

Canadian Gas Association: CBC's Take on Home Heating is Irresponsibly Incomplete

Re.: <https://www.cbc.ca/news/technology/greener-heating-1.5429709>

The article “*Goodbye gas furnaces? Why electrification is the future of home heating*” by Emily Chung published January 20, 2020 on CBC online is irresponsibly incomplete in its portrayal of energy delivery. Had the author thought to contact the natural gas industry, we would have helped create a more informed piece. Let us try to redress the confusion a bit here with some corrections.

First, we start with what is referred to as “leaks from the entire distribution system”. According to public information from the federal National Inventory Report and the Canadian Energy Partnership for Environmental Innovation, the natural gas system’s methane emissions totaled only 0.3 per cent of Canada’s total 2017 GHG emissions. No natural gas delivery company wants leaks, however small they might be. Methane is, after all, our product, and leaks represent a waste of that product. Our industry works each day to deploy measures that reduce methane emissions and our success in doing so is notable. In fact, emissions per kilometre of distribution gas lines have declined by 46 per cent since 2005 despite a doubling of the pipeline system size and a 45 per cent increase in natural gas use in Canada¹. Further, the stories of methane emissions from delivery systems often reference older cast iron pipelines. While still present in many US cities, there are no cast iron pipes in Canada’s gas delivery system. The last of the cast iron in Canada was phased out in 2012.

Second, stating that the only way to make a building 100 per cent emission neutral is through electricity is not accurate. There are a number of renewable gas pathways that can be used to deliver zero-emissions gaseous-piped energy to buildings. These include both renewable natural gas (produced from landfills, waste water facilities, etc.) and hydrogen (produced from electrolysis or from steam methane reformation with carbon capture and storage). In fact, the City of Vancouver, where one of the author’s interviewees is employed, is a centre for RNG use and development in Canada. Also notable is that by using Canada’s vast underground natural gas storage system, we can solve the challenge of renewable energy storage that represents such a pressing issue for the electricity system. At present, Canada has a gas storage system that can hold 90 days of total Canadian natural gas demand – no battery storage is even remotely comparable.

Third, the article notes the U.K. has proposed banning fossil fuel-based heating in new homes by 2025. What the article did not note is the U.K.’s aim to launch a hydrogen network, using the gas pipeline system for its delivery. Already, there are pilot projects in the U.K. that mix natural gas with up to 20 per cent hydrogen, thereby using gas infrastructure as a vehicle to reach its goal of net-zero emissions by 2050. Here in Canada, industry and governments are working together to determine how hydrogen can be safely and efficiently used to deliver clean energy through the extensive Canadian pipe delivery system.

Fourth, the article is completely silent on reliability. How many extreme weather events with significant power outages are required before people come to realize that it would be irresponsible to put all our energy delivery eggs in one basket? In bad weather, people often lose powerlines:

¹ <http://ec.gc.ca/inrp-npri/default.asp?lang=En&n=F9DFB0A0-5CC7-46EC-A3A8>

those who have access to piped energy hardly ever lose access. So why would you think about increasing the risk of loss of service? Especially in a country where – as in the last few days – it gets really, really cold. While equipment such as electric heat pumps can be useful for some warmer jurisdictions, they have consistently been shown to be less effective in colder climates. In many of the Canadian regions that experienced temperatures of approximately -30 C this past weekend, including parts of Ontario, Alberta, Saskatchewan and the Maritimes, an electric heat pump would require a backup heating system to function reliably for the homeowner. That means two systems instead of one – at consumers’ expense.

Fifth, and most troubling, is how the article remains silent on that issue of the expense for the consumer. The average annual cost for home heating in Canada is shown in the graphic here. Heating with natural gas generates between \$1,000-\$3,000 savings for a home each year. Even an electric heat pump will result in a dramatic increase of the heating bill for the consumer including not just the higher price of electricity but the cost to install a heat pump.

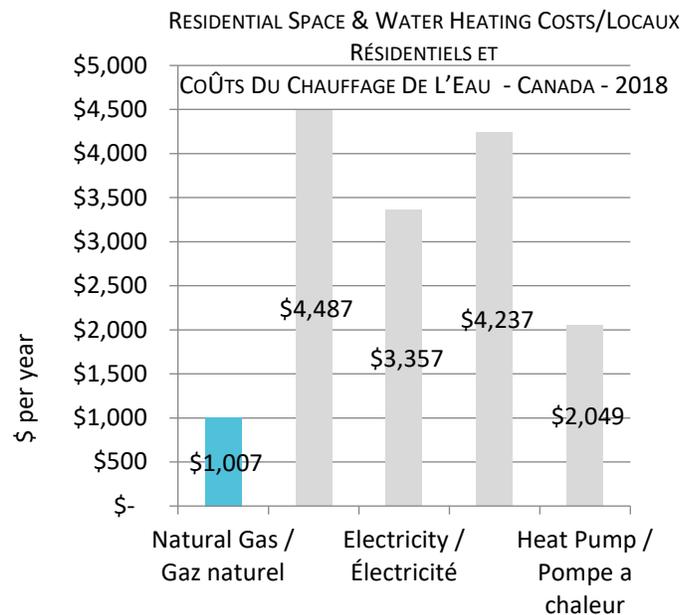
The expense only rises further as we contemplate the fact that Canadians use natural gas for multiple purposes, not just furnace heat. Fireplaces, hot water tanks, BBQs, dryers, stove tops and other appliances are increasingly gas-fuelled. Electrification would end this.

Too often the electrification conversation proceeds without any corresponding presentation of the costs involved.

This is deeply irresponsible: Canadians are very open to the idea of reducing emissions, but they are more and more angry at the prospects of having to pay more – either for the energy they consume or the cost of every good and service that has an energy input cost, including food, clothing, and shelter. We need affordable energy and any energy innovation needs to be assessed on the basis of how it can help us maintain energy affordability so Canadians know the costs.

To look deeper into the prospects for electrification, CGA commissioned ICF International to examine various scenarios in Canada. The [conclusions of the ICF work](#) make it clear that electrification would be extremely expensive, and of limited benefit for emission reductions versus a more cost-effective approach that would integrate both gas and electric energy delivery systems.

In Canada, electricity currently represents roughly 20 per cent of energy end-use with natural gas delivering 35 per cent and the balance coming from liquid fuels (40 per cent) and biomass/other fuels (5 per cent). The ICF analysis looked at taking electricity from that 20 per cent of end-use to



Source: StatsCan, Kent Marketing, Canadian Gas Association

60 per cent of end-use (a tripling). At a 60 per cent level – so still leaving 40% of our energy needs met by non-electrical energy delivery – the implications are daunting:

Electrification will require a massive build out of new infrastructure: Fuel switching to electricity of an additional 40 per cent of our end-use would require a tripling of generation capacity to meet peak demand on the energy system. That is the equivalent of hundreds of nuclear reactors.

The infrastructure required will be enormously expensive: The expansion could increase national energy costs by between \$580 billion and \$1.4 trillion over the 30-year period between 2020 and 2050. And we believe this to be a conservative estimate.

The expense for the average Canadian household will be very large: The cost is equivalent to increasing average Canadian household spending by \$1,300 to \$3,200 per year.

What ICF's findings told us, is that environmental policy goals can be pursued at significantly lower cost through a multi-grid approach that integrates natural gas solutions with the electric system rather than an electric-only option. GHG reduction policies that entirely favour electricity over multi-grid approaches are significantly more costly (at \$289 /tCO₂ for electric alone vs \$129 /tCO₂ for integrated systems).

Canada's natural gas delivery industry has an ongoing record of action on efforts to improve efficiency, to reduce emissions, and to drive cleantech innovation. We would be happy to provide examples of the extraordinary things being done by the thousands of hard-working Canadians who work right across this country in the gas sector to ensure that the most affordable, reliable energy available continues to be delivered. We are proud to do it in a manner that keeps emissions down, while preventing the cost of living from going up.

We welcome any opportunity to discuss our comments here.

Thank you,



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