# CONSIDERING PURCHASING A HEAT PUMP WEBINAR – April 12, 2022

**Township of Langley, Follow Up Questions.**

For the most up to date information on what rebates are available in your area please visit betterhomesbc.ca or contact an Energy Coach by emailing ask@betterhomesbc.ca or calling 1-844-881-9790.

## What support is available?

CleanBC Better Homes is BC's online hub for homeowners and businesses to access information, rebates and support to reduce energy use and greenhouse gas emissions in new and existing homes and buildings. Support includes:

- Easy to use rebate search tool for when you are renovating a home or building a new home
- Information and answers to frequently asked questions on energy efficiency upgrades and accessing rebates
- Free Energy Coaching Services for homeowners and businesses undertaking renovations, including a phone and email hotline staffed by energy coaching specialists
- Search tool to find registered EnerGuide Rating System energy advisors for residential renovations and new construction
- Contractor directories to find registered contractors in your area

## What rebates are available?

**CleanBC Better Homes and Home Renovation Rebate Program** – this provincial program provides rebates for upgrades such as insulation, heat pumps, windows and doors, and more. Review the Program Requirements and Additional Terms and Conditions to ensure you are eligible for the program. All upgrades must be completed by a contractor with a valid BC business license.

**Heat Pump Rebates***

- Ductless Mini-Split Heat Pump – up to $6,000 + up to $500 with the Heat Pump Group Purchase Rebate
- Central Ducted Heat Pump – up to $6,000 + up to $500 with the Heat Pump Group Purchase Rebate
- Dual-Fuel Ducted Heat Pump Rebate – $3,000 + up to $500 with the Heat Pump Group Purchase Rebate
- Combination Space and Water Heat Pump – up to $4,300 + up to $500 with the Heat Pump Group Purchase Rebate
- Hydronic Heat Pump – $3,000 + up to $500 with the Heat Pump Group Purchase Rebate
- Electrical Service Upgrade – $500
- Electric Heat Pump Water Heater – $1,000
- CleanBC Better Homes Low-Interest Financing Program – receive a loan of $1,000 - $40,000 for installing an eligible heat pump
- Heat Pump Group Purchase Rebate (GPR) – receive an additional up to $500 when switching from fossil fuel to a heat pump. The GPR rewards groups of homeowners working together to reduce greenhouse gas emissions by switching from an oil. Natural gas, or propane heating system to an air source heat pump. The GPR ranges from $200 per home, for a group of 2

homes up to a maximum of $500 for a group of 20 to 30 homes. To register for the GPR, visit www.betterhomesbc.ca/gpr-register.

*Rebate amounts vary depending on your location, primary space heating system prior to upgrade, and electricity provider. Review the summary pages for more detailed information.

**CleanBC Income Qualified Program** –Based on your household income, this program offers enhanced rebates to make energy-saving home upgrades more affordable. Visit the program's page for more details on the income requirements and other eligibility details. Please review the Rebate Eligibility Requirements, Participant Terms and Conditions, and Contractor Terms and Conditions. Keep in mind that **all upgrades must be completed with an Income Qualified Program Registered Contractor**. After completing the upgrade, the contractor will submit the rebate application and deduct the rebate from the final cost of the upgrade.

- You may be eligible to receive enhanced rebates that cover 60-95% of your home upgrade costs, with maximum rebate values of:
  - Ductless Mini-split, ductless multi-split and central ducted heat pumps – up to 9,500
  - Dual fuel ducted heat pumps – up to $9,500
  - Air-to-water heat pumps – up to $9,500 or up to $13,000 for a combined space and water heat pump
  - Heat pump water heaters: Up to $3,500
  - Electrical service upgrade – up to $3,500
- Additional rebates are available for necessary health and safety, ventilation, and electrical panel upgrades.
- Free energy coaching, virtual energy assessments, and support in multiple languages can help identify the home upgrades and rebates that are best for you.
- For more information, please contact the Income Qualified Program directly at 1-833-856-0333 or email incomequalified@betterhomesbc.ca

**Canada Greener Homes Grant**- this federal program offers up to $5,600 in rebates for homeowners completing energy efficient upgrades on their home, including insulation, air sealing, windows, heating systems, solar systems, and resiliency measures. **Up to $5,000 is available for installing a heat pump.** The completion of an EnerGuide Home Evaluation before and after upgrades is required to be eligible. You can access rebates from both the Greener Homes program and the CleanBC Better Homes and Home Renovation Rebate Program, however eligibility requirements and application steps differ. Carefully read the Greener Homes eligibility page to confirm your home is eligible and the eligible retrofits page to learn about efficiency requirements and available grants for each retrofit.

**Webinar Questions:**

**Do I need a permit to install a heat pump in the Township of Langley?**
You are not required to obtain a permit for heat pump installations in the Township of Langley. However, the municipality does have a bulletin that contains information about heat pump siting and noise levels according to the Community Standard Bylaw No. 5448 – Sound Control.

Bulletin: https://webfiles.tol.ca/Bylaws/PLI/Building%20Permits%20and%20Inspections%20Bulletins/PLI%20-%20Bulletin_Heat%20Pumps%20%20&%20Air%20Conditioning%20Equipment.pdf

**Does FortisBC provide rebates to discontinue gas use and switch to heat pump?**
For homeowners replacing their existing gas furnace or boiler to an electric heat pump (in the BC Hydro territory), they would not receive any rebates from FortisBC but can receive rebates from the Province of BC, BC Hydro, and the federal government through the **Canada Greener Homes Grant**.

**Heat pumps filter only inside air. They are not getting the fresh air from outside.**
Yes, that is correct! Heat pumps filter the indoor air rather than bringing air in from the outside. Heat pumps can help people manage allergies by reducing airborne irritants like dust and wildfire smoke, and improve the overall air quality in the home. It is important to note the air filtration capabilities is variable with different types of systems. For example, the air filtration is better with central systems rather than ductless systems. And an add-on air filtration system may be required if superior air filtration is wanted.

Another recommendation is to look at upgrading your ventilation system. Heat recovery ventilators (HRV) for example can work well with heat pumps to bring fresh air through MERV filters.

For more information check out CleanBC's FAQ on Heat Pumps and Air Filtration.

**Please explain how a portable AC unit that has a single hose blowing heat outside actually creates a vacuum in the house and the vacuum brings in hot outside air.**
Unlike air source heat pumps, a portable Air Conditioner (AC) units expel exhaust (hot) air out of the home through a portable vent. Because portal AC units only expel and don't bring fresh air into the room a vacuum can be created (the removal of air in a room without adding new air creates a negative pressure). The negative pressure in the room can pull in air from other rooms in the home or through air leakage between the inside of the home and outside. If the air is being pulled in from outside you may be pulling in more hot and humid air through your walls and into your home (which is something that should be avoided). Portable AC units may provide some relief in hot weather but they are much less efficient than air source heat pumps and are susceptible to operational issues related to the exhausting of air and the vacuum that can be created.

**What about ground-source heat pumps. Are they part of the program? Are they available? Do contractors know about them, how to install?**
A ground-source heat pump uses the earth, ground water, or both as the source of heat in the winter and as heat sink in the summer for heat transferred out of the home. These heat pumps are less common than air-source units, but are becoming more widely used in all provinces of Canada. Their primary advantage is that they are not subject to extreme temperature fluctuations, using the ground as a constant temperature source, resulting in the most energy efficient type of heat pump system.

Geothermal, or ground source heat pumps, are generally more efficient than air to air systems because the ground stays at a more consistent temperature than the outside air. With that said, geothermal systems can be substantially costlier to install and as a result are often a better solution for larger buildings. We always recommend asking a qualified contractor for quotes and advise on heating systems you are considering.

We recommend reading Natural Resources Canada resource on heat pumps, and specifically geothermal heat pumps: https://www.nrcan.gc.ca/energy-efficiency/energy-star-canada/about/energy-star-announcements/publications/heating-and-cooling-heat-pump/6817#o

There are currently **no provincial rebates** for geothermal heat pump systems, however, you may be interested in the **federal** Canada Greener Homes Grant. This program offers **up to $5,000** in grants for various upgrades, including ground source heat pumps. To find a contractor in your area that installs geothermal heat pumps, we recommend checking out the Better Business Bureau and/or with your local Chamber of Commerce.

**Would a heat pump work with a hot water baseboard heating? Currently the water is heated by gas.**
There are heat pump systems called air-to-water systems that can replace an existing gas boiler. These systems use a hydronic distribution system to heat the home with radiators or in-floor heating, much like a natural gas boiler does. They work by compressing an expanding refrigerant to transfer heat from the outside air to water, which is pumped through the system to heat your home. Air-to-water heat pumps are a good option for homeowners who want the comfort of radiant heating while also being climate friendly.

It will be important to assess the compatibility of the radiant piping with your proposed system. Older radiant piping may not be suitable for a heat pump and may require replacement to install an air-to-water heat pump.

While these systems are less common here in BC, they are available and there are rebates for this type of system as well. Check out the Combination Space and Water Heat Pump Rebate. Note, the federal program does not offer grants for air-to-water heat pumps.

Another great option to replace a boiler or in-floor system is a mini-split or multi-split heat pump system. Because mini-splits don't require any ductwork, they can be installed easily and can provide not only heating in the winter, but cooling in the summer.

Speak with a qualified heat pump contractor about the best system for your home. You can get started with the Registered Contractor Search Tool, and the Registered Contractor In-Progress list. You can also check out our tips for hiring a contractor FAQs.

**Do heat pumps vibrate a lot during operation? If I install one on my townhome's 2nd floor balcony, would it vibrate and be noticeable from inside?**
Well installed heat pumps are regularly installed on balconies. However, heat pumps will have some vibration when in operation. It is very important that the system is installed correctly to ensure any vibration and noise is mitigated. Working with a trained and registered contractor will ensure the best installation practices are taken into consideration for your home. It is recommended to install the unit on a solid base such as a concrete pad. Contractors should also mount the unit on a vibration-absorbing mat to reduce vibration and noise.

It is recommended to look for heat pumps with variable speed motors, as they tend to run more smoothly and quieter than single- or two-stage motors. Additionally, regular maintenance will play a role in the sound produced. Well-maintained equipment will operate more efficiently than equipment that has not been maintained.

If noise is a concern, ask your contractor for a quieter system and ask for the technical specification sheet. This sheet will show you the sound rating of both the indoor and the outdoor units. To learn more about heat pump noise, too see sound comparisons, and to learn about how good installation practices and outdoor unit placing can address noise concerns check out CleanBC's FAQ on heat pumps and noise. You can also read the City of Vancouver's Heat Pumps & Noise: A Neighbourly Installation Guide for additional tips and information about how installing heat pumps and minimizing noise.

We recommend talking to your municipality about how they measure heat pump noise level to confirm compliance regarding any Bylaws.

**Which 110v mini split heat pump will qualify for rebates?**
There are a variety of 110v heat pump models. However, CleanBC does not have a list of eligible heat pumps specific to the Volts of each individual system. Rather, heat pump eligibility is determined by the heating and cooling efficiencies. The easiest way to check system eligibility is with the system's AHRI reference number, which can be obtained from your heat pump contractor. The system must be found of the provincial Qualifying Product List in order to be eligible for a provincial rebate. We recommend reaching out to the CleanBC Energy Coach Service directly for support when confirming system eligibility at 1-844-881-9790.

- Note, CleanBC does not administer the federal program. To confirm system eligibility please contact the federal program directly at 1-833-674-8282.

Eligibility for the provincial rebates is determined by a number of factors including your location, home type, the home's primary heating system prior to upgrade, and more! Be sure to review the Ductless Mini-Split Heat Pump summary page and be sure to review the Program Requirements and Additional Terms and Conditions to ensure you are eligible for the program.

**Is there an online calculator to get accurate costs to run? The comment is "it depends on your home and what is installed" is just a bit vague.**

We do not have data to demonstrate the operational cost savings from removing a natural gas system and switching to a heat pump. Studies are currently being conducted on this topic and should be available in 2022. We do know informally from homeowners that have switched from natural gas to heat pumps that the heating costs can be lower, comparable, or sometimes higher. It is important to note that natural gas is currently cheaper than electricity but heat pumps are much more efficient. If the higher efficiency heat pump systems are installed and if the heating system switch is complemented by other home energy improvements the heating costs can be lower or comparable to the cost of heating with natural gas.

The actual operational costs of switching may be dependent on the efficiency of the heat pump installed, the efficiency of the home, and how the heating system is used. For example, when a heat pump in installed in a home it also provides air conditioning. During the summer of 2021 many new heat pump owners enjoyed the comfort of air conditioning during the heat dome and on hotter days. For these homes there may have been an increase in annual energy consumption and higher annual costs.

In areas that were impacted by wildfire smoke and had installed heat pump systems with more advanced air filtration systems there would likely also have been higher usage of their heat pumps and corresponding increases in their annual energy bills.

For most people, these additional annual costs incurred would be acceptable for the increased comfort. Other homeowners have been motivated to upgrade to a heat pump to improve home comfort and to reduce their household greenhouse gas footprint. In comparison to other bigger household purchases that can reduce their footprint (switching from a gas to an electric vehicle), the switching from natural gas to electric heat pump heating is a less costly option that often results in a larger household green house gas emission reduction.

Given the challenges of estimating the operational costs of switching from natural gas to a heat pump, we would recommend you consult with an Energy Advisor. By having an EnerGuide home evaluation you can access additional rebates for upgrading to a heat pump and the energy advisor will provide you with a range of recommendations on how to improve the efficiency of your home and make heating with a heat pump as cost effective as possible. Use the Program Qualified Energy Advisor Search Tool to find an energy advisor in your area.

**So the contractors can apply for the rebates on the owner's behalf?**

For the CleanBC Income Qualified Program the contactors apply for the rebates on the owners behalf. For all other rebate programs it is the homeowner's responsibility and therefore it is recommended that

each homeowner applies for rebates themselves. We understand that some contractors do provide support with applying for rebates.

The best thing contractors can do is ensure that their receipt documentation meets the information requirements of the CleanBC rebate program so that you will have no issues when applying for your rebates. Be sure to check out the provincial CleanBC sample invoices to better understand the necessary information required to ensure your clients will be eligible to receive heat pump rebates.

**How can I figure out if my mobile home is attached to a permanent base? It is on a cement pad.**
As per the provincial **CleanBC Better Homes and Home Renovation Rebate Program**'s program requirements, a mobile home is eligible as long as that it is permanently fixed, sits on a foundation and is structurally complete with installed and connected plumbing, heating, electrical, water and sewer services; towing apparatus and axle must be removed. Sitting on concrete blocks should fulfill the requirements above for provincial rebates.

Note that the federal, Canada Greener Homes Grant may have different household eligibility requirements. Be sure to inquire with the program directly at 1-833-674-8282 or send an email. They also have a quick eligibility tool online that may be able to determine your household eligibility for this federal program.

**Are the CleanBC rebates good for new home construction?**
There are two Provincial new home programs offered through CleanBC. The CleanBC Better Homes New Construction Program and the FortisBC New Home Program. Note that currently the CleanBC Better Homes New Construction Program is temporarily closed (as of September 24, 2021). We have not received an estimated date on when this program will be available again. Learn more by visiting the program webpages below:

- CleanBC Better Homes New Construction Program
- FortisBC New Home Program

To learn about additional rebate offers for new home construction, visit the CleanBC Rebate Search Tool and filter by '*Building a home'* to see what other offers may be available.

Note that the **federal** Canada Greener Homes Grant is for existing homes only and does not currently offer a new home program at this time.

**For other questions and information:** please visit betterhomesbc.ca or contact an Energy Coach by emailing ask@betterhomesbc.ca or calling 1-844-881-9790.