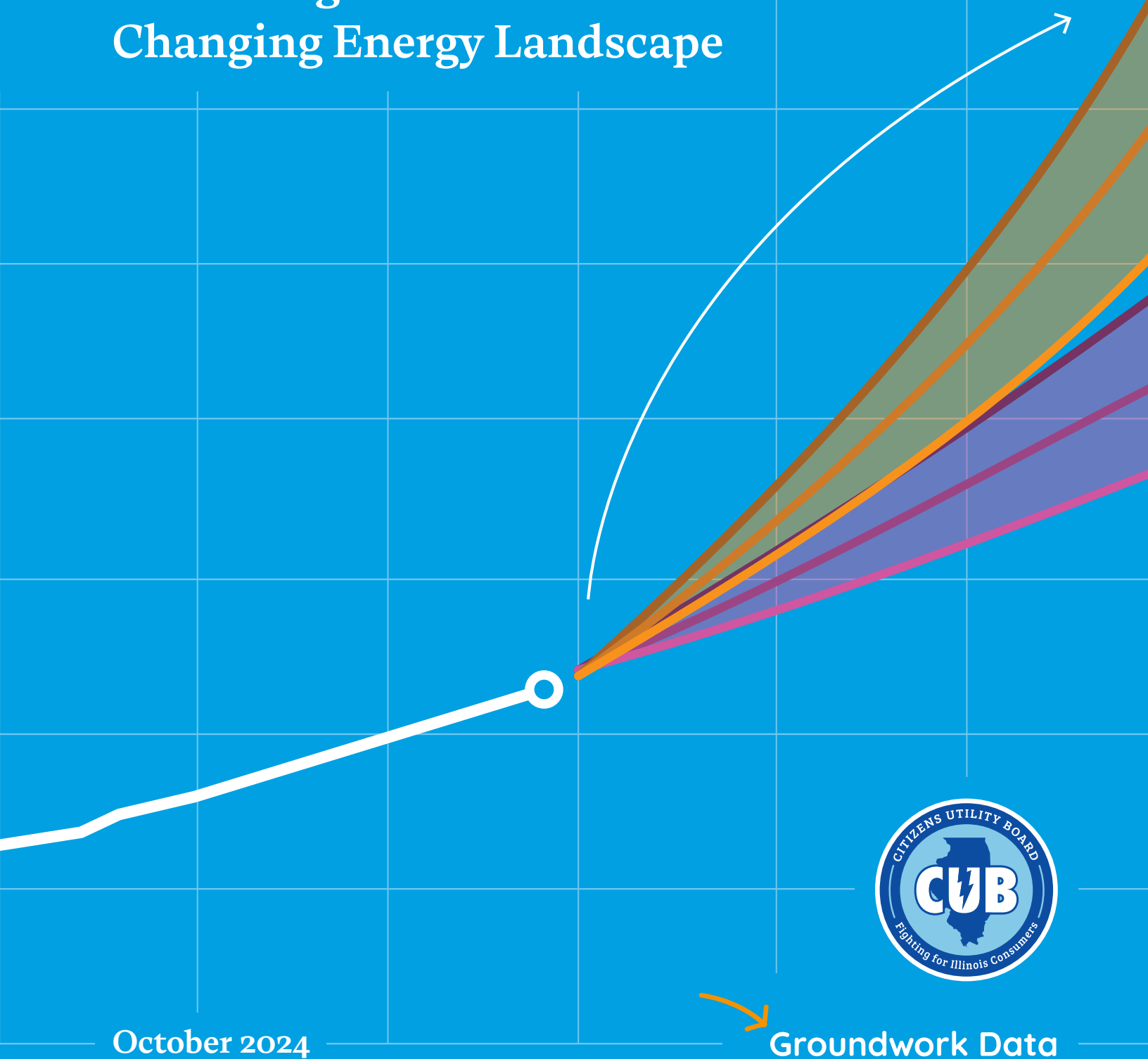


# Peoples Gas

Escalating Business Risk in a  
Changing Energy Landscape



# Acknowledgements

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Dorie Seavey et al., *Peoples Gas: Escalating business risk in a changing energy landscape*, Citizens Utility Board and Groundwork Data, October 2024, [www.groundworkdata.org/research/peoplesgas](http://www.groundworkdata.org/research/peoplesgas).

Report design and original illustrations were created by Ben Oldenburg unless otherwise indicated.



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# Executive Summary

**Peoples Gas Light and Coke Company (“Peoples Gas” or “PGL”)**, one of the oldest natural gas delivery systems in the United States, has been a cornerstone of Chicago’s energy infrastructure for over 150 years. It has evolved alongside the city’s shift from wood and coal to manufactured gas, and eventually to natural gas by the mid-20th century. Today, Peoples Gas – a subsidiary of the \$44 billion energy holding company, WEC Energy Group, Inc. (WEC Energy) – serves nearly 900,000 customers, providing gas for heating, cooking, and industrial uses.

Since its acquisition by WEC Energy in 2015, Peoples Gas has delivered five consecutive years of record financial returns, with dividend payments to WEC Energy increasing more than fivefold, totaling \$335 million in 2023. Central to these profits has been the company’s **System Modernization Program (SMP)**, a multi-decade, multibillion-dollar initiative to replace much of the city’s gas distribution network and upgrade the system’s pressure. However, despite this strong record of profitability, the SMP has also introduced significant financial and regulatory risks. In November 2023, the Illinois Commerce Commission (ICC) paused the SMP, initiated an investigation into its reasonableness and prudence, disallowed recovery of \$177 million in previously incurred capital costs, and initiated a multi-phased Future of Gas proceeding. These actions, alongside Illinois’ broader push toward clean energy, highlight the increasing regulatory scrutiny facing gas utilities in a rapidly changing energy landscape.

Today, as a gas-only utility, Peoples Gas is particularly vulnerable to the financial risks posed by shifting customer preferences and decarbonization efforts that increasingly favor electrification. Notwithstanding its historical significance and critical role in the city’s development, Peoples Gas now faces business threats that jeopardize the sustainability of its long-standing business model.

## A. Scope of this report

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This report examines the risks and uncertainties facing Peoples Gas, its investors, and its customers. It provides a comprehensive analysis that includes:

- ▶ **PGL’s corporate and regulatory history.** We chart the evolution of Peoples Gas, the regulatory model set by the ICC, and the significant scrutiny the SMP has faced from numerous audits and investigations.
- ▶ **Evaluation of key business threats.** We evaluate the impact of three major threats:
  1. **Escalating delivery costs.** The increasing costs associated with replacing aging infrastructure, particularly in an industry now in the mature phase of its life cycle.
  2. **Clean energy policies.** Mandates and incentives from the city of Chicago, Illinois, and the federal government related to reducing reliance on fossil fuels and encouraging the adoption of cleaner, more efficient energy systems.
  3. **Competition from clean energy alternatives.** The growing shift toward efficient electric appliances, which threatens to reduce the demand for natural gas.

Using Groundwork Data’s Gas Delivery Cost Model, we conduct a modeling analysis to assess the likely future levels of revenue and customer payments needed to sustain PGL’s operations under the assumption that a full-scope SMP is approved by the ICC. We also examine the impact of gas customer departures as households and businesses chose to switch to electric alternatives for space and water heating, air conditioning, and other functionalities such as cooking.

- ▶ **Critical assessment of PGL’s strategy.** We critically assess PGL’s assertion that reinstating the full SMP is the most viable and cost-effective solution for addressing safety, reliability, and emissions concerns. We also evaluate PGL and WEC Energy’s claims that electrification is infeasible and alternative gases offer a viable building decarbonization path for Chicago.

- **Regulatory and financial challenges.** We examine PGL's evolving regulatory landscape, including recent decisions that have negatively impacted Peoples Gas and the ICC's commitment to re-evaluate the role of gas utilities in Illinois' energy future in light of the state's climate goals. Given this heightened regulatory scrutiny, we examine what the impact would be of reducing capital spending on the Peoples Gas system.

## B. Main findings

The extensive modeling analysis conducted for this report investigates the total costs of resuming PGL's SMP at both full-funding and restricted levels (75% and 50% of full funding). We also evaluate the impact of gas customer departures on these scenarios. Our main findings are as follows:

- 1 Unsustainable rate increases.** Restarting the SMP at full scale would necessitate historically unprecedented rate hikes, even assuming a stable gas customer base. By 2040, the average annual per-customer delivery charge would need to essentially double, increasing from \$1,206 to \$2,424. Year-over-year rate increases of roughly 7% would be required. This compares with a 4.7% rate of annual increase in actual per customer delivery costs for the recent 2015 to 2024 period.
- 2 Impact of a shrinking customer base.** With a moderately declining gas customer base, average delivery costs per remaining customer rise significantly because cost recovery for PGL's escalating rate base must be spread over a shrinking pool of ratepayers. Under a full-scope SMP, customer attrition of 50% by 2050 results in annualized rate increases of 12%, 2.5 times the year-over-year increases from 2015 to 2024 (4.7%).<sup>1</sup> Such a level of escalation – resulting in a 185% increase in per customer delivery charges by 2040 to \$3,437 – would raise serious concerns about long-term affordability and customer

<sup>1</sup> By "rate increase" we refer to increases in average delivery costs per customer (or the increase in revenue requirement per customer not including charges for actual therms of gas consumed). Assuming the commodity price of gas remains stable, then these delivery cost increases are a reasonable approximation of increases in average customer gas rates.

retention, both of which are critical to maintaining stable PGL revenue streams. In addition, these levels of rate increases would undoubtedly accelerate customer departure from the gas system.

- 3 Limited potential for rate-increase moderation through reduced capital expenditures.** Lower SMP spending will moderate upward pressure on customer rates; however, this effect may be overwhelmed by the impact of a shrinking gas customer base. Even with reduced SMP spending, a declining customer base would still require annual delivery cost increases of 8% to 10%. This suggests that merely scaling back capital investments will not be sufficient to alleviate the financial pressures facing Peoples Gas should customer departures accelerate.
- 4 Escalating cost recovery risks.** Continuing the capital expenditures required by a full-scope SMP would expose WEC Energy to significant cost recovery risks (15% of the parent company's asset base is currently attributable to Peoples Gas). Assuming that a full SMP resumes, PGL's unrecovered balances would surge by 127%, reaching approximately \$12 billion by 2040. Complete cost recovery would not occur until after the year 2100. This sharp rise in stranded asset risk over the next 15 years increases the likelihood of significant financial write-downs, especially if regulators take steps to protect taxpayers from bearing the costs of decommissioning the gas network.
- 5 Capital costs that significantly exceed previous annual spending levels.** Given the extensive work remaining, PGL and WEC Energy will need to spend much more annually on the SMP than they previously have or project to spend. To complete the SMP by 2040, annual capital spending would need to increase to \$547 million beginning in 2025 compared to the historical annual average SMP spending level of \$280 million.
- 6 Heightened regulatory intervention.** Recent actions by the ICC, coupled with the sunset of the QIP Rider, have introduced new regulatory challenges for Peoples Gas that have begun to alter the company's investment risk profile. Peoples Gas has been adversely impacted by

these regulatory decisions, including a negative credit review from Moody's Ratings, a subsequent decline in WEC Energy's stock price, and capital spending disallowances. While the outcomes of two critical dockets are pending (the 2024 SMP Investigation and ICC's Future of Gas proceeding), it is clear that Peoples Gas must now operate in a regulatory environment predicated on heightened scrutiny, a focus on decarbonization, and concern about the rising costs of system modernization.

**7 Inadequate strategic response.** Peoples Gas and WEC Energy's current plans do not adequately address the looming threats to their gas utility business model and, therefore, do not adequately allow investors to assess the financial and operational risks associated with a shrinking customer base, escalating infrastructure costs, and regulatory pressures. PGL states that it has not conducted an analysis of Chicago's future energy consumption patterns. Such an analysis is essential and would ideally be coordinated with the city's electric utility, Commonwealth Edison, allowing for the modeling of reasonable scenarios for the uptake of efficient, non-gas technologies by the building sector. In addition, while PGL asserts that a critical role of the SMP is to carry alternative fuels, PGL has not provided feasibility and/or cost/benefit analyses related to decarbonizing the city's gas system by blending in RNG and/or hydrogen.

**8 Future infrastructure challenges.** The scope of system modernization planning put forward by Peoples Gas is confined to the next 15 years and excludes the substantial amounts of pipeline that will be in need of replacement after the SMP concludes. For example, by the 2050s, an additional 1,000 miles of distribution mains installed in the 1980s and 1990s will be queuing up for replacement. If the Peoples Gas system is to be continued indefinitely, then the Chicago gas territory needs a comprehensive, viable plan for the future of gas not just for the duration of the SMP but through the end of the century.

## C. Investor risks and strategic implications

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PGL's current trajectory raises significant strategic concerns for WEC Energy and its investors, given the financial and operational challenges outlined above. While Peoples Gas has historically delivered strong financial results, mounting risks threaten to negatively impact its financial performance. The long-term sustainability of PGL's operations in Chicago is in question, with potential repercussions that extend beyond Peoples Gas to the broader financial health and creditworthiness of the parent company, requiring investors to carefully assess how evolving regulatory, financial, and market risks might impact WEC Energy's future stability and profitability.

### Regulatory risks

- **Sunsetting of the regulatory mechanism allowing for accelerated cost recovery.** Accelerated cost recovery played a pivotal role in sustaining PGL's earnings but it expired in December 2023. As a result, future cost recovery efforts will likely take place in more frequent and potentially contentious rate cases, introducing greater financial uncertainty for Peoples Gas. Longer lag times for cost recovery may negatively impact PGL's future cash flows.
- **Potential reductions in earnings.** Any curtailment of the SMP by the ICC, so as to limit rate increases or curb stranded asset risk, would reduce PGL's earnings. We estimate that a 50% reduction in a fully-funded SMP would result in a 33% decrease in the company's earnings before interest and taxes (EBIT) by 2040.
- **Frequent rate increases.** Chicago's gas delivery rates are already among the highest in the nation and substantial PGL rate hikes could exacerbate affordability issues, particularly for low-income and energy-burdened customers. The need for rate increases that significantly exceed historical trends is likely to lead to regulatory and possibly legislative intervention, developments that would present risks for investors.



- ▶ **Additional regulatory intervention.** With limited relief achievable through reduced capital expenditures alone, additional regulatory actions, such as more stringent prudency reviews, are more likely.

## Market risks

- ▶ **Shrinking customer base.** As gas delivery costs rise and the competitiveness of electric alternatives improves, gas customer attrition is likely to accelerate. This could trigger a negative feedback loop where further departures increase the financial burden on remaining ratepayers and undermine cost recovery efforts. For Peoples Gas, a shrinking customer base will increase cash flow uncertainty and put downward pressure on profitability, potentially adversely affecting net present value.
- ▶ **Elevated cost recovery and stranded asset risk.** Continuation of a full-scope SMP could see unrecovered balances in PGL's rate base reach approximately \$12 billion by 2040. Coupled with the potential for customer departures and uncertainty about the magnitude of PGL's obligations for retiring or decommissioning gas assets, Peoples Gas faces enhanced risk of not recovering the capital it has invested in the gas system.

## Credit Risks

- ▶ **Potential credit downgrades.** Unstable rating outlooks for Peoples Gas have already begun. Actual credit downgrades are a serious possibility given the combined pressures of pending regulatory dockets and decisions, high gas system infrastructure costs, and declining gas demand. These would put pressure on WEC Energy's credit rating risk, likely increasing the parent company's cost of capital and eroding investor confidence.

## Strategic misalignment with climate goals and policies

- ▶ **Conflict with climate policies.** PGL's strategy of expanding and modernizing fossil fuel infrastructure increasingly conflicts with the aggressive climate goals of the city of Chicago and Illinois. This misalignment exacerbates the risks of regulatory and market pressures as policies may increasingly prioritize the transition away from natural gas for Chicago's building sector.
- ▶ **Threat to "solvency" of low-income discount rate (LIDR) structure.** The state's signature climate law, CEJA, mandated the ICC to study how bill impacts for low-income utility customers could be mitigated and gave the ICC authority to file tariffs establishing LIDRs. In October 2024, Peoples Gas will begin implementing a LIDR that caps gas charges at 3% of household income, providing a credit to energy-burdened customers offset by a rider applied to other ratepayers. However, if gas rate increases accelerate due to SMP spending and/or customer departures, LIDR's cross-subsidization of rate classes could become strained, potentially rendering the structure unworkable if it further incentivizes customer departure and attracts financial and political attention.



## D. Conclusion

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Peoples Gas and WEC Energy stand at a critical juncture. The risks and uncertainties highlighted in this report underscore the growing challenges of sustaining the financial health and viability of traditional gas utility operations during the energy transition. As regulatory scrutiny intensifies, and as market dynamics evolve in response to shifting consumer preferences and technological advancements, the business model that has underpinned Peoples Gas for over a century is becoming increasingly vulnerable.

The situation that Peoples Gas faces is emblematic of pressures across the nation that mature, incumbent gas-only utilities may encounter as they grapple with rising infrastructure costs, regulatory changes, and competitive threats from disruptive technologies. Decisions made in the near future regarding the financial path of Peoples Gas will provide important lessons for other energy companies confronting similar risks.

For investors, the evolving challenges confronting Peoples Gas serve as a critical reminder of the complexities involved in the ongoing energy transition and the future of gas. It is essential to monitor these developments closely as they could have significant implications not just for WEC Energy but for the broader utility sector.

Section

# 1

# Introduction

**Peoples Gas Light and Coke Company (“Peoples Gas” or “PGL”) operates one of the oldest natural gas delivery systems in the United States, serving Chicago, Illinois, the nation’s third-largest city.**

The gas system expanded in parallel with the industrialization of Chicago during the 19th and 20th centuries. Today, it provides nearly 900,000 customers with gas for heating, cooking, industrial uses, and more. Once an exemplar of technological advancement and modernization with a lengthy waiting list for service, Peoples Gas – a subsidiary since 2015 of Wisconsin-based WEC Energy Group, Inc. (“WEC Energy”) – faces an uncertain future, challenged by its aging gas infrastructure in an era of climate change and growing scrutiny of the health and safety implications of gas use.

Since 2018, Peoples Gas has delivered five consecutive years of record financial returns to its parent company. Dividend payments increased more than fivefold and totaled \$335 million in 2023. Central to these profits has been the company’s **System Modernization Program (SMP)** – a multi-decade, multi-billion dollar initiative to replace much of the city’s gas distribution network and upgrade system pressure.<sup>2</sup> However, in November 2023, the Illinois Commerce Commission (ICC) paused the SMP, launched a new investigation to determine the reasonableness and prudence of the program going forward, and disallowed recovery of \$177 million for previously incurred capital costs. These actions, along with the ICC’s initiation of a Future of Gas proceeding, highlight the increasing regulatory scrutiny facing gas-only utilities in a changing energy landscape.

This report examines the risks and uncertainties facing Peoples Gas, its investors, and customers.

In **Section 2**, we trace the evolution of the company’s business model and operations from the early 1900s to today, demonstrating the transition from expansion to replacement and modernization of the company’s aging gas infrastructure. We chart the historical relationship between Peoples Gas and the ICC, showing how their intertwined actions brought about record profits for Peoples Gas and its parent company as PGL’s rate base grew. Finally, we review the history and current status of the SMP, including PGL’s most recent proposal to the ICC as part of the ICC-initiated 2024 SMP Investigation.

**Section 3** introduces and evaluates the financial impacts on the company and its customers of three key business threats: the increasing costs of replacing aging infrastructure; mandates and incentives related to climate change, health, and safety; and growing competition from non-gas alternatives. Detailed modeling results for two scenarios are presented that forecast the revenue requirement increases necessary to reinstate a full-scope SMP, along with the resulting increases in average ratepayer delivery costs. The first scenario provides for a continued stable gas customer base and the second for a declining customer base due to customers defecting to take up efficient electric appliances and/or in response to increasing gas charges. We also model the mounting stranded asset risk that is emerging as the future of the PGL gas system becomes increasingly uncertain.

**Section 4** critically evaluates PGL’s assertion that the gas system must prepare for the eventual integration of alternative gases (such as renewable natural gas (RNG) and hydrogen) as well as the company’s claim that reinstating the full SMP is the most viable and cost-effective solution for addressing safety, reliability, and emissions concerns. We critically evaluate each of these positions on their own merits in light of emerging alternatives such as building electrification and a managed decline of the gas system.

<sup>2</sup> Peoples Gas (PGL) now refers to the SMP as the “Safety Modernization Program.” The Illinois Commerce Commission (ICC) generally refers to the “System Modernization Program” (see, for example, ICC Docket No. 24-0081).

In **Section 5** we consider the challenges to Peoples Gas from the evolving regulatory landscape within Illinois. While Peoples Gas historically has benefited from regulatory support for aggressive infrastructure replacement, recent decisions by the ICC indicate a shift toward greater scrutiny and a potential reevaluation of the role of gas utilities in Illinois in order to achieve alignment with the state’s clean energy goals. This shift was underscored by ICC Chairman Scott’s statement upon the announcement of the SMP pause: “As the State embarks on a journey toward a 100 percent clean energy economy, the gas system’s operations will not continue to exist in their current form.”<sup>3</sup> In consideration of these regulatory changes, we model two reduced-spending SMP scenarios and analyze the implications for PGL’s revenue requirement, average ratepayer delivery costs, stranded asset risk, and the company’s annual operating income.

**Section 6** summarizes our main findings regarding resuming a full SMP that concludes in 2040. We find that Peoples Gas faces elevated business risk on several fronts – regulatory, market, and credit – and that the sustainability of the company’s Chicago operations is increasingly uncertain and risky, with potential repercussions that extend beyond PGL to affect the broader financial health and creditworthiness of the parent company, WEC Energy. While Peoples Gas thus far has delivered strong financial results for WEC Energy, the mounting pressures on PGL suggest that investors should be increasingly concerned not only with securing a profitable return but also about fully recovering their initial investments in the gas distribution system.

“The sustainability of WEC Energy’s gas utility operations in Chicago is increasingly uncertain and risky, with potential repercussions that extend beyond PGL to affect the broader financial health and creditworthiness of the parent company.”

<sup>3</sup> Illinois Commerce Commission (ICC), Press Release (November 16, 2023), <https://itgov.illinois.gov/news/press-release.27313.html>.



Section



# The Peoples Gas business model: From expansion to “modernization”

**For over a century, Peoples Gas has been a cornerstone of energy provision for the residents of Chicago.** As a regulated monopoly utility, its business model has been shaped by judicial interpretation, state legislation, and the operational norms and regulations set by the ICC. This framework has evolved to encompass not just safety, reliability, cost-effectiveness, and conservation, but also equity and the reduction of greenhouse gas emissions.<sup>4</sup>

In this section, we examine the coevolution of PGL's business model and the regulatory framework in which Peoples Gas operates, tracing the progression of the company's business model from the early 1900s to today. While the company's operations have evolved over the decades, the foundation of how Peoples Gas generates revenue has not. The company operates under rate-of-return regulation whereby it earns an allowed rate of return on the equity-financed portion of its capital investments in the gas system. What has changed over the years is the justification for those capital investments, from the early 20th century *expansion* efforts to bring gas to every street and building to the current *modernization* efforts that have led to substantial investments and record earnings for PGL's parent company, WEC Energy. This section highlights PGL's dependence on its modernization plan for earnings growth and the evolution of the SMP program, including the company's most recent SMP proposal to the ICC.

## A. Evolution of the Peoples Gas business model and operations

For illustrative purposes, we divide the history of PGL's operations and business model evolution into three distinct periods: expansion (c. 1913 - late 1970s), transition (c. 1980 - c. 2010), and modernization (c. 2010 - c. 2023).

<sup>4</sup> Illinois Public Utilities Act, 220 ILCS 5/1-102 (from Ch. 111 2/3, par. 1-102).

### Figure 2.1: Rate-of-return regulation - Key variables

**Rate base.** The rate base is the value of the utility's gas plant used to provide gas services that is approved by regulators as constituting the investment on which a fair rate of return is to be based. Gas plant (also referred to as "gas infrastructure") includes distribution mains, meters, and services; transmission mains; storage facilities; and other structures, property, and equipment. The rate base is calculated by adding up the original cost of the assets and adjusting for depreciation and other factors. The rate base grows when utilities invest above the rate of depreciation.

**Rate of return.** Investor-owned utilities engage in approved capital spending to maintain and upgrade their infrastructure, and they earn a regulator-authorized rate of return on their investments known as the "weighted average cost of capital." That blended rate of return includes the profit rate that utilities are allowed to earn on their capital spending. This rate is then multiplied by the rate base to determine the amount of revenue needed to compensate utilities for the equity their shareholders invest, the cost of bond capital, whether it is short, medium, or long-term debt, and income taxes.

**Revenue requirement.** The basis for setting a utility's rates is known as the "revenue requirement." The revenue requirement refers to the total funds that an investor-owned utility needs to collect from its customers in order to pay for the gas system expenses it expects to incur in a given year (i.e., total "delivery costs"). These expenses include the utility's profit on its capital spending, operations and maintenance, depreciation, taxes, customer service, and administration. Dividing the revenue requirement by the total customer base yields a key metric used in this analysis: *average delivery cost per gas customer*.



## 1. Expansion (c.1913 to late-1970s)

Throughout the first three-quarters of the 20th century, Peoples Gas operated in a regulatory environment that encouraged significant capital investment to build out both the supply and delivery components of gas service. Under rate-of-return regulation, Peoples Gas earned a percentage return on capital expenditures deemed prudent by the Commission. The most significant investment in the first half of the century was the construction of a pipeline in 1931 to transport natural gas from the Texas Panhandle to Chicago. This enabled the mixing of natural gas with locally derived coal gas, significantly increasing both the supply and energy density of pipeline gas, which in turn fueled a surge in demand primarily to replace coal for space heating. The \$75 million investment (of which Peoples Gas paid approximately one quarter)<sup>5</sup> is equivalent to nearly \$1.5 billion today. In addition to the cost of the pipeline, accommodating the new fuel required burner adjustments to all gas-operating appliances – nearly 9 million burners for 820,000 customers.<sup>6</sup> Despite these high capital investments, the introduction of natural gas enabled a rate reduction for customers. A temporary spike in prices to \$1.26 per thousand cubic feet in 1941 remained the highest average gas cost to Illinois residential customers until 1974 (see Figure 2.2).

In conjunction with increased investment and stable customer prices, Peoples Gas provided steady returns to its shareholders. Dividends were raised eight times during the 1960s, with earnings-per-share routinely surpassing \$3.00.<sup>7</sup> The expansionary period for the gas system came to a close by the mid-1970s as a global energy crisis and the saturation of Chicago's customer base coincided.

## 2. Transition from expansion to replacement (late 1970s to c. 2007)

By 1980, the Peoples Gas gas distribution system was “essentially mature,” according to company management.<sup>8</sup> Customer growth and consumption had plateaued as the distribution system expanded to reach nearly every dwelling in Chicago, providing heating to over 82% of residents and by the mid-1970s, cooking, water heating, and clothes drying for 90%. That same year, Peoples Gas underwent a major restructuring, spinning off its highly profitable generation and transmission assets into a new company, MidCon Corp. This spin-off marked a significant shift as these assets had been crucial for the growth and profitability of PGL's parent company at the time, Peoples Energy Corporation (PEC). After the spin-off, PEC focused exclusively on its regulated businesses, of which Peoples Gas constituted the main holding.<sup>9</sup>

In 1981, an engineering study of Peoples Gas conducted by Zinder Engineering, Inc. (ZEI) recommended a 50-year program to accelerate the replacement of a subset of at-risk, leak-prone cast iron pipes (small-diameter cast iron pipes in clay soils).<sup>10</sup> Peoples Gas began replacing cast iron pipes at a pace of approximately 40 miles per year. This shift marked the transition from expansion to replacement as the company's dominant operational focus. Accordingly, the company's source of profit generation transitioned from capital spending on expanding the delivery system to capital spending on replacing aging, leak-prone mains. In 1994, the scope of the replacement program expanded to include all cast-iron pipes rather than just a subset. This expansion increased the target main replacement goal from 1,679 miles in 50 years (by 2030) to 3,450 miles by 2050.<sup>11</sup>

<sup>5</sup> Peoples Gas Light and Coke Company, *1932 Year Book*, p. 11 (accessed via Mergent Archives).

<sup>6</sup> *Ibid.*, p. 14.

<sup>7</sup> Peoples Gas Company and Subsidiary Companies, *1970 Annual Report*, p. 2 (accessed via Mergent Archives).

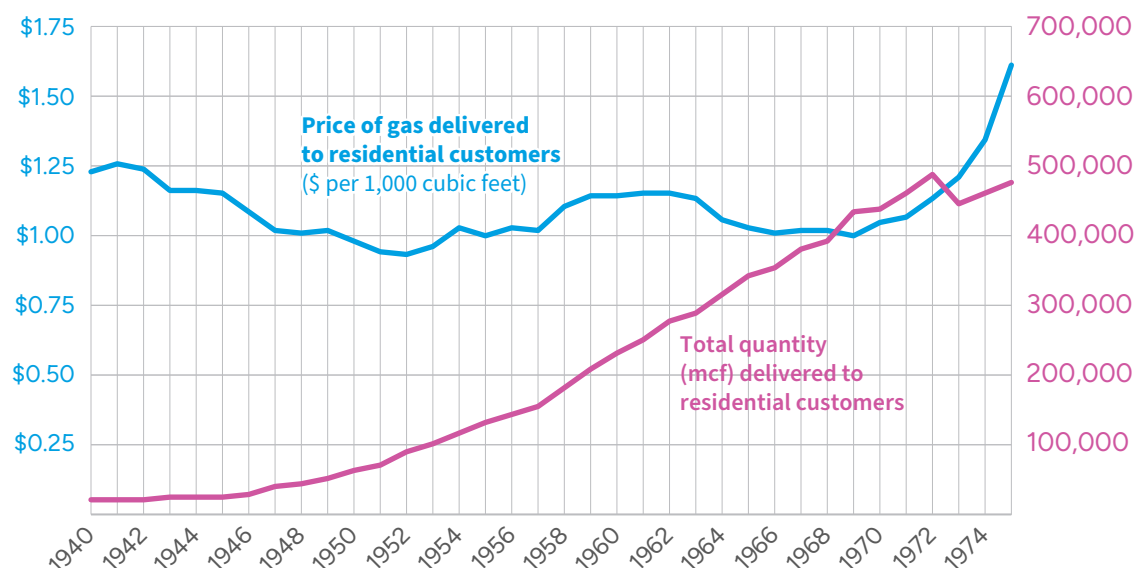
<sup>8</sup> Peoples Energy Corporation, *1980 Annual Report*, p. 15 (accessed via Mergent Archives).

<sup>9</sup> Peoples Energy Corporation, *1982 Annual Report*, p. 1 (accessed via Mergent Archives).

<sup>10</sup> Zinder Engineering, Inc., *Cast Iron Pipe Replacement Study for Peoples Gas Light and Coke Company*, Volume 1 (1981, Engineering Report No. ER-048), pp. 5-12 (filed as PGL Ex. 2.01 in Docket No. 24-0081).

<sup>11</sup> Abraham Scarr and Jeff Orcutt, *Tragedy of Errors: The Peoples Gas Pipe Replacement Program is a Poorly Designed, Mismanaged, Bad Investment for Chicago* (June 2019, Illinois PIRG Education Fund), p.16, [https://publicinterestnetwork.org/wp-content/uploads/2022/07/Tragedy-of-errors\\_scrn-5.pdf](https://publicinterestnetwork.org/wp-content/uploads/2022/07/Tragedy-of-errors_scrn-5.pdf).

**Figure 2.2: Price and total quantity of natural gas delivered to Illinois residential customers, 1940-1975**



Source: Data compiled from U.S. Bureau of Mines, *Minerals Yearbook* (various issues from 1941-1976, chapter on natural gas), <https://search.library.wisc.edu/digital/APPYAWXJZXOES08L>.

From the early 1980s through the end of the 1990s, Peoples Gas was able to invest in capital projects without significantly increasing customer rates, thanks in large part to declining gas supply prices. While customer bills stayed largely level, the portion of customer revenue that went to fuel vs. delivery charges changed drastically. As shown in Table 2.1, in 1984, the passthrough cost of gas accounted for two thirds of PGL revenue; by 1999, this portion had declined to just 38%. Over the same period, Peoples Gas averaged over \$65 million in net income each year.

**Table 2.1: Declining citygate gas prices enabled level PGL customer gas bills**

Year	Illinois citygate fuel price (per 1,000 cu ft)	Fuel cost as % of PGL operating revenues	PGL net income (millions)
1984	\$3.44	0.66	\$62,134
1985	3.43	0.63	\$69,383
1986	3.02	0.60	\$66,456
1987	2.81	0.57	\$47,170
1988	2.74	0.56	\$66,306
1989	2.99	0.59	\$77,881
1990	3.09	0.59	\$60,156
1991	2.91	0.57	\$61,763
1992	3.2	0.56	\$58,946
1993	3.3	0.57	\$64,355
1994	3.02	0.57	\$63,825
1995	2.59	0.50	\$53,660
1996	3.27	0.49	\$88,752
1997	3.28	0.54	\$85,098
1998	2.77	0.42	\$68,378
1999	3.00	0.38	\$78,217

Source: Data compiled from U.S. Energy Information Administration, Natural Gas Data, <https://www.eia.gov/dnav/ng/hist/n3050il3A.htm>, and PGL, Income statements from PGL Annual Reports, 1984–1996.

“While customer bills stayed largely level, the portion of customer revenue that went to fuel vs. delivery charges changed drastically.”

## QIP Rider annual reconciliations

QIP costs are subject to an annual reconciliation that examines the costs for accuracy and prudence. Reconciliations from 2017 through 2023 are pending and the possibility of future write-downs for past expenditures exists. In its 2023 annual report, WEC Energy wrote: “As of December 31, 2023, there can be no assurance that all costs incurred under PGL’s QIP rider during the open reconciliation years...will be deemed recoverable by the ICC. Disallowances by the ICC, if any, could be material and have a material adverse effect on our results of operations.”<sup>1</sup>

<sup>1</sup> WEC Energy, 2023 Annual Report (March 2024), p. F-98, [https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE\\_WEC\\_2023.pdf](https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE_WEC_2023.pdf).

### 3. The shift to “modernization” (c. 2007 to c. 2023)

Over the course of the past 15 years, which has included two corporate acquisitions, Peoples Gas has significantly transformed its capital spending and infrastructure strategy. Initially focused on replacing 40 miles of leaking cast iron and ductile iron mains per year, the utility’s approach evolved after the 2007 merger of its parent company, Peoples Energy Corporation, with WPS Resources Corporation to form Integrys Energy Group, Inc.<sup>12</sup> This merger signaled a shift towards more ambitious “comprehensive overhaul” and “system modernization,” as WPS committed to doubling the annual capital investment in the company’s main replacement program.<sup>13</sup>

In 2011, Peoples Gas launched its Accelerated Main Replacement Program (AMRP), installing a record 155 miles of new gas mains that year (only 19 miles

<sup>12</sup> SEC Archive, “New Release: WPS Resources Corporation and Peoples Energy Corporation Merger Completed, WPS Resources Changes Name to Integrys Energy Group, Inc.” (February 21, 2007), <https://www.sec.gov/Archives/edgar/data/107833/000091686307000103/exh991press.htm>.

<sup>13</sup> ICC, Reorganization Application, Docket No. 06-0540, Testimony of James F. Schott, WI Public Service Corporation, p.8, <https://www.icc.illinois.gov/docket/P2006-0540/documents/99154/files/178643.pdf>.

were due to retiring cast and ductile iron main).<sup>14</sup>

The year prior, the ICC approved the Infrastructure Cost Recovery (ICR) Rider, allowing cost recovery for AMRP expenditures outside of formal rate case proceedings in order to provide concurrent recovery of the revenue requirement associated with pipeline replacement. Later that year, however, the Illinois Appellate Court reversed this approval, ruling that the ICC had overstepped its legal bounds in approving the rider and that the utility should instead recover its accelerated pipeline replacement costs through traditional ratemaking procedures.<sup>15</sup>

In 2013, the Illinois General Assembly reinstated accelerated recovery with Public Act 98-57, formally authorizing a new rider called the Qualifying Infrastructure Plant (QIP) Rider. This rider significantly expanded the scope of infrastructure eligible for accelerated cost recovery beyond the replacement of distribution mains, services, and meters to include: transmission pipe replacement, changing the pressure of pipe networks from low to medium, and replacing or installing transmission and distribution regulation stations, regulators, valves, and associated facilities to establish over-pressure protection. Notably, the QIP Rider provided for its own sunset date of December 31, 2023.

QIP played a pivotal role in the finances of Peoples Gas, significantly contributing to steady profitability. In general, accelerated cost recovery riders (also called capital trackers) are attractive regulatory mechanisms for investors because they allow for faster and more predictable returns on investment. Annual cost recovery under QIP ranged from \$192 million to \$348 million.<sup>16</sup>

In 2015, Integrys Energy Group was acquired by Wisconsin Energy Corporation, forming WEC Energy Group and creating the largest electric and natural gas utility holding in the Midwest and a top ten

<sup>14</sup> The Liberty Consulting Group, *Executive Summary of a Final Report on Phase One of an Investigation of Peoples Gas Light and Coke Company’s AMRP* (May 5, 2015, ICC14GAS0002), <https://icc.illinois.gov/api/web-management/documents/downloads/public/FinalReportTheLibertyConsultingGroupPhaseOneAMRP.pdf>.

<sup>15</sup> Steve Daniels, “Peoples Gas infrastructure surcharge rejected by Appeals Court,” *Crain’s Chicago Business* (October 3, 2011), <https://www.chicagobusiness.com/article/20111003/NEWS11/110939981/peoples-gas-infrastructure-surcharge-rejected-by-appeals-court>.

<sup>16</sup> WEC Energy, 2023 Annual Report (March 2024), p. F-31, [https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE\\_WEC\\_2023.pdf](https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE_WEC_2023.pdf).

gas distribution company.<sup>17</sup> In 2023, WEC Energy's asset base totaled \$29.4 billion, encompassing a diversified portfolio of regulated and unregulated subsidiaries, including renewable energy facilities.<sup>18</sup> WEC Energy promised investors 5-7% growth in earnings per share and strong dividends. As a condition of the ICC's approval of the WEC Energy acquisition of Peoples Gas and North Shore Gas, the ICC required PGL to file a "Cost Plan Model and Scheduling Master Plan" for the AMRP. PGL's new management agreed that better project administration was needed and extended the program's terminal date from 2030 to a new target end date of 2035-2040. WEC Energy also committed to investing at least \$1 billion in Peoples Gas from 2015 to 2017 for infrastructure projects. That commitment was exceeded by nearly 20%, with \$1.178 billion spent on infrastructure projects over that period.<sup>19</sup>

In 2016, the AMRP was essentially rebranded as the System Modernization Program (SMP).<sup>20</sup> The stated goal of the two programs remained the same, namely, "to maintain the safety and reliability of PGL's distribution system while systematically addressing risks attributable to aging main by removing that main from the system..."<sup>21</sup> In practice, "modernization" has been a better descriptor of the wider work scope put forward by Peoples Gas, inclusive of system-wide pressurization upgrades. While the AMRP began with a focus on cast iron and ductile iron replacement, the SMP today has a broader, more complex scope and consists of five different subprograms: Neighborhood, Public Improvement, System Improvement, Emergency, and High Pressure. This multifaceted structure has

created ambiguity about the intersection of three types of work, each of which PGL treats as falling under the SMP: at-risk pipe replacement, work that PGL is already doing or is required to do (such as pipeline replacements dictated by third parties), and work it wants to do (converting its entire system from low to medium pressure).<sup>22</sup>

## B. SMP's profitability for Peoples Gas and cost to ratepayers

Despite challenges encountered throughout the implementation of the SMP, Peoples Gas has consistently been profitable. Capital spending on replacing and upgrading its gas distribution infrastructure have substantially increased the company's rate base, boosting earnings through a regulated rate of return. However, this profitability has required steady increases in customer delivery charges.

### 1. Corporate profitability

Under WEC Energy's ownership, PGL's net income has increased significantly, rising by 137% through 2022 and averaging 20% year-over-year growth since 2015 (see Figure 2.3). This increase is closely linked to gross revenue that Peoples Gas received via the QIP surcharge.

In 2023, Peoples Gas reported a decline in net income to \$120.1 million because it recorded the ICC's rate-case related disallowance of \$177.2 million as an impairment, thus reducing operating income.<sup>23</sup>

<sup>17</sup> Wisconsin Energy Corporation and Integrys, Wisconsin Energy To Acquire Integry Energy Group: Presentation (September 2014), Slide 23, [https://www.wecenergygroup.com/invest/wec-teg\\_transaction\\_sep2014.pdf](https://www.wecenergygroup.com/invest/wec-teg_transaction_sep2014.pdf).

<sup>18</sup> WEC Energy, *September 2024 Investor Book* (September 3, 2024), p. 38, [https://s22.q4cdn.com/994559668/files/doc\\_presentations/2024/Sep/03/09-2024-september.pdf](https://s22.q4cdn.com/994559668/files/doc_presentations/2024/Sep/03/09-2024-september.pdf).

<sup>19</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0068, Request No. ICC 1.02, p. 1, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337765/files/588769.pdf>.

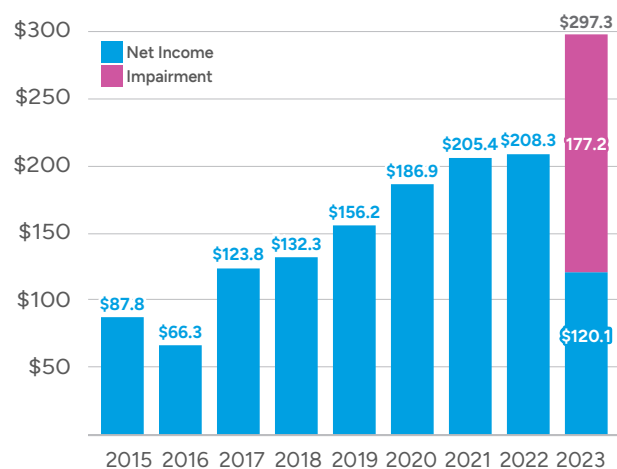
<sup>20</sup> ICC, Bureau of Public Utilities, Staff Report to the Commission Regarding Workshops Held to Evaluate and Assess the Peoples Gas Light and Coke Company Gas System Modernization Program (May 31, 2016), <https://icc.illinois.gov/docket/P2016-0376/documents/244379/files/431018.pdf>.

<sup>21</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 16, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>22</sup> Abraham Scarr and Jeff Orcutt, *Tragedy of Errors: The Peoples Gas Pipe Replacement Program is a Poorly Designed, Mismanaged, Bad Investment for Chicago* (June 2019, Illinois PIRG Education Fund), p. 9, [https://publicinterestnetwork.org/wp-content/uploads/2022/07/Tragedy-of-errors\\_scrm-5.pdf](https://publicinterestnetwork.org/wp-content/uploads/2022/07/Tragedy-of-errors_scrm-5.pdf).

<sup>23</sup> PGL, Form 21 ILCC for 2023 (April 2024), pdf p.134, <https://www.icc.illinois.gov/downloads/public/filing/2/2/2/372732.pdf>. PGL writes: "As the ICC did not grant a rehearing on the disallowance of our capital costs, we recorded a \$177.2 million non-cash impairment of our property, plant, and equipment in 2023. This amount includes the previously incurred disallowed costs related to our shops and facilities. The remaining disallowance of capital costs related to our expected future spend. We anticipate appealing the ICC's disallowance of our capital costs to the Illinois Appellate Court after the rehearing process is completed."

**Figure 2.3: Peoples Gas net income, 2015-2023 (\$ millions)**



Source: PGL Annual Reports, Consolidated Income Statement (various years), <https://investor.wecenergygroup.com/investors/financial-info/subsidiary-financial-statements/default.aspx>.

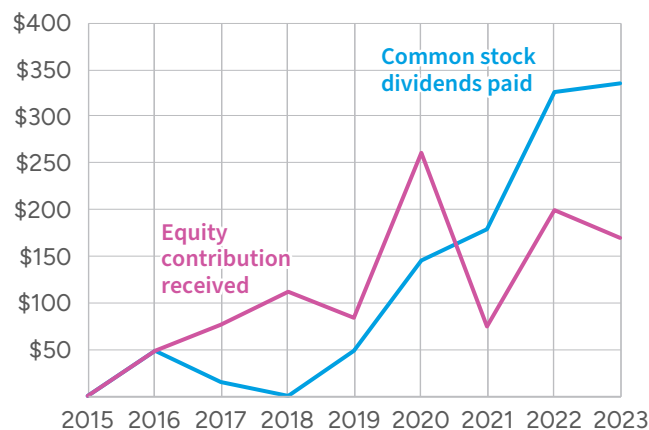
Absent this impairment, net income would have totaled \$297.3 million.

In addition to significant growth in net income, Figure 2.4 illustrates the annual dividends paid by Peoples Gas to WEC Energy and the capital contributions received by PGL from its parent company. In 2023, Peoples Gas paid a record \$335 million dividend to WEC Energy, marking more than a fivefold increase in annual dividends since 2018. From 2018 to 2023, WEC Energy's capital contributions to Peoples Gas totaled \$1.029 billion, or an annual average contribution of \$150 million (see Figure 2.4).

WEC Energy's dividend payouts to shareholders have also seen substantial increases, largely fueled by the profitability of its subsidiaries. According to WEC Energy's 2023 10-K filings with the U.S. Securities and Exchange Commission (SEC), the company's dividends have more than doubled since 2015, averaging a 15% annual growth rate and totaling \$984 million in 2023.<sup>24</sup> Notably, the contribution from Peoples Gas has increased substantially: PGL's share of WEC Energy's total dividends increased from 7% in 2019 to 34% in 2023.

<sup>24</sup> WEC Energy Group, *10-K Annual Report to the Securities & Exchange Commission* (February 16, 2024), Statements of Cash Flows (various years), p. 167, <https://investor.wecenergygroup.com/investors/financial-info/sec-filings/sec-filings-details/default.aspx?FilingId=17296303>.

**Figure 2.4: Dividends paid by PGL to WEC Energy & WEC Energy equity invested in PGL (\$ millions)**



Source: PGL Annual Reports, Consolidated Equity Statement (various years), <https://investor.wecenergygroup.com/investors/financial-info/subsidiary-financial-statements/default.aspx>.

WEC Energy's net income and earnings per share today are at record levels. In 2023, the company raised its dividend for the 20th consecutive year and revised its long-term earnings growth projections upward.<sup>25</sup> According to WEC Energy, "investment opportunities support long-term EPS growth of 6.5%-7%."<sup>26</sup>

## 2. Rising QIP charges to ratepayers

While the SMP and the QIP rider have been highly lucrative for WEC Energy, driving substantial profits and earnings, these gains have come at a significant cost to gas ratepayers. As shown in Figure 2.5, annual QIP charges for the average Chicago residential customer surged from \$75 in 2018 to \$183 in 2023, representing an average annual increase of nearly 30%.<sup>27</sup>

These rising charges have relegated the PGL gas system to among the most expensive in the nation. Because a high percentage of Chicago's households are energy-burdened, these escalating costs are

<sup>25</sup> WEC Energy Group, *2023 Annual Report* (March 2024), p. 2, [https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE\\_WEC\\_2023.pdf](https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE_WEC_2023.pdf).

<sup>26</sup> WEC Energy Group, *2022 Corporate Responsibility Report*, p. 14, <https://www.wecenergygroup.com/csr/cr2022/wec-corporate-responsibility-report-2022.pdf>.

<sup>27</sup> The QIP rider has now terminated and PGL proposes to continue SMP cost recovery through its rate cases. QIP charges were percentage multipliers applied to fixed monthly charges and a range of variable charges including the distribution charge, storage service charge, volume balancing charge, invested capital tax adjustment, and other cost adjustments.



fueling affordability concerns and increasing the likelihood of regulatory scrutiny. Future scenarios for these rising delivery costs are modeled in Sections 3 and 5 of this report.

## C. SMP scrutiny and PGL's latest proposal

Over the years, PGL's AMRP/SMP plans and outcomes have attracted considerable scrutiny (see Figure 2.8 for audits and investigations from 2007 to 2020). Multiple official investigations and audits have in turn led to revised program priorities, shifting capital spending plans, and evolving milestones. The chief concerns raised by the various audits and investigations have included:

- ▶ Project mismanagement and inadequate planning
- ▶ Lagging timeline and unrealistic termination date
- ▶ Scope creep and ambiguity
- ▶ Underemphasis on targeting and replacing the highest-risk pipe; overemphasis on medium-pressure upgrades
- ▶ Significant cost overruns

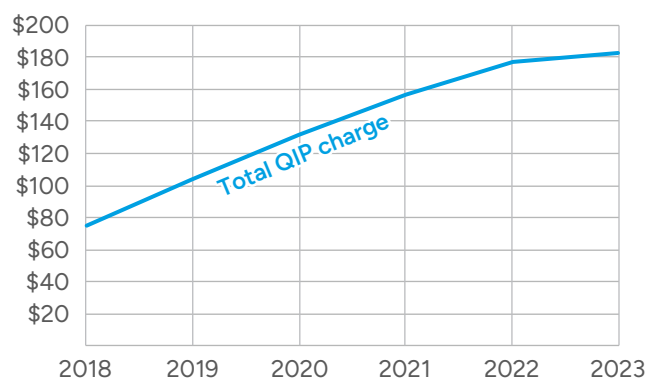
Figure 2.6 summarizes basic SMP outcomes and spending. As of the end of 2023, Peoples Gas had replaced 865 miles of distribution mains or 37% of the total it wishes to replace. Approximately 1,500 miles are still slated for replacement with a target completion date of 2040.<sup>28</sup> Since being acquired by WEC Energy, Peoples Gas has spent \$2.6 billion on the SMP or an average of \$294 million per year. Figure 2.7 shows annual AMRP/SMP spending over the last decade. The highest annual spending occurred in 2018 (\$313 million) and has generally declined since that time.

According to PGL's April 2024 filing, an additional \$7.5 billion is required to complete the program.<sup>29</sup> (Note: This capital expenditure forecast does not account for inflation or any escalation factors.)

<sup>28</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 29, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

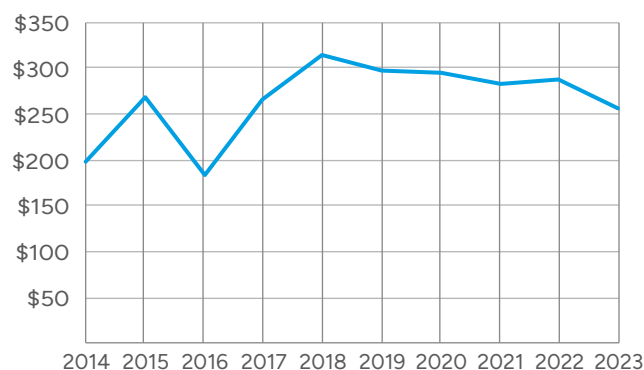
<sup>29</sup> Ibid.

**Figure 2.5: Annual QIP Rider charges for average residential heating customer, 2018-2023**



Source: SMP Quarterly Reports, "Average residential heating customer's monthly bill" (Q4 various years), <https://www.icc.illinois.gov/programs/natural-gas-investigations>.

**Figure 2.7: AMRP/SMP spending, 2014-2023 (\$ millions)**



Source: ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 18, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

Intervenors across several SMP investigations have questioned PGL's ability to accurately forecast and/or express overall program costs.<sup>30</sup>

<sup>30</sup> See, for example, ICC, 2024 SMP Investigation, Docket No. 24-0081, Direct Testimony of AG Gas Technical Panel (June 18, 2024), p. 15, <https://www.icc.illinois.gov/docket/P2024-0081/documents/351860/files/615460.pdf>.

**Figure 2.6: Basic SMP facts as of Q4 2023**

- **Five subprograms:** Neighborhood, Public Improvement, System Improvement, Emergency, and High Pressure.<sup>1</sup>
- **Distribution mains replaced since 2011:** 865 miles of mains (cast iron and ductile iron, and low pressure) or 37% of the total as of 2011 (2,371 miles).<sup>2</sup>
- **SMP spending from 2014-2023:** \$2.6 billion<sup>3</sup> or \$294 million per year.
- **2023 unit costs per mile of main replacement in Neighborhood and Public & Service Improvement Programs, respectively (including main install, main retirement, service replacement, and meter moves):** \$4 million and \$5.1 million.<sup>4</sup>
- **Main miles remaining to be replaced:** 1,499 miles of mains, of which 1,112 are cast and ductile iron (CI/DI) and 385 are low-pressure plastic or steel main.<sup>5</sup> Assuming double decking is used, these replacements would result in the installation of 2,120 miles of main. Of the cast and ductile iron mains, 983 are low pressure.
- **Additional new high-pressure main to be installed:** 30 miles.<sup>6</sup>

- **Services to be replaced:** 202,779 (including leak-prone services and other services connected to CI/DI main).<sup>7</sup>
- **Meters to be moved outside:** 346,912 meters.<sup>8</sup>
- **Stated target investment levels for 2023-2025:** \$280-\$300 million per year.<sup>9</sup> (See Section 3.A.1 of this report for our analysis of investment levels needed to complete the SMP.)
- **Future capex requirement:** PGL estimates \$7.2 billion to \$13 billion (PGL says the higher figure corresponds to a focus on at-risk pipeline only).<sup>10</sup> Multiple intervenors in the 2024 SMP Investigation find that PGL has not accurately forecast SMP costs and that its estimates should be disregarded.<sup>11</sup>
- **Target completion date:** 2035-2040 based on prior regulatory approval; 2040 based on SMP Quarterly Report for Q4 2023;<sup>12</sup> 2045 per PGL “if the Commission concludes that annual affordability should play a greater role in the analysis”;<sup>13</sup> 2049 per ICC estimates in 2023 Rate Case for PGL.<sup>14</sup>

<sup>1</sup> For descriptions of each subprogram and an explanation of PGL’s risk analysis and prioritization methods, see ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, pp. 39-49, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>2</sup> See the “Work Draw-down Curve” presented in PGL, *Safety Modernization Program Quarterly Report*, Q4 2023 (revised April 24, 2024), p. 5, <https://icc.illinois.gov/api/web-management/documents/downloads/public/gas/2023%20-%20Q4%20SMP%20Report.pdf>.

<sup>3</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 18, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>4</sup> PGL, *Safety Modernization Program Quarterly Report*, Q4 2023 (February 14, 2024), p. 6 and 9, <https://icc.illinois.gov/api/web-management/documents/downloads/public/gas/2023%20-%20Q4%20SMP%20Report.pdf>.

<sup>5</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 42, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>6</sup> Ibid., p. 61.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> PGL, *Safety Modernization Program Quarterly Report*, Q4 2023 (February 14, 2024), p. 5 (figure), <https://icc.illinois.gov/api/web-management/documents/downloads/public/gas/2023%20-%20Q4%20SMP%20Report.pdf> and WEC Energy Group, *2022 Corporate Responsibility Report*, p. 13, <https://www.wecenergygroup.com/csr/cr2022/wec-corporate-responsibility-report-2022.pdf>.

<sup>10</sup> PGL states that the cost figures presented in its April 2024 filing are “not meant to provide the Commission with a new cost estimate for the SMP.” ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, pp. 63-64, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>11</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, AG Exhibit 1.0, p. 46 (June 18, 2024), <https://www.icc.illinois.gov/docket/P2024-0081/documents/351860>.

<sup>12</sup> PGL, *Safety Modernization Program Quarterly Report*, Q4 2023 (February 14, 2024), Appendix A - Neighborhood Metrics (“End Year” column), <https://icc.illinois.gov/api/web-management/documents/downloads/public/gas/2023%20-%20Q4%20SMP%20Report.pdf>.

<sup>13</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 75, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>14</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Final Order (November 16, 2023), p. 28, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306>.



**Figure 2.8: Audits and investigations, 2007-2020<sup>1</sup>**

- ▶ **1st Liberty Audit.** In May 2007, the ICC ordered that an audit of PGL's cast iron replacement program be conducted. This audit, completed in August 2008, recommended that within six months, "Peoples Gas should document a well-defined plan for the *systematic* replacement of vulnerable service lines."<sup>2</sup>
- ▶ **2nd Liberty Audit.** In 2013, because of concern that the SMP/AMRP "lacked detail," the ICC ordered a two-phase audit of the program (the "Liberty Audit") which concluded in December 2017. The audit resulted in PGL adopting numerous recommendations regarding planning and execution plus two years of monitoring.
- ▶ **ICC-initiated Docket No. 15-0608.** This investigation sought to determine whether PGL, Integrys, or WEC Energy knowingly misled or withheld information about ballooning SMP/AMRP cost estimates from the ICC. The two resulting settlement agreements included PGL fines and refunds totalling \$18.5 million.
- ▶ **ICC-initiated Docket No. 16-0376.** This proceeding investigated the SMP/AMRP costs, schedule, scope, and other issues. PGL proposed a "neighborhood approach" with three-year rolling plans. The proceeding was contested, but in 2019 the IL Appellate Court affirmed the ICC's decision. Pursuant to the proceeding, PGL is required to file quarterly reports and report specific monitoring metrics.
- ▶ **Second Kiefner Study.** In its final order for Docket 16-0376, the ICC ordered a new SMP engineering (the "Second Kiefner Study" filed in January 2020). The study found that "most of PGL's CI mains average over 90 years old and most of PGL's DI mains average over 50 years old" and that "83% of the remaining CI and DI pipes have an average remaining life of less than 15 years."<sup>3</sup> The study recommended greater acceleration of the SMP, specifically that "all CI and DI pipes should be replaced by 2030, 10 years earlier than the current plan of completion by 2040."

<sup>1</sup> For further detail, see ICC, "The Peoples Gas Light and Coke Company Gas Main Replacement Program: A [sic] Historical Narrative" (not dated), <https://icc.illinois.gov/api/web-management/documents/downloads/public/gas/Final%20Historical%20Narrative.pdf>.

<sup>2</sup> ICC, *Final Report on an Investigation of Peoples Gas Pipeline Safety Program*, The Liberty Consulting Group (August 2008), p. 16, <https://icc.illinois.gov/api/web-management/documents/downloads/public/ng/Final%20Report%20Pipeline%20Safety%20Investigation%20-%20Public%20Version.pdf>.

<sup>3</sup> Kiefner and Associates, Inc., *Engineering Study of the Cast Iron and Ductile Iron Pipeline System*, Final Report No. 20-001 presented to PGL (January 2020), p.(i), <https://www.icc.illinois.gov/docket/P2018-1092/documents/295819/files/515921.pdf>.

## “In November 2023, the ICC issued a rate case order that paused PGL’s multi-decade SMP for a year”

In November 2023, the ICC issued a rate case order that paused PGL’s multi-decade SMP for a year, launching a new investigation (“2024 SMP Investigation”) “to determine the reasonableness and prudence of the Company’s next iteration of the SMP.”<sup>31</sup> The ICC’s decision was driven by concerns over cost overruns, doubts about the program’s effectiveness in mitigating risks from aging infrastructure, and questions about whether the most vulnerable neighborhoods were being prioritized.<sup>32</sup> The launching of a new investigation was strongly supported by the Attorney General, the city of Chicago, and public interest groups. In addition to halting the SMP, the ICC disallowed \$177 million in prior capital spending by Peoples Gas, along with an additional \$59 million related to “expected future spend.”<sup>33</sup>

These actions by the ICC had immediate financial consequences for PGL and parent company WEC Energy (see Section 5). During WEC Energy’s Q4 Earnings Call, Gale Klappa, then-Chairman of WEC Energy, defended the company’s position stating, “We firmly believe that the investments were necessary and prudent, and at the appropriate time, we will appeal the decision in court.” Klappa added, “We had planned to invest approximately \$265 million in these safety upgrades during 2024. Given the Commission’s order, we will not be carrying out the program as envisioned. We honestly do not believe that stopping the work is in the best interests of our Chicago customers.”<sup>34</sup> WEC Energy characterized the ICC’s disallowance of previously

incurred capital “highly unusual and not indicative of WEC Energy Group’s operating performance.”<sup>35</sup>

In response to the ICC’s investigation, Peoples Gas submitted a detailed filing in April 2024, outlining three alternative scenarios for the continuation of the SMP, with estimated costs ranging from \$7.2 billion to \$13 billion:<sup>36</sup>

- ▶ **Program Option 1:** Addressing *only* leak-prone mains and services (no medium pressure upgrades) at a cost of \$13 billion.
- ▶ **Program Option 2:** Addressing leak-prone mains *and* upgrading to medium pressure at a cost of \$7.5 billion.
- ▶ **Program Option 3:** Upgrading to medium pressure and addressing small- and medium-diameter leak-prone material (excludes replacing 49 miles of cast iron/ductile iron that are already medium pressure and 36 inches or greater with a remaining asset life of more than 50 years) at a cost of \$7.2 billion.

In its filing, Peoples Gas advocates for the reinstatement of the SMP, specifically Program Option 3.<sup>37</sup> This plan involves replacing all remaining cast iron and ductile iron pipes and upgrading the system to medium pressure but, compared to Option 2, excludes 49 miles of main that would instead be addressed “on a more reactive basis.”<sup>38</sup> Peoples Gas contends that this scope is crucial for ensuring safety, reliability, operational efficiency, and enabling the potential use of “future fuels,” such as hydrogen blending and renewable natural gas (RNG).<sup>39</sup> Cost recovery for these investments would be pursued through traditional rate cases, although no schedule has been established for these proceedings.

<sup>35</sup> WEC Energy Group, *2023 Annual Report* (March 2024), p. P-48, [https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE\\_WEC\\_2023.pdf](https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE_WEC_2023.pdf).

<sup>36</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 61 & 64, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>. PGL states that these cost estimates do not allow for inflation or other escalation or discount factors, and are not meant to be used as formal revised cost estimates. PGL also provides an alternative to its neighborhood-based approach (High Risk Zone Approach (HZRA)) which would further focus on the riskiest pipe segments as opposed to neighborhood-based geographic boundaries. *Ibid.*, p. 80.

<sup>37</sup> *Ibid.*, p. 64.

<sup>38</sup> *Ibid.*

<sup>39</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Final Order (November 16, 2023), p. 70, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306/files/601245.pdf>.

<sup>31</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Final Order (November 16, 2023), p. 30, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306/files/601245.pdf>.

<sup>32</sup> *Ibid.*, pp. 29-30.

<sup>33</sup> A small amount of the disallowance was restored in a Partial Rehearing Proceeding that concluded in May 2024. See Section 5 for more detail.

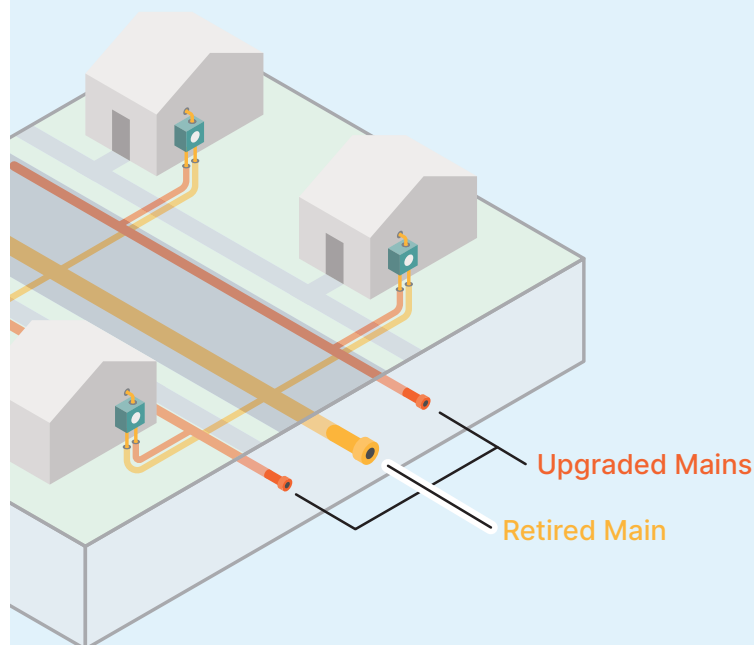
<sup>34</sup> WEC Energy Group, Q4 2023 Earnings Call, <https://finance.yahoo.com/news/wec-energy-group-inc-nyse-150702538.html>.

Critics have long urged that the SMP be scaled back to focus solely on the most critical leak-prone mains and services.<sup>40</sup> However, Peoples Gas maintains that such a limited approach would ultimately be more costly than Program Options 2 or 3. The company claims that considerable cost savings – over \$5 billion – would be achieved by bundling material replacement with system pressure upgrades. This strategy, the utility contends, reduces the required diameter of the mains and allows for less expensive construction methods such as double decking and directional boring versus open cutting. Peoples Gas reports that the average cost of replacing a mile of CI/DI low pressure main without using double decking, directional boring, and lower diameter pipelines is \$10.7 million per mile. According to the Attorney General, “this wildly expensive forecast is unlikely to be accurate” because PGL based it on a sample of projects that are “short cycle” (i.e., “emergency” projects) and have unit costs in excess of 300% that of other projects.<sup>41</sup>

The SMP remains central to Peoples Gas’s business model, driving significant revenue growth for its parent company through increased capital expenditures. The QIP accelerated cost recovery mechanism was pivotal in sustaining these earnings and its recent expiration means that future cost recovery will likely occur through more frequent and potentially contentious rate cases, introducing greater financial uncertainty for the utility. In addition, reflecting broader trends in the gas utility sector, the SMP generally faces an uphill course as Peoples Gas grapples with the high costs and risks of replacing aging infrastructure in a regulatory environment increasingly focused on decarbonization and emission reductions. Three key disruptors of the traditional gas utility model play a core role in these shifting trends and are analyzed in the next section.

<sup>40</sup> See, for example: ICC, 2016 SMP Investigation, Docket No.16-0376, AG Exhibit 1.0 (October 11, 2016), <https://www.icc.illinois.gov/docket/P2016-0376/documents/246901/files/435644.pdf> ; and Abraham Scarr and Jeff Orcutt, *Tragedy of Errors: The Peoples Gas Pipe Replacement Program is a Poorly Designed, Mismanaged, Bad Investment for Chicago* (June 2019, Illinois PIRG Education Fund), p. 9, [https://publicinterestnet-work.org/wp-content/uploads/2022/07/Tragedyoferrors\\_scrn-5.pdf](https://publicinterestnet-work.org/wp-content/uploads/2022/07/Tragedyoferrors_scrn-5.pdf).

<sup>41</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, AG Exhibit 1.0, p. 46 (June 18, 2024), <https://www.icc.illinois.gov/docket/P2024-0081/documents/351860>.



## Double Decking

Double decking refers to the practice of installing new main on both sides of the street to replace the existing run of main under the street. Each main serves customers on that side of the street. Since more main is installed than retired, double decking results in the use of more materials and involves moving to new medium-pressure pipe. While it requires more materials, double decking typically allows for lower-cost installation techniques such as directional drilling. Furthermore, it can reduce the risk of third-party damage by locating the mains away from other underground utilities. As a result, double decking can be cost effective depending on local restoration and trenching requirements and the location of the street’s utility corridor containing other utilities such as sewer, water, and electric.<sup>1</sup>

<sup>1</sup> For more information, see ICC, 2024 SMP Investigation, PGL Ex. 3.03, Request No. COC 1.36, <https://www.icc.illinois.gov/docket/P2024-0081/documents/352843/files/617447.pdf>.

Section

# 3

## Systemic threats to Peoples Gas

**Peoples Gas began in the 1880s on a competitive playing field and evolved over the following 150 years into the monopoly provider of gas services for nearly every building in Chicago.** Today, the company is entrenched in a costly and prolonged infrastructure replacement phase that is driving rate base expansion and fueling record earnings growth. But, at the same time, Peoples Gas faces an emerging set of systemic challenges that threaten the company's risk profile and financial stability, and undermine the long-term viability of its business model and operations.

This section examines three emerging business threats to Peoples Gas: escalating gas delivery costs, increasing regulatory pressure to reduce greenhouse gas emissions, and growing competition from alternative energy technologies. The first challenge is largely tied to the fact that the gas distribution industry is now in the mature phase of its life cycle with plateaued customer growth due to market saturation. The second and third threats directly relate to the energy transition, that is, America's shift to clean energy in order to reduce greenhouse gas emissions and meet urgent climate goals.

To examine the financial implications of these threats to Peoples Gas, we use Groundwork Data's Gas Delivery Cost Model to forecast future revenue requirement and customer delivery costs for two scenarios. Both provide for the completion of all outstanding SMP projects identified by Peoples Gas, assuming historic PGL unit costs. The first scenario assumes a stable gas customer base while the second models a declining base in line with the expectation that customers will leave the gas system as the energy transition progresses.

## A. Threat 1: Escalating delivery costs

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PGL's customers face the highest delivery costs of any gas utility in Illinois<sup>42</sup> and these costs rank among the most expensive in the nation.<sup>43</sup> Before factoring in the cost of the gas itself, the average PGL customer pays approximately \$1,000 annually just for the delivery of gas. These significant per-customer delivery costs are driven by three primary factors:

- 1. High capital spending.** Substantial investments have been made in PGL's gas infrastructure, particularly for the replacement of high-cost, long-lived assets like pipeline mains.
- 2. Operations and maintenance expenses.** The company incurs significant operations and maintenance costs – around \$300 million annually – including uncollectible account expenses which totaled \$54 million in 2023.<sup>44</sup>
- 3. Stagnant customer base.** Growth in PGL's customer base has leveled off; therefore, increasing delivery system costs must be distributed across a relatively constant number of users. Notably, Peoples Gas had more residential customers in 1990 (789,604) than it does today (773,427).<sup>45</sup>

<sup>42</sup> PGL's per customer delivery cost is more than a third higher than the next most expensive utility in the state. See: Dorie Seavey et al., *The Future of Gas in Illinois* (May 2024, Building Decarbonization and Groundwork Data), Section 5, <https://buildingdecarb.org/resource/the-future-of-gas-in-illinois>.

<sup>43</sup> Delivery costs are the main charge on gas customer bills and refer to all expenses associated with the reliable and safe transportation of gas to customers, including the costs of system operation, maintenance, repair, customer service, administration, taxes, and repaying utilities for their capital investments (capital spending is paid back over many years).

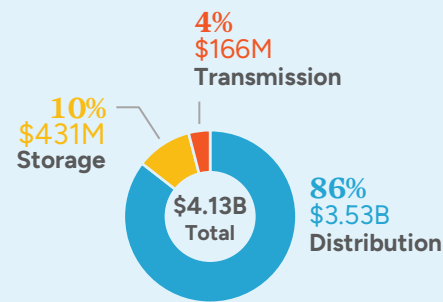
<sup>44</sup> For more on PGL's bad debt expenses, see Section 5.E.2 of this report.

<sup>45</sup> For the 1990 figure, see PGL, Annual Report on Form 10-K for fiscal year ended September 30, 1994, Item 6, p. 11, <https://www.sec.gov/Archives/edgar/data/77388/0000912057-94-004271.txt>. For the 2023 figure, see ICC, *Comparison of Gas Sales Statistics for 2022 and 2023* (July 2024), Table 4, p. 4, <https://www.icc.illinois.gov/downloads/public/ng/23-22Comparison%20of%20Gas%20Sales%20Statistics.pdf>.

# Highlights of PGL and WEC Energy's gas system investments in Chicago

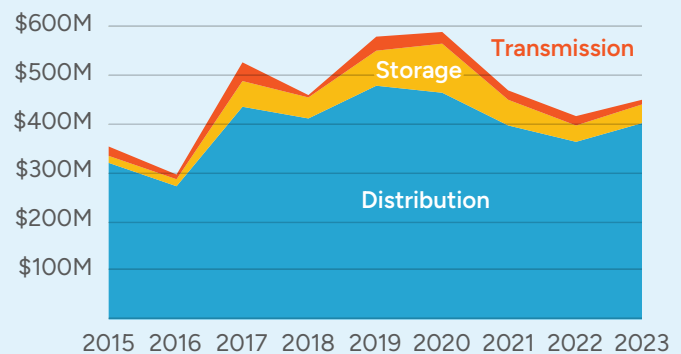
- From 2015 through 2023, the two companies invested \$4.1 billion in distribution, transmission, and storage infrastructure, or \$459 million per year.<sup>1</sup>
- The vast majority of this investment (86%) has been in distribution plant and approximately half that amount has been in pipeline mains which have a lengthy cost recovery period of approximately 65 years.<sup>2</sup>
- PGL's gas-plant-in-service balance for distribution, transmission, and storage assets ballooned by 80% from the end of 2014 to the end of 2023, increasing from \$3.6 billion to \$6.5 billion.<sup>3</sup>

**Figure 3.1: Total spending on PGL gas system by category, 2015-2023**



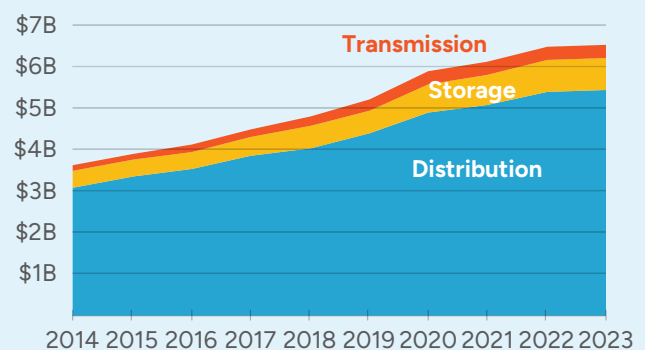
Source: GWD analysis of ICC, 2023 PGL Rate Case, Docket No. 23-0069, PIO Ex. 1.2, pp. 3-4.

**Figure 3.2: Trends in spending on PGL gas system by category, 2015-2023**



Source: GWD analysis of ICC, 2023 PGL Rate Case, Docket No. 23-0069, PIO Ex. 1.2, pp. 3-4.

**Figure 3.3: Growth in PGL's gas plant in service, 2014 (EOY) - 2023 (EOY)**



Source: GWD analysis of "Gas Plant in Service" Schedule, PGL ICC Form 21 ILCC (various years)

<sup>1</sup> Calculated from ICC, 2023 Rate Case for PGL, Docket No. 23-0069, PIO Exhibit 1.2, pp. 3-4. <https://www.icc.illinois.gov/docket/P2023-0069/documents/337548/files/588151.pdf>. Note: Calculations exclude intangible plant and plant related to manufactured gas and land rights. They also exclude capital spending on general plant and information technology which totaled another \$339 million over this period. 2023 figures are estimates.

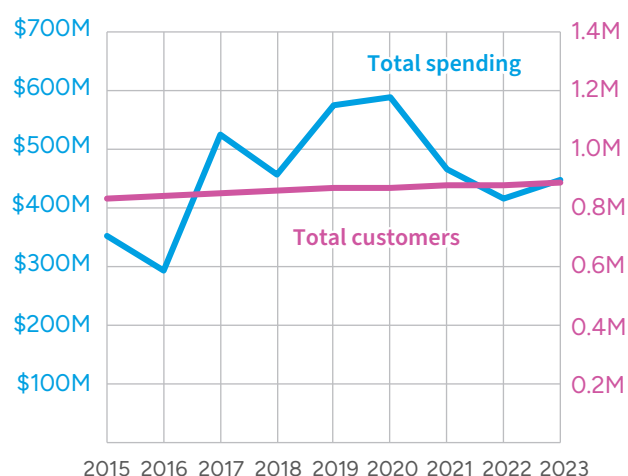
<sup>2</sup> ICC, 2023 Rate Case for Peoples Gas, Docket No. 23-0069, PGL Ex. 9.1: "Summary of the depreciation study," Table 1, Survivor Curve entry for plastic mains, [https://drive.google.com/file/d/10X3MrkN5ZDybC6g-d7hzYUqnvr9CT8CQ/view?usp=drive\\_link](https://drive.google.com/file/d/10X3MrkN5ZDybC6g-d7hzYUqnvr9CT8CQ/view?usp=drive_link).

<sup>3</sup> PGL, Form 21 ILCC for 2023 (various years), "Gas Plant in Service" Schedule, <https://www.icc.illinois.gov/downloads/public/filing/2/2/2/372732.pdf>. Figures show end-of-year balances after retirements, adjustments, and transfers.



As shown in Figure 3.4, from 2015 to 2023, PGL’s customer base increased by 0.7% while average annual gas system spending increased considerably through 2020 and then declined during the Covid pandemic. To continue the substantial remaining SMP work – 63% of which remains to be completed – system costs must be spread over a customer base that has shown little growth for several decades. This strongly suggests that gas delivery charges for Peoples Gas customers will continue to rise *independently* of climate policies.

**Figure 3.4: Total distribution, transmission, and storage capital spending versus customer counts**



Source: GWD analysis of ICC, 2023 PGL Rate Case, Docket No. 23-0069, PIO Ex. 1.2, pp. 3-4 and ICC, *Comparison of Gas Sales Statistics* (various years), <https://www.icc.illinois.gov/icc-reports/report/comparison-of-gas-sales-statistics>.

## 1. Modeling results for “Full SMP” scenario with a stable gas customer base

We apply our Gas Delivery Cost Model to assess a resumed “Full SMP” scenario. We define Full SMP as having the following scope as of the end of 2023:<sup>46</sup>

- Replace 1,506 miles of cast iron and ductile iron and low-pressure mains

<sup>46</sup> See the Appendix on Modeling for further description of Full SMP scope, data sources, and a description of Groundwork Data’s Gas Delivery Cost Model. “Full SMP” scope includes all the scope items presented by PGL in ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 61, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

- Reconnect and/or replace 202,779 services
- Relocate 346,912 meters
- Install 30 miles of high-pressure main

The scope of Full SMP reflects the complete set of items that Peoples Gas has identified as constituting its “historical approach to upgrading its gas distribution system.”<sup>47</sup>

For our modeling input values, we rely on data submitted by Peoples Gas to the ICC during its 2023 rate case, information found in PGL’s SMP Quarterly Reports (particularly the Q4 2023 report), and information provided in PGL’s major report filed at the beginning of the company’s 2024 SMP Investigation (Docket No. 24-0081). Our major assumptions are as follows:<sup>48</sup>

- Peoples Gas restarts its Full SMP in 2025.
- All work is completed by 2040 and is spread evenly across the 15-year period (2025-2040).
- The company’s gas customer base remains stable (we explore a declining customer base in Section 3.C.2).
- Historic unit cost rates for SMP work (e.g., \$ per retirement mile, \$ per service line) remain stable.
- An annual inflation adjustment of 2.5%.
- Non-SMP spending continues in line with prior years at a rate of \$116 million per year for the remainder of SMP.<sup>49</sup>

Our key modeling findings for this scenario (Full SMP with a stable customer base) are as follows (see Table 3.1 and Figures 3.5 and 3.6 for further detail):

- 1. Revenue requirement impact.** Under the Full SMP Scenario, by 2030, Peoples Gas’s revenue requirement would need to increase by nearly a third to fund capital spending for both SMP and non-SMP projects. By SMP’s projected 2040 end date, the annual revenue requirement roughly

<sup>47</sup> See Program Option 2 in ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 61, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>48</sup> See the Appendix for further details.

<sup>49</sup> Non-SMP capital spending includes capital spending on storage, transmission, and non-SMP distribution infrastructure. The latter consists largely of spending on new line extensions. We have excluded spending on General Plant and Information Technology. See the Appendix for detailed notes and sources.



“Managing the increasing costs of the gas system under Full SMP spending would require the ICC to place Peoples Gas customers on a steep trajectory of rising gas delivery costs. By 2040, the average annual per-customer delivery charge would need to double, increasing from \$1,260 to \$2,424 – requiring a year-over-year increase of 6.7%.”

doubles from its 2025 level (peaking at \$2.1 billion in 2040, up from \$1.1 billion in 2025).

2. **Customer impact.** Managing the increasing costs of the gas system under Full SMP spending would require the ICC to place Peoples Gas customers on a steep trajectory of rising gas delivery costs. By 2040, the average annual per-customer delivery charge would need to double, increasing from \$1,260 to \$2,424 (see Figure 3.5). This would require year-over-year rate increases of 6.7%.
3. **Unrecovered balances.** Committing to Full SMP spending would significantly increase PGL’s asset recovery risk profile. Currently, the company has about \$5 billion in unrecovered gas plant assets in its approved rate base.<sup>50</sup> Under the Full SMP scenario, PGL’s unrecovered assets would increase by 128% from 2025 to by 2040, rising from \$5.2 billion (\$5,846 per customer) to nearly \$12 billion (\$13,298 per customer) (see Figure 3.6). Complete SMP cost recovery would not conclude until around 2100, assuming an average depreciation rate of 65 years for the last SMP main installed in 2040.<sup>51</sup>
4. **Total capital costs.** Given the extensive work remaining, PGL and WEC Energy will need to spend much more annually on the SMP than they previously have or project to. To complete the SMP by 2040, our analysis finds that SMP

spending would need to increase to \$547 million beginning in 2025. The historical annual average spend for the SMP has been \$280 million (as of Dec. 31, 2023).<sup>52</sup>

**Table 3.1: Modeling results for Full SMP scenario with a stable customer base (2.5% annual inflation factor assumed)**

	2025	2030	2040
<b>Total cumulative capex</b>	\$663M	\$4,234M	\$12,847M
<b>Cumulative capex - SMP only</b>	\$547M	\$3,711M	\$12,668M
<b>Revenue requirement</b>	\$1,069M	\$1,408M	\$2,149M
<b>Cumulative revenue requirement</b>	\$1,069M	\$7,427M	\$25,497M
<b>Average annual delivery cost per customer</b>	\$1,206	\$1,588	\$2,424
<b>Unrecovered balances</b>	\$5.18B	\$7.38B	\$11.79B

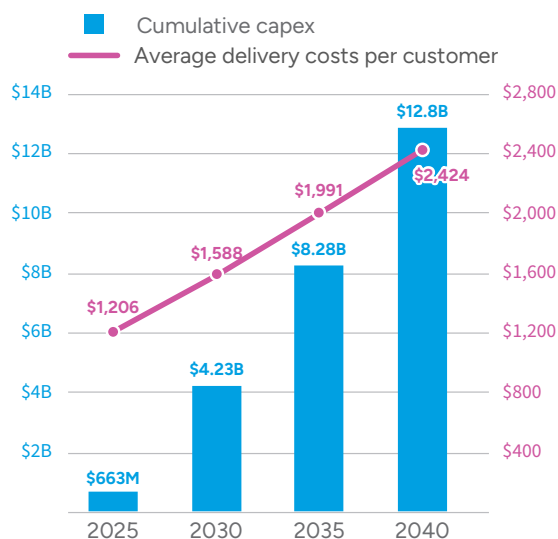
Source: GWD modeling results.

<sup>50</sup> Unrecovered gas plant assets refer to gas plant assets that have been put into service but which have not yet been fully paid back by ratepayers. We measure these as the difference between original cost and accumulated depreciation.

<sup>51</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, PGL Ex. 9.1: “Summary of the depreciation study,” Table 1, Survivor Curve entry for plastic mains, [https://drive.google.com/file/d/10X3MsrkN5ZDyBC6g-d7hzYUqnvr9CT8CQ/view?usp=drive\\_link](https://drive.google.com/file/d/10X3MsrkN5ZDyBC6g-d7hzYUqnvr9CT8CQ/view?usp=drive_link).

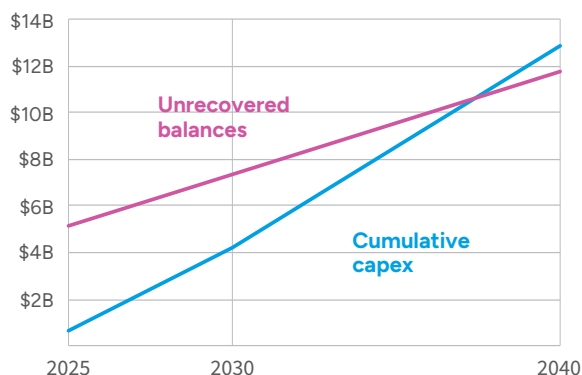
<sup>52</sup> According to WEC Energy, SMP historical annual average spend as of Dec. 31, 2023 was \$280 million. WEC Energy, *September 2024 Investor Book*, p. 35, [https://s22.q4cdn.com/994559668/files/doc\\_presentations/2024/Sep/03/09-2024-september.pdf](https://s22.q4cdn.com/994559668/files/doc_presentations/2024/Sep/03/09-2024-september.pdf).

**Figure 3.5: Cumulative capex & average delivery costs per customer under Full SMP with a stable customer base, 2025-2040**



Source: GWD modeling results.

**Figure 3.6: Cumulative capex & unrecovered balances under Full SMP with a stable customer base (millions)**



Source: GWD modeling results.

## PGL's current SMP timeline is not feasible

Given Peoples Gas's historical replacement rate of 58 miles of main per year (2018-2023), it is improbable that the SMP will be completed by the projected 2040 end date. At its current pace the program would extend to 2051. For the program to meet the 2040 deadline, PGL would need to significantly increase its annual replacement rate to 94 miles per year.<sup>53</sup> Concern regarding the feasibility of the SMP timeline has also been expressed by the ICC.<sup>54</sup>

Additionally, the SMP quarterly reports indicate a substantial backlog of projects slated to begin in 2040. If not addressed proactively, this backloading could lead to coordination challenges across multiple neighborhoods, thereby potentially complicating project management and leading to increased costs.

## 2. Challenges and considerations for Peoples Gas beyond 2040

The financial and operational implications of the SMP through 2040 are critical but it is equally important to address four key concerns that will persist beyond this timeline and require attention today: the infeasibility of the 2040 completion SMP timeline, PGL's mounting stranded asset risk, the impact of uncertainty about PGL's asset retirement obligations (AROs), and the need for replacement programs beyond the SMP.

<sup>53</sup> In PGL's April 2024 filing (<https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>), PGL states that 983 miles of CI/DI low-pressure main and 80 miles of CI/DI medium-pressure main remain to be replaced under SMP, or 1,063 miles of leak-prone main. The company's quarterly reports to the ICC refer to retiring 1,506 miles of main, a total that includes additional miles of main related to medium-pressure upgrade projects. Assuming SMP recommences in 2025, that leaves 16 years to complete SMP, requiring a replacement rate of 1,506 divided by 16, or 94 miles per year, a rate that is 62% higher than its historic replacement rate.

<sup>54</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Final Order, p. 28, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306/files/601245.pdf>.

“assuming an average useful life of 65 years, approximately 71.5 miles [of distribution mains] would need to be replaced each year in perpetuity.”

### Stranded asset risk from unrecovered balances is accelerating

This analysis shows that Peoples Gas faces growing stranded asset risk. The company's undepreciated balances are already substantial (\$5 billion) and could rise to nearly \$12 billion by 2040 if Full SMP resumes, with cost recovery extending into the 22nd century.

The current regulatory model assumes gas mains and services will remain used and useful throughout their expected physical lives. However, emissions-related policies and the prospect of declining gas demand – issues addressed later in this section – may shorten the useful lives of pipelines, reduce capacity utilization, and/or lower the profitability of gas infrastructure. Any of these shifts would heighten the risk of unrecoverable gas investments (i.e., undepreciated balances) with negative consequences for PGL's market valuation.

Managing stranded asset risk is a critical task for regulators nationwide, who are increasingly focused on reducing the creation of long-lived gas assets. The ICC has flagged stranded gas assets as a key issue to be considered in its Future of Gas proceeding. In Section 5, we show that lower spending levels today can reduce the risk of unrecovered costs. (See Figure 5.1 for how other states are tackling stranded gas assets.)

### The obligation to retire gas infrastructure assets

An asset retirement obligation (ARO) is a liability recorded on a gas utility's balance sheet,

arising from the legal requirement to retire or decommission assets like distribution mains or services.<sup>55</sup> Peoples Gas collects for these eventual retirement costs through negative net salvage values in its depreciation rates, spreading the expected cost over time.

If gas asset service lives are shortened due to planned transitions or customer attrition, the company's ARO liability would increase accordingly. Peoples Gas would likely request a revised depreciation schedule to recover these costs over a shorter period. If accelerated depreciation is not approved, Peoples Gas could face financial risk, potentially drawing on reserves to cover retirement costs, which may increase financial exposure and lead to higher costs for ratepayers.

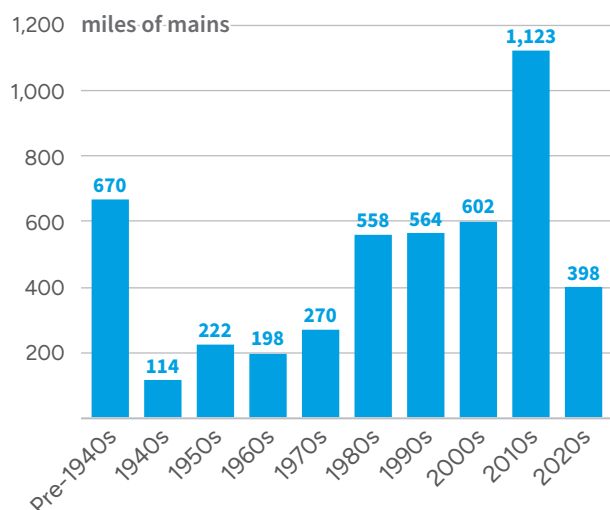
### Replacement programs beyond SMP will be needed to address additional aging pipeline

The Peoples Gas distribution system consists of approximately 4,700 main miles installed at different points in time.<sup>56</sup> If installations had occurred at a relatively even pace across the years, then, assuming an average useful life of 65 years, approximately 71.5 miles would need to be replaced each year in perpetuity. This means that after the SMP concludes, whether in 2040 or the early 2050s, Peoples Gas will face the ongoing challenge of replacing gas mains as they age. By the late 2040s and 2050s, many distribution mains installed in the 1980s and 1990s – roughly 1,100 miles – will be approaching the end of their useful lives, a substantial next-up cohort of pipeline in line for replacement. (See Figure 3.7 for the decadal age distribution of the company's distribution mains as of 2023.)

<sup>55</sup> U.S. Federal Energy Regulatory Commission (FERC), Docket No. RM02-7-000, Order No. 631 Accounting, Financial Reporting, and Rate Filing Requirements for Asset Retirement Obligations (April 9, 2003), p. 6, <https://www.ferc.gov/sites/default/files/2020-05/RM02-7-04-09-03.pdf>.

<sup>56</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 8, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

**Figure 3.7: PGL distribution mains installed by decade**



Source: PHMSA, Gas Distribution Annual Data: 2010 to present (ZIP extracted for 2023), <https://www.phmsa.dot.gov/data-and-statistics/pipe-line/gas-distribution-gas-gathering-gas-transmission-hazardous-liquids>.

The above four findings are critical to the ICC's consideration of the SMP's future feasibility. They underscore the growing problem of stranded asset risk and the likelihood that, beyond 2040, the need for capital expenditures to replace aging gas mains is unlikely to meaningfully decline. They also highlight the massive nature of the proposed "modernization" of Chicago's gas delivery system and the fact that the SMP – today only 37% complete – would constitute only a downpayment on an overhaul that would last well beyond 2040, continuing indefinitely as long as the system is in service.

## B. Threat 2: Clean energy policies

The increasing adoption of clean energy policies poses a significant threat to the traditional natural gas utility business model. Federal, state, and local governments are implementing mandates and incentives that promote renewable energy and drive the decarbonization of the energy sector. These policies aim to reduce reliance on fossil fuels and encourage the adoption of cleaner, more efficient energy systems, reshaping the energy market and

exerting both regulatory and competitive pressures on gas utilities.

Here we examine how these evolving clean energy policies are impacting the operations and financial stability of Peoples Gas.

### 1. State policy

In 2019, Governor Pritzker signed an executive order committing the state to the principles of the Paris Climate Agreement.<sup>57</sup> Two years later, Illinois instituted its most prominent energy legislation, the 2021 Clean and Equitable Jobs Act (CEJA). CEJA's key provisions relevant to this analysis include:

- **Phasing out fossil fuels.** The state commits to phasing out coal and gas electricity by 2045 and increasing renewable energy to 40% by 2030 and 50% by 2040.
- **Beneficial electrification plans.** The two largest electric utilities must develop plans and on-bill financing programs to support clean energy technology adoption.<sup>58</sup>
- **Energy affordability study.** The ICC must study energy affordability for low-income households and develop a new low-income discount rate (LIDR) structure that limits gas and electric charges for low-income households to no more than 6% of their income. The study was completed in December 2022 and gas utilities are on track to roll out their LIDRs by October 2024, with electric utilities to follow thereafter.<sup>59</sup>
- **Stretch Energy Code.** Illinois must develop a Stretch Energy Code for greater building efficiency. The now-finalized draft code incentivizes, but does not mandate, electric over gas in new construction.<sup>60</sup>

<sup>57</sup> Illinois Executive Order Number 06-19 (January 23, 2019), <https://www.illinois.gov/government/executive-orders/executive-order-executive-order-number-6-2019.html>

<sup>58</sup> For a fuller treatment of Illinois' energy transition legislation and orders, see Figure 2.2 of Dorie Seavey et al., *The Future of Gas in Illinois* (May 2024, Building Decarbonization and Groundwork Data), <https://buildingdecarb.org/resource/the-future-of-gas-in-illinois>.

<sup>59</sup> ICC, Bureau of Public Utilities, *Low-Income Discount Rate Study Report to the Illinois General Assembly* (December 2022), 8, <https://icc.illinois.gov/downloads/public/icc-reports/low-income-discount-rate-study-report-2022-12-15.pdf>.

<sup>60</sup> CEJA required the establishment of a Stretch Energy Code that would be available for municipalities to adopt (or opt into) beginning June 2024. The code is based on the International Energy Conservation Code (IECC) with some modifications. Despite calls for the stretch

CEJA did not specifically address the role of the gas system in the energy transition nor did it establish decarbonization targets for the building sector or specify greenhouse gas (GHG) emissions targets for the gas distribution industry. In an effort to address this gap, the ICC's Future of Gas proceeding is designed to investigate the decarbonization of the gas distribution system. According to the ICC, "the main goal of the proceedings is to explore issues tied to decarbonization of the gas distribution system, including how the gas systems may need to adapt. Additionally, the proceedings aim to develop recommendations for future Commission actions and any necessary legislative changes."<sup>61</sup>

In March 2024, the Illinois Environmental Protection Agency released its 2024 Priority Climate Action Plan (PCAP), a major planning document providing guidance and coordination for the state's climate planning, including assisting Illinois with applying for federal climate-related funding. Consistent with the state's decarbonization objectives, the PCAP sets two key goals for the building sector:<sup>62</sup>

- Reaching a 33% reduction in energy use in buildings by 2050.
- Accelerating the use of efficient, all-electric heating and appliances in buildings, increasing their share of new sales to 50%-90% by 2050.

The PCAP finds that "by 2050, Illinois will need to improve efficiency and install electric appliances in millions of homes and buildings to meet its commitment to the Paris Agreement."<sup>63</sup>

## 2. City of Chicago policy

Over the past five years, the city of Chicago – home to 23% of Illinois' population and the third-largest city in the U.S. – has significantly increased its

code to require all-electric buildings, the code still allows for the use of fossil fuels. However, buildings that use fossil fuels will be required to implement additional energy efficiency measures, such as high efficiency furnaces, lower air exchange rates, and greater efficiency applications. The stretch code also requires new construction buildings to be electric-ready. <https://cdb.illinois.gov/business/codes/illinois-energy-codes/illinois-stretch-energy-code.html>.

<sup>61</sup> ICC, Future of Gas Proceedings, <https://www.icc.illinois.gov/programs/Future-of-Gas-Workshop>.

<sup>62</sup> Illinois Environmental Protection Agency, *Priority Climate Action Plan* (March 1, 2024), pp. 22-23, <https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/climate/documents/Illinois%20Priority%20Climate%20Action%20Plan.pdf>.

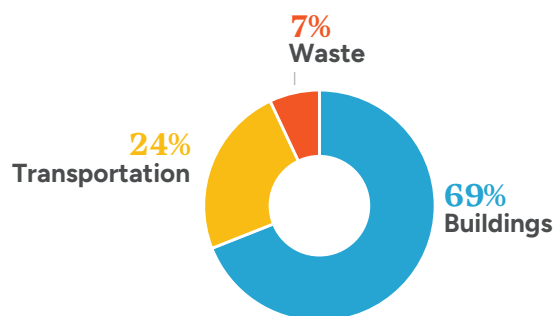
<sup>63</sup> Ibid.

climate commitments, setting aggressive GHG targets as detailed below. The city is actively pursuing policies that suggest a gradual but significant transition away from natural gas in its building sector, although the timeline for this transition remains uncertain.

In 2019, the Chicago City Council enacted a resolution to transition to 100% clean, renewable energy community-wide by 2035. This resolution also committed the city to use 100% clean, renewable energy for municipal operations by 2025 and for the Chicago Transit Authority to fully electrify its bus fleet by 2040.

The 2022 Climate Action Plan set a target of a 62% reduction in all emissions by 2040 relative to a 2017 baseline. An addendum in 2023 estimated a possible 67% reduction through additional programs and standards. Finally, in 2023, the city released its first citywide plan in half a century – We Will Chicago – which includes a number of ambitious clean energy goals.<sup>64</sup>

**Figure 3.8: Buildings' share of greenhouse gas emissions in Chicago, 2017**



Source: City of Chicago Greenhouse Gas Inventory Report (December 2019), p. ix, [https://www.chicago.gov/content/dam/city/progs/env/GHG\\_InVENTORY/Chicago-2017-GHG-Report\\_Final.pdf](https://www.chicago.gov/content/dam/city/progs/env/GHG_InVENTORY/Chicago-2017-GHG-Report_Final.pdf)

The building sector is central to the city's clean energy planning as it is responsible for nearly 70% of Chicago's emissions (see Figure 3.8).<sup>65</sup> In summer 2023, Mayor Brandon Johnson's transition team recommended:<sup>66</sup>

<sup>64</sup> City of Chicago, *We Will Chicago*, <https://wewillchicago.com/plan>.

<sup>65</sup> Louise Sharrow et al., *Building Electrification Helps Illinois Achieve Climate Goals*, RMI (September 2020) <https://rmi.org/insight/building-electrification-helps-illinois> and City of Chicago, *2022 Climate Action Plan*, <https://www.chicago.gov/city/en/sites/climate-action-plan/home.html>.

<sup>66</sup> City of Chicago, *A Blueprint for Creating a More Just and Vibrant City for All: Transition Team Report to Mayor Brandon Johnson* (July



- ▶ Requiring all new buildings and major renovations to use efficient, all-electric equipment and build rooftop solar-ready infrastructure plus incentivize the adoption of heat pumps, all-electric equipment, and renewable energy technologies.
- ▶ Developing policies to retrofit existing buildings, including measures to address indoor air pollution by transitioning away from fossil fuel heating, cooling, and cooking.

Community pressure to speed up emissions control and building decarbonization in Chicago is increasing. Beyond broad GHG emission reduction goals, prior policy has focused on measuring and reporting carbon emissions but without specific requirements for reducing emissions. That has begun to change. In January 2024, Mayor Johnson proposed a Clean and Affordable Buildings Ordinance (CABO) that would require zero-to-low emission energy systems in new construction. Over fifty other municipalities across the country, including New York City, Los Angeles, and San Francisco, have passed similar ordinances promoting the design of buildings without gas connections. WEC Energy reported that “PGL’s future natural gas operations could be materially adversely impacted if the CABO is passed.”<sup>67</sup>

In March 2024, the Urban Land Institute Chicago released a report calling on the city to take bolder steps to reduce GHG from existing buildings and accelerate building decarbonization,<sup>68</sup> including adopting building performance decarbonization standards policy for the city that require switching to clean, renewable energy sources over specific periods of time, ultimately reaching net zero. This report has the support of a wide swath of industry experts, civic and community leaders, and public sector officials.

Leading examples of city policy actions related to building decarbonization are detailed in Figure 3.9.

Chicago has put in place several funding programs to support building upgrades and adoption of alternate technologies (see Figure 3.10). In addition, \$263 million in funding has been allocated to Illinois under the Inflation Reduction Act (IRA) for two home energy rebate programs (HOMES and HEERA).<sup>69</sup> The funds are administered by the Illinois Environmental Protection Agency (EPA) and have not yet been processed or released. According to the IL EPA, “Illinois plans to allocate 100% of rebate funds to low-income households (i.e., households with less than 80% of the area median income); a minimum of 10% is to be allocated to low-income multifamily buildings.”<sup>70</sup> Approximately 26% of the state’s low-income households are located in the city of Chicago. Illinois also recently received \$172 million in additional funds from the IRA’s Climate Pollution Reduction Grant program to assist localities in decarbonizing their building sectors.

Finally, Peoples Gas and Commonwealth Edison (ComEd) – Chicago’s electricity utility – have ratepayer-funded energy efficiency programs that together provide approximately \$448 million in funds annually. While these programs support the general goal of energy efficiency, they may lack alignment with state and local building decarbonization and electrification goals. For example, PGL’s program provides rebates for the purchase of new gas appliances and furnaces.

The various federal, state, and local funding streams described in Figure 3.10 together leverage significant sources of funding to support Chicago’s building decarbonization efforts. Effort is focused on coordinating initiatives across state and local agencies and energy utilities, identifying delivery approaches that braid together available incentives and promote greater awareness of decarbonization programs.

2023), p. 80, [https://www.chicago.gov/City/en/depts/Mayor/supp\\_info/transition-report.html](https://www.chicago.gov/City/en/depts/Mayor/supp_info/transition-report.html).

<sup>67</sup> WEC Energy Group, *2023 Annual Report*, p. F-32, <https://www.wecenergygroup.com/invest/annualreports/wec2023-annual-report.pdf>.

<sup>68</sup> “Chicago has an extensive stock of older buildings. According to an analysis by the National Trust, in 2015, Chicago had more than 500,000 buildings and more than half were nearly 100 years old. Swasti Shah, *Climate Ready Chicago: Strategies for Accelerating Building Decarbonization* (March 2024, Urban Land Institute), p. 14, <https://chicago.uli.org/report-released-climate-ready-chicago/>.

<sup>69</sup> Illinois Environmental Protection Agency, Office of Energy, Energy Rebates, <https://epa.illinois.gov/topics/energy/energy-rebates.html>.

<sup>70</sup> Ibid.

### Figure 3.9: Chicago building decarbonization policies

**Building retrofit and electrification targets from the 2022 Climate Action Plan.** These provide for a) retrofitting 20% of 5-plus unit residential buildings by 2030 and 50% by 2040; 20% of commercial buildings by 2035; and b) electrifying 30% of existing residential buildings by 2035, 10% of existing commercial buildings by 2035, and 90% of existing city-owned buildings by 2035.

**Building and energy codes and other housing development requirements.** All-electric construction and advanced decarbonization are supported by the *Chicago Energy Transformation Code*, effective November 2022. Residences must be built with electrical capacity and wiring necessary to support full electrification without disallowing gas appliances.<sup>1</sup> In addition, as of 2023, all affordable housing developed with city support must be all-electric.<sup>2</sup> The strengthened 2024 *Sustainable Development Policy* (SDP) promotes sustainable building methods and materials for city-assisted construction and rehab projects requiring certain types of funding and zoning approvals. The *Chicago Energy Benchmarking Ordinance* requires commercial, institutional, and residential buildings over 50,000 square feet to report their energy consumption annually and verify their data every 3 years.

### Proposed Clean and Affordable Buildings Ordinance (CABO).

CABO would set an indoor emissions limit banning the combustion of fuels that emit more than 25 kg/btu, effectively requiring all new construction to use clean power sources.<sup>3</sup> The ordinance was introduced to the City Council in January 2024. Exceptions are provided for commercial cooking, emergency backups, among others.

**100% renewable energy for city government buildings and operations.** In August 2022, the city announced an agreement to purchase 100% renewable energy starting in 2025 for all city facilities and operations.<sup>4</sup> This makes Chicago one of the largest cities to make this commitment; one of IL's largest solar projects to date will supply the clean energy.

<sup>1</sup> The CETC regulates minimum energy conservation requirements for all aspects of energy uses in both new construction and building renovations. This code exceeds the latest edition of the International Energy Conservation Code (IECC). [https://www.chicago.gov/City/en/depts/bldgs/provdrs/bldg\\_code/alerts/2022/october/energycode.html](https://www.chicago.gov/City/en/depts/bldgs/provdrs/bldg_code/alerts/2022/october/energycode.html).

<sup>2</sup> City of Chicago, Department of Housing, *2023 Architectural Technical Standards Manual* (effective April 4, 2023), p. 35, [https://www.chicago.gov/content/dam/City/depts/doh/qap/qap\\_2023/ATS-2023-8.2.23.pdf](https://www.chicago.gov/content/dam/City/depts/doh/qap/qap_2023/ATS-2023-8.2.23.pdf).

<sup>3</sup> City of Chicago, Proposed Clean & Affordable Buildings Ordinance (January 2024), <https://news.wttw.com/sites/default/files/article/file-attachments/cd502415-4ff4-440a-8f92-7cdf53888b00.pdf>. Peoples Gas issued a statement saying "We believe this proposed ordinance is a terrible idea for Chicago. It would increase costs and risk reliability for everyone, especially during the coldest days of the year like we are seeing this week." Ysabelle Kempe, "Chicago mayor proposes natural gas ban in new ComEd buildings," *Smart Cities Dive* (January 25, 2024), <https://www.smartcitiesdive.com/news/chicago-mayor-natural-gas-ban-new-buildings-electrification-decarbonization-emissions/705580/>.

<sup>4</sup> City of Chicago, Office of the Mayor, "Mayor Lightfoot Announces Agreement to Purchase 100% Clean, Renewable Energy Starting in 2025," Press Release (August 8, 2022), [https://www.chicago.gov/city/en/depts/mayor/press\\_room/press\\_releases/2022/august/Purchase100Percent-CleanRenewableEnergy2025.html](https://www.chicago.gov/city/en/depts/mayor/press_room/press_releases/2022/august/Purchase100Percent-CleanRenewableEnergy2025.html).



### Figure 3.10: Public funding streams supporting clean-energy for Chicago's building sector

#### City of Chicago

**Green Homes Chicago.** This program provides income-eligible homeowners with up to \$50,000 in comprehensive retrofit services plus new insulation, heat pump HVAC systems, induction stoves, heat pump water heaters and clothes dryers, and other energy saving measures.<sup>1</sup> The program is delivered by the nonprofit Elevate and Zero Homes. With 2023 funding of \$21 million, this program aims to accelerate the decarbonization of 1-6 unit residential buildings owned by low- and moderate-income homeowners and also larger multi-family buildings.

**Climate Infrastructure Fund.**<sup>2</sup> Proceeds from a 2021 City of Chicago Bond issue fund yearly grants to accelerate Chicago's green economy transition by seeding energy efficiency/renewable energy projects by small businesses and nonprofits. In 2024, \$3.7 million is to be dispersed, including grants for EVs, charging stations, and green stormwater management.<sup>3</sup>

**Illinois Solar For All.** Created in 2017, this program provides incentives for distributed generation and community solar projects in low-income and environmental justice communities. With a 2024-2025 budget of \$66.5 million,<sup>4</sup> the program is administered by the nonprofit Elevate and is funded by the federal government, the state's renewable portfolio standard, and various utility tariffs.<sup>5</sup> Over the last 5 years, the program has supported 545 projects in ComEd territory.<sup>6</sup> An additional

pilot supports repairs and upgrades required for on-premise solar photovoltaic installation, such as roof repairs and electrical work.

**PGL and ComEd energy efficiency and demand reduction programs.** PGL and ComEd annually budget about \$24.4 million and \$423.9 million, respectively, to assist their customers with energy efficiency.<sup>7</sup> These programs are statutorily mandated and overseen by the ICC. The two utilities have joint or coordinated programs for income-eligible, single-family and multifamily upgrades and for building envelope improvements for non-income-eligible homes. In addition, rebates on the gas side support new gas appliances and furnaces; on the electric side, rebates assist with upgrading from electric resistance heating to heat pumps.

#### Inflation Reduction Act (IRA) and Illinois

**HEERA (High Efficiency Electric Home Rebate Act) and HOMES (Home Owner Managing Energy Savings) rebates for low-income households.** \$263 million in funding has been allocated to Illinois under the Inflation Reduction Act (IRA) for two home energy rebate programs, HOMES and HEERA.<sup>8</sup> Administered by the IL EPA, 100% of the funding is to be directed to low-income residences.

**Energy-Efficient Commercial Buildings Tax Deduction (Section 179D).** This federal tax credit provides an estimated cash value of roughly 25% for energy efficiency upgrades to multifamily residential buildings (4+ stories).

**Climate Pollution Reduction Grant.** CPRG is allocating \$172 million to the IL EPA to distribute to state and local governments for comprehensive GHG and air pollution reduction plans via building electrification.<sup>9</sup>

<sup>1</sup> City of Chicago, Office of the Mayor, Press Release (July 20, 2023), [https://www.chicago.gov/City/en/depts/Mayor/press\\_room/press\\_releases/2023/july/ResidentialDecarbonizationRetrofitProgram.html](https://www.chicago.gov/City/en/depts/Mayor/press_room/press_releases/2023/july/ResidentialDecarbonizationRetrofitProgram.html). See also: [https://www.chicago.gov/City/en/depts/doh/supp\\_info/residential-housing-decarbonization-and-retrofits.html](https://www.chicago.gov/City/en/depts/doh/supp_info/residential-housing-decarbonization-and-retrofits.html).

<sup>2</sup> City of Chicago, Climate Infrastructure Projects, <https://www.chicago.gov/City/en/sites/dpd-recovery-plan/home/climate-infrastructure-projects.html>.

<sup>3</sup> City of Chicago, Office of the Mayor, Press Release (January 30, 2024), [https://www.chicago.gov/City/en/depts/mayor/press\\_room/press\\_releases/2024/january/climate-infrastructure-fund-grants-will-support-solar-arrays--el.html](https://www.chicago.gov/City/en/depts/mayor/press_room/press_releases/2024/january/climate-infrastructure-fund-grants-will-support-solar-arrays--el.html).

<sup>4</sup> Illinois Power Agency, *2024 Long-Term Renewable Resources Procurement Plan* (April 2024), Table 8-2, p. 255, <https://ipa.illinois.gov/content/dam/soi/en/web/ipa/documents/final-2024-long-term-renewable-resources-procurement-plan-19-apr-2024.pdf>.

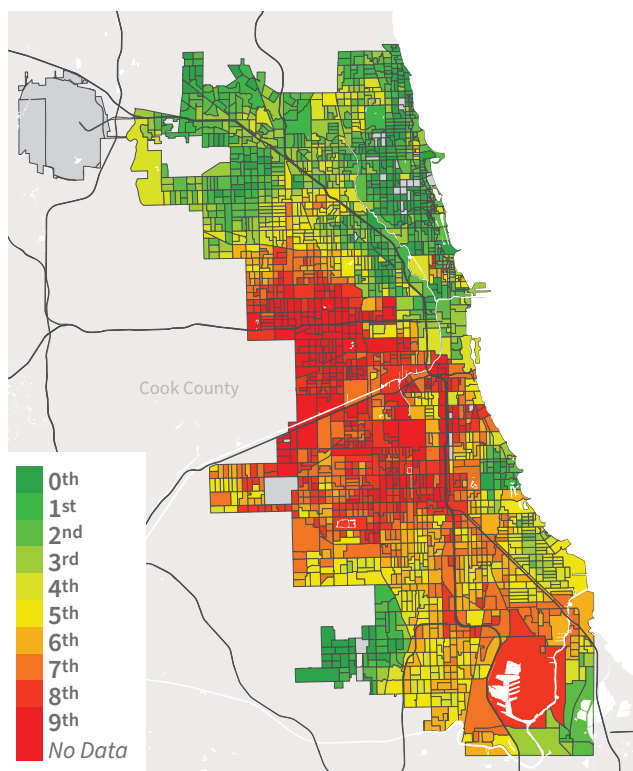
<sup>5</sup> The program recently received an additional \$156 million in federal funding, <https://www.epa.gov/newsreleases/epa-announces-illinois-finance-authority-receive-more-156-million-deliver-residential>.

<sup>6</sup> Illinois Power Agency, *2024 Long-Term Renewable Resources Procurement Plan* (April 2024), Figure 8-1, p. 248, <https://ipa.illinois.gov/content/dam/soi/en/web/ipa/documents/final-2024-long-term-renewable-resources-procurement-plan-19-apr-2024.pdf>.

<sup>7</sup> PGL, Energy Efficiency Plan 4 for January 1, 2022 - December 31, 2025, p. 7, [https://www.ilsag.info/wp-content/uploads/Peoples-Gas-2022-2025-EE-Plan\\_filed-March-2021.pdf](https://www.ilsag.info/wp-content/uploads/Peoples-Gas-2022-2025-EE-Plan_filed-March-2021.pdf); ComEd, Commonwealth Edison Company's Revised Energy Efficiency and Demand Response Plan 2022-2025, ICC Docket No. 21-0155, ComEd Ex. 1.01R - Corr., p. 7, <https://icc.illinois.gov/api/web-management/documents/downloads/public/future-of-gas/ComEd%202022-25%20Energy%20Efficiency%20Plan.pdf>.

<sup>8</sup> Illinois Environmental Protection Agency, Office of Energy, Energy Rebates, <https://epa.illinois.gov/topics/energy/energy-rebates.html>.

<sup>9</sup> U.S. Environmental Protection Agency, Inflation Reduction Act, <https://www.epa.gov/inflation-reduction-act/state-illinois>.



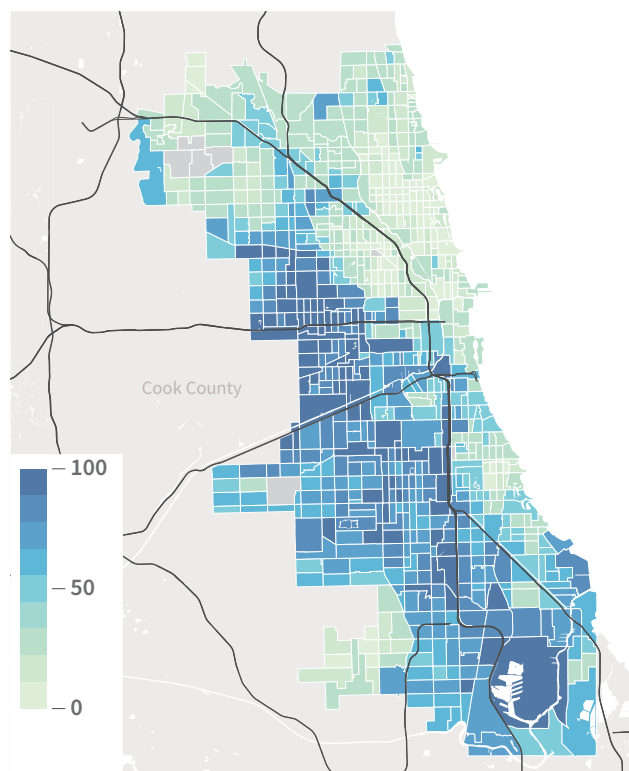
**Figure 3.11: Air quality and health index, Chicago 2020**

Source: City of Chicago, Air Quality and Health Report (2020), p. 7, [https://www.chicago.gov/content/dam/city/depts/cdph/statistics\\_and\\_reports/Air\\_Quality\\_Health\\_doc\\_FINALv4.pdf](https://www.chicago.gov/content/dam/city/depts/cdph/statistics_and_reports/Air_Quality_Health_doc_FINALv4.pdf).

## Public Health, Climate and Safety Considerations

The Chicago metro area has the second highest energy-burdened population in the country (second only to New York City)<sup>71</sup> and nearly 30 percent of Chicago census tracts are designated environmental justice neighborhoods (see Figures 3.11 and 3.12). Health and public safety issues resulting from the impact of climate change and GHG emissions are adding to the pressure to move forward with more aggressive building decarbonization strategies as well as stricter building codes and green infrastructure projects, with particular attention to environmental justice and lower-income communities.

<sup>71</sup> Ariel Brehob, Lauren Ross, and Roxana Ayala, *How High Are Household Energy Burdens: An Assessment of National and Metropolitan Energy Burden across the United States*, American Council for an Energy-Efficient Economy (ACEEE) (September 2020), Table B3.2, p. 57, <https://www.aceee.org/sites/default/files/pdfs/u2006.pdf>. The ACEEE study also finds that in 2020 “[a] quarter of low-income households have an energy burden above 15% in the Chicago metropolitan area, which is more than 5.5 times higher than the median energy burden.” See: “Energy Burdens in Chicago,” [https://www.aceee.org/sites/default/files/pdfs/aceee-01\\_energy\\_burden\\_-\\_chicago.pdf](https://www.aceee.org/sites/default/files/pdfs/aceee-01_energy_burden_-_chicago.pdf).



**Figure 3.12: Environmental justice index, Chicago 2023**

Source: Chicago Department of Health, Chicago Health Atlas, <https://chicagohealthatlas.org/indicators/CHAIXYP?topic=chicago-environmental-justice-index>.

Note: Chicago’s environmental justice index shows the communities in Chicago most burdened by pollution and most vulnerable to its effects. The index utilizes a composite score based on 28 indicators representative of environmental conditions and exposures, sensitive populations, and socioeconomic factors that contribute to environmental stressors or community vulnerability.

For Chicago, leaked and combusted natural gas are key drivers of these health-damaging emissions:

- **Scientific research has established that methane leaks from gas distribution systems around the U.S.** – including Chicago – are significantly underestimated. A study by Floerchinger et al. found that official emission inventories in Chicago currently underestimate the contribution of natural gas to methane emissions by about 50%.<sup>72</sup> Furthermore, studies find that methane leaks from Chicago’s gas distribution system tend to be concentrated in the metro region’s lower-income communities, producing “disturbing inequalities”: leak density increases with both the

<sup>72</sup> Cody Floerchinger et al., “Relative flux measurements of biogenic and natural gas-derived methane for seven U.S. cities,” *Elementa Science of the Anthropocene* (February 2021, 9:1), DOI:10.1525/elementa.2021.000119.

percent of people of color in the census tract and decreasing income.<sup>73</sup>

- **Research from cities with older gas infrastructure like Chicago's also show that behind-the-meter leaks are a significant contributor to fugitive methane emissions,<sup>74</sup> including from stoves even when they are turned off.<sup>75</sup>** When gas is combusted inside homes, harmful compounds known to cause cancer and other health problems are released.<sup>76</sup> Still a further source of air pollution for Illinois more generally is fossil fuel pollution from upwind gas fracking fields and oil extraction facilities in Texas, Oklahoma, and Pennsylvania.<sup>77</sup>

The climate, health, and safety consequences of leaked and combusted natural gas are many. A warming climate is increasing flooding and extreme heat events for Chicago. Chicago is at risk from increasing extreme precipitation and greater volatility of Lake Michigan's water level which may pose challenges to underground infrastructure.<sup>78</sup> A study by the Center for Neighborhood Technology found that nearly three-quarters of Chicago's flood damage claims in recent years occurred in 13 zip codes where 62% of households have an income of less than \$50,000, and over a quarter are below

<sup>73</sup> Zachary D. Weller et al., "Environmental injustices of leaks from urban natural gas distribution systems; Patterns among and within 13 U.S. metro areas," *Environmental Science & Technology* (2022, 56:12), pp. 8599-8609, <https://pubs.acs.org/doi/10.1021/acs.est.2c00097>.

<sup>74</sup> Maryann R. Sargent et al., "Majority of US urban natural gas emissions unaccounted for in inventories," *Proceedings of the National Academy of Sciences of the United States of America* (2021, 118), <https://www.pnas.org/doi/10.1073/pnas.2105804118>. In response, the U.S. Environmental Protection Agency (EPA) has now adjusted its inventory of GHG to include methane emissions from residential and commercial appliances as well as other sources. U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2020: Updates Under Consideration for Post-Meter Emissions* (September 2021), [https://www.epa.gov/system/files/documents/2021-09/2022-ghgi-update-post-meter\\_sept-2021.pdf](https://www.epa.gov/system/files/documents/2021-09/2022-ghgi-update-post-meter_sept-2021.pdf).

<sup>75</sup> Eric D. Lebel et al., "Methane and NO<sub>x</sub> Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes," *Environmental Science & Technology* (January 2022, 56:4), pp. 2529-2539, <https://doi.org/10.1021/acs.est.1c04707>.

<sup>76</sup> When combusted, gas releases a number of harmful compounds, including benzene, NO<sub>x</sub>, fine inhalable particles (PM<sub>2.5</sub>), and formaldehyde. Yifang Zhu et al., *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 (2020), <https://coeh.ph.ucla.edu/wp-content/uploads/2023/01/Effects-of-Residential-Gas-Appliances-on-Indoor-and-Outdoor-Air-Quality-and-Public-Health-in-California.pdf>.

<sup>77</sup> Jonathan J. Buonocore et al., "Air pollution and health impacts of oil & gas production in the United States," *Environmental Research & Health* (2023, 1), <https://doi.org/10.1088/2752-5309/acc886>.

<sup>78</sup> Dan Egan, "The climate crisis haunts Chicago's future. A Battle Between a Great City and a Great Lake," *New York Times* (July 7, 2021), <https://www.nytimes.com/interactive/2021/07/07/climate/chicago-river-lake-michigan.html>.

the poverty line. Furthermore, Chicago has the seventh-highest average heat index, weighted for its area, in the U.S. The city's asphalt and concrete density contributes to a heat island effect: Chicago is one of six cities that had more than 1 million people living under an urban heat island effect over 8 degrees.<sup>79</sup> A heavy concentration of the affected population lives in the city's southwest side, one of the city's poorest areas.

On the health front, emissions from gas systems elevate mortality and other health burdens such as asthma and heart attacks.<sup>80</sup> According to recent peer-reviewed analysis, 21% of childhood asthma cases in Illinois are attributable to indoor natural gas combustion for residential cooking. In response, legislation at the state level in Illinois has been filed that would require health warnings to be placed on gas stoves for sale (HB 5063 "Gas Stove Labeling Act").<sup>81</sup>

Finally, gas leaks can be extremely dangerous to local public safety and property. Even a small leak or a rupture in a gas line can lead to an explosion, killing or harming people and destroying or damaging property. Most reported incidents are caused by excavation that ruptures a gas line, but pipelines can corrode and fail due to their material, age, and condition.<sup>82</sup> Gas appliances can also leak gas and present an explosion risk.

## Regulatory involvement by the City

The strong positions taken by the city of Chicago during the course of its intervenor status during PGL's 2023 rate case deserve mention. According to the city, PGL provided "an unacceptable response to an inevitable energy transition" by failing to plan, ignoring state and city decarbonization targets, and "continuing to heavily invest in gas infrastructure without due regard for affordability and stranded assets."<sup>83</sup> The city emphasized the need for reevaluating the SMP and requiring it to evolve given

<sup>79</sup> Alix Martichoux, "Chicago is an 'urban heat island.' So what does that mean?" WGN9 (July 13, 2024),

<sup>80</sup> Ibid.

<sup>81</sup> Illinois General Assembly, HB5063 (introduced February 8, 2024), <https://www.ilga.gov/legislation/103/HB/PDF/10300HB5063lv.pdf>; and <https://www.canarymedia.com/articles/fossil-fuels/gas-stove-health-warning-labels-health-california-new-york-illinois-ge#>.

<sup>82</sup> For an analysis of Illinois' pipeline safety track record, see <https://pstrust.org/state-of-safety-illinois/>.

<sup>83</sup> Ibid., p. 110.

the fundamentally altered “energy environment” and “trajectory of the city’s energy future as provided for in the city’s Climate Action Plan.”<sup>84</sup>

The city underscores that, in response to requests to provide analyses assessing the impact of decarbonization policies on future throughput and infrastructure needs, PGL stated that “[n]o specific studies have been conducted of how, when or where to do [infrastructure upgrades] to accommodate lower carbon fuels, in part because there has been no Illinois ‘Future of Gas’ proceeding to clarify the scope of possibilities and the regulatory policies that will accompany them.”<sup>85</sup> The city also expressed concern about unrealistic backloading of many SMP projects such that many substantial projects are not slated to begin for over a decade, presenting significant financial challenges for residents to transition to cleaner alternatives.

The city specifically asked that Peoples Gas be required to work with the city and other interested and affected stakeholders to assess the “potential for strategic electrification and retirement of leak-prone pipe” and to develop a pilot that allows the Commission to assess the impact of the pilot on advancing equity and reducing GHG emissions.

## C. Threat 3: Growing demand substitution due to unprecedented competition from clean energy alternatives

Rapid technological change is producing new equipment and appliances for space and water heating, as well as cooking and clothes drying, that offer higher efficiency as well as attractive alternative value propositions, such as more comfortable homes, more precise cooking, and improved indoor air quality (see Figure 3.13 for a review of some of these technologies). These

technologies are also increasingly cost competitive with their fossil-fuel analogues, particularly over a ten-year payback period. Their adoption is further enhanced by unprecedented federal subsidies and tax credits reviewed in Section 3.B and the fact that they may reduce long-term energy bills compared to the expensive future of gas.

We review here the information available on adoption of clean heating and cooling technologies in Chicago and then present modeling results for a scenario that fully reinstates the SMP but allows for a moderately contracting Chicago gas customer base.

### 1. Adoption of clean space and water heating technologies in Chicago

The Midwest’s adoption rate for clean-energy space and water heating technologies has lagged behind that of other areas in the country.<sup>86</sup> But gas heating in Chicago has been slowly losing market share to electric over the past decade. The percentage of Chicago’s housing dependent on utility gas has steadily fallen since 2010, from 85.5% to 76.5% in 2022, (an average annual decline of 0.75 points). Electricity’s share of heating, on the other hand, has grown from 12% to 19%.<sup>87</sup>

These broad market share statistics likely understate actual heat pump adoption in the Chicago area. While the HVAC industry does not release state or regional sales data, Mitsubishi Electric Trane HVAC U.S., a major heat-pump supplier, reports that heat pump sales in the Chicago area market have increased by double digits year-over-year for the past ten years. In 2023, for example, the supplier’s heat pump sales in the Chicago area increased by more than 25% over 2022.<sup>88</sup>

Multi-building strategies will also play a role in curtailing gas demand. Thermal energy networks

<sup>84</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Final Order (November 16, 2023), pp. 20-21, 109-110, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306/files/601245.pdf>.

<sup>85</sup> *Ibid.*, p. 112.

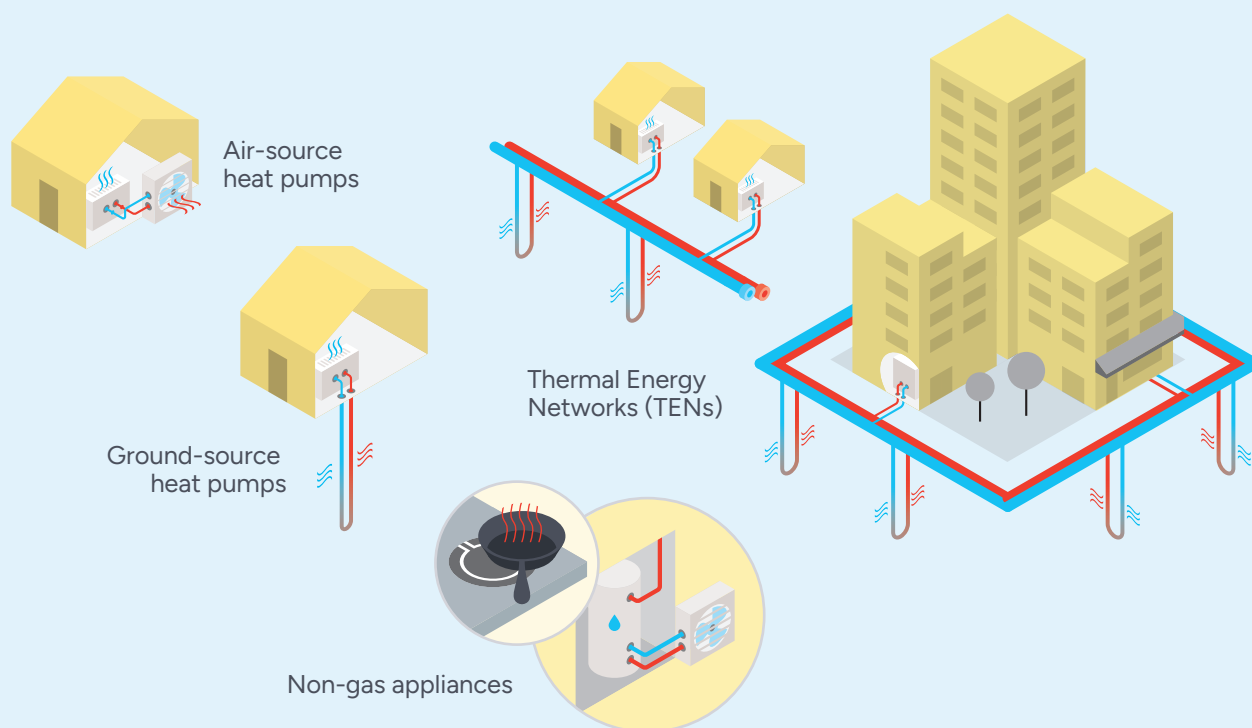
<sup>86</sup> Katherine Shok, “Electrifying the Midwest” (October 17, 2023), <https://atlasbuildingshub.com/2023/10/17/electrifying-the-midwest>.

<sup>87</sup> U.S. Census Bureau, American Community Survey, S2504 Physical Housing Characteristics for Occupied Housing Units, 1-year estimates (various years), [https://data.census.gov/table/ACSST1Y2022.S2504?q=S2504&g=040XX00US17\\_160XX00US1714000](https://data.census.gov/table/ACSST1Y2022.S2504?q=S2504&g=040XX00US17_160XX00US1714000).

<sup>88</sup> Nara Schoenberg, “Concerned about climate change, more Chicagoans are buying all-electric home heating systems,” *Chicago Tribune* (January 31, 2024), <https://www.chicagotribune.com/2024/01/31/concerned-about-climate-change-more-chicagoans-are-buying-all-electric-home-heating-systems/>.



**Figure 3.13: Technologies displacing gas consumption in buildings**



- **Air-source heat pumps.** ASHPs provide electric heating and cooling to a building in a single unit that exchanges energy with the ambient outdoor air. ASHPs were traditionally reserved for milder climates and are prevalent in much of the southern United States, but adoption is growing in colder climates in response to heat pump efficiency improvements and increased customer awareness of the technology. These advancements plus government incentive programs resulted in U.S. annual ASHP sales outpacing annual gas furnace sales for the first time in 2022.
- **Ground-source heat pumps.** GSHPs are quite similar to ASHPs except that they exchange energy with the earth. Because ground temperatures are relatively stable throughout the year, this configuration results in higher efficiencies for GSHPs compared to ASHPs. This lowers operating costs and also reduces the need for costly upgrades to the electric grid system to provide more energy. The increased efficiency comes at a higher cost than ASHPs, mainly due to the cost of digging.
- **Thermal energy networks.** TENs are made up of underground interconnected pipes that exchange thermal energy (heated or cooled water) between connected buildings. The connected ambient loops can harness thermal reservoirs, such as the temperature of bedrock or local bodies of water, and waste heat from data centers or wastewater treatment facilities.
- **Non-gas appliances, deep energy efficiency, and demand flexibility.** Energy-efficient appliances such as induction stoves and heat pump water heaters along with retrofits that promote energy efficiency can also help in reduce demand for gas and enable buildings to transition to electricity. Advanced controls that enable demand management and bidirectional energy transfers are also reduce energy demand and promoting more efficient, grid-interactive buildings.

(TENs) are a next-generation district energy solution that primarily use electricity to provide heating and cooling services by leveraging waste heat, ground, and waterbodies as thermal resources. Such systems are poised to best provide campus or district-scale services and could serve as an avenue for reducing large blocks of gas load. While approaches vary, such systems have been demonstrated across the country.<sup>89</sup> Of note is the Centrio Chicago District Cooling System, the largest carbon-free ice storage chilled-water system in the U.S.<sup>90</sup> In operation since 1995, Centrio provides sustainable district cooling service to 38% of the downtown area (115 buildings).

A recent state-level effort has advanced the consideration of TENs in Illinois. The ICC led a series of workshops on TENs and in March 2024 submitted a final report with recommendations on the role of TENs in Illinois' clean energy future to the Governor and General Assembly.<sup>91</sup> The report notes that the Chicago area has considerable promise for developing TENs because it is both home to the Centrio system and is one of the top data center markets in the country (data centers produce large amounts of heat waste).<sup>92</sup> This creates an opportunity for connecting the two thermal energy resources.

Also featured in the state report is the Chicago Sustainable Square Mile project piloted by the local environmental justice organization, Blacks In Green. Encompassing four city blocks containing more than 100 multi- and single-family residential buildings, this project seeks to develop a non-utility, community ownership model for thermal energy networks to be located in the West Woodlawn community of the city's south side. In

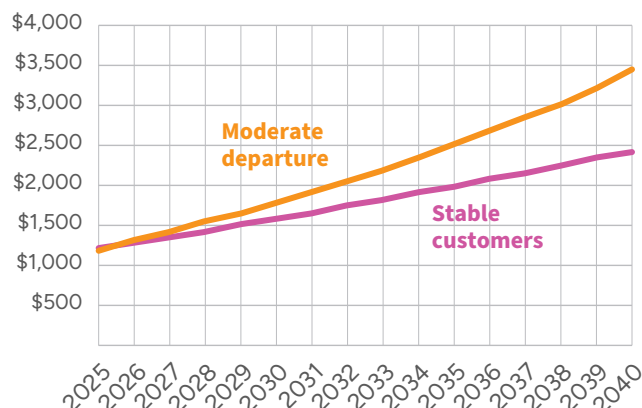
<sup>89</sup> Hyunjun Oh and Koenraad Beckers, *Cost and Performance Analysis for Five Existing Geothermal Heat Pump-Based District Energy Systems in the United States* (July 2023, National Renewable Energy Laboratory), <https://www.osti.gov/servlets/purl/1992646/>.

<sup>90</sup> Centrio, "Largest Carbon-Zero District Cooling System in the U.S.," <https://www.centrioenergy.com/our-districts/chicago/>. Centrio's district cooling system in Chicago draws on the largest ice-battery in North America, creating ice at night while energy demand and prices are lowest which then cools the water during the day. Three of the district's cooling plants tap into the Chicago River. See also: <https://www.enelnorthamerica.com/solutions/case-studies/centrio-energy-maximizes-demand-response>.

<sup>91</sup> ICC, *Thermal Energy Network Report* (February 2024), <https://icc.illinois.gov/api/web-management/documents/downloads/public/TEN/Thermal%20Energy%20Network%20Report%202024.pdf>.

<sup>92</sup> Ibid., pp. 11-12.

**Figure 3.14: Impact of moderate customer departures on average delivery costs per customer under Full SMP, 2025-2040**



Source: GWD modeling

2023, the project received funding from the U.S. Department of Energy.<sup>93</sup>

## 2. Modeling results for “Full SMP” scenario with a declining gas customer base

As gas demand in Chicago's building sector declines due to increased electrification and customer exits from the gas system, understanding the financial implications for Peoples Gas becomes essential. To quantify these impacts, we apply our Gas Delivery Cost Model under the assumption that Full SMP spending resumes while the PGL customer base contracts by 2% annually, resulting in a 50% decrease by 2050.

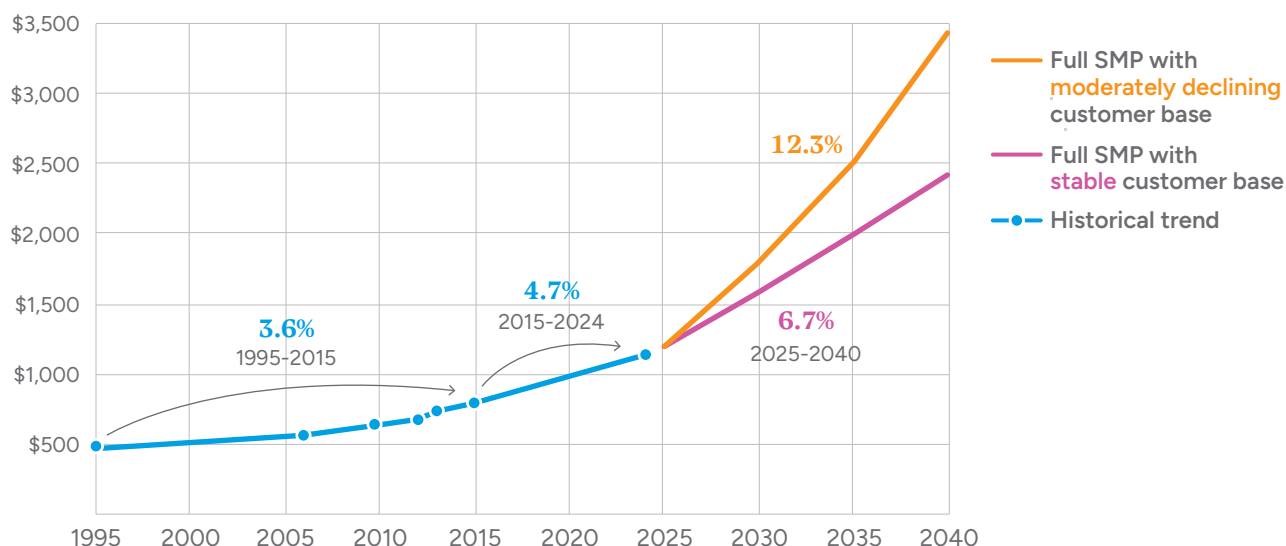
Our modeling results show that, as the number of gas customers decreases, average delivery costs per remaining customer rise significantly. This is because cost recovery for PGL's escalating rate base must be spread over a shrinking pool of ratepayers, thereby intensifying the financial burden on those remaining.

Figure 3.14 illustrates these findings. By 2030, per customer delivery charges increase by 50% from current levels, compared to a 32% increase for a

<sup>93</sup> The Blacks in Green project is using the BETTER HEAT model and is being administered by The Accelerate Group. See: Juanpablo Ramirez-Franco, "A Geothermal Energy Boom Could Be Coming to Chicago's South Side," *Grist* (February 23, 2024), <https://grist.org/cities/black-communities-south-side-chicago-geothermal-heat/>.



**Figure 3.15: Historical trends in PGL delivery cost per customer vs. future increases required for Full SMP with & without customer decline**



Sources: For 1995-2024, ICC final rate case orders (Appendix A or B) for Docket Nos. 95-0032, 07-0242, 09-0167, 11-0281, 12-0512, 14-0225, 23-0069 and ICC, Comparison of Gas Sales Statistics (various years); for 2025-2040, GWD modeling. Note: Percentages refer to average year-over-year increases in delivery costs per customer.

stable customer base. By the SMP's projected 2040 termination date, delivery charges per customer surge by 185%, reaching \$3,437, up from \$1,206 in 2025. If the resulting rate increases were evenly distributed over the next 15 years (2025-2040), a 12.3% increase in annual delivery charges per customer would be required. Such a rate trajectory would likely accelerate the departure of additional gas customers, creating a negative feedback loop of spiraling rates and declining customers.

### 3. Comparing historical trends in PGL's per customer delivery costs with projected future increases

Our modeling results indicate that resuming Full SMP would necessitate substantial increases in per customer delivery costs, leading to higher customer bills. These costs would escalate further as customers leave the gas system. To assess these projected increases against historical trends, we use the approved revenue requirements in prior PGL rate cases to calculate per customer delivery costs.

Figure 3.15 illustrates the resulting trends from 1995 to 2024; it also shows our projections for these costs assuming that Full SMP resumes in 2024. The blue line represents historical increases

in per customer delivery costs, with each dot corresponding to the test year of the relevant rate case. The red line shows the cost increases required to reinstitute Full SMP, assuming a stable customer base. The green line reflects the same capital spending assumptions but with a moderately contracting customer base.

This analysis makes clear that the rates of increase in per customer delivery costs required by Full SMP would be historically unprecedented and likely untenable. Compared to the past three decades – where rates first increased 3.6% per year from 1995 to 2015 and then by 4.7% more recently – Full SMP with a stable customer base would increase annual customer delivery charges by 6.7% from 2025 on. With a shrinking customer base, Full SMP would require yearly rate increases of 12.3%, or 2.5 times the rate of increase from 2015 to 2024.

## D. Business risk implications for Peoples Gas

This section has analyzed three critical threats to PGL's traditional business model: rising infrastructure costs, climate policies and programs, and increasing competition from alternative technologies. Due to the maturity of Chicago's gas system, infrastructure costs are on an upward trajectory, independent of climate policy and demand substitution. With aging infrastructure in need of repair or replacement and a level customer base, the burden of these costs is intensifying for ratepayers. Furthermore, PGL's customer base is expected to decline in response to state and local GHG emission and decarbonization policies as well as the growing availability of cost-effective alternatives to gas-dependent space and water heating.

Next, we explored the future costs of Chicago's gas system under the assumption that Full SMP is resumed. We presented two sets of modeling results: one assuming a stable gas customer base and the other assuming a steady decline in the customer base to half of its current level by 2050. The delivery costs of the gas system are driven in large part by PGL's substantial existing approved rate base of \$4.2 billion (cost recovery for this base is outstanding) and the continuing multibillion-dollar costs of the SMP. These fixed infrastructure costs will not decrease with reduced gas consumption or a declining customer base. Our findings indicate that gas delivery costs in Chicago will face steady upward pressure in both scenarios. From 2025 to 2040, customer delivery charges would need to escalate by nearly 7% annually under the stable customer scenario and by 12% under the declining customer scenario. Under the latter scenario, Chicago gas customers can expect their average delivery costs to increase nearly 50% just 6 years from now (by 2030).

Figure 3.16 illustrates the dynamic of these interacting factors and captures the possibility of a spiraling rate crisis in which higher charges would push more ratepayers to leave the gas system, leaving system costs to be spread over a declining

number of ratepayers. Such a situation would inevitably attract regulatory and legislative attention.

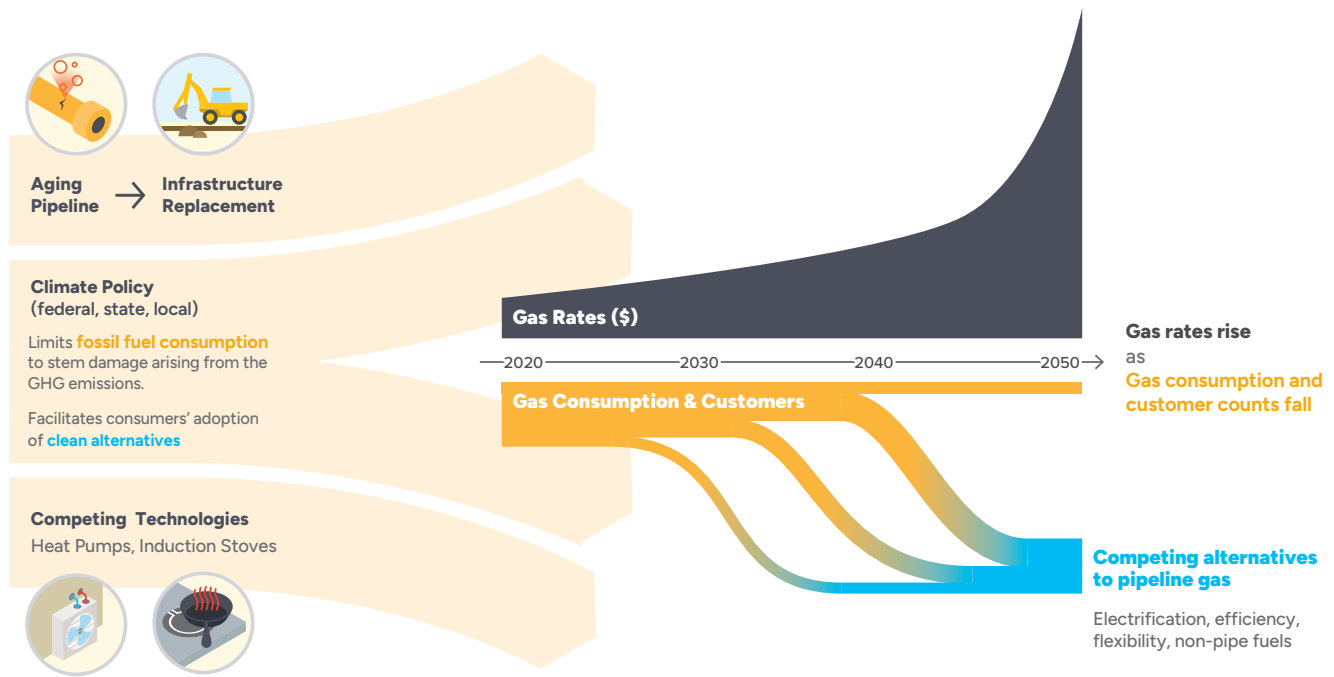
An unmanaged gas transition in which these factors play out without overarching policy and regulatory direction would present substantial challenges to PGL's operational and financial stability. As these challenges intensify, several major business and investor risks for PGL are likely to emerge:

- **Lower gas demand.** Decreased demand will negatively impact PGL's earnings, cash flow, and dividends payable to WEC Energy, potentially affecting WEC Energy's share price as well.
- **Rate fatigue.** The need for rate increases that significantly exceed historical trends is likely to lead to regulatory and legislative intervention, presenting risk for investors. Chicago's gas delivery rates are already among the highest in the nation and substantial rate hikes could exacerbate affordability issues, particularly for low-income and energy-burdened customers.
- **Adverse regulatory decisions.** Any decision to curtail the SMP would negatively impact PGL's cash flow and earnings and also WEC Energy's share price. Recent evidence of these kinds of impacts are presented in Section 5.B.
- **Elevated cost recovery and stranded asset risk, and financial pressures related to decommissioning liabilities.** Increasing concerns over cost recovery and decommissioning liabilities (i.e., asset retirement obligations) could negatively affect PGL's credit rating and potentially also WEC Energy's rating, leading to higher borrowing costs.

PGL plays an important role in WEC Energy's portfolio, constituting roughly 30% of the holding company's total gas distribution customers, 15% of its total assets, and 34% of its recent shareholder dividends.<sup>94</sup> As a result, business risks to Peoples Gas have potential upstream implications for WEC Energy. As detailed in Section 5.B, WEC Energy has already experienced negative financial impacts due

<sup>94</sup> For customer figure, see WEC Energy, *2023 Corporate Responsibility Report*, pp. 7, <https://www.wecenergygroup.com/csr/cr2023/wec-corporate-responsibility-report-2023.pdf#pagemode=bookmarks>. For asset figure, see WEC Energy Group, *September 2024 Investor Book* (September 3, 2024), p. 38, [https://s22.q4cdn.com/994559668/files/doc\\_presentations/2024/Sep/03/09-2024-september.pdf](https://s22.q4cdn.com/994559668/files/doc_presentations/2024/Sep/03/09-2024-september.pdf).

**Figure 3.16: Causes and effects of an unmanaged gas transition**



Source: GWD.

to recent PGL regulatory decisions, including the ICC's pause of the SMP. As a result, WEC Energy is reallocating investments from Peoples Gas to unregulated, renewable energy projects. As the risks of an unmanaged gas transition mount, PGL is likely to place a growing strain on WEC Energy's overall financial performance.

“As the risks of an unmanaged gas transition mount, PGL is likely to place a growing strain on WEC Energy's overall financial performance.”

Section

# 4

## The response of Peoples Gas and WEC Energy to energy transition risk

**Peoples Gas faces a challenging set of circumstances on both the demand and supply side of its operations.** Rising infrastructure costs, building pressure from state and municipal clean energy and GHG policies, and competition from alternative technologies present fundamental challenges to continuing a business-as-usual approach to its operations as these disruptors over the next five to 25 years can be expected to significantly alter residential and business energy consumption patterns, appliance choices, and overall gas usage.

In response to these pressures, Peoples Gas has chosen to continue its accelerated investment in gas infrastructure. The company justifies this multi-decade capital spending program by citing four primary objectives: maintaining the safety and reliability of the gas system, reducing methane emissions, ensuring energy affordability for the city's consumers, and preparing the gas system for the eventual integration of alternative gases, such as renewable natural gas (RNG) and hydrogen.

To assess the validity of Peoples Gas's strategy, it is essential to critically evaluate each of these objectives on its individual merits:

## A. Safety and reliability

PGL asserts that "it is essential to replace at-risk cast iron and ductile iron pipe in PGL's distribution system and that it should be done on an accelerated basis in the interest of safety."<sup>95</sup> Despite more than four decades of investment, substantial amounts of at-risk pipeline – some over 50 years old – remain a significant safety concern for Peoples Gas, as documented in the 2020 Kiefner study.<sup>96</sup>

<sup>95</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 66, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>96</sup> According to the 2020 Kiefner study, most of PGL's cast iron (CI) mains average over 90 years old and most of its ductile iron mains are over 50 years old. Furthermore, "83% of the remaining CI and DI pipes have an average remaining life of less than 15 years." Keifner and Associates, Inc., *Engineering Study of the Cast Iron and Ductile Iron Pipeline System*, Final Report No. 20-001 presented to PGL (January 2020), p.(i), <https://www.icc.illinois.gov/docket/P2018-1092/documents/295819/files/515921.pdf>.

In its 2023 rate case orders, the ICC made clear that it no longer supports granting approval for capital spending projects on the basis of generalized appeals to safety, reliability, and reduced emissions.<sup>97</sup> Consequently, the ICC is expected to increase its scrutiny of PGL's pipeline evaluations and the criteria used to determine whether replacements are necessary. The Commission may also consider alternatives to full replacement, such as repair, relining, or pipeline retirement, to meet safety goals.

Repairing pipeline is not a perfect substitute for replacing pipeline and there are circumstances where replacing an at-risk section of pipe is required for public safety purposes and/or is the most cost effective option. However, when feasible, repairing a pipe with advanced leak repair technologies can be a far less expensive option than pipeline replacement.<sup>98</sup> Some repair technologies – for example, cured-in-place (CIP) systems – constitute de facto "pipeline renewal" that extends the life of some types of pipeline by several decades.<sup>99</sup> In sum, pipeline retirement, pipeline renewal, and other advanced leak repair approaches may "eliminate leaks and their associated environmental and risks – a retired pipe does not leak – while reducing emissions at a faster rate, reducing stranded asset risk, lowering energy bills, and improving public health, comfort and air quality."<sup>100</sup>

The deployment of state-of-the art repair technologies is hindered by the fact that the regulatory cost recovery system typically rewards replacement rather than repair. The economic literature on leak repair vs. pipeline replacement makes clear that gas utilities have an incentive to over-invest in replacement because they are allowed to earn a rate of return on capital investments

<sup>97</sup> ICC, 2023 Rate Case for Ameren Illinois Company, Docket No. P2023-0067, Final Order (November 16, 2023), p. 90, <https://www.icc.illinois.gov/docket/P2023-0067/documents/344282/files/601209.pdf>.

<sup>98</sup> For an example from National Grid's Boston territory, see: Dorie Seavey, *Leak and Combusted: Strategies for reducing the hidden costs of methane emissions and transitioning off gas* (March 2024, HEET), p. 50, <https://tinyurl.com/4dd9ru3d>.

<sup>99</sup> *Ibid.*, p. 49.

<sup>100</sup> NY Public Service Commission, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Gas Service, Case 22-E-0064 and Case 22-G-0065, Direct Testimony of Alice Napoleon and Asa Hopkins PhD on behalf of Natural Resources Defense Council (May 20, 2022), p. 35, <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B3F43993F-8776-4CBC-8571-677B40CD7476%7D>.

## How Peoples Gas and WEC Energy view the SMP

### Peoples Gas

"While various parties have challenged various aspects of the SMP over the years, from the earliest ZEI studies to today there has never been any serious dispute that it is essential to replace at-risk cast iron and ductile iron pipe in PGL's distribution system and that it should be done on an accelerated basis in the interest of safety. Doing so is not just an obvious safety and reliability imperative, but also has environmental benefits and enhances compatibility with future fuels."<sup>1</sup>

### WEC Energy

*"Peoples Gas expects to continue investing between \$280 million and \$300 million annually in a program to to replace more than 2,000 miles of Chicago's deteriorating natural gas pipes — many of which were installed in the 1800s. We are replacing dated cast and ductile iron pipes and facilities in the natural gas delivery system with polyethylene pipes for longterm system safety, improved reliability and greatly reduced methane emissions. Safety enhancements include upgrading the system from low-pressure to medium-pressure operation. In addition, the modernization positions Chicago for a clean energy future in which renewable natural gas and hydrogen may someday heat customer homes and fuel the economy. Work on the program, overall, is more than 35% complete."*<sup>2</sup>

<sup>1</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 66, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>2</sup> WEC Energy Group, *2022 Corporate Responsibility Report*, p. 13, <https://www.wecenergygroup.com/csr/cr2022/wec-corporate-responsibility-report-2022.pdf>.

“The economic literature on leak repair vs. pipeline replacement makes clear that gas utilities have an incentive to over-invest in replacement...”

but not on leak detection and repair, which are treated as operational expenses.<sup>101</sup> In addition, gas companies lack the financial incentive to repair leaks in order to stop the waste of their primary product. They have regulatory approval to pass on the cost of the lost gas to their customers as a “normal” cost of doing business, and – at least for their distribution systems – they are not financially responsible for the climate and health costs caused by gas leaks.

In terms of comparing the relative efficacy and cost effectiveness of non-pipeline alternatives vs. pipeline replacement projects, Peoples Gas readily proffers the opinion that electrification is too expensive (see Section 4.B), but it is silent on the question of the rate increases required to pay for continuing its accelerated investments in Chicago's gas system for another 15 to 25 years, including under varying assumptions regarding customer base attrition. Additionally, Peoples Gas states that its new risk model (JANA) for scoring and prioritizing projects will not be used to evaluate the cost-effectiveness of “risk mitigation” projects (including projects that presumably deploy alternatives to pipeline replacement), but only to compare potential risk reduction between projects prior to their implementation.<sup>102</sup>

<sup>101</sup> Dorie Seavey, *Leak and Combusted: Strategies for reducing the hidden costs of methane emissions and transitioning off gas* (March 2024, HEET), pp. 42-43, <https://tinyurl.com/4dd9ru3d>.

<sup>102</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, PIRG Exhibit 2.4, p. 17, <https://www.icc.illinois.gov/docket/P2024-0081/documents/351917/files/615647.pdf>.



## B. Feasibility of electrification

PGL's position is that electrification is not a feasible alternative for gas consumers in Chicago for three reasons: it is too expensive, it would lead to unreliable energy supplies, and it is not clean.<sup>103</sup> Before addressing these arguments, we note that Peoples Gas has yet to study the likely effects of plausible electrification scenarios on gas demand and put in place robust demand forecasts to guide its planning and inform regulators. Expert testimony presented in PGL's 2023 rate case concluded that the company "has conducted no analysis of how implementation of the Climate Action Plan could impact PGL customer count, usage volume, and the required capacity and maintenance of PGL's gas distribution system"<sup>104</sup> and has done little to consider a future where demand shrinks.<sup>105</sup> In addition, the company states that it "has not conducted any studies or other activities regarding the identification of "non-pipeline solutions/alternatives" that could mitigate the scope and cost of future projects.<sup>106</sup> In the current SMP Investigation, Peoples Gas offers that it is only required to consider and study NPAs as part of its new bi-annual Integrated Resource Plan (IRP) proceeding<sup>107</sup> and, therefore, it would be duplicative and inefficient to assess them as part of the SMP proceeding.<sup>108</sup>

<sup>103</sup> These positions were laid out in PGL's response to an ICC interrogatory in the company's 2023 Rate Case. ICC, 2023 Rate Case for PGL, Docket No. 23-0069, ICC Request No. ICC 1.04 (May 16, 2023), <https://www.icc.illinois.gov/docket/P2023-0069/documents/337765/files/588776.pdf>.

<sup>104</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Direct Testimony by Dr. Sol deLeon, COC Ex. 1.0, p. 27, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337552/files/588163.pdf>.

<sup>105</sup> In contrast, Ameren Illinois has provided such an analysis, conducted by the Electric Power Research Institute (EPRI). For a description, see p. Section 4.B.1.

<sup>106</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Request No. COC 4.27, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337552/files/588191.pdf>.

<sup>107</sup> The IRP refers to a new long-term planning requirement ordered by the ICC in its four gas utility 2023 rate case orders. Beginning in 2025, gas utilities must present a 5-year action plan of investments with a longer-term planning horizon where applicable, describing the lowest societal cost gas distribution investments necessary to meet customer demand and comply with public policy objectives.

<sup>108</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, PGL Exhibit 3.0, p. 43, <https://www.icc.illinois.gov/docket/P2024-0081/documents/352840/files/617402.pdf>.

## Non-pipe alternatives

Non-pipeline alternatives (NPAs) refer to targeted activities or investments that delay, reduce, or avoid the need to build or upgrade traditional natural gas infrastructure such as pipelines, storage, and peaking resources. Many of these solutions involve transitioning the current system – where buildings are heated by fossil fuels or other combustible gases that are hazardous to health, safety, and climate – to one where buildings are heated by non-combustible, renewable sources of thermal energy via air- and ground-source heat pump technologies. Examples of alternative solutions include: paired pipeline retirement and electrification of corresponding customer loads, thermal energy networks, and advanced leak repair (including pipeline renewal systems) and enhanced leak monitoring.

“the company has conducted no analysis of how implementation of the Climate Action Plan could impact PGL customer count, usage volume, and the required capacity and maintenance of PGL's gas distribution system”

## 1. Economics of electrification in Chicago

Peoples Gas argues that electrification is currently excessively expensive. In its 2023 rate case, the company stated that “forcing electrification on PGL customers on an aggressive time table would be massively expensive. Requiring all electric homes could double customers’ heating costs.”<sup>109</sup> Similarly, WEC Energy states that electrification is not cost competitive: “conventional electric heat pumps are significantly more costly than natural gas heating in our region.”<sup>110</sup>

These claims do not appear to take into account the findings of recent studies examining the growing cost effectiveness of electrification for Illinois and Chicago specifically and the impact of rising gas prices:

- **Illinois Decarbonization Study by Energy and Environmental Economics, Inc. (E3)** (December 2022).<sup>111</sup> This study – prepared for ComEd – models various scenarios to “determine the impact that CEJA and the IRA will have on GHG emissions in Illinois.” It separately models scenarios for ComEd’s service territory (which includes Chicago), finding similar results. It finds that “customers with natural gas heating in buildings...see their costs increase as more customers transition to...all electric homes.” Total customer costs (appliance upfront costs plus monthly bills) are lower today for customers who electrify, particularly due to incentive programs like the IRA. Annual bills are lower for electrified customers in the future because of the rising cost of gas: “Gas rates escalate as the fixed costs of the gas system are spread across fewer remaining customers.”<sup>112</sup> The study also finds that gas

backup for home heating can reduce the need for electric system upgrades and further lower electric costs. Finally, the study finds that despite the “substantial support” available through the IRA, many customers will still face “prohibitive” upfront costs to electrify.

- **Electrification scenarios for Ameren Illinois by Electric Power Research Institute (EPRI).**<sup>113</sup> EPRI’s study projects a decrease in gas consumption in the Ameren gas territory of 18% to 40% by 2050 due to electrification. Specifically within the building sector, EPRI projects a gas consumption decline of 38% to 56% by 2050 due to gains in market share for both residential heat pump space heating and heat pump water heating.
- **Feasibility of advanced retrofits and heat pumps for Chicago by the National Renewable Energy Laboratory (NREL) and Elevate (2022).**<sup>114</sup> NREL and Elevate model 75% of Chicago’s residential building stock to simulate possible energy savings and utility costs. They find that “advanced retrofits with energy efficiency upgrades and electrification with heat pumps can reduce utility costs and produce >50% energy savings in older vintage homes in Chicago, reduce CO2 emissions, add necessary cooling, and remove indoor air quality hazards like NOx pollutants.” In addition to the high efficiency of modern heat pumps, utility bill savings from full electrification are realized “by eliminating the monthly fixed gas fees for natural gas in Chicago.” Many older homes in the study also benefit from the addition of central cooling provided by heat pumps. The study finds that “advanced retrofit packages with heat pumps have the potential to reduce Chicago’s CO2 emissions by 2.5 million metric tons per year – the equivalent of 500,000 cars taken off the road.”

Meeting the growing electricity demand of increasingly electrified transportation and building loads will require significant investment in electric generation and distribution infrastructure.

<sup>109</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, ICC Request No. ICC 1.04 (May 16, 2023), p. 1, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337765/files/588776.pdf>.

<sup>110</sup> WEC Energy Group, 2022 Corporate Responsibility Report, p. 41, <https://www.wecenergygroup.com/csr/cr2022/wec-corporate-responsibility-report-2022.pdf>.

<sup>111</sup> Energy and Environmental Economics, Inc., *Illinois Decarbonization Study: Climate and Equitable Jobs Act and Net Zero by 2050* (December 2022), <https://www.ethree.com/wp-content/uploads/2022/12/E3-Commonwealth-Edison-Decarbonization-Report-December-2022.pdf>.

<sup>112</sup> E3’s modeling assumes a 1% annual increase in revenue requirement for each IL gas utility. Our study shows PGL’s revenue requirement growing at 3%-6% per year due to the relatively higher costs of the SMP (Full SMP, stable customer base). Therefore, we can expect the cost reduction for electrification relative to continued gas use to be even greater than what E3 shows for the state.

<sup>113</sup> ICC, 2023 Rate Case for Ameren Illinois, Docket 23-0067, PIO 7.04R Attach 1, Electric Power Research Institute, “Electrification Scenarios for Ameren Illinois’ Energy Future,” Executive Summary, p. 11.

<sup>114</sup> NREL and Elevate, *Achieving 50% Energy Savings in Chicago Homes: A Case Study for Advancing Equity and Climate Goals* (November 2022), <https://www.elevatenp.org/wp-content/uploads/Achieving-50-Energy-Savings-in-Chicago-Homes-1.pdf>.

However, that cost will be spread across growing consumption, and electricity use will be increasingly managed by technologies that allow for more optimal use of electricity resources, such as batteries, flexible loads, and load control systems. The ComEd Illinois Decarbonization Study shows that, in the near term before loads started to increase, heating and transportation electrification lead to greater grid utilization factors and lower average per kWh costs. Smart rate design, such as that being implemented in several states, can be used to lower the operational cost burden for early adopters.<sup>115</sup> Over the long term, even assuming the buildout costs of new electric infrastructure, greater demand for electricity will moderate average costs; in contrast, the future of gas is on course to deliver steep increases in average delivery costs even as demand is decreasing.

The upfront costs of electrification do pose a barrier to fuel switching from gas to electricity, but electrification generates consumer value in ways that gas does not. Upfront costs need not be cheaper for consumers to electrify. In contrast with the “forced electrification” scenario painted by Peoples Gas, the real challenge is that, as customers voluntarily depart the gas system in response to that enhanced value, the increasing costs of the gas system will be concentrated on a population less able to afford increasing rates.

If anything, Chicago is an ideal candidate for electrification given the high costs of PGL’s gas delivery charges which are among the highest in the country. PGL’s residential and small commercial customers will be *pulled* by the value offered by efficient electric alternatives, including their superior health properties for indoor spaces, and *pushed* by higher gas delivery charges. It is useful to remember that, during the first part of the 20th century, gas service was more expensive than wood, coal, and heating oil. Its growth was driven by consumer preference and made possible by policymakers and regulators who crafted new rules and regulations to support the fledgling industry. Ultimately, clean

energy technologies for space heating threaten the foundation of Chicago’s widespread gas service.

## 2. Reliability of gas vs. electricity

Ensuring that homes can be reliably heated is an important consideration for a large-scale shift to electric heat. According to Peoples Gas, electrifying current gas customers would lead to peak shortages and unreliable energy supplies. The company asserts that “today’s electric grid was not built for the strain of millions of new electric vehicles and appliances from policy-driven electrification,”<sup>116</sup> and, furthermore, that “the electrification of vehicles and buildings switching from gas to electric-powered heating could lead to shortages during normal peak times as the decade proceeds.”<sup>117</sup>

In contrast, ComEd recently reported that, at current heat pump adoption rates for its territory, “it looks like there is enough capacity.”<sup>118</sup> In large part, this reflects the excess supply of ComEd’s grid: ComEd currently exports nearly a third of its generating power.<sup>119</sup> In winter 2023, for example, 32 TWh of generation were available to serve 22 TWh of load.<sup>120</sup> Further, “when compared to the all-time system peak, there is 7 GW excess capacity; when compared to total available generation, there is 12 GW.”<sup>121</sup> ComEd estimates that a 50% heat pump adoption rate through 2040 would require the installation of 1.5 million heat pumps in its territory and 12GW of additional capacity, which already exists in its grid.<sup>122</sup> While it is undeniable that increased investments will be necessary to expand Illinois’ electrical grid, it appears that current excess capacity is adequate to make considerable progress on heat pump adoption without straining the system and harming energy reliability.

Peoples Gas also ignores other strategies for managing loads and reducing electric heating peaks,

<sup>115</sup> See Andrew DeBenedictis et al., *Interagency Rates Working Group Study*, Energy & Environmental Economics (August 12, 2024), <https://www.mass.gov/doc/near-term-rate-strategy-draft-report-for-public-comment/download>; and Central Maine Power, “Statement on Unanimous Approval of CMP Rate Plan,” (June 6, 2023), <https://www.cmpco.com/w/statement-on-unanimous-approval-of-cmp-rate-plan#>.

<sup>116</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Request No. ICC 1.04, p. 1, <https://icc.illinois.gov/docket/P2023-0068/documents/337765/files/588776.pdf>.

<sup>117</sup> *Ibid.*, p. 2.

<sup>118</sup> ICC, Future of Gas Proceeding, ComEd Presentation: “Introduction to Electric Utility Considerations: ComEd” (May 20, 2024), remarks by Jason Decker, VP Regulatory Policy & Strategy, [https://icc.illinois.gov/api/web-management/documents/downloads/public/future-of-gas/ComEd%20Presentation\\_ICC%20Future%20of%20Gas\\_5-20-2024.pdf](https://icc.illinois.gov/api/web-management/documents/downloads/public/future-of-gas/ComEd%20Presentation_ICC%20Future%20of%20Gas_5-20-2024.pdf).

<sup>119</sup> *Ibid.*, Slide 5.

<sup>120</sup> *Ibid.*, Slide 6.

<sup>121</sup> *Ibid.*, Slide 7.

<sup>122</sup> *Ibid.*, Slide 11.

“ComEd estimates that a 50% heat pump adoption rate through 2040 would require the installation of 1.5 million heat pumps in its territory and 12GW of additional capacity, which already exists in its grid.”

thereby protecting customers from energy outages. These include improved software controls,<sup>123</sup> more resilient building envelopes due to thermal improvements, and greater use of distributed energy resources that leverage growing renewable energy production. ComEd points favorably to the impact of solar generation (rooftop and community) on Chicago’s electricity supply. Its most recent solar forecast shows a near quadrupling of residential solar and a 250% increase in small commercial and industry solar for the period 2023 to 2029.<sup>124</sup> ComEd also underscores the potential for bringing down the electric load using TENs that tap into Lake Michigan.<sup>125</sup>

Finally, Peoples Gas fails to consider the role that tank-based fuels could play for some types of housing in order to provide backup and resiliency services in situations where full electrification may be too costly or impractical. While tank-based fuels today cost more than delivered gas, the costs of a low-utilization gas delivery system on a per MMBtu basis would likely exceed the delivered costs of such fuels.

<sup>123</sup> Elias N. Pergantis et al., “Field demonstration of predictive heating control for an all-electric house in a cold climate,” *Applied Energy* (2024), 360:122820, <https://doi.org/10.1016/j.apenergy.2024.122820>.

<sup>124</sup> ComEd, *Load Forecast for Five-Year Planning Period June 2024 – May 2029* (July 15, 2023) Table II-5(a), p. 23, <https://ipa.illinois.gov/content/dam/soi/en/web/ipa/documents/procurement-plans/2024/appendix-c-comed-submittal-2024-electricity-plan.pdf>.

<sup>125</sup> Comment by Jason Decker, ComEd VP of Regulatory Policy and Strategy, during ComEd Presentation: “Introduction to Electric Utility Considerations: ComEd” (May 20, 2024), [https://icc.illinois.gov/api/web-management/documents/downloads/public/future-of-gas/ComEd%20Presentation\\_ICC%20Future%20of%20Gas\\_5-20-2024.pdf](https://icc.illinois.gov/api/web-management/documents/downloads/public/future-of-gas/ComEd%20Presentation_ICC%20Future%20of%20Gas_5-20-2024.pdf).

### 3. Relative emissions from electricity and gas

Peoples Gas and WEC Energy position electricity as a dirtier energy source than gas in the short to near term. WEC Energy asserts that “[f]ull-home electrification is significantly more costly than natural gas heating in our region, and currently appears to demonstrate no net reduction in methane consumption due to seasonal demands for power generation.”<sup>126</sup> In its April 2024 presentation to the Illinois Future of Gas proceeding, PGL presented its summary analysis of the relative emissions of an “efficient gas furnace” and two types of heat pumps, concluding that far fewer emissions result from the gas furnace.<sup>127</sup>

While the assumptions behind WEC Energy and PGL’s analyses have not been provided, both appear to assume that seasonal demands for electric heating and any required non-baseload generation rely on a resource mix heavily weighted toward coal. This is a questionable, worst-case assumption that is out of step with the excess generation reported by ComEd as well as the fact that Illinois has made substantial strides in making its grid less carbon intensive, including being on track to completely phase out coal by 2030.<sup>128</sup> ComEd indicates that over 75% of its current generation is carbon-free.<sup>129</sup>

Numerous studies have established that heat pumps reduce emissions for the average household in every state when compared to the highest efficiency gas-fired equipment available.<sup>130</sup> Most notably, a high-resolution national scale study from

<sup>126</sup> WEC Energy Group, *2023 Corporate Responsibility Report*, p. 34, <https://www.wecenergygroup.com/csr/cr2023/wec-corporate-responsibility-report-2023.pdf>.

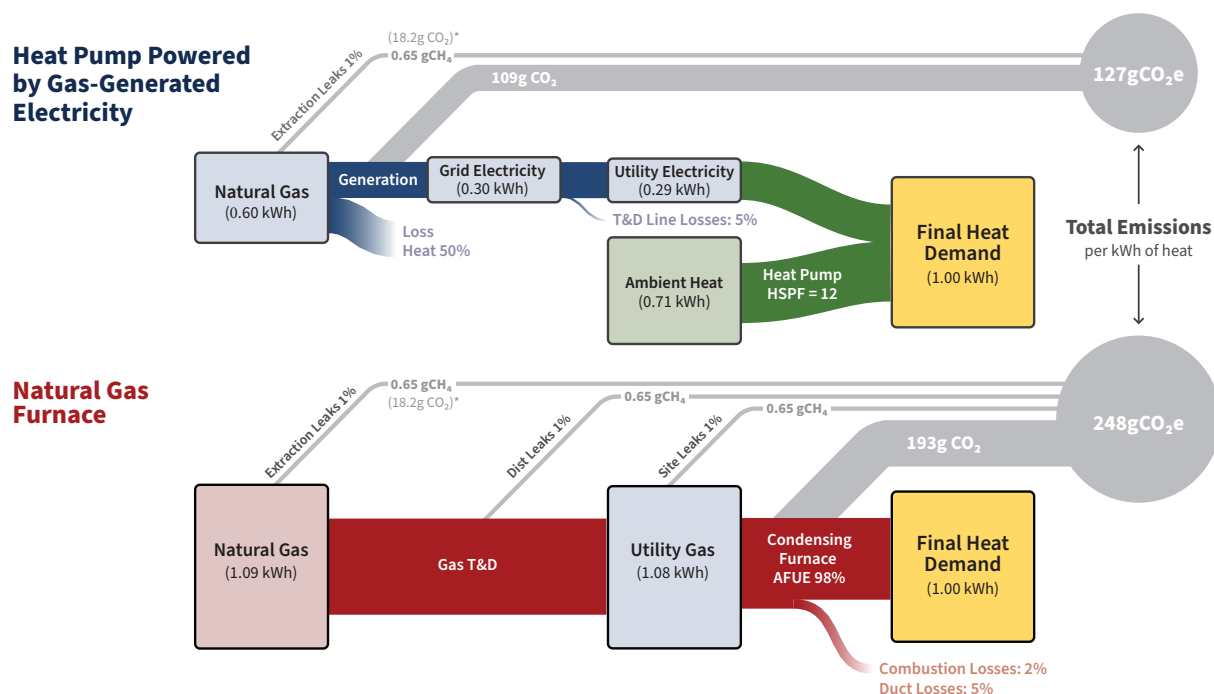
<sup>127</sup> PGL and North Shore Gas, “Role of Gas Utilities in the Clean Energy Transition and Impacts of Electrification,” Presentation to the IL Future of Gas Proceeding (April 22, 2024), pdf slide 10, <https://icc.illinois.gov/api/web-management/documents/downloads/public/future-of-gas/PGL%20NSG%20Future%20of%20Gas%20Presentation%2004-22-24.pdf>. See also: ICC, 2023 Rate Case for PGL, Docket No. 23-0069, ICC Request No. ICC 1.04 (May 16, 2023), p. 2, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337765/files/588776.pdf>.

<sup>128</sup> Sources of ComEd’s electricity for the 12 months ending September 30, 2023 are presented in ComEd’s environmental disclosure statement, <https://www.icc.illinois.gov/downloads/public/filing/2/12/13/350333.pdf>.

<sup>129</sup> ICC, Future of Gas Proceeding, ComEd Presentation: “Introduction to Electric Utility Considerations: ComEd” (May 20, 2024), slide 5, [https://icc.illinois.gov/api/web-management/documents/downloads/public/future-of-gas/ComEd%20Presentation\\_ICC%20Future%20of%20Gas\\_5-20-2024.pdf](https://icc.illinois.gov/api/web-management/documents/downloads/public/future-of-gas/ComEd%20Presentation_ICC%20Future%20of%20Gas_5-20-2024.pdf).

<sup>130</sup> Sam Calisch, “Heat Pumps emit less than high efficiency gas appliances in nearly every household in America,” *Rewiring America* (April 20, 2022), <https://www.rewiringamerica.org/circuit-breakers/heat-pumps>.

**Figure 4.1: Comparison of energy flows and emissions from a gas furnace and a heat pump powered by electricity from gas generation**



Source: GWD.

the National Renewable Energy Laboratory (NREL) demonstrated near-universal emissions reductions when coupling building energy simulations with various grid forecasts.<sup>131</sup> Modern heat pumps consume less energy than they deliver. As shown in Figure 4.1, even when a heat pump runs with electricity generated from gas, it reduces emissions relative to combusting gas directly for heat in the home. In addition, statements regarding the carbon intensity of electricity are often overestimated when the pace of grid decarbonization is not accounted for and when analyses are based on older, less efficient heat pumps.<sup>132</sup>

“even when a heat pump runs with electricity generated from gas, it reduces emissions relative to combusting gas directly for heat in the home.”

<sup>131</sup> E.J.H. Wilson et al., “Heat pumps for all? Distributions of the costs and benefits of residential air-source heat pumps in the United States,” *Joule* (2024, 8 (4), 1000–1035), <https://doi.org/10.1016/j.joule.2024.01.022>.

<sup>132</sup> Sam Calisch, “Heat Pumps emit less than high efficiency gas appliances in nearly every household in America,” *Rewiring America* (April 20, 2022), <https://www.rewiringamerica.org/circuit-breakers/heat-pumps>.



## C. Emissions

Reducing greenhouse gas emissions is a major goal of the SMP. PGL's position is that leak-prone pipeline replacement will solve the problem of downstream methane emissions as more mains are replaced and as RNG is increasingly utilized.<sup>133</sup> The company reports that "from 2016 through 2021, the SMP reduced methane emissions by 1,100 metric tons, equivalent to the greenhouse gas emissions of 71 million miles driven by the average gasoline-powered car."<sup>134</sup>

PGL and WEC Energy's position fails to address two important dimensions of the emissions problem:

- **Official methane leak rates significantly underestimate the contribution of PGL's gas network to Chicago's GHG emissions.** This is for two reasons. First, methane leaked from storage facilities, gas mains and services, and meters is underestimated for the Chicago territory.<sup>135</sup> Second, WEC Energy and PGL do not take into account Scope 3 emissions which broadly include behind-the meter (i.e., indoor) emissions attributable to both gas leaks and the combustion of gas in household equipment and appliances.
- **Pipeline replacement generally is a high-cost approach to reducing GHG emissions from gas distribution systems.** Replacing gas mains in many circumstances is unlikely to be the most cost-effective solution to controlling and reducing emissions. In fact, pipeline replacement can compare "very unfavorably with electrification on the basis of dollars per ton of CO<sub>2</sub> saved,"<sup>136</sup> particularly when pipe replacement

costs are high, as they are in the Peoples Gas territory.<sup>137</sup>

It should be noted that, assuming that recent proposed PHMSA revisions to gas pipeline leak detection and repair (LDAR) regulations take effect as proposed in March 2025, PGL is likely to face significant repercussions.<sup>138</sup> This is because the regulations will require gas utilities to conduct more frequent leak surveys, expand the definition of hazardous leaks, increase their focus on Grade 3 leaks, accelerate repairs, and conduct enhanced leak monitoring.<sup>139</sup> PGL expects that the enhanced regulations will result in an increase in detected leaks and associated leak repair and maintenance costs.<sup>140</sup> The ICC Safety and Reliability Division finds that the potential LDAR rule "could result in Peoples Gas spending significantly more money to fix leaks in the near future."<sup>141</sup>

In its April 2024 filing in the 2024 SMP Investigation, PGL argues that this looming PHMSA-related cost of compliance issue is a further reason to "promptly resume a proactive pipe replacement program."<sup>142</sup> Over the last four years (2020 to 2023), PGL's

of%20Alice%20Napoleon%20on%20behalf%20of%20NRDC%20KEDNY%20KEDLI%2022-017.pdf.

<sup>137</sup> In testimony for a recent ConEd rate case in New York, Napoleon and Hopkins estimate that "an approach based on building retrofits, electrification, and pipeline retirement could reduce emissions at a cost per ton that is 77 percent less expensive than the cost per ton of the MRP [main replacement pipe], while delivering co-benefits of lower energy bills and increased public health and comfort for building residents." NY Public Service Commission, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Gas Service, Case 22-E-0064 and Case 22-G-0065, Direct Testimony of Alice Napoleon and Asa Hopkins PhD on behalf of Natural Resource Defense Council (May 20, 2022), p. 6, <https://www.synapse-energy.com/sites/default/files/Synapse-Panel-Testimony-Exhibits-NRDC-22-017.pdf>.

<sup>138</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, Staff Exhibit 2.0, <https://www.icc.illinois.gov/docket/P2024-0081/documents/351871/files/615569.pdf>.

<sup>139</sup> Dorie Seavey, *Leaked & Combusted* (May 2024, HEET), pp. 43-45, [https://assets-global.website-files.com/649aeb5aa8188e00cea66b-b/663a27270c0fa4ffcfce447d\\_Leaked-and-Combusted-May-2024.pdf](https://assets-global.website-files.com/649aeb5aa8188e00cea66b-b/663a27270c0fa4ffcfce447d_Leaked-and-Combusted-May-2024.pdf).

<sup>140</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 35, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>. ICC staff estimates that improved leak detection will result in identifying many more Grade 3 leaks involving "somewhere between 366,960 to 489,280 [joint] locations" which if leaking will have to be treated within 3 to 7 years (a common leakage spot on cast and ductile iron pipes are the connection joints). See: ICC, 2024 SMP Investigation, Docket No. 24-0081, Staff Exhibit 2.0, p. 5, <https://www.icc.illinois.gov/docket/P2024-0081/documents/351871/files/615569.pdf>.

<sup>141</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, Staff Exhibit 2.0, p. 7, <https://www.icc.illinois.gov/docket/P2024-0081/documents/351871/files/615569.pdf>.

<sup>142</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 35, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>133</sup> WEC Energy Group, CDP Climate Change Questionnaire for 2023, p. 65, <https://www.wecenergygroup.com/csr/cdp2023-climate-change.pdf>; and ICC, 2023 Rate Case for PGL, Docket No. 23-0069, ICC Request No. ICC 1.04 (May 16, 2023), p. 3, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337765/files/588776.pdf>.

<sup>134</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Request No. ICC 1.04 (May 16, 2023), p. 3 of 4, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337765/files/588776.pdf>.

<sup>135</sup> Cody Floerchinger et al., "Relative flux measurements of biogenic and natural gas-derived methane for seven U.S. cities," *Elementa Science of the Anthropocene* (February 2021, 9:1), DOI:10.1525/elementa.2021.000119.

<sup>136</sup> NY Public Service Commission, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Brooklyn Union Gas Company and KeySpan Gas d/b/a National Grid, Case 23-G-0225 & 0226, Direct Testimony of Alice Napoleon on behalf of the Natural Resources Defense Council (September 1, 2023), p. 45, <https://www.synapse-energy.com/sites/default/files/Direct%20Testimony%20>



annual leak repair and maintenance costs averaged \$27.1 million, or about 8% of its total operations and maintenance expenses.<sup>143</sup> Any increase in PGL's operations and maintenance expenses would lower the company's net income until the next rate case when rate increases could be pursued to cover the added expenses. An additional motivation for Peoples Gas to resume the SMP is that having a pipeline replacement program in place can greatly extend the PHMSA compliance dates to address detected leaks if the specific material at issue is scheduled for replacement.<sup>144</sup>

## D. Role and feasibility of RNG and hydrogen

PGL's position is that it is essential for Chicago to continue to use the SMP to create a "modern distribution infrastructure system" that can carry lower carbon fuels. According to the company, to do otherwise would be to foreclose "beneficial opportunities"<sup>145</sup> and jeopardize the preservation of "customer choice" such that customers can "choose the decarbonization strategies that work best for them."<sup>146</sup> As it stands, PGL's system is a poor candidate for transporting and delivering these fuels because its cast iron mains are leak prone, have limited remaining service lives, and provide limited pressurization capabilities.<sup>147</sup>

Groundwork Data recently conducted an analysis of the potential role that alternative gases could play in Illinois' energy transition.<sup>148</sup> Our key conclusions are these:

- ▶ **RNG is an exceptionally expensive decarbonization pathway that does not create any new value for gas customers.** At scale, energy customers would incur burdensome costs, further incentivizing customers to leave the gas system. Additionally, scaling RNG for heat will likely be constrained by new federal incentives for transportation biofuels and carbon sequestration.
- ▶ **The highest and best use of Illinois' vast potential bioenergy resources is not RNG for building heating.** These resources would have far greater economic value if allocated to harder-to-electrify sectors, such as sustainable aviation fuel and carbon dioxide removal. Additionally, scaling RNG for heat will likely be further constrained by new federal incentives for transportation biofuels and carbon sequestration.
- ▶ **Like RNG, hydrogen for heating is neither a scalable decarbonization solution nor cost effective.** The preponderance of scientific literature finds that hydrogen is not cost-optimal for building decarbonization.<sup>149</sup> Beyond cost and efficiency, other problems include: hydrogen's significant GHG and environmental impacts (hydrogen has recently been determined to have a larger global warming potential than previously understood);<sup>150</sup> pipeline materials compatibility (hydrogen is known to have a degrading effect on pipes, fittings, valves, joints and welds);<sup>151</sup> safety issues (hydrogen is more hazardous than fossil gas); hydrogen's questionable impact on end-use appliances (appliances and furnaces are not certified to burn hydrogen and as the percentage of hydrogen blends increases, end-use appliances may require modifications);<sup>152</sup> leakage rates (because hydrogen is a small molecule, leak rates from distribution pipes will increase); and the need to increase operating pressures which in turn will increase leak flow rates (hydrogen has only one-third the energy content of methane;

<sup>143</sup> PGL, *Safety Modernization Program Quarterly Report*, Q4 2023 (February 14, 2024), p. 24, <https://icc.illinois.gov/api/web-management/documents/downloads/public/gas/2023%20-%20Q4%20SMP%20Report.pdf>

<sup>144</sup> For example, under the new LDAR rule, Class 2 leaks must be repaired within 1 year unless scheduled for replacement, in which case the operator has 2 years. Class 3 leaks have a 3-year repair timeline unless the operator is under a replacement program in which case the operator has 7 years to replace the pipe. See ICC, 2024 SMP Investigation, Docket No. 24-0081, Staff Exhibit 2.0, p. 5, <https://www.icc.illinois.gov/docket/P2024-0081/documents/351871/files/615569.pdf>.

<sup>145</sup> *Ibid.*, p. 2.

<sup>146</sup> *Ibid.*, p. 3.

<sup>147</sup> *Ibid.*, p. 11.

<sup>148</sup> Dorie Seavey et al., *The Future of Gas in Illinois* (May 2024, Building Decarbonization and Groundwork Data), Section 5, <https://buildingdecarb.org/resource/the-future-of-gas-in-illinois>.

<sup>149</sup> Jan Rosenow, "A meta-review of 54 studies on hydrogen heating," *Cell Reports Sustainability* (December 14, 2023), <https://doi.org/10.1016/j.crsus.2023.100010>.

<sup>150</sup> Maria Sand et al., "A multi-model assessment of the Global Warming Potential of hydrogen," *Communications Earth & Environment* (June 7, 2023, 4:203), <https://doi.org/10.1038/s43247-023-00857-8>.

<sup>151</sup> Kevin Topolski et al., *Hydrogen Blending into Natural Gas Pipeline Infrastructure: Review of the State of Technology* (2022, National Renewable Energy Laboratory), <https://www.osti.gov/biblio/1893355>.

<sup>152</sup> *Ibid.*

“Procuring RNG for heat means paying for high production costs and clearing the higher cost of these credits. Ultimately, these financing mechanisms will push up rates for customers and make electrification more affordable.”

therefore, greater pressure is required to deliver the same amount of energy).<sup>153</sup>

Like many investor-owned gas utilities, PGL has adopted a bullish position toward RNG and hydrogen but without detail on how and over what time frame pilots can be scaled up to create affordable gas rates.<sup>154</sup> In addition, PGL has not provided feasibility and/or cost/benefit analyses related to decarbonizing the city’s gas system by blending in RNG and/or hydrogen.

WEC Energy, for its part, has stated that it is looking at RNG blends from dairy farms as an alternative to electrification and is “taking steps to implement this method as we work toward our methane reduction goal.”<sup>155</sup> However, the parent company has not explained how it seeks to overcome the barriers posed by federal and state fuel standards that provide significant subsidies for fuels used solely for transportation end-uses.

An RNG interconnection pilot is currently underway to connect PGL’s high-pressure distribution system and an RNG project involving anaerobic digesters for local food waste diverted from landfills.<sup>156</sup> The pilot is part of the urban farming Green Era Campus on Chicago’s Southside. The \$32 million project has received international attention for its efforts to prioritize local community needs as part of its development. The total cost of the interconnection is reported to be \$1.7 million and the pilot is designed to produce up to 1,152 Mcg of gas per

day (48 Mcf/hour) with multiple testing protocols to ensure that the RNG produced meets pipeline quality and safety standards.<sup>157</sup> The cost of the interconnection is to be recovered via a recently approved rider.<sup>158</sup>

According to Groundwork Data’s analysis, the cost of RNG produced by the Green Era project is likely to total over \$25 per MMBtu (food waste) – far exceeding the \$3–\$6 range of fossil gas in recent years.<sup>159</sup> The project is likely only financially feasible due to the availability of Renewable Fuel Standard (RFS) and Low Carbon Fuel Standard (LCFS) credits for the production of RNG for use in vehicles only. Procuring RNG for heat means paying for high production costs and clearing the higher cost of these credits. Ultimately, these financing mechanisms will push up rates for customers and make electrification more affordable.

Regarding hydrogen, WEC Energy has stated that “there is potential for hydrogen to be produced with zero-emission energy resources and blended with conventional natural gas. If this technology becomes a viable option for our natural gas business, we expect our modernized distribution system could be modified slightly to carry hydrogen fuel.”<sup>160</sup> Yet as of 2023, Peoples reports that it “has not conducted a study on hydrogen’s use in the new SMP facilities

<sup>153</sup> Ibid.

<sup>154</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Request No. ICC 1.04, <https://icc.illinois.gov/docket/P2023-0068/documents/337765/files/588776.pdf>.

<sup>155</sup> WEC Energy, 2022 Corporate Responsibility Report, <https://www.wecenergygroup.com/csr/cr2022/wec-corporate-responsibility-report-2022.pdf#pagemode=bookmarks>.

<sup>156</sup> Corli Jay, “The South Side is getting a facility to turn food waste into natural gas,” *Crain’s Chicago Business* (May 19, 2022), <https://www.chicagobusiness.com/utilities/auburn-gresham-getting-renewable-natural-gas-facility>.

<sup>157</sup> ICC, Verified Petition of PGL for Certain Regulatory Findings re: Proposed RNG Connection, Docket No. 22-0323, PGL Exhibit 4.0 (April 26, 2022), <https://icc.illinois.gov/docket/P2022-0323/documents/323226/files/562662.pdf>.

<sup>158</sup> Effective April 2023, the ICC approved the implementation of a new PGL rider called “Rider PRG: Producer of Renewable Gas Transportation Service.” See: PGL, “Rider PRG,” ILL. C.C. NO. 28, Sixth Revised Sheet No. 147 (March 2023), <https://www.icc.illinois.gov/downloads/public/filing/4/344699.pdf>.

<sup>159</sup> Dorie Seavey et al., *The Future of Gas in Illinois* (May 2024, Building Decarbonization and Groundwork Data), Section 5, <https://buildingdecarb.org/resource/the-future-of-gas-in-illinois>.

<sup>160</sup> WEC Energy Group, 2022 Climate Report: Pathway to a Clean Energy Future, p. 25, <https://www.wecenergygroup.com/csr/climate-report2022.pdf>.

being deployed.”<sup>161</sup> The most successful and longest-running hydrogen blending project in the U.S. is by Hawaii Gas. Recent hydrogen-blending efforts by other gas utilities both in the U.S. and the United Kingdom have fizzled.<sup>162</sup>

## E. Key takeaways and strategic implications

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Peoples Gas and its parent company, WEC Energy, have opted for a strategy of aggressive investment in the SMP with the expectation of securing greater financial returns while maintaining system reliability and preparing for potential use of “future fuels.” This approach is built on several high-risk assumptions that warrant close scrutiny.

First, the company’s strategy rests on the assumption that large-scale investments in traditional gas infrastructure will continue to be justified by safety, reliability, and environmental considerations. This assumption may overlook the rapidly changing regulatory, policy, and market environment where increasing pressure to decarbonize could undermine the long-term viability of these investments.

Second, the expectation that emerging technologies such as RNG and hydrogen will provide a reliable and cost-effective pathway for decarbonization is far from guaranteed. These technologies face significant technical, economic, and regulatory hurdles, and their widespread adoption remains uncertain. This high-risk assumption exposes Peoples Gas to the possibility that these technologies may not materialize at scale or within projected timeframes.

Finally, the failure to thoroughly evaluate and consider non-pipeline alternatives, such as advanced leak detection and repair technologies,

electrification, and thermal energy networks, is a significant oversight. By not exploring these options, Peoples Gas may be missing opportunities to adapt to the evolving energy landscape and mitigate the risks associated with continued reliance on fossil fuel infrastructure. For investors, this lack of comprehensive risk assessment should be a point of concern as it could lead to unforeseen challenges and impact the company’s long-term financial stability.

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<sup>161</sup> ICC, 2023 PGL Rate Case, Docket No. 23-0069, COC Exhibit 1.05, p. 3, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337552/files/588187.pdf>.

<sup>162</sup> See Sam Brasch, “Xcel Energy backs off plan to blend hydrogen into the natural gas system serving a neighborhood near Hudson,” *Colorado Public Radio* (March 5, 2024), <https://www.cpr.org/2024/03/05/xcel-energy-pauses-plan-to-blend-hydrogen-into-natural-gas-system-near-hudson/>; and BBC, “Ellesmere Port hydrogen heating trial scrapped after protests” (July 11, 2023), <https://www.bbc.com/news/uk-england-merseyside-66165484>.

Section

# 5

## Managing risk in a changing regulatory environment

**Recent actions by the ICC coupled with the sunseting of the QIP Rider, have introduced new financial challenges for Peoples Gas and arguably have begun to alter the company's risk profile for investors.** The ICC's actions are part of a broader reassessment of the role of gas utilities within the context of Illinois' climate commitments. The Commission has stated that to meet the state's climate law, "the gas distribution system as currently operated will need to change."<sup>163</sup> Further underscoring this shift is the recent launch of the ICC Future of Gas proceeding which aims to address the decarbonization of the gas system and develop recommendations for regulatory and legislative changes.<sup>164</sup>

This section surveys this evolving regulatory landscape and examines the financial repercussions for Peoples Gas. Given a future regulatory environment predicated on heightened scrutiny, a focus on decarbonization, and concern about the rising costs of system modernization, we present modeling results for two scenarios that require reduced – rather than Full – SMP spending. In the first scenario, SMP capital spending is lowered by 25%; in the second, it is reduced by 50%. We explore how reduced spending would affect PGL's financial stability and long-term viability in a rapidly evolving energy landscape.

<sup>163</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Final Order (November 16, 2023), p. 121, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306/files/601245.pdf>.

<sup>164</sup> ICC, Initiation of proceeding to examine the Future of Natural Gas and issues associated with decarbonization of the gas distribution system, Docket No. 24-0158, <https://www.icc.illinois.gov/docket/P2024-0158/documents/347887>.

## A. Recent regulatory decisions

From November 2023 through Q2 2024, the ICC took several noteworthy steps consistent with a tightened regulatory regime for investor-owned gas utilities. For Peoples Gas, these actions largely stemmed from the Commission's 2023 rate case order and included the following:

- **Pause of the SMP Program.** The ICC's year-long "pause" of the SMP has halted planned capital expenditures.<sup>165</sup> The accompanying new SMP investigation (Docket No. 24-0081) was strongly advocated for by the Attorney General, the City of Chicago, and public interest intervenors. In its 2023 rate case order, the ICC found that Peoples Gas had failed to adequately justify the SMP and cited concerns with SMP cost overruns, insufficient risk reduction for aging pipes, and lack of prioritization of neighborhoods with the highest levels of risk.<sup>166</sup>
- **Capital expenditure disallowances.** The ICC disallowed \$177.2 million related to spending on PGL's service centers and an additional \$59 million for "expected future spend."<sup>167</sup>
- **Biennial long-term gas infrastructure plan.** Beginning in 2025, Illinois' four largest gas utilities, including Peoples Gas, will be required to publicly disclose a five-year action plan for investments. This plan must describe the lowest societal cost gas distribution investments necessary to meet customer demand and comply with public policy objectives.<sup>168</sup>
- **Annual leak reporting requirement.** As part of its 2023 rate case orders, the ICC adopted recommendations to enhance utility leak reporting in order to provide greater transparency and to enable the Commission to assess the

<sup>165</sup> ICC, 2023 Rate Case for PGL, Docket 23-0069, Final Order (November 16, 2023), p. 30, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306/files/601245.pdf>.

<sup>166</sup> Ibid., pp. 29-30.

<sup>167</sup> WEC Energy Group, 2023 Annual Report, Note 26, p. F-98, <https://www.wecenergygroup.com/invest/annualreports/wec2023-annual-report.pdf>.

<sup>168</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Final Order (November 16, 2023), pp. 119-120, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306/files/601245.pdf>

scope of system leaks and the effectiveness of utility efforts to identify, target, and remedy them. Beginning July 1, 2024, each gas utility must annually report leaks by grade, cause, and facility type (material type and infrastructure type).<sup>169</sup>

- **ICC order on PGL's rehearing petition.** Peoples Gas requested that the ICC add back \$145 million in capital spending related to work-in-progress and "emergency" projects, thereby exempting these from the SMP pause. In a June 2024 order, the ICC agreed to reinstate only \$28.5 million, increasing PGL's revenue requirement by \$1.6 million instead of nearly \$8 million.<sup>170</sup> Peoples Gas is contesting this rehearing order in the Illinois Appellate Court.
- **Inadequate justification for CI/DI pipeline replacement.** In its 2023 rate case order, the ICC determined that Peoples Gas failed to provide sufficient detail regarding the replacement of cast iron and ductile iron (CI/DI) pipelines; therefore, it was unable to conclude that the 2024 SMP test year investments were "prudent and reasonable." The Commission noted that "between the end of 2018 and the end of 2022, PGL retired and replaced 237 miles or 59 miles per year. At this rate, it will take 26 years – until 2049 – to replace the existing at-risk pipe. PGL makes no attempt in this record to explain the steps they will take to complete retirement within or close to the Kiefner Study's specified timeline [of 2030]."<sup>171</sup> The Commission found that PGL "offered inadequate record justification for maintaining a \$265 million spending level [for SMP]."<sup>172</sup> This scrutiny could lead to further disallowances or stricter oversight, potentially reducing future investment returns.

In its 2023 rate case orders for Illinois' four largest investor-owned utilities, the ICC articulated a firm guiding principle: "the question is not whether

pipeline replacements generally improve safety and reliability, but what types of pipes are to be replaced, to what degree safety and reliability are affected, at what pace, and at what cost."<sup>173</sup> This suggests a higher threshold for justifying SMP investments such that it is no longer sufficient to claim that an investment improves safety, reliability, or reduces emissions; instead, going forward, PGL's proposed spending plans must meet the ICC's detailed criteria.

## B. Financial impacts

The regulatory actions outlined above have had immediate material effects on Peoples Gas and the shareholders of its parent company, with both entities describing the regulatory environment shift as "adverse" and a "deterioration."

To date, the financial consequences – all negative – have included:

- **Increased operating expenses due to non-cash impairment.** Peoples Gas expensed \$177.2 million related to the ICC's disallowances of previously incurred capital costs as a non-cash "impairment."<sup>174</sup> The impairment was also reflected in WEC Energy's consolidated income statements.<sup>175</sup>
- **Decline in WEC Energy net income from Illinois.** WEC Energy recorded an \$86.9 million, or 38.3%, decrease in net income to common shareholders due to its Illinois segment.<sup>176</sup> This decline in net income was the first to occur in five years.
- **WEC Energy decision to shift capex away from PGL.** During its Q4 2023 earnings call and

<sup>173</sup> ICC, 2023 Rate Case for Ameren Illinois Company, Docket No. P2023-0067 (November 16, 2023), p. 90, <https://www.icc.illinois.gov/docket/P2023-0067/documents/344282>.

<sup>174</sup> Note: An impairment loss is recognized when the carrying amount of an asset is not recoverable and exceeds its fair value. PGL, 2023 Annual Report, Consolidated Income Statement, p. 37 and 43, [http://q4live.s22.clientfiles.s3-website-us-east-1.amazonaws.com/994559668/files/doc\\_financials/2023/q4/2023-PGL-Annual-Report.pdf](http://q4live.s22.clientfiles.s3-website-us-east-1.amazonaws.com/994559668/files/doc_financials/2023/q4/2023-PGL-Annual-Report.pdf).

<sup>175</sup> WEC Energy Group, 2023 Annual Report, p. F-40, <https://www.wecenergygroup.com/invest/annualreports/wec2023-annual-report.pdf>.

<sup>176</sup> According to WEC Energy, the decrease was "driven by higher operating expenses, primarily due to an impairment associated with the ICC's disallowance of certain incurred capital costs in its 2023 rate orders for PGL and NSG [North Shore Gas]" but offset by lower operation and maintenance costs, rate increases for the two Illinois gas utilities, and continued capital investment in the SMP project in 2023. Ibid., p. F-13.

<sup>169</sup> Ibid., p. 65. For PGL's first annual leak report, see: PGL, Annual Leak Report for Calendar Year 2023, <https://www.icc.illinois.gov/docket/P2023-0069/documents/352355/files/616633.pdf>.

<sup>170</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Order on Rehearing (May 30, 2024), <https://www.icc.illinois.gov/docket/P2023-0069/documents/351184/files/614334.pdf>.

<sup>171</sup> ICC, 2023 Rate Case for PGL, Docket 23-0069, Final Order (November 16, 2023), p. 28, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306/files/601245.pdf>.

<sup>172</sup> Ibid., p. 29.



in response to what it called a “disappointing” conclusion to the 2023 rate case, WEC Energy announced that it had lowered its planned five-year investment in Illinois’ gas delivery system by \$800 million for 2024-2028, compared to 2023-2027. The capex is to be redirected to non-regulated, renewable power operating subsidiaries, indicating a “diminished role for gas utilities in [its] business mix.”<sup>177</sup>

- **Decrease in unadjusted WEC Energy earnings per share (EPS).** The negative impact of the ICC’s disallowance decreased EPS on an unadjusted basis by \$0.41. The resulting EPS for 2023 was \$4.22 versus \$4.45 in 2022.<sup>178</sup> (The adjusted EPS for 2023 was \$4.63).
- **Negative credit review from Moody’s Ratings.** Following the ICC’s June 2024 order on PGL’s rehearing request, Moody’s changed PGL’s outlook from stable to negative, although it did not change PGL’s current A-level ratings. According to Moody’s, “the negative outlook on PGL’s financial performance for the next few years reflects a deterioration in the Illinois regulatory environment, uncertainty about future capital expenditures, increased likelihood that PGL’s cash flows will be subject to regulatory lag in terms of cost recovery (including prudence reviews of amounts previously collected through riders), and the probability of an adverse outcome of the pending SMP investigation.”<sup>179</sup>
- **Subsequent fall in WEC Energy’s stock price.** Upon the announcement of the ICC’s 2023 rate case decision, WEC Energy’s stock price declined 4.6%. It declined again at the time of the rehearing order and the announcement of Moody’s negative credit review in June 2024. However, as of early September 2024, the stock had rebounded to reach a 52-week high.

<sup>177</sup> Tom DiChristopher, “Future of gas, pipe safety probes cloud outlook for WEC Energy’s Chicago Utility,” *S&P Capital IQ* (February 6, 2024). WEC Energy indicates that in 2028 it expects gas assets to make up 30% of its total asset base, down from 35% at the end of 2023. See WEC Energy, *September 2024 Investor Report* (September 4, 2024), p. 13, [https://s22.q4cdn.com/994559668/files/doc\\_presentations/2024/Sep/03/09-2024-september.pdf](https://s22.q4cdn.com/994559668/files/doc_presentations/2024/Sep/03/09-2024-september.pdf).

<sup>178</sup> WEC Energy Group, *2023 Annual Report*, p. P-43, <https://www.wecenergygroup.com/invest/annualreports/wec2023-annual-report.pdf>.

<sup>179</sup> Moody’s Ratings, Rating Action: Moody’s Ratings changes outlook of Peoples Gas Light and Coke to negative; affirms ratings” (June 3, 2024), <https://ratings.moody.com/ratings-news/422391>.

“the negative outlook on PGL’s financial performance for the next few years reflects a deterioration in the Illinois regulatory environment, uncertainty about future capital expenditures, increased likelihood that PGL’s cash flows will be subject to regulatory lag in terms of cost recovery (including prudence reviews of amounts previously collected through riders), and the probability of an adverse outcome of the pending SMP investigation.”

— Moody’s

## C. Future of Gas deliberations in Illinois

To address systemic decarbonization issues and develop recommendations for regulatory actions and legislation, the ICC initiated a Future of Gas proceeding in March 2024.<sup>180</sup>

According to WEC Energy Group’s 2023 annual report, while the ultimate outcome of this proceeding remains uncertain, “future natural

<sup>180</sup> The proceeding begins with two workshop series. See ICC, Future of Gas Proceedings, <https://www.icc.illinois.gov/programs/Future-of-Gas-Workshop>.

## “The considerable cost savings from avoided gas pipeline replacement could effectively be redirected towards investment in building electrification.”

gas investment opportunities in Illinois could be negatively impacted.”<sup>181</sup>

With the launch of this Future of Gas proceeding, Illinois joined 11 other states where utility commissions have undertaken similar initiatives. These proceedings generally focus on addressing long-term gas planning, pathways for emissions reductions, clean energy infrastructure, workforce transitions, and protections for low-income ratepayers<sup>182</sup> (see Figure 5.1 for future-of-gas-related activity across the country).

An important framework to emerge from these efforts is that of a “managed gas transition” – that is, a comprehensive strategy involving regulatory oversight and stakeholder collaboration to phase out pipeline-delivered gas in favor of clean energy while ensuring safety, reliability, and affordability. A managed gas transition has three key building blocks:<sup>183</sup>

1. **Halting gas system expansion** (e.g., limiting or removing pipeline line extension allowances and instituting all-electric building codes)
2. **Limiting reinvestment in the gas distribution system** by restricting or reducing capital spending on the replacement of existing gas infrastructure
3. **Strategically downsizing the gas distribution system** by creating detailed, phased plans for decommissioning the gas system over time

Implementing such a strategy requires developing rigorous frameworks for identifying and evaluating non-pipeline alternatives (NPAs), such as advanced

leak repair, pipeline decommissioning, targeted or zonal electrification, and thermal energy networks.

A key factor driving some states to explore policies supporting a managed transition is the body of analysis indicating that the cost of building electrification is comparable to, and potentially lower than, the cost of pipeline replacement over the long term.<sup>184</sup> The considerable cost savings from avoided gas pipeline replacement could effectively be redirected towards investment in building electrification. Should the ICC implement elements of a managed transition, the financial implications for Peoples Gas under its current operating model could be substantial, particularly given that Chicago’s electric system is owned and operated by a separate utility, ComEd.

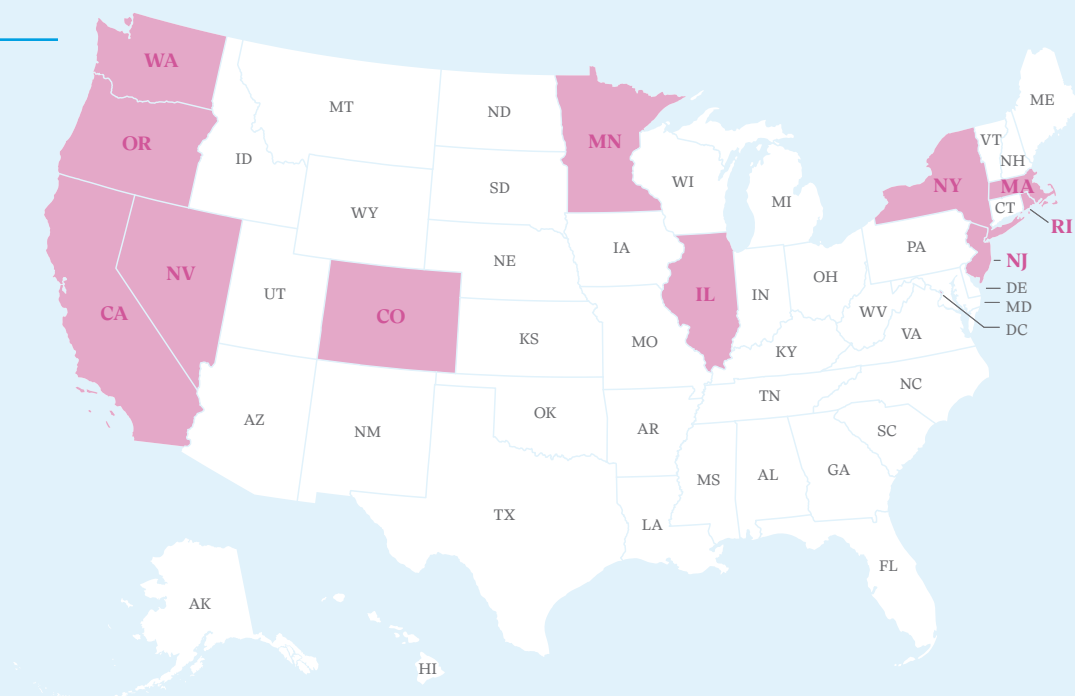
<sup>181</sup> WEC Energy Group, *2023 Annual Report*, p. F-32, <https://www.wecenergygroup.com/invest/annualreports/wec2023-annual-report.pdf>.

<sup>182</sup> See BDC’s summary of active Future of Gas proceedings as well as their tracker: <https://buildingdecarb.org/decarbation-issue-2>.

<sup>183</sup> Dorie Seavey et al., *The Future of Gas in Illinois* (May 2024, Building Decarbonization and Groundwork Data), Section 6, <https://buildingdecarb.org/resource/the-future-of-gas-in-illinois>.

<sup>184</sup> See, for example, Aryeh Gold-Parker et al., *Benefit-Cost Analysis of Targeted Electrification and Gas Decommissioning in California: Evaluation of 11 Candidate Sites in the San Francisco Bay Area*, California Energy Commission (December 2023), [https://www.ethree.com/wp-content/uploads/2023/12/E3\\_Benefit-Cost-Analysis-of-Targeted-Electrification-and-Gas-Decommissioning-in-California.pdf](https://www.ethree.com/wp-content/uploads/2023/12/E3_Benefit-Cost-Analysis-of-Targeted-Electrification-and-Gas-Decommissioning-in-California.pdf); and UMass Amherst Energy Transition Institute, *Equitable Energy Transition Planning in Holyoke Massachusetts: A Technical Analysis for Strategic Gas Decommissioning and Grid Resiliency* (December 2023, prepared by Groundwork Data), <https://doi.org/10.7275/enzr-5311>.

States with Future of Gas proceedings



**Figure 5.1: Future-of-gas activity across the states**

**Future-of Gas-Proceedings.** Proceedings have occurred or are underway in 12 states: California, Colorado, Illinois, Massachusetts, Minnesota, Nevada, New Jersey, New York, Oregon, Rhode Island, and Washington. Among the main issues under consideration are: aligning utility planning with climate goals, equitably financing existing gas assets, halting gas system expansion, transitioning away from the gas system while maintaining safe, reliable, and affordable energy access, and providing a just transition for gas workers.<sup>1</sup>

**Non-pipeline alternative (NPAs) frameworks.** NPAs are intended to delay, reduce, or avoid the need to build up or upgrade traditional gas infrastructure such as pipelines, storage, and peaking resources (see page 47 for a description). California, Colorado, Massachusetts, New York, Oregon, and Rhode Island now require local gas utilities to evaluate and consider NPAs as a substitute for pipeline replacement.

**Thermal energy network (TEN) pilots.** Several utility-sponsored thermal energy network projects

are under development across the country. In Massachusetts, Eversource and National Grid are leading 3 projects. In New York, plans for 13 utility TEN projects have been proposed as required under the Utility Thermal Energy Network and Jobs Act. To encourage TEN pilots, Colorado and Minnesota have each taken steps to expand their definitions of clean heat resources to include thermal energy and/or to provide that gas utilities can sell thermal energy. In Chicago, the environmental justice organization, Blacks In Green, is piloting non-utility TEN ownership models. In 2023, the organization received funding from the Department of Energy “to design and develop a community geothermal heating and cooling district...across four city blocks containing more than 100 multi-family and single-family homes.”<sup>2</sup> At the state level, the ICC held a workshop on thermal energy networks in 2023 and submitted a report with recommendations on the role of TENs in Illinois’ clean energy future to the Governor and General Assembly.<sup>3</sup>

<sup>1</sup> Kristin George Bagdanov, “The Future of Gas: A Summary of Regulatory Proceedings on the Methane Gas System,” DecarbNation Blog (December 15, 2022, revised May 31, 2024, Building Decarbonization Coalition), <https://buildingdecarb.org/decarbntion-issue-2#scope>.

<sup>2</sup> Juanpablo Ramirez-Franco, “A Geothermal Energy Boom Could Be Coming to Chicago’s South Side,” *Grist* (February 23, 2024), <https://grist.org/cities/black-communities-south-side-chicago-geothermal-heat/>.

<sup>3</sup> The workshop covered a variety of issues, including: different ownership models for TENs; synergies with existing weatherization and energy efficiency programs; contributions to climate justice and equitable building electrification; and the role of TENs in creating a just transition for utility workers. The final report recommended exploring utility and non-utility ownership models, necessary regulatory and legislative changes, consumer protections, and other recommendations. ICC, *Thermal Energy Network Report* (February 2024), <https://icc.illinois.gov/api/web-man->

### Decommissioning with targeted electrification.

Several states are advancing or encouraging targeted or zonal electrification projects and pilots that provide for retiring gas pipeline segments. The CA Energy Commission's Tactical Gas Decommissioning Project is identifying 3 pilot sites for gas decommissioning and Pacific Gas and Electric (PG&E) has independently instituted a number of small-scale decommissioning projects.<sup>4</sup> The District of Columbia has released a detailed roadmap for strategically electrifying buildings and transportation in the District.<sup>5</sup> In Massachusetts, the Department of Public Utilities has ordered that each gas utility coordinate with the relevant electric company to propose at least one demonstration project for "decommissioning an area of its system through targeted electrification."<sup>6</sup> In Minnesota, gas companies can sell electric heating technologies such as ASHPs and geothermal or aquifer thermal applications, and gas utilities are encouraged to undertake decarbonization pilots.<sup>7</sup>

**Analytic tools for decommissioning.** CA Energy Commission's Tactical Gas Decommissioning Project is developing a decommissioning tool to identify cost-effective gas segments for retirement. PG&E has developed an internal Gas Asset Analysis Tool to identify locations where zonal electrification and/or targeted decommissioning of the methane gas system may reduce gas system costs.<sup>8</sup> Federal and state funding has also begun supporting the development of technical frameworks and tools that use longer planning horizons, integrate planning between gas and electric systems, and assess

alternative strategies for gas network sections slated for pipeline replacement.<sup>9</sup>

**Accelerated gas asset depreciation for dual utilities.** In Washington, a newly adopted law (HB 1589) provides for accelerated depreciation by 2050 for Puget Sound Energy (PSE) gas assets put in service by July 2024; it also allows for gas/electric rate base merging.<sup>10</sup>

**Stranded assets.** In Massachusetts, the Department of Public Utilities has directed gas utilities to forecast "the potential magnitude of stranded investments" and identify the impacts of accelerated depreciation proposals and other alternatives.<sup>11</sup> In California, the Public Utilities Commission (CPUC) has also adopted a new framework to comprehensively review utility gas infrastructure investments in order to help the state transition away from gas-fueled technologies and avoid stranded assets in the gas system.<sup>12</sup> Utilities must now seek CPUC approval of gas infrastructure projects of \$75 million or more or those with significant air quality impacts. Previously, all gas infrastructure projects were considered in utility general rate cases.

agement/documents/downloads/public/TEN/Thermal%20Energy%20Network%20Report%202024.pdf

<sup>4</sup> Gridworks, "Site Prioritization: Identifying Three Proposed Gas Decommissioning Pilot Locations" (August 17, 2023), <https://gridworks.org/2023/08/site-prioritization-identifying-three-proposed-gas-decommissioning-pilot-locations/>

<sup>5</sup> Government of the District of Columbia, Department of Energy and Environment, *The Strategic Electrification Roadmap for Buildings and Transportation in the District of Columbia* (April 2023), [https://doee.dc.gov/sites/default/files/dc/sites/doe/page\\_content/attachments/Strategic%20Electrification%20Roadmap-reducedsize.pdf](https://doee.dc.gov/sites/default/files/dc/sites/doe/page_content/attachments/Strategic%20Electrification%20Roadmap-reducedsize.pdf).

<sup>6</sup> MA Department of Public Utilities, Order on Regulatory Principles and Framework, DPU 20-80-B (December 6, 2023), p. 87, <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/18297602>.

<sup>7</sup> Frank Jossi, "Under new law, Minnesota gas utilities could play a role in electrification," *Energy News Network* (July 21, 2021), <https://energy-news.us/2021/07/21/under-new-law-minnesota-gas-utilities-could-play-a-role-in-electrification/>

<sup>8</sup> CA Energy Commission, PG&E Comments on the Draft 2021 Integrated Energy Policy Report (IEPR), Volume III Decarbonizing the State's Gas System, Docket 21-IEPR-01 (January 28, 2022), <https://efiling.energy.ca.gov/GetDocument.aspx?tn=241334>.

<sup>9</sup> An example of the latter is the Local Energy Asset Planning (LEAP) tool developed by Groundwork Data with support from the U.S. Department of Energy and the MA Department of Energy Resources. UMass Amherst Energy Transition Institute, *Equitable Energy Transition Planning in Holyoke Massachusetts: A Technical Analysis for Strategic Gas Decommissioning and Grid Resiliency* (December 2023, prepared by Groundwork Data), <https://doi.org/10.7275/enzr-5311>.

<sup>10</sup> Matt Joyce, "The path for gas utility decarbonization in Washington state" (May 28, 2024, NW Energy Coalition), <https://nwenergy.org/featured/path-for-gas-utility-decarbonization-in-washington-state/> and Puget Sound Energy, "Facts about HB 1589," Press Release (March 29, 2024), <https://www.pse.com/en/press-release/details/Facts-about-HB-1589>.

<sup>11</sup> MA Department of Public Utilities, Order on Regulatory Principles and Framework, DPU 20-80-B (December 6, 2023), p. 101, <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/18297602>.

<sup>12</sup> CA Public Utilities Commission, "CPUC creates new framework to advance California's transition away from natural gas," News and Updates (December 1, 2022), <https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-creates-new-framework-to-advance-california-transition-away-from-natural-gas>.

## D. Modeling the impact of SMP curtailment

There is a strong possibility that the current SMP investigation will result in limitations on the SMP's scope and spending. This would be consistent with the ICC's heightened regulatory scrutiny and concerns about the rising costs of system modernization, mounting stranded asset risk, and the prospect of historically unprecedented rate hikes. Any reductions in capital spending for gas infrastructure would have financial implications for Peoples Gas and its parent company.

To assess the implications of curtailed SMP spending, we model two possible capex reduction scenarios. These could be achieved by implementing some or all of the following strategies:

- ▶ Prioritizing and managing the replacement of the highest-risk mains and service lines.
- ▶ Strategic decommissioning, starting with the end nodes of the distribution system and progressing to additional segments as needed.
- ▶ Scaling up of specific non-pipeline alternatives, such as thermal energy networks or targeted electrification.
- ▶ Targeted pipeline repairs using advanced technologies such as liners that can extend the life of some pipes by decades.

The first scenario – SMP@75% – models a 25% reduction in the PGL's proposed Full SMP spending. We assume the reduction occurs in 2025 and the reduced capex level is then held constant through 2040. The second scenario – SMP@50% – models a 50% reduction in SMP spending levels that is then held steady through 2040. As in our Full SMP modeling, we assume a constant annual rate of non-SMP capital spending of \$116 million. We model each scenario under both a stable and declining customer base (2% annual decline).

### 1. Curtailed SMP with a stable customer base

Table 5.1 and Figure 5.2 summarize the key modeling results for the two restricted spending scenarios, assuming a stable customer base, and also provide a comparison with the corresponding Full SMP results.

Our key modeling findings are as follows:

- ▶ **Average delivery costs and revenue requirement.** Curtailed SMP spending reduces PGL's revenue requirement and, therefore, average delivery costs per customer. Compared to Full SMP, 25% and 50% SMP reductions over the period 2025 to 2040 reduce the increase in average delivery costs per customer from 100% to 77% and 53%, respectively. SMP@50% would require a 3.6% year-over-year increase in revenue requirement (and therefore customer rates) whereas SMP@75% would require a 5.2% increase, compared to a 6.7% increase for the Full SMP option.
- ▶ **Cumulative capital expenditures.** By 2040, Full SMP would require capital expenditures of nearly \$13 billion whereas the 75% and 50% scenarios would require \$10 billion and \$7.6 billion, respectively.
- ▶ **Unrecovered balances.** Curtailed SMP spending results in lower levels of unrecovered balances by 2040: \$7.9 billion and \$9.8 billion for the 50% and 75% SMP scenarios, respectively, compared to \$11.8 billion for Full SMP.
- ▶ **Annual operating income.** As SMP spending is curtailed, PGL's annual operating income or earnings before interest and taxes (EBIT) necessarily declines. Under Full SMP, PGL's operating income increases by an average of 8% per year between 2025 and 2040, reaching \$741 million in the last year. Under the 75% and 50% capex scenarios, annual increases in operating income decline to 6% and 3.5%, respectively. Compared to Full SMP in 2040, operating income is 17% lower in the 75% capex scenario and 33% lower in the 50% capex scenario (\$741 million vs. \$618 million and \$497 million, respectively).



**Table 5.1: Modeling results for restricted SMP scenarios compared to Full SMP with a **stable customer base** ( 2.5% annual inflation factor assumed)**

		2025*	2030	2040
<b>Cumulative capex</b>	<b>Full SMP</b>	\$663M	\$4,234M	\$12,847M
	<b>SMP @ 75%</b>	\$526M	\$3,361M	\$10,199M
	<b>SMP @ 50%</b>	\$390M	\$2,488M	\$7,550M
<b>Annual revenue requirement*</b>	<b>Full SMP</b>	\$1,069M	\$1,408M	\$2,149M
	<b>SMP @ 75%</b>		\$1,322M	\$1,895M
	<b>SMP @ 50%</b>		\$1,236M	\$1,640M
<b>Cumulative revenue requirement*</b>	<b>Full SMP</b>	\$1,069M	\$7,427M	\$25,497M
	<b>SMP @ 75%</b>		\$7,171M	\$23,500M
	<b>SMP @ 50%</b>		\$6,914M	\$21,493M
<b>Average delivery cost per customer*</b>	<b>Full SMP</b>	\$1,206	\$1,588	\$2,424
	<b>SMP @ 75%</b>		\$1,491	\$2,138
	<b>SMP @ 50%</b>		\$1,394	\$1,849
<b>Unrecovered balances</b>	<b>Full SMP</b>	\$5,183M	\$7,379M	\$11,789M
	<b>SMP @ 75%</b>		\$6,720M	\$9,839M
	<b>SMP @ 50%</b>		\$6,062M	\$7,900M
<b>PGL projected annual operating income (EBIT)**</b>	<b>Full SMP</b>	\$326M	\$464M	\$741M
	<b>SMP @ 75%</b>		\$422M	\$618M
	<b>SMP @ 50%</b>		\$381M	\$497M

\* For 2025, with the exception of cumulative capex, the differences in the starting values for each variable are sufficiently minimal that they can be presented as the same value.

\*\* We treat annual operating income and Earnings Before Interest and Taxes (EBIT) as equivalent. This is because, in the context of utility financial statements, operating income is typically defined as total revenue minus operating expenses, excluding non-operating income, interest expenses, and taxes. EBIT, by definition, also represents earnings before the deduction of interest and taxes, aligning it with operating income in the case of a regulated utility. Therefore, for the purposes of our analysis, these two metrics are interchangeable and provide a consistent measure of the company's profitability from core operations.

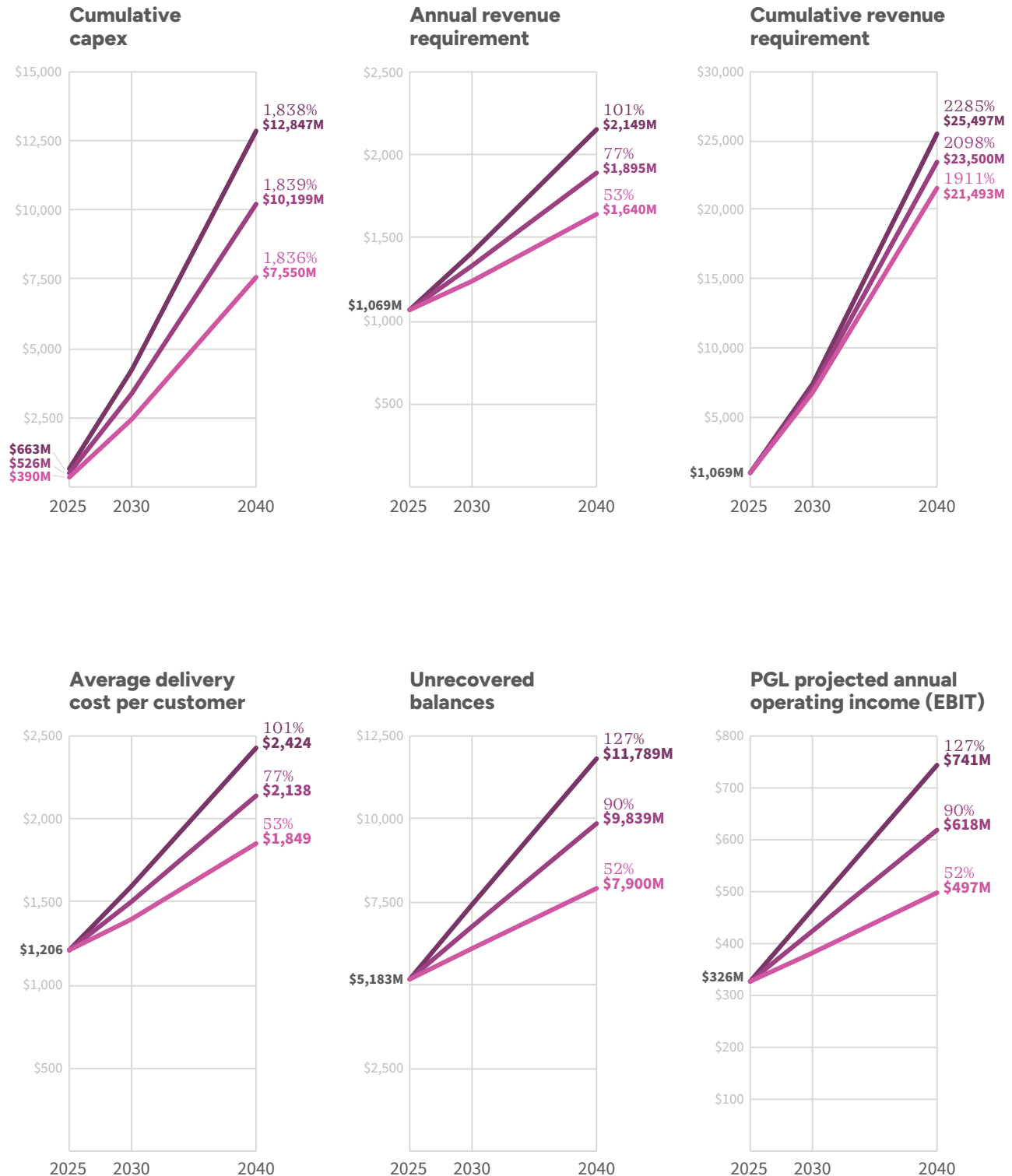
Source: GWD modeling results.



**Figure 5.2: Modeling results for restricted SMP scenarios compared to Full SMP with a stable customer base**

Source: GWD modeling results.

Full SMP  
SMP @75%  
SMP @50%

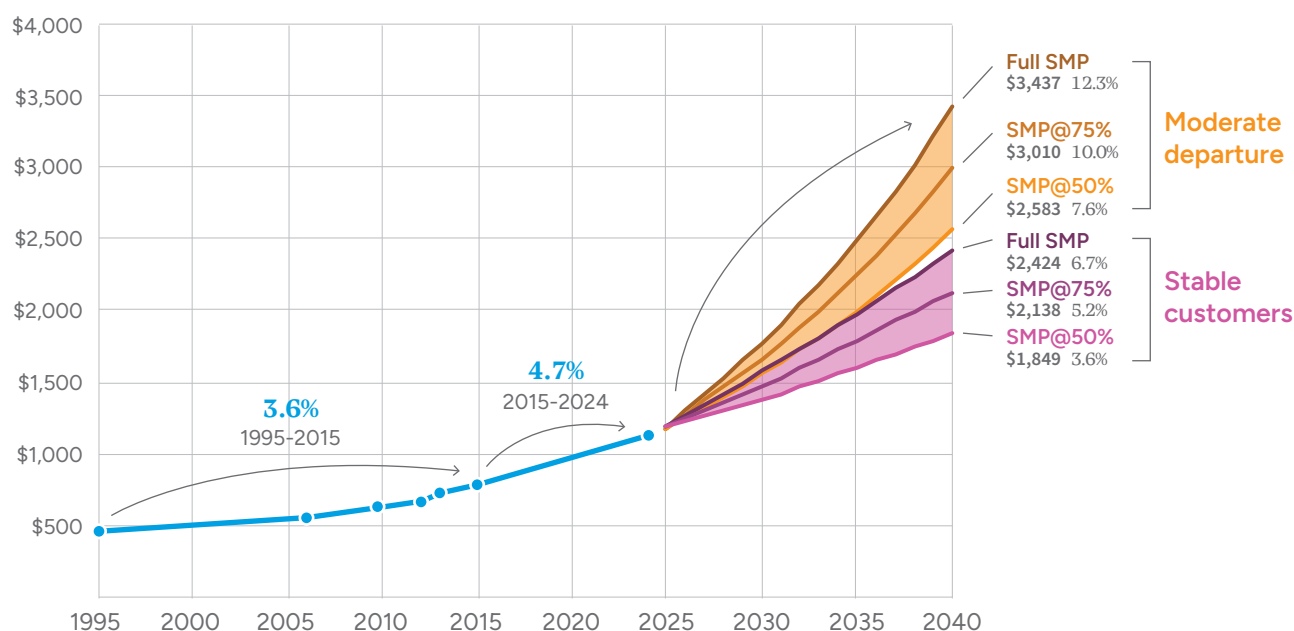


## 2. Curtailed SMP with a moderately declining customer base

The last step in our modeling is to investigate the impact of a moderate rate of gas customer decline. As for the Full SMP scenario, we assume a 2% year-over-year decline resulting in a 50% contraction in PGL's gas customer base by 2050. Under moderate customer decline, curtailed SMP spending (ranging from 25% to 50% reduced capex) increases annual average delivery costs per customer by 4-5 percentage points from 2025 to 2040, compared to a stable customer base.

Under SMP@75%, average delivery costs per customer would rise by 150% over the period 2025 to 2040. Under SMP@50%, they would increase by 114%. These accelerating delivery costs would require year-over-year increases in delivery charges of 10.0% and 7.6%, respectively. While these rate increases would not be as steep as those required under Full SMP with a declining customer base, they would still far exceed the recent historical trend rate of 4.7% for the period 2015-2024 (see Figure 5.3 and Table 5.2).

**Figure 5.3: Average delivery costs per customer: historical trends vs. future scenarios**



Source: GWD modeling results. Note: Percentages refer to average year-over-year increases in delivery costs per customer.

**Table 5.2: Annual delivery charge increases required by Full SMP vs. restricted SMP with moderate customer decline**

		2025	2030	2040	% change 2025 - 2040
Average delivery cost per customer	Full SMP	\$1,206	\$1,789	\$3,437	185% or 12.3% per year
	SMP @ 75%	\$1,206	\$1,679	\$3,010	150% or 10.0% per year
	SMP @ 50%	\$1,206	\$1,570	\$2,583	114% or 7.6% per year

Source: GWD modeling results.

## E. Other key findings

Two other findings from our analysis deserve mention.

### 1. PGL's significant O&M expenses

Regardless of whether and how SMP spending is curtailed, PGL's operations and maintenance (O&M) expenses are a significant driver of the company's future revenue requirement needs.<sup>185</sup> In its 2023 rate case decision, the ICC approved annual O&M expenses of \$359 million<sup>186</sup> and we carry those forward in our modeling with a conservative escalation factor of 2.5%. Actual increases could be higher, particularly given the operational impact of the new PHMSA LDAR regulations expected to take effect in 2025 (see Section 4.C for more on PHMSA's proposal for revised LDAR regulations). In addition, O&M may increase if reduced SMP capex is offset by expenditures on non-pipe alternatives that are treated as O&M (e.g., pipeline repairs and renewal) as opposed to capital spending. (Note: our modeling does provide for a decrease in O&M as customers exit the system.)

### 2. Unaffordability and uncollectibles

In its 2023 rate case order decision, the ICC stated that "the evidence in the record shows that Peoples Gas' and North Shore Gas' current and proposed rates are unaffordable for substantial numbers of financially struggling customers..." and that a significant portion of NS-PGL customers have considerable energy burdens.<sup>187</sup> The ICC maintains an online credit, collections, and arrearages dashboard that consistently shows high numbers of PGL customers who are behind on their bills and assessed late fees.<sup>188</sup>

<sup>185</sup> It is noteworthy that the total costs of the three scenarios through 2040 – as measured by their cumulative revenue requirement – are not wildly different, differing by 16%. The minimum cost is \$21.5 billion (for SMP@50%) while the maximum is \$25.5 billion (for Full SMP).

<sup>186</sup> ICC, 2023 Rate Case for PGL, Consolidated Revised Appendix B to Rehearing Order, Docket No. 23-0069 (May 30, 2024), <https://www.icc.illinois.gov/docket/P2023-0069/documents/351184/files/614335.pdf>.

<sup>187</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Final Order (November 16, 2023), p. 266, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306/files/601245.pdf>.

<sup>188</sup> During 2023, PGL assessed late fees each month for an average 28% of its residential customers. As of the end of July 2024, residential arrearages with a past due amount greater than 30 days totaled \$89.4 million.

The exposure of PGL and its parent company to "credit losses" is attenuated, if not eliminated, by regulatory mechanisms that allow the company to "socialize" written-off revenues due to uncollectibles. WEC Energy states that "at December 31, 2023, \$914.6 million, or 60.8%, of our net accounts receivable and unbilled revenues balance had regulatory protections in place to mitigate the exposure to credit losses."<sup>189</sup> In 2023, PGL's uncollectibles totaled \$54.2 million and constituted 5% of the company's total gas service revenues. The company recoups these uncollectibles via base rate payments that include rate recovery for uncollectibles plus a specific rider – the Uncollectible Expense Adjustment (UEA) Rider – that recovers the difference between actual uncollectible write-offs and the amounts recovered in rates. These cost recovery regulatory protections for uncollectibles bolster PGL revenue and increase cash flow.

In addition, PGL receives payments from the federal bill assistance LIHEAP program. These totaled \$51 million during 2021-22.<sup>190</sup> These public bill assistance subsidies help significant numbers of low-income gas customers stay on the gas system and afford their bills but they also implicitly support PGL throughput.

In October 2024, a new five-tier discounted low-income rate (LIDR) structure will be implemented by PGL that provides a credit to qualifying low-income customers such that their gas payments (supply and delivery) constitute no more than 3% of their income.<sup>191</sup> The credit is to be paid for by an offsetting rider – Rider LIDA – levied on other ratepayers which is expected to lower uncollectibles and, therefore, customer charges for

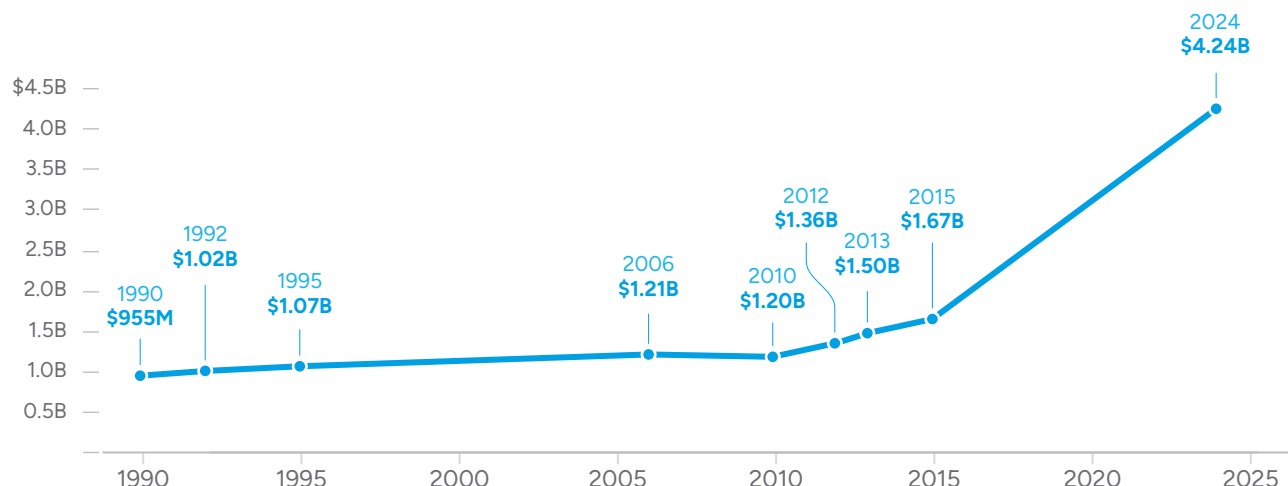
ICC, Credit, Collections, and Arrearages Reports Monthly Dashboard, <https://www.icc.illinois.gov/industry-reports/credit-collections-and-arrearages-reports/monthly-dashboard>.

<sup>189</sup> WEC Energy Group, *10-K Annual Report to the Securities & Exchange Commission* (February 16, 2024), p. 109, <https://investor.wecenergygroup.com/investors/financial-info/sec-filings/sec-filings-details/default.aspx?FilingId=17296303>.

<sup>190</sup> LIHEAP (Low-Income Home Energy Assistance Program) helps low-income households pay for heat, gas, and electric utilities. Payments are made directly to the energy service providers on behalf of qualifying households. For further description, see ICC, Bureau of Public Utilities, *Low-Income Discount Rate Study Report to the Illinois General Assembly*, (December 2022), p. 22, <https://icc.illinois.gov/downloads/public/icc-reports/low-income-discount-rate-study-report-2022-12-15.pdf>.

<sup>191</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Final Order (November 16, 2023), p. 265, <https://www.icc.illinois.gov/docket/P2023-0069/documents/344306>.

**Figure 5.4: PGL's approved rate base, 1990-2024**



Source: ICC, Financial Analysis Division, Rate Case Histories, "Gas," (revised July 2024), <https://www.icc.illinois.gov/downloads/public/RateCaseHistory.xlsx>.  
Note: Each dot corresponds to a PGL rate case. The approved rate base includes approved adjustments.

“At some point, the additional payments levied on non-low-income gas customers in order to socialize the gas system’s energy burdens may alter the economics of household electrification and push even more gas customers to leave the gas system.”

the uncollectibles rider. Both LIDR and the UEA are examples of rate-class cross subsidization designed to mitigate bill impacts for low-income customers.

Socializing the arrearages revenue deficit via a cap on household energy burden provides an important social protection for low-income households. However, it is unclear how LIDR will fare under the pressures of increasing gas rates due to higher levels of SMP spending, a contracting gas customer base, and declining throughput. At some point, the additional payments levied on non-low-income gas customers in order to socialize the gas system’s energy burdens may alter the economics of household electrification and push even more gas customers to leave the gas system.

## F. Modeling implications

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The outcome of the 2024 SMP Investigation could be a restricted-scope SMP with lower spending. That possibility is modeled in this section in order to assess its financial and regulatory implications relative to the Full SMP scenario modeled in Section 3. A comparison of the two sets of results leads to the following observations:

- 1. Reduced SMP capital spending (modeled as 25% and 50% reductions) is impactful in lowering revenue requirement, cumulative capex, and unrecovered balances.** Looking across the two lower spending scenarios, a smaller revenue requirement decreases the needed increase in gas delivery rates from roughly a quarter to a half. Depending on the scenario, over the 15-year period reduced capital spending avoids \$2.6 billion to \$5.3 billion in new gas infrastructure assets and avoids \$2 billion to \$4 billion in unrecovered balances.
- 2. Substantial recent increases in PGL's rate base temper the "power" of a circumscribed SMP to have greater impact on the company's revenue requirement and, therefore, on customer rates.** By 2040, a 50% decline in Full SMP results in only a 31% decline in revenue requirement. Figure 5.6 shows the ICC-approved rate base additions that have occurred over the last 30 years. During the recent 2023 rate case – the first since WEC Energy's acquisition of Peoples Gas in 2015 – over \$2 billion in SMP spending that occurred outside the rate base under the QIP Rider was moved into PGL's rate base. The financial consequences of completing cost recovery for those new gas plant assets will persist for decades to come and essentially drive cost recovery needs. As underscored in our recent statewide report on the future of gas in Illinois, that capex reductions do not have a greater impact on revenue requirement "reflects the strong "undertow" effect of high levels of capital spending that have been baked into the rate bases of each utility, reflecting prior cost recovery decisions."<sup>192</sup>

- 3. PGL's annual operating income and EBIT are positively correlated with SMP spending.** Rate base increases over the last 7 years have pushed up PGL's operating income to new levels. A 50% reduction in SMP spending by 2040 would cause operating income/EBIT to fall by a third.
- 4. The moderating effect of significant reductions in SMP spending on customer rates would likely be overwhelmed by the impact of a shrinking gas customer base.** Annual Increases of 8% to 10% in average delivery costs per customer (and therefore rates) would be needed under the scenario of a moderately contracting customer base.

Our modeling of future SMP scenarios shows that, even with significant curtailment of capital expenditures, Peoples Gas customers would face steep annual rate increases in response to customer departures. The magnitude of projected rate hikes even in a reduced-SMP spending paradigm should be a serious concern for the ICC and would constitute a significant business risk for Peoples Gas.

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<sup>192</sup> Dorie Seavey et al., *The Future of Gas in Illinois* (May 2024, Building Decarbonization and Groundwork Data), p. 9, <https://buildingdecarb.org/>

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[resource/the-future-of-gas-in-illinois](https://buildingdecarb.org/resource/the-future-of-gas-in-illinois).

**Section**

# 6

# Conclusions



“Our analysis finds that resuming the SMP at full funding levels puts Peoples Gas on an unsustainable trajectory with respect to revenue requirements and customer rate increases. In addition, on this path, billions of dollars of additional capital spending on natural gas infrastructure will be subject to cost recovery risk as alternative energy sources gain ground and gas demand inevitably declines.”

**Peoples Gas, one of the oldest continuously operating gas utilities in the United States, has been a cornerstone of Chicago’s energy infrastructure for over 150 years, evolving as the city transitioned from wood and coal to manufactured gas, and eventually to natural gas by the mid-20th century.** Today, as a gas-only utility, Peoples Gas is particularly vulnerable to the financial risks posed by shifting customer preferences and decarbonization efforts that increasingly favor electrification. Notwithstanding its historical significance and critical role in the city’s development, the company now faces business threats that jeopardize the sustainability of its long-standing business model. These threats include the escalating costs of replacing aging infrastructure; state and city of Chicago mandates and policies related to climate change, health, and safety; and increasing competition from non-gas alternatives.

Peoples Gas and its parent company, WEC Energy, view the indefinite continuation of the gas distribution system as essential to serving their Chicago customers. This belief underpins their commitment to the System Modernization Program (SMP), which aims to replace an additional 1,500 miles of main infrastructure and raise pressure levels in order to “modernize” the system and prepare for the introduction of alternative fuels, which the companies view as having strong potential to decarbonize the city’s gas system. Peoples Gas and WEC Energy also assert that their operations will soon be net-zero in terms of methane emissions. Finally, they dismiss electrification as not yet being

cost effective or an efficient solution for space and water heating in the Midwest.

This report locates Peoples Gas in a different economic and regulatory reality – one that is both urgent and complex, and subject to growing risk and uncertainty. Our analysis establishes that Peoples Gas has entered a challenging period of mounting competition from clean, non-gas technologies for heating and cooling buildings and for ancillary activities such as cooking and water heating. We do not find scientific or economic support for the proposition that alternative fuels have favorable prospects for heating Chicago’s building sector. Instead, Chicago’s building sector offers strong prospects for significant “load” shifting from gas to electricity, particularly given the relatively high gas delivery costs of the Peoples Gas system. PGL’s territory should be planning for declining gas demand and underutilized infrastructure over the coming decades.

Our analysis finds that resuming the SMP at full funding levels puts Peoples Gas on an unsustainable trajectory with respect to revenue requirements and customer rate increases. In addition, on this path, billions of dollars of additional capital spending on natural gas infrastructure will be subject to cost recovery risk as alternative energy sources gain ground and gas demand inevitably declines.

## A. Main findings

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The in-depth modeling analysis conducted for this report investigates the total costs of resuming PGL's SMP at both full-funding and restricted levels (75% and 50% of full funding). We also evaluate the impact gas customer departures on these scenarios. Our main findings are as follows:

- 1 Unsustainable rate increases.** Restarting the SMP at full scale would necessitate historically unprecedented rate hikes, even assuming a stable gas customer base. By 2040, the average annual per-customer delivery charge would need to essentially double, increasing from \$1,206 to \$2,424. Year-over-year rate increases of roughly 7% would be required. This compares with a 4.7% rate of annual increase in actual per customer delivery costs for the recent 2015 to 2024 period.
- 2 Impact of a shrinking customer base.** With a moderately declining gas customer base, average delivery costs per remaining customer rise significantly because cost recovery for PGL's escalating rate base must be spread over a shrinking pool of ratepayers. Under Full SMP, customer attrition of 50% by 2050 results in annualized future rate increases of 12%, roughly 2.5 times the year-over-year increases from 2015 to 2024 (4.7%). Such a level of escalation – resulting in a 185% increase in per customer delivery charges by 2040 to \$3,437 – would raise serious concerns about long-term affordability and customer retention, both of which are critical to maintaining stable PGL revenue streams. In addition, these levels of rate increases would undoubtedly accelerate customer departure from the gas system.
- 3 Limited potential for rate-increase moderation through reduced capital expenditures.** Lower SMP spending will moderate upward pressure on customer rates; however, this effect may be overwhelmed by the impact of a shrinking gas customer base. Even with reduced SMP spending, a declining customer base would still require annual delivery cost increases of 8% to 10%. This suggests that merely scaling back capital investments will not be sufficient to alleviate the financial pressures facing Peoples Gas should customer departures accelerate.
- 4 Escalating cost recovery risks.** Continuing Full SMP capital expenditures would expose WEC Energy to significant cost recovery risks (15% of the parent company's asset base is currently attributable to Peoples Gas). Assuming that Full SMP resumes, PGL's unrecovered balances would surge by 127%, reaching approximately \$12 billion by 2040. Complete cost recovery would not occur until after the year 2100. This sharp rise in stranded asset risk over the next 15 years increases the likelihood of significant financial write-downs, especially if regulators take steps to protect taxpayers from bearing the costs of decommissioning the gas network.
- 5 Capital costs that significantly exceed previous annual spending levels.** Given the extensive work remaining, PGL and WEC Energy will need to spend much more annually on the SMP than they previously have or project to spend. To complete the SMP by 2040, annual capital spending would need to increase to \$547 million beginning in 2025 compared to the historical annual average SMP spending level of \$280 million.
- 6 Heightened regulatory intervention.** Recent actions by the ICC, coupled with the sunset of the QIP Rider, have introduced new regulatory challenges for Peoples Gas that have begun to alter the company's investment risk profile. Peoples Gas has been adversely impacted by these regulatory decisions, including a negative credit review from Moody's Ratings, a subsequent decline in WEC Energy's stock price, and capital spending disallowances. While the outcomes of two critical dockets are pending (the 2024 SMP Investigation and ICC's Future of Gas proceeding), it is clear that Peoples Gas must now operate in a regulatory environment predicated on heightened scrutiny, a focus on decarbonization, and concern about the rising costs of system modernization.

**7 Inadequate strategic response.** Peoples Gas and WEC Energy's current plans do not adequately address the looming threats to their gas utility business model and, therefore, do not adequately allow investors to assess the financial and operational risks associated with a shrinking customer base, escalating infrastructure costs, and regulatory pressures. PGL states that it has not conducted an analysis of Chicago's future energy consumption patterns. Such an analysis is essential and would ideally be coordinated with the city's electric utility, Commonwealth Edison, allowing for the modeling of reasonable scenarios for the uptake of efficient, non-gas technologies by the building sector. In addition, while PGL asserts that a critical role of the SMP is to carry alternative fuels, PGL has not provided feasibility and/or cost/benefit analyses related to decarbonizing the city's gas system by blending in RNG and/or hydrogen.

**8 Future infrastructure challenges.** The scope of system modernization planning put forward by Peoples Gas is confined to the next 15 years and excludes the substantial amounts of pipeline that will be in need of replacement after the SMP concludes. For example, by the 2050s, an additional 1,000 miles of distribution mains installed in the 1980s and 1990s will be queuing up for replacement. If the Peoples Gas system is to be continued indefinitely, then the Chicago gas territory needs a comprehensive, viable plan for the future of gas not just for the duration of the SMP but through the end of the century.

## B. Investor risks and strategic implications

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PGL's current trajectory raises significant strategic concerns for WEC Energy and its investors, given the financial and operational challenges outlined in this report. While Peoples Gas has historically delivered strong financial results, mounting risks threaten to negatively impact its financial performance. The long-term sustainability of PGL's operations in Chicago is in question, with potential repercussions that extend beyond Peoples Gas to the broader financial health and creditworthiness of the parent company, requiring investors to carefully assess how evolving regulatory, financial, and market risks might impact WEC Energy's future stability and profitability.

### Regulatory risks

- ▶ **Sunsetting of the regulatory mechanism allowing for accelerated cost recovery.** Accelerated cost recovery played a pivotal role in sustaining PGL's earnings but it expired in December 2023. As a result, future cost recovery efforts will likely take place in more frequent and potentially contentious rate cases, introducing greater financial uncertainty for Peoples Gas. Longer lag times for cost recovery may negatively impact PGL's future cash flows.
- ▶ **Potential reductions in earnings.** Any curtailment of the SMP by the ICC, so as to limit rate increases or curb stranded asset risk, would reduce PGL's earnings. We estimate that a 50% reduction in a fully-funded SMP would result in a 33% decrease in the company's EBIT by 2040.
- ▶ **Frequent rate increases.** Chicago's gas delivery rates are already among the highest in the nation and substantial PGL rate hikes could exacerbate affordability issues, particularly for low-income and energy-burdened customers. The need for rate increases that significantly exceed historical trends is likely to lead to regulatory and possibly legislative intervention which would present risk for investors.

- **Additional regulatory intervention.** With limited relief achievable through reduced capital expenditures alone, additional regulatory actions, such as more stringent prudency reviews, are more likely.

## Market risks

- **Shrinking customer base.** As gas delivery costs rise and the competitiveness of electric alternatives improves, gas customer attrition is likely to accelerate. This could trigger a negative feedback loop where further departures increase the financial burden on remaining ratepayers and undermine cost recovery efforts. For Peoples Gas, a shrinking customer base will increase cash flow uncertainty and put downward pressure on profitability, potentially adversely affecting net present value.
- **Elevated cost recovery and stranded asset risk.** Continuation of a full-scope SMP could see unrecovered balances in PGL's rate base reach approximately \$12 billion by 2040. Coupled with the potential for customer departures and uncertainty about the magnitude of PGL's obligations for retiring or decommissioning gas assets, Peoples Gas faces enhanced risk of not recovering the capital it has invested in the gas system.

## Credit Risks

- **Potential credit downgrades.** Unstable rating outlooks for Peoples Gas have already begun. Actual credit downgrades are a serious possibility given the combined pressures of pending regulatory dockets and decisions, high gas system infrastructure costs, and declining gas demand. These would put pressure on WEC Energy's credit rating risk, likely increasing the parent company's cost of capital and eroding investor confidence.

## Strategic misalignment with climate goals and policies

- **Conflict with climate policies.** PGL's strategy of expanding and modernizing fossil fuel infrastructure increasingly conflicts with the aggressive climate goals of the city of Chicago and Illinois. This misalignment exacerbates the risks of regulatory and market pressures as policies may increasingly prioritize the transition away from natural gas for Chicago's building sector.
- **Threat to "solvency" of low-income discount rate (LIDR) structure.** The state's signature climate law, CEJA, mandated the ICC to study how bill impacts for low-income utility customers could be mitigated and gave the ICC authority to file tariffs establishing LIDRs. In October 2024, Peoples Gas will begin implementing a LIDR that caps gas charges at 3% of household income, providing a credit to energy-burdened customers offset by a rider applied to other ratepayers. However, if gas rate increases accelerate due to SMP spending and/or customer departures, LIDR's cross-subsidization of rate classes could become strained, potentially rendering the structure unworkable if it further incentivizes customer departure and attracts financial and political attention.

## C. Final reflection

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Peoples Gas and WEC Energy stand at a critical juncture. The risks and uncertainties highlighted in this report underscore the growing challenges of sustaining the financial health and viability of traditional gas utility operations during the energy transition. As regulatory scrutiny intensifies, and as market dynamics evolve in response to shifting consumer preferences and technological advancements, the business model that has underpinned Peoples Gas for over a century is becoming increasingly vulnerable.

The situation that Peoples Gas faces is emblematic of pressures across the nation that mature, incumbent gas-only utilities may encounter as they grapple with rising infrastructure costs, regulatory changes, and competitive threats from disruptive technologies. Decisions made in the near future regarding the financial path of Peoples Gas will provide important lessons for other energy companies confronting similar risks.

For investors, the evolving challenges confronting Peoples Gas serve as a critical reminder of the complexities involved in the ongoing energy transition and the future of gas. It is essential to monitor these developments closely as they could have significant implications not just for WEC Energy but for the broader utility sector.

Section



# Appendix on Modeling Methodology



**This appendix describes Groundwork Data's Gas Delivery Cost Model and the approach we took to estimating the cost of Full SMP.** Our model allows us to project the annual revenue requirements of Peoples Gas. It also allows us to examine the sensitivity of revenue requirement to changes in both capital spending on gas plant and the size of the company's customer base. In addition, we evaluate the bill impact on ratepayers by calculating the average per customer revenue requirement and then tracking that variable over time.

## Methodology and analytical approach

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Groundwork Data's Gas Delivery Cost Model uses a revenue requirement modeling approach that includes both the capital-related costs of utilities and operations-related costs – in other words, we project a full revenue requirement that includes the sum of total return on the utility's gas plant rate base, depreciation, operations and maintenance, and property taxes.

We include the following capital cost components of the revenue requirement:

- ▶ Allowed rate of return on rate base (weighted average cost of capital (WACC) for debt and equity)
- ▶ Depreciation rates (constructed as a weighted average for the main types of gas plant assets)
- ▶ Retirement rates (constructed as a weighted average for the main types of gas plant assets)
- ▶ Net salvage rates (constructed as a weighted average for the main types of gas plant assets)
- ▶ Property taxes
- ▶ Gross-up for state and federal income taxes and bad debt

Gas asset depreciation is determined by three main components: asset service life, net salvage value, and the method of depreciation. Asset service life refers to the period over which an asset is expected to be available for use by the gas utility (its "useful

life"). An asset's useful life may be shorter than its physical life. Gas plant investments such as pipeline mains have depreciation schedules that extend about 60 years. Net salvage represents the expected cost recovery needed to remove the pipeline at the end of its service life. (For pipeline mains, net salvage is typically a negative value because the cost of removing the pipe at the end of its useful life exceeds the scrap or "salvage value" that the utility can recover.) This study assumes a straight-line depreciation method which is the standard method for the gas industry. The longer the depreciation schedule, the higher the total rate of return to be collected.

The cost of capital is equal to the return on the rate base, adjusted for the gross-ups and property taxes, multiplied by the rate base, which is the original cost of the utility's gas plant net of accumulated depreciation, retirements, and net salvage value.

Operations and maintenance expenses (O&M) include expenses such as conducting leak surveys, repairing pipelines and meters, right of way surveys, emergency responses to gas odor calls, and general and administrative expenses. They also include supplies and labor not used for plant construction. After conducting a trend analysis of these expenses, we did not observe significant increases in annual O&M spending outside of increases due to inflation. Therefore, we assume O&M expenses track our assumed inflation rate of 2.5%. Note that our model does provide for a decrease in O&M as customers exit the system.

Capital expenditures include spending on four types of gas plant (distribution, transmission, storage, and general plant) across two sources: the System Modernization Program (SMP) and non-SMP capital spending. See the next section for a detailed description of our calculations.

# Estimating capital expenditures for SMP and non-SMP spending

## Baseline SMP annual spending

For the baseline scenario, this analysis assumes that the SMP resumes in 2025 to accomplish what we term “Full SMP.” We define Full SMP as covering the following four-pronged scope of work: a) replacing 1,506 miles of cast iron, ductile iron, and low-pressure mains; b) reconnecting and/or replacing 202,779 services; c) relocating 346,912 meters; and d) installing 30 miles of high-pressure mains. Quantities for (a) come from PGL’s 2023 Q4 SMP Quarterly Report, while quantities for (b), (c), and (d) come from PGL’s “Peoples Gas and the SMP” report to the ICC.<sup>193</sup>

To estimate the total cost of Full SMP, we use the company’s SMP Quarterly Reports to calculate the average unit costs for each of the four Full SMP components over the period for which we have the most detailed data, 2018 to 2023.<sup>194</sup> These calculations average the unit costs found in the relevant SMP subprograms (Neighborhood, Public Improvement, System Improvement, and High Pressure). We discounted data from all SMP Quarterly Reports to 2024\$ and calculated the average cost to replace a mile of main (\$3,933,793 / mile), the average cost per service (\$6,246 / service), the average cost per meter (\$2,432 / meter), and the average cost per mile of high-pressure main (\$16,643,427 / mile). We then multiply those unit costs by the total units for each of the scope components and then sum to arrive at the grand total. To arrive at an estimate of annual capital expenditures for the full SMP, we divide the grand total by the number of years remaining to complete SMP by the target deadline of 2040 (15 years, inclusive of 2040). This was then escalated to 2025 dollars assuming 2.5% inflation.

<sup>193</sup> ICC, 2024 SMP Investigation, Docket No. 24-0081, *Peoples Gas and the SMP: History, Current State, and Alternatives*, PGL Exhibit 2.0, p. 61 & 64, <https://www.icc.illinois.gov/docket/P2024-0081/documents/348897/files/609896.pdf>.

<sup>194</sup> PGL, SMP Quarterly Reports, <https://www.icc.illinois.gov/programs/natural-gas-investigations>.

## Baseline non-SMP annual spending

Non-SMP spending refers to other capital expenditures made by Peoples Gas on the following types of assets: storage, transmission, and non-SMP distribution infrastructure. For our calculations, we exclude capital spending on intangible plant, plant related to manufactured gas and land rights, general plant, and information technology. Our initial year values for storage and transmission are tied to median spending on these categories for the period 2013 to 2023. The historical values were sourced from PIO Exhibit 1.2 filed in the company’s 2023 rate case (the exhibit provides PGL’s response to an interrogatory from the Attorney General, Request No. AG 5.03).<sup>195</sup> The source for our baseline estimate of non-SMP distribution spending is a set of estimates for 2024 non-QIP distribution spending provided by Peoples Gas in response to an ICC information request made in the company’s 2023 rate case.<sup>196</sup>

These analyses yielded estimates for storage spending of \$51,782,176 and transmission spending of \$21,296,290. Non-QIP distribution spending was forecast in the interrogatory response to be \$40,300,000. The sum of these provides an estimate of \$113,378,466 for total non-SMP spending in 2024\$. This was then escalated to 2025 dollars assuming 2.5% inflation.

## Analytical approach

Our analytical approach relies on five steps:

- 1. Develop capital cost and rate base projections.**  
As described above, we used multiple sources to develop a projection of capital spending from 2025 to 2040 for completion of Full SMP, breaking out SMP and non-SMP spending.
- 2. Estimate the annual revenue requirement needed to cover PGL’s capital spending plus related capital costs and operating expenses.**

<sup>195</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, PIO Exhibit 1.2, pp. 3-4, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337548/files/588151.pdf>.

<sup>196</sup> ICC, 2023 Rate Case for PGL, Docket No. 23-0069, Response to REQUEST NO. ICC 1.02, <https://www.icc.illinois.gov/docket/P2023-0069/documents/337765/files/588769.pdf>.

We rely on the Commission’s 2023 rate case orders and related rate case filings to determine our initial base year variables.

3. **Estimate the average utility delivery cost per customer served under various capital investment and customer base scenarios.** Using our annual revenue requirement projections, we calculate the estimated per customer revenue requirement (i.e., the total revenue requirement in each year divided by the total customer base). Our estimates of per customer revenue requirements serve as a consistent, normalized metric for assessing the bill impact to ratepayers.<sup>197</sup>
4. **Calculate the value of unrecovered gas plant balances (“book value”).** An unrecovered balance refers to gas assets that have been put into service but have not yet been fully recovered through rates. This balance consists of investments that are still being “recovered” through rates and therefore are not yet fully depreciated. This variable serves as our metric for capital asset risk exposure.
5. **Estimate annual operating income or earnings before interest and taxes (EBIT).** In this report, we use annual operating income as a proxy for EBIT, as it represents the primary component of EBIT and because non-operating contributions, such as income from investments or asset sales, are minimal and infrequent. We derive estimated annual operating income as PGL’s return on its rate base before gross ups for federal and state income tax rates and the company’s uncollectible expense rate.

We use 2025 as the initial year for our modeling (updating prior-year values to 2025 using a 2.5% inflation factor) and then project the annual revenue requirement in future years. All future values are expressed in nominal dollars and assume a 2.5% inflation rate. It should be noted that our modeling approach implicitly assumes that steady rate increases occur but, in reality, rate increases occur at intervals coinciding with rate case proceedings before the ICC.

<sup>197</sup> An alternative approach is to estimate the future typical customer bills (gas supply charge plus fixed and variable delivery charges) that will be developed through the regulatory ratemaking process.

**Table 7.1: Data sources and initial values**

Variable*	Source
<b>Rate base</b>	2023 ICC Rate Case Rehearing Order - Appendices
<b>Capital expenditures for SMP and non-SMP</b>	See section above on “Estimating capital expenditures”
<b>Accumulated depreciation</b>	2023 ICC Rate Case Rehearing Order - Appendices
<b>Depreciation, retirement, and net salvage rates</b>	Gas utility depreciation studies filed in 2023 rate case for PGL
<b>O&amp;M net of production expenses</b>	2023 ICC Rate Case Rehearing Order - Appendices
<b>Property/real estate taxes</b>	2023 ICC Rate Case Rehearing Order - Appendices
<b>Capital structure</b>	2023 ICC Rate Case Final Orders (section on Cost of Capital)
<b>Weighted average cost of capital</b>	2023 ICC Rate Case Final Orders (section on Cost of Capital)
<b>Gross revenue conversion factor</b>	2023 ICC Rate Case Final Orders - Appendices
<b>Number of customers</b>	2023 Rate Case filing Schedule E-5 (Jurisdictional Operating Revenue)
<b>Inflationary factor</b>	2.5% applied annually

\*all for 2025 unless otherwise noted

