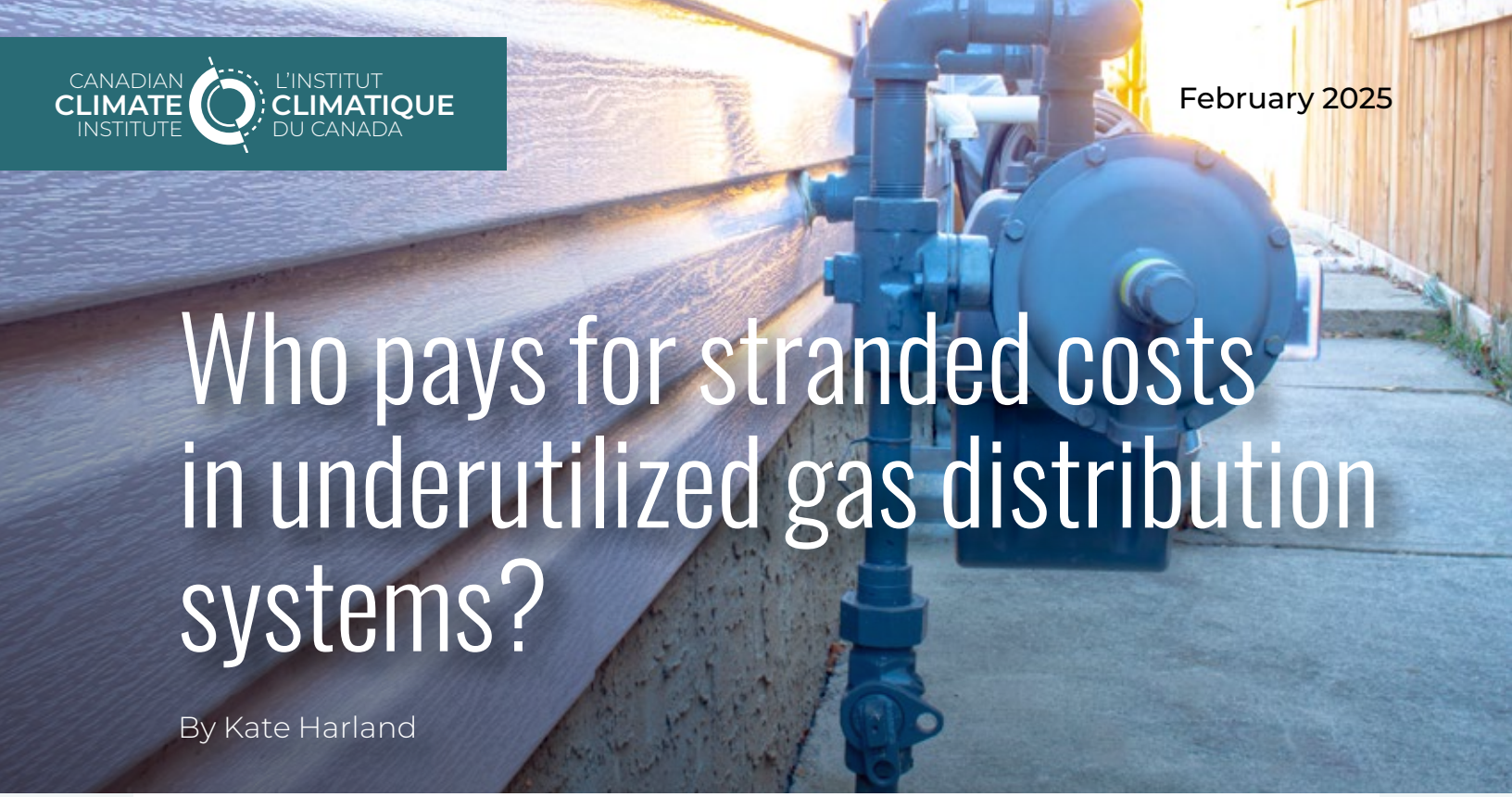


CANADIAN CLIMATE INSTITUTE | L'INSTITUT CLIMATIQUE DU CANADA

February 2025

Who pays for stranded costs in underutilized gas distribution systems?

By Kate Harland

Summary

As consumers increasingly transition away from gas for heating, cooking, and water heating, there is a growing risk that existing gas pipelines—investments that are typically amortized over 40 to 50 years—could effectively cease to be useful before their full costs are recovered. Under current standard practices, pipes laid today will not be fully depreciated until at least 2065, well beyond the time frame for Canada to achieve net zero emissions.

When an infrastructure asset becomes significantly underutilized, it becomes uneconomic to recover the outstanding fixed costs from a declining base of remaining customers, resulting in stranded costs. In this paper, stranded costs refers to the remaining unrecovered costs of physical assets on a corporate balance sheet that are not fully paid for before they reach this point.

At the moment utilities continue to build out new gas infrastructure, adding to the bill. This raises a critical question: who will bear the financial burden of the stranded costs if gas assets are underutilized? The options include utility ratepayers, utility shareholders, governments, or some combination thereof.

This paper explores regulatory decisions concerning gas utility stranded costs in Alberta, Ontario, and British Columbia, provinces with the highest growth rates in their gas networks (Harland et al. 2024) but also those engaging in the most discussion on who pays for stranded costs in Canada. This paper examines both the potential exposure to stranded costs and ways to mitigate it.

Assignment of stranded cost risk for gas assets has not been settled in Canada. This work finds varying interpretations across provinces and persistent uncertainty about whether ratepayers or shareholders would bear these costs. Provincial regulators apply different principles or stan-

dards to determine how these financial responsibilities are allocated. Based on past precedent (although regulators may change their approach), Ontario largely assigns liability to ratepayers (in whole or part) for unforeseen risk and Alberta largely assigns such liability to shareholders. In British Columbia, the discussion on stranded costs is nascent and open to case-by-case interpretation, while in many other provinces, the discussion has yet to materialize.

Independent of these precedents and decisions, practically speaking, provincial governments may ultimately bear some of the costs of stranded assets. Governments may need to step in to protect ratepayers due to escalating rates in a declining system and/or a lack of clear and legislated policies may give utility shareholders a legal case for compensation for billions of dollars in stranded costs.

For regulated energy utilities, financial incentives reward utilities for building capital assets like pipelines—incentives that remain even as some customers switch away from gas, leaving fewer customers to pay for the largely fixed costs of the gas network. This situation is only worsened given the uncertainty on who pays when ratepayers cannot. Regardless of the specific expected distribution of risks and costs in a given jurisdiction, it is crucial that regulatory frameworks guard against the risk of moral hazard—utilities adding liabilities and increasing their risk exposure because they do not expect to bear the full costs of that risk.

Clearer guidance and regulation from provincial governments is necessary both to help reduce the future level of stranded costs and to more clearly establish who would be liable for them, thereby supporting better risk management. Clarifying who would ultimately bear the costs—whether taxpayers, ratepayers, or shareholders—helps address the moral hazard. Not only does provincial government policy action help reduce future financial risk to governments, but it can also empower prudent risk management and oversight by regulators and encourage utilities and their shareholders to more actively manage potential liabilities and minimize future losses.

1 The challenge

As the energy transition progresses, the use of gas infrastructure will evolve and is likely to decrease. Who decides who pays for infrastructure that is underused? How do existing regulatory frameworks and incentives shape these outcomes? This section unpacks these pressing questions and highlights the challenges ahead.

Stranded gas assets represent a financial liability that someone must pay for

The energy transition in Canada is well underway, driven by the country's commitment to achieve net-zero emissions by 2050 but also by cost and performance improvements in low-emission technologies. Homes, businesses, and communities across Canada are starting to switch to electric heat pumps (Kanduth 2023) or explore alternatives to fossil fuels such as thermal energy networks (Gajudhur 2024), though at differing rates depending on local conditions.

As part of this shift, energy utility regulators play a critical role in determining what gas utility investments can continue to be included in customer rates as usage on the network changes. This decision depends on whether assets are "used" (actively providing service) and "useful" (contributing to efficient and reliable utility operations). Assets that no longer meet these criteria risk becoming stranded. Stranded costs can occur when rates required to recover the full costs of utility assets become too high to—in the view of the regulators that approve those rates—recover the full costs of the assets. This can result from decreased gas infrastructure utilization as a consequence of reduced gas demand in the energy transition, shifts in technology, or changes in policy.

The energy transition represents a permanent change on a broad scale with substantial stranded cost risk for gas utilities. The shift to cleaner options such as electric heat and the corresponding decline in demand for gas in buildings may lead to the early retirement of gas-transmission and -distribution assets before they are fully depreciated, posing long-term financial risks. (Harland et al. 2024, Carter 2023; E3 2024; Sorge 2024; Gridworks 2019; NERA Economic Consulting 2021).

Our recent report, *Heat Exchange* (Harland et al. 2024), found on a cost-optimal path to net zero, total gas consumption in buildings falls in every province. Alternatives to natural gas, such as hydrogen and biomethane, could potentially repurpose some existing gas infrastructure. However, we find that under any cost-effective path, these alternatives are likely to account for only a small proportion of the energy demand, with pure hydrogen also requiring significant modifications

to both the network and appliances in homes and businesses. Decarbonizing the gas network is therefore expected to lead to a reduction in use of gas infrastructure in many regions, rather than its widespread repurposing. As gas use diminishes, fewer customers remain to bear the fixed costs of maintaining the system, resulting in higher bills for those customers and driving more defections, raising questions about how to recover the costs of underutilized infrastructure.

Even as the energy transition's implications for gas networks are becoming increasingly clear, gas utilities continue to expand their networks, adding to future potential liabilities. Because gas utilities realize returns on the regulator-approved infrastructure they build, rather than the fuel they sell, they have a direct economic incentive to pursue continued growth of gas infrastructure and new customers—even if the long-term usage case is uncertain. This is true as long as utilities can reasonably expect regulators to approve such infrastructure in the rate base and recover the costs plus a rate of return as usual. Legal obligations to serve and connect customers to gas further exacerbate the issue.

Regulators have tools at their disposal to reduce the total risk of stranded costs (Harland et al. 2024) but may be constrained in their ability to use them. Interpreting the long-term implications of the energy transition in their decision-making is difficult, particularly where the path forward is unclear as a result of government climate policies that are not sufficiently connected to their long-term climate goals or that have ambiguous implications for regulated energy systems. Fluctuating and inconsistent government programming around consumer incentives also creates uncertainty, affecting the pace of change and complicating the timing and nature of the appropriate regulatory response. Regulators may also tend to approve gas upgrades if there is doubt about future use, even if this has rate implications, because service reliability is also a core objective of the regulator.

Regulators must balance the needs of both ratepayers and utilities: ensuring just, reasonable rates while providing safe, reliable service for ratepayers, and maintaining the financial health of regulated gas utilities to support the delivery of such service. As the energy transition progresses,

this balance will become increasingly hard to strike for gas systems without improved policy and guidance from provincial governments.

Continuing with the status quo is exacerbating the risk of a large potential financial liability that someone must pay for, be that ratepayers, utility shareholders, governments, or a combination of the above. Under current standard practices (which allow the costs of new pipelines to be paid off over 40 years or more), pipes laid today will not be fully depreciated until at least 2065, well beyond the commitment for Canada to achieve net zero.

While *Heat Exchange* addressed ways governments could reduce overall financial liabilities from an underutilized gas system, this paper examines who might bear the financial risk of the remaining stranded gas assets—ratepayers, shareholders, or governments. In Section 2, we consider how the answer may vary across Canadian jurisdictions and unpack implications for liability, moral hazard, and government policy. Throughout, we consider what additional questions may emerge as the energy transition progresses.

Lack of clarity over who will bear stranded costs could delay action to mitigate them

When there is a lack of clear, proactive guidance on who bears the financial burden of stranded costs, it can be unclear who carries this risk, reducing incentives for any one player to mitigate it (Harland 2024). For utilities and their shareholders, this uncertainty introduces a moral hazard risk—they may continue to add liabilities and increase their risk exposure because they do not expect to be fully responsible for the associated costs.

Specifically, this ambiguity limits proactive action from utilities. Unless utilities identify they are substantively risk exposed, they are limited in their ability to adjust their behaviour to proactively manage stranded asset liabilities. The majority[1] of gas utilities in Canada are investor-owned and duty bound to act in the interests of delivering a return to their shareholders. Gas utilities, both public and private, are also required to serve all customers requesting service within their service area under an "obligation to serve" as a regulated monopoly in a given area. Absent other considerations, they must continue to connect new customers[2] and invest in replacement gas infrastructure.

Providing clarity on stranded asset responsibilities would reduce market uncertainty and could encourage utilities to make informed, proactive decisions. For example, PG&E—a dual fuel utility in California—cites reducing stranded gas asset risk as a motivator in its targeted electrification efforts, which prioritize highest risk sections, such as long pipelines with few customers needing replacement. This program offers support to households to fuel switch and saves remaining gas customers money (Velez 2024; Gold-Parker et al. 2023)

1 SaskEnergy being one exception, as a provincial Crown corporation.

2 Customers may have to contribute towards connection costs if the revenue from rates projected from that new connection does not cover the upfront cost (typically over 40 years for general service, or small customers and 20 years for large contract customers). These calculations are typically based on current average demand (ignoring energy efficiency improvements and assuming the customer remains connected for the whole period).

Canadian regulators and utilities are starting to acknowledge stranded asset risks from the energy transition

Public discussion is starting in Canada, but lags action in some U.S. states and European countries (Alter et al. 2024; Spees and O'Loughlin 2021; Sorge and Rocha 2024; Hiel 2023). In December 2023, the Ontario Energy Board, the regulator in that province, directly addressed the risk of stranded costs (OEB 2023). In the same month, its West Coast counterpart, the B.C. Utilities Commission, questioned the public interest in expanding the gas system further in the Okanagan (BCUC 2023a). But, actions and decisions are already having complex interactions with provincial government policy that can make it difficult for regulators to effectively use their tools (Mondrow 2024, (see also section 2).

Meanwhile, financial markets and credit rating agencies are "widely recognizing the potential long-term reduction in natural gas use" (LEI 2023). This may translate into higher debt and equity costs for gas utilities. Gas utilities in turn have asked regulators for higher rates of return and/or greater equity thickness (i.e., lower financial leverage) to compensate for these potential rising costs (e.g., OEB 2023).

Despite these developments, the debate lacks the urgency required. Decisions made today regarding long-lived utility infrastructure will have significant impacts for decades. Lack of prompt and decisive action increases the scale of potential liabilities, or makes climate goals more difficult to achieve—or both.

Regulators decide who pays between utility shareholders and ratepayers, within boundaries defined by courts and provincial legislation

Utilities are a highly regulated sector and decisions on who pays for utility investments are made by provincial regulators. Under the "regulatory compact"[3] regulators seek to balance the interests of consumers, aiming to ensure they do not pay more than is required, with the needs of utilities, which are seeking a fair return on capital investment in return for supplying reliable service. The regulator must manage tradeoffs to maintain this balance.

3 The Regulatory Compact holds that utilities are obliged to provide safe, adequate, and reliable service at reasonable rates to all customers in their service territory, and in return, they are entitled to a reasonable opportunity to recover their prudently incurred costs and expenses, and to earn a fair return on behalf of their investors. This "compact" was first articulated almost 100 years ago in 1929 Supreme Court of Canada case *Northwestern Utilities Ltd v City of Edmonton* [1929] SCR 186 and reaffirmed continually in case law since, including in 2015 Supreme Court of Canada case *Ontario (Energy Board) v Ontario Power Generation Inc*, 2015 SCC 44 at para 15.

Several court decisions have confirmed that regulators can decide what tests to apply to apportion costs between ratepayers and shareholders as long as this is within their governing statute, as it is in Ontario, Alberta, and British Columbia.[4] Regulators are experts in their field, with processes in place to gather and test information, and support informed discussion and decision making.

> *"The setting of rates is clearly within the discretion of the Commission, including the determination of what expenses can be included as recoverable costs and expenses, how to deal with depreciation, and how to deal with stranded or unpredictably destroyed assets."*
>
> *~Alberta Court of Appeal (ABCA 2023)*

Regulators must fulfil their mandate and stay within their legal boundaries. Decisions are subject to appeal, and could be challenged in the courts if the regulator steps beyond their mandate or fails to fulfill it.[5] A utility can appeal a decision if, for example, they:

- step into role of policymaker, moving beyond the scope of their delegated authority in the proceeding; or
- ignore common-law precedent, such as the long-established "fair return standard," such that the utility no longer has the opportunity to realize a fair return on its assets in aggregate (referred to as "rate base").[6]

Regulators (and indeed applicants) prefer certainty—they do not want to face court appeals due to the resources involved and the resulting lack of predictability of regulatory proceedings and outcomes. This also tends to feed the status quo bias, even under changing fundamental circumstances.

While court decisions can set precedents that affect regulator mandates, governments set the regulator's mandate and they can change this to include new considerations, such as climate change or affordability. They can also engage in other ways, for example, providing evidence to the regulator and participating as an intervenor in the regulatory process.

4 See: *Alberta's Public Utilities Act*, RSA 2000; Ontario's *Ontario Energy Board Act*, 1998; British Columbia's *Utilities Commission Act*, RSBC 1996; and more. These statutes grant energy regulators broad discretion and power in the subject area of energy regulation.

5 This is set out in regulation that give them the source of their powers.

6 Assets are considered as a group, some assets may be retired early while others may last longer than anticipated.

2 Who pays the bill under current rules?

What can past regulatory decisions tell us about whether ratepayers or shareholders bear stranded costs? Across Canada, regulators have addressed similar issues under various circumstances, from market disruptions to losses from natural disasters. But the energy transition introduces new complexities. This section examines precedents, explores how these frameworks may apply, and highlights lingering uncertainties in determining who ultimately pays the bill.

Prior decisions suggest provincial regulators may come to different conclusions on who pays for stranded costs

Stranded costs arise when investments initially deemed prudent are later affected by circumstances not accounted for at the time of the investment. When prudent action results in uneconomic outcomes, the question is who bears the cost (Hempling 2015). Regulatory systems vary in:

- how they consider the "used and useful" and prudent investment principles, especially when these principles conflict; and
- how they handle post-investment, or unforeseen, circumstances.[7]

Even within a given province, the outcome of individual regulatory proceedings can be difficult to predict. Regulators most often make case-by-case decisions in response to specific situations and circumstances. While regulators consider previous regulatory decisions, they are not bound by them, unlike courts.

Assignment of stranded cost risk for gas assets has not been settled in Canada. The existing precedents, however, may have lessons for application of regulatory policy and law to stranded cost risk. The following section discusses Alberta, Ontario, and British Columbia; in many other provinces, this discussion is even more nascent.

7 During the energy transition, we may see changes in energy policy, substantial improvements in the cost and performance of alternative technologies, or new understandings of the implications for the gas network. Some of this may be considered unforeseen based on information at the time of investment.

ONTARIO

Ontario's regulator has focused on prudence, based on the information available to the utility at time of decision-making. In decisions discussed below, unforeseen costs are therefore typically borne by the ratepayer.

The Ontario Energy Board generally applies the "prudence test" to determine if utilities can recover costs from customers. If a utility can show that the investment was prudent at the time it was made, given the information then available, utilities can recover costs of assets taken out of service early in their customer rates (OEB 2016). Ontario also approves standalone funding requests from utilities related to unforeseen events such as extreme weather. These "Z-Factor" applications allow the utility to recover material, unforeseen costs from ratepayers.

In Ontario's system, once investments pass regulatory approval, the risk exposure for shareholders is low. Decisions deemed prudent at the time they were made are rarely revisited by the OEB down the line. But according to the regulator, the utility still has an obligation to monitor and manage risk prudently over time (OEB 2023).

Perhaps because of this structure, the OEB so far asks the most direct questions across the country around the prudence of new pipeline investments and reassessing who pays for new connections in order to avoid future stranded costs.

> *"An essential component of prudent investment is the identification, management, and mitigation of risk. This includes the risk arising from the energy transition, the very risk that Enbridge Gas relies upon to justify an increase in its deemed equity thickness, which, if approved, would increase Enbridge Gas's return on its investment.... Enbridge Gas has taken the position that there is no stranded asset risk for the purposes of setting rates for 2024. This is not logical... It is the 40-year horizon against which the stranded asset risk must be examined, not the five-year horizon of the requested rate term that Enbridge Gas urges the OEB to use. When looked at through the 40-year lens, what Enbridge Gas proposes looks very much like business as usual and it is not sustainable."*
>
> *~Ontario Energy Board, December 2023*

The words "prudent" or "prudently incurred" occur in governing legislation in both Ontario and Alberta. Assessing the use of such terms, the Supreme Court of Canada interpreted prudence in its common, everyday sense rather than as requiring a specific test with a rigid methodology (Yahya 2015).

The energy transition brings questions of prudence to the fore, particularly given the scale and pace of change. Questions then arise about when and how a utility should actively manage these risks as they become reasonably foreseeable.

ALBERTA

Alberta's regulator has placed greater emphasis on whether assets are used and useful for the ratepayer. In decisions discussed below, unforeseen costs are borne by the shareholder.

In recent capital asset case proceedings in Alberta, the Alberta Utilities Commission (AUC) has employed the "used and useful" standard to determine who pays for stranded asset costs.[8] When assets stop being usable and/or useful before the end of their natural life, even if unforeseeable at time of investment, shareholders bear the cost, not ratepayers (Cusano et al. 2018)

Instances when shareholders have not been compensated for assets that unforeseeably stop being "used and useful" include:

- a change in metering technology that made old meters in-service obsolete before the end of their useful life;[9] and
- circumstances where natural disasters such as wildfires have inflicted a degree of damage on infrastructure that was not contemplated by utilities in their normal course planning.[10]

Overall, shareholders paying for unforeseen risk appears uncommon in the North American context (Cusano et al. 2018),[11] with many jurisdictions assigning these costs to the ratepayer.

Alberta's approach to the assignment of risk between customers and shareholders is built upon a specific legal history. A utility sought successfully to claim the full benefit of the appreciation in value from property that was no longer needed for utility purposes, rather than share profit with customers (ATCO Gas & Pipelines Ltd. v. Alberta (Energy & Utilities Board) 2006), commonly referred to as 'Stores Block'. A follow-on four-year AUC proceeding (Utility Asset Disposition Decision 2013-417, 26 November 2013) sought to address how utilities should handle gains or losses from asset disposition, especially concerning stranded costs. The AUC concluded that utilities, having full claim to proceeds from non-useful assets, also bear the full risk for losses due to stranded costs in extraordinary circumstances (Smellie 2014; Mondrow 2020).

The UAD decision emphasized the importance of foresight. Retirement levels across a group of assets that are foreseeable at the time of the utility's depreciation study (e.g., reasonably anticipated based on past events) are considered "ordinary." These costs are typically addressed in rate-setting and reclaimed from customers.

Subsequent rulings applied these principles to assets stranded during the Fort McMurray and Wood Buffalo extraordinary wildfire events (Mondrow 2020). These decisions, allocating losses to shareholders, are not without controversy and have been subject to appeal. The original Stores Block decision did not account for physical destruction from natural forces but rather for gains or losses on asset disposition. A 2023 appeal (ABCA 2023) determined that the regulator was not bound by its earlier position.

---

8 Note, the AUC does use different tests in other circumstances; in the case of pensions, for example, the regulator used a prudence test and put the burden on the utility to justify the prudence of its choice (Yahya 2015).

9 Metering decision: AUC Decision 3100-D01-2015

10 ATCO Electric Ltd—2012 Distribution Deferral Accounts and Annual Filing for Adjustment Balances (29 October 2014), 2014-297

11 See p. 431

In the context of the energy transition, questions of foresight become critical for utilities and regulators. What constitutes an "ordinary" or foreseeable circumstance in terms of gas demand and stranded costs? What is "extraordinary"? At what point does the "extraordinary" become the new normal? These considerations, if guided by precedents, may affect who bears the cost of stranded gas assets in Alberta.

BRITISH COLUMBIA

Discussions in B.C. are more nascent.

The British Columbia Utilities Commission (BCUC), the regulator in that province, has also signaled that questions surrounding stranded costs from the energy transition remain unsettled. While the BCUC has taken steps towards considering the risk of stranded costs with respect to new investments (BCUC 2023a, BCUC 2023b) the question of who pays for stranded costs remains.

The BCUC highlighted that the energy transition introduces a new category of risk for Fortis Energy Inc.'s shareholders—highlighting the risk that shareholders will not be able to earn their full return due to stranded costs (BCUC 2023c).

> *"The Panel notes costs associated with certain risk categories such as commodity prices and Indigenous engagement activities will largely be borne by ratepayers since increases in operating costs and capital projects are generally recoverable through rates. In contrast, some elements of Energy Transition risk pose an existential risk to FEI's shareholders and impact the risk of stranded assets which increases the risk that shareholders will not be able to earn their full return."*
>
> *~(BCUC 2023c)*

These comments echo a BCUC 2019 position on electric vehicle charging infrastructure, that the costs of underutilized assets must be borne by either the shareholder or the ratepayer, and that under the existing regulatory framework, regulated utility shareholders potentially incur this risk, referencing an Alberta case[12] as precedent.

12 ATCO Gas and Pipelines Ltd. V Alberta Energy and Utilities Board, 2006 SCC

BCUC has called into question the gas utility's demand forecasts for not considering the potential for a flattening or even a decline in the demand curve in response to policies that are already in place, including building codes and municipal bylaws. Instead, the gas utility projects a continued increase in peak demand over the next 20 years (BCUC 2023a). BCUC's question and its previous interpretations suggest continuing with such an approach is insufficient in the present risk environment.

The national regulator shows us that costs can also be split across multiple parties

Interprovincial transmission gas pipelines are under federal rather than provincial jurisdiction and are regulated by the Canada Energy Regulator (formerly the National Energy Board, or NEB).

The NEB was one of the first regulators to address the potential decline of a natural gas pipeline system in the case of the TransCanada Mainline, a gas transmission pipeline running across Canada. When proximate cheap shale gas from the United States became available, gas utility customers in Eastern Canada switched away from sources in Western Canada and no longer wanted to pay the tolls to cover the operation and remaining capital costs for transporting gas along the Mainline.

This put the Mainline at risk of spiralling tolls that would only worsen the problem, causing more customers to switch sources. But in this case, owners of the Mainline (TCPL) forecast that demand would rebound. The NEB, taking this at face value, only needed to find a solution to bridge the gap to limit the spiral (NEB 2013).

Under the NEB solution, Eastern customers agreed to pay higher tolls for six years, allowing accelerated depreciation of assets. After this period, the Mainline would be split, and Eastern customers would no longer pay for sections they no longer needed. The NEB did say that if load demand did not return, then TCPL would face potential cost disallowances, and therefore a risk that stranded costs would be passed onto shareholders. But in this case, this solution was sufficient to manage the risk.

In this TransCanada Mainline decision, the NEB argued that the principle of prudence alone is not sufficient to determine cost recovery in the context of NEB-regulated pipelines. This approach risks undermining the creation of efficient energy infrastructure and markets, and discourages pipeline companies from finding better or higher uses for their assets. The NEB reasoned that

setting tolls regardless of whether assets are used and useful erodes management's responsibility for making sound investment decisions and for keeping depreciation rates up to date.

The NEB also acknowledged the distinction and potential conflict between the regulatory principles of "prudently incurred costs" and the "used and useful" standard. This conflict arises when assets that were initially deemed prudent investments later become no longer useful—a matter that remained unresolved by the courts.

Even absent clarity from the courts, the NEB has used a two-part test to try to reconcile this issue, beginning over 40 years ago in the first rate case for Interprovincial Pipeline Ltd (RH-2-76 Decision, 1977). Although there was no indication that the investment in assets was imprudent, the board disallowed part of the pipeline company's return on investment for assets that were no longer used and useful, and accelerated the recovery of that investment.

Even though circumstances for transmission pipelines are different from distribution pipelines,[13] the NEB (now the Canadian Energy Regulator, or CER) shows us that the regulatory principles referenced above are distinct but connected. The principles of prudence and usefulness can be considered together, even as they have different implications for the decision. As such, regulators could allocate the risk and associated costs to more than one party.

Uncertainty and ambiguity on who pays between shareholders and ratepayers remains

Despite the precedents discussed above, assignment of stranded cost risk for gas assets is far from settled in Canada. Stranded costs in the energy transition have yet to materialize in any significant sense and precedents are therefore often set based on assets stranded for other reasons (such as unforeseen weather events).

A broad risk of stranded gas assets driven by the energy transition is of unprecedented scale, with billions of dollars of potentially stranded costs across the system. The magnitude of this risk could well drive new regulatory approaches in the balancing of ratepayer, shareholder and public interests.

There is also a lack of translation of medium- and long-term climate targets into energy system implications that invites debate on what is reasonably "foreseeable", even if some options lead to dead ends. This relates to a lack of clarity in government energy transition policy. The pace of the transition is another uncertain variable, also made less ascertainable in the face of a lack of clarity in government energy transition policy.

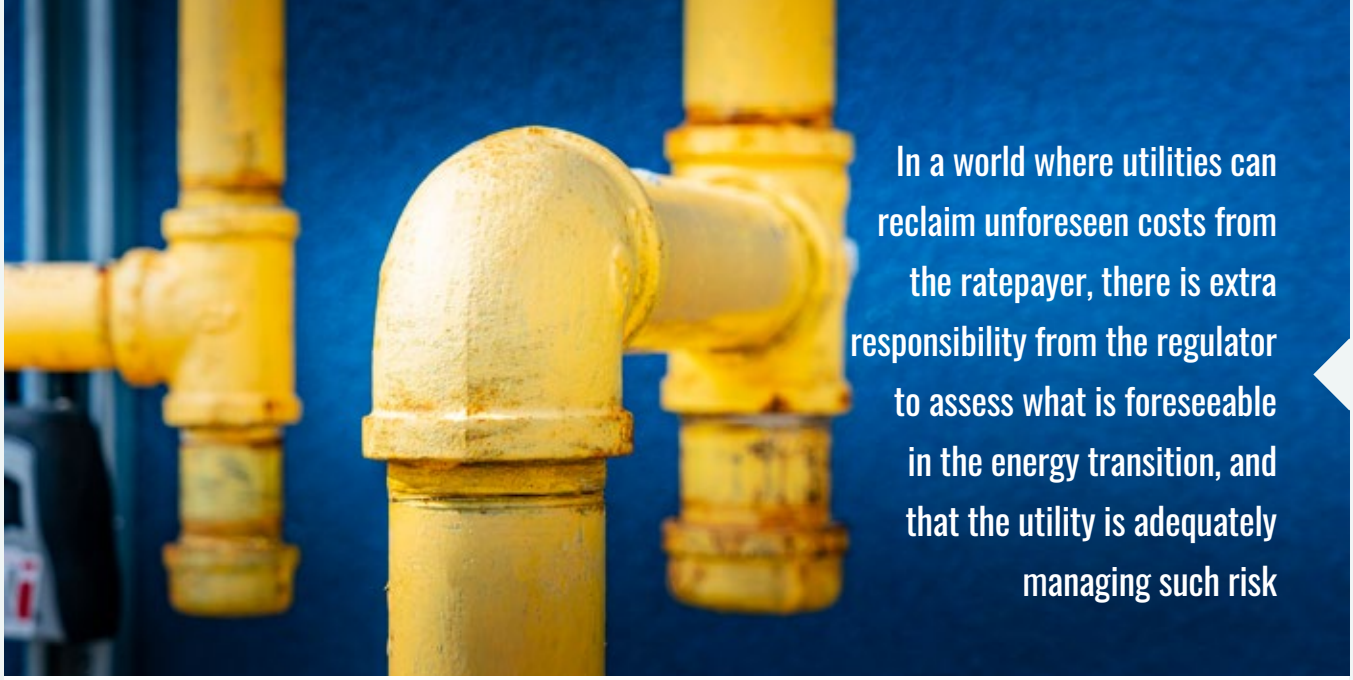
The future of regulatory decision making in this space remains uncertain:

- **Regulatory approaches could change:** Even in jurisdictions where stranded cost risk has been addressed to a limited extent and in specific historical circumstances, regulators may need to apply principles in new and different ways as the energy transition (and associated legislation and/or government policy) evolves.
- **Decisions can be controversial and subject to appeal:** Relevant decisions, such as those in Alberta and Ontario, often face controversy and appeals, further complicating the

13 Transmission gas companies face unique circumstances compared to local distribution utilities. Unlike local gas-distribution utilities, transmission companies regulated by the NEB are not obligated by law to serve specific areas. They also face more direct competition from other providers in some parts of the country. This difference in market dynamics creates unique regulatory challenges for the NEB.

regulatory landscape. Less commonly, there are changes in legislation. In its December 2023 decision for Enbridge Gas Inc., the OEB declared new small-volume customers must pay for the costs of connecting natural gas up front, rather than Enbridge recovering them from all customers through rates over 40 years (OEB 2023). This OEB decision, however, was reversed by the provincial government through legislation shortly thereafter (*Keeping Energy Costs Down Act 2024*).

- **Other factors are also connected and influence the overall balance of who pays:** Regulators have a variety of dimensions to consider. Utilities, for example, are asking for (and being granted) higher rates of return or changes in capital structure to enable them to continue to attract investment in an environment of increased business uncertainty from the energy transition (BCUC 2023c, OEB 2023). Higher rates of return, if granted, would pass such costs from the utility to its ratepayers, though may also strengthen later arguments that utility shareholders should bear energy transition-driven stranded costs. Decisions on rates of return and stranded asset risk are therefore connected, both impacting the distribution of who pays and both presenting some moral hazard if utilities can reasonably expect to pass on costs.
- **Provinces may continue to diverge in their approach:** Regulators can create their own unique tests and rules to apportion costs within their jurisdiction. They may also diverge in their approaches not only with respect to stranded costs, but also for other related issues such as utility rates of return. Adding to uncertainty, regulators could change approaches in future as the transition and policy environment evolves and presents novel regulatory challenges.
- **Potential for policy change:** Decisions made by regulators are guided by climate and energy policy to understand whether investment is prudent in this context. If such policy shifts significantly, regulatory decisions can be expected to follow. Policy certainty and implementation are particularly important in considering whether risks are reasonably foreseeable.



There is more than one way to assign responsibility for stranded asset costs. Beneath the various options is a question of whether shareholders should be shielded from certain risks or if this protection leads to risky decision-making. Arguments can be made on both sides with respect to whether the regulator or utility is best placed to manage risk.

- **Shareholders as risk moderators:** The regulated rate of return is intended to balance risk and reward. It works to compensate shareholders for predictable utility operations risks like maintenance and capital costs. Uncertainties about the future, such as changes in climate and energy policy or market dynamics (such as improved performance and cost of alternative technologies to gas) leading to stranded costs, can also be taken as part of the broader investment risk profile. Such risks may be considered unforeseeable at the time of investment by the regulator. If shareholders are insulated from such risks, it may encourage riskier decisions, knowing the utility will not bear the consequences. Exposing shareholders to these risks can promote long-term prudent risk management (as long as utilities can reasonably manage such risk and therefore have an opportunity for a fair rate of return).
- **Regulators as risk moderators:** Conversely, the regulated rate of return is expected to provide a stable and consistent return on capital assets, reflecting the traditionally low-risk nature of utility investments.[14] In a world where utilities can reclaim unforeseen costs from the ratepayer, there is extra responsibility from the regulator to assess what is foreseeable in the energy transition, and that the utility is adequately managing such risk given available information, policy and legislation.

While there may be more than one way to assign responsibility for stranded asset costs, the greater risk is when neither party fulfills this risk moderator function. This may occur because of uncertainty in climate and energy policy or a lack of mandate to consider such factors. Both of these are in fact the norm in many jurisdictions, and ultimately this exacerbates risks for provincial governments and taxpayers, as we discuss next.

14 The regulated return afforded to utility shareholders is established on the basis of the risk profile of the utility business, and needs to be high enough that the utility's returns can compete with the returns offered by other investments with similar risk levels.

3 Stranded cost risks for provincial governments

Ratepayers and shareholders are not the only options for who pays for stranded costs. This section explores why provincial governments may be risk-exposed and how inaction may exacerbate both the likelihood and level of such risk.

A lack of policy clarity from provincial governments increases their financial risk

The final group that may be left on the hook for the bill is provincial governments and their taxpayers. The lack of clarity in how governments' long-term climate goals connect to their climate and energy policies increases their exposure to stranded cost risks in two ways. First, it complicates cost mitigation for regulators, often increasing the size of the problem and subsequent pressure for governments to step in. Second, it leaves governments vulnerable to legal challenges from utilities.

Regulator practices, jurisdiction, and relevant common law were largely established before climate change became a major concern, leading to ambiguity in how regulators should incorporate emerging energy transition goals and uncertainties.[15] This is uncharted territory with no clear guidelines until provincial governments provide such clarity. Without clear direction, and in light of continuing obligations to connect and serve customers, gas utilities continue expanding their networks—increasing future liabilities—while shareholders are less likely to bear responsibility for stranded asset costs due to uncertainty at the time of the original investment (if a no-hindsight prudence test is applied). Both effects can increase the financial burden on ratepayers. And, if ratepayers are unable or unwilling to pay the costs of escalating rates, governments may be forced to step in.

Lack of policy clarity also heightens the risk of governments paying for stranded costs because it could increase the likelihood of success of legal claims from utilities that may argue they were denied the opportunity of a fair rate of return. Longstanding case law in Canada and the United States (the Fair Return Standard) has established the requirement that a regulated utility be given the opportunity—though not the guarantee—to recover the cost to build and operate its system, including a return on investment (or profit), where investments were "prudent". When

15 While ambiguous, declining gas demand is still directly relevant to the traditional role of an economic regulator.

climate and energy policies are ambiguous, gas utilities can more easily later claim that their investments were prudent.

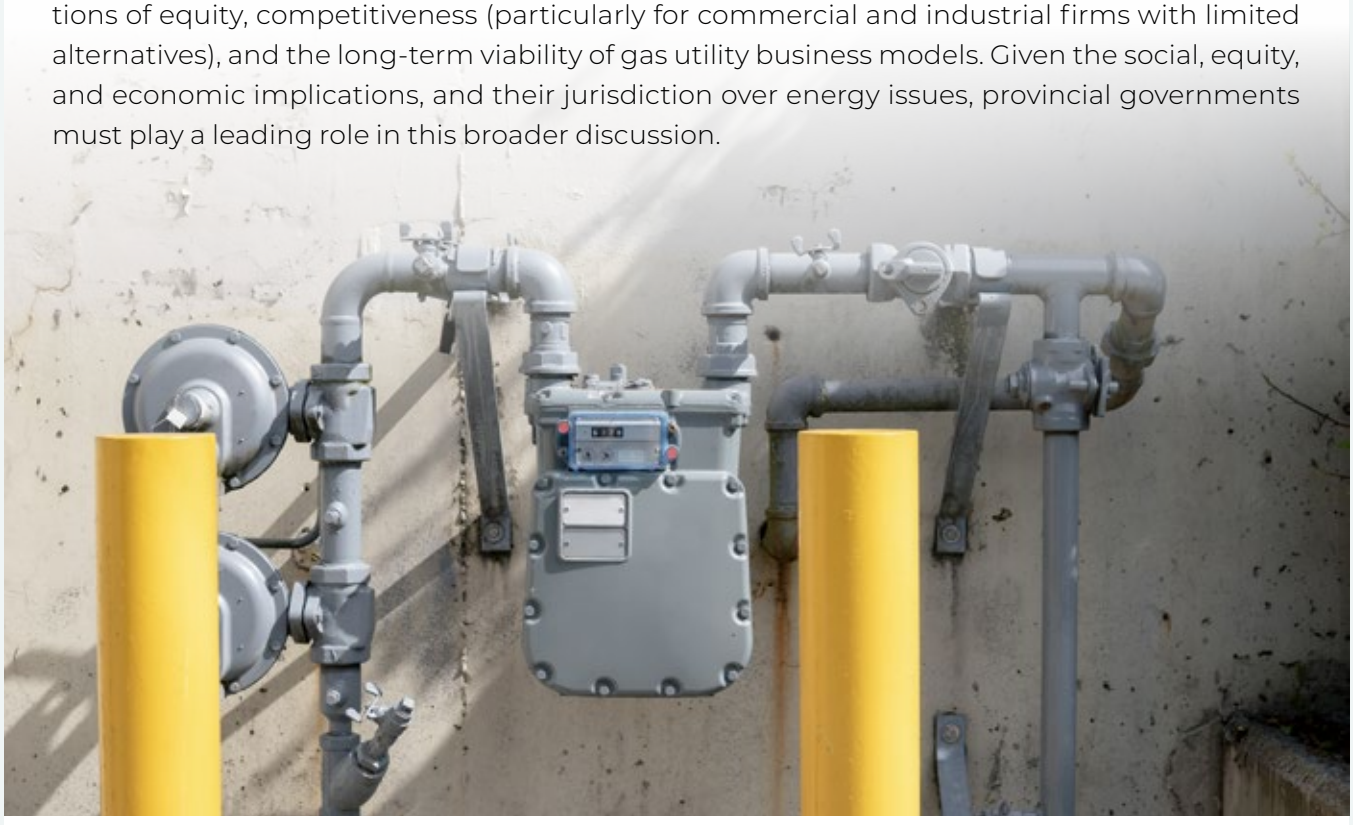
The stranded asset compensation debate is not unique to Canada and some other governments have successfully argued against it. Court proceedings in the Netherlands found the coal law banning coal generation post-2030 was "lawful, proportionate, and foreseeable," and that the Dutch state, therefore, did not have to pay compensation to the international utility owners of the coal-fired plants. (Verbeek 2021, Verbeek 2023). But policy on coal-fired generation (internationally and nationally) is much clearer than present provincial policy on the future use of gas distribution networks.

Proactive energy plans and policy, including guidance or evidence on the associated impact for gas distribution networks, would provide provincial governments with greater protection from utility claims of compensation for stranded costs.

Broader potential impacts also call for governments to take a proactive approach to the problem

There is a high cost to the current, largely reactive and piecemeal approach. Canada lacks transparent and comprehensive discussion on this topic, so uncertainty reigns and liabilities continue to accumulate. Incentives to mitigate risk will remain insufficient as long as ambiguity on who will pay remains.

This paper has examined the complexity and frequent ambiguity surrounding who pays for stranded assets between ratepayers, shareholders, and the government. But there are broader issues at play. Recovering costs from a shrinking base of gas customers raises important questions of equity, competitiveness (particularly for commercial and industrial firms with limited alternatives), and the long-term viability of gas utility business models. Given the social, equity, and economic implications, and their jurisdiction over energy issues, provincial governments must play a leading role in this broader discussion.



4 Implications for policymakers

The clean energy transition is reshaping the regulatory landscape, introducing significant challenges that require new approaches to protect the long-term interests of ratepayers and ensure fair treatment of utility shareholders.

Regulators already have some tools to mitigate the risk of stranded costs and assess the tradeoffs and consequences of various strategies. For instance, they can require gas utilities to explore what-if scenarios, including significant decline in gas demand, allowing for proactive planning and evidence-based decision-making. With evidence in hand, they could clearly articulate policies to mitigate stranded cost risk. For example, they could issue greater clarity on how investments are determined to be prudent or imprudent, implement accelerated or alternative methodologies for depreciation, and require the assessment of non-pipe alternatives or "repair and maintain" options as standard alternatives to new investments. They could also provide greater clarity on who would bear the costs of underutilized assets under specific future circumstances of the energy transition, at least between shareholders and ratepayers.

Utilities can also play a role by actively managing stranded asset risks as a material concern for their shareholders, adjusting planning assumptions to limit their financial exposure. For example, if incentivised, utilities can extend the life of existing assets by repairing rather than replacing them, or explore alternatives to new gas infrastructure in developing areas, provided they are enabled to do so through policy reforms (e.g., updating obligation-to-serve requirements to focus on delivery of heat, not gas). As the last example shows, policymakers again hold keys to unlocking some of this prudent management.

Proactive action from regulators and utilities would be more effective, however, with government policymakers first acting to provide energy policy clarity. Provincial governments need to set a long-term direction soon on what the clean energy transition means for their provincial energy systems—or risk leaving systems unprepared, and consumers and governments themselves exposed. Concerns about stranded costs could also have a chilling effect on the development of stronger climate policy that disincentivizes gas consumption, reinforcing a status quo bias and making climate goals more difficult or costly to achieve.

As highlighted in our *Heat Exchange* report, the first priority in addressing the issue of stranded costs is to reduce the total potential bill. This means providing direction and implementing policy

that stops treating gas system expansion and replacement as the default option. Acting now to avoid lock-in and further exacerbating the problem is the closest thing we have to a no-regrets action, even if untangling the question of who pays for what remains is complex.

Notably some policy actions can not only help to reduce the total bill but also more clearly allocate risks, thereby reducing moral hazard. For example, where legislated climate targets exist, the most important way to reduce both future costs and moral hazard is for provincial governments to clarify how their targets translate into implications for the local energy system through energy roadmaps. These guide and inform pathways and future roles for both the electricity and gas systems, shifting from the traditional siloed approach to energy.

As the path forward for the gas system becomes clearer, so, too, does the clarity on whether investments are prudent, and the assignment of the risk of stranded asset liabilities. This clarity creates a feedback loop, as exposure to liabilities increases the incentive to reduce them.

Other provincial government policy actions with dual effects focus on clarifying responsibilities. Provinces can:

- update their regulator mandates to include consideration of alignment with legislated provincial climate targets alongside standard considerations of cost, reliability, and safety. Regulators with this in their mandate have a clearer public duty to assess and *assign* stranded asset risk from the energy transition; and
- reform obligation-to-serve requirements for gas utilities (Bagdanov 2024); as highlighted above, this can unlock prudent management by gas utilities but it also has direct implications for who bears stranded costs down the line. If utilities claim they were required by legislation to continue expanding the system under the status quo, the government may ultimately be held responsible for covering some stranded asset costs.

Differences between provinces—in terms of their energy systems, regulatory precedents, and policymaking frameworks—mean there may be more than one answer to the question of who pays for stranded gas assets when the bill comes due. However, reducing ambiguity in this regard has the potential to decrease the moral hazard currently driving continued infrastructure expansion, which otherwise increases the overall bill. Provincial governments must overturn this status quo through updated legislation, regulatory mandates and clearer energy policy.

References

Alter, Abigail Lalakea, Sherri Billimoria, Mike Henchen, Karsten Barde, Coutney Eichhorst, and Justin Klingler. 2024. Non-Pipeline Alternatives: Emerging Opportunities in Planning for U.S. Gas System Decarbonization. RMI (Rocky Mountain Institute) and National Grid. May. https://www.nationalgridus.com/media/pdfs/other/CM9904-RMI_NG-May-2024.pdf

ATCO Gas & Pipelines Ltd. v. Alberta (Energy & Utilities Board). 2006. 1 SCR 140 [Stores Block]. https://www.canlii.org/en/ca/scc/doc/2006/2006scc4/2006scc4.html

BCUC (British Columbia Utilities Commission). 2023a. Decision and Order G-361-23. https://docs.bcuc.com/documents/other/2023/doc_75554_g-361-23-fei-ocu-project-decision.pdf

BCUC (British Columbia Utilities Commission). 2023b. Decision and Order G-62-23https://www.ordersdecisions.bcuc.com/bcuc/decisions/en/item/521567/index.do

BCUC ((British Columbia Utilities Commission). 2023c.Decision and Order G-236-23https://www.ordersdecisions.bcuc.com/bcuc/decisions/en/item/521862 /index.do

BCUC (British Columbia Utilities Commission). 2019. *An Inquiry into the Regulation of Electric Vehicle Charging Service*. Phase Two Report. June 24. https://www.ordersdecisions.bcuc.com/bcuc/decisions/en/419818/1/document.do

Bilich, Andy, Michael Colvin, Timothy O'Connor. 2019. *Managing the Transition: Proactive solutions for stranded gas asset risk in California*. Environmental Defense Fund. https://www.edf.org/sites/default/files/documents/Managing_the_Transition_new.pdf

Bagdanov, Kristin George. 2024. *Decarbonizing the Obligation to Serve*. Building Decarbonization Coalition. https://buildingdecarb.org/wp-content/uploads/FINAL_Decarbonizing-the-Obligation-to-Serve_Oct2024.pdf

Carter, Michael. 2023. *How utilities should prepare for a new era of stranded assets and regulatory scrutiny*. ESource. April 18. https://www.esource.com/blog/001232qpqh/how-utilities-should-prepare-new-era-stranded-assets-and-regulatory-scrutiny

Cusano, Lou, David M. Wood, Evan Dickson, and Gino Bruni. 2018. *"Prudence, Stranded Assets, and the Regulation of Utilities: A Review of Alberta Utility Regulatory Principles in a Post-Stores Block Era."* Alberta Law Review 403. https://www.canlii.org/en/commentary/doc/2018CanLIIDocs260#!fragment/zoupio-%20_Tocpdf_bk_1BQCwhgziBcwMYgK4DsDWszIQewE4BUBTADwBdoAvbRABwEtsBaAfX2zhoBMAz%20ZgI1TMAjAEoANMmylCEAIqJCuAJ7QA5KrERCYXAnmKV6zdt0gAyn%20lIAhFQCUAogBl7ANQCCAOQDC9saTB80KTsIiJAA

Davis, Lucas, and Catherine Hausman. 2022. *Who will pay for legacy utility costs?* Energy Institute at Haas. March. https://haas.berkeley.edu/wp-content/uploads/WP317.pdf

E3 (Energy and Environmental Economics). 2024. *Massachusetts DPU issues Order in 20-80 Future of Gas Proceeding supported by E3 Decarbonization Pathways Study*. January. https://www.ethree.com/massachusetts-dpu-order-20-80-future-of-gas-proceeding-e3-decarbonization-pathways/

Gold-Parker, Aryeh, Jeard Landsman, Fangxing Liu, Dan Aas, and Amber Mahone. 2023. *Benefit-Cost Analysis of Targeted Electrification and Gas Decommissioning in California*. Energy and Environmental Economics Inc., Ava Community Energy, Gridworks. December. https://www.ethree.com/wp-content/uploads/2023/12/E3_Benefit-Cost-Analysis-of-Targeted-Electrification-and-Gas-Decommissioning-in-California_u.pdf

Gridworks. 2019. *California's Gas System in Transition: Equitable, Affordable, Decarbonized and Smaller*. https://gridworks.org/wp-content/uploads/2019/09/CA_Gas_System_in_Transition.pdf

Harland, Kate, Sachi Gibson, Jason Dion, Nikhitha Gajudhur, and Kathleen Mifflin. 2024. *Heat Exchange: How today's policies will drive or delay Canada's transition to clean, reliable heat for buildings*. Canadian Climate Institute. June. https://climateinstitute.ca/wp-content/uploads/2024/06/Heat-Exchange-Report-Canadian-Climate-Institute.pdf

Harland, Kate. 2024. *"Change is in the pipeline—will expanding gas networks leave ratepayers on the hook?"* Canadian Climate Institute. March. https://climateinstitute.ca/energy-boards-transition-gas/

Hempling, Scott. 2015. *"From Streetcars to Solar Panels: Stranded Cost Policy in the United States."*. Energy Regulation Quarterly. Volume 3, Issue 3. https://energyregulationquarterly.ca/articles/from-streetcars-to-solar-panels-stranded-cost-policy-in-the-united-states#sthash.STzjWJor.D7rXm9S1.dpbs

Hiel, Adrian. 2023. *"We no longer need a (gas) pipeline network in residential areas."* Energy Cities [Interview]. July 11. https://energy-cities.eu/we-no-longer-need-a-gas-pipeline-network-in-residential-areas/#:~:text=%E2%80%9CWe%20plan%20to%20decommission%20around,be%20transported%20through%20these%20pipes

Kaiser, Gordon E. 2024. *"The Energy Transition, Stranded Assets, and Agile Regulation."* Energy Regulation Quarterly. Volume 12, Issue 1. April. https://energyregulationquarterly.ca/articles/the-energy-transition-stranded-assets-and-agile-regulation#sthash.0tbLLSRN.pjJYKgD3.dpbs

Keeping Energy Costs Down Act. 2024. Statutes of Ontario. Chapter 10. https://www.ola.org/en/legislative-business/bills/parliament-43/session-1/bill-165

LEI (London Economics International). 2023. *Recommendation for appropriate capital structure for Enbridge Gas in its application for 2024 rebasing and 2025-2028 price cap plan.* https://www.rds.oeb.ca/CMWebDrawer/Record/785972/File/document

Ligaya, Armina. 2016. *Capital Power upgraded on Alberta compensation for stranded coal assets*. Financial Post. November 25. https://financialpost.com/investing/trading-desk/capital-power-upgraded-on-alberta-compensation-for-stranded-coal-assets

Marr-Laing, Tom, and Benjamin Thibault. 2015. *Early coal phase-out does not require compensation*. Pembina Institute. November 10. https://www.pembina.org/pub/early-coal-phase-out-does-not-require-compensation

Mondrow, Ian. 2024. *"Why bother with an independent energy regulator?"*. Gowling WLG. January. https://gowlingwlg.com/en-ca/insights-resources/articles/2024/independent-energy-regulator

Mondrow, Ian. 2020. *"The Fort McMurray Wildfire Cases: Life After Stores Block."* Energy Regulation Quarterly. Volume 8, Issue 3. September. https://energyregulationquarterly.ca/articles/the-fort-mcmurray-wildfire-cases-life-after-stores-block#sthash.lD2yA7FT.vnLGPLEK.dpbs

NERA Economic Consulting. 2021. *Stranding risk for gas networks*. September 3. https://www.aer.gov.au/system/files/Jemena%20-%20Submission%20-%20Equity%20-%203%20September%202021%20-%20Attachment%202%20-%20NERA%20Stranding%20Risk%20Report.pdf

National Energy Board. 2013. Decision, RH-003-211; the TransCanada Restructuring Decision.

OEB (Ontario Energy Board). 2023. Decision and Order EB-2022-0200. https://www.rds.oeb.ca/CMWebDrawer/Record/827754/File/document

OEB (Ontario Energy Board). 2016. *Handbook for Utility Rate Applications*. October. https://www.oeb.ca/sites/default/files/uploads/documents/regulatorycodes/2019-01/Handbook-Utility-Rate-Applications-20161013.pdf

Ontario Energy Board Act. 1998. c.15, schedule B. https://www.ontario.ca/laws/statute/98o15

Ontario (Energy Board) v. Ontario Power Generation Inc. 2015. 2 SCR 147. https://decisions.scc-csc.ca/scc-csc/scc-csc/en/item/15517/index.do

Public Utilities Act. 2000. c.P-45. https://canlii.ca/t/569mn

Smellie, James H. 2014. *"Alberta Utilities Asset Disposition Decision."* Energy Regulation Quarterly. September. https://energyregulationquarterly.ca/case-comments/alberta-utilities-asset-disposition-decision#sthash.5gMflNvR.2UK4yPI1.dpbs

Sorge, Petra, and Priscila Azevedo Rocha. 2024. *Europe braces for billions in writedowns at stranded gas assets*. Bloomberg. May 6. https://www.bloomberg.com/news/articles/2024-05-07/europe-braces-for-billions-in-write-downs-at-stranded-gas-assets

Spees, Kathleen, and Matthew O'Loughlin. 2021. *Stranded fossil fuel infrastructure. How big is the stranded asset problem, and what should we do about it?* Brattle. June 24. https://www.brattle.com/wp-content/uploads/2021/08/Stranded-Fossil-Fuel-Infrastructure-How-Big-is-the-Stranded-Asset-Problem-and-What-Should-We-Do-About-It.pdf

Utilities Commission Act. 1996. Chapter 473. https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96473_01

Velez, Kiki. 2024. *CA: $20B Potential Savings from Targeted Electrification.* NRDC [blog]. June 19. https://www.nrdc.org/bio/kiki-velez/ca-20b-potential-savings-targeted-electrification#:~:text=The%20way%20targeted%20electrification%20works,effective%20than%20replacing%20the%20pipeline

Verbeek, Bart-Jaap. 2021. *Compensation for stranded assets?* https://www.somo.nl/compensation-for-stranded-assets/

Acknowledgments

This work was conducted with research support from Utilis Consulting, including contributions from Brandon Ott and Kiran Waterhouse .

External reviewer

Ian Mondrow, Partner, Gowling WLG

Contributing expert panel members

Andrew Leach, Professor of Economics and Law, University of Alberta
Kristen van de Biezenbos, Professor of Law, California Western School of Law

We have made efforts to respond to comments made by reviewers but all errors and omissions are the responsibility of the author. Review does not imply endorsement of the findings and recommendations in the paper.

Recommended citation

Harland Kate, 2025. *Who pays for stranded costs in underutilized gas distribution systems?* Canadian Climate Institute.

Creative Commons

Published under a Creative Commons BY-NC-ND 4.0 license by the Canadian Climate Institute. The text of this document may be reproduced in whole or part for non-commercial purposes, with proper source citation.

Disclaimer

The Canadian Climate Institute is a collaboration of experts from a diverse range of disciplines and organizations across the country. As an independent, non-partisan, and publicly funded organization, we undertake rigorous and independent research and analysis and engage a diverse range of stakeholders and rightsholders to bring clarity to the climate challenges and transformative policy choices ahead for Canada.

This report is based on public regulatory filings and court decisions as of the date of publication. It is provided by the Institute for informational purposes only. None of the information in this report is intended to provide, nor should be construed as or relied upon as, investment, financial, legal, or other advice. The Institute and its directors, officers, sponsors, partners, and employees do not accept or assume any liability or responsibility for any damages or costs, including legal expenses, of any kind arising out of or in connection with any use of, or reliance upon, this report.