%</u>
8	Total Surcharge in effect		0.02632	100.00%	0.05540	100.00%
9						
10	<u>EUT</u>					
11	2020 Performance Incentive Surcharge	Col. (d) to (e)	0.00114	42.99%	0.00114	25.19%
12	2022 Base Surcharge 1/	Col. (d) to (e)	<u>0.00151</u>	<u>57.01%</u>	<u>0.00339</u>	<u>74.81%</u>
13	Total Surcharge in effect		0.00265	100.00%	0.00453	100.00%

1/- Base surcharge for January 2022 per U-20429, February-December 2022 per U-20881

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Line No.	Description	Source	2021 Year-End Balance (1)	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
1	Return on Capitalized Costs														
2	Average Capitalized Costs	Line 11		-	-	-	-	-	-	-	-	-	-	-	-
3	Monthly Pre-Tax Rate of Return	A-34 line 10		0.746%	0.740%	0.740%	0.740%	0.740%	0.740%	0.740%	0.740%	0.745%	0.745%	0.745%	0.745%
4	Return on Capitalized Costs	Line 2 x Line 3		-	-	-	-	-	-	-	-	-	-	-	-
5	Ending Capitalized Costs														
6	Gross Plant	A-14 pg 2 Line 18	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Accumulated Amortization	A-14 pg 2 Line 19 & 20	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Net Plant	Line 6 + Line 7	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Accumulated Deferred Taxes	Prior Bal. - A-40 Line 5	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Ending Capitalized Costs	Line 8 + Line 9	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Average Capitalized Costs	Simple avg of Line 10		-	-	-	-	-	-	-	-	-	-	-	-

Notes:
(1) Values in column (c) are taken from the approved 2021 EWR Reconciliation 2021 ending balance in Case No. U-21206

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Line No.	Description	Source	2021 Year-End Balance (1)	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
1	Return on Capitalized Costs														
2	Average Capitalized Costs	Line 11		1,105,060	1,084,183	1,063,306	1,042,429	1,021,552	1,000,674	979,797	958,920	938,043	917,166	896,289	875,412
3	Monthly Pre-Tax Rate of Return	A-34 line 10		0.746%	0.740%	0.740%	0.740%	0.740%	0.740%	0.740%	0.740%	0.745%	0.745%	0.745%	0.745%
4	Return on Capitalized Costs	Line 2 x Line 3		8,246	8,027	7,872	7,718	7,563	7,409	7,254	7,100	6,986	6,831	6,675	6,520
5	Ending Capitalized Costs														
6	Gross Plant	A-14 pg 3 Line 18	1,697,324	1,697,324	1,697,324	1,697,324	1,697,324	1,697,324	1,697,324	1,697,324	1,697,324	1,697,324	1,697,324	1,697,324	1,697,324
7	Accumulated Amortization	A-14 pg 3 Line 19 & 20	(185,809)	(214,098)	(242,386)	(270,675)	(298,964)	(327,253)	(355,541)	(383,830)	(412,119)	(440,408)	(468,696)	(496,985)	(525,274)
8	Net Plant	Line 6 + Line 7	1,511,516	1,483,227	1,454,938	1,426,649	1,398,361	1,370,072	1,341,783	1,313,494	1,285,206	1,256,917	1,228,628	1,200,339	1,172,051
9	Accumulated Deferred Taxes	Prior Bal. - A-40 Line 10	(396,017)	(388,605)	(381,194)	(373,782)	(366,370)	(358,959)	(351,547)	(344,136)	(336,724)	(329,312)	(321,901)	(314,489)	(307,077)
10	Ending Capitalized Costs	Line 8 + Line 9	1,115,498	1,094,621	1,073,744	1,052,867	1,031,990	1,011,113	990,236	969,359	948,482	927,605	906,728	885,850	864,973
11	Average Capitalized Costs	Simple avg of Line 10		1,105,060	1,084,183	1,063,306	1,042,429	1,021,552	1,000,674	979,797	958,920	938,043	917,166	896,289	875,412

Notes:

(1) Values in column (c) are taken from the approved 2021 EWR Reconciliation 2021 ending balance in Case No. U-21206

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Line No.	Description	Source	2021 Year-End Balance (1)	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
1	Return on Capitalized Costs														
2	Average Capitalized Costs	Line 11		2,168,779	2,127,811	2,086,843	2,045,874	2,004,906	1,963,938	1,922,969	1,882,001	1,841,032	1,800,064	1,759,096	1,718,127
3	Monthly Pre-Tax Rate of Return	A-34 line 10		0.746%	0.740%	0.740%	0.740%	0.740%	0.740%	0.740%	0.740%	0.745%	0.745%	0.745%	0.745%
4	Return on Capitalized Costs	Line 2 x Line 3		16,184	15,754	15,450	15,147	14,844	14,541	14,237	13,934	13,712	13,406	13,101	12,796
					16,184										
5	Ending Capitalized Costs														
6	Gross Plant	A-14 pg 4 Line 18	3,330,763	3,330,763	3,330,763	3,330,763	3,330,763	3,330,763	3,330,763	3,330,763	3,330,763	3,330,763	3,330,763	3,330,763	3,330,763
7	Accumulated Amortization	A-14 pg 4 Line 19 & 20	(364,281)	(419,794)	(475,307)	(530,819)	(586,332)	(641,845)	(697,357)	(752,870)	(808,383)	(863,896)	(919,408)	(974,921)	(1,030,434)
8	Net Plant	Line 6 + Line 7	2,966,482	2,910,969	2,855,456	2,799,944	2,744,431	2,688,918	2,633,406	2,577,893	2,522,380	2,466,868	2,411,355	2,355,842	2,300,329
9	Accumulated Deferred Taxes	Prior Bal. - A-40 Line 15	(777,218)	(762,674)	(748,130)	(733,585)	(719,041)	(704,497)	(689,952)	(675,408)	(660,864)	(646,319)	(631,775)	(617,231)	(602,686)
10	Ending Capitalized Costs	Line 8 + Line 9	2,189,264	2,148,295	2,107,327	2,066,359	2,025,390	1,984,422	1,943,453	1,902,485	1,861,517	1,820,548	1,779,580	1,738,611	1,697,643
11	Average Capitalized Costs	Simple avg of Line 10		2,168,779	2,127,811	2,086,843	2,045,874	2,004,906	1,963,938	1,922,969	1,882,001	1,841,032	1,800,064	1,759,096	1,718,127

Notes:

(1) Values in column (c) are taken from the approved 2021 EWR Reconciliation 2021 ending balance in Case No. U-21206

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
Line No.	Description	Source	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
1	Debt Ratio	(1)	48.00%	48.00%	48.00%	48.00%	48.00%	48.00%	48.00%	48.00%	48.00%	48.00%	48.00%	48.00%
2	Debt Cost	(2)	3.98%	3.98%	3.98%	3.98%	3.98%	3.98%	3.98%	3.98%	4.09%	4.09%	4.09%	4.09%
3	Revenue Conversion Factor	A-35 Col c, L9	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>
4	Debt Component	L1 x L2 x L3	1.91%	1.91%	1.91%	1.91%	1.91%	1.91%	1.91%	1.91%	1.96%	1.96%	1.96%	1.96%
5	Equity Ratio	(1)	52.00%	52.00%	52.00%	52.00%	52.00%	52.00%	52.00%	52.00%	52.00%	52.00%	52.00%	52.00%
6	Equity Cost	(1)	10.00%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%	9.90%
7	Revenue Conversion Factor	A-35 Col d, L9	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>	<u>1.3550</u>
8	Equity Component	L5 x L6 x L7	7.05%	6.98%	6.98%	6.98%	6.98%	6.98%	6.98%	6.98%	6.98%	6.98%	6.98%	6.98%
9	Annual Pre-Tax Rate of Return	Line 4 + Line 8	<u>8.95%</u>	<u>8.88%</u>	<u>8.88%</u>	<u>8.88%</u>	<u>8.88%</u>	<u>8.88%</u>	<u>8.88%</u>	<u>8.88%</u>	<u>8.94%</u>	<u>8.94%</u>	<u>8.94%</u>	<u>8.94%</u>
10	Monthly Pre-Tax Rate of Return	Line 9/12	<u>0.746%</u>	<u>0.740%</u>	<u>0.740%</u>	<u>0.740%</u>	<u>0.740%</u>	<u>0.740%</u>	<u>0.740%</u>	<u>0.740%</u>	<u>0.745%</u>	<u>0.745%</u>	<u>0.745%</u>	<u>0.745%</u>

Source
(1) Commission Order in DTE Gas's EWR Plans: U-20429 (Jan) and U-20881 (Feb-Dec)
(2) Provided by DTE Treasury Department

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Revenue Conversion Factors

Case No.: U-21313
 Witness: K. M. Vangilder
 Exhibit: A-35
 Page: 1 of 1

(a)		(b)	(c)	(d)
Line No.	Description	Source	Debt Conversion Percent	Equity Conversion Percent
1	Base		100.00%	100.00%
2	MCIT	(1)	0.00%	6.00%
3	Municipal Tax Base	(L1 - L2)	100.00%	94.00%
4	Municipal Tax Rate	(1)		0.56%
5	FIT Base	(L3 - L4)	100.00%	93.44%
6	FIT Rate	(1)		21.00%
7	FIT Tax	(L5 x L6)	0.00%	19.62%
8	Income	(L5 - L7)	100.00%	73.80%
9	Revenue Conversion Factor (Revenue Multiplier)	(L1 / L8)	1.0000	1.3550
10	Composite Federal, State, and Local Tax Rate	L1 - L8		26.20%

(1) Provided by DTE Tax Department

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Performance Incentive Reconciliation - All Classes
(\$)

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-36
Page: 1 of 1

Line No.	(a) Description	(b) Source	(c) Residential	(d) C&I	(e) EUT	(f) Total Col. (c)+(d)+(e)
<u>2020 Performance Incentive (PI)</u>						
1	PI Revenue Collected in 2022	Exhibit A-31 Col. (o)	5,625,578	1,368,100	1,526,828	8,520,507
2						
3	Approved 2020 Performance Incentive Revenue	(1)	<u>5,503,404</u>	<u>1,124,357</u>	<u>1,669,511</u>	<u>8,297,272</u>
4						
5	Over/(Under) Recovery of 2020 PI	Line 1 - Line 3	<u>122,175</u>	<u>243,743</u>	<u>(142,683)</u>	<u>223,235</u>

(1) Approved 2020 PI per U-20871 Order adjusted for 2018 PI over/(under) recovery calculated within that case
(Case No. U-20871, Exhibit A-24, Line 3)

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas Calculation of Surcharges to Recover Performance Incentive

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-37
Page: 1 of 1

	(a)	(b)	(c)	(d)	(e)	(f)
Line No.	Description	Source	Residential	C&I	EUT	Total
1	2022 Performance Incentive	(1)	\$ 5,103,181	\$ 1,960,831	\$ 2,046,751	\$ 9,110,763
2	2020 Performance Incentive Over/(Under) recovery balance	A-36, Line 5	122,175	243,743	(142,683)	223,235
3	Total Performance Incentive	Line 1 Less Line 2	\$ 4,981,006	\$ 1,717,088	\$ 2,189,434	\$ 8,887,528
4						
5	2024 Billing Determinants (MMcf)	(2)	112,069	45,268	144,940	
6						
7	Twelve Month Surcharge per Ccf	L3/L5/10,000	\$ 0.00444	\$ 0.00379	\$ 0.00151	

(1) Total expensed program costs per Exhibit A-14 for respective rate class X performance incentive % per Exhibit A-5
(2) 2024 billing determinants provided by DTE Gas Supply and Planning

Michigan Public Service Commission
DTE Gas Company
Energy Waste Reduction - 2022 Plan Reconciliation
Gas History of Billed Surcharges
(\$/Ccf)

Case No.: U-21313
Witness: K. M. Vangilder
Exhibit: A-38
Page: 1 of 1

Line No.	(a) Description	(b) Source	(c)	(d)	(e)	(f)	(g)	(h)
			1/1/2021 to 12/31/2021	1/1/2022 to 1/31/2022	2/1/2022 to 12/31/2022	1/1/2023 to 1/31/2023	2/1/2023 to 12/31/2023	1/1/2024 to 12/31/2024
1	<u>Residential</u> Rate A	(1) U-20429 - 2020-2021 Base EWR Surcharge	\$ 0.02476	\$ 0.02476	\$ -	\$ -	\$ -	\$ -
2		(2) U-20708 - 2019 Performance Incentive	0.00338	-	-	-	-	-
3		(3) U-20871 - 2020 Performance Incentive	-	0.00489	0.00489	-	-	-
4		(4) U-20881 - 2022-2023 Base EWR Surcharge	-	-	0.02742	0.02742	0.02742	0.02742
5		(5) U-21206 - 2021 Performance Incentive	-	-	-	-	0.00442	-
6		(6) U-21313 - 2022 Performance Incentive	-	-	-	-	-	0.00444
7		Sum of Lines 1 through 6	<u>\$ 0.02814</u>	<u>\$ 0.02965</u>	<u>\$ 0.03231</u>	<u>\$ 0.02742</u>	<u>\$ 0.03184</u>	<u>\$ 0.03186</u>
8								
9	<u>Commercial & Industrial</u> Rates 2A, GS-1, GS-2 (<100,000 Mcf), and S	(1) U-20429 - 2020-2021 Base EWR Surcharge	\$ 0.02346	\$ 0.02346	\$ -	\$ -	\$ -	\$ -
10		(2) U-20708 - 2019 Performance Incentive	0.00166	-	-	-	-	-
11		(3) U-20871 - 2020 Performance Incentive	-	0.00286	0.00286	-	-	-
12		(4) U-20881 - 2022-2023 Base EWR Surcharge	-	-	0.05254	0.05254	0.05254	0.05254
13		(5) U-21206 - 2021 Performance Incentive	-	-	-	-	0.00244	-
14		(6) U-21313 - 2022 Performance Incentive	-	-	-	-	-	0.00379
15		Sum of Lines 9 through 14	<u>\$ 0.02512</u>	<u>\$ 0.02632</u>	<u>\$ 0.05540</u>	<u>\$ 0.05254</u>	<u>\$ 0.05498</u>	<u>\$ 0.05633</u>
16								
17	<u>End User Transportation</u> Rates GS-2 (>100,000 Mcf), ST, LT, XLT and XXLT	(1) U-20429 - 2020-2021 Base EWR Surcharge	\$ 0.00151	\$ 0.00151	\$ -	\$ -	\$ -	\$ -
18		(2) U-20708 - 2019 Performance Incentive	0.00070	-	-	-	-	-
19		(3) U-20871 - 2020 Performance Incentive	-	0.00114	0.00114	-	-	-
20		(4) U-20881 - 2022-2023 Base EWR Surcharge	-	-	0.00339	0.00339	0.00339	0.00339
21		(5) U-21206 - 2021 Performance Incentive	-	-	-	-	0.00131	-
22		(6) U-21313 - 2022 Performance Incentive	-	-	-	-	-	0.00151
23		Sum of Lines 17 through 22	<u>\$ 0.00221</u>	<u>\$ 0.00265</u>	<u>\$ 0.00453</u>	<u>\$ 0.00339</u>	<u>\$ 0.00470</u>	<u>\$ 0.00490</u>
24								
25	EUT Exploratory Program	(1) U-20429 - 2020-2021 Base EWR Surcharge	\$ 0.00048	\$ 0.00048	\$ -	\$ -	\$ -	\$ -
26		(2) U-20708 - 2019 Performance Incentive	0.00070	-	-	-	-	-
27		(3) U-20871 - 2020 Performance Incentive	-	0.00114	0.00114	-	-	-
28		(4) U-20881 - 2022-2023 Base EWR Surcharge	-	-	0.00112	0.00112	0.00112	0.00112
29		(5) U-21206 - 2021 Performance Incentive	-	-	-	-	0.00131	-
30		(6) U-21313 - 2022 Performance Incentive	-	-	-	-	-	0.00151
31		Sum of Lines 25 through 30	<u>\$ 0.00118</u>	<u>\$ 0.00162</u>	<u>\$ 0.00226</u>	<u>\$ 0.00112</u>	<u>\$ 0.00243</u>	<u>\$ 0.00263</u>

- (1) 2020/2021 Base Surcharge approved November 19, 2020 - billed beginning December 1, 2020
(2) 2019 Performance Incentive Approved December 9, 2020 - billed beginning January 1, 2021 (effective through December 2021)
(3) 2020 Performance Incentive Approved September 24, 2021 - billed beginning January 1, 2022 (effective through December 2022)
(4) 2022/2023 Base Surcharge approved January 20, 2022 - billed beginning February 1, 2022
(5) 2021 Performance Incentive approved January 19, 2023 - billed beginning on February 1, 2023 (effective through December 2023)
(6) 2022 Performance Incentive pending approval

M.P.S.C. No. 1 – Gas
DTE Gas Company
(Revised pursuant to Case No. U-21206)

Revised Sheet No. D-2.00
Cancels _____ Revised Sheet No. D-2.00

D2. SURCHARGES AND INFRASTRUCTURE RECOVERY MECHANISM

D2.1 Surcharges

Rate Schedule No.	U-21313 Energy Waste Reduction Surcharge \$/Ccf	U-20940 IRM Surcharge \$/Customer
A Residential	<i>\$0.03186</i>	\$2.19
2A Multifamily Dwelling Class I	<i>\$0.05633</i>	\$14.03
2A Multifamily Dwelling Class II	<i>\$0.05633</i>	\$14.03
GS-1 Non-Residential General Service	<i>\$0.05633</i>	\$10.06
GS-2 Large Volume		\$10.06
<100,000 Mcf	<i>\$0.05633</i>	
>100,000 Mcf	<i>\$0.00490</i>	
S School	<i>\$0.05633</i>	\$133.58
ST Small Volume Transportation	<i>\$0.00490</i>	\$507.24
LT Large Volume Transportation	<i>\$0.00490</i>	\$2,466.62
XLT Extra Large Volume Transportation	<i>\$0.00490</i>	\$14,011.30
XXLT Double Extra Large Volume Transportation	<i>\$0.00490</i>	\$3,502.51
C&I/EUT Exploratory Program	<i>\$0.00263</i>	

In addition to the above surcharges/ (credits), Rate Schedules A, 2A, GS-1, GS-2, and S are subject to Rule C7, Gas Cost Recovery, and may be subject to Rule C8, Customer Attachment Program.

The Energy Waste Reduction Surcharge is implemented on a “bills rendered” basis and is effective for a twelve-month period commencing with the billing cycle following January 1, 2024 and ending December 31, 2024.

The IRM is effective beginning with the first cycle of the January 2022 billing month and will change on a bill cycle basis thereafter each January based on the tables on Sheet No. D-2.01

This is only the proposed incremental language for the EWR surcharge. This language would be added to the current Sheet D-2 in effect at the time the surcharge was approved. Because the surcharge(s) currently in effect may change between the time this sheet is proposed and its approval, only the language and rates at issue in this case are included. DTE Gas proposes this incremental language tariff to avoid confusion at the time of final tariff issuance.

Issued _____, 202__
M. Bruzzano
Vice President
Corporate Strategy & Regulatory Affairs
Detroit, Michigan

Effective for bills rendered on and after the first billing cycle of _____, 202__

Issued under authority of the
Michigan Public Service Commission
and dated _____, 202__ in Case No. U-21313
and dated December 9, 2021 in Case No. U-20940

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

QUALIFICATIONS

AND

DIRECT TESTIMONY

OF

REEMA A. BIEL

DTE ELECTRIC COMPANY AND DTE GAS COMPANY
QUALIFICATIONS AND DIRECT TESTIMONY OF REEMA A. BIEL

Line
No.

1 **Q1. What is your name, business address, and by whom are you employed?**

2 A1. My name is Reema A. Biel (she/her/hers). My business address is DTE Energy,
3 One Energy Plaza, Detroit, Michigan 48226. I am employed by DTE Energy
4 Corporate Services, LLC.

5

6 **Q2. On whose behalf are you testifying?**

7 A2. I am testifying on behalf of DTE Electric Company (DTE Electric) and DTE Gas
8 Company (DTE Gas) (collectively, DTE).

9

10 **Q3. What is your educational background?**

11 A3. I earned a Bachelor of Accountancy from Walsh College in 1999 and earned my
12 Certified Public Accounting License in 2003.

13

14 **Q4. What work experience do you have?**

15 A4. In 1995, I joined Coopers & Lybrand (“C&L”) individual tax practice primarily
16 working on income tax compliance. In 1998, C&L merged with Price Waterhouse,
17 forming PricewaterhouseCoopers (“PwC”) in which I began working in their
18 Business Compliance Group. In 2002, I was promoted to Tax Manager responsible
19 for the preparation and review of federal, state, and foreign income tax returns for
20 multi-national corporations. In addition, I was responsible for the review of federal,
21 state, and foreign quarterly and annual tax provision for multi-national companies.
22 I joined DTE Energy Company’s Tax Department in 2007 as a Tax Principal
23 responsible for the preparation and review of the DTE Energy’s federal income tax
24 returns and forecasts. I was promoted to Regulatory Tax Manager in February 2016

Line
No.

1 responsible for federal, state, and local income tax accounting and tax forecasting
2 for all regulatory filings.

3

4 **Q5. Have you previously sponsored testimony before the Michigan Public Service**
5 **Commission (MPSC)?**

6 A5. Yes, I have sponsored testimony in the following cases:

7 U-20364 – DTE Electric 2018 TRM Reconciliation

8 U-20366 – DTE Electric 2018 EWR Reconciliation

9 U-20369 – DTE Gas 2018 EWR Reconciliation

10 U-20703 – DTE Electric 2019 EWR Reconciliation

11 U-20708 – DTE Gas 2019 EWR Reconciliation

12 U-20711 – DTE Electric 2019 TRM Reconciliation

13 U-20373 – DTE Electric 2020-2021 EWR Plan

14 U-20429 – DTE Gas 2020-2021 EWR Plan

15 U-20866 – DTE Electric 2020 EWR Reconciliation

16 U-20871 – DTE Gas 2020 EWR Reconciliation

17 U-20987 – DTE Electric 2020 TRM Reconciliation

18 U-20881 – DTE Gas 2022-2023 EWR Plan Filing

19 U-20876 – DTE Electric 2022-2023 EWR Plan Filing

20 U-21206 – DTE Electric & DTE Gas 2021 EWR Reconciliation

21 U-21307 – DTE Electric 2021 & 2022 TRM Reconciliation

Line
No.

1 **Q6. What is the purpose of your testimony?**

2 A6. The purpose of my testimony is to discuss and support the calculation of deferred
3 taxes included in DTE's 2022 EWR Reconciliation.

4

5 **Q7. Are you sponsoring any exhibits in this proceeding?**

6 A7. Yes. I am supporting the following exhibits:

7 Exhibit Description

8 A-40 DTE Electric and DTE Gas Deferred Income Tax Liability

9

10 **Q8. Were these exhibits prepared by you or under your direction?**

11 A8. Yes, they were.

12

13 **Q9. How is the net deferred tax liability balance calculated for DTE Electric and**
14 **DTE Gas?**

15 A9. The monthly net DTE Electric deferred tax liability (DTL) balance is calculated on
16 lines 22 through 30 of Exhibit A-40 p1. The ending balance on line 25 is calculated
17 by starting with the beginning balance on line 22 and adding the change during
18 2022, which is based on deferred tax activity from line 20. The net DTL on line 31
19 also includes the monthly amortization on lines 28 and 29 related to the 2017 Tax
20 Cuts and Jobs Act (TCJA) regulatory liability for the indicated customer classes.

21

22 The monthly net DTE Gas deferred tax liability (DTL) balance is calculated on
23 lines 22 through 25 of Exhibit A-40 p2. The ending balance on line 25 is calculated
24 by starting with the beginning balance on line 22 and adding the change during
25 2022, which is based on deferred tax activity from line 20.

Line
No.

1 **Q10. How did you calculate DTE's deferred tax activity on Exhibit A-40?**

2 A10. DTE Electric's deferred tax activity is calculated on lines 1 through 20 on exhibit
3 A-40 p1. For each of the three customer classes, the deferred tax represents the
4 difference between the book and tax treatment of Capitalized Program Costs
5 multiplied by the composite tax rate of 25.9%. It also includes the monthly TCJA
6 regulatory liability amortization on line 28 and line 29. The monthly amounts
7 calculated on lines 5, 10, 15, 28 and 29, are used by DTE Witness Mr. Vangilder to
8 adjust the monthly accumulated deferred tax balance for the corresponding
9 customer class on line 9 of Exhibit A-22, pages 1-3.

10

11 DTE Gas's deferred tax activity is calculated on lines 1 through 20 exhibit A-40
12 p2. For each of the three customer classes, the deferred tax represents the difference
13 between the book and tax treatment of Capitalized Program Costs multiplied by the
14 composite tax rate of 26.2%. The monthly amounts calculated on lines 5, 10, 15,
15 and 20, are used by Witness Vangilder to adjust the monthly accumulated deferred
16 tax balance for the corresponding customer class on line 9 of Exhibit A-33, pages
17 1-3.

18

19 **Q11. What is the difference between the book and tax treatment of Capitalized**
20 **Program Costs?**

21 A11. For DTE Electric, the EWR program costs that were capitalized for book purposes
22 in tax years 2021 and prior were deducted in the year incurred for tax purposes.

23

24 For DTE Gas, the EWR program costs that were capitalized for book purposes in
25 tax years 2020 and 2021 were deducted in the year incurred for tax purposes.

Line
No.

1 Starting in tax year 2022 for DTE Electric and DTE Gas, EWR program costs are
2 deducted in the year incurred for both book and tax purposes.

3

4 **Q12. Does the TCJA regulatory liability have an impact on DTE's EWR**
5 **reconciliation?**

6 A12. Yes. For DTE Electric, the TCJA regulatory liability related to EWR Program costs
7 is a component of total deferred taxes on Exhibit A-40 p1, line 31. The TCJA
8 regulatory liability activity is reflected on Exhibit A-40 p1, line 27 through line 30
9 with current year amortization on line 28 and line 29.

10

11 For DTE Gas, EWR Program costs were treated as O&M for book and tax purposes
12 through 2019. As a result, there were no deferred taxes related to EWR Program
13 costs at 12/31/2017 that needed to be re-measured, and, therefore, no corresponding
14 TCJA regulatory liability was established within the DTE Gas EWR Program.

15

16 **Q13. Is the overall methodology for amortizing the TCJA regulatory liability for**
17 **excess deferred taxes related to DTE Electric consistent with prior**
18 **Commission orders?**

19 A13. Yes. Amortization started in May 2019 and continues to follow the same overall
20 methodology approved in DTE Electric's Case No. U-20162.

21

22 **Q14. Is the amortization of the TCJA regulatory liability reflected as a reduction to**
23 **DTE Electric's EWR program over/(under)-recovery for this filing?**

24 A14. Yes. The amortization of the TCJA regulatory liability is reflected as a reduction
25 to the EWR program over/(under) cost recovery on Witness Vangilder's Exhibit A-

Line
No.

1 19, line 6. Since the amortization of the TCJA regulatory liability is post tax
2 adjustments, in order to include it in the pre-tax EWR program over/(under) cost
3 recovery, it must be grossed up (increased) for taxes.

4

5 **Q15. Does this complete your direct testimony?**

6 A15. Yes, it does.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the)
Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY and)
DTE GAS COMPANY to fully comply with)
Public Act 295 of 2008, as amended by)
Public Act 342 of 2016.)
_____)

Case No. U-21313
(Paperless e-file)

EXHIBITS

OF

REEMA A. BIEL

Line No.	(a) Description	(b) Source	(c) Jan-22	(d) Feb-22	(e) Mar-22	(f) Apr-22	(g) May-22	(h) Jun-22	(i) Jul-22	(j) Aug-22	(k) Sep-22	(l) Oct-22	(m) Nov-22	(n) Dec-22	(o) Total 2022
1	Total 2022 Program Costs Capitalized - Residential	A-10, Page 2, Line 12	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Book Amortization	A-10, Page 2, Line 13	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Difference	Line 1 - Line 2	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Tax Rate		25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%
5	Deferred Tax - Residential	Line 3 x Line 4	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Total 2022 Program Costs Capitalized - C & I Secondary	A-10, Page 3, Line 12	(0)	(0)	0	0	(0)	-	-	-	(0)	-	-	-	(0)
7	Book Amortization	A-10, Page 3, Line 13	577,033	577,033	577,034	577,034	577,035	577,036	601,420	601,420	601,421	601,421	601,422	601,422	7,070,731
8	Difference	Line 6 - Line 7	(577,033)	(577,033)	(577,034)	(577,034)	(577,035)	(577,036)	(601,420)	(601,420)	(601,421)	(601,421)	(601,422)	(601,422)	(7,070,731)
9	Tax Rate		25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%
10	Deferred Tax - Secondary C & I	Line 8 x Line 9	(149,452)	(149,452)	(149,452)	(149,452)	(149,452)	(149,452)	(155,768)	(155,768)	(155,768)	(155,768)	(155,768)	(155,768)	(1,831,319)
11	Total 2022 Program Costs Capitalized - C & I Primary	A-10, Page 4, Line 12	(0)	(0)	0	0	(0)	-	-	-	(0)	-	-	-	(0)
12	Book Amortization	A-10, Page 4, Line 13	1,141,827	1,141,827	1,141,826	1,141,825	1,141,825	1,141,824	1,117,440	1,117,440	1,117,439	1,117,439	1,117,438	1,117,438	13,555,588
13	Difference	Line 11 - Line 12	(1,141,827)	(1,141,827)	(1,141,826)	(1,141,825)	(1,141,825)	(1,141,824)	(1,117,440)	(1,117,440)	(1,117,439)	(1,117,439)	(1,117,438)	(1,117,438)	(13,555,588)
14	Tax Rate		25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%
15	Deferred Tax - C & I Primary	Line 13 x Line 14	(295,733)	(295,733)	(295,733)	(295,733)	(295,733)	(295,733)	(289,417)	(289,417)	(289,417)	(289,417)	(289,416)	(289,416)	(3,510,897)
16	Total 2022 Program Costs Capitalized - All Programs	Line 1 + Line 6 + Line 11	(0)	(0)	0	0	(0)	-	-	-	(0)	-	-	-	(0)
17	Total Book Amortization	Line 2 + Line 7 + Line 12	1,718,860	1,718,860	1,718,860	1,718,860	1,718,860	1,718,860	1,718,860	1,718,860	1,718,860	1,718,860	1,718,860	1,718,860	20,626,319
18	Difference	Line 16 - 17	(1,718,860)	(1,718,860)	(1,718,860)	(1,718,860)	(1,718,860)	(1,718,860)	(1,718,860)	(1,718,860)	(1,718,860)	(1,718,860)	(1,718,860)	(1,718,860)	(20,626,319)
19	Tax Rate		25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%	25.90%
20	Deferred Tax - All Programs Total	Line 18 x Line 19	(445,185)	(445,185)	(445,185)	(445,185)	(445,185)	(445,185)	(445,185)	(445,185)	(445,185)	(445,185)	(445,185)	(445,185)	(5,342,217)
21	Deferred Tax Asset/(Liability) DTA/(DTL)														
22	DTA/(DTL) Beginning Balance	A-22, pg 2 & pg 3, Col (c), Line 9	(17,189,791)	(16,744,606)	(16,299,422)	(15,854,237)	(15,409,052)	(14,963,867)	(14,518,683)	(14,073,498)	(13,628,313)	(13,183,129)	(12,737,944)	(12,292,759)	(17,189,791)
23	Change in Balance	Line 20	445,185	445,185	445,185	445,185	445,185	445,185	445,185	445,185	445,185	445,185	445,185	445,185	5,342,217
24	Rate Adjustment		-	-	-	-	-	-	-	-	-	-	-	-	-
25	DTA/(DTL) Ending Balance	Line 22 + Line 23 + Line 24	(16,744,606)	(16,299,422)	(15,854,237)	(15,409,052)	(14,963,867)	(14,518,683)	(14,073,498)	(13,628,313)	(13,183,129)	(12,737,944)	(12,292,759)	(11,847,574)	(11,847,574)
26	TCJA Regulatory Asset/(Liability)														
27	TCJA Regulatory Asset/(Liability) Beginning Balance		(2,938,896)	(2,917,326)	(2,895,756)	(2,874,186)	(2,852,616)	(2,831,046)	(2,809,477)	(2,787,907)	(2,766,337)	(2,744,767)	(2,723,197)	(2,701,627)	(2,938,896)
28	C&I Secondary - Amortization	WP-RB-1 (TCJA Amort)	12,299	12,299	12,299	12,299	12,299	12,299	12,299	12,299	12,299	12,299	12,299	12,299	147,592
29	C&I Primary - Amortization	WP-RB-1 (TCJA Amort)	9,271	9,271	9,271	9,271	9,271	9,271	9,271	9,271	9,271	9,271	9,271	9,271	111,247
30	TCJA Regulatory Asset/(Liability) Ending Balance	Line 27 + Line 28 + Line 29	(2,917,326)	(2,895,756)	(2,874,186)	(2,852,616)	(2,831,046)	(2,809,477)	(2,787,907)	(2,766,337)	(2,744,767)	(2,723,197)	(2,701,627)	(2,680,057)	(2,680,057)
31	Net Deferred Taxes	Line 25 + Line 30	(19,661,932)	(19,195,178)	(18,728,423)	(18,261,669)	(17,794,914)	(17,328,159)	(16,861,405)	(16,394,650)	(15,927,896)	(15,461,141)	(14,994,386)	(14,527,632)	(14,527,632)

Line No.	(a) Description	(b) Source	(c) Jan-22	(d) Feb-22	(e) Mar-22	(f) Apr-22	(g) May-22	(h) Jun-22	(i) Jul-22	(j) Aug-22	(k) Sep-22	(l) Oct-22	(m) Nov-22	(n) Dec-22	(o) Total 2022
1	Total 2022 Program Costs Capitalized - Residential	A-14, Page 2, Line 12	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Book Amortization	A-14, Page 2, Line 13	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Difference	Line 1 - Line 2	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Tax Rate		26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%
5	Deferred Tax - Residential	Line 3 x Line 4	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Total 2022 Program Costs Capitalized - Commercial & Industrial	A-14, Page 3, Line 12	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Book Amortization	A-14, Page 3, Line 13	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	28,289	339,465
8	Difference	Line 6 - Line 7	(28,289)	(28,289)	(28,289)	(28,289)	(28,289)	(28,289)	(28,289)	(28,289)	(28,289)	(28,289)	(28,289)	(28,289)	(339,465)
9	Tax Rate		26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%
10	Deferred Tax - Commercial & Industrial	Line 8 x Line 9	(7,412)	(7,412)	(7,412)	(7,412)	(7,412)	(7,412)	(7,412)	(7,412)	(7,412)	(7,412)	(7,412)	(7,412)	(88,940)
11	Total 2022 Program Costs Capitalized - End-User Transportation	A-14, Page 4, Line 12	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Book Amortization	A-14, Page 4, Line 13	55,513	55,513	55,513	55,513	55,513	55,513	55,513	55,513	55,513	55,513	55,513	55,513	666,153
13	Difference	Line 11 - Line 12	(55,513)	(55,513)	(55,513)	(55,513)	(55,513)	(55,513)	(55,513)	(55,513)	(55,513)	(55,513)	(55,513)	(55,513)	(666,153)
14	Tax Rate		26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%
15	Deferred Tax - End-User Transportation	Line 13 x Line 14	(14,544)	(14,544)	(14,544)	(14,544)	(14,544)	(14,544)	(14,544)	(14,544)	(14,544)	(14,544)	(14,544)	(14,544)	(174,532)
16	Total 2022 Program Costs Capitalized - All Programs	Line 1 + Line 6 + Line 11	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Total Book Amortization	Line 2 + Line 7 + Line 12	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	83,801	1,005,617
18	Difference	Line 16 - 17	(83,801)	(83,801)	(83,801)	(83,801)	(83,801)	(83,801)	(83,801)	(83,801)	(83,801)	(83,801)	(83,801)	(83,801)	(1,005,617)
19	Tax Rate		26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%	26.20%
20	Deferred Tax - All Programs Total	Line 18 x Line 19	(21,956)	(21,956)	(21,956)	(21,956)	(21,956)	(21,956)	(21,956)	(21,956)	(21,956)	(21,956)	(21,956)	(21,956)	(263,472)
21	Deferred Tax Asset/(Liability) DTA/(DTL)														
22	DTA/(DTL) Beginning Balance	A-33, pg 2, pg 3 & pg 4 , Col (c), Line 7	(1,173,235)	(1,151,279)	(1,129,323)	(1,107,367)	(1,085,411)	(1,063,455)	(1,041,499)	(1,019,543)	(997,587)	(975,632)	(953,676)	(931,720)	(1,173,235)
23	Change in Balance	Line 20	21,956	21,956	21,956	21,956	21,956	21,956	21,956	21,956	21,956	21,956	21,956	21,956	263,472
24	Rate Adjustment		-	-	-	-	-	-	-	-	-	-	-	-	-
25	DTA/(DTL) Ending Balance	Line 22 + Line 23 + Line 24	(1,151,279)	(1,129,323)	(1,107,367)	(1,085,411)	(1,063,455)	(1,041,499)	(1,019,543)	(997,587)	(975,632)	(953,676)	(931,720)	(909,764)	(909,764)
26	Net Deferred Taxes	Line 25	(1,151,279)	(1,129,323)	(1,107,367)	(1,085,411)	(1,063,455)	(1,041,499)	(1,019,543)	(997,587)	(975,632)	(953,676)	(931,720)	(909,764)	(909,764)

Note -- EWR Program Costs were treated as O&M for book and tax purposes as of 12/31/2019. As a result, there was no deferred tax liability related to EWR Program Costs to re-measure as of 12/31/2017 resulting from 2017 Tax Cut and Jobs Act (TCJA).

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,)
regarding the regulatory reviews, revisions,)
determinations, and/or approvals necessary for)
DTE ELECTRIC COMPANY AND)
DTE GAS COMPANY)
to fully comply with Public Act 295 of 2008,)
as amended by Public Act 342 of 2016.)

Case No. U-21313
(Paperless e-file)

PROOF OF SERVICE

ESTELLA R. BRANSON states that on June 16, 2023, she served a copy of DTE Gas Company's and DTE Electric Company's Application, Direct Testimony and Exhibits of Witnesses, Reema A. Biel, Kevin L. Bilyeu, Brandon Murray, Joshua Rego, and Kirk M. Vangilder and Direct Testimony of Witnesses, Philip A. Guster, Rebecca M. Malfroid, and Thac K. Nguyen in the above captioned matter, via electronic mail upon the persons listed on the attached service list.

ESTELLA R. BRANSON

MPSC Case No. U-21313
Service List

MPSC STAFF

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