

ELECTRIC HEAT PUMPS

Health/Safety Concerns

- *healthier home air quality and healthier, more stable, global environment and climate in future
- *Better, cheaper, energy security

Efficiency

- *They don't generate heat – they just move it around, thus they're super-efficient compared to gas/oil or other electric systems
- *At -30 Celcius? 1 ½ - 2 times more efficient than natural gas. As conditions warm efficiency increases up to 600%.
- * Up to 50% more efficient for cooling than window air conditioners.
- * 300% more efficient than electric baseboard heaters.
- * Plug air leaks and add quality windows and insulation to increase efficiency!

Benefits

- *Provide stable, consistent heating/cooling all in one
- **Canadian Climate Institute* study: 18 year lifetime, costs and saving included.
- * Reduce home-related greenhouse gases up to 80% because they use BC's clean electricity (much less if coal is burned to generate electricity)
- *Not a factor in climate disasters (heat domes, fires, floods etc)
- Less expensive to operate than oil/natural gas furnaces
- *No carbon tax on bills because no Greenhouse Gases (GHGs) are created in the home

Problems/Concerns

- *Lack of mandatory implementation that would help combat the climate crisis
- *No city/BC homeowner-tax-type loans to assist with switch away from natural gas.
- *BC's electricity is stable now but special generators, or solar, are available to run heat pumps if power fails (but recent research says back-ups not necessary)
- *Not enough 'up-to-date' installers and ready-to-install pumps
- *Hydro bill will be higher (but there'd be no gas bill!)
- * Noise? there are heat pumps that are very quiet, should neighbours be close.

Cost

- *Ducted heat pumps: \$5000 to \$9000 to buy and install - are eligible for federal
- *Greener Homes Grant of \$4000
- *Cold-climate ducted heat pumps: \$10,000 to \$19,000, eligible for Greener Homes Grant of \$5000.
- *Mini split ductless heat pumps: \$5000 and up.
- *With no natural gas use and just a heat pump, you pay management fees to only one company (BC Hydro)

FOSSIL FUEL NATURAL GAS (LNG or RNG METHANE) FURNACES

Health/Safety Concerns

- *Stoves and water tanks leak pollutants even when not in use, and linked to poorer health: childhood asthma, bronchitis, cardiovascular disease, premature death, lung and other cancers. 13% of children's emphysema is proven to be from natural gas leaks in the home. Gas hot water tanks leak 4 times more pollutants than gas stoves.
- * NOT environmentally friendly!
- * Responsible for many of our climate disasters

Efficiency

- *Fuel is burned to create heat and CO2... after burned, the fuel is gone forever
- *Less than 100% in any weather because of unburned methane or NOx that leak

Benefits

- *If either heating or a/c fail, only one needs replacement/repair.
- *Fossil Fuel company shareholders and CEOs are really happy!

Problems/Concerns

- * New high efficiency furnaces may only have a 15-20 year lifetime. Much less if in a crawl space or attic.
- *Fossil fuel price spikes: overseas LNG sales will cause prices in BC to rise to match them – costs up 19 % last year already.
- *Inertia: homeowners feel 'locked in' to keeping newer furnaces and delay use of alternatives that would reduce household and health-related GHG production.
- * A/C won't work should there be a power failure in summer heat
- * Blasts of hot followed by cooling from furnaces during winter use
- * 30 – 40 % of Canada's GHGs come from burning fossil fuels in homes
- *More maintenance than heat pumps
- * As bad as coal for climate damage due to pipe/equipment leaks

Cost

- *High costs for TWO sets of management fees (BC Hydro and Fortis) on top of cost of paying for electricity and gas
- *For a 2500 sq ft home: \$20,000 to install even though a furnace may only cost \$2000 – 3,000.
- * Central air conditioners for summer cooling cost around \$5000 in addition to cost for a gas furnace.