RIVENOAK
LAW GROUP PC
Valerie J. M. Brader
Admitted in Michigan
valerie@rivenoaklaw.com

March 19, 2024

VIA ELECTRONIC CASE FILING

Ms. Lisa Felice, Executive Secretary
Michigan Public Service Commission
7109 W. Saginaw Highway
Lansing, MI 48917

Re: **MPSC Case No. U-21384**: In the matter of the Application of **DTE GAS COMPANY** for approval of depreciation accrual rates and other related matters.

Dear Ms. Felice:

Enclosed for filing please find the ***Direct Testimony of Robert C. Ackley and Dr. Melissa Stults on behalf of the City of Ann Arbor*** for the above referenced case.

Should you have any questions or comments regarding this matter, please do not hesitate to contact my office.

Sincerely,

Valerie Jackson

Counsel to the City of Ann Arbor

cc: w/enclosure: Parties of Record

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of **DTE GAS COMPANY** for approval of depreciation accrual rates and other related matters.	U-21384 ALJ Jonathan F. Thoits

---

DIRECT TESTIMONY OF ROBERT C. ACKLEY

ON BEHALF OF

THE CITY OF ANN ARBOR

March 19, 2024

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Robert C. Ackley. I am the owner of Gas Safety Inc. My business address is 16 Brook Lane, Southborough, Massachusetts 01772.

Q. On whose behalf are you submitting your testimony in this proceeding?

A. My testimony is on behalf of the City of Ann Arbor ("Ann Arbor" or "the City").

Q. Have you previously testified before this Commission or in other proceedings?

A. No.

Q. What is your educational background?

A. I graduated from high School in 1977 and attended Quinsigamond College and Assumption College, both in Worcester, Massachusetts.

Q. What is your professional background?

A. I spent over 30 years in the natural gas industry as a safety expert, beginning in the identification of and response to gas leaks for utilities, largely in the Northeastern Seaboard from New Jersey north to all the New England states and then on to training employees and contract bidding on monitoring entire gas pipeline systems. In 2003, the Department of Transportation implemented the Operator Qualification program that required written materials and training processes, which I oversaw and implemented for Omark Consultants. In 2006, I founded Gas Safety Inc., which has performed both academic research activities and a number of services for non-utility clients. Since 2006, I have worked with various organizations to conduct gas leak surveys and studies, as well as emissions and vegetation surveys and studies. I have also provided training in the detection of gas leaks and the collection of gas leak data, the vegetation patterns

indicative of gas leakage, as well as consultation services regarding best practices related to assessing natural gas leakage and compliance with applicable laws and safety regulations.

Q. Has your work related to natural gas leaks ever been published?

A. Yes, I have co-authored several articles for publication, including the following:

- Michanowicz, Drew; Dayalu, Archana; Nordagard, Curtis L.; Buonocore, Jonathan J.; Fairchild, Molly W.; Ackley, Robert; Schiff, Jessica; Liu, Abbie; Phillips, Nathan G.; Schulman, Audrey; Magavi, Zeyneb; Spengler, John D., "Home is Where the Pipeline Ends: Characterization of Volatile Organic Compounds Present in Natural Gas at the Point of the Residential End User," *Environ. Sci. Technol.*, 2022, 56, 14. 10258-10268.

- Schollaert, Claire; Ackley, Robert C.; DeSantis, Andy; Polka, Erin; Scammell, Madeleine K., "Natural Gas Leaks and Tree Death: A First-Look Case-Control Study of Urban Trees in Chelsea, MA USA," *Environ. Pollut.*, Vol. 263, Part A, August 2020, 114464.

- Hendrick, Margaret F.; Ackley, Robert; Sanaie-Movahed, Bahare; Tang, Xiaojing; Phillips, Nathan G., "Fugitive methane emissions from leak-prone natural gas distribution infrastructure in urban environments," *Environ. Pollut.*, Vol. 213, June 2016, 710-716.

- Jackson, Robert B.; Down, Adrian; Phillips, Nathan G.; Ackley, Robert C.; Cook, Charles W.; Plata, Desiree L.; Zhao Kaigung, "Natural Gas Pipeline Leaks Across Washington, DC," *Environ. Sci. Technol.*, 2014, 48, 3, 2051-2058.

Q. Are you testifying today as an expert witness?

A. Yes, I am testifying as an expert in the field of natural gas utilities and natural gas leak detection.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to discuss the condition of the existing natural gas infrastructure in Ann Arbor and the appropriate physical life of plastic pipelines used in

natural gas systems.

Q. Are you sponsoring any exhibits?

A. Yes. I am sponsoring the following exhibits:

Exhibit AA-1	Curriculum Vitae of Robert C. Ackley
Exhibit AA-2	Methane Detection Project Report
Exhibit AA-3	Int'l Journal of Pressure Vessels and Piping Article
Exhibit AA-4	Plastic Industry Pipe Association of Australia Paper

II. CONDITION OF NATURAL GAS INFRASTRUCTURE IN ANN ARBOR

Q. Please describe some of your recent work for the City of Ann Arbor.

A. I conducted a methane detection survey to determine the location of possible natural gas leaks and the condition of the natural gas infrastructure in the City. The results of that survey are in my Methane Detection Project Report, which is Exhibit AA-2.

Q. Based on that survey, what is your assessment of the condition of the natural gas infrastructure in the City?

A. The majority of the natural gas infrastructure in the City appears to be in good condition. My equipment detected a lower level of leakage in Ann Arbor than I generally observe in other cities.

Q. Based on your observations, do you believe the existing natural gas infrastructure in Ann Arbor will safely last until at least 2050?

A. I believe the vast majority of the existing natural gas infrastructure in Ann Arbor will be able to safely serve the City until at least 2050. There are portions of pipe that will need to be repaired, but the expense of completely replacing any pipes should be able to be avoided, with the caveat that if certain pipes or sections of pipes have a history of failure

or extraordinary leakage, replacement of only those particular pipes (or sections thereof) may be necessary to address immediate safety concerns.

Q. Is it unusual for natural gas infrastructure to be in place for 50 years or longer without being replaced?

A. No. In my experience, many systems that have been in place for well over 100 years still have some original pipes in use. For example, there are pipes in gas distribution systems around the country from the early 1900s that are still safely operating. Most of the original gas systems were in old cities and gradually grew to suburbs and rural areas. Most of the systems are now a mix of newer plastic pipes and older original steel and cast-iron.

III. PHYSICAL LIFE OF PLASTIC PIPES

Q. According to DTE's Depreciation Rate Study, the average life of its plastic services is 45.17 years (Exhibit A-6, p. 31-32). Does that average life align with the average physical life of plastic pipes in your experience?

A. No. Generally, plastic pipes should last a minimum of 50 years before needing to be replaced. It's possible that a section of a plastic pipe may need to be replaced in fewer than 50 years – for example, if it is struck by some outside force – but a physical life of at least 50 years should apply to the majority of plastic pipes used in natural gas systems.

Q. Is there additional research beyond your experience that supports a longer life for plastic piping?

A. Yes. In a 2022 paper regarding the lifetime predictions of polyethylene pipes based on slow crack growth, environmental stress cracking, and the mechanical and chemical degradation of polyethylene, the authors found that plastic pipes have a minimum

lifetime of 50 years. Exhibit AA-3. Further, the Plastics Industry Pipe Association of Australia Limited determined that a 50-year life expectancy for plastic pipe systems is conservative, and "such systems can reasonably be expected to last 100 years or more." Exhibit AA-4.

Q. Based on your experience and the available research, is DTE's use of 45.17 years as the average life of its plastic services reasonable?

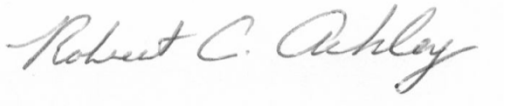
A. No. As stated above, studies have shown the minimum physical life of plastic pipes is 50 years (barring some outside force), and there is an expectation that plastic pipes will last beyond this minimum – up to 100 years or more. Thus, it is my opinion that using any amount less than 50 years in the calculation of depreciation rates for plastic pipes is unreasonable (unless there is some other non-physical reason for accelerating depreciation). Assuming plastic pipes will have a physical life of at least 50 years is actually conservative given the current available research.

Q. Does this conclude your direct testimony?

A. Yes.

Q. Do you swear under penalty of perjury that the statements above are true to the best of your knowledge, information, and belief?

A. Yes.



Robert C. Ackley

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of **DTE GAS COMPANY** for approval of depreciation accrual rates and other related matters.	U-21384 ALJ Jonathan F. Thoits

---

DIRECT TESTIMONY OF DR. MELISSA STULTS

ON BEHALF OF

THE CITY OF ANN ARBOR

March 19, 2024

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Dr. Melissa Stults. I am the Sustainability and Innovations Director for the City of Ann Arbor, Michigan ("Ann Arbor" or "the City"). My office is located at 301 E. Huron Street, Ann Arbor, MI 48104.

Q. Please describe your educational background and professional experience.

A. I hold a dual doctoral degree of urban resilience from the University of Michigan. This degree is from Urban and Regional Planning and from the former School of Natural Resources and the Environment, now known as the School for the Environment and Sustainability ("SEAS"). I also hold a master's degree in Climate and Society from Columbia University and a bachelor's degrees in Marine Biology and Environmental Sciences from the University of New England.

Professionally, I have spent the last 20 years working directly with local and regional governments, as well as indigenous populations, to advance climate and sustainability actions. This has included work in nonprofits, for profits, academic institutions, philanthropic organizations, and local government. In this work, I have focused on translating complex scientific information into useful, usable, and understandable pieces of knowledge that can inform decision-making across scales (i.e., local, regional, statewide) and sectors (i.e., built, natural, social, cultural, economic). I have been the City of Ann Arbor's head of Sustainability and Innovations for approximately six years but have worked on sustainability and climate-related activities in Ann Arbor since moving to the City in 2012.

Q. On whose behalf are you submitting your testimony in this proceeding?

A. My testimony is on behalf of the City of Ann Arbor ("Ann Arbor" or "the City").

Q. Have you previously testified before this Commission or as an expert in other proceedings?

A. Yes. I provided testimony in Case Nos. U-20471, U-20836, U-21172, and U-21297.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to discuss the impacts of sustainability and climate-focused goals and policies on the useful life of fossil gas assets, and the need to consider such impacts when calculating depreciation rates.

Q. Are you sponsoring any exhibits?

A. Yes. I am sponsoring the following exhibits:

Exhibit AA-5	Curriculum Vitae of Dr. Melissa Stults
Exhibit AA-6	A^2ZERO Carbon Neutrality Plan
Exhibit AA-7	University of Michigan Board of Regents Minutes, May 2021
Exhibit AA-8	University of Michigan Priorities & Progress Web Page
Exhibit AA-9	DTE Sustainability Report (excerpts)
Exhibit AA-10	Ann Arbor City Council Resolution, R-23-101
Exhibit AA-11	National Renewable Energy Laboratory, "Blending Natural Gas Pipeline Networks: Key Issues" (excerpt)
Exhibit AA-12	Depreciation Primer: United States Agency for International Development, National Association of Regulatory Utility Commissioners, *Depreciation Expense: A Primer for Utility Regulators* (May 2021) (excerpt)

Exhibit AA-13	New York State Electric & Gas Corporation, Rochester Gas and Electric Corporation, *Depreciation Study: Potential Impacts of Climate Change Policies and Laws* (2022)
Exhibit AA-14	Discovery Response AADG-1.7a
Exhibit AA-15	Discovery Response AADG-1.8a
Exhibit AA-16	Discovery Response AADG-1.8b-c
Exhibit AA-17	Case 20-G-0131, State of New York Public Service Commission, Order Adopting Gas System Planning Process (May 12, 2022) (excerpts)
Exhibit AA-18	D.P.U. 20-80-B, Massachusetts Department of Public Utilities, Order on Regulatory Principles and Framework (Dec. 6, 2023) (excerpts)
Exhibit AA-19	Discovery Response AADG-1.2a
Exhibit AA-20	Discovery Response AADG-1.1
Exhibit AA-21	Discovery Response AADG-1.3
Exhibit AA-22	PHMSA Data
Exhibit AA-23	Discovery Response AADG-3.1a-b

II. IMPACTS OF SUSTAINABILITY GOALS ON THE DURATION OF USE OF FOSSIL GAS

Q. Does Ann Arbor have a climate and/or sustainability plan?

A. Yes. On June 1, 2020, Ann Arbor's City Council adopted the A^{2}ZERO Carbon Neutrality Plan ("A^{2}ZERO") (Exhibit AA-6), which is the City's plan for achieving a just transition to community-wide carbon neutrality by 2030. The strategies of A^{2}ZERO include powering the electrical grid with 100% renewable energy, transitioning appliances and vehicles from gasoline, diesel, propane, and fossil gas to electric, and significantly

improving the energy efficiency of our homes, businesses, schools, places of worship, recreational sites, and government facilities.

Q. Does the State of Michigan have a climate and/or sustainability plan?

A. Yes. In 2022, the Michigan Department of Environment, Great Lakes, and Energy released the MI Healthy Climate Plan ("MHCP"), which lays out a plan for Michigan to significantly reduce greenhouse gas emissions and achieve 100% economy-wide carbon neutrality by 2050. The MHCP focuses heavily on energy, transportation, and buildings, with one of its stated interim goals being the reduction in emissions related to heating homes and businesses by 17 percent by 2030.

Q. Has the University of Michigan ("UM") announced any plans related to reduction of fossil gas usage at its Ann Arbor facilities?

A. Yes. In 2021, UM committed to eliminating 100% of its carbon emissions from direct, on-campus sources (Scope 1) by 2040 and from purchased sources (Scope 2) by 2025. *See, e.g.* Exhibit AA-7, p. 4. As part of those efforts, UM is developing campus-specific utility plans focused on decarbonizing heating and cooling infrastructure and has ongoing installation of geothermal exchange heating and cooling systems that are both building-specific and district geothermal systems. Exhibit AA-8. The City has been in discussions with UM regarding collaborative deployment of geothermal systems to help scale adoption of sustainable heating solutions in the community and on campus.

Q. How will the implementation of these plans impact the energy industry?

A. The move toward clean energy will mean less reliance on fossil gas and an increased dependence on renewably powered-electricity, geothermal, and thermal energy networks. There will be an emphasis on switching to more sustainable means of heating homes,

businesses, and other buildings (such as through geothermal energy) and running our appliances from renewable resources, which means transitioning away from fossil gas. This is especially true in Ann Arbor where we are actively and aggressively pursuing solutions to power our entire community with clean, renewable sources of energy (i.e., transitioning away from fossil fuels such as fossil gas). There is a time in the not-so-distant future when Ann Arbor will likely no longer require fossil gas service. In the meantime, sharp reductions in usage are expected: the A^{2}ZERO plan states the City's goal is to have 100% of City facilities, 30% of owner-occupied homes, and 25% of rental properties fully electrified (meaning no fossil gas usage) by 2030. Exhibit AA-6, p. 31.

Q. Does DTE Gas have stated carbon-neutrality goals?

A. Yes. The Company has a stated goal of being 80% carbon neutral by 2040 and "net zero by 2050." Exhibit AA-9, p. 10.

Q. Has DTE stated how it can meet that goal?

A. No. The two innovations the Company's sustainability report discusses are renewable natural gas and hydrogen. Exhibit AA-9, p. 9.

Q. Do you think there will be enough renewable natural gas to make the current gas pipeline structure useful in a future where the A^{2}ZERO goals are met?

A. No. While renewable natural gas is something we have moderate interest in exploring in the near term to aid the transition, I don't believe supplies of renewable natural gas will be plentiful enough to replace Ann Arbor's current usage of fossil gas, nor do I believe that the sources of renewable natural gas that DTE is pursuing are the types of RNG we'd be interested in off-taking (e.g., Ann Arbor has no interest in dairy farms or anything that incentivizes more material consumption). This is one of the reasons the A^{2}ZERO plan

assumes electrification will be needed to meet the City's goals.

Q. Do you believe the current gas infrastructure would support a shift to hydrogen?

A. No. My understanding, based on research I have reviewed, is that even gas blends with as little as 5 to 15%[1] hydrogen by volume create increased risk associated with "end-use devices (such as household appliances), overall public safety, or the durability and integrity of the existing natural gas pipeline network." Exhibit AA-11, p. v. Thus, a shift to even a small concentration of hydrogen would likely lead to the need to replace DTE's existing pipelines and customers' end-use appliances. That means people replacing gas furnaces today are unlikely to get the full life of those furnaces if DTE meets its own goals using the technologies it has identified. If we need to replace appliances and pipelines in any future, we should be moving to renewable alternatives for heating (e.g. thermal solutions) that will increase customer safety by eliminating explosion risk and secure long-term cost savings by eliminating heating fuel costs and lowering electric costs for cooling.

III. DTE'S FRANCHISE IN ANN ARBOR

Q. Is a franchise necessary for DTE to use existing infrastructure to serve existing customers or expand service to new customers within the City of Ann Arbor?

A. Yes. A franchise, in addition to allowing use of the City's rights-of-way, gives DTE permission to conduct business within Ann Arbor.

Q. What is the duration of the current franchise Ann Arbor granted to the Company

[1] Other studies have suggested generally acceptable ranges for end-use systems of 5 to 20% hydrogen and up to 28% hydrogen for "properly serviced existing domestic appliances." *See*, Exhibit 11, p. vii; 15.

related to fossil gas service?

A. The Company currently has a 30-year franchise, which is revocable at will. It expires in 2027.

Q. What direction do you have from the Ann Arbor City Council regarding the expiration of that franchise?

A. On March 20, 2023, the Ann Arbor City Council unanimously passed a resolution stating, "Given the City's aggressive and time sensitive A^{2}ZERO goals, the community's desire for more resilient, reliable, and affordable energy, and the need to accomplish these ends in a legally prudent manner, [Council authorizes staff] to begin negotiations immediately with the goal of bringing a new franchise aligned with A^{2}ZERO and best practices regarding the use of the City's rights of way, back to Council as soon as possible." The Council noted that a sub-strategy of A^{2}ZERO is "an incremental transition from natural gas to electric transportation and building systems" and that it "recognizes the urgency in identifying and implementing thoughtful and innovative approaches to meet the City's goals." It directed City staff to begin negotiating a new or amended franchise "aligned, to the fullest extent possible, with the City's A^{2}ZERO goals and best practices regarding uses of the City's rights of way, without compromising the ability of community members to heat or cook in their homes and businesses." Exhibit AA-10.

Q. Do you believe a fossil gas franchise substantially similar to the current franchise, including a 30-year term, would be consistent with that direction?

A. No.

Q. By what year do you estimate Ann Arbor will no longer require fossil gas service?

A. I do not expect fossil gas use in Ann Arbor to extend past 2050 at the very latest.

However, we are working on strategies which we hope will expedite the timeline by which fossil gas will no longer be needed or desired in Ann Arbor.

Q. Do you believe there are portions of Ann Arbor which will no longer require fossil gas service between now and 2050?

A. Yes. The City is already designing a geothermal system to serve one neighborhood. Ann Arbor schools are installing geothermal systems at their locations. The University of Michigan is installing geothermal systems, and the City is exploring geothermal installations at various municipal facilities. The City has also engaged contractors to perform an initial evaluation of the potential for district or networked geothermal systems throughout the City. The City also intends to aggressively educate and engage residents, including through the use of rebates and incentives, about alternative solutions to heating with fossil gas, which we anticipate will lead to higher adoption rates of alternative heating solutions.

Q. Is the City required to continue with DTE as its fossil gas provider?

A. No. The City could choose to contract with an alternative provider, especially if that provider had a service offering that would more quickly advance the City's stated goals as outlined in Ann Arbor City Council's directive to move toward more sustainable sources of heating and cooling.

Q. **If the City transitioned to geothermal or other renewable sources for energy now provided by fossil gas, would it be required to grant a franchise to DTE to provide fossil gas service or other heating utility services?**

A. No. The City is not required to enter into a fossil gas franchise. In terms of other utility services (e.g. multi-customer geothermal), the City could choose to establish a municipal

utility, or could grant a franchise to any investor-owned, cooperative, or other municipal provider of those utility services.

IV. DEPRECIATION AND THE USEFUL LIFE OF ASSETS

Q. What is your understanding of depreciation?

A. Depreciation is the decrease in value of an asset over its life. In the utility ratemaking context, depreciation is "the periodic allocation of costs to reflect the use of tangible fixed assets." Exhibit AA-12, p. 10. Essentially, the inclusion of depreciation expenses in rates is the way utilities recover the cost of their assets over the course of the useful life of those assets.

Q. What is your understanding of how faster depreciation rates would affect customer rates?

A. Depreciation is both an expense and a deduction to rate base. That means that if depreciation is increased, the Company would no longer earn a return on a larger portion of its assets. Thus, over the useful life of the assets customers would pay less, but in the immediate future, customer rates would increase because cost recovery would take place over fewer years. Higher depreciation today means lower depreciation and rate base costs in the future, and thus an overall savings to customers.

Q. What is your understanding of the useful life of an asset?

A. The useful life of an asset is the time between the acquirement of an asset and the retirement of that asset. As indicated in a report by the New York State Electric & Gas Corporation and the Rochester Gas and Electric Corporation ("NY Utility Report"), this is true "no matter whether the retirement is due to decay, damage, the need for additional capacity, obsolescence, or due to the actions of public authorities such as environmental

regulations or requirements that result in retirement." Exhibit AA-13, p. I-16. In other words, the useful life of an asset "is not merely the attainable life from a physical standpoint." *Id.* Rather, several factors that are very likely to impact usage should be considered when estimating the amount of time an asset will be used and useful (and hence the asset life) for depreciation purposes.

Q. What factors should be considered when estimating the useful life of an asset?

A. The NY Utility Report lists the following factors that should be considered when estimating the useful life of an asset:

1. Observable trends reflected in historical data,
2. Potential changes in the type of property installed,
3. Changes in the physical environment,
4. Changes in management requirements,
5. Changes in government requirements, and
6. Obsolescence due to the introduction of new technologies.

Exhibit AA-13, p. I-23.

Q. Do the imminent changes to the energy industry as a result of climate initiatives fall within any of these factors?

A. Yes. The imminent changes to the energy industry that will result in less reliance on fossil gas directly fall under both changes in government requirements and obsolescence due to new technologies.

Q. Should the move toward less reliance on fossil gas be considered when determining the useful life of the Company's assets, and thus the appropriate depreciation schedule, in this case?

A. Yes. There is a reasonable expectation that there will be a significant reduction in fossil gas consumption starting immediately and continuing rapidly over the next 20 years

based on the urgency required by climate change and via the implementation of sustainability initiatives/plans focused on addressing these challenges. This includes work in Ann Arbor to achieve the goals of A^{2}ZERO, state efforts to achieve the stated goals of the MHCP, and dozens of other local communities' actions to achieve their own adopted climate and sustainability goals. These actions are very likely to reduce the useful life of fossil gas assets in the DTE service territory, and that should be taken into account when setting deprecation rates. As stated in the NY Report,

> Gas assets will likely have shorter service lives than has been the case historically. For example, if a customer decides to fully electrify their energy usage, the infrastructure providing [fossil] gas service to that customer would be retired. With widespread electrification, this would result in shorter service lives for assets such as gas services, meters, and meter installations. Gas mains and regulator stations would also be affected if natural gas throughput declines, as many of these facilities could become obsolete. Other assets may also become obsolete if they are no longer needed due to declines in [fossil] gas throughput.

Exhibit AA-13, p. II-15.

V. PROPOSED DEPRECIATION RATES DO NOT REFLECT POTENTIAL FOR OBSOLECENCE AND CHANGES IN GOVERNMENT POLICY

Q. What is your chief concern with the Company's proposed depreciation rates?

A. The Company is not considering the stated plans of its customers related to the reduction in or elimination of fossil gas use in projecting the useful life of fossil gas assets, leading to depreciation rates that are too low, and thus an increased opportunity for earnings on assets that are unlikely to be used and useful for the period the Company estimates they will be in use.

Q. How can you be sure DTE is not taking into account changes in government policies on climate change and the potential obsolescence of fossil gas infrastructure due to

the introduction of new technologies in determining the useful life of the assets?

A. In a discovery response regarding whether the Company has analyzed the potential to securitize fossil gas assets that may not be used for their entire service life, the Company responded, "There are no events or changes in circumstances that would indicate that the fossil gas assets will not be used for their entire service life." Exhibit AA-14.

Q. How has the Company estimated the life of its assets?

A. The Company describes a two-step process for estimating the life of its assets, of which the first step is "largely mechanical and primarily concerned with history," and the second step is "concerned with predicting the expected remaining life of property units still exposed to forces of retirement … [through] a process of blending the results of a life analysis with informed judgment (including expectations about the future) …" Exhibit A-6, p. 7.

Q. Does the Company's "informed judgment" or expectations about the future include a consideration of its climate goals?

A. In discovery, when asked this directly, DTE stated, "no impact has been identified as to the useful lives of DTE Gas's assets as a result of its climate goals." Exhibit AA-15.

Q. Does the Company's "informed judgment" or expectations about the future include a consideration of the climate goals of its customers or the State of Michigan?

A. In discovery, when asked this directly, DTE stated it would "[n]either confirm nor deny" the consideration of its customers' or the State of Michigan's climate goals. Exhibit AA-16.

Q. Did DTE's answers allow you to make an informed judgment regarding the likelihood it considered climate goals in estimating the useful life of assets in this

case?

A. Yes. I believe DTE's stated climate goals, as well as the stated climate goals of its customers, played absolutely no role in the Company's analysis, but it did not want to admit that. The Company did not include such climate considerations in its list of "various factors" that it does consider when determining an asset's useful life (*see*, Exhibit AA-16), and all the testimony supporting the useful life of assets appears to be based on physical factors alone. Thus, there are two possibilities. The first is that DTE ignored its own stated climate goals as well as the climate goals of the State of Michigan and its customers (including the City of Ann Arbor) in determining the useful life of its assets. The other is that it did consider these goals, but has no real plan for or intention of fulfilling its own goals and believes Michigan, Ann Arbor, UM, and other customers will all generally fail to meet their stated climate goals. In short, DTE's "informed judgment" does not include any impact from its own public pronouncements regarding the Company's intentions related to carbon reduction, or the already-underway changes in the energy industry due to climate-focused initiatives that will likely result in significantly less fossil gas use, fewer fossil gas customers, and the obsolescence of fossil gas assets.

Q. How long are the Company's proposed depreciation schedules for assets in this case?

A. The remaining life expectancy of the Company's assets used in its 2023 Depreciation Rate Study ("Rate Study") (Exhibit A-6) is longer than those assets are reasonably expected to be used and useful (particularly in the City of Ann Arbor). For example, according to the Rate Study, all plastic service lines that were installed in or after 1998

have over 26 years of remaining life, with a range of 26.40 years for 1998 vintage to 44.59 years for 2022 vintage, and the average remaining life of all plastic services is 36.23 years, which means the Company still expects those assets to be used in 2050 and well beyond. See Exhibit A-6, p. 31.

Q. Why is the Company's failure to consider impending changes in the energy industry due to climate initiatives concerning?

A. My concern is twofold: (1) failing to take climate change into consideration results in depreciation rates that are too low, which means a higher rate base, a higher return on rate base, and thus higher costs for ratepayers in the long-term; and (2) failing to take climate change into consideration will result in intergenerational inequity that could negatively impact disadvantaged communities. *See*, Exhibit AA-13, p. II-4.

Q. Please explain your concerns regarding intergenerational inequity and disadvantaged communities.

A. The depreciation expense that is built into rates is essentially the utility customers' way of returning capital to the Company. The customers who are benefitting from that capital should bear its costs. However, as customers make the switch from fossil gas to another energy source (e.g., geothermal or electric) for heating or to power their appliances, the class of ratepayers will shrink leading to fewer customers paying higher rates because the depreciation expenses will be spread over a smaller customer base. Thus, the result of too-low depreciation rates is intergenerational inequity – a smaller and smaller class of remaining rate-paying customers will pay an increasingly disproportionate amount for the capital that used to be shared with customers who exited the class.

Adding to my concern is the disproportionate impact intergenerational inequity is likely

to have on disadvantaged communities. Low-income customers are least able to invest in upgrading to electric appliances and switching their energy usage. While Ann Arbor is committed to helping its own citizens transition in an equitable and just manner, citizens of other jurisdictions may experience affordability impacts when a shrinking customer base is left paying the same amount of depreciation expenses. As stated in the NY Study, "if depreciation is too low, there could be a future in which the revenue requirements required to provide a return of and return on costs exceed the capacity of remaining customers to pay." Exhibit AA-13, p. I-34.

Q. Do other DTE entities have a history of failing to consider climate change in planning, to the detriment of their customers?

A. Yes. As I stated in my testimony in Case No. U-20836, DTE's sister company, DTE Electric Company, failed to incorporate climate change in its assumptions when determining the level of tree trimming it both needed and could execute given the increasing intensity and frequency of storm activity. This failure to consider climate change in past planning continues to be a contributing factor to DTE Electric Company being unable to meet minimum reliability requirements.

VI. REGULATOR RESPONSES TO CLIMATE POLICIES IN GAS DEPRECIATION CONTEXT

Q. How have regulators in other jurisdictions addressed the fact that customers are signaling they are planning to discontinue fossil gas services at some point in depreciation cases?

A. Regulators in other jurisdictions have required utilities to file studies that analyze the potential impacts of such changes for incorporation in future depreciation studies. For

instance, the New York State Public Service Commission has directed utilities to file depreciation studies with three scenarios: (1) a scenario that fully depreciates all new gas plants installed beginning in 2022 by 2050; (2) a scenario that fully depreciates all gas plants by 2050; and (3) a scenario that assumes 50 percent of gas customers exit the gas system by 2040 and that 10 percent of gas customers remain after 2050 (referred to as the "high electrification" scenario.). Exhibit AA-17, p. 61. Similarly, the Massachusetts Department of Public Utilities has directed all gas utilities to conduct a forecast of the potential magnitude of stranded investments and to identify the impacts of accelerated depreciation proposals, as well as potential alternatives to accelerated depreciation. Exhibit AA-18, p. 2; 101.

Q. Did DTE voluntarily provide any analysis of a scenario in which fossil gas usage is reduced over time in this case?

A. No.

Q. Has the Michigan Public Service Commission ("the Commission") required the Company to analyze scenarios that assume a reduction in fossil gas service demand over time?

A. No.

VII. RECOMMENDATIONS

Q. What are your recommendations for calculating an appropriate depreciation rate for the Company's assets?

A. The reality of current and future climate-focused policies, regulations, and legislation, and their impact on the energy industry should be considered when calculating depreciation rates. The estimated useful life of fossil gas assets should be shorter than the

purely physical life or the historical life of similar assets to account for the transition away from fossil gas to electrification and renewable energy systems. I recommend estimating the useful life remaining of the Company's fossil gas assets to be no more than 26 years so that the capital for all fossil gas assets can be recovered by 2050, which aligns with DTE's stated decarbonization goals. This is the latest time it can be reasonably expected that much of the Company's fossil gas assets will be used or useful.

Q. If the Commission opts not to order DTE to shorten the remaining life of all its fossil gas assets to 26 years or less in this case, should the Commission at least order DTE to incorporate Ann Arbor and UM's stated goals into determinations of the useful life of assets in this case?

A. Yes. Depreciation rates should be adjusted to account for the portion of assets used to serve Ann Arbor having shorter assumed service lives. Specifically, the depreciation assumptions should be a 50% reduction in meters by 2040 and a 100% transition by 2050 (no pipelines, no meters being used in Ann Arbor). This scenario would assume all meter installations cease in 2040, because those customers would transition rather than re-up.

Q. How would this impact pipeline infrastructure depreciation rates?

A. For pipeline infrastructure, the Commission should assume no pipelines will be in use in Ann Arbor by 2050. This means pipelines that serve Ann Arbor should be assumed to have a remaining useful life of no more than 26 years. Assuming straight line depreciation over 26 years, this means a 3.8% depreciation rate on investment should be applied to pipeline assets serving Ann Arbor.

Q. What percentage of asset classes 380.10 (metallic) and 380.20 (plastic) should be assumed to be serving Ann Arbor and thus receive the new depreciation rate?

A. In response to a discovery request asking DTE to identify the approximate number of miles of pipeline dedicated to service in Ann Arbor, DTE objected and did not supply a number, but rather claimed its system is so integrated that every distribution pipeline that exists in Ann Arbor must be assumed to serve not only Ann Arbor customers, but customers throughout the Company's service territory. Exhibit AA-19. I find this an unreasonable assumption, since I believe it is extremely likely that some infrastructure at the distribution level would be able to be retired if all customers in Ann Arbor stopped using fossil gas. Moreover, if Ann Arbor did transition by creating geothermal systems, it is likely customers on the border of Ann Arbor would choose to connect to those systems rather than pay the costs of an increasingly shrinking infrastructure.

Though DTE also objected to Ann Arbor's discovery request to indicate the number of miles of pipeline that are within Ann Arbor's boundary, the Company did supply a number: there are 417 miles of distribution pipeline within the City. Exhibit AA-20. Of those 417 miles of pipeline, DTE reported that the approximate material makeup is 61% plastic and 39% metallic. Exhibit AA-21. Thus, there are approximately 254 miles of plastic pipe (417 miles x 61%) and 163 miles of metallic pipe (417 miles x 39%) in the City. DTE reported to PHMSA that it had a total of 13,266.354 miles of plastic pipe and 6,283.123 miles of metallic pipe in 2022. Exhibit AA-22. Thus, Ann Arbor represents approximately 1.9% of pipes in 380.20 (plastic) (254 / 13,266.354 = 0.01914) and 2.6% of the total pipes in 380.10 (metallic) (163 / 6,283.123 = 0.02594). Based on the testimony of Ann Arbor witness Ackley, I assume this percentage will remain relatively stable for the remaining useful life of the assets, because replacements would only happen for immediate safety concerns and not for long-term usage. Therefore,

accelerated depreciation should apply to 1.9% of assets in 380.20 (plastic) and 2.6% of assets in 380.10 (metallic).

Q. How would incorporation of Ann Arbor's goals impact metering infrastructure depreciation rates?

A. For meter infrastructure, the Commission should assume half the meters in Ann Arbor would have a 16-year remaining useful life (a 6.3% depreciation rate on investment assuming straight line depreciation), and the other half would have a 26-year remaining useful life (a 3.8% depreciation rate, with the same assumptions). A blend of these two figures assuming a straight-line depreciation for investment (pre-salvage) values for Ann Arbor meter assets would be 5.05%. While the transition would likely be more gradual, and other depreciation methods may be reasonable, in the absence of a full study, I believe these are reasonable assumptions to better align depreciation rates with the likely reality.

Q. What percentage of asset classes 381.00 (meters), 381.02 (AMI/AMR modules), and 382.00 (meter installations) should be assumed to be serving Ann Arbor and thus receive the accelerated depreciation rate?

A. In discovery, DTE stated that it serves 53,750 billing sites in Ann Arbor and 1,334,914 billing sites in its entire service territory. Exhibit AA-23. To determine the percentage of the Company's customer base that is in Ann Arbor, I divided the number of billing sites in Ann Arbor by the number of billing sites in DTE's entire service area (53,750 / 1,334,914 = 0.04026). The resulting conclusion is that Ann Arbor represents approximately 4% of DTE's customer base. Therefore, the accelerated depreciation rate should be applied to 4% of assets in these classes.

Q. What investment depreciation adjustments do you recommend after applying reductions to the useful life for Ann Arbor customers as described above?

A. The table below describes my recommended adjustments to DTE's depreciation rates in Exhibit A-6 to Company witness K.A. Kateregga's calculations, using the assumptions I described in my prior answers. This table should be understood to illustrate the method of calculation of the adjustment that should be applied to the investment depreciation rates in that table to take into account Ann Arbor's climate goals and should **not** be read to take a position on the reasonability of those rates. Specifically, I have applied the recommended Ann Arbor Asset Investment Depreciation Rate percentage to the portion of assets serving Ann Arbor in column 2, and DTE's proposed rate to the remaining asset portion, and shown the blended adjustment that would result in Column 5 and the resulting blended depreciation rate in Column 6.

Asset Class	**% Ann Arbor**	**DTE Proposed Depreciation Investment Rate**	**Ann Arbor Asset Investment Depreciation Rate**	**Adjustment in Investment Depreciation Rate for A2 Rates**	**Resulting Blended Depreciation Rate**
380.10 (Services–Metallic)	2.6%	2.27%	3.8%	+0.04%	2.31%
380.20 (Services–Plastic)	1.9%	2.25%	3.8%	+0.04%	2.29%
381.00 (Meters)	4%	3.06%	5.05%	+0.08%	3.14%
381.02 (AMI/AMR modules)	4%	5.01%	5.05%	+0.00%	5.01%
382.00 (meter installations)	4%	2.8%	6.3%	+0.14%	2.94%

Q. How does this recommendation align with that of Ann Arbor witness Ackley regarding the asset life for plastic piping, arguing its physical life extends much longer than the Company proposed?

A. This recommendation, when paired with Ackley's recommendation, reflects the true reality of the situation. It is the City's position that if the Company is going to look solely at physical attributes to determine useful life, then it should pass along immediate rate relief that lower depreciation rates provide, given that research is showing those pipes have a longer life than the Company is assuming. It is important for everyone to recognize the true physical useful life of plastic piping and the magnitude of the risk for a stranded asset for every pipe that is replaced with plastic. Only if that risk is truly reflected will the Commission be able to make an honest assessment of when asset replacement is reasonable. Overlaying the realities of a shortened useful life due to climate considerations with the true physical life of plastic piping will allow the Commission to understand the true impact to ratepayers of the current capital plans. If a shorter physical life is used for plastic piping, and climate is ignored in determining the useful life of the asset, then ratepayers lose in two ways: they pay higher rates today because physical depreciation is over-recovered, and they risk higher rates in the future due to stranded assets. The Commission and the Company need to grapple with the true cost of current capital programs to ratepayers given the likelihood that these assets will be rendered obsolete due to customer changes and climate policy.

Q. In addition to making adjustments to depreciation rates for the assets serving Ann Arbor in this case, do you have any further recommendations?

A. Yes, I recommend the Commission order DTE to perform a Climate Policy Impact Study

to analyze the impact on depreciation rates and the cost to ratepayers of a reduction in fossil gas service demand over the next 26 years throughout its service territory. This Climate Impact Study should include – at least – the following scenarios:

Scenario 1: The obsolescence of all the Company's fossil gas assets by 2050.

Scenario 2: A 50% reduction in the Company's fossil gas customers by 2040, with the Company's remaining customers transitioning away from fossil gas by 2050.

Scenario 3: The obsolescence of the Company's fossil gas assets at a rate that integrates the established climate goals of all government entities in the Company's service territory (e.g., local, county, and statewide).

Scenario 4: A transition to 50% green hydrogen usage in the Company's service territory by 2050 along with 50% decarbonization through other means.

Scenario 5: A transition to 80% green hydrogen usage in the Company's service territory by 2050 along with 20% decarbonization through other means.

Scenario 6: A transition to 25% thermal energy networks in the Company's service territory by 2050 along with 75% decarbonization of system through other means.

Scenario 7: A transition to 50% thermal energy networks in the Company's service territory by 2050 along with 50% decarbonization of system through other means.

Q. What is the rationale for each recommended scenario in the recommended Climate Policy Impact Study?

A. The rationale for each scenario is as follows:

Scenario 1: The obsolescence of all the Company's fossil gas assets by 2050.

Rationale: This scenario aligns with the stated goals of Ann Arbor, the State of Michigan, and the Company itself to achieve 100% carbon neutrality by 2050.

Scenario 2: A 50% reduction in the Company's fossil gas customers by 2040, with the Company's remaining customers transitioning away from fossil gas by 2050.

Rationale: As above, this scenario aligns with the stated goals of Ann Arbor, the State of Michigan, and the Company. This scenario also recognizes the significant – though not complete – progress that will likely be made by 2040 (and given the Company's stated goal of 80% carbon neutrality by 2040, recommending a 50% reduction by 2040 is actually conservative).

Scenario 3: The obsolescence of the Company's fossil gas assets at a rate that integrates the established climate goals of all government entities in the Company's service territory (e.g., local, county, and statewide).

Rationale: The Company should be considering the stated climate goals of all the customers it serves and assuming that those customers will achieve their stated climate goals. Such climate goals should be treated as notice of those customers' plans to discontinue fossil gas service, and if the Company ignores that notice, it is inviting a financially unsustainable system of stranded assets.

Scenario 4: A transition to 50% green hydrogen usage in the Company's service territory by 2050 along with 50% decarbonization through other means.

Rationale: Use of green hydrogen is one of the two innovations the Company

discusses in its sustainability report. This scenario assumes moderate success of incorporation of green hydrogen.

Scenario 5: A transition to 80% green hydrogen usage in the Company's service territory by 2050 along with 20% decarbonization through other means.

Rationale: Use of green hydrogen is one of the two innovations the Company discusses in its sustainability report. This scenario assumes a higher level of success of incorporation of green hydrogen than the previous scenario.

Scenario 6: A transition to 25% thermal energy networks in the Company's service territory by 2050 along with 75% decarbonization of system through other means.

Rationale: There are currently several thermal energy projects in various stages of progress in Ann Arbor (including the City's design of a geothermal project to serve one neighborhood, Ann Arbor schools installing geothermal systems for all its buildings, a private developer installing a geothermal system for heating and cooling in its new development, UM transitioning to all geothermal systems, etc.). Considering the number of thermal energy projects that are in the works and planned for the future, a transition to 25% thermal energy networks by 2050 is conservative.

Scenario 7: A transition to 50% thermal energy networks in the Company's service territory by 2050 along with 50% decarbonization in the system through other means.

Rationale: This scenario represents a high thermal energy network adoption rate – which is not unreasonable given the number of current thermal energy

projects currently underway, and the likely exponential adoption of such systems once other communities have successful models from early adopters (such as Ann Arbor) to work from.

Q. If the Commission were to order a Climate Policy Impact Study, when should it be done?

A. My recommendation is that DTE perform a Climate Policy Impact Study as soon as reasonably possible. At the latest, I would recommend the Climate Policy Impact Study be completed and available to interested parties at least 6 months before the filing of the Company's next depreciation case, and I would recommend the Commission order the Company to file its next depreciation case within three years of the final order in this case.

Q. Does this conclude your direct testimony?

A. Yes.

Q. Do you swear under penalty of perjury that the statements above are true to the best of your knowledge, information, and belief?

A. Yes.

Dr. Melissa Stults

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of **DTE GAS COMPANY** for approval of depreciation accrual rates and other related matters.	U-21384 ALJ Jonathan F. Thoits

---

PROOF OF SERVICE

On the date below, an electronic copy of the **Direct Testimony of Robert C. Ackley and Dr. Melissa Stults on behalf of the City of Ann Arbor** was served on the following:

Name/Party	E-mail Address
Michigan Office of Administrative Hearings and Rules Jonathan F. Thoits, ALJ	thoitsj@michigan.gov
DTE Gas Company Carlton D. Watson	MPSCFILINGS_Account@dteenergy.com mpscfilings@dteenergy.com carlton.watson@dteenergy.com
MPSC Staff Heather M.S. Durian Alena Clark Lori Mayabb	durianh@michigan.gov clarka55@michigan.gov mayabbl@michigan.gov
City of Ann Arbor Valerie J.M. Brader Valerie Jackson	ecf@rivenoaklaw.com valerie@rivenoaklaw.com valeriejackson@rivenoaklaw.com
ABATE Michael J. Pattwell Stephen A. Campbell James Dauphinais Brian Andrews	mpattwell@clarkhill.com scampbell@clarkhill.com jdauphinais@consultbai.com bandrews@consultbai.com

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

Dated: March 19, 2024

RIVENOAK LAW GROUP P.C.

By: 

Valerie Jackson
Attorney for the City of Ann Arbor
3331 W. Big Beaver Rd.
Suite 109
Troy, MI 48084
Telephone: (734) 306-4437
Email: valeriejackson@rivenoaklaw.com
ecf@rivenoaklaw.com