



NARUC

National Association of Regulatory Utility Commissioners

NARUC TASK FORCE ON NATURAL GAS RESOURCE PLANNING

**EXPERT LEARNING SERIES:
Ratemaking and Affordability**

May 29, 2024



Today's Agenda

Part 1: Expert speaker presentations (*recorded for website library*)

Moderator: Task Force Chair Hon. Fitz Johnson, Georgia Public Service Commission

- **Mike Bloomberg**, Managing Partner, Groundwork Data
- **Mike Artuso**, Director of Regulatory Strategy, Philadelphia Gas Works
- **Steve Berman**, Regional Vice President of Regulatory & Pricing, Xcel Energy

Part 2: Q&A with expert speakers (*not recorded*)

Part 3: Lessons learned from Task Force members (*not recorded*)



EXPERT SPEAKER PRESENTATIONS





The Future of Gas



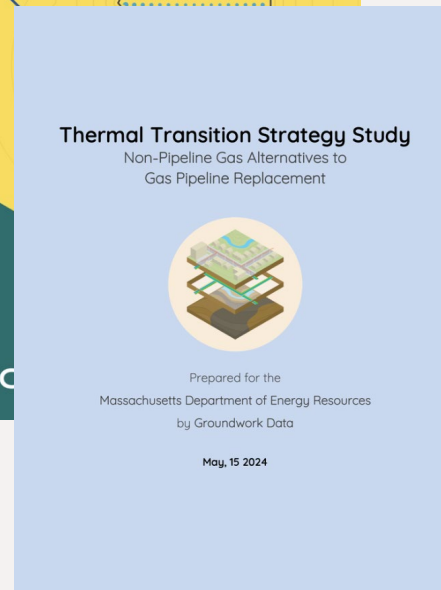
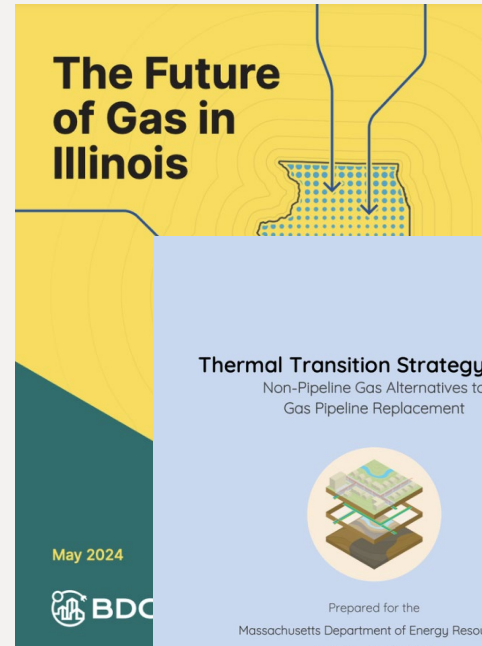
May 29, 2024
Presentation to NARUC - Natural Gas Resource Planning Committee

Groundwork Data is a public-interest advisory, research, and technology firm supporting a clean, equitable, and reliable energy transition.

**Mike
Bloomberg**
Managing Partner



**Michael
Walsh**
Head of Research



GroundworkData.org/Research

What do we mean by the Future of Gas?

12 states have launched “Future of Gas” proceedings

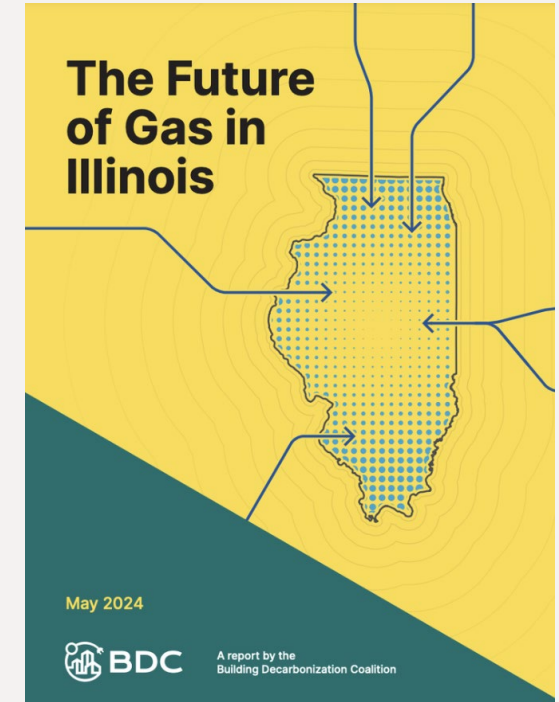
The Future of Gas – Fuel

- Proceedings predominantly driven by the role of combusted and leaked methane in contributing to GHG emissions, and legislative efforts to curb emissions to “net zero.”

The Future of Gas – Infrastructure

Climate policy is just 1 of 3 factors that threatens the gas LDC business model and leads to significant rate increases.

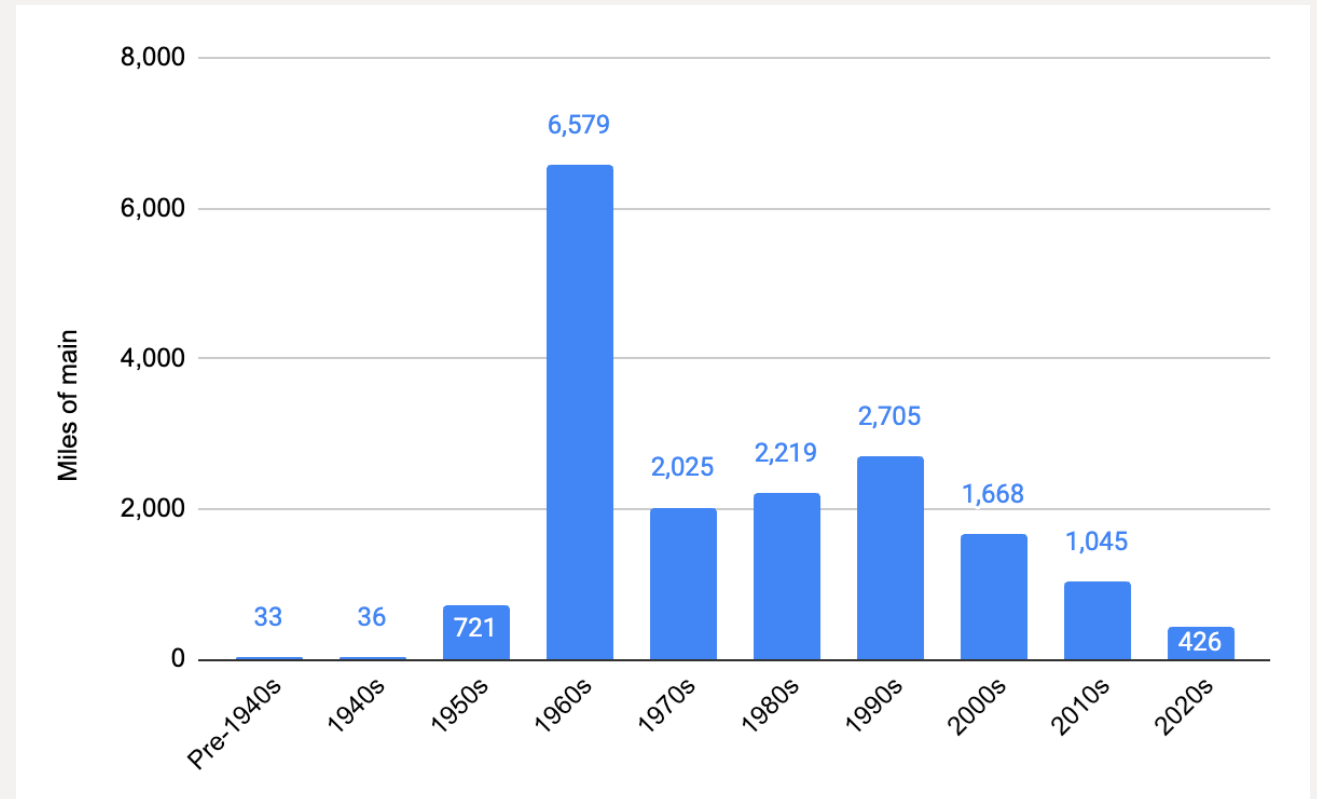
- Aging distribution infrastructure
- Competing technologies



Illinois: Aging distribution infrastructure

- 58,000 miles of main distribution pipe and over 3.5 million services
- Age
 - One third of distribution mains (21,000 miles) are over 50 years old
- Material
 - 90% of all pre-1950 steel pipe is in Ameren & Nicor territory
 - All iron pipe is in Peoples territory (25% of PGL mains)
 - Ameren & Nicor currently replacing mechanically coupled steel and some plastic mains

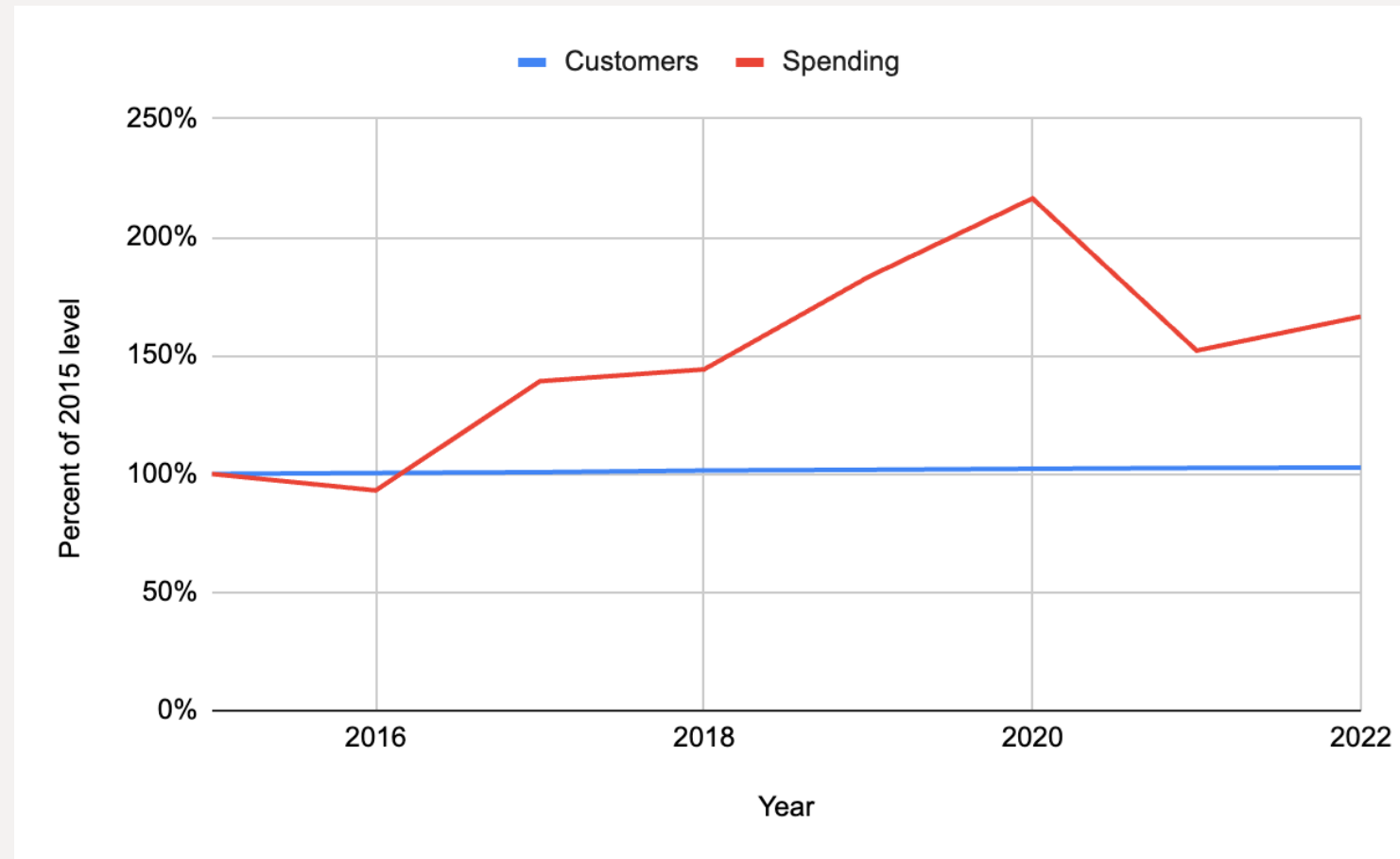
Miles of distribution mains by installation decade



Big Four: Increasing spending but stagnant customer base

- Book value of gas plant increased 84% over the last decade, from \$11.8bn to \$21.7bn
- CapEx averaged \$1.3bn per year from 2018-2022
- Customer count and consumption have plateaued

Total customer counts and capital spending as percent of 2015 levels



Scenario #1: Business-as-Usual

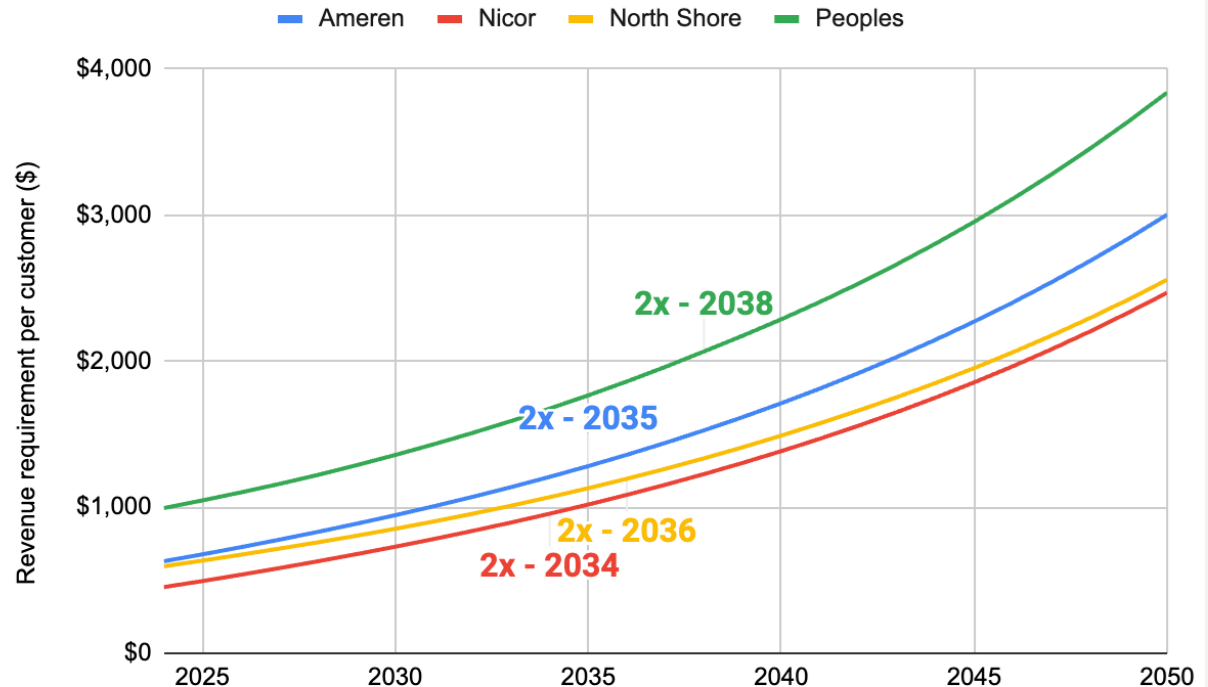
Assumes:

- Spending continues to grow at 6% annually
- Constant customer base
- No internalization of “social cost” of gas (\$7.3bn annually for IL gas distribution system per U.S. EPA GHG cost estimates)

Outcomes:

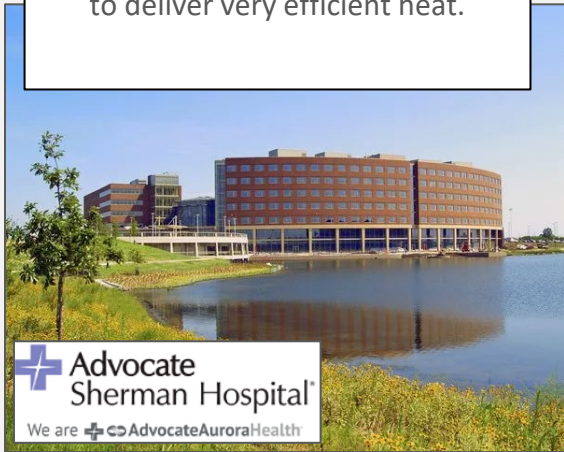
- Gas delivery costs rise steadily, even with a stable customer base. 45% increase by 2030
- System does not comply with climate goals, unless low-cost, low-/no-carbon substitute for methane

Revenue requirement per customer assuming BaU capital spending and no departures

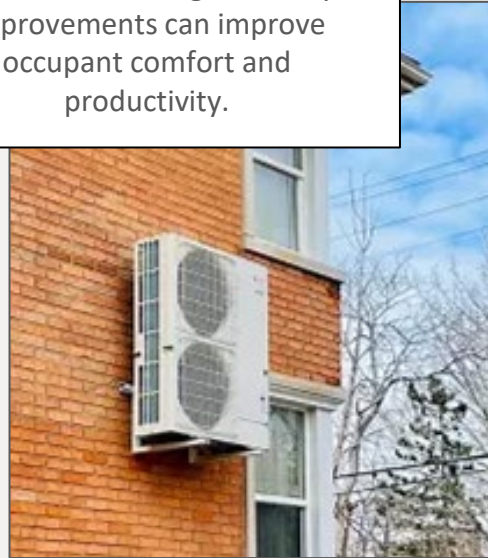


Unprecedented competition from non-gas alternatives

Ground- and water-source thermal networks: Integrate heating loads, and thermal storage to deliver very efficient heat.



Heat pumps: Modularity allows for zoning; provides cooling. Additional building efficiency improvements can improve occupant comfort and productivity.

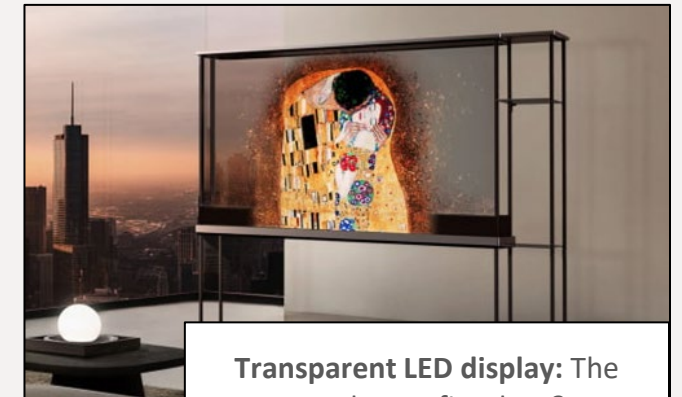


Induction cooktop: Easier to clean, reduces cooking pollutants, embedded temperature control to prevent boil over.



Combo 120V washer-dryer: Frees up space, eliminates need to flip laundry, no venting.

Thermal storage: Reduces carbon intensity of ethanol and biofuel production to unlock lucrative tax credits.



Transparent LED display: The new luxury fireplace?

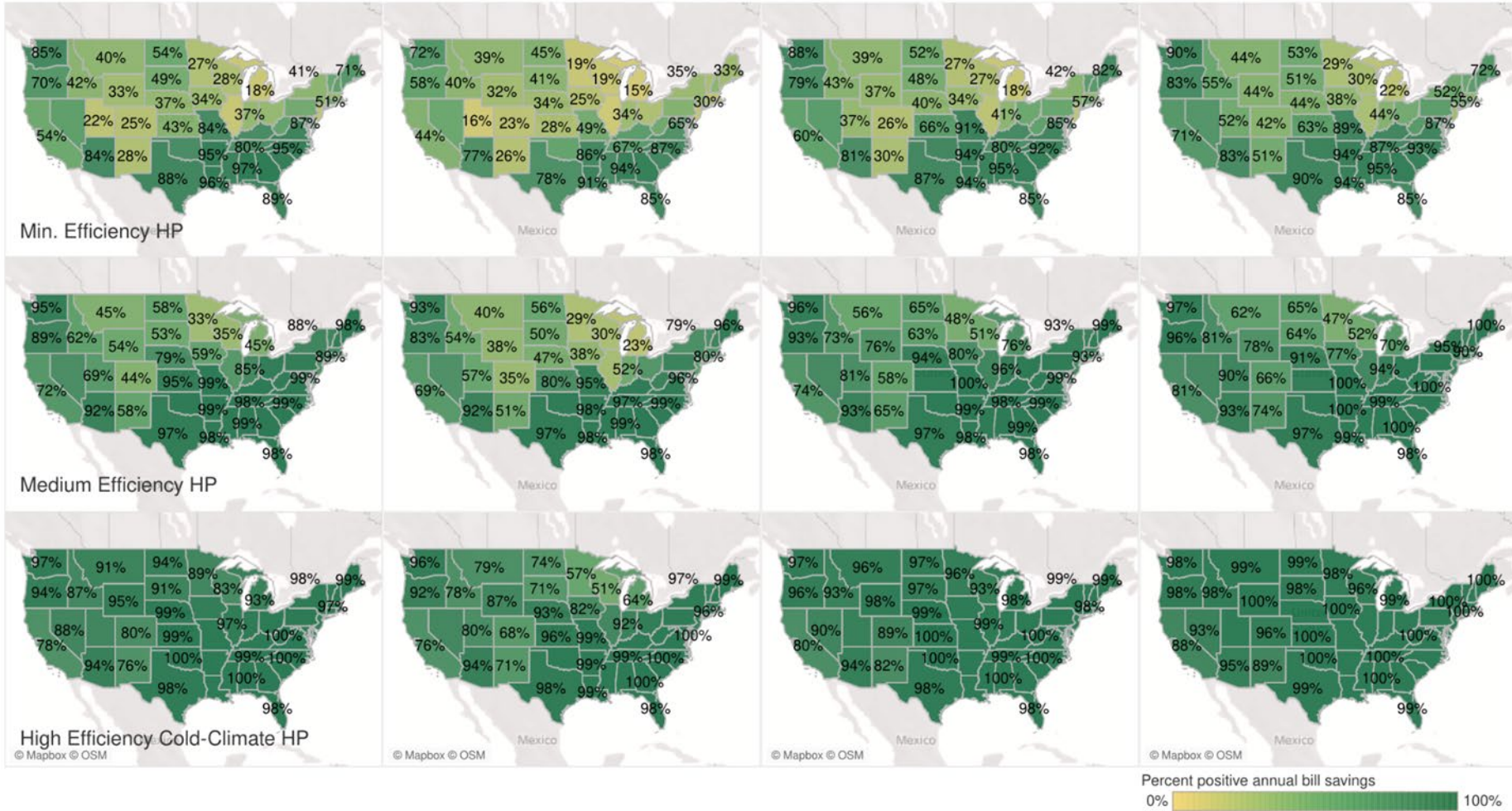
Competition is not distributed evenly

Main case:
Winter 21-22 prices

Sensitivity:
Return to 2019 prices

Sensitivity:
Winter 22-23 prices (forecast)

Sensitivity:
21-22 prices, elim. gas fixed charges



Source: Wilson et al., Joule 8, 1000–1035 April 17, 2024 a 2024 Lawrence Berkeley National Laboratory and National Renewable Energy Laboratory (NREL). Published by Elsevier Inc.

Scenario #2: The impact of customer departures

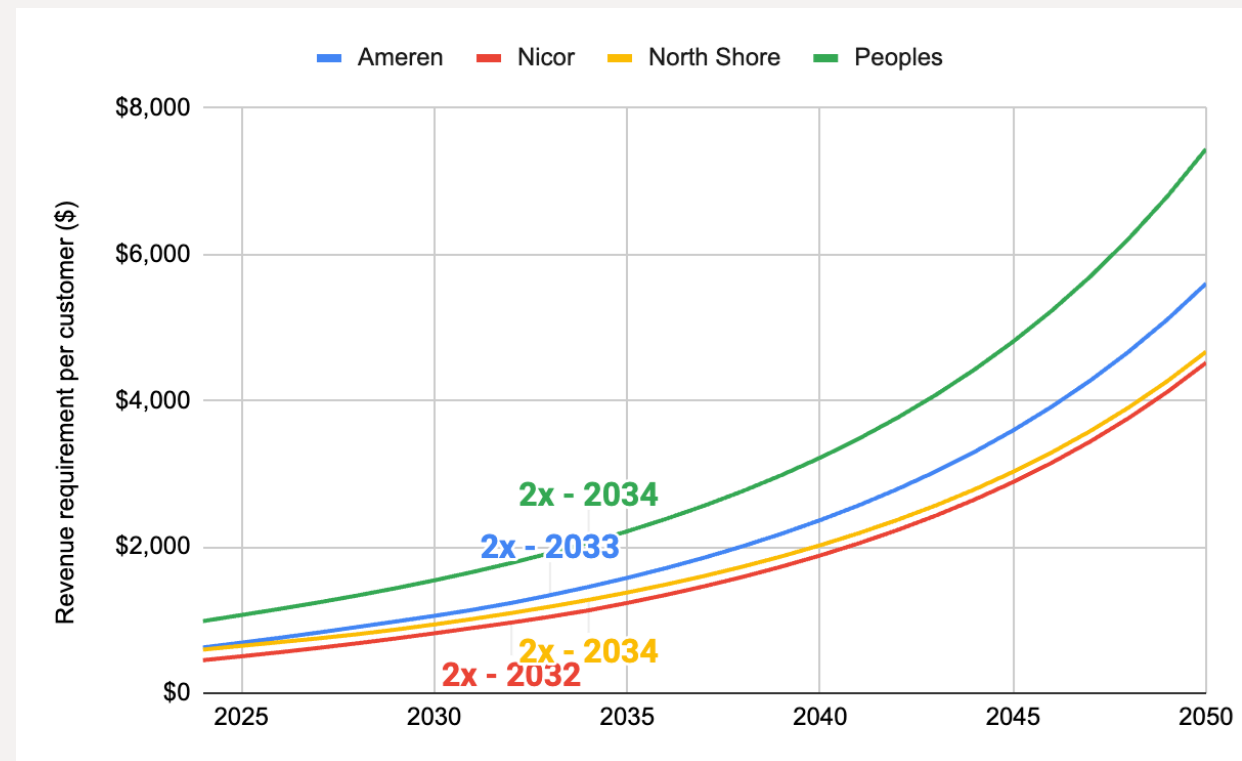
Assumes:

- Same spending assumptions as previous scenario (6% annual increase)
- Moderate customer attrition to 50% of today's count by 2050 (~2% decline per year)

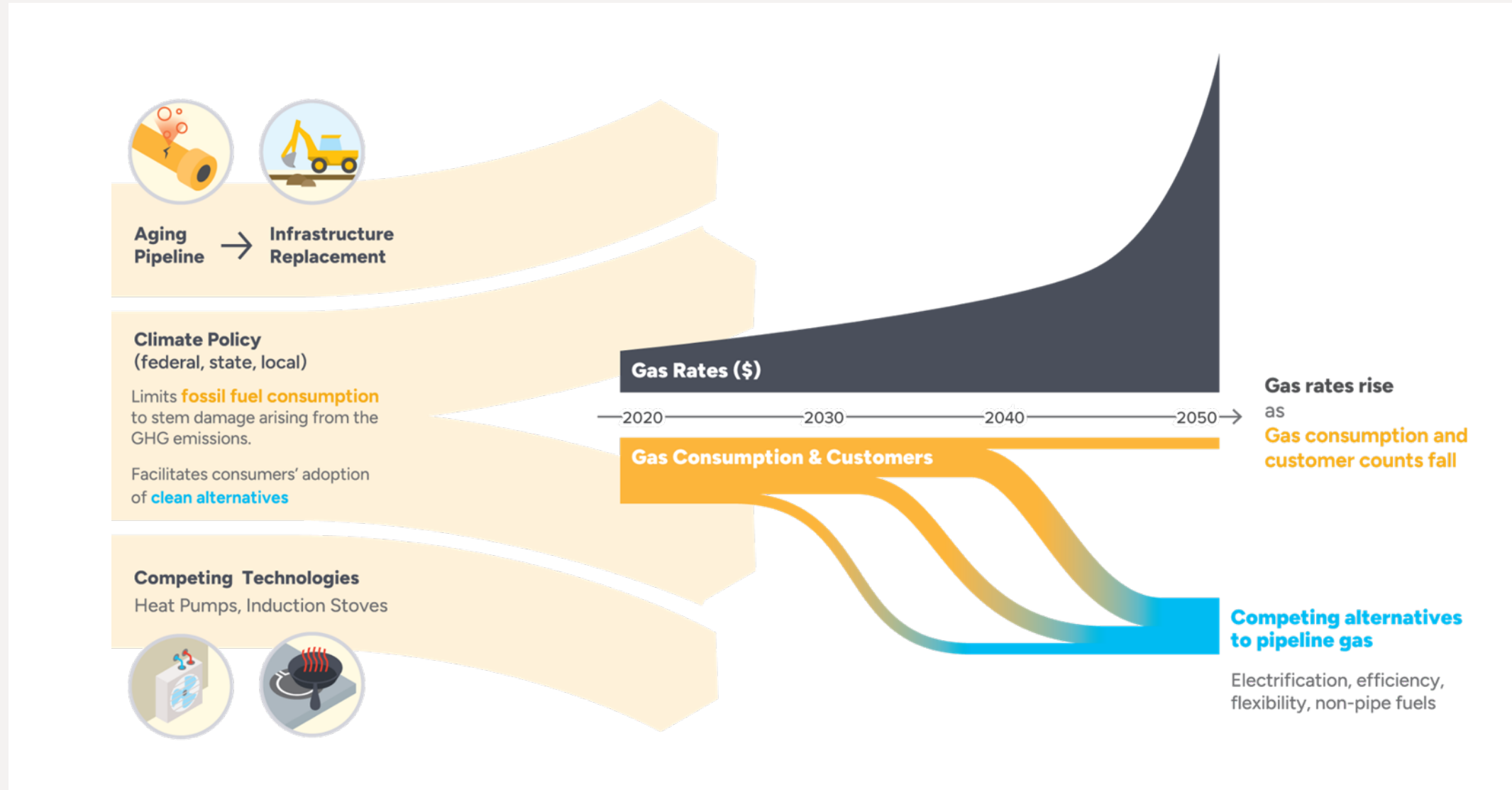
Outcomes:

- Departures cause dramatically increasing delivery costs for remaining customers
- Revenue requirement per customer doubles sooner and compounds in later years

Revenue requirement per customer assuming BaU capital spending and moderate departures



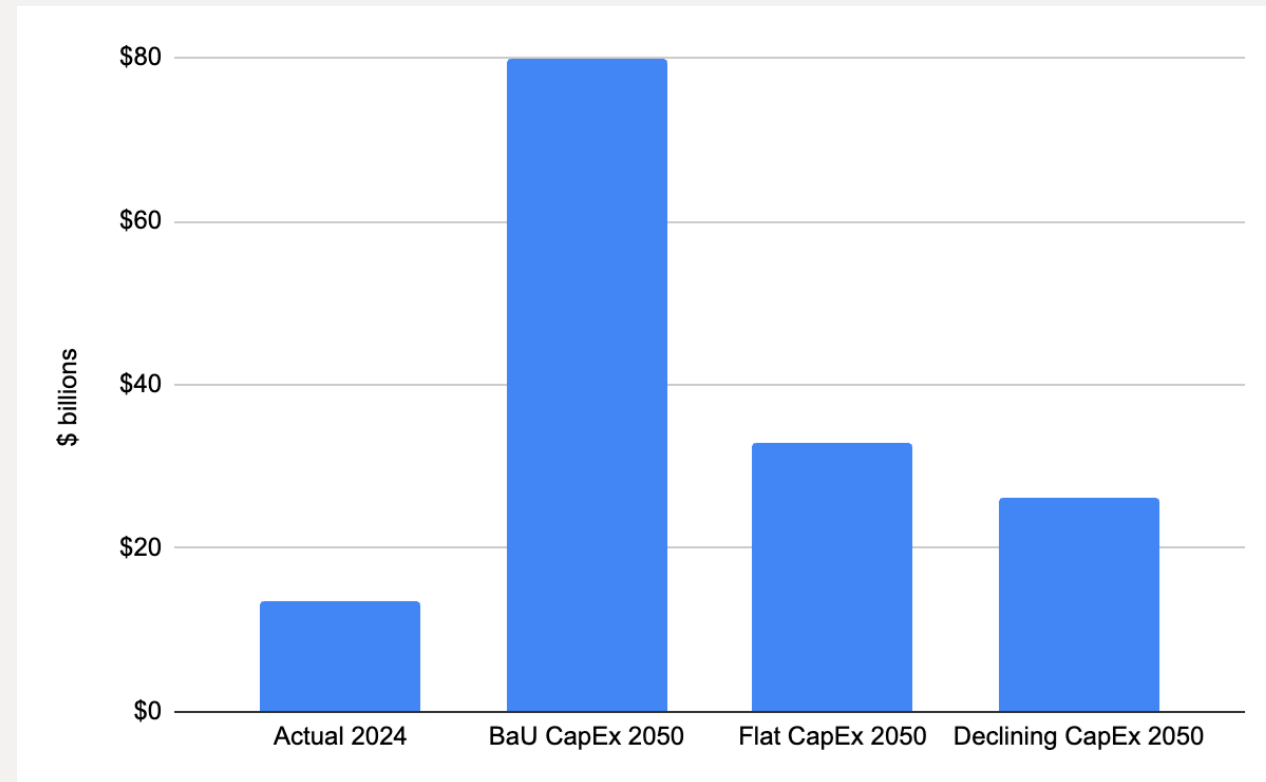
Causes and effects of disruption



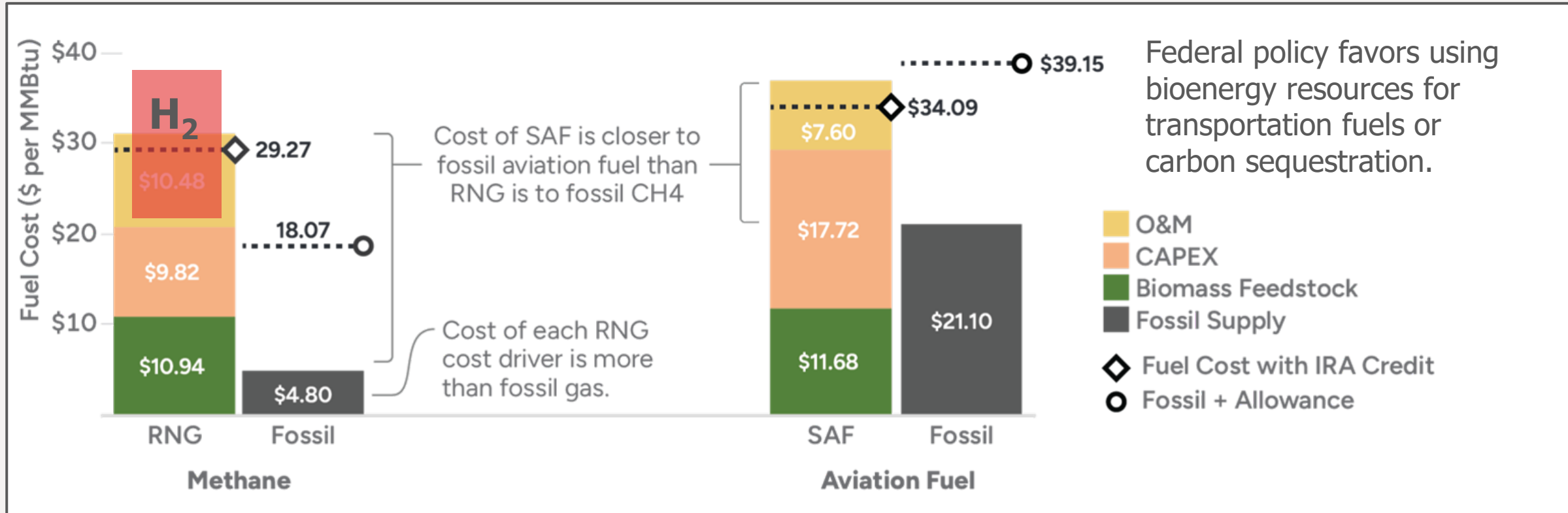
Stranded asset risk

- By 2050, total unrecovered gas plant increases sixfold to \$83bn under BaU
- Flat or declining CapEx can substantially reduce stranded asset risk

Total unrecovered book value of gas plant
\$ billions



RNG economics doesn't work



- IL available RNG resource at best could support 10% of demand
- RNG at scale would cost ~\$3 per therm or \$30 per MMBtu (current city-gate cost of fossil gas = \$0.50/th)

- RNG is **one of many** strategies for managing organic wastes and CH₄
- Using biomass for liquid fuels creates more value per unit of CO₂ avoided

Analysis: Flat spending in response to departures

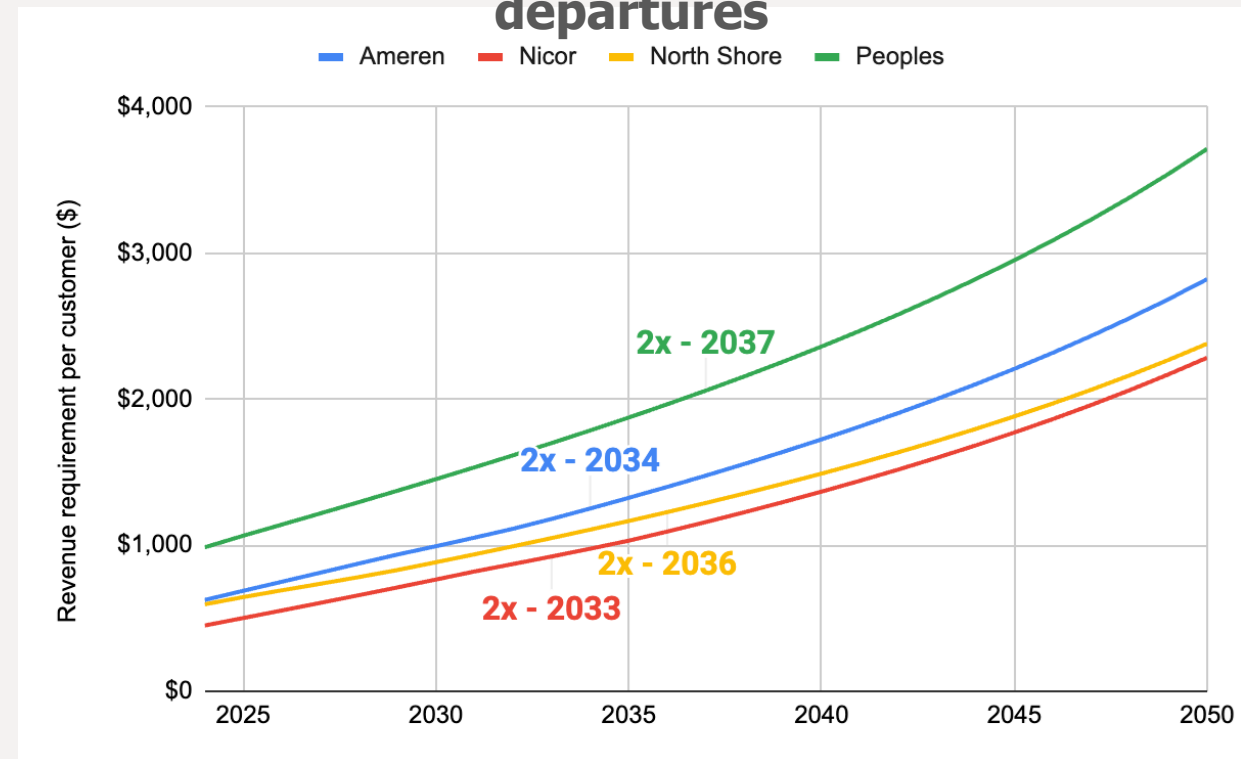
Assumes:

- Annual CapEx stays flat at 2024 levels
- Moderate customer attrition to 50% of today's count by 2050 (~2% decline per year)

Outcomes:

- By 2050, total CapEx falls by 58%, cumulative revenue requirement by **31%**
- However, by mid- to late-2030s, revenue requirement per customer doubles for each LDC, likely creating a strong incentive to leave gas system

Revenue requirement per customer assuming flat spending and moderate departures



Analysis: Declining spending in response to departures

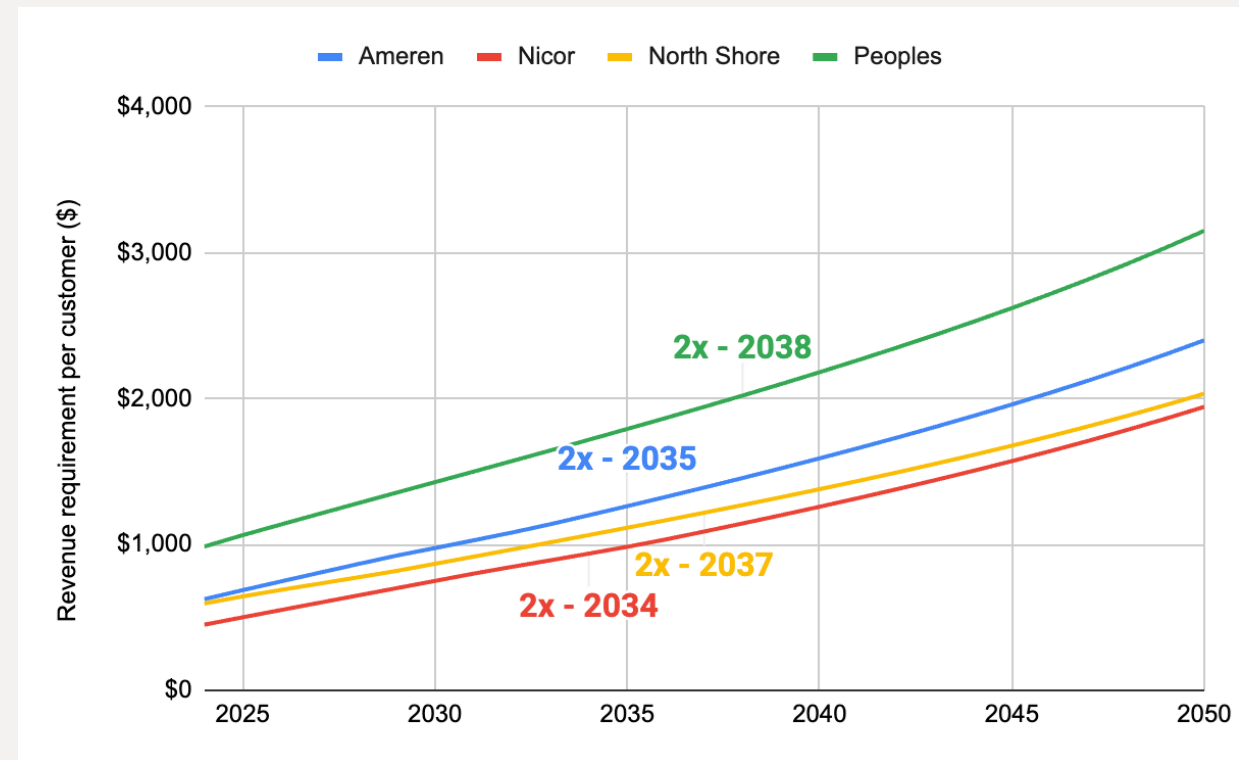
Assumes:

- Declining CapEx (2% annual decline)
- Moderate customer attrition to 50% of today's count by 2050 (~2% decline per year)

Outcomes:

- By 2050, total CapEx falls by 67%, cumulative revenue requirement by **36%**
- However, by mid- to late-2030s, revenue requirement per customer still doubles for each LDC, 2-3 years later than under flat CapEx

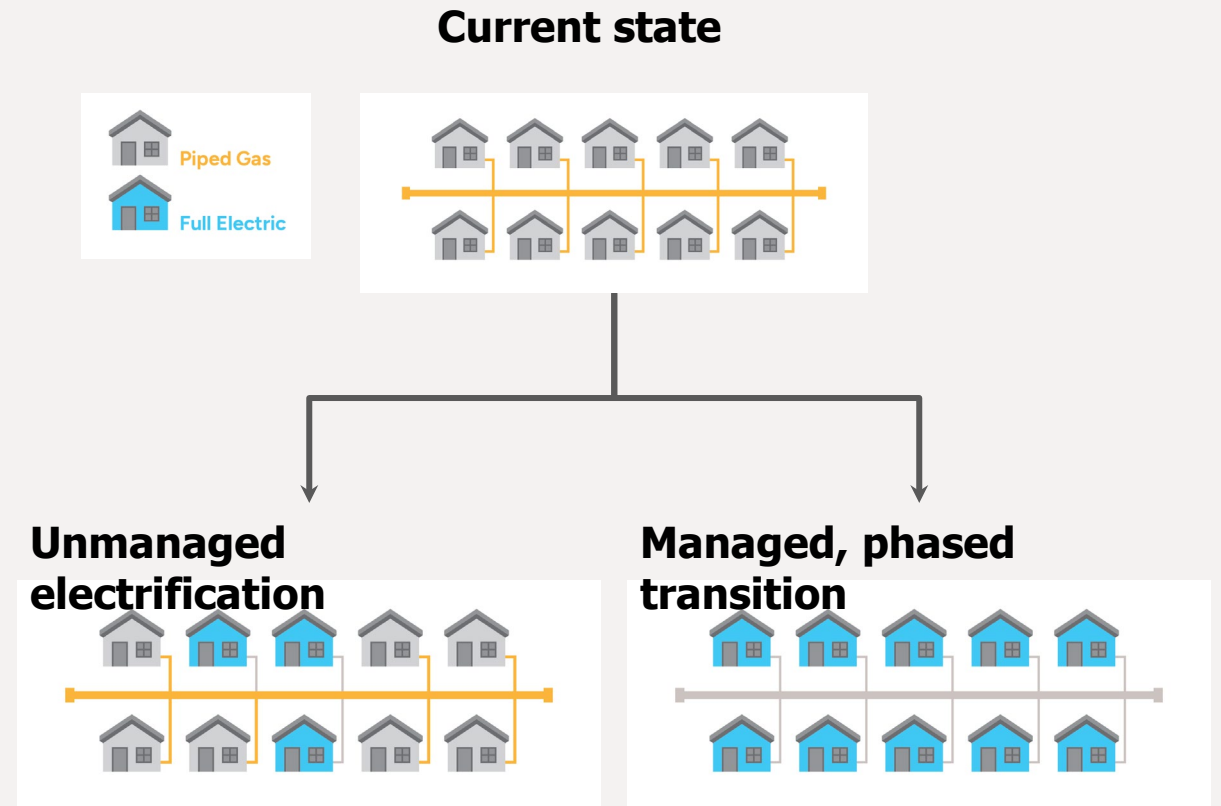
Revenue requirement per customer assuming declining spending and moderate departures



Now what?

Strategies for moving forward

1. **Launch your own Future of Gas investigation:** Challenges and solutions are state (and local) specific.
2. **Avoid lock-in:** Avoiding new gas distribution mains
3. **Evaluate alternatives to replacement:** Investigate repair and relining options that are prevalent outside the US, capable of addressing leaks and extending pipeline life.
4. **Evaluate non-pipeline alternatives and system pruning**



Q&A

Future of gas activity in other states

Future of Gas Proceedings: Launched in 12 states

Non-pipeline alternative (NPAs) frameworks: CA, CO, MA, NY, OR, and RI now require LDCs to evaluate and consider NPAs as a substitute for pipeline replacement

Thermal energy network pilots: In NY and MA, gas utilities are proposing and implementing TENs

Decommissioning with targeted electrification: In MA, LDCs must coordinate with applicable electric company to propose at least 1 decommissioning project using targeted electrification. CA CEC is identifying 3 sites for Bay Area

Analytic tools for decommissioning: CA CEC's Tactical Gas Decommissioning Project is developing decommissioning tool to identify cost-effective gas segments for retirement

Accelerated gas asset depreciation for dual utilities: Newly adopted WA law provides for accelerated depreciation by 2050 for assets in service by July 2024 and allows gas/electric rate base merging

Low-income Utility Assistance Programs

May 29th, 2024

Low-Income Utility Programs

1. Why do we need assistance programs?
2. What programs have utilities pursued for affordability?
3. What regulatory mechanisms exist for bill affordability?
4. How do we measure efficacy of programs?

A.L.I.C.E.

Asset Limited, Income Constrained, Employed

	US	PA	Phila.
Below FPL	13%	12%	21%
ALICE	29%	28%	26%
Below ALICE Threshold	42%	41%	47%
Households	~55,000,000	~2,200,000	~328,000

Source: <https://www.unitedforalice.org/national-overview>

Commonwealth of Pennsylvania

1. Customers who are at or below 150% of Federal Poverty Line.
2. Benefits include a **Discount** on your energy bill along with **Arrearage Forgiveness**.
3. Percentage of Income Payment Plan (PIPP) based on designated Energy Burdens.
4. “Opt in” program design.
5. Program costs reallocated at a utility level to non-participants.

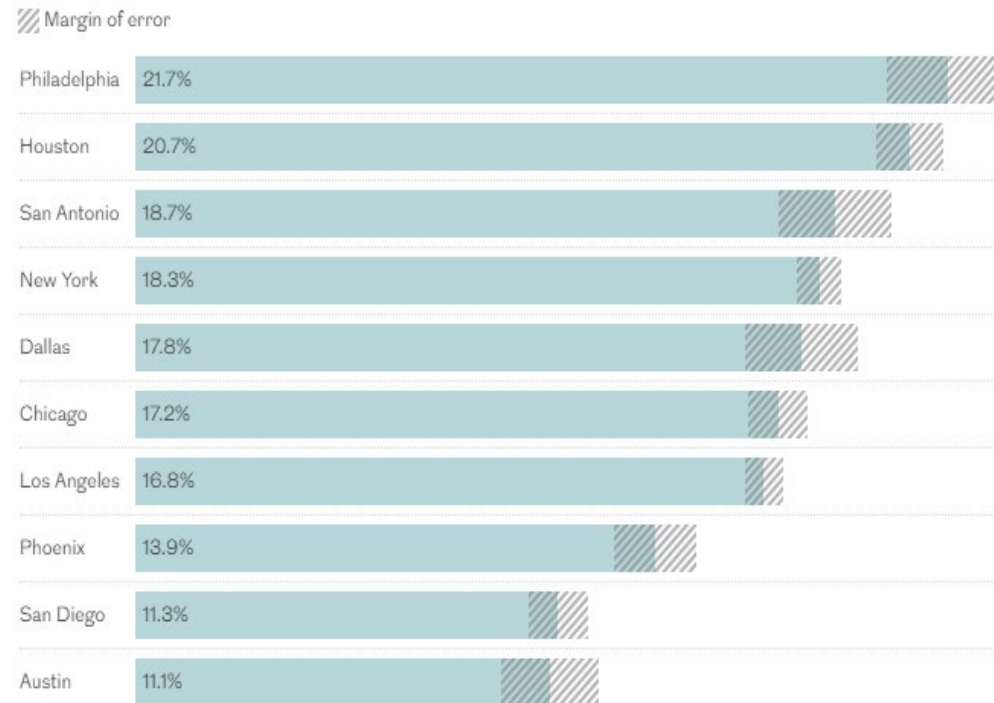
Low-income Gas Program Costs

	2022 Costs	Estimated	Difference
Residential Customers	2,806,681	-	-
CAP Participants	155,162	726,443	571,281
Total Benefits	\$151,445,862	\$692,646,474	\$541,200,612
Average cost to non-CAP participant	\$57.12	\$332.97	\$275.85

Source: <https://www.puc.pa.gov/media/2573/2022-universal-service-report-final.pdf>

Philadelphia

1. Disproportionate level of poverty compared to other cities.
2. Municipally-owned gas company.
3. CAP costs recovered through non-CAP ratepayers.
4. No pooling of rates or braiding of LIHEAP funds.



Source: <https://www.inquirer.com/news/philadelphia-poverty-rate-big-city-20230914.html>

Philadelphia Gas Works

	2023 Costs	Estimated	Difference
Residential Customers	485,008	-	-
CAP Participants	53,724	182,412	128,688
Total Benefits*	\$41,712,315	\$141,627,816	\$99,915,502
Average cost to non-CAP participant**	\$96.72	\$468.04	\$371.32

*Total costs were \$58.8 million, with 71% allocated to residential ratepayers.

** Prior years: \$119.84 in 2022, \$110.22 in 2021, and \$76.97 in 2020

Source: <https://www.puc.pa.gov/media/2573/2022-universal-service-report-final.pdf>

Review Proceeding

1. Initiated to break down barriers and add efficiencies to customers applying for and enrolling in programs.
2. 4 main areas of focus:
 - Website
 - Common Application
 - Statewide Administrator
 - Data Sharing

Questions to takeaway

1. What is the potential need in your jurisdictions for these programs?
2. What data do you need to make informed decisions?
3. How much will this cost, and what is the impact on the average customer?
4. How are we measuring efficacy of the programs?
5. What ratemaking mechanisms are required to implement this?

Questions?



RATE MAKING AND AFFORDABILITY PROGRAMS

NARUC Natural Gas Resources Planning Task Force

May 29, 2024

Steve Berman is the Regional Vice President of Rates & Regulatory of Xcel Energy's Colorado Operating Company.

In this role, he is responsible for providing leadership, direction, and technical expertise related to regulatory processes and functions, including the design and implementation of regulatory strategy and programs, as well as the direction and supervision of regulatory activities, including oversight of rate filings, administration of regulatory tariffs, rules and forms, regulatory case direction and administration, compliance reporting, and complaint responses.



Steve leverages nearly 20 years of experience in the utility industry primarily in the regulatory and finance functions at both investor owned and municipal utilities. Over the past 9 years at Xcel Energy Steve has led rate making activities across a variety of regulatory proceedings to allow for the delivery of outstanding energy service to the people of Colorado, while maintaining Xcel Energy's unwavering commitment to keeping Customer bills low.

Prior to joining Xcel Energy, Steve served as Treasurer and led Financial Planning and Analysis over 5 years at Colorado Springs Utilities, one of the country's only four service vertically integrated municipal utilities.

Steve holds a bachelor's degree in marketing from The University of Maryland, an MBA from George Washington University, and is a Certified Public Accountant in Colorado.

Xcel Energy

Serving eight states

3.7 million electricity customers

2.1 million natural gas customers

Nationally recognized leader:

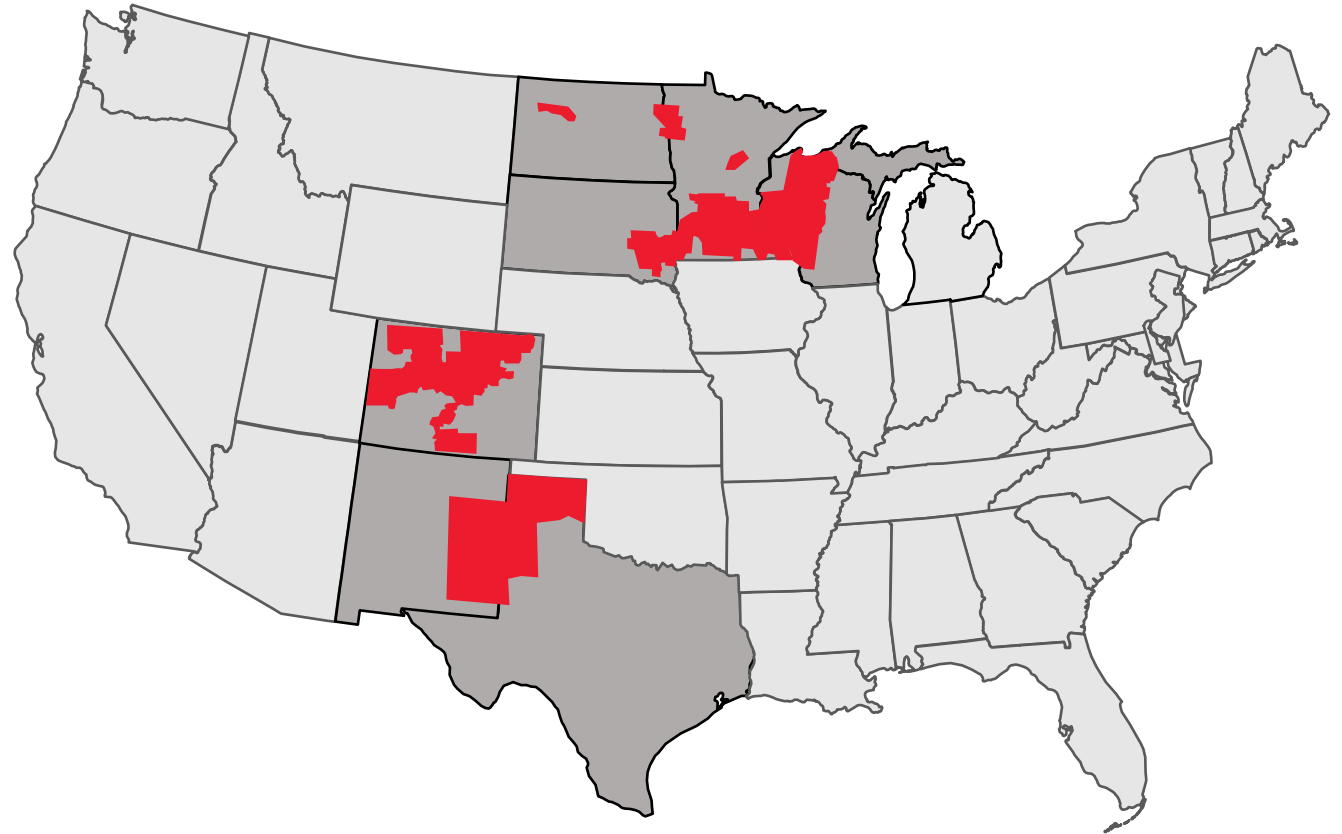
Wind energy

Energy efficiency

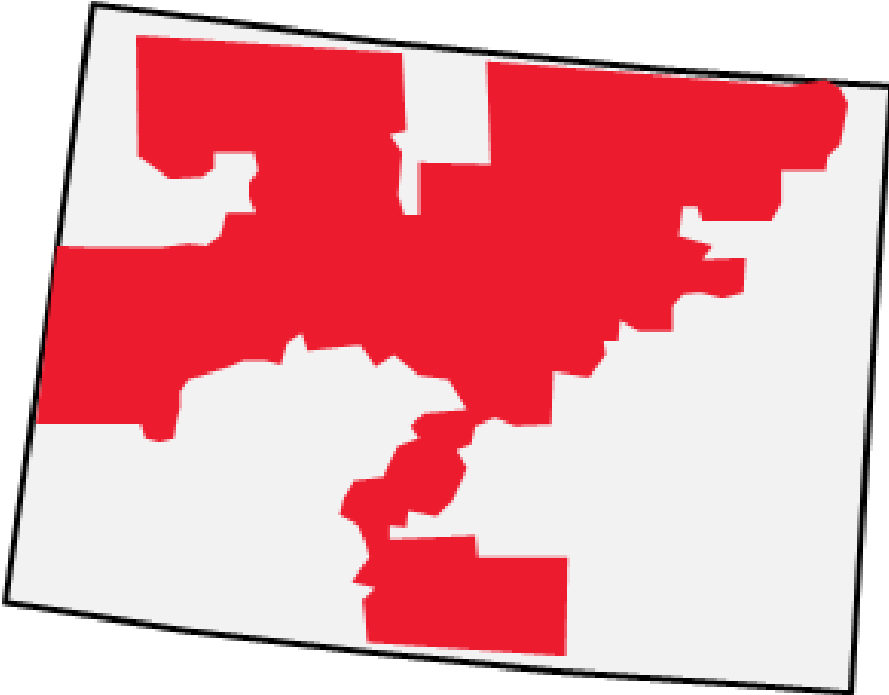
Carbon emissions reductions

Innovative technology

Storm restoration



Colorado Customers



**1.6 million
Electric
Customers**



**1.5 million
Natural Gas
Customers**



**99.98%
Electric
Reliability**

Data based on 2022 Sustainability Report. To view full report: xcelenergy.com/sustainability



CO GAS PRICE RISK MITIGATION PLAN (GPRMP)

Background

- Senate Bill 23-291 (“SB 23-291”), passed in 2023, established that investor-owned gas utilities shall file a GPRM Plan that includes proposals for leveling or reducing the volatility of fuel costs that are recovered pursuant the utility’s GCA filings.
- Specifically, the statute called for:
 - *On or before November 1, 2023, an investor-owned gas utility shall file with the Commission a gas price risk management plan that includes proposals for leveling or reducing the volatility of fuel costs that are recovered pursuant to the utility's gas cost adjustment filings. Such a plan must include a maximum per-month fuel cost that accounts for price fluctuations based on seasonality and can be automatically recovered through the gas cost adjustment mechanism. The plan may include other elements such as physical hedging, financial hedging, fuel storage, or long-term contracting.*
 - *The Commission shall allow any prudently incurred costs above the maximum monthly fuel cost included in an investor-owned gas utility's plan pursuant to subsection 40-3-120(1)(a), C.R.S., to be recorded in a deferred balance that is recoverable and amortized over an appropriate timeline of no more than five years with financing costs, as determined by the Commission.*

GPRMP Mechanism

History

The Company has a fuel adjustment clause (GCA) that adjusts quarterly to pass fuel costs through to customers

In the decade prior to 2022 Gas prices were stable in a range of about \$2.50/Dth to \$5.50/Dth with limited exceptions like Winter Storm Uri

In the winter of 2022 higher sustained prices approaching \$10/Dth were experienced prompting the legislation requiring this mechanism

GPRMP Parameters

A maximum cap equal to 180% of the previous 5-year historical average of GCA cost. Initially set at \$7.80/Dth

A (soft) minimum threshold of 80% of the previous 5-year historical average of GCA cost. Initially set at \$3.46/Dth

Amounts over the maximum cap deferred for future amortization

With stakeholder agreement an adder can be applied in quarterly filings to build a reserve fund

Any reserve fund will not exceed \$75M

Deferred Balances

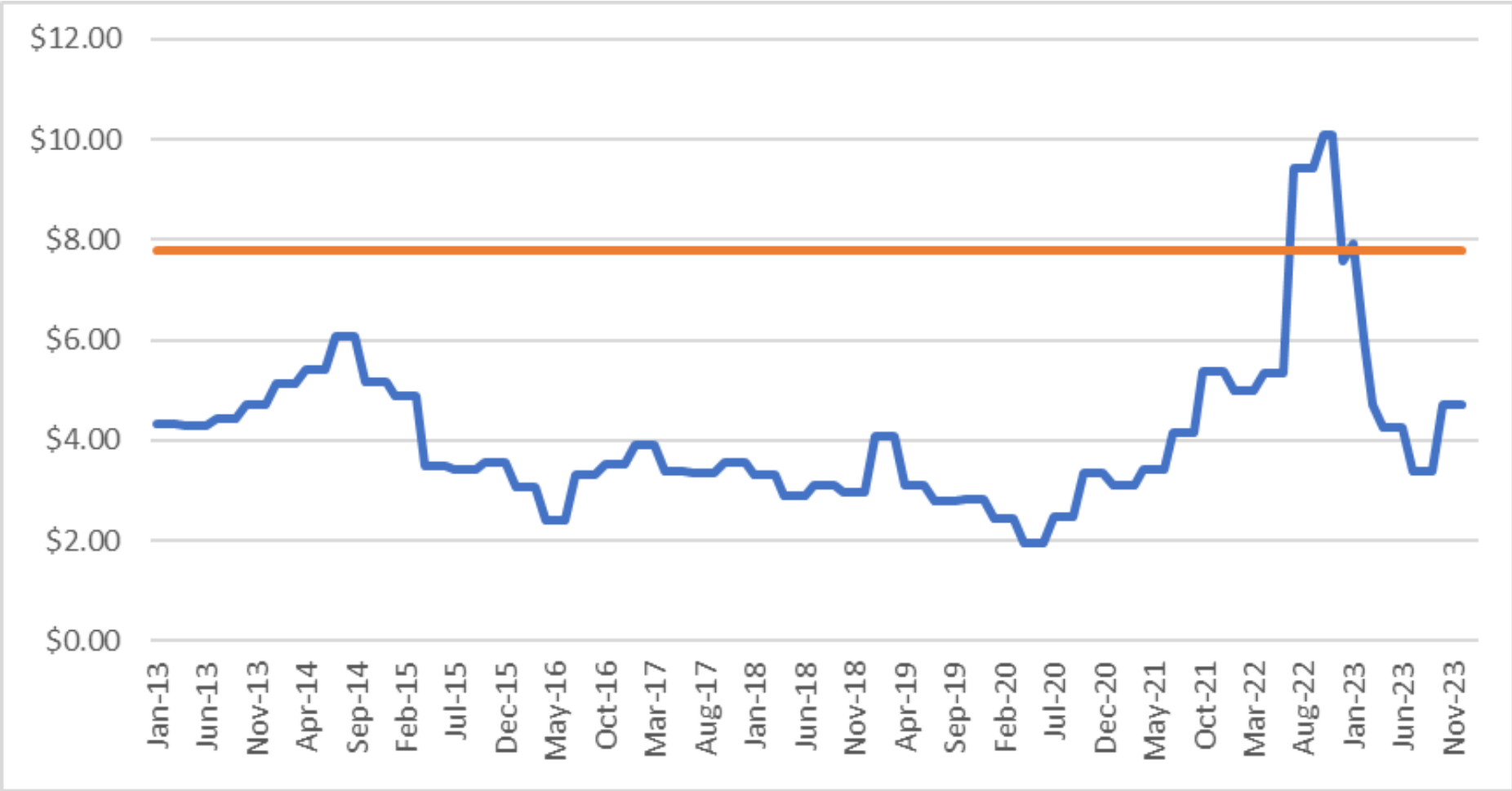
Amortization periods

- \$0 to -\$75m: within a year
- \$75 to \$150m: within 2 years
- \$150m and above: separate proceeding to address recovery

Interest rates

- Symmetry on all over/under collections
- Amounts accrued less than one year: customer deposit rate
- Amounts accrued greater than one year: long-term cost of debt

History of Company GCA Cost (Excluding Winter Storm Uri)



GPRMP Development and Performance

- The Company engaged collaboratively to develop the GPRM with Commission Staff and the CO Utility Consumer Advocate
- The Commission approved the GPRMP in November 2023
- GCA costs fell under the minimum in Q2 2024 and the commission approved a GCA rate at the minimum plus a \$0.30 adder to begin to build a reserve fund while Gas prices remain low

Other Fuel Cost Stabilizations Deployed



Hedging

Storage

**Fixed-Priced
Contracts**

