

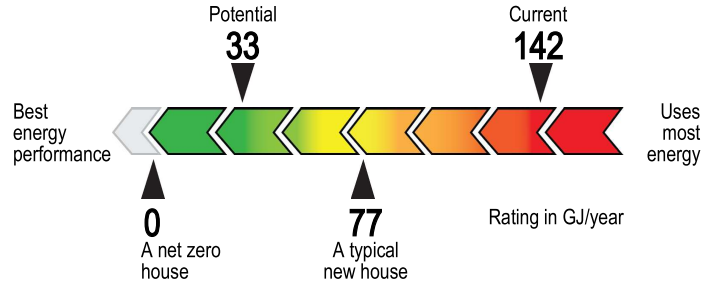
RENOVATION UPGRADE REPORT



167 RALEIGH ST
CHATHAM, ON N7M 2N4



Year built: 1900



Assessment date:
February 22, 2024

Evaluated by:
Derek Hick
+1 844-820-3361

Quality assured by:
EnergyWerx
844-820-3361

This report identifies your home’s energy savings opportunities by providing you with recommended renovation upgrades. It complements your EnerGuide label and your homeowner information sheet.

Next steps:

- 🏠 Review your customized action plan below to improve the energy efficiency of your home;
- 🏠 You may be eligible for **financial incentives** to support your energy-efficient upgrades. Please visit www.canada.ca/greener-homes-grant to view the financial incentives available.
- 🏠 Need help getting started? Go to our **resources** www.nrcan.gc.ca/kthi.

YOUR ENERGY EFFICIENCY ROADMAP

Your energy advisor has prioritized your recommended upgrades based on the potential energy savings, the life expectancy of your home components, the interactions between systems, your potential renovation plans and the costs to perform the upgrades.



1. Insulate attic

[Save 1 GJ/year]

2. Upgrade windows

[Save 9 GJ/year]

3. Upgrade doors

[Save 3 GJ/year]

4. Upgrade hot water system

[Save 15 GJ/year]

Additional recommendations on next pages



By implementing all upgrades, you are helping to fight climate change and could **reduce GHG emissions by up to 5.4 tonnes per year.**

RECOMMENDED ENERGY EFFICIENCY UPGRADES

A customized plan to improve the energy efficiency of your home is found below:



1. Insulate attic

- ❑ Increase the insulation value of your attic (SECOND) by RSI 1.51 (R-8.6).
- ❑ Increase the insulation value of your attic (MAIN) by RSI 1.56 (R-8.9).

This upgrade could reduce the energy consumption of your house by 1 gigajoules per year.

Did you know?

Ceilings account for 3 percent of the estimated annual heat loss of your house.

Useful tips

The following are some of the items to consider before insulating the attic:

- ❑ Ensure the roof does not leak.
- ❑ Ensure electrical work is up-to-date and that all desired ceiling fixtures have been installed.
- ❑ Look for opportunities to air seal before insulation is added.
- ❑ Ensure adequate attic venting is installed and that it is not blocked by insulation.
- ❑ Ensure all exhaust fans and ducts penetrating the attic are sealed and vented to the outside.

Consult our **resources** www.nrcan.gc.ca/energy-efficiency/homes/make-your-home-more-energy-efficient/keeping-the-heat/15768 to learn more and take action.

Your energy advisor's comments



The insulation in your attic was assessed at ---. Because the amount of insulation in your attic has been assessed as being less than or equal to R-12, a grant of up to \$1,800 is available for adding insulation to reach R-50 or more.

The insulation in your attic was assessed at ---. Because the amount of insulation in your attic has been assessed as being less than or equal to R-12, a grant of up to \$1,800 is available for adding insulation to reach R-50 or more.



2. Upgrade windows

- ❑ Replace 19 windows with ENERGY STAR certified models.

This upgrade could reduce the energy consumption of your house by 9 gigajoules per year.

Did you know?

Windows account for 21 percent of the estimated annual heat loss of your house.

Useful tips

Replacing windows can improve aesthetics, reduce noise from outside, reduce maintenance, increase property resale value, improve comfort and reduce condensation during cold weather. ENERGY STAR certified windows, patio doors and skylights are among the most energy efficient in the marketplace.

Consult our **resources** www.nrcan.gc.ca/energy-efficiency/homes/make-your-home-more-energy-efficient/keeping-the-heat/15768 to learn more and take action.

RECOMMENDED ENERGY EFFICIENCY UPGRADES - CONTINUED

Your energy advisor's comments



Through the Canada Greener Homes Grant initiative are available when an ENERGY STAR certified or ENERGY STAR certified Most Efficient window is installed to replace an existing window. Replacing old, damaged or leaky windows with new ENERGY STAR certified products can help you save energy, improve comfort and reduce noise. To determine eligibility of the product you are seeking to purchase, confirm that it is included on the Searchable product list of eligible windows for the Canada Greener Homes Grant.

ENERGY STAR labels must be affixed to windows at the time of installation and remain in place until the time of your post-retrofit evaluation. If ENERGY STAR labels are removed prior to the post-retrofit evaluation, the following photos are your responsibility to acquire, retain and provide to the energy advisor at the time of the post-retrofit evaluation:

- A photo of each newly-installed window showing a portion of the surrounding wall assembly from the inside, outside or both, AND
- A photo of each ENERGY STAR label affixed to the window that clearly shows
 - o the ENERGY STAR certification mark
 - o Manufacturer model code/number
 - o U-factor/Energy Rating,
 - o NRCan reference number or a Certified Products Directory (CPD) number
 - o a Certified mark from one of the following:
 - Canadian Standards Association (CSA)
 - Intertek Canada
 - Keystone Certifications
 - Labtest Certification (LC)
 - QAI Laboratories
 - National Fenestration Council (NFRC)

Removed labels must be submitted and provided to the energy advisor.

Request your supplier/installer to include the following information on the invoice:

1. Name of the homeowner and address of the house;
2. Date of installation;
3. Window make and model numbers;
4. NRCan Reference Number;
5. Indication of whether windows are ENERGY STAR or ENERGY STAR Most Efficient certified;
6. Number of windows and location of each installation;
7. U-factor or Energy Rating (ER);
8. Itemized cost of each window and total cost of installation;
9. Itemization of any other work done as part of the installation, such as air/gap sealing and associated costs.

Please note that a window schedule (quote) cannot be used as a substitute for the aforementioned acceptable window validations and cannot be submitted to the portal as a standalone document to validate window installation and eligibility. However, the window schedule may be attached to the invoice provided there is a reference on the invoice to a schedule reference number to link the two documents.

Grants for windows are per rough opening, not the number of windows installed in a rough opening. Replacement of just the glass or sash is not eligible. Skylights are not eligible for grants.

Important- for the Greener Homes program, it is not enough to be an ESTAR window alone. The Greener Homes program requires better and best ESTAR windows that must meet the U value &/or the Energy Rating (ER) specifications defined by the Canada Greener Homes Initiative at

<https://www.nrcan.gc.ca/energy-efficiency/homes/canada-greener-homes-grant/make-your-home-more-energy-efficient/plan-document-and-complete-your-home-retrofits/eligible-grants-for-my-home-retrofit/23504#s3>

RECOMMENDED ENERGY EFFICIENCY UPGRADES - CONTINUED

I recommend that you obtain the NRCAN reference number for each type of window from the manufacturer/supplier and use that and the make of the window to verify its eligibility.

The windows must have a U factor rating between 1.05 and 1.22, or have an Energy Rating (ER) of 34 - 39. Such windows are worth \$125- \$175 per rough opening.

Higher rating windows (U factor LESS than 1.05 _or_ ER 40 or GREATER) will be eligible for the higher tier of incentives for the Greener Homes program. Such windows are worth \$250 - \$325 each.

The amount of the incentive will depend on whether the client is an Enbridge Gas customer and whether they own the property under assessment. Please consult with your energy adviser as to which category you fall into.

*** Windows replaced without proof of EnergyStar will not qualify for any rebate.***



3. Upgrade doors

❑ Replace 3 doors with ENERGY STAR certified models.

This upgrade could reduce the energy consumption of your house by 3 gigajoules per year.

Did you know?

Doors account for 4 percent of the estimated annual heat loss of your house.

Useful tips

ENERGY STAR certified doors are among the most energy efficient in the marketplace. If there is a window in the door, consider units with low-E coatings and inert gas fills.

Consult our **resources** www.nrcan.gc.ca/energy-efficiency/homes/make-your-home-more-energy-efficient/keeping-the-heat/15768 to learn more and take action.

Your energy advisor's comments



Through the Canada Greener Homes Grant initiative, a grant of \$125- \$175 per hinged door system is available when an eligible ENERGY STAR certified door or door system is installed. Replacing old, damaged or leaky hinged doors with new ENERGY STAR certified products can help you save energy and improve comfort. The door grant applies to the entire door system installed in a rough opening. A door system installed in a rough opening may consist of one or more doors and may include side lights and transoms. Side lights and transoms installed in the rough opening are not eligible for individual grants. To determine the eligibility of the product(s) you are seeking to purchase, confirm that each product is included on the Searchable product list of eligible doors for the Canada Greener Homes Grant.

The amount of the incentive will depend on whether the client is an Enbridge Gas customer and whether they own the property under assessment. Please consult with your energy adviser as to which category you fall into.

ENERGY STAR labels must be affixed to each component of the door system at the time of installation and remain in place until the time of your post-retrofit evaluation. If ENERGY STAR labels are removed prior to the post-retrofit evaluation, the following photos are your responsibility to acquire, retain and provide to the energy advisor at the time of the post-retrofit evaluation.

- A photo of each newly-installed door system showing a portion of the surrounding wall assembly from the inside, outside or both,
- A photo of each ENERGY STAR label affixed to each component of the door system that clearly shows:
 - o the ENERGY STAR certification mark
 - o Manufacturer model code/number,
 - o U-factor/Energy Rating,

RECOMMENDED ENERGY EFFICIENCY UPGRADES - CONTINUED

o NRCan reference number or a Certified Products Directory (CPD) number

o a Certified mark from one of the following:

- Canadian Standards Association (CSA)
- Intertek Canada
- Keystone Certifications
- Labtest Certification (LC)
- QAI Laboratories
- National Fenestration Council (NFRC)

Removed labels must be submitted and provided to the energy advisor.

Request your supplier/installer to include the following information on the invoice:

- Name of the homeowner and address of the house;
- Date of installation;
- Make and model numbers of each door component (door leaf, side light, transom);
- NRCan Reference Number;
- Indication of whether door system components are ENERGY STAR certified;
- Number of door system components and location of each installation;
- U-factor/Energy Rating (ER);
- Itemized cost of each door system component and total cost of installation; and
- Itemization of any other work done as part of the installation, such as air/gap sealing and associated costs.

Please note that a door schedule (quote) cannot be used as a substitute for the aforementioned acceptable door systems validations and cannot be submitted to the portal as a standalone document to validate door systems installation and eligibility. However, as for windows, the door schedule may be attached to the invoice provided there is a reference on the invoice to a schedule reference number to link the two documents.

Please make sure to keep any Energystar rated stickers on the door until after the retest so that we have visual proof that the door is eligible for incentive.



4. Upgrade hot water system

- Install a new ENERGY STAR certified, electric heat pump water heater with a uniform energy factor (UEF) of 3.15.

This upgrade could reduce the energy consumption of your house by 15 gigajoules per year.

Did you know?

Water heating accounts for 17 percent of the estimated annual energy use of your house.

Useful tips

The efficiency of fuel-fired water heating equipment is expressed as the energy factor (EF), uniform energy factor (UEF) or thermal efficiency. The higher the number, the more efficient the water heater. The efficiency of storage-tank electric water heating equipment is expressed in watts of standby loss, where the lower the number, the more efficient the water heater.

Look for an energy-efficient model and ensure it is properly sized for your needs. Use manufacturers' sizing charts available from your contractor or retailer. See Natural Resources Canada's website at www.nrcan.gc.ca/energy/products/categories/water-heaters/13735 for more information.

Your energy advisor's comments

RECOMMENDED ENERGY EFFICIENCY UPGRADES - CONTINUED

Under the Canada Greener Homes Grant initiative, a grant of \$1000 - \$1300 is available for installing an eligible ENERGY STAR certified heat pump water heater. Heat pump water heaters transfer heat from the indoor air to the water thereby partially reducing room temperatures which will increase heating requirements somewhat during the heating season. At the same time, the equipment will remove moisture from the air while cooling it, which can be beneficial during the non-heating season. If a heat pump water heater is recommended, its presence should be considered in the sizing of the heating system.

The amount of the incentive will depend on whether the client is an Enbridge Gas customer and whether they own the property under assessment. Please consult with your energy adviser as to which category you fall into.

To determine the eligibility of the product you are seeking to purchase, confirm that it is included on the Searchable product list of eligible heat pump water heaters for the Canada Greener Homes Grant.

Domestic hot water heat pumps are great for improving your ecological footprint, as they eliminate natural gas from the hot water equation entirely, reducing fossil fuel use. They do, however, use electricity to operate.

Please note that there are no incentives for gas-fired hot water heaters, only for electric hot water heat pumps.



5. Upgrade heating system

- Install a new ENERGY STAR certified, forced-air, condensing, gas-fired furnace that has an annual fuel utilization efficiency (AFUE) of 98%.
- Install a new ENERGY STAR certified air-source heat pump that has a heating seasonal performance factor (HSPF) region V of 10.

This upgrade could reduce the energy consumption of your house by 54 gigajoules per year.

Did you know?

Space heating accounts for 60 percent of the estimated annual energy use of your house.

Useful tips

Perform any planned building envelope upgrades before your heating contractor begins work since a more energy efficient building envelope may mean that a smaller heating system could be installed. The contractor should first conduct a heat loss calculation before deciding on the capacity and model of your heating system.

Your *Homeowner Information Sheet* provides important details and a reference for this calculation. Inform your heating contractor of any building envelope upgrades performed since your evaluation, or that will be undertaken since these may render certain details in your *Homeowner Information Sheet* inaccurate.

Consider purchasing a system that is ENERGY STAR certified when available. Consult Natural Resources Canada's website at www.nrcan.gc.ca/energy/products/categories/heating/13740 for information on choosing a heating system.

Your energy advisor's comments



For a more ambitious heating upgrade option, consider an air source heat pump. The heat pump could also potentially be used as a very efficient air conditioning unit.

Heat pumps work similar to your air conditioner but also in reverse (grabbing heat from the outdoors and expelling it inside during the winter). Due to recent improvements in technology in Asia and Nordic countries, cold climate models work exceptionally well through-out the entire winter in Canada making them quiet, carbon-cutting heating and cooling machines.

Installing a heat pump is the single largest step you can take to reduce fossil fuels used by your home, increasing your heating efficiency from 90% to 250% or more.

Please note that any recommendation in the above to install an electric forced-air furnace is referring to a backup system that comes built into the heat pump, as is not normally a separate item.

RECOMMENDED ENERGY EFFICIENCY UPGRADES - CONTINUED

Through the Canada Greener Homes Grant initiative, a grant between \$2,500 and \$6500 is available for installing a new ENERGY STAR certified air source heat pump (ASHP) or cold climate air source heat pump (ccASHP) system.

The grant amount is based on the type and configuration of the heat pump system: \$2,500-\$3250 is available for mini- or multi-split systems with two indoor heads,

\$4,000- \$5250 is available for ENERGY STAR certified ASHP central systems or mini- or multi-split systems with a minimum of three indoor heads, and \$5,000 is available for ccASHP central systems or mini- or multi-split systems with a minimum of three indoor heads.

The amount of the incentive will depend on whether the client is an Enbridge Gas customer and whether they own the property under assessment. Please consult with your energy adviser as to which category you fall into.

Speak with a mechanical system contractor/designer for recommendations on the type of heat pump system that is best suited for your home.

Depending upon the region in which you live and how you heat your home today, the installation of a heat pump may result in lower or higher utility costs. For e.g., a heat pump could reduce your natural gas consumption, but raise your electricity consumption. Consult with a mechanical system contractor to determine if this type of system is practical and the right choice for your circumstances.

The Canada Greener Homes Grant initiative requires that the heat pump system is capable of distributing heat throughout the entire conditioned space in the home, including the basement. This applies regardless of whether the heat pump system is a centrally ducted, mini- or multi-split ducted or ductless system. The sizing and selection of the heat pump is to be determined in consultation with the mechanical system contractor and a sizing guide tool, such as the one offered by Natural Resources Canada.

To determine the eligibility of the product you are seeking to purchase, use the AHRI number and make and model of the indoor and outdoor units provided by the mechanical system contractor to confirm that it is included on the Searchable product list of eligible heat pumps for the Canada Greener Homes Grant.

The mechanical system contractor is responsible for specifying (including load calculations, sizing and selection) and installing the new heat pump system to meet this requirement. The mechanical system contractor is not required to submit their design documentation to the energy advisor.

** Please note there are no incentives for gas fired heating equipment (furnaces, boilers), except for Off Grid Communities. Please ask your energy adviser for details if you fall into this category.



6. Insulate main walls

- ❑ Increase the insulation value of your main walls (MAIN) by RSI 3.20 (R-18.2).
- ❑ Increase the insulation value of your main walls (Floor-2-Primary-Wall-1) by RSI 3.20 (R-18.2).

This upgrade could reduce the energy consumption of your house by 16 gigajoules per year.

Did you know?

Main walls account for 21 percent of the estimated annual heat loss of your house.

Useful tips

Main walls can be insulated from the interior, exterior or both using a variety of materials and methods. Refer to your energy advisor's comments to determine the best approach.

Consult our **resources** www.nrcan.gc.ca/energy-efficiency/homes/make-your-home-more-energy-efficient/keeping-the-heat/15768 to learn more and take action.

Your energy advisor's comments

RECOMMENDED ENERGY EFFICIENCY UPGRADES - CONTINUED

Through the Canada Greener Homes Grant initiative, a grant of up to \$5,000 is available for adding insulation to the exterior wall area of your home. Insulation grants are based on the percentage of wall area to which the insulation has been added and the amount of insulation added. A minimum of 20% of the exterior wall area of your home, excluding foundation walls, must be insulated in order to qualify for a grant.

The amount of the incentive will depend on whether the client is an Enbridge Gas customer and whether they own the property under assessment. Please consult with your energy adviser as to which category you fall into.

If you add between R 7.5 to R12 worth of insulation to 100% of the walls you qualify for \$3,300.

Adding greater than R12 up to R20 qualifies for \$3,800 back.

Adding more than R20 qualifies for \$5,000.

ENBRIDGE

Alternatively, Enbridge Gas' HER program also offers incentives for main walls.

Enbridge's requirements are:

\$1,000: Add at least R-3.8 to meet a value of at least R-12.

\$1,750: Add at least R-9 to meet a value of at least R-12.

\$3,000: Insulate to meet a value of at least R-20

NOTE ON INSULATED SIDING

Several Canadian manufacturers of vinyl siding offer an insulated option that includes a contoured underlayment of EPS backing of varying thicknesses. In order for the insulation component of the insulated siding to be counted towards the R-value required for the Canada Greener Homes Grant initiative, the insulated siding must be tested to either the ASTM D7793 or ASTM C1363 Standard. The homeowner must provide this information to the energy advisor at the time of the post-retrofit evaluation, in the form of product literature.

If the insulated siding has not been tested or information is not available, it will not be eligible for the Canada Greener Homes Grant initiative. The R-value of the siding will not be accounted for when determining eligibility for the Canada Greener Homes Grant initiative.



7. Insulate foundation

- ❑ Increase the insulation value of 100% of your basement walls (Basement-1) from the interior by RSI 3.20 (R-18.2).
- ❑ Increase the insulation value of your foundation headers (basement-1- FloorHeader-1) by RSI 4.93 (R-28.0).

This upgrade could reduce the energy consumption of your house by 11 gigajoules per year.

Did you know?

Your foundation accounts for 18 percent of the estimated annual heat loss of your house.

Useful tips

Assess the status of your foundation for water leaks, cracks and flooding and remediate these issues before beginning any insulation job. Foundations can be insulated from the interior, exterior or a combination of both depending on accessibility and the complexity of the building. Refer to your energy advisor's comments to determine which would be best suited for your foundation.

Consult our **resources** www.nrcan.gc.ca/energy-efficiency/homes/make-your-home-more-energy-efficient/keeping-the-heat/15768 to learn more and take action.

Your energy advisor's comments

RECOMMENDED ENERGY EFFICIENCY UPGRADES - CONTINUED



The Canada Greener Homes Grant initiative offers grants for adding insulation to basement walls. Insulating basement walls can reduce energy costs and improve comfort. Grants are based on the RSI/R-value of the added insulation and the percentage of wall area insulated. The current amount of insulation does not affect the grant amounts. A minimum of 20% of the exterior basement wall area must be insulated. Grant amounts are pro rated against total foundation wall area (the total sum wall area of both basements and crawls)

The amount of the incentive will depend on whether the client is an Enbridge Gas customer and whether they own the property under assessment. Please consult with your energy adviser as to which category you fall into.

You must add at least R10.

If you add R10 to R22, you will be eligible for one level of incentives (\$1050- \$1400).

If you add more than R22, the incentive maximum is raised to between \$1500 - \$2000

** If Stone Foundations, add the following: **

STONE FOUNDATION

Because your home has a fieldstone foundation, it is important to consult with an experienced professional before insulating the foundation from the inside. The foundation will be colder after insulation is installed on the inside, because it will no longer be warmed by the heated space in your basement. Any moisture in the foundation wall could freeze and cause serious damage due to the freeze-thaw cycle. Insulating from the outdoors avoids this concern.

It's important to manage the moisture in the foundation wall properly before insulating. This usually involves installing a dimpled drainage membrane directly next to the foundation before installing the insulation layer. It is also important to install a drainage channel at the floor level to allow the moisture coming from the wall to drain away safely.

Basement Headers

Sealing and insulating headers in an unfinished basement can be a relatively simple task. In addition to reducing energy costs and improving comfort, this measure can reduce or eliminate the transfer of odours from adjacent units in attached homes.

Through the Canada Greener Homes Grant initiative, a grant of \$240- \$325 is available for sealing and adding insulation to basement headers. The grant is available when RSI 3.52 (R-20) or more is added to a minimum of 80% of your entire basement header area, along with air sealing.

The amount of the incentive will depend on whether the client is an Enbridge Gas customer and whether they own the property under assessment. Please consult with your energy adviser as to which category you fall into.

Sealing can be accomplished by applying caulking to the perimeter of the rim joist cavity. Alternatively, installing custom-cut pieces of board insulation and applying caulking to the perimeter of each piece can create a seal. Spray foam can also create a good seal and first layer of insulation. Once sealed, board or batt insulation may be installed to achieve the desired level of insulation.

Basement waterproofing

Through the Canada Greener Homes Grant, a grant of \$875 is available for waterproofing exterior foundation walls. This resiliency measure must be combined with an energy efficiency retrofit from the Canada Greener Homes Grant to be eligible

Waterproofing must be performed on the exterior side of the below-grade basement wall with rubberized or polymer membranes (e.g. waterproof-rated spray, trowel-on, roll-on and sheet materials). Ensure that a waterproofing membrane is used and not a damp/moisture-proofing membrane.

- A minimum 80% of the below-grade wall area must be waterproofed. This applies to all exterior facing below-grade basement walls but does not include party walls between homes (e.g. semi-detached homes).

Note: Simple paint brush or roller applied interior sealants are considered damp/moisture-proofing membranes, and are not eligible for the waterproofing grant as they are not rated to withstand hydrostatic pressure.

RECOMMENDED ENERGY EFFICIENCY UPGRADES - CONTINUED



8. Perform air sealing

- ❑ Improve the airtightness of your house by 23% to achieve 9.51 air change(s) per hour at 50 pascals.

This upgrade could reduce the energy consumption of your house by 10 gigajoules per year.

Did you know?

Air leakage accounts for 33 percent of the estimated annual heat loss of your house.

Useful tips

Air sealing is one of the most cost-effective energy-saving measures you can undertake. It is typically performed before and during other upgrades to ensure optimal benefit. Air sealing can help to minimize potential moisture damage and improve comfort by reducing drafts, heat loss, dust and outdoor noise in your home.

Consult our **resources** www.nrcan.gc.ca/energy-efficiency/homes/make-your-home-more-energy-efficient/keeping-the-heat/15768 to learn more and take action.

Air leakage locations identified by your energy advisor are listed below:



- ❑ Attic hatch- I recommend you seal the hatch with removable caulking after all work up there is complete. Be aware however, that your REA will need to break the seal to get into the attic for the necessary photo proof if you are claiming incentives. You can potentially get around this requirement by taking a wide shot photo of the new insulation AND a depth photo using a tape measure prior to sealing the hatch, and providing those photos to your REA instead of having the seal broken.
- ❑ Electrical plugs- You are getting some air movement through the electrical plugs. I recommend adding foam plate covers behind the plastic ones, as well as purchasing a number of baby-proofing plastic plugs and inserting them into any unused sockets. This will reduce air movement both around and through the box.
- ❑ Air sealing is one of the most cost-effective energy-saving measures you can undertake. An air-sealing grant is available if the airtightness of your home is improved to achieve or exceed the air change rate target proposed above. Achieving any of the targets defined for your home typically requires that the work be performed by an air-sealing professional, but can also be achieved through DIY and renos related to improving the building envelope.
- ❑ The amount of the incentive will depend on whether the client is an Enbridge Gas customer and whether they own the property under assessment. Please consult with your energy adviser as to which category you fall into.
- ❑ 1. Meet air sealing target listed: \$550- \$725
- ❑ 2. 10% better than the target achieved: \$810 - \$1050
- ❑ 3. 20% better than the target achieved: \$1000 - \$1300
- ❑ Please note however that HER+ uses the above number as a cap on the grant, and will only reimburse up to that number based on documented receipts or invoices.
- ❑ Because HER+ will only reimburse actual expenses, as documented with receipts or invoices, I recommend that, if you are using an insulation contractor, have them note in writing, as part of their quote, they are also doing "air sealing" and assign a dollar value to that portion of the work, so that "air sealing" shows up as a quantifiable expense later when claiming incentives through Greener Homes
- ❑ For a good air sealing guide, please download Natural Resources Canada's "Keeping the Heat In" document, which can be found at <https://energywerx.ca/resources/>



9. Add a renewable energy system

RECOMMENDED ENERGY EFFICIENCY UPGRADES - CONTINUED

❑ Install a photovoltaic system designed to deliver 5385.1 kilowatt-hours per year.

This upgrade could reduce the energy consumption of your house by 21 gigajoules per year.

Did you know?

Solar and wind energy can be used for electricity generation.

Useful tips

Installing renewable energy systems will offset some or potentially all of the purchased energy required to operate your home while decreasing the greenhouse gas emissions generated.

Your energy advisor's comments



You could likely fit a 5 KW system and offset at least some of your electricity (particularly in a scenario where your hot water and/or heating are done through heat pump technology). These are conservative estimates and a solar installer will be able to provide a more accurate estimate including shading, costs, and return on investment. Typically homeowners recoup their costs on solar installations within 10 - 14 years depending on the size of the system and extent of electricity consumption.

Through the Canada Greener Homes Grant initiative, a grant of \$1,000 per kW DC, up to a maximum of \$5000, is available for installing a solar photovoltaic (PV) system. If you choose to install a PV system, it is strongly recommended that a full assessment by a professional solar PV installer, including the measurement of solar irradiance (how much sunlight falls on the roof) is undertaken to provide detailed information on considerations for your home and specific installation recommendations, including the size and related energy production of the system. The rated PV panel must have peak power capacity higher than or equal to 1.0 kW DC.

The system must be composed of PV panels and an inverter certified to CSA Standards. Solar panels can be mounted on the house or ground, as long as they are on the property / land of the house associated with the application.

Building permits may be required for both off-grid and grid-connected installations.

For more information, refer to Natural Resources Canada's Solar Ready Guidelines document that can be found online.

SOLAR BATTERY

Through the Canada Greener Homes Grant initiative, a separate grant of \$1000 is available for the installation of battery storage and an inverter to connect to a photovoltaic system to provide standby power for the home for an existing PV system or a new install. This resiliency measure must be combined with an energy efficiency retrofit from the Canada Greener Homes Grant in order to be eligible. This grant may be combined with the new PV installation grant for a maximum grant of \$5000.

The battery system must be connected to a permanently mounted solar PV system;

- Batteries can be for a new battery system, the replacement of existing batteries or to supplement an existing battery system;
- Battery system minimum total capacity must be rated 4500 Watt hours at 20 hours.
- Batteries must be rated for deep cycle (any technology);
- Batteries must be permanently installed (i.e. portable batteries and electric vehicles are not eligible for this grant).

NOTES:

- 🏠 Energy use reductions are calculated with each upgrade taken on its own. Combinations of upgrades may produce slightly different results.
- 🏠 If negative savings are shown, please see your energy advisor's comments for an explanation.

ENERGY EFFICIENCY FORECAST

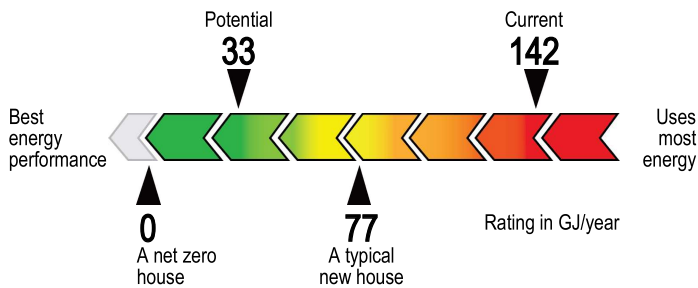
YOUR HOME'S ENERGY POTENTIAL



By implementing the recommended upgrades, you will not only see an improvement in your EnerGuide Rating but you might also reduce greenhouse gas (GHG) emissions.

Note that the energy consumption indicated on your utility bills may be higher or lower than your EnerGuide Rating. This is because the EnerGuide Rating is based on standard assumptions regarding how many people live in the home and how it is operated. Refer to your *Homeowner Information Sheet* for details on the EnerGuide Rating System standard operating conditions.

EnerGuide Rating



A **gigajoule (GJ)** is a unit of energy that can represent all energy sources found in Canadian homes such as electricity, fossil fuels and wood.

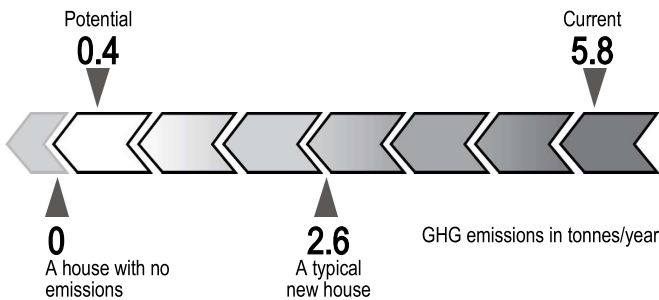
A **typical new house** is a reference point for comparing your rating to that of a similar house built to current energy efficiency requirements.

Rated energy intensity



The **Rated energy intensity** is an estimate of your home's annual energy use relative to its size. It allows you to compare the energy used by homes of different sizes on a "per square metre" basis.

Rated greenhouse gas (GHG) emissions

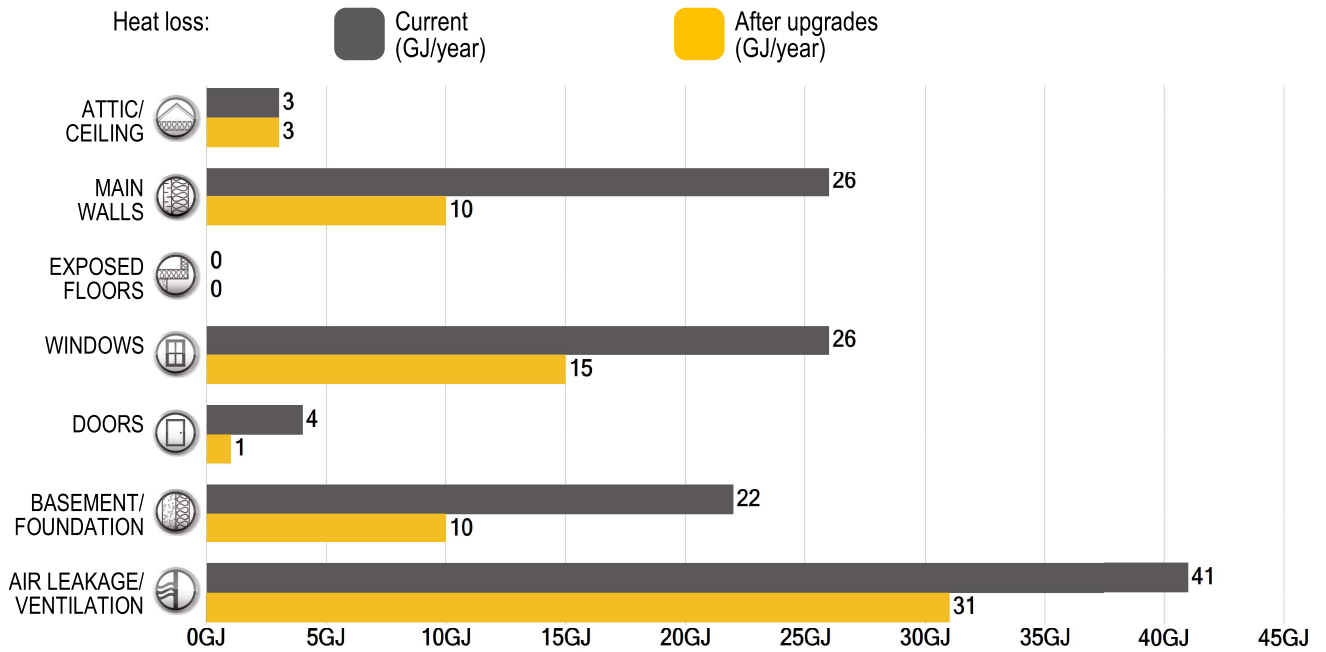


Every time we use energy from fossil fuels such as oil and gas, we produce **greenhouse gas (GHG) emissions** that contribute to climate change. We can reduce these emissions by making homes more energy efficient and lowering energy use.

ENERGY EFFICIENCY FORECAST - CONTINUED

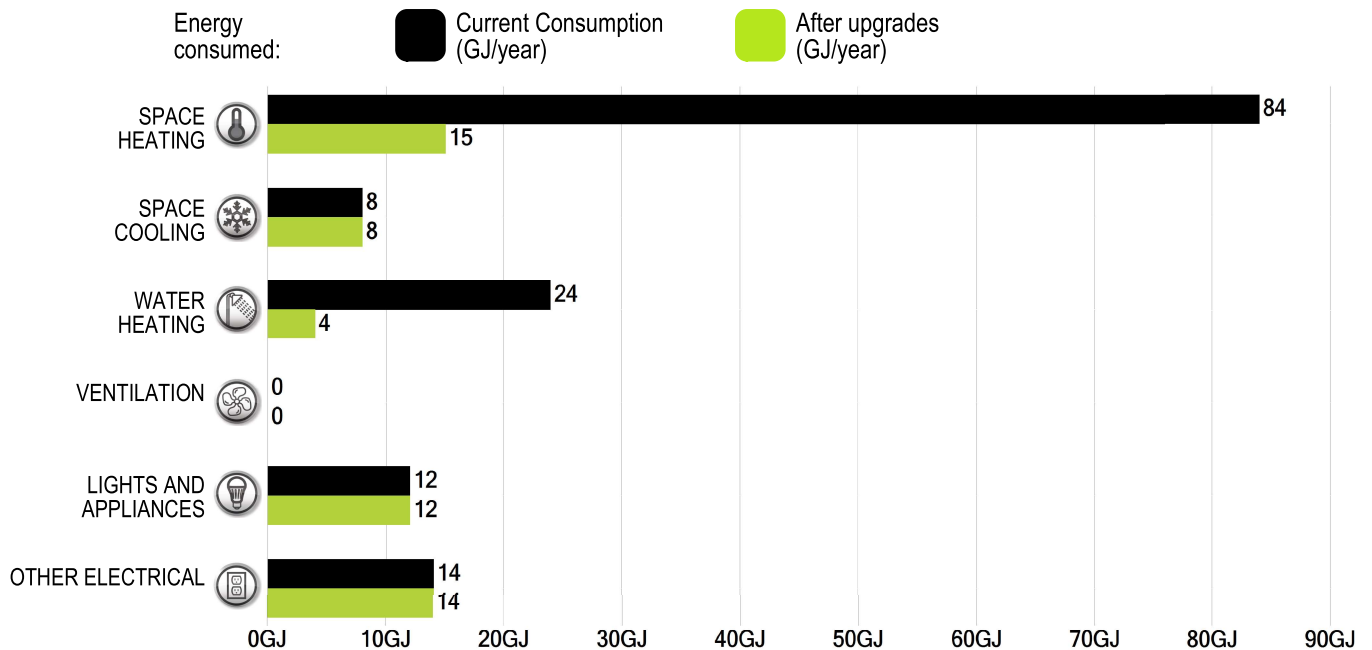
BEFORE AND AFTER: Estimated heat loss through the building envelope*

This bar chart shows where heat is lost from your house. The dark bars show the areas where you are currently losing heat. The longer the bar, the more heat you are losing. The light bars show the estimated heat loss if you were to complete all the recommended upgrades as outlined.



BEFORE AND AFTER: Estimated energy use*

This bar chart shows the potential for improving the energy performance of your house. The dark bars show your current rated consumption. The longer the bar, the more energy you are using. The light bars show the rated energy consumption if you were to complete all the recommended upgrades as outlined.



*Calculated using standard operating conditions. Refer to your *Homeowner Information Sheet* for more information.

HEALTH AND SAFETY INFORMATION

If your energy advisor has identified a potential health or safety concern related to insufficient outdoor air, risk of combustion fumes being drawn into the home or the presence of vermiculite, a warning has been included in your *Homeowner Information Sheet*. However, energy advisors are not required to have expertise in health and safety matters, and it is the sole responsibility of the homeowner to consult a qualified professional to determine potential hazards before undertaking any upgrades or renovations. Visit Natural Resources Canada's webpage *Health and safety considerations for energy-efficient renovations*.

Humidity control

A relative humidity level of between 30 and 55 percent is recommended for optimal health and comfort. For more information on assessing moisture levels in your house, visit the Canada Mortgage and Housing Corporation's website.

Radon

Radon is a naturally occurring radioactive gas that is colourless, odourless and tasteless. It is formed from the radioactive decay of uranium, a natural material found in some soil, rock and groundwater. When radon is released into the outdoor air, it gets diluted to low concentrations and is not a concern. However, in enclosed spaces like houses, it can sometimes accumulate to high levels, which can pose a risk to both your or your family's health. For more information, visit Health Canada's website.

Asbestos and vermiculite insulation

Vermiculite insulation installed in homes may contain asbestos. This can cause health risks if inhaled. If you find vermiculite insulation during renovations, avoid disturbing it. If you suspect the presence of asbestos in your home and plan to undertake renovations (including insulation or air sealing work) that may cause the vermiculite insulation or asbestos to be disturbed, contact professionals who are qualified to handle asbestos before you proceed with the renovations.

Combustion gases

The use of fuel-burning heating equipment can inadvertently lead to hazardous combustion gases being drawn into your home. Always consult a qualified heating and ventilation contractor when servicing or replacing this type of equipment and ensure you have a functioning carbon monoxide detector. Refer to the publication entitled *Combustion gases in your home: What you should know about combustion spillage* on Natural Resources Canada's website to learn more about combustion spillage.

DISCLAIMERS

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Natural Resources Canada does not endorse or make any representation of warranty as to the accuracy or applicability of the energy advisor's comments with respect to your particular home.

Natural Resources Canada does not endorse the services of any contractor, nor any specific product, and accepts no liability in the selection of materials, products, contractors nor the performance of workmanship.

The rating and potential savings in this report are based on the conditions of your home at the time of the evaluation and the use of EnerGuide standard operating conditions.

ADDITIONAL INFORMATION - CONTINUED

Along with the upgrade recommendations, here are some simple actions you can take to be more comfortable, save money and reduce GHG emissions:

ENERGY-SAVING TIPS

- Install and set-up programmable electronic thermostats to reduce the heating temperature at night and when you are away. For each degree of setback, you can save up to 2 percent on your heating bills.
- When replacing appliances, electronics and office equipment, look for ENERGY STAR® certified products. ENERGY STAR certified products are among the most efficient and use up to less than half as much energy in standby mode (i.e. when they are turned "off") than non-certified products. You can also look for the EnerGuide product label to help you select the most energy efficient model. For more information, go to energystar.gc.ca.
- Replace your light bulbs with ENERGY STAR certified ones, such as light emitting diodes (LEDs). They last longer and use less electricity.
- Insulate the first two metres of the hot and cold water pipes starting from the water heater with insulating foam sleeves or pipe wrap insulation. By doing so, you will save on your water heating costs and reduce your water consumption. For a fuel-fired water heater, maintain a 15 cm (6 in.) clearance between the water piping insulation and the vent pipe.
- If you use a block heater for your car, use a timer. Set the timer to turn on one to two hours before you plan to start your vehicle.
- Replace your kitchen and bathroom exhaust fans with ENERGY STAR certified exhaust fans vented to the outside.
- Install a timer on your bathroom exhaust fans so that the fans are not left running for extended periods of time.
- Install low-flow shower heads (rated at 7.6 litres per minute or less) and faucet aerators.
- Fix leaky faucets and outside hose bibs.
- Plug your entertainment systems and office equipment into power bars that can be easily turned off when equipment is not in use.

NOTES:

Questions about this report?

Please contact your energy advisor.