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** to fully comply with Public Act 295 of 2008, as amended by Public Act 342 of 2016.	U-20876 ALJ Dennis Mack

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REVISED

TESTIMONY OF ROGER COLTON

ON BEHALF OF

**SIERRA CLUB, THE ECOLOGY CENTER,
AND NATURAL RESOURCES DEFENSE COUNCIL**

November 29, 2021

~~**October 6, 2021**~~

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I. INTRODUCTION & QUALIFICATIONS

Q. Please state for the record your name and business address.

A. My name is Roger Colton. My business address is 34 Warwick Road, Belmont, MA 02478.

Q. By whom are you employed and in what position?

A. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to a variety of federal and state agencies, consumer organizations, and public utilities on rate and customer service issues involving water/sewer, natural gas, and electric utilities.

Q. On whose behalf is this testimony being offered?

A. I am testifying on behalf of Sierra Club ("SC"), the Ecology Center, and Natural Resources Defense Council ("NRDC").

Q. Please describe your professional background.

A. I work primarily on low-income utility issues. This involves regulatory work on rate and customer service issues, as well as research into low-income usage, payment patterns, and affordability programs. At present, I am working on various projects in the states of New Hampshire, Maryland, Pennsylvania, Michigan, and Washington. My clients include state agencies (*e.g.*, Pennsylvania Office of Consumer Advocate, Maryland Office of People's Counsel, Illinois Office of Attorney General), federal agencies (*e.g.*, the U.S. Department of Health and Human Services), community-based organizations (e.g., Legal Assistance of New Hampshire, Action Centre Tenants Ontario, BC Public Interest Advocacy Centre), and private utilities (e.g., Unitil Corporation d/b/a Fitchburg

Gas and Electric Company, Entergy Services, Xcel Energy d/b/a Public Service of Colorado). In addition to state- and utility-specific work, I engage in national work throughout the United States. For example, in 2011, I worked with the U.S. Department of Health and Human Services (the federal Low Income Home Energy Association Program, or "LIHEAP", office) to create the Home Energy Insecurity Scale and to advance its utilization as an outcome measurement tool for LIHEAP and other low-income utility bill affordability programs. In 2016, I was part of a team that engaged in a study for the Water Research Foundation on how to reach "hard to reach" customers. I just completed a study of the affordability of water service in twelve United States cities for the London-based newspaper The Guardian. A summary description of my professional background is provided in Exhibit SC-1.

Q. Please explain your previous work on utility low-income bill assistance.

A. Over the course of the past 35 years, I have frequently been involved with the planning, implementation, and evaluation of bill assistance programs for low-income households. In the past year, I have designed a water affordability program for the City of Baltimore and consulted with the California Public Utilities Commission in its consideration of how to address affordability in that state. In 2019, I worked for the Pennsylvania Office of Consumer Advocate in the Pennsylvania Public Utility Commission's ("PUC") generic proceeding reviewing bill affordability programs in that state. In past years, amongst other activities, I was the consultant for the Staff of the New Hampshire PUC in its development of an Electric Assistance Program ("EAP"); for the Staff of the Maine PUC in that state's design of a fixed-payment Percentage of Income Payment Program ("PIPP") for its electric utilities; for the Maryland Office of People's Counsel in that

state's design of its Electric Universal Service Program ("EUSP"); for the New Jersey Division of the Rate Counsel in that state's design of its Universal Service Fund ("USF"); and for the staff of the Ontario Energy Board in that province's development of its Ontario Electricity Support Program ("OESP"). I have been retained by SC to assist in the development of low-income affordability programs in Virginia pursuant to the Virginia Clean Economy Act (S.B. 851; H.B. 1526), which went into effect on July 1, 2020. I have been retained by the Maryland Office of People's Counsel to assist in the development of low-income affordability programs in Maryland pursuant to House Bill 606, relating to Electricity and Gas Limited-Income Mechanisms and Assistance.

I consulted with and for the Philadelphia City Council on the development of that city's water affordability program, was named the Detroit City Council's representative to the Detroit Blue Ribbon Panel on Water Affordability, and most recently completed the development of a Water Affordability Plan for the City of Toledo, Ohio. I was hired as the evaluator of low-income assistance programs by Missouri Gas Energy, Public Service Company of Colorado, and Empire District Electric.

Q. Please describe your educational background.

A. After receiving my undergraduate degree in 1975 from Iowa State University, I obtained further training in both law and economics. I received my law degree in 1981 from the University of Florida and I received my master's degree in Regulatory Economics from the MacGregor School, Antioch University, in 1993.

Q. Have you published on public utility regulatory issues?

A. Yes. I have published three books and more than 80 articles in scholarly and trade journals, primarily on low-income utility and housing issues. I have published an equal number of technical reports for various clients on energy, water, telecommunications, and other associated low-income utility issues. My most recent publication is a chapter in the book, "Energy Justice: US and International Perspectives," published by Edward Elgar. My chapter was titled, "The equities of efficiency: distributing usage reduction dollars." It offers an objective definition of "equity" based on legal and economic doctrines. A summary list of my publications is included in Exhibit SC-1.

Q. Have you testified before this Commission or as an expert in any other proceeding?

A. I have previously testified before the Michigan Public Service Commission ("Commission") in the following cases:

- Case U-18255 (DTE Electric Company's 2017 General Rate Case);
- Case U-18262 (DTE Electric Company's 2018–19 Energy Waste Reduction Plan);
- Case U-20373 (Company's 2020–21 Energy Waste Reduction Plan);
- Case U-20429 (DTE Gas Company's 2020–21 Energy Waste Reduction Plan);
- Case U-20561 (DTE Electric Company's 2020 General Rate Case).

More generally, I have testified in more than 250 regulatory proceedings in more than 35 states and various Canadian provinces on a wide range of utility issues. A list of the jurisdictions in which I have testified is listed in Exhibit SC-2.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my Direct Testimony in this proceeding is as follows:

- First, I discuss the meaning of "equity" in the distribution of energy waste reduction investments made through ratepayer-funded programs;
- Second, I examine the extent to which DTE Electric Company's ("DTE" or the "Company") proposed low-income energy waste reduction spending in this electric Energy Waste Reduction ("EWR") proceeding results in an inequitable distribution of low-income EWR investments;
- Third, I explain the results of my examination of the geographic distribution of DTE's spending on low-income EWR over the last ten years to determine whether DTE has consistently invested in areas with the greatest need; I examine DTE's investments in energy waste reduction through the Energy Efficiency Assistance and the Income-Qualified Multi-Family program in particular;
- Fourth, I examine the extent to which DTE's investments in low-income energy waste reduction can generate additional utility-related benefits above and beyond the benefits associated with the "traditional" notions of "avoided costs" (e.g., energy and capacity costs, environmental compliance costs);
- Fifth, I examine DTE's investments in energy waste reduction through the Low-Income Multi-Family program in particular;
- Sixth,I recommend that DTE increase its overall budget for both single-family and multi-family income-qualified EWR programs. There has been a large shortfall historically which is not remedied by the budget amounts proposed in this plan, DTE has not funded its low-income programs at a level that would exhaust the administrative capacity to deliver energy waste reduction services, and additional budget is required to address the specific programmatic shortfalls and reporting and tracking needs discussed in Mr. Neme, Ms. Brindel, and Mr. Lewis's testimonies, as well as my own, filed in this case. To truly capitalize on the benefits of neighborhood-based delivery through improved outreach as well as coordination to leverage other sources of funding, as described in Mr. Lewis's testimony, additional budget may be necessary; and
- Finally, I make a series of recommendations regarding data that DTE should be reporting on low-income customers who are being served through the Company's low-income program.

Q. Are you sponsoring any exhibits?

A. Yes, I am sponsoring the following exhibits:

Exhibit SC-1:	Resume (or CV) of Roger Colton
Exhibit SC-2:	Total Electric Incentive by Vulnerable/Non-Vulnerable Census Measures, and Number of Vulnerability Factors (Percent by Row)
Exhibit SC-3:	Total Electric Incentive by Vulnerable/Non-Vulnerable Census Measures, and Number of Vulnerability Factors (Percent by Column)
Exhibit SC-4:	Low-Income Housing Tax Credit Multi-Family Developments in High Burden Zip Codes
Exhibit SC-5:	Case No. U-20876, Responses to SCDE
Exhibit SC-6:	List of major measures
Exhibit SC-7:	Case No. U-20876, Response to NRDCNHTECDE

II. THE MEANING OF EQUITY IN THE DISTRIBUTION OF ENERGY WASTE REDUCTION INVESTMENTS

Q. Please describe the purpose of this section of your testimony.

A. In this section of my testimony, I present an objective definition of the term "equitable" (or, similarly, "equity") within the context of the distribution of ratepayer-funded utility investments in energy waste reduction measures. I compare this definition of equity to DTE's approach to the distribution of its low-income EWR spending. I find that the DTE approach to equity has serious shortcomings.

Q. How is the principle of "equity" presented in DTE's distribution of low-income EWR funding?

A. DTE does not systematically address the degree to which its low-income EWR program(s) result in the equitable distribution of EWR investments. The word "equitable" never appears as a description of DTE's low-income EWR program. DTE witness Jeffrey LeBrun does state that DTE seeks to ensure an equitable distribution of workforce development funds.[1] He states, in this regard, that "the Company defines equity as recognizing that each person has varying circumstances or requirements to ensure equality (or the delivery of equal resources in this context) is reached."[2] In other words, according to Mr. LeBrun, DTE views "equity" to be the same as "equal" ("ensure equality," "delivery of equal resources").

Mr. LeBrun' definition of equity does not reconcile with his definition of "inclusion." Again, with respect to workforce development, not with respect to the distribution of EWR investments, Mr. LeBrun[3] He does not acknowledge that delivering "equal resources" not only may not, but likely will not, result in "equal opportunities and access" to services. While Mr. LeBrun uses the word "balanced" in reference to DTE's EWR investments, he concedes that the intent of that word only "refers to the commensurate amount of resources allocated *to each customer class*[4] "Balanced" refers to allocations

[1] Qualifications and Revised Direct Test. of Jeffrey C. Lebrun, at 18:7–10, Case No. U-20876 (Sept. 29, 2021) ("Lebrun Direct").
[2] Ex. SC-5, Case No. U-20876, Response to SCDE-1.1a.
[3] *Id.* at SCDE-1.1b.
[4] Ex. SC-5, Case No. U-20876, Response to SCDE-1.19 (emphasis added).

of EWR investments *between customer classes*, which may not adequately address low-income needs.

Q. What does DTE witness Bilyeu testify regarding participation opportunities?

A. Mr. Bilyeu states that DTE seeks to "offer a diverse portfolio of programs that provide participation opportunities for all customers."[5] Again, however, when asked to explain what he meant by that statement, Mr. Bilyeu stated that "participation opportunities" means "a set of energy waste reduction programs that include offerings for each customer class, including low-income residential."[6] So long as DTE provides an "offering" to each customer class, in other words, Mr. Bilyeu's testimony is that DTE is providing "participation opportunities for all customers." The extent to which there is a take-up of those "offerings" is neither considered nor tracked by DTE.[7] According to DTE, so long as "participation opportunities" are "available," its responsibility to ensure that its distribution of investment dollars is equitable is fulfilled.[8] The Company states quite explicitly that "Income qualified programs are *available* to all customers meeting the income eligibility requirements."[9]

While DTE asserts that its low-income programs are "available to all customers," the Company does not collect data regarding the demographic distribution of its low-income EWR investments to ensure that those dollars are equitably distributed. According to DTE, "The Company is not aware of any documents that discuss income-qualified

[5] Qualifications and Revised Direct Test. of Kevin L. Bilyeu, at 8:18–19, Case No. U-20876 (Sept. 29, 2021) ("Bilyeu Direct").
[6] Ex. SC-5, Case No. U-20876, Response to SCDE-1.32a; see also *id.* at SCDE-1.32c.
[7] *Id.* at SCDE-1.32e ("A ratio between participation and participation opportunities is not available.").
[8] Ex. SC-5, Case No. U-20876, Response to SCDE-1.43a–d.
[9] Ex. SC-5, Case No. U-20876, Response to SCDE-1.41c (emphasis added).

program objectives by census tract, zip code, or community."[10] DTE states further that "The Company is not aware of any documents that discuss income-qualified program objectives by race/ethnicity."[11] DTE states finally that "The Company is not aware of any documents that discuss income-qualified program objectives by energy burden."[12]

Q. Is DTE's approach to equity in the distribution of its low-income energy waste reduction investments adequate?

A. No. DTE's approach seems to misunderstand equity at a basic level. In assessing the equity of energy waste reduction investments, an important distinction lies between *equality* of investment and *equity* of investment. Equality of funding means that every recipient of assistance receives the same amount of funding. Equality would require that the aid-provider treat everyone the same. Equity of funding means that every recipient receives an amount reflective of their needs. In other words, equity would require that DTE supply EWR investments sufficient to meet the needs of the assisted population (including making up for past lack of investments). Thus, equality of assistance is very likely to be inequitable and inadequate to serve the population most in need in DTE's territory.

Q. Is this distinction applied in the context of other economic issues?

A. Yes. From a cost perspective, both state aid to schools and utility waste reduction investments present the distinction quite clearly. On the one hand, some school districts have higher costs than other school districts do. They may have a higher percentage of

[10] *Id*. at SCDE-1.41a.
[11] *Id*. at SCDE-1.41b.
[12] *Id*. at SCDE-1.41d.

special needs students or they may have a deeper penetration of poverty. To treat such school districts the same would provide equal, yet inequitable, funding. Similarly, some housing units may have special needs, being older and in poorer physical condition, and some households may live in deep poverty. Accordingly, to provide an equal amount of funding to each unit of housing may represent equality, yet not represent equity in services.

Q. Is there a formally recognized, commonly accepted, reference to the description of equity you describe above?

A. Yes, it is the difference between vertical and horizontal equity. "Vertical equity" requires that the distribution of assistance be explicitly varied to reflect differences in needs, unlike "horizontal equity," which provides that benefits be distributed equally regardless of need.

A vertical equity regime recognizes that "equity" often requires unequal treatment to achieve equal outputs. Vertical equity has frequently been discussed and applied in the school finance arena. Exclusively thinking in terms of horizontal equity, and/or failing to meet vertical equity standards is a form of passive discrimination by failing to treat individuals with measurably different needs differently.

Vertical equity recognizes that certain factors relating to the characteristics of the recipient of aid require additional resources to address. Education finance and energy waste reduction investments have much in common in this respect, as I have noted above. Just as a component of the equity framework in school finances must accept that some unequal students should have access to unequal levels of resources, an equity framework must also

accept that some unequal energy consumers, as well as housing units, should have access to unequal levels of resources.

Q. Explain the practical significance of this discussion to decision-making regarding DTE's low-income EWR program.

A. The discussion above relates directly to DTE's decision-making regarding budgets for its income-qualified (i.e., low-income) EWR programs. DTE was specifically asked to describe "the process used, and *standards employed*, for determining the investment in income-qualified programs."[13] In response, DTE stated that "The Company also compared the income-qualified investment to the Energy Efficiency Equity Baseline (E3b) . . ."[14] In turn, that ~~Attachment~~ attached report to that discovery response states in relevant part:

- The report uses a metric called "the Energy Efficiency Equity baseline (E3b), which estimates equitable utility investment *proportionate to the low-income population in the service territory* and as a percentage of the total residential energy efficiency investment portfolio." [15]

- "To normalize for variations in residential energy efficiency portfolio size (total dollars spent), utilities were compared using the metric percent E3b achieved [Figure omitted]. This represents how close a utility came to spending *at the estimated E3b level* relative to its residential portfolio size."[16]

As can be seen, the standards DTE, itself, states that it employed explicitly incorporate notions of horizontal equity. Under the E3b approach, if low-income households represent 20% of a utility's residential population, the utility should devote 20% of its residential energy waste reduction investments to serving those low-income customers.

[13] Ex. SC-5, Case No. U-20876, Response to SCDE-1.46 (emphasis added).
[14] *Id.* (referencing Attach. 1.46-02).
[15] *Id.* at Attach. SCDE-1.46-02 (emphasis added).
[16] *Id*.

What that means, of course, is that low-income customers and non-low-income customers will receive an equal amount of energy waste reduction investment on a per customer basis.

However, given that it is more expensive to serve low-income customers, to provide an equal per-customer investment to low-income and non-low-income customers in setting budgets will result either in: (1) disproportionately fewer low-income customers being served given that per-customer costs are higher for the low-income population; or (2) low-income customers being under-served by having fewer cost-effective measures installed in each customer's home in order to keep the cost per-customer lower in order to serve a larger number of customers.

As I discuss below, both of these results arise for DTE. The ramifications of DTE's use of a horizontal equity approach to funding low-income EWR will be discussed in more detail below.

Q. Are there other problems with DTE's use of the E3b metric?

A. Yes. In addition to its failings as a measure of "equity," the E3b metric is not appropriate to use as a benchmark for low-income investments. It lacks a number of details. The E3b metric lacks any look at the comprehensiveness of investment (how those dollars are being used, and for what types of measures). Moreover, the E3b metric does not look at energy savings, does not look at non-energy benefits ("NEBS"), and does not account for historical underinvestment. Of particular concern, as well, is that the E3b metric does not consider the health and safety needs in homes and buildings. Even aside from the

misapplication of E3b for equity purposes, the E3b metric should not be used for assessing low-income EWR investments in Michigan.

Q. Is there any dispute that income-qualified energy reductions savings cost more than residential EWR savings generally?

A. No. DTE reports that the cost per kWh saved is higher for low-income customers than it is for higher income customers.[17] The cost per kWh saved for differing income ranges, as reported by DTE, is set forth in Table 1.

Table 1. Incentive $/kWh by Estimated Household Income[18]

Income	$/kWh Saved	Income	$/kWh Saved
$1,000 - $14,999	$0.92	$100,000 - $124,999	$032.
$15,000 - $24,999	$0.83	$125,000 - $149,999	$0.33
$25,000 - $34,999	$0.70	$150,000 - $174,999	$0.35
$35,000 - $49,999	$0.58	$175,000 - $199,999	$0.34
$50,000-$74,999	$0.47	$200,000 - $249,999	$0.38
$75,000 - $100,000	$0.38	$250,000+	$0.42

[17] Ex. SC-5, Case No. U-20876, Attachment SCDE-1.40b-01.
[18] *Id.* at SCDE-1.40b.

Q. What explains these variations in the cost per kwh saved?

A. The higher costs can likely be attributed to any number of factors. First, the percentage of the costs paid by DTE for any given measure installed is higher for low-income customers than for non-low-income customers. This reflects the fact that low-income customers do not have the financial capacity to invest in energy waste reduction measures, even if cost-effective in the long-term, if those investment dollars must come out-of-pocket. Second, this reflects the fact that the administrative cost of enrolling a customer in a low-income program involves greater administrative effort (given the need to document and record income). Third, this reflects the fact that the low-income homes that are being served are more likely to be in worse physical condition, with additional investments necessary than a non-low-income home.

Q. Does the higher cost per kwh saved in low-income homes mean that DTE's investments cannot achieve the full potential for energy savings in these homes?

A. DTE does not specifically point to funding as a barrier to achieving the full potential for energy savings in low-income homes. DTE does not track the extent to which its investment in income-qualified homes achieves the full potential for cost-effective energy waste reduction in the home. When asked to "provide all documents identifying, assessing, or discussing the proposed spending on all income-qualified measures as a percentage of the spending needed to exhaust the efficiency potential for all income-qualified customers," DTE responded that "documents regarding proposed spending on

all income-qualified measures as a percentage of the spending needed to exhaust the efficiency potential for all income-qualified customers is [sic] not available."[19]

The measures which DTE offers, or, any limitation on the measures which DTE offers because of funding constraints, is important because DTE states that low-income program participants are expected to adopt all measures offered because those measures are 100% paid for through DTE incentives. According to DTE, "The low-income sector is assumed to have an initial year adoption rate equal to the ultimate adoption rate. The high starting point recognizes that *participation should be expected to be high with 100% incentives being offered* for low-income measures."[20]

Q. Please summarize what conclusions flow from your discussion of equity above?

A. A number of conclusions have been firmly established in the discussion above regarding DTE's approach to providing an equitable distribution of EWR funds to low-income customers fails in the following:

1) For budgeting purposes, DTE defines "equitable" to mean "equal resources" (i.e., proportionate resources). That is a false equivalency. "Equal" and "equitable," however, are two distinctly different concepts. Equality of assistance is very likely to be inequitable.

2) For budgeting purposes, DTE defines "equity" in terms of what is known in law and economics as the concept of "horizontal equity," i.e., providing the same amount of resources. DTE does not take into account the need for "vertical equity." Vertical equity requires that the distribution of assistance be explicitly varied to reflect differences in needs.

[19] Ex. SC-5, Case No. U-20876, Response to SCDE-1.47.
[20] Ex. SC-5, Case No. U-20876, Response to SCDE-1.57a (emphasis added).

3) DTE defines *any* opportunity to participate to be an "equitable opportunity" to participate. Clearly, however, that approach is in error. Not all low-income customers are the same. Different customers, for example, will have different financial needs which the DTE EWR programs need to address.

4) As a result of its use of horizontal equity principles, DTE under-serves the number of low-incomes customers that need to receive efficiency measures. In addition, of those low-income customers that DTE does serve, the Company fails to provide the full range of cost-effective energy waste reduction measures that would be needed to fully serve each home.

III. THE EXTENT TO WHICH DTE ELECTRIC COMPANY'S EWR INVESTMENTS ARE EQUITABLY DISTRIBUTED.

Q. Please describe the purpose of this section of your testimony.

A. In this section of my testimony, I describe the distribution of DTE's EWR investments by various demographic characteristics. In examining the distribution of EWR investments, I consider the dollars of natural gas and electric incentives paid for DTE's low-income single-family home program. In this testimony, I focus on the electric incentives, while my testimony in the corresponding natural gas EWR proceeding focuses on the gas incentives. The zip code data I consider is that data which DTE provided in response to discovery.

A. Targeting by Zip Code.

Q. What is the first aspect of DTE's EWR distribution you consider?

A. I first examine the extent to which DTE's Energy Efficiency Assistance ("EEA") investments are going to a selection of 27 "high burden" zip codes in the Detroit area. A "high burden" zip code in this context is one in which lower incomes and/or higher bills combine to result in energy burdens exceeding 10%. An "energy burden" is a natural gas

or electric bill as a percentage of income.[21] Energy burdens represent a simple ratio: the household's energy bill (in dollars) is placed in the numerator, while the household's income (in dollars) is placed in the denominator, yielding bills as a percentage of income. As I explain in more detail below, higher energy burdens are associated with greater bill payment difficulties and higher rates of nonpayment service terminations. The high burden zip codes studied here are a selected subset of those in DTE's service territory, mainly focused in the Detroit area and in areas that have a majority Black population as well as high energy expenditures. As this Commission has recognized in prior dockets, EWR investments can help struggling households permanently reduce their energy burdens by reducing their energy bills.

Q. How did you select which high energy burden zip codes to specifically study?

A. DTE's service territory has a large number of zip codes where the average energy burden exceeds what is typically considered affordable. For my comparisons below, I considered a subset of zip code that had several overlapping characteristics: an average energy burden exceeding 10%; a majority Black population; and a history of "redlining" (the practice of denying financial services, such as loans and insurance, to residents of a given area based on its racial make-up). As discussed in Mr. Lewis' testimony, racial make-up of an area is unfortunately often a proxy for chronic disinvestment in the housing stock there. This is in part due to historic redlining in many majority Black

[21] An "energy burden" can be calculated for individual fuels or for home energy bills as a whole. For an electric-only customer, the numerator would be the home electric bill. For a natural gas-only customer, the numerator would be the natural gas bill. For a combination customer, the numerator would be the combined gas/electric bill.

areas.[22] In turn, this is an indicator of less energy-efficient homes. My references to "High Burden Zip Codes" (and, correspondingly, to "High Burden Census Tracts") throughout this section (III.A) of my testimony.[23]

Q. What do you find?

A. While in recent years, more of DTE's low-income electric investments have been going into High Burden Zip Codes, those investments have not consistently supported substantial energy savings measures.[24] In Table 2[25] below, DTE's EEA investments have been categorized in two different ways: (1) by whether the investment is in a High Burden Zip Code; and (2) by whether the investment is in a major or a non-major energy reduction measure (or a health and safety measure).[26] While low-income electric incentives in High Burden Zip Codes have reached roughly 70% in two of the past three years (2018, 2019), that investment was only 40% to 43% in the years 2013 through 2015. In 2016 and 2017, the electric low-income investment was roughly 50%/50%

[22] Great Lakes Envtl. Law Center, *Comment Re. U-20633 – Incorporating Environmental Justice Considerations in Future IRP Cases* (Apr. 28, 2021).
[23] DTE's service territory, therefore, is divided into two categories. Those parts that have been identified as High Burden Zip Codes and the Remainder Zip Codes (those that have *not* been so identified). Together, they comprise 100% of the DTE service territory.
[24] Throughout my testimony, reference to "EWR investments" is intended to be limited to low-income EWR investments.
[25] In this, and other, tables, the source of data is a combination of data provided by DTE in response to discovery regarding the distribution of EEA and Income Qualified Multifamily Program investments and data obtained from the Census Bureau's American Community Survey (5YR, 2019), https://data.census.gov/cedsci/advanced (last visited Oct. 4, 2021). [25] Ex. SC-5, Case No. U-20876, Response to SCDE-1.2g-01; SCDE-1.2g-02.
[26] A major measure is one that has been identified as typically providing substantial savings at a reasonable cost. A list of the EWR measures deemed to be "major measures", and for which DTE has historically provided incentives, is attached as Ex SC-6.

between High Burden Zip Codes and zip codes not identified as High Burden Zip Codes.[27]

Moreover, the question is not merely how much electric waste reduction investment is being directed to High Burden Zip Codes, but also what types of measures those investments are being used to support. The measures supported by DTE's EWR investment were divided into two separate categories: (1) major savings measures; and (2) non-major savings measures.[28]

[27] In undertaking this analysis, I do not have access to what investments are directed to single-fuel (i.e., gas-only, electric-only) and which are directed to duel-fuel (i.e., combination gas-electric) individual homes. Accordingly, I do not have access to information on individual housing units that may have different investment types, if served with both gas and electric investments.
[28] Ex. SC-6, List of major measures.

Table 2. Percentage of Electric EEA Incentives (dollars)
by Year and Type of Measure / High Burden Zip Code (percentage)

	Health and Safety			Major Measures			Non-Major Measures			Total
	High Burden	Remainder	Sub-Total	High Burden	Remainder	Sub-Total	High Burden	Remainder	Sub-Total	
2013	0.0%	0.0%	0.0%	22.2%	56.5%	78.7%	18.3%	3.0%	21.3%	100.0%
2014	0.0%	0.0%	0.0%	41.4%	51.6%	93.0%	3.4%	3.6%	7.0%	100.0%
2015	0.0%	0.0%	0.0%	41.1%	49.7%	90.9%	2.0%	7.1%	9.1%	100.0%
2016	0.0%	0.0%	0.0%	28.2%	44.4%	72.6%	24.3%	3.1%	27.4%	100.0%
2017	0.0%	0.0%	0.0%	3.5%	3.8%	7.4%	49.1%	43.5%	92.6%	100.0%
2018	0.0%	0.0%	0.0%	5.1%	4.2%	9.3%	64.4%	26.3%	90.7%	100.0%
2019	0.0%	0.0%	0.0%	39.3%	21.0%	60.3%	27.2%	12.5%	39.7%	100.0%
2020	13.4%	1.4%	14.9%	45.2%	23.5%	68.7%	13.8%	2.6%	16.4%	100.0%

In 2020, the majority of electric investments in High Burden Zip Codes was devoted to major energy reduction measures. While 45% of total electric investments were for major savings measures in High Burden Zip Codes, only 14% were for non-major energy savings measures. This investment in major measures, however, has not always been the case. As recently as 2017 and 2018, the vast majority of DTE spending in High Burden Zip Codes was on non-major energy waste reduction measures. In 2018, nearly two-thirds (64%) of the spending in High Burden Zip Codes went into non-major measures. In 2017, nearly half (49%) did, while only 4% went into major energy waste reduction measures. In 2019, more DTE spending went into non-major measures in the combined set of zip codes (40%) than went into major measures in High Burden Zip Codes (39%). In three of the past four years, DTE's percentage of total EEA electric spending on non-

major measures was higher than the percentage of spending on major measures directed toward High Burden Zip Codes, sometimes substantially. In 2017, while 93% of DTE's electric incentives were devoted to non-major measures, only 4% were devoted to major measures in High Burden Zip Codes. In 2018, while 91% of DTE's spending was devoted to non-major measures, only 5% was devoted to major measures in High Burden Zip Codes.

Q. Why is the distinction between major and non-major measures significant?

A. Households receiving non-major measures are less likely to experience substantial energy savings and corresponding bill reductions. In addition, weatherization measures such as insulation and air sealing (or "infiltration reduction") provide corresponding benefits in improving comfort and preparing homes for potential future electrification. That said, as discussed in Mr. Neme's testimony, a large proportion of DTE's major measures investments goes to gas furnace replacements,[29] which do not provide these benefits. My analysis does not specifically distinguish between weatherization measures and other types of major measures, but the data is available to specifically evaluate the distribution of weatherization measures and this would be another valuable way to consider the equity of DTE's investments.

Q. Did you assess the distribution of DTE's low-income investments in relation to other demographic data?

A. Yes. I considered DTE's investments in relation to concentrations of Black households, concentrations of low-income households, and concentrations of older homes. Considering these additional factors leads me to conclude that DTE does not perform

[29] Direct Testimony of Chris Neme, Case No. U-20881 (Oct. 6, 2021) ("Neme Direct").

well in reaching these populations. My testimony is intended to supplement, and support, the Direct Testimony of Jamal Lewis who explains that current DTE programming is insufficient in meeting the needs of all DTE customers, particularly limited income, Black and Brown customers, and high energy burdened customers.

Q. What were the results of your analysis of investments in zip codes that have a majority Black population?

A. Table 3 presents data on the distribution of major and non-major EWR electric investments in zip codes that have a majority Black population. As the Table indicates, when customers are served in zip codes with non-majority Black populations, they are much more likely to receive major energy savings measures. While one-quarter of the investment in majority Black zip codes in 2020 (15%/60% = 25%) were devoted to non-major EWR measures, only 12% of the investments in non-majority Black zip codes were non-major measures. In 2017 and 2018, by far the greatest dollar investment (electric incentives) in majority Black zip codes was in non-major investments (44% in 2018; 45% in 2017). While EWR investment in major measures was higher overall in 2013 through 2016, those investments in major measures were not flowing into majority Black zip codes. During that four year period (2013–2016), while the percentage of total electric investments involved incentives for major EWR measures in non-majority Black zip codes ranges from a low of 47% to a high of 54%, the percentage of total electric investments for major EWR measures in majority Black neighborhoods ranged from a low of 25% to a high of 42%. In contrast, the investment in non-major measures was consistently higher in majority Black zip codes (2013, 2016, 2019, 2020).

Table 3. Percentage of Electric EEA Incentives (dollars)
by Year and Type of Measure / Majority Black Zip Code (percentage)

	Major Measures			Non-Major Measures			Total [30]
	Majority Black	Non-Majority Black	Sub-Total	Majority Black	Non-Majority Black	Sub-Total	
2013	26%	53%	79%	19%	3%	21%	100.0 %
2014	42%	51%	93%	4%	3%	7%	100.0 %
2015	37%	54%	91%	2%	7%	9%	100.0 %
2016	25%	47%	73%	24%	3%	27%	100.0 %
2017	3%	4%	7%	45%	47%	93%	100.0 %
2018	5%	5%	9%	44%	46%	91%	100.0 %
2019	38%	23%	60%	26%	13%	40%	100.0 %
2020	45%	36%	81%	15%	5%	19%	100.0 %

Q. What were the results of your analysis of investments in zip codes that have a particularly high concentration of low-income households, or particularly low-incomes?

A. In Table 4 below, data is presented on the distribution of EWR investments by the percentage of the total population in DTE zip code that live with annual income at or below 200% of Federal Poverty Level ("FPL"). Zip Codes were examined to determine which geographic areas had a percentage of population at or below 200% of FPL that was at least 25% higher than the percentage of population in this poverty range for the DTE service territory as a whole. Those with a percentage 25% higher are defined to be

[30] The 100% total includes health and safety spending in 2020.

"Concentrated Poverty" in Table 4. As can be seen, the overwhelming majority of DTE electric expenditures on major EWR measures were delivered in zip codes that were not those with Concentrated Poverty as defined for this purpose. Indeed, in 2019 and 2020, nearly five times the investment in major measures occurred in areas that are not Concentrated Poverty than occurred in areas that are Concentrated Poverty (in 2019, it was 51% versus 10%; in 2020, it was 68% versus 13%). Moreover, in 2017 and 2018, when 90% or more of the EWR investments were devoted to non-major measures, the dollars of investment were not flowing into the zip codes with high concentrations of poverty served by DTE.

Table 4. Percentage of Electric EEA Incentives (dollars)
by Year and Type of Measure / Concentrated Poverty (25% Above Pct <200% FPL)

	Major Measures			Non-Major Measures			Total [31]
	Concentrated Poverty	Not Concentrated Poverty	Sub-Total	Concentrated Poverty	Not Concentrated Poverty	Sub-Total	
2013	35%	44%	79%	1%	20%	21%	100.0%
2014	30%	63%	93%	2%	5%	7%	100.0%
2015	25%	66%	91%	3%	7%	9%	100.0%
2016	25%	48%	73%	1%	26%	27%	100.0%
2017	2%	6%	7%	24%	69%	93%	100.0%
2018	2%	7%	9%	16%	75%	91%	100.0%
2019	10%	51%	60%	8%	32%	40%	100.0%
2020	13%	68%	81%	1%	18%	19%	100.0%

Table 5 shows the same result when low-income status is defined by reference to dollars of income rather than by reference to FPL. In no year, did EWR electric investment in major EWR measures flow into Concentrated Low-Income zip codes (defined to be those zip codes where the percentage of households with income below $15,000 was at least 25% higher than the percentage for the service territory as a whole). In 2020, for example, 77% of total EEA electric investments went into major measures that were delivered to areas that were not Concentrated Low-Income, while 4% were delivered to Concentrated Low-Income areas. In 2019, 58% of electric EWR investments were delivered as major investments to areas that were not Concentrated Low-Income,

compared to 3% that were delivered to Concentrated Low-Income areas. As Table 5 below demonstrates, consistently over the past eight years (2013–2020), those investments made in Concentrated Low-Income zip codes focused on EWR measures that are not designed to generate substantial reductions in electricity consumption.

Table 5. Percentage of Electric EEA Incentives (dollars)
by Year and Type of Measure / Concentrated Low Income
(25% Above Pct <$15,000 Annual Income)

	Major Measures			Non-Major Measures			Total [32]
	Concentrated Low-Income	Not Concentrated Low-Income	Sub-Total	Concentrated Low-Income	Not Concentrated Low-Income	Sub-Total	
2013	17%	62%	79%	21%	0%	21%	100.0%
2014	12%	81%	93%	7%	1%	7%	100.0%
2015	9%	82%	91%	9%	1%	9%	100.0%
2016	8%	64%	73%	27%	0%	27%	100.0%
2017	0%	7%	7%	85%	7%	93%	100.0%
2018	1%	9%	9%	86%	4%	91%	100.0%
2019	3%	58%	60%	37%	3%	40%	100.0%
2020	4%	77%	81%	19%	0%	19%	100.0%

Q. What were the results of your analysis of investments in zip codes with older homes?

A. Table 6 distributes electric EWR investments by areas categorized by the age of housing in the area in which the investment was made. For purposes of this table, an area with Concentrated Older Homes is one in which the percentage of homes built before 1970

was more than 25% higher than average percentage of homes built before 1970 for the DTE service territory as a whole. The table shows what we have seen above, that in 2017 and 2018, DTE devoted most of its EEA spending to non-major EWR measures. In other years, however, the majority of EEA electric investments in major EWR measures were provided in zip codes with Concentrated Older Homes (i.e., percentage of homes built before 1970 was 25% higher than the percentage for the service territory as a whole). In 2019 and 2020, the difference between the percentage of electric investments in major measures made in zip codes with Concentrated Older Homes was noticeably higher than the percentage of electric investments in major measures in areas which do not have Concentrated Older Homes.

Table 6. Percentage of Electric EEA Incentives (dollars)
by Year and Type of Measure / Concentrated Older Homes
(25% More than Avg Built <1970)

	Major Measures			Non-Major Measures			Total [33]
	Concentrated Older Homes	Not Concentrated Older Homes	Sub-Total	Concentrated Older Homes	Not Concentrated Older Homes	Sub-Total	
2013	40%	39%	79%	12%	10%	21%	100.0%
2014	54%	39%	93%	4%	3%	7%	100.0%
2015	60%	31%	91%	4%	5%	9%	100.0%
2016	46%	26%	73%	3%	24%	27%	100.0%
2017	4%	3%	7%	68%	24%	93%	100.0%
2018	6%	3%	9%	68%	23%	91%	100.0%
2019	46%	14%	60%	24%	16%	40%	100.0%
2020	61%	19%	81%	8%	11%	19%	100.0%

Q. What do you conclude from the data above?

A. DTE does not consistently direct its EWR investments to those low-income customers who are most in need. Within the past five years, DTE frequently directs its investments to non-major EWR measures in zip codes with high levels of need indicators. In some years, even when DTE's EWR electric investments are in major energy saving measures, those investments are made in zip codes other than those with the high indicators of need.

[33] The 100% total includes health and safety spending in 2020.

It is possible for DTE to target its EEA investments to populations that are likely to have greater needs.

B. Targeting by Census Tract.

Q. Is it possible to target EWR investments based on need indicators for geographic areas that are smaller that zip codes?

A. Yes. In this section of my testimony, I have identified and applied a series of seven (7) factors that would reasonably indicate a higher need consistently exists throughout the geographic area. My analysis is based on Census Tracts. I begin with the zip codes that comprise the DTE service territory as a whole.[34] Using the U.S. Department of Housing and Urban Development's ("HUD") "Zip Code Crosswalk" files, I then associate Census Tracts with each of those zip codes. Having identified the Census Tracts which comprise the DTE service territory, I examine each Census Tract by the following factors: (1) is the percentage of population with income at or below 200% of FPL more than 25% higher than the average percentage for the DTE service territory as a whole; (2) is the percentage of Supplemental Nutrition Assistance Program or SNAP recipients in the Census Tract is more than 25% higher than the percentage in the DTE service territory as a whole; (3) is the percentage of households with housing burdens more than 40% of income more than 25% higher than the percentage in the DTE service territory as a whole; (4) is the median

[34] In this section of my testimony examining vulnerability indicators, I do not distinguish between natural gas and electric territories. The indicators of vulnerability that I examine do not involve an assessment of gas or electric bills. Rather, using Census data, I am seeking to determine whether there are areas of concentrated need in the DTE service territory. While I would want to separate the DTE Gas and DTE Electric service territories if I were seeking to select specific Census Tracts to serve in this testimony, in fact, that is not the task that I have undertaken. For the planning and program delivery purposes which I am addressing, it is more appropriate to determine the characteristics of the DTE service territory as a whole.

income for the Census Tract lower than 75% of the average median incomes for the DTE service territory as a whole; (5) is the average First Quintile income less than $10,000;[35] (6) is the percentage of households with annual income below $15,000 more than 25% higher than the percentage in the DTE service territory as a whole; and (7) is the percentage of housing units built before 1970 more than 25% higher than the percentage in the DTE service territory as a whole. For each Census Tract, I then determine whether the Census Tract is within one of the "High Burden" zip codes as defined above.

Q. What is the extent to which these seven indicators of vulnerability exist in DTE census tracts?

A. Of the 2,062 Census Tracts in the DTE service territory, 162 met the vulnerability indicator for all seven indicators studied. An additional 206 of the 2,062 Census Tracts met the vulnerability indicator for six of the seven indicators studied. [36] In contrast to those Census Tracts with either six or seven indicators, there are 745 of the 2,062 Census Tracts that meet none of the seven indicators, 467 Census Tracts that meet only one of the seven indicators, and 161 that meet only two of the seven indicators.

[35] The Census Bureau rank orders each household in a geographic area by income from lowest to highest. That list is then divided into five equal parts, each part being called a "quintile." The quintile with the lowest income is the "First Quintile" (sometimes known as the "bottom quintile").
[36] Different Census Tracts would meet different combinations of the seven indicators of vulnerability. This reference to meeting six indicators does not mean that I excluded one and tested for the remaining six.

Table 7. Number of Census Tracts by Number of Vulnerability Indicators Present (by location in High Burden Zip Code)

Number of Vulnerability Indicators	Number of Census Tracts Located in: High Burden Zip Code	Not High Burden Zip Code	Grand Total
0	6	739	745
1	9	458	467
2	8	153	161
3	6	95	101
4	13	80	93
5	26	101	127
6	123	83	206
7	114	48	162
Grand Total	305	1757	2062

Q. Do the areas where these vulnerability indicators exist overlap with the high burden zip codes studied above?

A. Yes. Overwhelmingly, Census Tracts with six or seven vulnerability indicators are also located in zip codes that are high energy burden and majority Black. Conversely, those with zero through four vulnerability indicators rarely overlap with high energy burden/majority Black zip codes. Of the 368 Census Tracts with either six or seven vulnerability indicators, 237 are found within high energy burden/majority Black zip codes (defined as High Burden Zip Codes above). Of the 1,445 Census Tracts with four or fewer vulnerability indicators, only 29 are found within high energy burden/majority Black zip codes.

Q. What conclusions do you draw from this data?

A. The conclusions to be drawn from this data and analysis are several-fold. First, there are concentrated areas of need within the DTE service territory. Where there are disproportionately high percentages of population with income below 200% of Poverty

(more than 25% higher than DTE service territory), there are also disproportionately high percentages of *very* low-income households. For example, Table 8 below shows that 709 Census Tracts in the DTE service territory have a percentage of population with income below 200% of FPL that is more than 25% higher than the percentage for the DTE service territory as a whole. Of those 709 Census Tracts, 538 (76%) also have a percentage of households with annual income that is less than $15,000. For comparison, 150% of FPL for a three-person household in 2019 (the last year for which Census data is available) was $31,995. Moreover, of the 709 Census Tracts with a disproportionate percentage of population with incomes below 200% of FPL, 424 also have a mean income for its First Quintile of population of less than $10,000.

Table 8. Census Tracts by Percent Population Below 200% FPL and Pct Households with Annual Income < $15,000

	Number of Census Tracts			
	Not Disproportionate < $15,000	Disproportionate < $15,000	No Data	Total
Not Disproportionate <200% FPL	1,254	85	0	1,338
Disproportionate < 200% FPL	168	538	3	709
No Data	0	0	14	14
Total	1,422	623	17	2,062
	Q1 mean income not <$10,000	Q1 mean income < $10,000	No Data	Total
Not Disproportionate <200% FPL	1,304	35	0	1,339
Disproportionate < 200% FPL	285	424	0	709
No data	14	0	0	14
Total	1,603	459	0	2,062

Second, these lower income households are important to target with EWR investments because they also have housing characteristics that lend themselves to energy waste reduction improvements. Table 9 below compares the Census Tracts with a disproportionate percentage of population with income below 200% of FPL (more than 25% higher than percentage for DTE service territory) to the Census Tracts with a disproportionate percentage of housing units that were built before 1970 (more than 25% higher than percentage for DTE service territory). Of the 709 Census Tracts with a disproportionate percentage of population with income below 200% of FPL, 464 (65%) also have a disproportionate percentage of housing units that are more than 50 years old (i.e., built before 1970).

Table 9. Census Tracts by Percent Population Below 200% FPL and Pct Housing Units Built Before 1970

	Number of Census Tracts			
	Not High Pct <1970	High Pct <1970	No Data	Total
Not Disproportionate <200% FPL	959	380	0	1,339
Disproportionate < 200% FPL	242	464	3	709
No Data	1	2	11	14
Total	1,202	846	14	2,062

Third, geographic areas of concentrated need clearly exist in the DTE service territory. Highly vulnerable Census Tracts can be beneficially targeted with high degrees of electric investments in major EWR measures. The delivery of major EWR measures to households in these areas would not only help reduce DTE's systemwide energy usage,

but would also help address the affordability problems (and associated payment difficulties) associated with the vulnerability indicators.

Q. Have you assessed the degree to which DTE is already directing low-income funding to the most vulnerable census tracts in its service territory?

A. Yes. DTE presented low-income EWR spending by Census Tract for the years 2019 and 2020, along with 2021 through July.[37] To make the numbers more manageable, I selected the following counties to examine: Macomb, Oakland, Washtenaw and Wayne. Within each of those counties, I then selected the Census Tracts that had either six (6) or seven (7) of the vulnerability factors I discuss above. I then determined whether each Census Tract fell into a High Burden Zip Code (as I defined above). For that selection of Census Tracts, I examine the distribution of low-income EWR spending between major and non-major EWR measures. The data is presented in Exhibit SC-2.

The data shows that in 2019, 82% of DTE's low-income EWR spending in Census Tracts with either six or seven of the vulnerability factors was directed toward Census Tracts in vulnerable zip codes. That figure, however, is somewhat misleading. The high figure is driven exclusively by spending in Wayne County (92% of spending in vulnerable Census Tracts). In contrast, some counties had no spending in vulnerable Census Tracts at all. Macomb, Oakland, and Washtenaw experienced no low-income EWR spending in vulnerable Census Tracts. The fact that Wayne has far more vulnerable Census Tracts does not detract from this conclusion. The analysis considers the extent to which funding

[37] Ex. SC-5, Case No. U-20876, Response to SCDE-1.2b, Attach.

is going to the highest need Census Tracts compared to other Census Tracts, not total spending.

Macomb, Oakland, and Washtenaw counties experienced DTE low-income EWR spending in Census Tracts with either six or seven vulnerability factors. In each of these counties in 2019, however, 100% of the electric spending occurred in Census Tracts in zip codes that were not identified to be High Burden Zip Codes.

Similar patterns continued in 2020 and 2021 (through July). In 2019, 82% of the total low-income electric EWR spending was being devoted to Census Tracts in vulnerable zip codes with either six or seven vulnerability factors. That total, however, was driven by spending in Wayne County, with the remaining counties having spending in zip codes with six of seven vulnerability factors, but no spending in Census Tracts falling in vulnerable zip codes.

Q. Does comparing levels of EWR spending in different areas tell the whole story as to whether DTE is effectively reaching customers in vulnerable census tracts?

A. No. The question should not be simply whether DTE has delivered "something" to the Census Tracts being examined. The question should be whether DTE is delivering energy waste reduction measures offering substantial energy savings (and thus substantial bill reductions, along with non-energy benefits associated with more comfortable and healthy homes) to these vulnerable Census Tracts. I have examined the delivery of low-income EWR measures in the same vulnerable Census Tracts I identified above. The data is presented in Exhibit SC-3. In this Exhibit, rather than showing the percentage of investments by rows, I show the percentage of investments by column. This data shows

the extent to which, if at all, DTE is delivering major EWR measures in these vulnerable Census Tracts.

The data shows that, in Wayne County in particular, while DTE spends heavily in the vulnerable Census Tracts as I have identified them, that spending is often not directed to major energy waste reduction measures. In 2019, for spending in vulnerable Census Tracts, the spending between major and non-major measures was split roughly equally (17% on major measures; 16% on non-major measures). The distribution of spending between major and non-major measures improved somewhat in 2020 (25% on major measures; 10% on non-major measures), but reversed itself in 2021 (11% on major measures; 21% on non-major measures). Overall in 2021, DTE spending on non-major measures in Wayne County was nearly twice the level (19%) as its spending on major EWR measures (10%). The same conclusion can be drawn for the vulnerable Census Tracts in Washtenaw County. DTE spending on non-major measures (0.99%) was nearly 40% higher than DTE spending on major measures (0.63%).

Finally, in counties other than Wayne, while DTE spending was somewhat higher on major low-income EWR measures than on non-major measures, as noted above, the entirety of spending in these counties (Macomb, Oakland, Washtenaw) was in Census Tracts that were not found to be vulnerable Census Tracts.

C. DTE's Low-Income Multi-Family Energy Waste Reduction Investments.

Q. Please explain the purpose of this section of your testimony.

A. In this part of my testimony, I examine the geographic distribution of DTE's Low-Income Multi-Family ("LIMF") investments. I consider whether DTE's investments are distributed to areas that have the highest needs.

Q. What is the basis for your discussion?

A. DTE provided data on its LIMF investments, by zip code, for the years 2018 through 2020.[38] I matched this spending by zip code with the High Burden Zip Codes I identify earlier in my testimony. I use the same terminology in this section. Those zip codes defined to be "high burden" are called High Burden Zip Codes. All other zip codes are referred to as the Remainder Zip Codes (meaning simply that they are not included in the list of High Burden Zip Codes). Moreover, as I did above, I distribute DTE's investments between "major" and "non-major" investments.

Q. What did you find?

A. A relatively small percentage of LIMF spending is being distributed in High Burden Zip Codes. Table 10 below shows that for the years 2018 through 2020, only 36% of the LIMF investments went to such Zip Codes, with the remaining 64% going to the Remainder Zip Codes. Only 22% of the LIMF investments in major measures went to High Burden Zip Codes over the same three-year period.

[38] Case No. U-20876, Response to SCDE-1.2g, Attach. U-20876-SCDE-1.2g-02 MFLI measures by zip code 2011-2020. DTE also provided its spending for 2021 (*id.* at Attach. U-20876-SCDE-1.2g-04 MFLI measures by zip code in 2021 as of 8-25), which I have excluded given that that year is not yet completed.

Table 100. Percentage **of Electric Incentive Amount (LIMF 2018 – 2020)**			
High Burden vs. Remainder Zip Codes	**Major**	**Not Major**	**Grand Total**
High Burden			
2018	3%	1%	2%
2019	9%	18%	14%
2020	10%	29%	20%
Remainder			
2018	40%	3%	20%
2019	29%	27%	28%
2020	8%	23%	16%
Grand Total	**100%**	**100%**	**100%**

Three High Burden Zip Codes (48210, 48211, 48224) received no LIMF spending at all. In Zip Code 48210, 100% of the residents of multi-family buildings with 5 to 19 units have rental burdens (which includes rent plus all utilities except telephone) of greater than 35%, while 85% of the residents of multi-family buildings with 20 to 50 units have rent burdens that high. In Zip Code 48224, 53% of residents of 5 to 19-unit buildings have rent burdens exceeding 35% of income, while 78% of residents of 20 to 50-unit buildings do. In Zip Code 48211, 82% of residents of 20+ unit buildings have rent burdens exceeding 35% of income.

Moreover, Table 11 below shows that, with the exception of 2018, of the LIMF investments going to High Burden Zip Codes, the bulk of the dollars were devoted to non-major measures. In High Burden Zip Codes, between 70% and 80% of LIMF investments were devoted to non-major measures in 2019 and 2020, while in the Remainder Zip Codes, between roughly 50% and 80% were.

Table 11. Percentage of **Electric Incentive Amount (LIMF 2018 – 2019)**			
High Burden vs. Remainder Zip Codes	**Major**	**Not Major**	**Grand Total**
High Burden			
2018	77%	23%	100%
2019	30%	70%	100%
2020	21%	79%	100%
Remainder			
2018	93%	7%	100%
2019	47%	53%	100%
2020	23%	77%	100%
Grand Total	**45%**	**55%**	**100%**

In 2020, for example, according to the Company's data,[39] of the $1,881,715 spent on electric LIMF measures, only $386,712 was devoted to refrigerator replacements. In contrast, $181,410 was devoted to exterior HID replacement, $164,475 was devoted to LED downlights, $171,230 was devoted to mogul base lamps, and $440,287 was devoted to multi-family lighting bonuses.

Q. Have you had occasion to assess whether it is possible to identify zip codes with concentrated needs?

A. Yes. I have examined the 21 High Burden Zip Codes in which DTE provides either electric-only service or combination gas and electric service to residential ratepayers. These zip codes have a total of 35,654 families with income at or below the FPL. Of those families, 24,109 (68%) were renters. While the Census Bureau does not report tenure by the number of units in a building by Poverty status, it does report tenure by

[39] Case No. U-20876, Response to SCDE-1.2g, Attach. U-20876-SCDE-1.2g-02 MFLI measures by zip code 2011–2020.

number of units in a building. We know that in the 21 High Burden Zip Codes, of the 222,922 owner-occupied buildings, only 519 (0.23%) were owner-occupied units in buildings with between 5 and 50 units in the structure. Residents of multi-family buildings of this size in these zip codes, in other words, are overwhelmingly likely (99.7%) to be renters. Low-income residents of these buildings are even more likely to be renters.

Renters in the 21 High Burden Zip Codes tend to have high housing burdens as a percentage of income. Households with housing burdens exceeding 30% are considered to be over-extended. Of the 6,493 renters in buildings with 20 to 50 units, nearly 50% (2,992: 46.1%) have a housing burden of 35% or more. Of the 9,864 renters in buildings with 5 to 19 units, 5,462 (55.4%) have housing burdens greater than 35%. Low-income status is even more highly associated with high housing burdens. In the 21 High Burden Zip Codes, 89% of the renters with an income less than $20,000 have housing burdens that exceed 30%. In those High Burden Zip Codes, 75% of the renters with an income between $20,000 and $35,000 have housing burdens that exceed 30%.

Q. Have you had occasion to consider any other extent of low-income housing in the high burden zip codes?

A. Yes. I accessed the HUD database on Low-Income Housing Tax Credit ("LIHTC") developments[40] and identified those developments in the 21 High Burden Zip Codes. Information on the 212 developments that have more than 50% of their units designated as low-income units is set forth in Exhibit SC-4. In fact, of these 212 developments, the

[40] HUD, *LIHTC Database Access*, https://lihtc.huduser.gov/ (last visited Oct. 4, 2021).

minimum percentage of units that are low-income units is 78%. In addition, 185 of the 212 developments have 100% of their units designated as low-income. Overall, of the 10,141 housing units in these 212 LIHTC developments, 10,003 (98.6%) are low-income units. These 10,000 low-income units, in 212 developments are limited only to the 21 High Burden Zip Codes as I have defined those Zip Codes earlier in my testimony.

Q. What do you conclude?

A. The data and discussion presented above supports the conclusion that there is substantial opportunity for DTE to expand its LIMF investments. Moreover, I conclude that DTE has the opportunity not only to serve LIMF units, but also to target its investments to areas that have demonstrated indicators of high need.

Q. Are there reasonable ways for DTE to track and enroll low-income customers in multi-family properties in the Company's low-income multi-family program?

A. Yes. One primary effort DTE should make is to improve its referral and tracking of LIMF residents. For example, DTE can (and should) record multi-family vs. single-family status when customers enroll in (or simply apply for) the Company's Low-Income Self-sufficiency Plan ("LSP"), Shutoff Protection Plan ("SPP"), and Payment Stability Plan ("PSP") programs. In addition, DTE should then share multi-family and single family LSP, SPP, and PSP participant information with the staff of the Company's multi-family programs. The programs should collaborate rather than operate in their respective silos. Finally, DTE should track (and report) its success in enrolling LIMF customers. In particular, DTE should track (and report) LSP, SPP, and PSP participation in multi-family and single-family units; referrals to the LIMF energy waste reduction

programs; and how residents of those properties follow through to participate in the program.

Finally, DTE should improve its reporting of the geographic distribution of multi-family investments. The Company should track (and report) (by zip code and/or Census Tract) the investments that are being made by measure and the property types being served. The "property types" would include whether the units are subsidized or not (through local, state or federal programs) and the size of the building in terms of the number of units per ~~each~~ building.

Overall, I recommend that DTE engage in best efforts to enroll multi-family properties that contain clusters of low-income customers, or, in particular, that contain clusters of participants in LSP, SPP, and PSP in whole-building retrofits through the Company's LIMF energy waste reduction program.

D. DTE's Current Low-Income Allocation Process

Q. How does DTE currently determine how to allocate its EWR funding among its low-income customers?

A. DTE does not have clear strategic objectives in its allocation of low-income EWR funding, as I discuss further below. Rather, DTE works with its program implementation contractors to determine the allocation of low-income funding between local community action agencies.[41] It states that it relies on "past performance metrics" (without identifying those metrics or explain how those metrics are measured or considered) to

[41] Ex. SC-5, Case No. U-20876, Response to SCDE-1.7a.

make initial allocation decisions.[42] Once those initial allocations are proposed, actual allocations are a function of negotiation with each individual contractor.[43]

Q. Does DTE's current allocation process take into account geographic concentrations of need?

A. No. DTE repeatedly concedes that it does not seek to distribute its EWR funding based on any geographic targeting. For example, when DTE was asked to provide "all documents which identify and discuss 'program objectives' regarding the distribution of income-qualified savings, measures and/or expenditures by. . .Census Tract, zip code, community, etc.," the Company responded that it "is not aware of any documents that discuss income-qualified program objectives by census tract, zip code, or community."[44] Further, DTE unequivocally states that "the Company currently does not target based on Census Tract, zip code, community, etc."[45]

Q. Does DTE's current allocation process take into account the racial impacts of the distribution of its low-income funds?

A. No. DTE does not take into account disparate racial impacts in its distribution of low-income funding.[46]

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[42] *Id.* at SCDE-1.7b, Attach.
[43] *Id.*
[44] Ex. SC-5, Case No. U-20876, Response to SCDE-1.41a; see also Ex. SC-5, Case No. U-20876, Response to SCDE-3.7 (confirming that "DTE is not aware of any documents which discuss program objectives for how savings, measures, and/or expenditures are distributed to different strata within the income qualified population.").
[45] Ex. SC-5, Case No. U-20876, Response to SCDE-1.43d; Ex. SC-5, Case No. U-20876, Response to SCDE-3.11.
[46] Ex. SC-5, Case No. U-20876, Response to SCDE-1.41b.

Q. Does DTE's current allocation process take into account the distribution of low-income funding by income or energy burden?

A. No. DTE does not take into account the distribution of its low-income funds by income.[47] Nor does the Company consider energy burdens in its distribution of its low-income funding.[48] DTE explicitly states that "the Company currently does not target based on energy burden."[49]

Q. What is your conclusion about DTE's existing method of allocating its low-income EWR funds?

A. DTE's existing methodology lacks a proactive approach to ensuring its low-income EWR funds are allocated to the neighborhoods or customers that could most benefit from these investments. Both the initial allocation to Community Action Agencies and the negotiations between these agencies and their contractors occur in the absence of DTE ever considering, let alone adopting or implementing, any objectives regarding the geographic distribution of funding,[50] the extent to which EWR investments are to be directed toward particular income levels,[51] or toward customers with any particular home energy burdens.[52] DTE does not consider the extent to which its negotiated distribution

[47] *Id.* at SCDE-1.41c; Ex. SC-5, Case No. U-20876, Response to SCDE-1.43b.
[48] Ex. SC-5, Case No. U-20876, Response to SCDE-1.41d.
[49] Ex. SC-5, Case No. U-20876, Response to SCDE-1.43c. See also Ex. SC-5, Case No. U-20876, Response to SCDE-3.10 (confirming that "DTE is not aware of any documents which discuss targeting EWR opportunities according to customers' respective energy burdens within the income-qualified population"); Ex. SC-5, Case No. U-20876, Response to SCDE-3.12 (confirming "that DTE does not incorporate the number of its customers experiencing high energy burden in establishing (a) its goals for energy savings from its income-qualified programs, or (b) its budget for income-qualified programs").
[50] Ex. SC-5, Case No. U-20876, Response to SCDE-1.41a.
[51] *Id.* at SCDE-1.41c.
[52] *Id.* at SCDE-1.41d.

of EWR measures may be disproportionately excluding households based on race, since it does not consider race or ethnicity in the allocation process.[53]

Rather than intentionally and proactively considering where the greatest need lies, DTE relies on its ongoing assertion that its low-income EWR investments are "available" to all low-income customers. It never explains, however, what it considers to be "available." For example, it assumes that the information and education needs for *all* of its customers are identical, irrespective of age,[54] race or ethnicity,[55] income,[56] or geographic location (e.g., community, zip code).[57]

Q. What are your recommendations based on the discussion above?

A. I make several recommendations based on the data and discussion presented above. First, DTE should adopt a series of fundamental planning steps in the design and implementation of its low-income EWR program (both for single-family or multi-family investments). The first step is to adopt specific performance objectives as to the populations to be reached by DTE's low-income programs. DTE's current approach, which posits that so long as its program is open to all low-income customers, the program is "available" to all low-income customers, is ill-advised and results in passive discrimination. Rather than taking such a hands-off approach, DTE should identify the sub-populations that may be most in need (either in terms of homes needing energy upgrades or in terms of inefficient usage yielding high bills that contribute to payment

[53] *Id.* at SCDE-1.41b.
[54] Ex. SC-5, Case No. U-20876, Response to SCDE-1.44a.
[55] *Id.* at SCDE-1.44b.
[56] *Id.* at SCDE-1.44c.
[57] *Id*. at SCDE-1.44d.

difficulties), as well as those populations who would likely not be served due to a variety of program barriers, and establish affirmative performance goals to ensure that, truly, all low-income customers have an adequate opportunity to participate.

Flowing from this first step, DTE should engage in (or should require its implementation contractors to engage in) the intentional targeting of low-income populations to ensure that specific sub-populations are neither unserved nor under-served. The data presented above demonstrates that DTE fails to ensure that all sub-populations within the low-income population are being equitably served. In making this recommendation, I understand that "the Company relies on its Implementation Contractors to provide the necessary marketing for the success of its programs."[58] But to assume, as DTE does, that there is no need to consider differences in how to provide information and education by the demographics of the customer basis is unacceptable. For example, DTE does not consider the need to differentiate information and education by age,[59] by race or ethnicity,[60] by income,[61] by geographic area,[62] or by energy burden.[63] I discuss the "intentional targeting" of customers with payment difficulties and high energy burdens further below. Mr. Lewis discusses effective mechanisms used for the intentional targeting of low-income customers by geography in their testimony within this case.

Finally, DTE should engage in a routine, periodic, performance evaluation on whether its low-income EWR program is meeting the above-recommended performance goals to

[58] Ex. SC-5, Case No. U-20876, Response to SCDE-1.54.
[59] Ex. SC-5, Case No. U-20876, Response to SCDE-1.44a.
[60] *Id.* at SCDE-1.44b.
[61] *Id.* at SCDE-1.44c.
[62] *Id.* at SCDE-1.44d.
[63] *Id.* at SCDE-1.44f.

equitably serve all aspects of its low-income customer base. As I note immediately above, existing data indicates that not only are EWR expenditures not equitably flowing to all geographic areas, but even when total expenditures flow to all areas, the types of measures being supported are not. DTE does not report and publicly evaluate such information.[64]

Q. Can DTE rely on the distribution of funds to various contractors as a means of serving low-income customers equitably across different geographic areas?

A. No. While DTE repeatedly states that it does not consider the geographic distribution of its EEA funding, according to the Company, DTE "provides funding to approved Participating organizations."[65] It then confirmed that "each participating organization has a prescribed service area/geography."[66] This approach not only limits the geographic distribution of overall funding, but also limits the geographic distribution of complete service provided to income-eligible customers. DTE states that "not every home with efficiency potential will receive measures as part of the EEA program."[67] Some of the reasons DTE provides on why this is so include:[68]

- "Certain partner organizations may not be interested in providing multiple measures for all customers it serves and may instead focus on specific measures, such as refrigerators."

- "Partner organizations may choose to not install measures to address every opportunity for energy efficiency identified in the customer's home, ultimately, this is their choice."

[64] See, e.g. Ex. SC-5, Case No. U-20876, Response to SCDE-1.40c–e.
[65] Lebrun Direct at Ex. A-9, page 46.
[66] Ex. SC-7, Case No. U-20876, Response to NRDCNHTECDE-1.20c.
[67] *Id.* at NRDCNHTECDE-1.20g.
[68] *Id.* at NRDCNHTECDE-1.20f.

- "Partner organization may not have the contractor network to provide specific measures."

- "Partner organization may not have requested allocations for specific measures and/or the partner organization may not have allocations available to provide specific measures."

- "Partner organization may not have the capacity to address every measure."

- "Not all partner organizations conduct an initial assessment to identify all opportunities for energy efficiency."

Not only does the DTE program not address the distribution of EEA measures by geography in allocating EEA funds, but even when DTE does allocate funds to serve a particular geographic area, the Company divorces itself from whether low-income customers being served are being *fully* served by its low-income EWR program.

Q. Are there specific ways to engage in "intentional targeting" of customers?

A. Yes. One way to engage in intentional targeting is to engage in a neighborhood-based outreach for delivering DTE EWR measures to low-income customers. As I describe in detail above, for example, within the DTE service territory, it is possible to identify a limited number of specific Census Tracts that have a high concentration of households with characteristics demonstrating a particular need. Neighborhood targeting would seek to treat the entire neighborhood, recognizing that doing so would generate a high penetration of investment in households that have demonstrated characteristics of need. The implementation of a neighborhood targeting such as I recommend here is further explained in the Direct Testimony of Jamal Lewis filed in this case.

Q. Has DTE considered this geographic approach to targeting the delivery of low-income EWR investments?

A. No. Unfortunately, DTE has never considered this approach for targeting investments. When asked for all information about the efficiencies of geographic targeting, DTE responded that "documents discussing the efficiencies derived through geographic proximity of participants in delivering the stated measures and how they may be used in developing implementation and marketing strategies and/or in estimating participation does [sic] not exist."[69] DTE also confirmed that it is not aware of any documents in its possession evaluating "the manner by which residential participation opportunities are provided for 'all customers' by ensuring or targeting participation by Census Tract, zip code, or community."[70]

Q. Does DTE's EWR budget to support the Payment Stability Plan go far enough to address the needs of highly energy burdened customers?

A. While it is important that DTE target Payment Stability plan ("PSP") Pilot Program participants with EWR measures, the PSP limits DTE's reach to assist high energy burdened customers. DTE's PSP pilot is a percentage of income payment plan ("PIPP") established to cap customers' bills to 6% (single fuel) or 10% (dual fuel) based on their income.[71] Generally, a PIPP is an important way to ease a customer's energy burden. Given the expense of a PIPP such as the PSP to a utility (rate recovery, arrears forgiveness, etc.), targeting PSP participants with EWR measures is a good way to reduce

[69] Ex. SC-5, Case No. U-20876, Response to SCDE-1.29.
[70] Ex. SC-5, Case No. U-20876, Response to SCDE-3.11.
[71] *Ex parte Application for Approval of a Low-Income Payment Stability Plan Pilot Program*, at ¶ 5, Case No. U-20929 (Nov. 18, 2020).

the cost to DTE of providing PSP benefits. However, because the pilot is limited to 2000 customers, with a maximum arrearage of $1500 per customer, and minimum consumption levels, this program may leave or exclude some high energy burdened customers.[72] Thus, DTE limiting itself to providing EWR support to PSP and customers on other payment plans would not be as comprehensive and far reaching as a geographic targeting program that would focus investments in areas with high average energy burdens. The implementation of the PSP will most likely not substitute for the types of intentional targeting of low-income energy waste reduction investments that I recommend herein.

Q. Are there other ways to proactively target certain low-income customers?

A. Yes. As DTE recognized in adopting its Payment Troubled Customer Initiative ("PTCI") in the settlement of its 2019 EWR Plan, another way to engage in intentional targeting is to direct specific outreach and enrollment efforts to low-income customers that have characteristics indicating that EWR investments would generate more than simply the traditional cost savings associated with reduced energy production. Directing targeting toward low-income payment troubled customers, for example, generates additional cost reductions in the form of reduced working capital, reduced credit and collection costs, reduced lost revenue due to forced mobility and nonpayment disconnections, and reduced bad debt. Directing targeting toward low-income customers who are participating in income-based assistance programs generates additional cost reductions in the form of reduced financial subsidies.

[72] *Id.* at ¶¶ 1, 6.

Q. What respective roles should DTE and its implementation contractors play in intentionally targeting certain low-income customers?

A. DTE states in relevant part that "the Company relies on its Implementation Contractors to provide the necessary marketing for the success of its programs. With the wide and varied program offerings that the Company provides, there are a multitude of marketing tactics used to encourage program participation. . .The appropriate marketing tactics used are specific to the needs of the program and to audience at points when they may be likely to decide to participate."[73] While it is appropriate to have the implementation contractors be responsible for the outreach strategies and tactics, the outreach and enrollment *outcomes* regarding targeted populations falls within the exclusive province of DTE.

DTE should take specific steps to expand the base of contractors who can provide deeper measures. This need not entail substituting contractors for existing contractors. It would instead involve expanding the overall population of contractors who can be called upon to deliver low-income energy waste reduction services. In addition, DTE should affirmatively respond to the message from Community Action Agencies who need more funding in order to provide deeper measures. Without adequate funding, as DTE, itself, states (as quoted above), contractor capacity to deliver deep measures is limited by resources rather than by the availability of cost-effective waste reduction opportunities.

Q. Does DTE pursue specific outreach to payment troubled low-income customers and low-income assistance program participants?

A. Although this was the original concept of the PTCI, DTE can do more to engage in proactive, comprehensive, and, targeted outreach to participants in its LSP, SPP (the customers targeted for the PTCI), and PSP plans. Proactive targeting involves creating a separate pool with specific messaging developed to address the needs of the payment troubled customer.

Further, when asked to provide the service territories for its EEA partners, DTE provided a list that is organized by city only.[74] It is not clear that each EEA partner assigned to a county is actually active in every part of the county, and some of the EEA partners cover many counties across the state. There is no indication that DTE or its implementing contractor ensures that the list provided to a partner organization includes customers within its immediate area of operations. By initiating a neighborhood-based targeting approach, DTE could better ensure that it provides data on customer need or payment-troubled status to the correct partner organization.

IV. CONTINUATION OF THE PAYMENT TROUBLED CUSTOMER INITIATIVE

Q. Please describe the purpose of this section of your testimony.

A. In this section of my testimony, I review what we have learned to date from DTE's PTCI. I recommend that the Company continue to target payment-troubled low-income

[74] Case No. U-20876, Response to AGDE 1.19, Attach. 1.

customers pending the completion of its program evaluation and the decisions on how it will incorporate the PTCI into its permanent low-income EWR program structure.

Q. What has DTE said about the continuation of the PTCI?

A. DTE does not say anything about the PTCI in its application and supporting testimony. In response to discovery, DTE states that "The Amended 2020-2021 EWR Plan states 'The Company shall also seek commission approval to continue the Payment Troubled Customers EWR initiative, *or some version thereof* (emphasis added), in its 2022/2023 EWR Plan.'"[75] The Company states that it "will complete customer enrollment in the PTCI pilot by the end of 2021, however, the program will continue to support LSP and SPP customers. The Company will also continue the evaluation work per the settlement agreement in Case No. U-20373."[76]

Finally, DTE states that "there are components of the Payment Troubled Customer Initiative that will continue. In supporting the PSP that is being administered through DTE's Revenue Management and Protection team, EWR will continue to receive lists of customers enrolled on PSP. EWR will continue to utilize our implementing contractors to distribute the list to our partnered organizations for outreach to encourage EEA participation."[77]

[75] Ex. SC-5, Case No. U-20876, Response to SCDE-1.17 (emphasis in original).
[76] Ex. SC-5, Case No. U-20876, Response to SCDE-1.16b.
[77] *Id.* at SCDE-1.16c.

DTE has not only failed to consider the demographic factors which might be associated with low-income customers being "at risk of shutoff," but it also considers this information to be *not relevant* to its development of low-income programs.[78]

The questions posed in this proceeding involve not merely whether, and in what form, the PTCI will be continued, but also the extent to which payment-troubled status can and should be used as a targeting criteria in the normal course of operating its low-income EWR programs. Further, parties should consider whether DTE is appropriately considering the full range of beneficial impacts that targeting energy waste reduction investments to payment-troubled low-income customers will generate for the utility.

Q. Why should DTE continue to enroll customers in its PTCI program with improved targeted proactive outreach and enrollment processes and procedures?

A. Research I undertook for the federal LIHEAP office in 1999 examined reasons why low-income customers do not engage in "constructive responses" to inability to pay. For example:

- I found that some "constructive responses" standing on their own do not address the underlying affordability problem facing the customer. I reported that "Low-income customers, however, frequently have little incentive, and even fewer choices, to pursue one of these constructive responses to bill unaffordability. Enrolling in an energy efficiency program to reduce high bills on a going-forward basis, for example, does not help pay the existing arrears unless coupled with a reasonable long-term deferred payment plan. Conversely, agreeing to a deferred payment arrangement does not address affordability on a going-forward basis unless some adjustment can be made in either the level of the bill or the level of household resources available to pay for the bill."

[78] Ex. SC-5, Case No. U-20876, Response to SCDE-1.17; Ex. SC-5, Case No. U-20876, Response to SCDE-1.16b; Ex. SC-5, Case No. U-20876, Response to SCDE-1.58a–c.

- I found further that by the time a shutoff notice has been issued, the time for a low-income customer to engage in a "constructive response" has lapsed. I reported that: "All too frequently, the customer is faced with an immediate need (i.e., bill payment by a date certain) with the available constructive responses to an inability-to-pay unable to deliver assistance either in the form, the time period, or the magnitude necessary to meet that need. Given the immediate consequences of failing to address the short-term nonpayment crisis, the customer is pushed into the negative actions identified in this research."[79]

Accordingly, I recommend DTE engage its billing and payment records as a means to identify low-income households that might benefit from participation in its low-income EWR programs.[80] The identified list of payment-troubled customers should then be placed in a separate pool with specific messaging developed to address the needs of the payment troubled customer and the purposes of the PTCI. Through such processes, the PTCI could provide customers with resources they need not only to reduce energy consumption, but also lower their bills. To pursue these ends, DTE would need to engage in some affirmative program planning and design that it has not pursued for the current program.

Q. What benefits will DTE generate?

Almost by definition, an energy waste reduction program directed toward payment-troubled low-income customers will generate cost savings to the utility. When low-

[79] Roger D. Colton, *Measuring LIHEAP's Results: Responding to Home, Energy Unaffordability*, at 12, 13, Public Finance and General Economics (1999).
[80] See generally Roger D. Colton, *The Use of Utility Data Processing Records as a Data Mining Source on Low-Income Consumers: Converting Information to Knowledge*, Public Finance and General Economics (Apr. 1999). See also Roger D. Colton, *Zip Code Scoring: Targeting EITC Outreach to Delinquent Utility Customers*, Public Finance and General Economics (Feb. 2003).

income customers have difficulty in paying their bills, a reduction in bills will help the utility reduce company-side expenses. One of the primary utility cost savings is a reduction in working capital. Working capital expense is driven by two factors: (1) the *level* of arrears; and (2) the *age* of arrears. For example, an arrearage of $1,500 generates a greater working capital expense than an arrearage of $500; or, an arrearage that is 120 days old generates a greater working capital expense than an arrearage that is 60 days old. The reduction in bills arising because of the delivery of low-income EWR measures to payment-troubled customers will reduce both of these impacts. If installed EWR measures reduce an arrearage from $500 to $300, for example, it will reduce working capital needs even though the arrearage remains greater than $0. And, EWR measures that help improve payment patterns such that payments made 90 days in arrears are instead made in 60 days will generate a reduction in revenue lag days and thus produce a working capital savings for DTE. Further, a reduction in arrears provides ongoing working capital savings rather than one-time (or limited time) savings. A customer with an arrearage reduction, for example, will generate a working capital savings each month the arrears are lower than they would have been. This stands in contrast to one-time savings such as bad debt savings or credit and collection savings. Finally, since working capital is a capital expense (included in rate base), not only will there be an expense reduction, but there will also be a reduction in the rate of return provided on capital items. Indeed, a reduction in working capital generates a double benefit because a reduced return would include a reduction in the equity return, which would have a tax component associated with it.

V. FUNDING RECOMMENDATIONS.

Q. Please describe the purpose of this section of your testimony.

A. In this section of my testimony, I recommend that DTE increase its overall budget for both single-family and multi-family income-qualified EWR programs.

Q. Why do you recommend a budget increase?

A. For a number of reasons. First, as I describe in detail above, DTE's funding of low-income energy waste reduction should be based on principles of vertical equity rather than DTE's current approach, which assumes equity is achieved when the proportion of EWR spending on low-income programs is equal to the proportion of its customer base that is low income.

Second, even using DTE's own measure of equity, there has been a large shortfall historically which is not remedied by the budget amounts proposed in this plan.[81]

Third, to date, DTE has not funded its low-income programs at a level that would exhaust the administrative capacity to deliver energy waste reduction services. For example, in the past DTE has tapped additional capacity not funded in its original plan proposal by reallocating budget to increase low-income EWR services.[82]

A related reason is that not every low-income customer who is reached by DTE's low-income EWR program receives the full range of cost-effective energy waste reduction

[81] Ex. SC-5, Case No. U-20876, Responses to SCDE-1.46-02
[82] Ex. SC-5, Case No. U-20876, Responses to SCDE-1.42a–b; Ex. SC-5, Case No. U-20876, Responses to SCDE-3.8.

measures that could be implemented for that home, as described above. DTE should ensure that a low-income housing unit that is treated has its entire set of cost-effective energy waste reduction potential exhausted at the time of treatment, either through a single contractor or through a combination of contractors. Low-income housing units should not receive partial treatment of their energy waste reduction potential.

Finally, additional budget is required to address the specific programmatic shortfalls and reporting and tracking needs discussed in Mr. Neme, Ms. Brindel, and Mr. Lewis's testimony, as well as my own.

The neighborhood-based delivery approach that I and Mr. Lewis recommend does not necessarily require a special "program," with additional investments as opposed to a different distribution of existing funds. However, to truly capitalize on the benefits of neighborhood-based delivery through improved outreach as well as coordination to leverage other sources of funding, as described in Mr. Lewis's testimony, additional budget may be necessary.

Q. Are there capacity limitations that would prevent local agencies from spending an increased budget?

A. No. In making this determination, one need not only consider existing capacity but should take into account the development of future capabilities as well. Consider, for example, when the Community Action Agencies nationwide received more than $5 billion in additional weatherization funding through the American Recovery and Reinvestment Act (ARRA) over a three-year period starting in 2009. Through ARRA,

Michigan received $243,398,975, and weatherized an additional 32,332 homes.[83] A consideration of capacity should take into account both existing and additional capacity (given adequate funding).

Q. Are you proposing a specific amount that DTE should increase its low income EWR budget by?

A. While I am not proposing a specific budget increase, I would recommend adopting, at a minimum, the budget recommendations made in Mr. Neme's, and Ms. Brindel's direct testimonies filed in this case.

VI. PROGRAM REPORTING AND DATA COLLECTION.

Q. Please describe the purpose of this section of your testimony.

A. In this section of my testimony, I explain what program reporting and data collection DTE should implement on a going forward basis for its low-income program. I explain a set of data that DTE should use to help report the impacts of its low-income energy waste reduction investments on payment patterns and the cost savings generated by improving those patterns.

Q. Do you have any clarifying or definitional comments you wish to make about your recommendations before you begin?

A. Yes. Before I begin, let me note the following observations about my recommendations. First, within that data that I recommend being collected, my references to "accounts"

[83] Weatherization Assistance Program: 2009 Funding Survey, Table 9, https://nascsp.org/wp-content/uploads/2018/02/py_2009_funding_survey.pdf (last visited Oct. 4, 2021).

(and related terms, e.g., "customers") is intended to be limited to low-income EWR participants. Second, whenever I talk about "arrears," I mean unpaid bills for current service incurred after someone receives their EWR treatment. Frequently, someone who receives energy waste reduction investments through DTE's low-income EWR is going to have pre-existing arrears. What we want to know, however, is how people are performing *after* they receive EWR measures. Third, while I state that data should be collected "by month," what I mean is that the data should be monthly data. That "monthly data," however, could be filed (or submitted or whatever term is most appropriate) on a bi-annual or on an annual basis. DTE does not need to produce the data each month, but when DTE does produce data, it should be "by month."

Q. Given the above observations, what data reporting elements do you recommend the Company adopt to allow the Commission and stakeholders to adequately assess the low-income EWR investments on payment patterns?

A. Noting that what I recommend below should not be construed as being in contravention of that data which is already routinely collected regarding the energy savings bill reductions associated with EWR, I recommend as follows:

1. The dollars of bills for current service by month;
2. The dollars of actual receipts from customers[84] by month;[85]

[84] The source of revenue is irrelevant. The phrase here "from customers" is, for example, not intended to distinguish receipts from LIHEAP and receipts paid out-of-pocket by customers.

[85] The combination of Metric #1 and Metric #2 allows us to look at the percentage of bills that are paid each month. If you place the dollars of bills (Metric #1) in the denominator and the dollars of receipts (Metric #2) in the numerator, you can calculate what percentage of bills is being paid on a monthly basis. You can also aggregate these monthly bills (and payments) so that you can examine the results (the term for this calculation is "payment coverage ratio") on an annual basis, on a seasonal basis, or on any other time period which you desire. For example, in an evaluation I performed of a Colorado energy affordability program, one question was the extent to which customers made payments after receiving a

3. The number of accounts receiving a bill by month;
4. The number of accounts making a payment by month;[86]
5. The number of disconnect notices issued by month;[87, 88]
6. The number of accounts in arrears (setting aside any pre-existing arrears. This would, in other words, be limited to arrears incurred since they entered the program) by month;
7. The dollars of arrears (with the same disclaimers) by month;
8. The average arrears of accounts with arrears (other than any pre-existing arrears) by month;
9. Conversely, the number of accounts with a $0 balance[89] by month;[90]
10. The number of Final Bills by month (as I explain below, this is a better metric than disconnections); and
11. Finally, the number of Final Bills disaggregated by those with an arrearage and those with no arrearage[91] by month.[92]

I wish to emphasize that I do not *object* to counting the number of shutoffs. While that data identifies an important outcome, it does not provide more meaningful information

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disconnect notice. I calculated a bill payment coverage ratio for the four months after the receipt of a disconnect notice. One additional question was the extent to which customers made payments after having service disconnected and reconnected (or whether customers simply fell back into arrears again). Again, that was tested by examining the payment coverage ratio for the four months subsequent to the reconnection.

[86] This allows us to see what percentage of people make *some* payment (while Metric #1 and Metric #2 allow us to see what percentage of the bill is paid).

[87] This is more important than the number of disconnections.

[88] Metrics # 1, 2, 3, 4 and 5 also allow us to calculate a number of other data points. For example, the number of disconnect notices per $1,000 in bills (or, similarly, the number of disconnect notices per $1,000 in payments) lets us see how hard the Company has to work to collect its revenue. Similarly, the number of disconnect notices per 1,000 bills provides insights into the extent of payment troubled status of customers. You can also "flip" these metrics. Looking at the amount of dollars received per disconnect notice allows us to assess the efficiency of collection. An increasing amount of revenue per disconnect notice may mean that the Company is issuing fewer disconnect notices, or that the Company is collecting more dollars, either of which is a positive development.

[89] Experience counsels that testing for whether an account has a $0 balance is easier than tracking whether a customer has made a payment "in-full" and "on-time" each month. In fact, it is the $0 balance which a utility should have the most interest in.

[90] In contrast, the extent to which customers make partial payments is determined through the "payment coverage ratio" discussed above. A "payment coverage ratio" of more than 0% and less than 100% indicates a partial payment.

[91] By definition, a "Final Bill" will have a balance for usage incurred prior to the bill. The metric tracked here is whether the Final Bill has an unpaid balance from a *prior* billing period (i.e., an arrearage).

[92] The Final Bills metric does not allow us to directly measure who receives a Final Bill because of payment troubles and who receives a Final Bill simply because they are moving. However, we can gain some insights into that question by examining the extent to which someone was current on their account at the time they receive a Final Bill.

related to whether or how long the customer had arrears or the magnitude of those arrears. I think the other data points are better. "Final Bills," I believe, are better than "shutoffs" because Final Bills shows the number of customers actually leaving the system, whether due to a shutoff, or because they're "running" from a debt, or for some other reason. And, if we get Final Bills disaggregated by whether they had an arrearage or not, we can see how many folks with Final Bills were in payment trouble when they left the system (and thus got a Final Bill).

Q. Please summarize your conclusions and recommendations to the Commission.

A. On behalf of Sierra Club, the Ecology Center, and Natural Resources Defense Council, I recommend that the Commission:

- Require DTE ~~Gas~~ Electric to affirmatively distribute its residential EWR investments equitably to low-income customers.

- Use principles of vertical equity in reviewing the extent to which, if at all, DTE EWR investments have been equitably distributed.

- DTE engage in best efforts to enroll multi-family properties that contain clusters of low-income customers, or, in particular, that contain clusters of participants in LSP, SPP and PSP, in whole-building retrofits through the Company's low-income multi-family energy waste reduction program.

- DTE should adopt a series of fundamental planning steps in the design and implementation of its low-income EWR program (both for single-family or multi-family investments). The first step is to adopt specific performance objectives as to the populations to be reached by DTE's low-income programs. Flowing from this first step, DTE should engage in (or should require its implementation contractors to engage in) the intentional targeting of low-income populations to ensure that specific sub-populations are neither unserved nor under-served. Finally, DTE should engage in a routine, periodic, performance evaluation on whether its low-income EWR program is meeting a fundamental objective to equitably serve all aspects of its low-income customer base.

- DTE should utilize, as one way to engage in intentional targeting, a neighborhood-based outreach for delivering DTE EWR measures to low-income customers. Neighborhood targeting would seek to treat the entire neighborhood, recognizing that doing so would generate a high penetration of investment in households that have demonstrated characteristics of need.

- DTE should continue to target payment-troubled low-income customers through its PTCI pending the completion of its program evaluation and the decisions on how it will incorporate the PTCI into its permanent low-income EWR program structure.

- DTE should continue to engage its billing and payment records as a means to identify low-income households that might benefit from participation in its low-income EWR programs. The identified list of payment-troubled customers should then be placed in a separate pool with specific messaging developed to address the needs of the payment troubled customer and the purposes of the PTCI.

- I recommend that DTE increase its overall budget for both single-family and multi-family income-qualified EWR programs. There has been a large shortfall historically which is not remedied by the budget amounts proposed in this plan, DTE has not funded its low-income programs at a level that would exhaust the administrative capacity to deliver energy waste reduction services, and additional budget is required to address the specific programmatic shortfalls and reporting and tracking needs discussed in Mr. Neme, Ms. Brindel, and Mr. Lewis's testimony, as well as my own. To truly capitalize on the benefits of neighborhood-based delivery through improved outreach as well as coordination to leverage other sources of funding, as described in Mr. Lewis's testimony, additional budget may be necessary.

- Finally, DTE should engage in prescribed program reporting and data collection to help report the impacts of its low-income energy waste reduction investments on payment patterns and the cost savings generated by improving those patterns.

Q. Does this complete your direct testimony?

A. 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** to fully comply with Public Act 295 of 2008, as amended by Public Act 342 of 2016.	U-20876

PROOF OF SERVICE

On the date below, an electronic copy of **REVISED Direct Testimony of Roger Colton on behalf of Sierra Club** was served on the following:

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The statements above are true to the best of my knowledge, information and belief.

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Counsel for Sierra Club

Date: November 29, 2021

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