TROPOSPHERE LEGAL

May 28, 2025

Ms. Lisa Felice
Michigan Public Service Commission
7109 W. Saginaw Hwy.
Lansing, MI 48909

Via E-File

RE: MPSC Case No. U-21806

Dear Ms. Felice:

Attached please find the enclosed documents for filing:

- Revised Direct Testimony of Dr. Sol deLeon on behalf of Michigan Environmental Council and Sierra Club; and
- Proof of Service.

Thank you for your assistance in this matter. If you have any questions, please feel free to contact me.

Sincerely,

Digitally signed by Christopher M. Bzdok
Date: 2025.05.28 12:29:57 -04'00'

Christopher M. Bzdok
chris@tropospherelegal.com

CC: Parties to Case No. U-21806

STATE OF MICHIGAN

MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of **CONSUMERS ENERGY COMPANY** for authority to increase its rates for the distribution of natural gas and for other relief.	Case No. U-21806

REVISED DIRECT TESTIMONY OF

DR. SOL DELEON

ON BEHALF OF

MICHIGAN ENVIRONMENTAL COUNCIL AND SIERRA CLUB

May 28, 2025

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I. INTRODUCTION AND PURPOSE OF TESTIMONY

Q Please state your name and occupation.

A My name is Sol deLeon. My business address is 485 Massachusetts Ave., Suite 3, Cambridge, Massachusetts 02139. I am a Principal Associate at Synapse Energy Economics, Inc. I work primarily in Synapse's consulting for future of gas utilities practice, and I also work in the related area of building decarbonization technology and policy.

Q Please describe Synapse Energy Economics.

A Synapse Energy Economics is a research and consulting firm specializing in electricity and gas industry regulation, planning, and analysis. Our work covers a range of issues, including economic and technical assessments of demand-side and supply-side energy resources, energy efficiency policies and programs, integrated resource planning, electricity market modeling and assessment, renewable resource technologies and policies, and climate change strategies. Synapse works for a wide range of clients, including state attorneys general, offices of consumer advocates, trade associations, public utility commissions, environmental advocates, the U.S. Environmental Protection Agency, U.S. Department of Energy, U.S. Department of Justice, the Federal Trade Commission, and the National Association of Regulatory Utility Commissioners. Synapse's staff includes over 35 professionals with extensive experience in the electricity and gas industries.

Q **Please describe your professional experience at Synapse Energy Economics and before beginning your current position at Synapse.**

A I have over 25 years of experience in the energy industry, primarily in U.S. natural gas distribution utilities and international merchant electricity generation. I analyze gas utility applications and filings before state public service commissions, in addition to developing studies, reports, and other materials regarding gas utility investments, business models, ratemaking, depreciation, revenue requirements, and business risk. Prior to joining Synapse, I was a project manager at Washington Gas & Light Company, working on initiatives for corporate governance, renewable natural gas ("RNG"), and greenhouse gas ("GHG") emissions reduction inventories. Before that, I worked for AES Corporation where I conducted risk analysis on commodity prices, interest rates and foreign exchange rates, developed models for derivative valuation and electric generating asset project valuation. I completed my Masters in Business Administration and my Doctorate in Liberal Studies at Georgetown University. My doctorate focused on energy transition and energy justice. My complete CV is attached as Exhibit MEC-14.

Q **On whose behalf are you testifying in this case?**

A I am testifying on behalf of Michigan Environmental Council and Sierra Club.

Q **Have you previously testified before the Michigan Public Service Commission ("the Commission")?**

A No.

Q What is the purpose of your testimony?

A The purpose of my testimony is to explain the impending energy transition and its impacts on ratepayers, and then to evaluate Consumers Gas ("Consumers" or "the Company") planned capital investments within the context of the energy transition. I will also address the need to develop a long-term planning perspective and to introduce the value of using risk mitigation effectiveness measures as a tool to select and prioritize capital projects.

Q Are you sponsoring any exhibits in this proceeding?

A Yes, I am sponsoring the following exhibits:

- Exhibit MEC-14: CV of Dr. Sol deLeon
- Exhibit MEC-15: State Survey White Paper

II. FINDINGS AND RECOMMENDATIONS

Q Please summarize your primary conclusions.

A My findings include the following:

- The future of natural gas will not be like the past or the present. Changes driven by climate policy, changing markets, and the availability of alternatives will have an impact on demand. Michigan has established policies and conducted regulatory processes that the Company could have used to inform its planning. In addition, the Company has developed its own climate objectives to support the state's decarbonization targets. Thus, the Company has sufficient information to be taking prudent actions, as described in this testimony, to adapt to a changing future.

- The Company's lack of good planning practice makes imprudent investment likely.
- The Company has not made the appropriate evaluations to determine that the continued spending on gas distribution infrastructure is the best way to achieve goals of safety, affordability, and emission reductions.
- The Company does not undertake well-established practices to consider non-pipeline alternatives ("NPA") to its capital investments.
- The Company's approach to prioritizing leak-prone pipe for replacement does not account for the actions that need to be undertaken to meet the state's GHG emission reduction goals or the Company's scope 3 emission reduction targets, nor does it attempt to maximize the risk reduction of ratepayer spending.
- The Company has not initiated an NPA process within its long-term gas planning to ensure that investments meet affordability and clean energy objectives.

Q Please summarize your recommendations.

A Based on my findings, I offer the following recommendations:

- The Commission should find that the Company's planning process is flawed because it does not incorporate planning for the energy transition. The Commission should direct the Company to update its practices to align with planning for the Company's and Michigan's climate objectives. This should include requiring the Company to include the forecasted yearly sales for each major customer class for the 10-year gas delivery planning horizon.

- The Commission should open a docket for the purpose of establishing a common framework and planning parameters, including consideration of NPAs and other alternatives, for the future of the natural gas system in Michigan.
- The Commission should require Consumers to evaluate NPAs in place of traditional gas infrastructure investments before the Company can seek cost recovery of those traditional investments. This should include evaluation of electrification as an alternative to service line replacement.
- The Commission should set forth minimum requirements for an NPA framework, including but not limited to benefit-cost analysis, project size, type of project, timeline for implementation, and alternatives to consider. The Commission should then launch an inclusive stakeholder process to develop the details of the NPA framework, with participation by all electric and gas utilities in the state along with other stakeholders.
- Consumers should provide much greater transparency regarding the tradeoffs between safety and affordability—on a regular basis and in its requests for approval to include expenditures in rate base—through probabilistic risk modeling and calculation of cost-effectiveness. This includes, but may not be limited to:

    - Reporting on transmission-level projects that demonstrates how Consumers utilizes cost-effectiveness, where applicable, to maximize safety impacts for the ratepayer dollars spent. Calculations and assumptions should be available to stakeholders upon request.
    - Enhanced Infrastructure Replacement Program ("EIRP") reporting should include risk ranking information (risk rank of asset remediated and total number of assets) and narrative descriptions regarding the use of risk ranking driving remediation for a particular project.
- When probabilistic risk models are available for distribution assets starting in the next rate case, Consumers should do the following:
    - Calculate and utilize total risk reduction and cost-effectiveness statistics as an important input into selecting appropriate projects and related remediations. Make cost-effectiveness statistics and all inputs and assumptions available to stakeholders upon request, including the ability to calculate risk reduction and cost-effectiveness for alternative projects and remediations.
    - Ensure its EIRP reports summarize remediations examined, describe the cost-effectiveness of projects relative to alternatives, and indicate why the Company's remediation was selected.
- The Commission should require future rate case applications, starting with Consumers' next rate case, to utilize probabilistic risk modeling and cost-effectiveness calculations to a much greater extent for all asset classes.

Consumers should make this modeling available upon request to stakeholders and the Commission, including the following:

  - Unless Consumers can demonstrate it is not possible, the Company should develop probabilistic risk models for use in the next rate case for all asset classes (distribution, storage wells, etc.).
  - For each project proposed in the test year, Consumers should calculate the risk reduction, cost, and cost-effectiveness (measured as risk spend efficiency, or "RSE") of its expenditures. The Company should make all workpapers available upon request, and include the source and calculation of key assumptions such as mitigation effectiveness, cost estimates, and other inputs.
  - Consumers should provide an estimate of the impact that prior year's expenditures have made to reduce risk on the system. Given the substantial ratepayer expenditures each year on the gas system to improve safety, the Company should describe what has been achieved to date and how much risk is left on the system relative to five years ago, ten years ago, etc.? If Consumers has prioritized the highest risk assets each year, I would expect diminishing returns for risk reduction. This information can only be ascertained with historical analysis of risk reduction achieved to date.

- The Commission should cap additions to plant in service in the projected test year at no more than 2024 investment levels, as illustrated in Table 1.

Furthermore, the Commission should require Consumers to implement probabilistic risk models for EIRP and Vintage Service Program ("VSR") before spending at levels that increase additions to plant in service above 2024 levels. (See Table 8)

III. ENERGY TRANSITION

Q Could you please describe what you mean by the term "energy transition"?

A The "energy transition" refers to the economy-wide transition to reduce GHG emissions by 80 percent or more by 2050 by moving away from an energy system of fossil fuel resources and toward an energy system of renewable and zero-carbon resources. The energy transition is underway in several jurisdictions across the United States as state agencies, public utility commissions, and utilities take action to support the achievement of the state's GHG emission reduction objectives.

Q Are other jurisdictions taking actions to address the energy transition?

A Many other jurisdictions are formally addressing issues related to the future of the natural gas system in a regulated context. For a detailed description of the future of gas dockets in 12 other jurisdictions including Massachusetts, New York, Maryland, the District of Columbia, Minnesota, Illinois, Colorado, Oregon, and California, refer to Exhibit MEC-15.

Q Please summarize the major implications of the energy transition for gas utilities based on experience in other jurisdictions.

A As demonstrated by the regulatory proceedings in numerous other jurisdictions, utility commissions are increasingly recognizing that business-as-usual approaches to managing the gas system cannot continue if states are to achieve their emission reduction targets and maintain affordable rates. The major implications of the energy transition for gas utilities are:

- The future of gas consumption and gas utility asset utilization will not look like the past or present. Energy delivered by the gas system will fall substantially, and the building sector share of gas consumption will fall (Massachusetts, New York, Maryland).
- Business-as-usual approaches to accelerated leak-prone pipe replacement are not justified. Capital investments should not be made until they are shown to be superior to alternatives that incorporate repair, retirement, or NPAs such as efficiency and electrification (Massachusetts, New York, Maryland, Illinois). In addition, regulators are requiring higher levels of analysis to justify gas plans (New York) and more extensive reporting to justify gas capital investments (Illinois, Massachusetts, Colorado).
- The recovery of invested capital over a smaller volume of sales will mean higher gas distribution rates and increased competition from electricity. The extent of these gas rate increases can be reduced by changes to the utility's approach to capital investment, repairs, retirement, and depreciation (Massachusetts, New York).
- Utilities have a responsibility to undertake prudent planning and investment actions to adapt to the energy transition, taking into account the timeframe of that transition and how it relates to the lifetime of gas assets. Failure to

make prudent capital decisions increases stranded-asset risk, which may be borne by customers and/or investors (Massachusetts, Maryland, Colorado).

Q Why is the energy transition relevant for this case?

A As jurisdictions have started to plan for the energy transition and to model pathways to achieve net-zero emissions, available analyses have made clear that the transition requires broad reductions in gas consumption (see Exhibit MEC-15 for a discussion of pathways analysis conducted in different jurisdictions) to meet emission reduction targets. The transition requires a reduction in the amount of fuel the gas utilities deliver to customers, and this will ultimately be reflected in changes in the Company's rates and the Company's overall competitive position compared to alternatives. The transition will impact the need to build out, repair and replace, depreciate, and generally plan and invest in the gas system, with fewer customers to shoulder this risk. Decision-making related to infrastructure investments must account for the energy transition. Gas distribution utilities such as the Company get their revenue from delivering gas to customers and recovering both the costs of the gas commodity and the costs of maintaining the extensive pipeline network used to transport it. Utilities have the opportunity to earn a fair return on prudent investments in assets that are used and useful.

As the energy transition progresses and gas sales decline, some gas utility assets will no longer provide service or will not be used and useful. These assets will therefore need to be removed from the rate base. That removal turns those investments into "stranded assets." If the constructed stranded assets are not fully depreciated, the Company's remaining customers or investors will bear the risk of those stranded costs. A rate case such as this one is where the prudence of a utility's actions can be evaluated and its rates adjusted to account for the cost of capital, for changes in the assets which are used and useful, and for their useful lives. The energy transition impacts these factors and thus is relevant to this case.

Q What are Michigan's emission reduction policies?

A Executive Directive No. 2020-10, signed by Governor Whitmer in September 2020, establishes a state-wide goal of achieving a 28 percent reduction in GHG emissions below 1999 levels by 2025, and reaching carbon-neutrality no later than 2050.[1] To achieve these reductions, the Governor then ordered the creation of the Michigan Healthy Climate Plan in September 2020. The plan includes a roadmap to a 52 percent GHG emissions reduction in space heating for Michigan buildings. The plan elaborates further with respect to natural gas: "To complement immediate policy actions, the Plan recommends the state undertake a pathway analysis to assess options to achieve carbon neutrality from natural gas production, transmission, distribution, compression, storage, and end uses in a least-cost manner. This analysis should consider a full range of options for decarbonizing natural gas end uses, including energy efficiency, electrification, fuel switching to renewable natural gas and hydrogen, and other potential opportunities."[2]

[1] Governor Gretchen Whitmer, Executive Directive No. 2022-10, September 23, 2020, available at: https://content.govdelivery.com/attachments/MIEOG/2020/09/23/file_attachments/1553296/ED%202020-10%20Carbon_Neutral_Goal.pdf.

[2] Michigan Healthy Climate Plan page 43.

Q Do the natural gas utilities in Michigan have a role to play in meeting the state's GHG emission targets?

A Yes, due to the reliance on natural gas for heating. Three-quarters of Michigan residents rely on natural gas for heating,[3] and in 2023 Michigan had the fourth highest natural gas consumption in residential and commercial sectors of any state in the United States.[4] According to the 2024 Michigan Healthy Climate Plan, the 'built environment' (which includes home and business heating) accounted for 16 percent of statewide GHG emissions with industry consumption accounting for another 19 percent in 2021.[5]

IV. NATIONAL GAS DELIVERY PLAN AND CONSUMERS' CLIMATE TARGETS

Q Please describe the Natural Gas Delivery Plan and how the plan addresses Michigan's GHG emission reduction objectives.

A The Natural Gas Delivery Plan ("NGDP") presents the planned investments in natural gas infrastructure for the next 10 years. The framework for the investment plan considers the safety and reliability of gas supply and also factors in the changes needed to meet pipeline safety regulatory requirements.

The NGDP also includes the response of the Company to the decarbonization goals of Michigan. It includes a "strategic framework in response to the decarbonization

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[3] U.S. Energy Information Administration (EIA), Michigan State Energy Profile, updated October 17, 2024, available at: https://www.eia.gov/state/print.php?sid=mi#51.

[4] EIA, Natural Gas Consumption by End Use, released January 31, 2025, available at: https://www.eia.gov/dnav/ng/ng_cons_sum_a_EPG0_vrs_mmcf_a.htm.

[5] Michigan Department of Environment, Great Lakes, and Energy (EGLE), Michigan Healthy Climate Plan: 2024 Report, December 2024, page 26, available at: https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Reports/OCE/MHCP-2024-Report.pdf.

goals of the company's natural gas customers and future carbon policy relevant to the utility."[6] The NGDP includes a discussion of its commitment to "reducing greenhouse gas emissions across its systems associated with the energy consumption of its customers."[7] The Company also mentions supporting Michigan's MI Healthy Climate Plan with its goal to "achieve net zero greenhouse gas emissions from the entire natural gas production and delivery system, including customers and suppliers, by 2050."[8]

Q Does the Company have any GHG emission reduction goals?

A The Company has established Scope 1 and Scope 3 targets.[9]

The Company established a goal to achieve net-zero Scope 1 methane emissions by 2030. The Company plans to achieve 80 percent of this reduction through near-term measures to reduce methane leaks from the system. This includes actions such as the reduction of distribution main and service leaks by replacing vintage pipe, reducing storage wellhead component leaks, and implementing compression blowdown venting procedures and transmission blowdown procedures. The balance of 20 percent is expected to be met through the procurement of carbon credits potentially through RNG.[10]

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[6] Direct Testimony of Company Witness Neal P. Dreisig, page 3 at 6.

[7] Dreisig Testimony, page 5 at 14.

[8] Ex A-42, Natural Gas Delivery Plan (NGDP), page 77.

[9] Scope 1 emissions are those directly resulting from the Company's operations. This involves the reduction of fugitive methane and carbon emissions from the gas system. Scope 3 emissions are produced upstream and downstream of the Company; they include emissions that result from customers' consumption of gas purchased from Consumers.

[10] NGDP, page 78.

It also has a goal to reduce Scope 3 emissions by 20 percent by 2030 and to achieve net-zero carbon emissions by 2050. The Company clarifies that this "include[s] all emissions traced to natural gas purchases and activities by customers and suppliers, like those associated with burning natural gas to heat homes and businesses."[11] The Company's goal is to achieve the 20 percent reduction by 2030 through Energy Waste Reduction (EWR or energy efficiency), RNG, carbon offsets and other new emerging decarbonization technologies such as hydrogen, clean synthetic fuels, electrification, and carbon capture.

While the Company highlights the voluntary program allowing customers to offset carbon emissions through RNG—noting that it would contribute to the state's emission reduction targets—the Company admits that "[a]fter inception in April 2024, no customers have been enrolled,"[12] and states that the program is expected to be operational in late 2025. This raises questions about the efficacy of this program in contributing to the achievement of the Company's GHG emission reduction goals.

Q Do you have any concerns that the Company does not have a more detailed decarbonization plan?

A Yes. The Company has identified potential pathways to meet net-zero emissions by 2050. However, the Company has not provided any concrete plan to meet its Scope 3 targets, neither for 2030 nor for 2050. Despite findings from the state-wide decarbonization pathways analysis that support hybrid electric and gas

[11] NGDP, page 79.

[12] Discovery Response MNSC-CE-0034

heating,[13] the Company has stated that it "does not have current plans to deploy or support hybrid heating through 2030 and 2050."[14] The Company has less than five years to achieve the 20 percent reduction in Scope 3 emissions and has only presented a list of actions and a waterfall chart;[15] it has not presented a more detailed execution plan that includes actual tasks that must be completed to achieve these lofty goals.

Q Do you have any concerns about the inconsistency between the Company's Scope 3 net-zero targets and the continued investment in natural gas infrastructure?

A Yes. In the NGDP, the Company set an interim goal to help its customers achieve a 20 percent reduction in Scope 3 emissions by 2030. They also have a goal of net-zero emissions on or before 2050. The Company recognizes the immensity of the task, stating that "[r]eaching 'net zero' will require Consumers Energy to balance many diverse emission reduction opportunities with safe, reliable, and affordable energy delivery."[16] Included in the list of items that will support the achievement of this goal are EWR or energy efficiency programs and electrification, which suggest a reduction or elimination of the use of natural gas.

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[13] According to the Company, hybrid heating "combines the heat content of natural gas with the efficiency of a heat pump. In this context, heat pumps would be used as much as possible; however, during the coldest winter months, natural gas furnaces would still be used to mitigate winter peak electric load." (NGDP, p. 82)

[14] Ex MEC-3, Discovery Response MNSC-CE-0039. Witness Napoleon sponsors Ex MEC-3.

[15] See Figure 40 on page 80 of the NGDP.

[16] NGDP, page 79.

As discussed in the next section, the Company's emissions reduction targets coexist with contradicting plans for continued significant and elevated levels of investment in natural gas infrastructure. For one, Consumers is expecting continued customer growth through at least 2035, despite a historically declining number of new connections (please refer to the testimony of my colleague, Alice Napoleon, for more details on gas demand).[17] The Company is also planning to replace 1,760 miles of vintage, standard pressure, and Transmission Operated by Distribution pipe over the next 10 years with no plans to conduct leak repair or consider NPAs for serving demand in lieu of replacement.[18]

Q Why is this a concern?

A From 2026 to 2035, Consumers is proposing long-lived infrastructure investments that will be paid for by its customers for decades. This proposal is inconsistent with the Company's Scope 3 emission reduction targets. The Company identifies several technologies that would contribute to meeting its Scope 3 objectives. The EWR/energy efficiency programs and increased electrification, in particular, should contribute towards a significant reduction in gas throughput and a reduction in gas customers. Thus, there is a risk that these new infrastructure investments will become stranded assets.

[17] NGDP, page 60.

[18] NGDP, page 51.

Q **In the NGDP, what are the long-term factors that drive the future of the natural gas business?**

A The Company identified four factors: safety, increasing regulation, changing supply and demand patterns, and an environmental focus.[19] The last factor has long-term implications. The Company elaborates, "[t]he impact of natural gas use on climate change through carbon emissions and methane emissions is becoming a focal point of environmentally conscious customers, regulators and other stakeholders as coal-based emissions from electric generation continue a downward trend."[20]

Q **Does the Company consider the energy transition in its gas planning, as presented in the NGDP?**

A The Company discusses its Scope 1 and Scope 3 net-zero targets and the potential technologies that can be used to meet these targets. It also includes a section in its NGDP discussing the results of the decarbonization modeling undertaken in 2021. However, there is no evidence that the Company considered these when developing the near-term or long-term capital plan for the distribution system.

In contrast to discussions about the energy transition and the changing energy environment in which the Company will be operating, Consumers' gas planning seems to assume the future will be the same as the past, with no departure from status quo. The NGDP includes a section with a 10-year focus on distribution assets, where the priority is to "[r]educe system risk and methane emissions while

[19] NGDP, page 11.

[20] NGDP, page 11.

addressing system reliability and capacity. This will be accomplished by addressing aging or vintage infrastructure that is closest to the customers" and to "[r]emediate vintage distribution main, standard pressure main, and vintage services to meet 2035 completion date."[21]

The planned investments in the distribution system are an extension of and completion of previously identified plans to replace pipe. The Company has not provided any indication that it considered other options, such as pipe repair or NPAs, that could be more suitable for a changing environment.

V. <u>OVERVIEW OF CONSUMER'S MAJOR INFRASTRUCTURE INVESTMENTS AND NATURAL GAS DELIVERY PLAN</u>

Q Please describe how the natural gas infrastructure investments were determined in the NGDP.

A A significant amount of investment in the distribution system is for the replacement of pipelines of vintage materials. The investments also include expanded monitoring though advanced leak detection methodologies and upgrading the remote data monitoring system.

The Company is planning to complete the vintage pipe replacement programs by 2035, claiming that it balances safety, reliability, and affordability. Distribution programs aimed at replacing and expanding the distribution system make up almost 60 percent of Consumer's cumulative projected investments through 2034.[22]

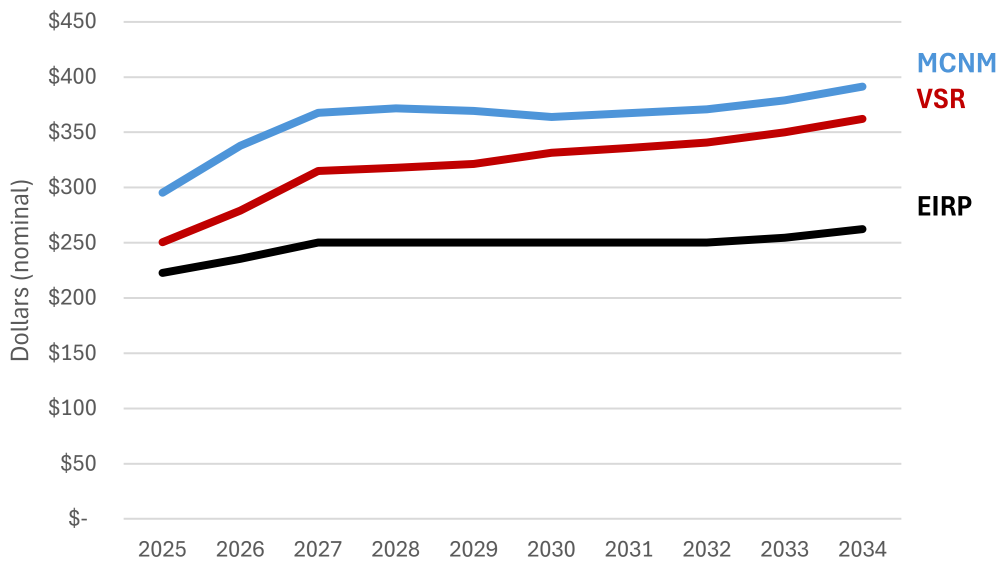
[21] NGDP, page 47.

[22] Discovery Response MNSC-CE-0007_Dreisig_ATT_1.

Q **Please characterize Consumers' natural gas infrastructure investments.**

A Three major pipe replacement programs within the distribution category include the EIRP, VSR, and Material Conditioned Non-Modeled Program (MCNM). The Company is on track to spend $3.6 billion in the next decade on the EIRP, VSR, and MCNM programs alone (see Figure 1).[23]

Figure 1. Distribution replacement program forecasted investment



Source: MNSC-CE-0007_Dreisig_ATT_1.
Note: values are stacked to show cumulative program investment.

[23] Discovery Response MNSC-CE-0007_Dreisig_ATT_1.

i. Enhanced Infrastructure Replacement Program

Q Please characterize Consumer's Enhanced Infrastructure Replacement Program.

A Launched in 2012, the EIRP replaces distribution pipes made of vintage, leak-prone materials. The EIRP is the Company's largest individual capital program, accounting for a fifth of cumulative projected investments through 2034.[24] In addition to replacing vintage pipes (defined as pipes made of cast iron, bare steel, threaded and coupled steel, and wrought iron),[25] Consumers intends to replace all low pressure pipe through the EIRP with the goal of eliminating its entire standard pressure system.[26] As of February 2024, there were 1,726 miles of vintage and standard pressure pipe slated for replacement under the EIRP.[27] The Company prioritizes segments of pipe using the Distribution Risk Analysis Model (DRAM).[28] Pipe repair is not part of the EIRP.[29]

Q Please describe historical EIRP activities.

A Refer to Table 1 showing historical miles of pipe replaced and capital expenditures under the EIRP since 2017. Since the start of the program in 2012, Consumer's has spent $1.6 billion on pipe removal and installation, in that time replacing roughly 980 miles of transmission and distribution pipe.[30] From 2012 to 2022,

[24] Discovery Response MNSC-CE-0007_Dreisig_ATT_1

[25] NGDP, page 48.

[26] NGDP, page 49.

[27] NGDP, page 51.

[28] Direct Testimony of Company Witness Kristine A. Pascarello, page 68 at 23.

[29] Discovery Response MNSC-CE-0579.

[30] Discovery Response MNSC-CE-0042_Pascarello_Attachment_1 through 12.

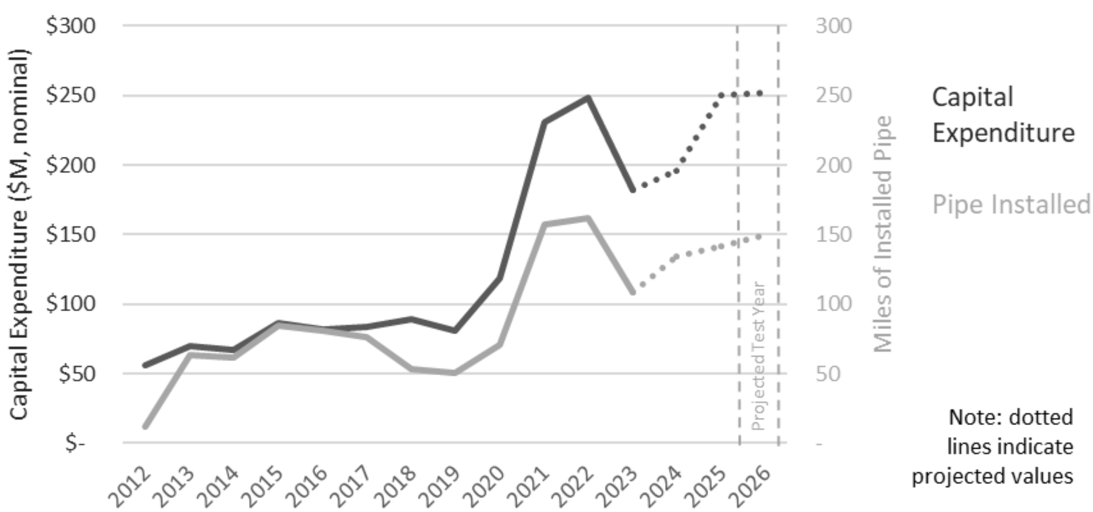
annual capital expenditures more than tripled; spending fell slightly in 2023, but Consumers' projected expenditures for 2025 and 2026 return to the same elevated levels from 2022 (see Figure 2).

Table 1. EIRP Historical Pipe Replacement (nominal dollars)

	2017	2018	2019	2020	2021	2022	2023
Pipe Retired (miles)	78.30	50.86	45.83	71.66	134.61	130.34	131.16
Pipe Installed (miles)	76.67	52.86	50.75	71.24	157.22	162.11	108.94
Capital Expenditure ($000)	$83,705	$88,821	$81,028	$118,551	$230,723	$248,149	$181,927
Unit Cost ($000/mile installed)	$1,092	$1,680	$1,596	$1,664	$1,468	$1,531	$1,670

Source: MNSC-CE-0042_Pascarello_Attachment_1 through 12.

Figure 2. Historical and Projected EIRP Expenditure and Pipe Installation



Source: MNSC-CE-0042_Pascarello_Attachment_1 through 12.

Q What are Consumers' proposed investments for the EIRP?

A Consumers is proposing to spend $697.5 million over 3 years (2024-2026) to retire 406 miles of old pipe and install 426.9 miles of new pipe through the EIRP.[31] Notably, the test year values show an almost 30% increase from $195.6 million in 2024 to a proposed $251.4 million in the test year,[32] noting that the amount in the test year "supports the annual installed mileage required to ensure program completion by 2035."[33]

Table 2. EIRP projected pipe replacement (nominal dollars)

	2024	2025	2026	Total
Pipe Installed (miles)	134.60	142.00	150.30	426.90
Capital Expenditure ($000)	$195,587	$250,300	$251,600	$697,487
Unit Cost ($000/mile installed)	$1,453	$1,763	$1,674	$1,634

Source: Exhibit A-84 (KAP-6).

ii. Vintage Service Replacement Program

Q Please characterize Consumer's Vintage Service Replacement program.

A Beginning in 2017, the VSR program eliminates services made of vintage materials such as copper or bare steel, and services for which the material is unknown.[34] Within this program, service replacements fall into one of three groups: In-Grid VSRs, Proactive-in-Grid VSRs, and Proactive Out-of-Grid VSRs.

[31] Pascarello Testimony, page 49, Table 7; NGDP page 51.

[32] Pascarello Testimony, page 47 at 26.

[33] Pascarello Testimony, page 48 at 3.

[34] Pascarello Testimony, page 66 at 19.

- In-Grid VSRs are vintage services attached to vintage mains that are being replaced within an EIRP project. The cost of these service replacements fall under the EIRP.[35]
- Proactive In-Grid VSRs are vintage services attached to non-vintage mains within the footprint of an EIRP project. The cost of these service replacements falls under the VSR program.[36]
- Proactive Out-of-Grid VSRs are vintage services located outside of an EIRP project; project costs fall under the VSR program.[37]

Vintage services might also be replaced outside of the VSR program, such as services replaced through the Material Condition Non-Modeled program, and others.[38]

Vintage services are currently prioritized based on a manual analysis process that considers factors such as leak rate, material age, and soil conditions; although the Company states that in 2025 it plans to transition to using the Distribution Risk Analysis Model (DRAM) which is currently used to analyze distribution pipes.[39]

Q Please describe historical VSR activities.

A Refer to Table 3 showing historical VSR replacements and expenditures. The table excludes service replacements carried out through the EIRP and through other

[35] Pascarello Testimony, page 69 at 16.

[36] Pascarello Testimony, page 69 at 20.

[37] Pascarello Testimony, page 69 at 28.

[38] Pascarello Testimony, page 68 at 13.

[39] Pascarello Testimony, page 69 at 23.

programs, it only includes service replacements associated with VSR expenditure. The VSR program represents about half of the Company's total service replacements from 2017 to 2023.[40]

Table 3. VSR historical service replacements (nominal dollars)

	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Proactive In-Grid and Out-of-Grid VSRs	6,307	9,381	5,571	5,456	5,056	2,176	1,228
VSR Program Spend ($000)	$33,564	$56,634	$40,443	$42,818	$32,955	$17,165	$11,354
VSR Unit Costs	$5,322	$6,037	$7,260	$7,848	$6,518	$7,888	$9,246

Q What are Consumers' proposed investments for the VSR program?

A Table 4 shows the Company's projected VSR replacements and expenditures through 2026.

Table 4. VSR projected service replacements (nominal dollars)

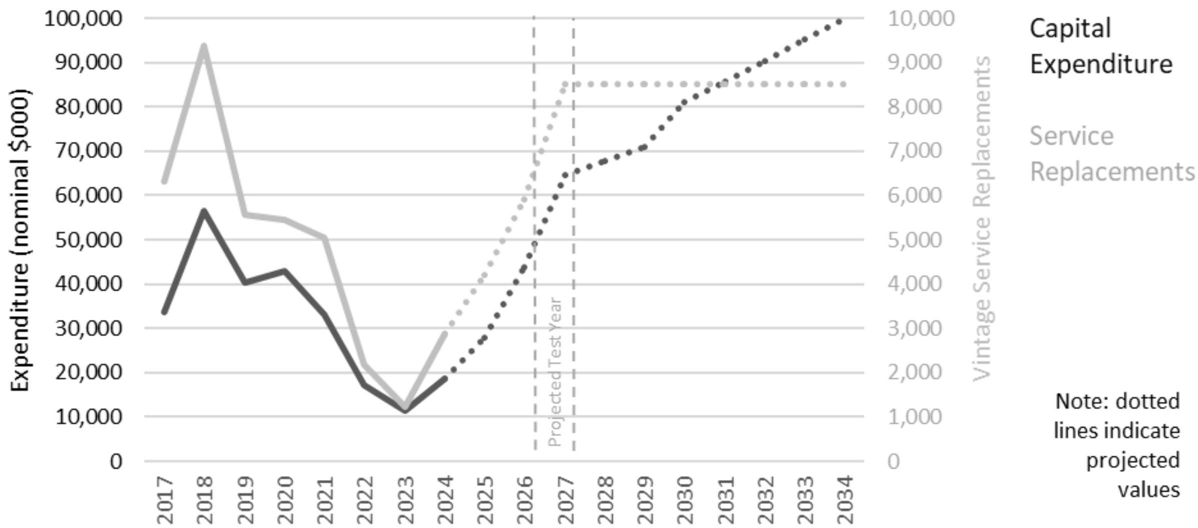
	2024	**2025**	**2026**	**Total**
Proactive In-Grid and Out-of-Grid VSRs	2,875	4,194	5,913	12,982
VSR Program Spend ($000)	$18,666	$27,978	$43,689	$90,333
VSR Unit Costs ($)	$6,493	$6,671	$7,389	$6,851

Source: Pascarello Testimony, page 71.

[40] Pascarello Testimony, page 71 Table 9; MNSC-CE-0040_Pascarello_Attachment_1.

Consumers' projects an increased number of vintage service replacements in 2024, 2025, and 2026, and through 2035.[41] The VSR program spend increases 128 percent from $18.6 million in 2024 to a projected $42.5 million for the test year.[42]

Figure 3. VSR service replacements



Source: Pascarello Testimony, page 71; MNSC-CE-0040_Pascarello_Attachment_1; MNSC-CE-0007_Dreisig_ATT_1.

iii. Material Condition Non-Modeled Program

Q Please characterize Consumers' Material Condition Non-Modeled program.

A This program replaces distribution main not covered by the EIRP. Under this program, pipes might be replaced due to emergent safety concerns, active gas leaks, compliance with regulation, and Company-initiated projects of certain

[41] Pascarello Testimony, page 71 Table 9; MNSC-CE-0040_Pascarello_Attachment_1

[42] Pascarello Testimony, page 71 at 1.

assets "which may not rank as highly in the Company's risk modeling but whose replacements offer operational advantages to the Company and customers."[43]

Q How does the MCNM program differ from the EIRP?

A Both the EIRP and MCNM program address risk-related needs of the system. Witness Pascarello explains that, as EIRP planning increasingly happens further out, the MCNM program gives the Company flexibility to address emergent needs of the deteriorating system as they arise.[44]

Q Please describe historical MCNM activities.

A Table 5 shows the Company's historical expenditure, replaced pipe, and unit costs under the MCNM program. As stated in discovery, "There are zero miles of pipe repaired in this program."[45]

Table 5. MCNM historical replacements and expenditures (nominal dollars)

	2020	**2021**	**2022**	**2023**	**2024**
Pipe Replacement (miles)	9.37	19.8	12.9	10	11.8
Capital Expenditure ($000)	$36,892	$50,126	$42,358	$38,516	$39,443
Unit Cost ($000/mile replaced)	$3,937	$2,532	$3,284	$3,852	$3,343

Source: MNSC-CE-0578

[43] Pascarello Testimony, page 50 at 24.

[44] Pascarello Testimony, page 52 at 6.

[45] Discovery Response MNSC-CE-0578.

Q What are Consumers' proposed investments for the MCNM program?

A Consumers is proposing to spend over $130 million on MCNM projects through 2026.[46] This includes (but is not limited to) three Company-initiated projects: replacing 6 miles of wrought iron pipe (with plans to replace the entire remaining 12 miles of the wrought iron system over the next four years), a $38 million Maximum Allowable Operating Pressure (MAOP) compliance project on Line 1010, and a high pressure waterway crossing.[47] The MCNM program spend increases 47 percent from $38.3 million in 2024 to a projected $56.2 million for the test year.[48]

Table 6. MCNM projected expenditure (nominal dollars)

	2024	**2025**	**2026**	**Total**
Capital Expenditure ($000)	$38,256	$42,628	$56,206	$138,277

Source: Exhibit A-82 (KAP-4), pages 1- 2;

Q What can you say about the increase in gas infrastructure investment?

A The test year capital expenditures for five programs is $385.7 million, a 45 percent increase from $266.3 million in 2023 and 35 percent increase from $285.7 million in 2024.[49] The test year totals are a snapshot of a sustained high level of capital investment proposed by the Company (see Figure 4), leading to an increasing rate

[46] Exhibit A-82 (KAP-4), page 2.

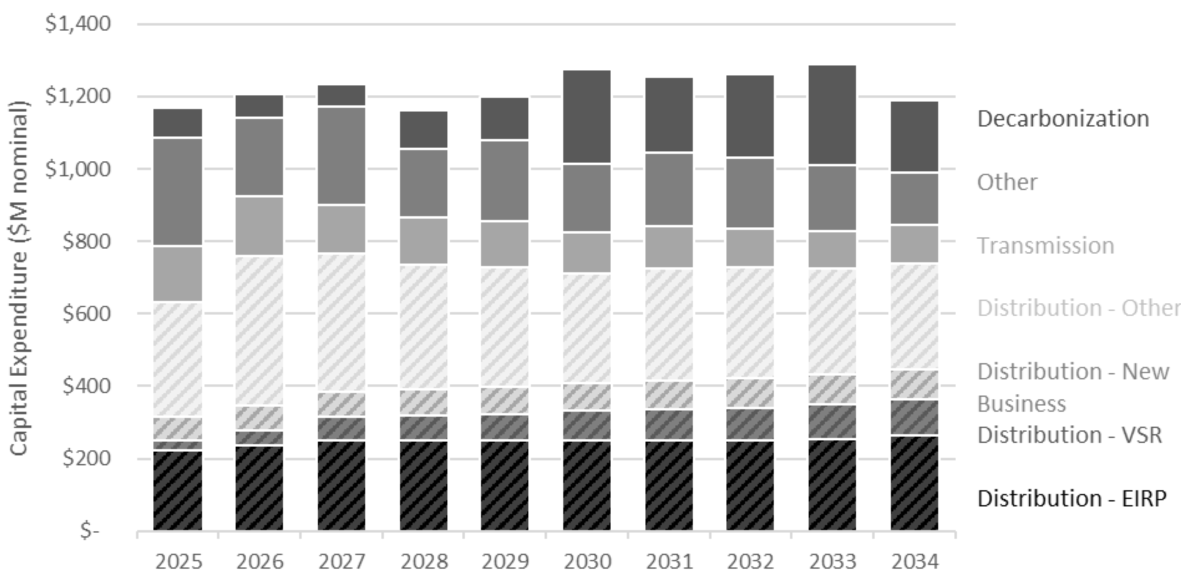
[47] Pascarello Testimony, page 56 at 15.

[48] Exhibit A-82 (KAP-4), page 1.

[49] Pascarello testimony, page 34 at 16.

base. This level of spending, combined with sales the Company itself projects will decline and are likely to decline more than the Company projects.[50]

Figure 4. Projected capital investment by program



Source: MNSC-CE-0007_Dreisig_ATT_1.

VI. RISK MODELING AND COST-EFFECTIVENESS TO MAXIMIZE SAFETY IMPACTS OF RATEPAYER EXPENDITURES

i. Overview of Risk Modeling and Cost-Effectiveness

Q How do you define cost-effectiveness in relation to safety-related programs?

A In this context, cost-effectiveness analysis examines the level of risk reduction expected from alternative measures in comparison with the cost to deploy these alternatives. This type of analysis allows the utility and stakeholders to compare various mitigations against each other, such as replacement versus pipe lining,

[50] See Direct Testimony of Alice Napoleon.

from both a safety impact and cost perspective, and can support evaluations regarding prudence.

Q How can utilities model the risk of its gas system?

A A probabilistic risk model utilizes historical data and subject matter expertise to estimate the likelihood of failure and consequence of failure for specific areas or pipeline segments. The multiplication of likelihood and consequence is the risk. Consumers acknowledges that probabilistic models "show great promise as a tool in more accurately assessing pipeline risk," as compared to relative risk models.[51]

Q How can a utility calculate the cost-effectiveness of various safety investments?

A Cost-effectiveness, or risk spend efficiency (RSE), is calculated by dividing risk reduction of each mitigation alternative by cost. Ideally, for capital projects, costs should entail the full revenue requirement of an investment over the full depreciation life of the asset, discounted appropriately.[52] Risk reduction is calculated as the level of risk multiplied by mitigation effectiveness (percent reduction in likelihood and/or consequence), discounted appropriately in each year. Mitigation effectiveness can be determined based on historical data and/or subject matter expertise.

RSE = Risk Reduction (Risk x Mitigation Effectiveness) / Cost

[51] Direct Testimony of Company Witness Michael P. Griffin, p. 17 at 22.

[52] This allows for the comparison of O&M and capital mitigations. However, if the only mitigations available are capital investments with similar depreciation lives, the calculation of full revenue requirements is less important.

Q What is the value of risk modeling and cost-effectiveness analyses?

A Risk modeling and cost-effectiveness calculations allow stakeholders to examine the level of risk reduction expected from Consumers' proposed remediations, the cost to achieve this, and an ability to assess alternatives that could better maximize risk reduction and minimize costs. These analyses provide transparency and insight into tradeoffs between risk reduction and affordability.

This type of transparency is currently lacking in Consumers' application. The inability to assess tradeoffs between safety impacts and affordability means the Commission must rely on relatively vague utility proclamations without data-driven, analytical support that Consumers' proposals are in the ratepayer interest. In the context of moving gas system planning away from business-as-usual to a more forward-looking approach, risk analysis is an important component to help reduce unnecessary or ineffective expenditures while still investing where necessary to ensure safe, reliable gas service.

Q What is the relationship between risk modeling, cost-effectiveness, and the energy transition?

A As stated above, in the face of the energy transition, gas utility actions that avoid, reduce, or delay irreversible investments have particular value. Risk modeling and the examination of cost-effectiveness gives utilities, stakeholders, and regulators the tools to maximize risk reduction and minimize ratepayer spending on irreversible and long-lived investments. This helps to further the energy transition without compromising customer safety (and even making the system safer through a more granular understanding of risk). Quantitative estimates of risk reduction, cost, and cost-effectiveness of utility proposals and alternatives provide a rigorous way to explore tradeoffs between safety and affordability. The Company's transmission asset risk model illustrates the importance of risk modeling for maximizing risk reduction and minimizing costs. For example, it shows that 80 percent of the current risk on the transmission system is contained within just over 9 percent of total transmission miles (208 miles).[53] This information can allow the utility and its regulator to properly target investment towards the highest risk assets.

Q Should all utility programs calculate cost-effectiveness metrics?

A There is a distinction to be made between "compliance" programs that are mandated by a law or regulation, and therefore have little-to-no flexibility for what measures to employ to remediate safety issues, and expenditures where multiple alternatives can be assessed (i.e. are "discretionary"). However, I note that the lines between these categories of programs are often unclear, which is why it is important to assess the risk reduction and cost-effectiveness of all utility programs.

Q Do you have any examples of utilities that use risk modeling and cost-effectiveness in their decision-making?

A Washington Gas (WGL), the gas utility in the District of Columbia, states that it utilizes risk models and cost-effectiveness to optimize investment and prioritization decisions:

> Once the risk has been assessed for assets associated with each project, a parametric estimate of the cost for each project is

[53] Statistics derived from Discovery Response U21806-MNSC-CE-0080_Griffin_CONF_ATT_1_EB.

> produced. The Company then ranks projects to achieve the greatest reduction of overall risk per dollar invested. This basic prioritization may then be modified as appropriate to consider poor asset conditions observed directly by Company personnel, alignment with schedules for work compelled by others, and completion of work in-process.[54]

Furthermore, all California utilities must model risk to develop cost-effectiveness statistics for their gas inspection and investment programs. This framework was instituted in the wake of a 2010 pipeline failure in San Bruno, California, part of Pacific Gas and Electric's (PG&E) service territory.[55]

Q Have risk modeling and cost-effectiveness calculations influenced how the California Public Utilities Commission ("CPUC")assesses utility expenditures?

A Yes. In its decision on PG&E's test-year 2023 rate case, the CPUC reduced PG&E's proposed rate of 12 in-line inspection (ILI) upgrades per year to 4 per year, based on recommendations by an intervenor in that proceeding, The Utility Reform Network ("TURN").

> PG&E has not convincingly demonstrated that performing ILI upgrades at the rate of four segments per year would fail to meet the requirements of federal and state law and regulations, nor would it conflict with prior Commission decisions. Moreover, the lack of cost-effectiveness of ILI upgrades disfavors performing them at the pace requested by PG&E. TURN shows, for example, that the RSE [Risk Spend Efficiency] for PG&E's proposal is 0.08, ranking the ILI Program 171st out of 247 programs for which PG&E calculated an RSE. This translates to a benefit-cost ratio of only 0.0159, or a

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[54] *Application of Washington Gas Light Company for Authority to Increase Existing Rates and Charges for Services*, Case No. 1180, Supplemental Direct Testimony of Kevin Murphy, November 4, 2024, p. 13.

[55] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M325/K471/325471063.PDF; https://pstrust.org/map-of-major-incidents/sanbruno/.

> benefit of 1.6 cents of risk reduction for every dollar spent. Compared to the costs and benefits of the combined external corrosion direct assessment and stress corrosion direct assessment costs every seven years (discussed below), it is unreasonable for ratepayers to pay for more than four ILI upgrades per year.[56]

The type of analysis discussed in this decision is not possible with the information provided by Consumers in this case.

ii. Consumers Use of Risk Modeling and Cost-Effectiveness

Q Has Consumers developed probabilistic risk models to estimate the risk to customers of its assets?

A Consumers developed a probabilistic risk model for transmission assets and Transmission Operated by Distribution assets. It is developing a model for storage wells which it expects to begin utilizing in 2025; the Company expects to develop a probabilistic distribution asset risk model by 2027.[57] The Company currently uses relative risk models for storage wells and distribution assets.[58]

Consumers acknowledges the importance of probabilistic risk modeling to accurately assess risk:

> In the last several years probabilistic models have been developed, and show great promise as a tool in more accurately assessing pipeline risk. The use of a model that is entirely data driven provides a more accurate representation of the risks associated with pipelines. This in turn will allow the Company to more precisely mitigate risks

[56] D. 23-11-069, Decision on Test Year 2023 General Rate Case for Pacific Gas and Electric Company, 11/17/23, p. 88.

[57] Discovery Response MNSC-CE-0080, part (a).

[58] Discovery Response MNSC-CE-0080, part (a).

> associated with its transmission system to improve customer safety and reliability.[59]

Additionally, Consumers states "[Pipeline and Hazardous Materials Safety Administration] has identified the probabilistic risk model as a potential best practice for pipeline operators over other risk models."[60]

Q What is your understanding of a relative risk model as compared with a probabilistic one?

A A relative risk model ranks assets within an asset class (e.g. transmission pipe, distribution pipe, storage wells, etc.) based on certain characteristics (material, location, etc.) but does not calculate a quantitative risk score using likelihood of failure and consequence of failure. These models cannot examine cost-effectiveness of remediation alternatives, nor can the risk across asset types (e.g. distribution vs. transmission vs. storage wells) be compared against each other. By contrast, a probabilistic risk model calculates a quantitative risk score that can be used to understand the cost-effectiveness of alternative remediations and risk across different types of assets.

Q Does Consumers utilize cost-effectiveness information to support its cost forecast and justify prior investment decisions?

A In general, no. Consumers cannot calculate these statistics without a probabilistic risk model. Consumers does not have a probabilistic risk model for distribution

[59] Witness Griffin Testimony, page 17 at 22.

[60] Witness Griffin Testimony, page. 17 at 5.

system or asset classes such as storage wells. So for distribution-level assets it cannot justify investments based on cost-effectiveness.

For transmission-level assets, the Company states it *prioritizes* inspection by likelihood of failure and overall risk, as calculated by its probabilistic risk model of transmission assets.[61] Additionally, for certain programs, the Company states that it utilizes risk modeling results to prioritize selection of its projects. For example, the Asset Relocation Transmission Program prioritizes "[s]egments showing a higher overall risk reduction as a result of increased depth of cover [which] are graded as higher priority within the Asset Relocation Program." That said, the Company allows itself considerable flexibility to deviate from remediating the highest risk projects, stating "[p]rioritization may also be adjusted based on availability of transmission pipeline outages, continued coordination with local municipalities or governing authorities for civic-related work, and anticipated future replacement under another program (such as TED-I)."[62]

When asked whether it utilizes cost-effectiveness to determine what pipelines or mitigations to target during the rate case period, the Company responded:

> No, Consumers Energy does not perform cost-effectiveness or RSE metrics. The Pipeline Integrity program falls under [Pipeline and Hazardous Materials Safety Administration] requirements to perform on a reoccurring basis.[63]

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[61] Witness Griffin Testimony, page. 14 at 10.

[62] Witness Griffin Testimony, page 9 at 2.

[63] Discovery Response MNSC-CE-0081.

Q Can you provide an example of issues with specific safety programs?

A As an example, Consumers provides regular reports detailing work accomplished in the EIRP, a major expense for gas ratepayers every year. In its reporting on the program, Consumers is obligated to provide the "risk ranking for all projects." However, ~~at least in the publicly available reports available to stakeholders, the Company rarely does this~~ while the Company provides numerical risk ranking values for distribution projects, it is not possible to discern whether Consumers prioritized projects appropriately based on risk ranking, nor whether some projects are "high risk" based on Consumers risk model results~~.~~ As stated above, it also does not examine the cost-effectiveness of alternatives to support its expenditures. Table 7 shows the first five reasons given by the Company for EIRP projects in 2023, demonstrating the lack of risk ranking and cost-effectiveness information provided in these reports.

Table 7. Consumers' stated reason for selection of EIRP projects

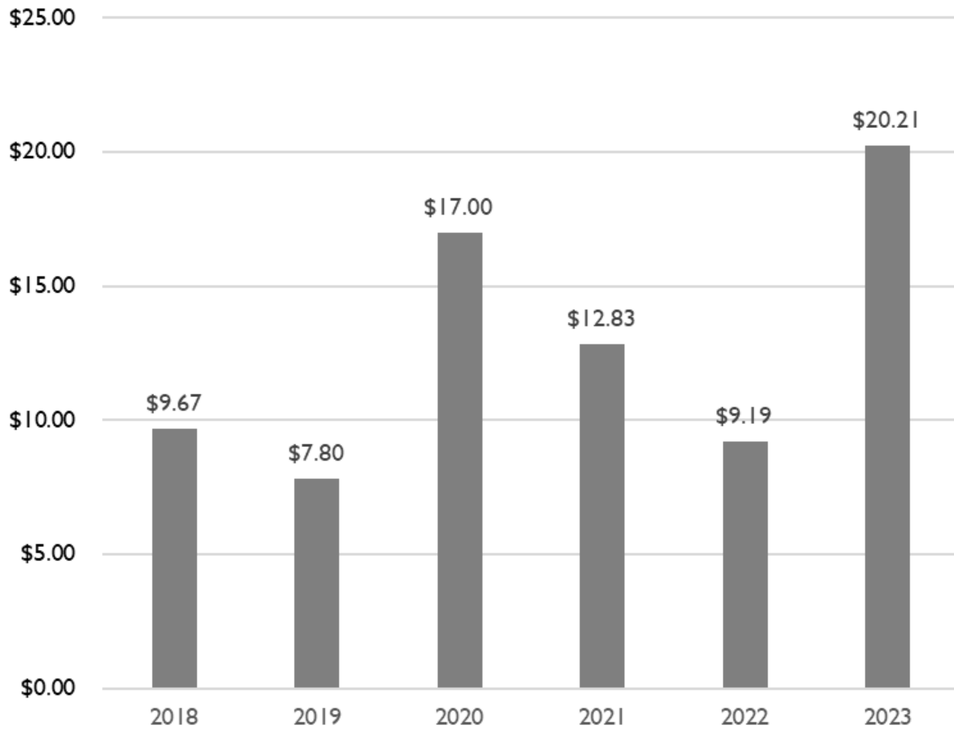
Risk Rank / Selection Reason
20" Line 100A, built in 1949, has reached the end of its useful life. Phase 1 of the Mid-Michigan project has replaced ~30 miles of 20" steel piping with new 36" steel piping from Chelsea to Williamston.
Install 20" PLD on 2700/600 to protect the MAOP difference
Removal of TDW hot tap tee on Line 2020
Replace actuator on valve 605T12W and update to RCV
Site reaching the end of its design life. Project completed in conjunction with mid-Michigan pipeline project. Added modern filter/separator to enhance gas quality and protect downstream facilities and customers.

Source: U21806-MNSC-CE-0079_GRIFFIN_ATT_1_to_6, tab "2023 Att 8 Transmission."

It is not my testimony that these, or other EIRP projects, were not necessary or prudent, as I have not conducted analysis at the project level. It is my testimony that the selection of projects under the EIRP program is not transparent from a risk reduction and cost-effectiveness perspective, which makes it impossible to assess the prudency of these investments.

A high-level analysis of the EIRP program's cost-effectiveness from 2018–2023 underscores why it is critical for cost-effectiveness to play a substantial role in the selection of projects. In Figure 5 below I calculated the dollars per leak remediated in each year. Leaks remediated in each year are therefore used as a proxy for reduced risk by that year's EIRP investments.

Figure 5. Dollars per leak remediated 2018–2023 ($ million, nominal)



Source: 2018-2023 EIRP Reports, expenditures and leak remediated on the distribution system. Links to the reports provided in Consumers response to U21806-MNSC-CE-0079.

First, I observe that this program is expensive, costing ratepayers $20 million *per leak* in 2023. Second, if Consumers EIRP program were targeted to remediate the most risk (as measured by leaks) at least cost, I would expect earlier years of program implementation to be much more cost-effective (lower expenditures per leak remediated) compared to later years (higher expenditures per leak remediated). While there is no clear pattern in Figure 5, the data is largely not consistent with this expectation, with the exception of a comparison of 2018 and 2023. However, work accomplished in 2022 was 18 percent *more* cost-effective than 2018, while 2020 and 2023 had similar cost-effectiveness results. Therefore, based on the data I reviewed, including the EIRP reports and the analysis above, it is unlikely that the EIRP program has maximized safety impacts for the ratepayer dollars spent in each year.

iii. Assessment and Recommendations Regarding Risk Modeling and Cost-Effectiveness

Q What are your concerns with Consumers' use of risk modeling and cost-effectiveness statistics?

A The Company does not have probabilistic risk models to calculate cost-effectiveness statistics for the distribution system or individual assets such as storage wells, though it is working on these models. In the current case, however, there is no way to tell whether the Company is performing cost-effective work that is in the interest of ratepayers, nor is it possible to even calculate cost-effectiveness of alternatives for a majority of forecast spending.[64]

While the Company states that cost-effectiveness is a "factor" in its decision-making, it has not provided evidence of this, and it is thus not possible to ascertain the extent to which cost-effectiveness influences project selection.[65] Indeed, the Company would not provide estimates of mitigation effectiveness (discussed above) for the various remediations it considered, so I cannot confirm that the Company even considers cost-effectiveness.[66] Additionally, it is unclear that the EIRP program has adequately prioritized cost-effectiveness and risk reduction.

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[64] In 2025 and 2026, distribution-related expenditures comprise 54 percent and 63 percent of total expenditures, respectively, based on my review of U21806-MNSC-CE-0007_Dreisig_ATT_1.

[65] Discovery Response U21806-MNSC-CE-0285, part (a) says: "Cost effectiveness is factored into the remediation methodology selected for each individual project as well as complying with all applicable regulations and industry standards."

[66] Discovery Response U21806-MNSC-CE-0282.

Further, while the Company appears to understand the importance and necessity of risk modeling to prioritize its programs and investments, its use of models to examine the cost-effectiveness of remediations is extremely lacking. In sum, the Commission and stakeholders have very little information to assess whether Consumers' use of ratepayer funding is efficient and effective at reducing safety risk to customers.

Due to these shortcomings, there is a concerning lack of transparency and support for past and future spending. Is the Company's proposal the most efficient use of ratepayer funds? Is Consumers prioritizing the right types of inspections and remediations to cost-effectively maintain the safety of its system? Could NPAs more cost-effectively mitigate safety risks? These basic questions get at the heart of what expenditures should be deemed "just and reasonable" in this case. Based on my review of materials provided, neither I nor the Commission can satisfactorily answer these questions.

Q What are your recommendations?

A First, Consumers should provide on a regular basis and in its applications for ratepayer funding far greater transparency regarding the tradeoffs between safety and affordability. This includes, but may not be limited to:

- Reporting on transmission-level projects that demonstrates how Consumers utilizes cost-effectiveness, where applicable, to maximize safety impacts for the ratepayer dollars spent. Calculations and assumptions should be available to stakeholders upon request.

- EIRP reporting should include risk-ranking information (risk rank of asset remediated and total number of assets) and narrative descriptions regarding the use of risk-ranking driving remediation for a particular project.
- When probabilistic risk models are available for distribution assets starting in the next rate case, Consumers should:
  - Calculate and utilize total risk reduction and cost-effectiveness statistics as an important input into selecting appropriate projects and related remediations. Cost-effectiveness statistics and all inputs and assumptions should be made available to stakeholders upon request, including the ability to calculate risk reduction and cost-effectiveness for alternative projects and remediations.
  - Summarize in its EIRP reports remediations examined, cost-effectiveness of projects relative to alternatives, and explanations of why the Company's remediation was selected.

Second, future rate case applications should utilize probabilistic risk modeling and cost-effectiveness calculations to a much greater extent for all asset classes. This modeling should be made available upon request to stakeholders and the Commission, including the following:

- Unless Consumers can demonstrate it is not possible, it should develop probabilistic risk models for use in the next rate case for all asset classes (distribution, storage wells, etc.).

  - For each project proposed in the test year, Consumers should calculate the risk reduction, cost, and cost-effectiveness (RSE) of its expenditures. All workpapers should be made available upon request and include the source and calculation of key assumptions such as mitigation effectiveness, cost estimates, and other inputs.
  - Consumers should provide an estimate of the impact prior year's expenditures have made to reduce risk on the system. Given the substantial ratepayer expenditures each year on the gas system to improve safety, Consumers should explain what has been achieved to-date, and how much risk is left on the system relative to five years ago, ten years ago, etc. If Consumers has prioritized the highest risk assets each year, I would expect diminishing returns for risk reduction. This information can only be ascertained with historical analysis of risk reduction achieved to date.

- The Commission should cap additions to plant in service in the projected test year at no more than 2024 investment levels (see Table 8). Furthermore, the Commission should require Consumers to implement probabilistic risk models for EIRP and Vintage Service Program ("VSR") before spending at levels that increase additions to plant in service above 2024 levels.

Table 8: Recommendations - Test Year

	2023	2024	Test Year	Recommendation: Capped at 2024 levels Test Year
EIRP	$181,927	$195,587	$251,372	**$195,587**
VSR	$11,354	$18,666	$42,513	**$18,666**
MCNM	$38,516	$38,256	$56,206	**$38,256**

VII. ALTERNATIVES TO PIPE REPLACEMENT AND PATHWAYS TO MEETING NET-ZERO EMISSIONS

Q Is Consumers considering leak repair as an alternative to pipe replacement?

A Consumers is not considering leak repair for any proposed projects.[67] The Company has stated that it does not consider pipe repair for the EIRP[68] or the MCNM program.[69]

The Company has already produced an example of what kind of analysis should be conducted when considering alternatives to pipe replacement. For example, the Company completed a cost and risk analysis for Line 1010 to compare the cost of pressure testing the existing pipe to test for MAOP compliance, with the cost of complete pipe replacement. While the Company decided to proceed with pipe replacement, the evaluation was conducted and made available to the public.[70]

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[67] Discovery Response MNSC-CE-0578.

[68] Discovery Response MNSC-CE-0579.

[69] Discovery Response MNSC-CE-0578.

[70] Pascarello Testimony, page 56 at 23.

Q **What are NPAs and why are they relevant to the energy transition?**

A NPAs are solutions that meet customer energy needs and are alternative to traditional infrastructure investments. Examples of NPA portfolio components include electrification, energy efficiency, and other measures that reduce or eliminate customers' demand for natural gas. NPAs can be temporary solutions to defer infrastructure replacement or long-term solutions that allow utilities to decommission assets. The benefits of NPAs include emission reductions and associated health benefits, avoided costs from traditional infrastructure investments, and reduced risk of future stranded assets. When faced with uncertainty, companies can reduce risk by retaining optionality and avoiding potentially unnecessary capital investments. In the face of the energy transition, gas utility actions which avoid, reduce, or delay irreversible investments have particular value.

Q **Has the Company discussed implementing any NPAs?**

A The Company does not address NPAs in its application nor has it proposed any NPA projects in its capital investment plan. To date, the Company has only completed an initial screening criterion which identified Kalamazoo, Lansing, and Flint as "the top communities to investigate further for an initial feasibility data assessment"[71]

[71] Discovery Response MNSC-CE-0030.

Q Consumers claims that affordability is a main objective of the NGPD. Are there other actions it can do to address affordability?

A Consumers claims that affordability is one of the key objectives of the NGPD. However, in the planning for the gas infrastructure investment, there is no evidence that the Company evaluated alternatives such as leak repair or NPAs that could reduce the need for pipeline replacement and thus be a lower-cost alternative to continued gas investments.

Q Is it reasonable or prudent for the Company to make investment decisions without evaluating alternatives, such as pipeline repair or NPAs?

A No. By failing to evaluate alternatives, the Company runs a high risk of spending more money than is necessary to achieve the safe and reliable gas system that it is obligated to maintain and operate. Because the Company has provided no records of any cost-effectiveness or other evaluations conducted to determine the most appropriate investment, it is essentially asking for approval billions of dollars of capital investments without substantive justification that they were truly necessary.

Q Does this complete your direct testimony?

A Yes, it does.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for authority to increase its rates for the distribution of natural gas and for other relief.	U-21806

PROOF OF SERVICE

On the date below, an electronic copy of **Revised Direct Testimony of Dr. Sol deLeon on behalf of Michigan Environmental Council and 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.

TROPOSPHERE LEGAL, PLC
Counsel for MEC & SC

Date: May 28, 2025

By: Natasha L. Fowles Digitally signed by Natasha Fowles Date: 2025.05.28 12:32:37 -04'00'

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