Date: February 27, 2023

To: Michigan Public Service Commission
Cc: Chair Dan Scripps
Commissioner Tremaine Phillips
Commissioner Katherine Peretick
Lynn Beck
Brad Banks
Re: DTE Gas Company Proposals to Low Carbon Energy Infrastructure Grant Program

---

Thank you for the opportunity to provide written these comments on DTE's gas distribution infrastructure proposals to the Low Carbon Energy Infrastructure Grant Program (the "Program"), on behalf of Natural Resources Defense Council, Strategen, Sierra Club, Michigan Environmental Council, Michigan Food for All and the Earth Project, and J Koeppel Consulting LLC.

DTE Energy ("DTE" or the "Company") has submitted five funding proposals to the Program—totaling $48M—to expand its gas distribution infrastructure in: 1) Benzie, Manistee, and Wexford, 2) Delta, 3) Newago, 4) Oceana, and 5) Osceola Counties. The Company proposes a business-as-usual approach to expanding "natural" gas (e.g. fossil gas), the combustion of which is a driver of climate change, and which the Michigan Healthy Climate Plan identifies as a key contributor to the state's greenhouse gas emissions and associated negative health impacts.[1] Moreover, the MI Healthy Climate Plan recommends the state undertake a decarbonization pathways analysis to consider a full range of options for decarbonizing fossil gas end uses—a recommendation that is inconsistent with DTE's proposals to use Program funds to continue to expand the gas system into new areas of the state. These business-as-usual proposals to expand the gas distribution system are not serious decarbonization strategies, are not aligned with the purpose of the Program, and would squander valuable taxpayer funds intended to fund projects that would actually be effective at moving Michigan's infrastructure toward a deeply decarbonized future. DTE's proposals work directly against the spirit and stated purpose of the Program and should be rejected in their entirety.

---

[1] https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Offices/OCE/MI-Healthy-Climate-Plan.pdf at 41.

In these comments, we discuss how DTE's gas line extension proposals are inconsistent with the criteria identified in the Program and identify alternative projects DTE could have proposed in order to achieve meaningful, cost-effective emissions reductions that will help the state achieve its emissions reduction goals—such as building electrification.

I. Grant Criteria and Legislative Intent

The Legislature established the Low Carbon Energy Infrastructure Grant Program "for the purposes of planning, developing, designing, acquiring, or constructing low carbon energy facilities."[2] According to the MPSC's evaluation guidelines, grant proposals will be awarded up to 100 available points, with the highest weighting assigned to "Program Priorities and Impact" such that prioritized proposals:

- Are supported by a cost-benefit analysis,
- Facilitate the largest number of end-use customers achieving access to low carbon energy facilities at the lowest total cost,
- Reduce customer energy cost burdens, and
- Support the reduction of emissions.

We understand that the Legislature intended to award grants to projects that have the highest impact reducing emissions and energy burdens at the lowest cost for the most people. The use of the superlative "lowest" suggests that the Legislature intended proposals to be cost effective in reducing emissions *relative to alternatives*. We believe that the Legislature intended to fund projects with *lasting impacts* such that investments remain cost-effective *well into the lifespan of the infrastructure*, *even amid rapid technological advancements*. It is thus important to evaluate a proposal's cost effectiveness in reducing emissions not only relative to the status quo in the short-term, but over a multi-decade horizon and relative to alternatives, including expected technological advancements and evolving market dynamics. Of note, gas distribution infrastructure typically has a lifespan of several decades, with lasting emissions. Thus, we ask MPSC to evaluate DTE's proposals with an awareness of that longer timeframe and the likelihood that gas line extensions will not only increase emissions relative to alternatives such as electrification, but that those investments will likely become stranded assets as Michigan decarbonizes, calling into question the long-term cost-effectiveness of this use of taxpayer funds. Our Comments evaluate DTE's grant proposals according to the above criteria while reflecting these considerations.

II. Evaluation of DTE Gas Company's Proposals

DTE's proposals to use taxpayer funds to significantly expand the existing gas system and lock customers into fossil gas for decades is antithetical to the intent of the Legislature in developing this Program. Rather than proposing any substantive innovation to decarbonize its system, the

[2] https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/activity/EIED-Grant/Low-Carbon-EIED-Grant-RFP.pdf

Company offers a business-as-usual approach to expanding fossil gas. While the Company frames its proposals as cleaner and cheaper alternatives to propane, it nonetheless cannot escape the fact that the combustion of fossil gas in homes and other buildings is a key contributor to Michigan's greenhouse gas emissions. [3] DTE also neglects to mention a number of other important realities, including that there are cheaper, cleaner alternatives to both propane *and* fossil gas (such as electrification), and its proposal carries significant financial risk for customers of stranded assets amid a gas sector in transition. The suggestion appears to be that business-as-usual expansion of the gas system represents a plausible decarbonization pathway. The Commission must reject that suggestion on its face.

a. *The Company's proposals do not facilitate large numbers of end-use customers in achieving access to low carbon energy facilities at the lowest total cost.*

As the MI Healthy Plan identified, fossil gas, which has an emissions factor of 0.053 metric tons of CO_2 per MMBtu,[4] is not a low-carbon fuel – a point that will be addressed further in Section IIb below. In addition to not being low carbon, extending gas service to new customers is not low-cost.

To contextualize the cost of the project, it is useful to translate into a consistent "dollars per household" format. The Company proposes to extend gas service to both residents and businesses and has not provided a budget that allows evaluators to differentiate costs by customer class. However, 94% of the units that the Company proposes to extend gas to would be residences. Although we recognize that costs may vary depending on the unit type, the table below indicates that the cost (inclusive of grant funds and other sources) per unit connected is quite high. Given that the Company's proposals include the substantial expansion of gas mains, the per unit cost is far higher than the typical line extension allowance provided to single family residents by most Midwestern gas utilities.[5]

Table 1: Cost per building of DTE's line extension proposals

Project	**Homes**	**Businesses**	**Cost**	**Cost/Unit**
Osceola County	204	8	$2.35M	$11.1k
Delta County	245	21	$2.83M	$10.6k
Oceana County	236	22	$5.13M	$19.9k
Benzie, Manistee, and Wexford Counties	1,838	172	$24.89M	$12.4k
Newago County	841	5	$12.89M	$15.2k
Total	**3,364**	**228**	**$48.1M**	**$13.4k**

[3] https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Offices/OCE/MI-Healthy-Climate-Plan.pdf at 41.
[4] See, e.g., DTE Proposal for Expansion of Natural Gas Distribution Systems in Newago County at 11.
[5] See, U-21148, Direct Testimony of Bradley Cebulko submitted on behalf of NRDC (April 8, 2022) at 26-27.

In practice, even these high costs are likely to be an underestimate. If customer enrollments are lower than anticipated – a real possibility, given the substantial investment required from the customer – then the cost per participant will be even higher. In addition, DTE's estimates do not include appliance upgrades to accommodate the shift from propane to gas, which the Company acknowledges that its proposal may require.[6] Nonetheless, the Company has included a rebate of only $500/customer in its budget – far less than what would very likely be needed for residents to purchase a gas furnace, water heater, and oven. For example, Consumers Energy has also included gas system expansion in its proposals but has assumed a capital cost of nearly $3,000 per customer for a furnace replacement as well as $1,100 in annual O&M costs.[7] Finally, main and service line extension costs may be an underestimate. For example, in the latest Consumers Energy gas rate case, Strategen evaluated proposed line extension costs and found that the cost of main and service lines per foot had been increasing on an annual basis.[8]

The Company's proposals thus would likely cost *several thousand dollars* more per unit served than indicated in the figures above to lock customers into a fuel source that is not even low carbon – much of which would come in the form of upfront equipment costs borne by residents. According to the Michigan Healthy Climate Plan (emphasis added):

> To reach our 2030 goals of reducing emissions relating to heating Michigan homes and businesses 17 percent by 2030**,** *Michigan must reduce end-use emissions related to heating Michigan homes and businesses by approximately three percent per year from now to 2030*. We will accomplish this objective through investments in energy conservation, energy efficiency, smart consumption, cogeneration, and *replacing traditional fossil fuel use with cost-effective technologies that rely on electricity and alternatives like renewable natural gas and hydrogen*.[9]

The Company is not proposing to replace fossil fuel use with cost-effective technologies that rely on electricity and alternatives. Rather, the Company proposes to switch one fossil fuel for another while locking in fossil gas for decades to come, rather than investing in real efforts to decarbonize its system. There can be no justification for the high cost of this project, especially given the high-emissions future to which it would tether Michigan consumers.

b. The Company's proposals would have limited impact on emissions relative to alternatives.

The Company proposes business-as-usual expansion of the gas system, even though gas is not a zero or low carbon fuel. The Company asserts that its proposals have emissions reduction benefits in the switch from propane to fossil gas, using as justification that the emissions factor for fossil gas is 14% lower than that of propane (which the Company claims is the fuel source for most of

[6] See, e.g., DTE Proposal for Expansion of Natural Gas Distribution Systems in Newago County at 14-15.
[7] See, e.g., Consumers Energy Proposal for Renewable Natural Gas Project at Wilson Centennial Farms at 9.
[8] See, U-21148, Direct Testimony of Bradley Cebulko submitted on behalf of NRDC (April 8, 2022) at 37-38 and 41.
[9] https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Offices/OCE/MI-Healthy-Climate-Plan.pdf at 42

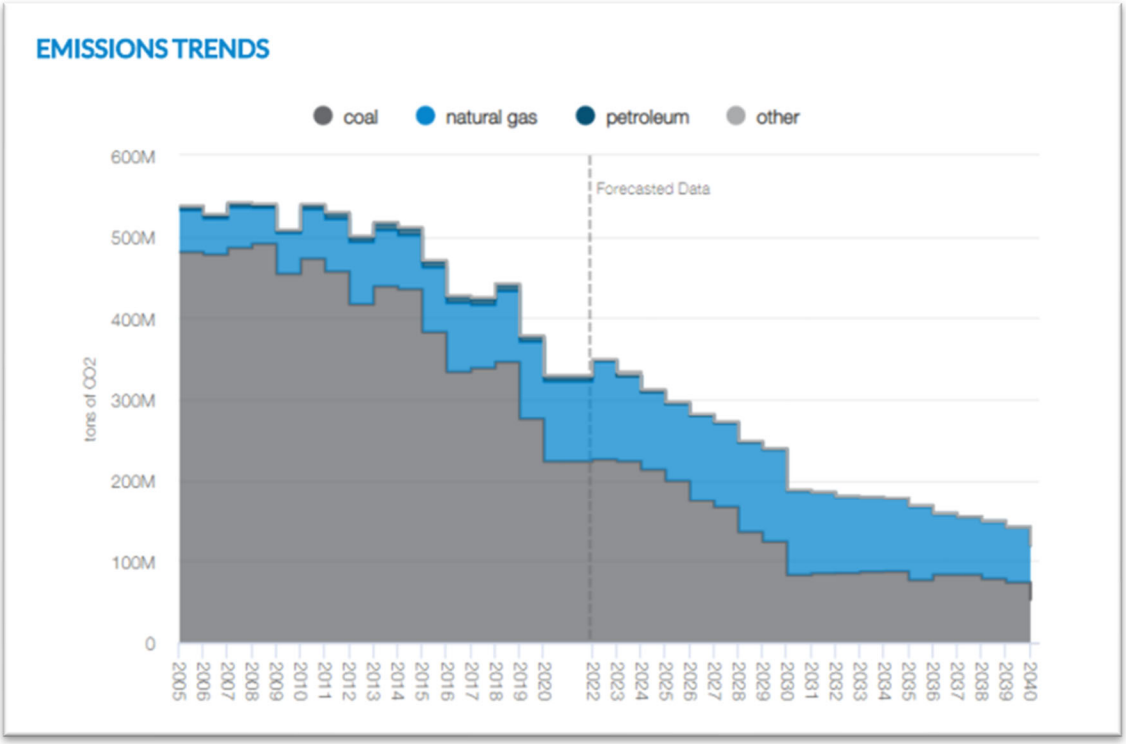
the residences targeted in its proposals). However, this differential may be on the generous side. Consumers Energy, which also included propane conversions to gas in its Program proposals, assumed that gas has an emissions factor that is only 5% less than propane.[10] In addition, although the Company claims that methane leaks would be negligible, utilities, gas companies, and states have a long history of underestimating methane leakages.[11] Even if local leaks are minimized as the Company claims, adding additional gas deliveries increases the potential for upstream leakage.

It is also disingenuous to seek taxpayer dollars to swap one fossil fuel for another, using the minimal emissions differences between the two to cast fossil gas as "low carbon."

It is notable that DTE has chosen to propose that the Program fund gas expansion, rather than legitimate decarbonization strategies that would enable Michiganders to see immediate benefits from today (and into the future), like electrification. Michigan's electric grid is getting cleaner by the year, and it is critical that public policy and funding (and the state's investor-owned utilities) begin to prioritize the electric grid for the state's decarbonization efforts. If, for example, DTE were to propose projects electrifying space heating, water heating, and cooking in the propane service territories in question, it would not only be a low-emissions alternative today, but would become increasingly clean over the lifespan of the proposed infrastructure investment. As of 2021, Michigan's carbon-free energy sources such as renewables and nuclear provided over 40% of Michigan's electricity net generation.[12] Meanwhile, the state's electric utilities have announced plans to replace fossil fuels with carbon-free sources – including DTE's very own electric company, which recently set a goal to reach net-zero carbon emissions by 2050 and plans to end its use of coal by 2035.[13] In terms of the region's grid as a whole, according to MISO:

> *Based on members' announced plans and the EGEAS [Electric Generation Expansion Analysis System] modeling that MISO performed, power sector carbon emissions in the MISO region would continue to decline — reaching an 80% reduction by 2041 compared to the 2005 baseline level...At an intermediate milestone of 2030, the expected reduction is approximately 65%.*[14]

[10] See, e.g., Consumers Energy Proposal for Renewable Natural Gas Project at Wilson Centennial Farms at 8
[11] https://www.bloomberg.com/features/2022-methane-leaks-natural-gas-energy-emissions-data/
[12] https://www.eia.gov/state/?sid=MI#tabs-4
[13] https://dtecleanenergy.com/downloads/IRP_Executive_Summary.pdf
[14] https://cdn.misoenergy.org/2022%20Regional%20Resource%20Assessment%20Report627163.pdf at 24



In addition, Governor Whitmer has announced a priority of codifying into law the goals in the MI Healthy Climate Plan, which call for 60% renewable electricity generation by 2030 and economy-wide carbon neutrality by 2050.[15] DTE has not justified in its proposals why Michigan taxpayers should invest in a high carbon fuel, locking residents into decades of future gas emissions when alternatives exist that are significantly lower carbon and likely have a much lower cost per volume of CO_2e removed.

With this context, it is also important to interrogate the capacity of DTE's gas system to decarbonize. While DTE Gas recently pledged to achieve net zero emissions by 2050,[16] the Company does not explain how it will achieve this goal.[17] There is ample reason to be skeptical that this goal is even feasible, particularly given the Company's proposal to continue to expand its gas system with no end in sight. For example, DTE Gas references RNG as a leading decarbonization strategy for its gas system.[18] Yet, MPSC's recent RNG inventory study found that the "achievable" potential of RNG in Michigan could only offset 8.5% of the state's demand for

[15] https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Offices/OCE/MI-Healthy-Climate-Plan.pdf.
[16] https://empoweringmichigan.com/dte-impact/planet/.
[17] https://empoweringmichigan.com/dte-energy-cleanvision-natural-gas-balance/.
[18] *Id.*

buildings while requiring substantial new infrastructure investment.[19] Moreover, a significant portion of current RNG production is already used in the transportation sector and will likely be in demand from hard-to-electrify industries.

Many natural gas utilities are also looking to green hydrogen as a decarbonization solution.[20] Assuming that the utility can even ensure that the hydrogen is "green" (i.e., produced using 100% renewable power), the gas distribution system and the homes and businesses it serves are simply not strategic use cases for hydrogen. Heating homes with hydrogen is one of the least-efficient and most costly options available.[21] Hydrogen can only be blended up to 7% by energy content before the utility needs to make cost-prohibitive investments into retrofitting its entire distribution system, and the furnaces and other appliances that use it.[22] It is plainly contradictory for the Company to be expanding its fossil gas distribution system while also pledging that its system will be net zero by 2050.

Finally, in addition to contributing to climate change, it is well-documented that fossil gas combustion in buildings has negative public health impacts. While there are a variety of factors that influence indoor air quality, with ventilation being a chief factor, there is a growing body of research suggesting that homes with gas appliances can experience elevated levels of nitrogen dioxide and carbon monoxide.[23] Multiple studies have found that gas appliances are associated with high concentrations of these pollutants in homes – often higher than what the U.S. Environmental Protection Agency considers safe for outdoor air.[24] Unsurprisingly, a growing body of research has found that gas-burning appliances in our homes harm human health, especially for children. Adding to these health concerns are the climate impacts of gas use in homes; a recent Stanford University study found that appliances such as gas stoves emit up to 1.3% of the gas they use as unburned methane, which has an annual emissions impact nationwide similar to that of approximately 500,000 gasoline powered cars.[25]

c. DTE's proposals risk increasing energy burden over the long-term.

---

[19] https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/workgroups/RenewableNaturalGas/MI-RNG-Study-Final-Report-9-23-22.pdf?rev=213e31ab46c24ce1b799eeb8a42f0824&hash=5B8C2CEB98C8F8F20C7D65F4C4153CE1 at 7.

[20] https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/utility-executives-plot-renewable-hydrogen-s-future-in-us-decarbonization-60070401.

[21] https://www.nrdc.org/experts/rachel-fakhry/hydrogen-buildings-poster-child-tech-crastination.

[22] *Id*.

[23] Yifang Zhu, Rachel Connolly, Yan Lin, Timothy Mathews, Zemin Wang, "Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California," UCLA Fielding School of Public Health, Department of Environmental Health Sciences, April 2020, available at: coeh.ph.ucla.edu/effects-of-residential-gas-appliances-on-indoor-and-outdoor-air-quality-and-public-health-in-california

[24] See, e.g., https://www.sciencedirect.com/science/article/abs/pii/S036013231730255X; https://eta.lbl.gov/publications/impact-natural-gas-appliances.

[25] Eric D. Lebel, Colin J. Finnegan, Zutao Ouyang, and Robert B. Jackson, "Methane and NOx Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes," *Environ. Sci. Technol.* (2022) 56 (4), 2529-2539 DOI: 10.1021/, available at acs.est.1c04707, available at pubs.acs.org/doi/10.1021/acs.est.1c04707.

We applaud the Commission's recognition of energy burden in its grant criteria and encourage the Commission to take a long-term and holistic view of costs as well as the associated risks of investments. According to the Company, its proposals would connect communities that include low-income residents to a fuel source that is cheaper than propane—however, this claim masks longer-term cost concerns. For example, DTE's cost analysis is only focused on the comparison of commodity costs but does not include the costs and risks associated with an expanded distribution system. The Company's proposal to use taxpayer money to add connections to the gas system is a risky prospect for captive customers, especially those with limited resources. There is growing concern that, as more consumers switch to electric appliances, low income and vulnerable consumers will be stuck with higher bills that reflect an increasingly expensive gas system. The trend towards electric buildings is picking up pace. In 2022, more Americans bought heat pumps than traditional fossil fuel furnaces.[26] Cold weather states like Maine are leading the adoption of electric heat pumps.[27] This trend is likely to accelerate with the passage of the Inflation Reduction Act, which includes hundreds of millions of dollars to help consumers switch to electric appliances. As gas customers opt to take advantage of the improved economics of electrification there is a risk that their departure will increase gas rates for remaining customers and that those most unable to afford electrification will be saddled with ever increasing gas bills – a dynamic that would only be exacerbated by gas expansions.

The issue before the Commission is not only whether gas would reduce energy burden in the short-term, but whether it will continue to do so over the course of the *multi-decade lifetime* of the infrastructure. When new customers are added to the gas system, they are typically locked into the system for the life of their appliance, which can average 18 years for gas furnaces and 10-20 years for gas water heaters.[28] Ratepayers as a whole are locked into costs than span decades, as gas distribution pipelines often have useful lives of 30 – 50 years. Locking customers into the gas system will become an increasing liability over this lifespan as decarbonization of the electric grid accelerates. When customers defect from the gas system over the coming years due to the improved economics of electrification – or due to states adopting building decarbonization policies, or the growing market and availability of electric appliances – gas sales revenues will decrease while fixed costs will remain level. Fixed costs may even increase if the Company is permitted to expand its infrastructure. This will result in increased costs for remaining customers including low-income residents and renters as stranded assets are recovered through rates. It is important to note that increased rates will occur under such conditions whether a customer fully departs from the gas system (fuel switching) or remains on the gas system but consumes decreasing volumes of gas due to more efficient appliances, conservation, or partial electrification.

Expansion of the gas system presents an asymmetrical risk. The Company will rate-base the capital investment associated with system expansion where it will earn a return on its investment

[26] https://www.nbcnews.com/science/environment/cheap-green-heat-pumps-take-hold-world-rcna70496.
[27] https://www.washingtonpost.com/climate-environment/2023/02/07/maine-gas-industry-heat-pumps/.
[28] Consumer Reports News, "By the Numbers: How long will your appliances last? It depends" (Mar. 21, 2009), www.consumerreports.org/cro/news/2009/03/by-the-numbers-how-long-will-your-appliances-lastit-depends/index.htm.

throughout its depreciable life. If gas sales decline and gas infrastructure that was built today does not make sense in 20-30 years, those costs will most likely be assigned to customers.

In its proposal, the Company's short-term focus on gas commodity costs relative to propane neglects the fact that electrification is not only likely to be the cheaper option *today* but is poised to become increasingly cost competitive *over the coming years*. A 2020 RMI report compared the net present costs of "a new all-electric home versus a new mixed-fuel home that relies on gas for cooking, space heating, and water heating" in several major cities across the country, including in colder climates in the Midwest and Northeast, finding that all-electric homes were the cheaper option in every instance.[29] Although Michigan cities were not included in the study, the table below presents RMI's findings in cold climates, including Boston, Columbus, Minneapolis, and New York City. According to the report, a mixed-fuel home has higher up-front costs than an all-electric home in every state other than Minneapolis, where the "climate requires a higher capacity heat pump than other cities in the study."[30] However, these costs are outweighed by 9% lower annual utility costs in Minneapolis – savings which are largely due to the substantially higher efficiency of heat pumps in comparison to gas appliances.[31]

Table 2: RMI Study on the cost of energy in new homes

City	**15-Year Net Present Cost, Mixed Fuel Home**	**15-Year Net Present Cost, All Electric Home**	**Savings**
Boston, MA	$29.5k	$27.9k	$1.6k
Columbus, OH	$21.6k	$17.7k	$3.9k
Minneapolis, MN	$22.1k	$20.2k	$1.9k
New York City, NY	$34.5k	$27.7k	$6.8k

It is notable that this study was published in 2020, well before gas prices had reached their current high levels and prior to the passage of the Inflation Reduction Act. This suggests that if recent price volatility (and longer-term trends) were taken into account, the cost savings associated with electrification could be substantially higher.

d. The Company's Cost Benefit Analysis ignores these realities.

As stated, the Company's proposals must be evaluated relative to alternatives and over the long-term. The Company's cost benefit analysis (CBA) assumes that customers will use propane

[29] Claire McKenna, Amar Shah, and Leah Louis-Prescott, "The New Economics of Electrifying Buildings: An Analysis of Seven Cities," Rocky Mountain Institute (RMI) (2020), available at https://rmi.org/insight/the-new-economics-of-electrifying-buildings/.
[30] *Id.*
[31] *Id.*; See also Claire McKenna, Amar Shah, Leah Louis-Prescott, "All-Electric New Homes: A Win for the Climate and the Economy," Rocky Mountain Institute (RMI) (October 15, 2020), available at rmi.org/all-electric-new-homes-a-win-for-the-climate-and-the-economy; Claire McKenna, Amar Shah, and Mark Silberg, "It's Time to Incentivize Residential Heat Pumps," Rocky Mountain Institute (RMI) (June 8, 2020), available at rmi.org/its-time-to-incentivize-residential-heatpumps/.

indefinitely and will not electrify – even though electrification is a much cleaner alternative which the Company's proposal would disincentivize. On the cost side of the calculation, as stated, the CBA does not include the full cost of connection to the gas system, such as the need for expensive new appliances. In addition, the Company assumes constant gas rates for fifteen years – an assumption that fails to reflect stranded asset risk.

III. Conclusion

The Commission must consider DTE's proposal against the backdrop of rapid evolution in the gas sector, a decarbonizing electricity system, and a pivotal moment for the climate. DTE's proposals would certainly advance the Company's business interest in adding infrastructure to rate base. Critically, however, it would do little to help Michigan achieve its decarbonization goals—the very purpose of which the Program was set up to facilitate. DTE's proposal also sidesteps an important opportunity to leverage Program funds to advance building decarbonization at a time when this option is an increasingly clean, cheaper, less risky, and more equitable option. The Company has not justified why substantial taxpayer dollars should be spent to lock customers into a fuel source that is not only high carbon but contrary to customers' long-term economic interests, for decades to come.

As such, the Company's proposals should be rejected.