

REPLACING NATURAL GAS WITH CLEAN ELECTRICITY IS UNREALISTIC

The provincial government has established very ambitious CO₂ emission reduction targets for 2030. Of particular interest for this paper is the 59% to 64% reduction below 2017 levels set for residential and commercial buildings.¹ The objective is to severely restrict the use of natural gas for heating and cooking. This onerous target was established even though residential and commercial buildings generated only 7.3 mtco₂ in 2020, or approximately 11.2% of the 64.6 mtco₂ total for that year.²

The CleanBC targets do not provide an estimate of the amount of renewable electricity required to replace the natural gas, nor of the cost of such a displacement.

The Push to Eliminate Fossil Fuels

The government's reduction target for the reduction of natural gas in residential and commercial buildings is part of a movement to severely restrict or eliminate the use of natural gas as a component of the province's energy mix. The new building code standards, announced in May 2023, target new buildings for higher energy efficiency.³ By 2030, the new standards will effectively bar natural gas from new buildings.

Yet, a phase-out of natural gas in new construction is not enough for the more activist climate advocates. Calls for the elimination of existing natural gas for hot water, heating and cooking are becoming more prominent.⁴

In a recent article, representatives of four environmental groups argued that the public strongly supports government efforts to restrict the use of natural gas in residential and commercial buildings.⁵ Despite the small amount of GHG emissions produced by the use of natural gas in residential and commercial buildings, the authors assert that a "key piece of climate emergency action is getting fossil gas — more commonly and

¹ https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/2022-ccar/2022_climate_change_accountability_report.pdf p. 6.

² Ibid., p. 9.

³ <https://news.gov.bc.ca/releases/2023ENV0030-000653>

⁴ https://thetyee.ca/News/2024/03/27/BC-Climate-Goals-Gas/?utm_source=daily&utm_medium=email&utm_term=intro

⁵ https://thetyee.ca/Opinion/2024/03/29/Most-People-BC-Want-To-Get-New-Buildings-Off-Gas/?utm_source=daily&utm_medium=email&utm_campaign=290324

misleadingly known as “natural” gas — out of buildings. But we need to pick up the pace.”⁶

Using an opinion poll commissioned by a “coalition of climate groups,” the authors make a number of assertions that are either incorrect or misleading. For example, the authors state that a majority of those polled want the government to take “a firmer regulatory hand” over FortisBC (Gas); “a company which, as reported by [The Tyee](#) and [others](#), is pulling out all the stops to grow its market as the top supplier of methane to homes and businesses in B.C.”⁷ The government does not regulate FortisBC (Gas). It is regulated by the BC Utilities Commission, through clearly defined regulatory standards.

After touting the results of the opinion survey, the authors then bemoan the same survey respondents’ lack of knowledge about the “climate crisis.” Only 29% “correctly knew that the largest source of greenhouse gas emissions in most cities is the burning of methane gas in homes and buildings. In other words, the strong support we found for getting our homes and buildings off gas came even in the absence of widespread understanding of the problem.”⁸ This demonstrates the problem with surveys of uninformed public opinion.

Nevertheless, the four environmental organizations have joined others in the BC Climate Emergency Campaign (BCCAC) to ask that the government require that “all new buildings to be prohibited from hooking up to gas lines within a year, and for the government to ‘create a Crown corporation to mobilize the workforce to retrofit all existing buildings and eliminate fossil fuel heating by 2035.’”⁹

Why the Call to Replace Natural Gas is Unrealistic

The demand to replace natural gas in residential and commercial buildings with renewable electricity by 2035 is more hyperbole than a serious proposition. In fact, it appears to be part of a larger campaign to end the use of natural gas entirely. The BCCAC has not calculated what the cost would be to BC residents and commercial building owners, nor the amount of electricity required to replace the banned natural gas.

FortisBC reports that in 2022 it had 976,000 residential and 97,700 commercial customers, which generated \$1.18 billion and \$0.67 billion in revenue

⁶ Ibid.,

⁷ Ibid.

⁸ Ibid.

⁹ Ibid.

respectively.¹⁰ The residential customers required 87 PJs of natural gas, which is the equivalent of approximately 24,100 GWh of electricity. The commercial customers utilized 61 PJs, equivalent to approximately 17,000 GWh of electricity.¹¹ In 2022/24, BC Hydro reported that it sold 19,500 GWh of electricity (\$2.15 billion) to 1.96 million residential customers, and 19,200 GWh of electricity (\$1.84 billion) to 224,000 commercial customers.¹²

Clearly, to replace all the residential natural gas with electricity supplied by BC Hydro by 2035 would be prohibitively expensive (and bankrupt FortisBC). BC Hydro would need to develop or acquire approximately 24,100 GWh of new renewable electricity, which is the equivalent output of almost five Site C dams. A further 17,000 GWh would be needed to replace the natural gas used in commercial buildings (3.5 Site C dams). This new 41,100 GWh requirement is 67% of the domestic electricity generated or purchased by BC Hydro in 2022/23.¹³

BC Hydro is about to purchase a minimum of 3,000 GWh of new intermittent power generated primarily by wind turbines (and some solar arrays). To increase this requirement by almost 14 times, with little economic development for the province's economy (but a boon to manufacturers of heat pumps), is beyond the realm of any serious discussion of BC's energy future.

The government's CleanBC requirement to reduce carbon emissions has significantly increased the value of hydroelectric and other forms of clean electricity. To commit to the elimination of natural gas to heat residential and commercial buildings would be a serious misallocation of this limited resource.

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¹⁰ https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/fei-gas-aif-2022-c2-sedar.pdf?sfvrsn=39b70f24_1 p. 5.

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https://www.google.com/search?q=natural+gas+PJ%3F&rlz=1C1GCEA_enCA817CA817&oq=natural+gas+PJ%3F&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIICAQABgWGB4yCAGCEAAAYFhgeMggIAxAAGBYHjIICAQQA BgWGB4yCAGFEAAAYFhgeMggIBhAAGBYHjINCACQABiGAXiABBiKBTINCAgQABiGAXiABBiKBTINCA kQABiGAXiABBiKBdIBCjE3MTM2ajBqMTWoAgiwAgE&sourceid=chrome&ie=UTF-8

¹² <https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/accountability-reports/financial-reports/annual-reports/2022-23-bc-hydro-annual-service-plan-report.pdf> p. 28 and p. 132.

¹³ Excluding the 15,400 GWh purchased from IPPs, this represents almost 90% of owned generation.

APPENDIX

FortisBC Annual Report 2022 Statement on Natural Gas Competitiveness

[https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/fortisbc-\(gas\)-mda-q4-2023-d2-pa-sedar.pdf?sfvrsn=49c2fa5b_1](https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/fortisbc-(gas)-mda-q4-2023-d2-pa-sedar.pdf?sfvrsn=49c2fa5b_1) p. 16.

In the future, if natural gas becomes less competitive due to price or other factors, such as government policy or public perception of natural gas or its carbon intensity relative to other energy sources, the Corporation's ability to add new customers could be impaired and existing customers could reduce their consumption of natural gas or eliminate its usage altogether as furnaces, water heaters and other appliances are replaced. This may result in higher rates for remaining customers and, in an extreme case, could ultimately lead to an inability to fully recover the Corporation's cost of service in rates charged to customers.

In the Corporation's utility service territory, natural gas primarily competes for space and hot water heating load with electricity. In addition to other price comparisons, the upfront capital cost differences between electricity and natural gas equipment for hot water and space heating applications continue to present a challenge for the competitiveness of natural gas on a fully costed basis, including where electric applications are supported by government incentives and preferential tax treatment.

Government policy has also impacted the competitiveness of natural gas and the future use of natural gas in BC. Federally, the Canadian Net-Zero Emissions Accountability Act became law in June 2021 and establishes in legislation Canada's commitment to achieve net-zero emissions by 2050. Provincially, in October 2021, the Government of BC released an update to its economic and climate action plan, the CleanBC Roadmap to 2030 ("CleanBC"). Originally introduced in 2018, CleanBC frames BC's approach to reducing emissions and transitioning to a low-carbon economy. The update includes a series of actions designed to achieve the Government of BC's legislated climate targets to reduce GHG emissions by 40 per cent by 2030, based on 2007 levels. Among the initiatives outlined in CleanBC are a requirement that all new construction be zero-carbon by 2030, the introduction of a GHG emissions cap that will require gas utilities to undertake activities and invest in technologies to limit GHG emissions from buildings and industry to approximately 6 megatonnes by 2030, the phasing out of incentives for conventional gas-fired heating equipment, a commitment to increase the tax on carbon-

based fuels to meet or exceed the federal benchmark of \$170 per tonne by 2030, a new high efficiency standard requiring space and water heating equipment to meet or exceed 100 per cent efficiency after 2030, an end to efficiency rebates on conventional gas-fired equipment, and acceleration of zero-emission vehicle adoption with a target of 90 per cent of all new light-duty vehicle sales in the province being zero-emission by 2030. In addition, the Province provides significant incentives for electric heat pumps, including both rebates on equipment sales and exemption on provincial sales taxes, which is driving adoption of electric heat pumps and may erode new customer additions on the gas system. While CleanBC provides a path forward for the Province, further policy details, enabling regulation, and implementation plans are still to be released.