CITY OF VANCOUVER

Domestic Hot Water
Improving the efficiency of hot water heaters at home

The City of Vancouver regularly updates its building code requirements as technology improves and more energy efficient equipment becomes readily available.

As part of the City of Vancouver's Climate Emergency Action Plan, we committed to reducing carbon pollution (also known as greenhouse gases or emissions) from new construction and existing buildings in Vancouver, as buildings create nearly 60% of Vancouver's emissions.

To move this forward, staff are proposing changes to shift to higher efficiency equipment in existing detached homes when undertaking a large renovation, or when a hot water heater is being replaced.

In this context "higher efficiency" means equipment that is at least 100% efficient, which includes electric water heaters, electric heat pump systems, hybrid gas/electric systems, and high-efficiency gas heat pumps. It does not include typical gas water heaters, condensing or on-demand gas water heaters (often called 'high-efficiency'), as these are all less than 100% efficient.

More details
The City wants feedback from residents on two proposed changes to the Vancouver Building By-law, as well as proposed exceptions to the changes:

1. Home renovations over $75,000 would no longer be required to upgrade airtightness and attic insulation, and instead will only be required to replace existing hot water heaters with higher efficiency equipment (to go into effect July 2024);
2. When hot water heaters are replaced, they must be replaced with higher efficiency equipment (to go into effect January 2025).

Exceptions
There are also proposed exceptions to provide some flexibility and support smooth uptake of this regulation in the early years. The following exceptions, where this requirement would not apply, are being proposed:

- Emergency or unplanned equipment replacements, while industry increases its capacity to respond to same-day replacements.
- Insufficient electric panel capacity to accommodate additional electric loads from electric equipment, while industry adapts to minimize the need for electrical upgrades.
- Insufficient mechanical room size to accommodate the space for higher-efficiency equipment, such as when replacing on-demand gas systems.

- Equipment less than 3 years old since permitted installation, where replacement would be considered wasteful. This exception would only apply to renovation projects.

Benefits of emissions reductions
The proposed updates to equipment standards would reduce Vancouver's emissions by about 7,300 tonnes per year, every year once fully implemented (up to 22,000 tonnes per year reduction after three years of implementation, which is equivalent to taking 5,400 cars off the road).

Cost
The costs of higher efficiency equipment are comparable to typical equipment today.

- Electric hot water heaters have lower installed costs than typical gas options.
- Electric heat pump costs are similar to condensing gas options and are eligible for rebates.
- Monthly operating costs (for a family of four) range from a $0 - $9 increase with a conventional electric tank, to a $15 savings with a heat pump ($0 is with future $170/t carbon tax).

Tell us what you think
Vancouver residents are invited to provide feedback to help shape the details of hot water equipment replacement requirements in existing detached homes by:

- Completing our short survey before Thursday, December 7.

If you have any comments about these proposed changes, you can email: green.buildings@vancouver.ca

Feedback will be used to inform these proposed changes. Results from this engagement process will be available in the staff report to Council early in 2024.