

**To: Jack Krubnik,
Director of Planning & Development, Town of Erin**

**SUBMISSION TO TOWN OF ERIN,
Re: GREEN DEVELOPMENT STANDARDS COMMUNITY CONSULTATION**

**Submitted by: Erin Citizens' Climate Lobby, November 30, 2023
(with updates March 6, 2024)**

A HEAT PUMP FOR EVERY (NEW) TOWN OF ERIN HOME

Councillor Bridget Ryan's aspiration for the Town of Erin to become 'a green gem on the corner of the GTA' is not only a positive and motivating catchphrase, but also an urgent need, as our world is experiencing more and more [disastrous outcomes of the climate crisis](#). Climate change is overwhelmingly driven by the [burning of fossil fuels](#), and increasingly by [huge methane leaks](#) from natural gas pipelines, including Canada's.

The consensus of climate scientists and world leaders is that if we truly want to turn this crisis around and leave our children a liveable planet, [there must be sweeping cuts of fifty percent](#) of all greenhouse gases (GHGs) by 2030 to restrict global warming to 1.5°C compared to pre-industrial carbon levels.

[Canada is a climate laggard](#); as a country, we are still off target to reach our 40-45 per cent 2030 GHG reduction pledge. The [Ontario government is moving backwards](#), climate-wise, by expanding fossil-based gas plants as sources of new energy for the province, while [Wellington County's aim of 6 percent in GHG reductions by 2030](#) falls far short of an adequate interim goal to achieve net-zero by 2050.

What is the best opportunity for a small Ontario municipality like the Town of Erin to prevent significant increases in GHG emissions as new housing surges in our near future?

CCL ERIN'S RECOMMENDATION: HEAT PUMPS + NO FOSSIL GAS

- We recommend cold-climate heat pumps (or other non-fossil fuel alternatives such as district geothermal heating/cooling or fossil-fuel free net-zero systems) be required for all new home builds in the Town of Erin.
- We recommend that no natural gas lines be installed in new Town of Erin subdivisions. Heat pumps in combination with more energy-efficient electric appliances (such as [induction stoves](#)) preclude the need for fossil fuel energy, including gas.

- We suggest new builds in the Town of Erin have solar-panel-ready roofs and have roughed-in electrical capacity for a fallback battery backup (such as a Tesla Powerwall) when power outages occur, and a 230 Volt outlet for easy installation of fast Electric Vehicle (EV) chargers.

WHY HEAT PUMPS?

- [Heat pumps](#) are exceptionally efficient. The latest cold climate air-to-air versions can provide three or more units of heat energy output for each unit of energy input.

As [BC Hydro explains](#): Today's heat pumps are generally 250% to 400% efficient with each unit of electricity that goes into the system's operation producing 2.5 to four times the amount for heating.

Compare this to natural gas furnaces which range from about 50% efficiency to 98% for the most efficient models and produce less than one unit of heat per unit of energy of input.

- Heat pumps operate remarkably well in cold countries. The current leader in pumps-per-homes is Norway...[Over 60 per cent of Norwegian households already have heat pumps](#). Almost all are the cold climate air-source variety that can operate effectively to -30°C. (100% energy-efficient [electrical resistance heating](#) can provide backup at temperatures lower than -30°C).
- Heat pumps also provide cooling in the summer, with the same or better efficiency than conventional air conditioners.
- No fossil fuels are required - no burners to generate heat, and no fume gases. Unlike wood stoves, there is no fire or smoke. Savings from lower energy costs over the life of buildings are substantial, especially as fossil energy prices continue rising.
- Since heat pumps run on electrical energy, and emissions from Ontario electricity generation such as hydropower and nuclear are much lower than systems that burn fossil fuels, the carbon footprint for heat pumps in new builds would also be lower.

NATURAL GAS BANS: Thanks in large part to super-efficient fossil-fuel-free heat pumps, many jurisdictions in Canada and the United States are banning natural gas to new developments in their efforts to reduce greenhouse gas emissions and curb climate change.

[Montreal is the latest Canadian city to ban natural gas](#), announcing in October it would no longer allow gas in new buildings of up to three storeys as of October 2024, and in larger new builds as of April 2025.

Other Canadian cities declaring similar bans include Victoria, Saanich and Nanaimo. The Laurentian municipality of [Prévost, Québec](#), population 13,000, joined the ban in October.

- Across the United States, as of March 2023, more than 125 cities, counties and state jurisdictions (such as New York State) have adopted policies that require or encourage the move off fossil fuels to all-electric homes and buildings. (US Zero-emissions Building Ordinances: <https://buildingdecarb.org/zeb-ordinances>)

CUTTING CARBON FOOTPRINTS: LOCAL EXAMPLES

Over the past several years, many local Town of Erin residents have replaced propane and oil heating systems with fossil-fuel free heat pumps/electric furnaces to cut their carbon footprints and eliminate the need for increasingly expensive fossil fuels, i.e. heating oil and propane.

One of our Erin Citizens' Climate Lobby members, Ron Moore, has acted to significantly reduce the carbon footprint of his Hillsburgh home. He chose a hybrid heating system – one that combines a heat pump with natural gas back-up. Ron's example, summarized below, demonstrates two key points:

- 1) the energy and climate cost savings of drastically reducing fossil fuel use in an existing, retrofitted home;
- 2) the economic benefits of incorporating heat pumps, and the capacity for solar panels, EV chargers, and back-up batteries at the design and construction stage of new subdivision homes rather than as retrofits.

RON MOORE'S SUMMARY

This is a brief overview of my experience with the solar, battery, and hybrid heat pump-natural gas system I installed over the period 2018 to 2021.

SOLAR PANELS: In the summer, the solar panels on my roof power everything in the house – the water pump, water heater, air conditioning, dehumidifier, all appliances; they charge my Tesla PowerWall battery and plug-in hybrid car, a Prius). (And, if regulations allowed, my solar panels could provide excess power to the grid.)

BATTERY BACK-UP: The battery backup (Tesla PowerWall) stores excess energy from my solar panels, this powers the house at night, powers the house when the grid goes down, and in the winter, charges at night when electricity rates are low and powers the house during the day when rates are high. The battery does all this automatically.

COSTS & SAVINGS

The yearly carbon footprint running my home dropped from 7.6 tonnes of CO2 in 2018 to 1.7 tonnes last year (2022).

The total cost of permits, components and installation (but not including the Prius) was \$60,100.

Last year my solar panels supplied 5500 kWh while 5300 kWh came from the grid – most of which was supplied at off peak hours.

My use of natural gas dropped from 1,980 cubic meters (4.75 t CO2) in 2018 to 487 cubic meters (1.17 t CO2) in 2022 and is projected to be 280 cubic meters (0.90 t CO2) this year.

ADVANTAGES OF GOING GREEN IN NEW BUILDS

While it cost Ron Moore a significant amount to make the changes and additions to reduce his carbon footprint, new builds in the Town of Erin will have the advantage of bulk purchasing, the cost advantages of building green from the start rather than retrofitting, plus the reduced costs of operating and heating homes over decades.

As well, there will be [no methane from leaky gas pipelines](#), a reduced load on the electricity grid and a far lower carbon footprint for homeowners and our municipality.

BOTTOM LINE

Heat pumps (or other fossil-fuel free heating and cooling alternatives) for all new housing in the Town of Erin – a crucial component of creating that 'green gem on the corner of the GTA' we all envision for our children's and grandkids' future.

Submitted by:

Erin Citizens' Climate Lobby

Liz Armstrong

Sue Braiden

Gord Cumming

Ron Moore

Gerry Walsh

Deborah Wickham