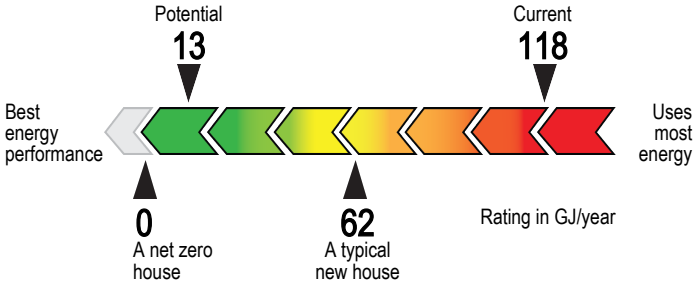
File Number: 4GBD00023

RENOVATION UPGRADE REPORT

ENERGUIDE



Year built: 1950

Assessment date:	Evaluated by:	Quality assured by:
June 03, 2022	Adam Axcell	Homesol Building Solutions Inc. 844 466 0664

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	2. Upgrade heating system	3. Upgrade cooling system	4. Upgrade hot water system	*Additional recommendations on next pages*
[Save 11 GJ/year]	[Save 39 GJ/year]	[Save 1 GJ/year]	[Save 13 GJ/year]	

By implementing all upgrades, you are helping to fight climate change and could **reduce GHG emissions by up to 4.2 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 (Ceiling) by RSI 7.54 (R-42.8).**

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

Did you know?

Ceilings account for 15 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 Canada Greener Homes Grant offers grants of up to $1,800 for increasing home insulation in attics, cathedral ceilings and flat roofs. The amount you are eligible for will depend on factors such as what insulation is currently in your home, how much insulation you add and type of attic/ceiling your home has. Insulation slows the rate of heat loss, resulting in improved energy use and can help save money.

Installing insulation in an attic, cathedral ceiling or flat roof is eligible for a grant, as long as minimum levels of insulation and coverage are achieved. If your house consists of more than one roof or roof type, the grant amount will be pro-rated or calculated based on roof type and area.

The insulation in your attic was assessed at R-9. Because the amount of insulation in your attic has been assessed as being at or less than R-12, a grant of up to $1800 is available through the Canada Greener Homes Grant initiative for adding insulation to reach R-50 or more.

2. Upgrade heating system

- ❑ **Install a new ENERGY STAR certified air-source heat pump that has a heating seasonal performance factor (HSPF) of 11.**

This upgrade could reduce the energy consumption of your house by 39 gigajoules per year.

Did you know?

Space heating accounts for 54 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

Heat Pumps- Air source heat pump- ASHP and ccASHP

Through the Canada Greener Homes Grant initiative, a grant of $2500 is available for smaller Air Source Heat Pumps (ASHP) or cold climate Air Source Heat Pumps (ccASHP). Install a complete ENERGY STAR certified new or replacement air source heat pump (ASHP) system or a variable capacity cold climate air source heat pump (ccASHP) system, intended to service the entire home. The newly installed system must meet the following criteria:

• minimum total rated heating capacity at 8.3°C of 3.52kW (12,000 Btu/h)

• HSPF (AHRI Climate Region Zone IV) 10

• two indoor heads ductless unit

• Your new pump must be on the list of eligible products

• Quebec and Nova Scotia residents: Your new pump must be on the list of eligible products

Note: In case of central split ducted and single package systems, if part of the ENERGY STAR certified system, the furnace or air handler must always be the specified matching unit.

$4000 is available for larger ASHPs. Install a complete ENERGY STAR certified new or replacement air source heat pump (ASHP) system, intended to service the entire home (not available for Quebec or Nova Scotia residents). The newly installed system must meet the following criteria:

• minimum total rated heating capacity at 8.3°C of 3.52kW (12,000 Btu/h)

• HSPF (AHRI Climate Region Zone IV) 10

• minimum three indoor heads for ductless units or central system

• Your new pump must be on the list of eligible products (not available for Quebec or Nova Scotia residents)

Note: In case of central split ducted and single package systems, if part of the ENERGY STAR certified system, the furnace or air handler must always be the specified matching unit.

$5000 is available for large Cold Climate Heat Pumps (CCHP). Install a complete ENERGY STAR certified new or replacement variable capacity cold climate air source heat pump (ccASHP) system, intended to service the entire home. The newly installed system must meet the following criteria:

• a new or replacement CCHP system intended to service the entire home

• compressor must be variable capacity with three or more distinct operating speeds, or continuously variable speed

• minimum total rated heating capacity at 8.3°C of 3.52kW (12,000 BTU/h)

• HSPF (AHRI Climate Region Zone IV) 10

• minimum three indoor heads for ductless or central system

• COP of 1.8 at -15°C (5°F) (at maximum capacity operation);

• capacity Maintenance (Max -15°C (5°F)/Rated 8.3°C (47°F)) 70%

• Your new pump must be on the list of eligible products

• Quebec and Nova Scotia residents: Your new pump must be on the list of eligible products

Note: For central ducted systems, if part of the cold climate heat pump listed systems, the furnace or air handler must always be the specified matching unit.

Speak with an HVAC professional for recommendations on the type of heat pump that is best suited for your home, for example, an air-source heat pump, or if you live in a colder climate, a cold-climate heat pump.

Depending upon the region in which you live and how you heat your home today, the installation of a heat pump in your home may result in higher utility costs. Consult with an HVAC professional in this field to determine if this type of system is practical and the right choice for your circumstances.

To determine eligibility of the product you are seeking to purchase, confirm that it is included on the list of eligible equipment as found on the Canada Greener Homes Grant webpage.

The heating load of your home is: 9.9 kW and the cooling load is 2.6 kW. Your new heat pump must be sized to supply heat to your entire home. Ask the professional to size your heat pump according to the heating load of your entire home as indicated above.

If you intend to implement all the thermal enclosure upgrades in this report, the heating load of your home would be reduced to: 4.6 kW and the cooling load would be reduced to: 2.4 kW.

For more information: Natural Resources Canada has developed a package of materials related to air source heat pump sizing and selection, intended for use by mechanical system designers and renovation contractors. https://www.nrcan.gc.ca/maps-tools-and-publications/tools/modelling-tools/toolkit-for-air-source-heat-pump-sizing-and-selection/23558

3. Upgrade cooling system

❑ **Install a new ENERGY STAR certified air conditioner.**

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

Did you know?

Space cooling accounts for 3 percent of the estimated annual energy use of your house.

Useful tips

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

Your *Homeowner Information Sheet* provides important details and a reference for this calculation. Inform your 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. Consult Natural Resources Canada's web site at *www.nrcan.gc.ca/energy/products/categories/cooling-ventilating/13756* for more information.

Your energy advisor's comments

See the Heat System section because Air Source Heat Pumps provide space cooling AND heating.

4. Upgrade hot water system

❑ **Install a new ENERGY STAR certified, electric heat pump water heater with an energy factor (EF) of 2.25.**

This upgrade could reduce the energy consumption of your house by 13 gigajoules per year.

Did you know?

Water heating accounts for 21 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

Under the Canada Greener Homes Grant initiative, a grant of $1,000 is available for installing an eligible ENERGY STAR certified domestic hot water heat pump. 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.

To determine eligibility of the product you are seeking to purchase, confirm that it is included on the list of eligible equipment as found on the Canada Greener Homes Grant webpage.

Water heating accounts for over 20% of the energy used in the average Canadian home. Learn more about making the switch to a more energy-efficient water heater to save money on your energy bill and reduce your carbon footprint.

There are installation requirements that must be met as follows:

• Must be installed by a licenced and trained professional. When using a licensed professional it is highly recommended that you obtain proof of their licence to install equipment in your province or territory.

• Your new water heater must be on the list of eligible products

• All equipment must be purchased in Canada. Online purchases are only eligible if they are ordered from an online distributor in Canada.

Option: Eligibility criteria for reimbursement Grant amount per home

• ENERGY STAR certification as defined at the first home evaluation (pre-retrofit)

• Capacity 55 gal, EF 2.00 with FHR 50 gallons per hour or UEF 2.00 FHR 45 gallons per hour

• Capacity > 55 gal, EF 2.20 FHR 50 gallons per hour or UEF 2.20 FHR 45 gallons per hour

If the cooling effect of the heat pump water heater is not desirable in the winter, there are two options you could consider:

1) Some units can be ducted which could allow for many possibilities such as ducting directly to the outside through an insulated duct, or ducting to and from warmer parts of the house, like ceiling level of a 2 storey great room;

or

2) Choose a hybrid heat pump water heater that can be switched to electric only during the heating season.

5. Upgrade windows

❑ **Replace 15 windows with ENERGY STAR certified models.**

This upgrade could reduce the energy consumption of your house by 6 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.

Your energy advisor's comments

When looking for windows, it is optimal to choose units with a low U-Factor (~1.0) and moderate to low Solar Heat Gain Coefficient (SHGC) (

Comfort is the main benefit for this upgrade. During colder months, the temperature of the interior surface of the window will be much higher with low U-Factor windows, which means that your body temperature will not be pulled towards the window as much. This is technically referred to as radiation asymmetry, which is often mistaken as a cold draft or air leak. Low SHGC glass will reduce the chance of overheating during the spring, summer and fall.

If you choose to pursue a Chainsaw Retrofit, then upgrading the windows at the same time as the walls gets you more bang for your buck!

Through the Canada Greener Homes Grant initiative, grants of either $125 or $250 per window rough opening 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 on energy, improve comfort, and reduce noise. To determine eligibility of the product you are seeking to purchase, confirm that it is included on the list of eligible equipment as found on the Canada Greener Homes Grant webpage.

Replace your windows or sliding glass doors with ENERGY STAR certified models:

• U-Factor of 1.22 W/m²K or less or

• Energy Rating 34

• $125 per window rough opening

Replace your windows or sliding glass doors with ENERGY STAR Most Efficient models:

• U-Factor of 1.05 W/m²K or less or

• Energy Rating 40

• $250 per window rough opening

Eligibility criteria for reimbursement:

• All equipment must be purchased in Canada.

• Online purchases are only eligible if they are ordered from an online distributor in Canada.

• The equipment must be on an eligible list below.

• Maintain the ENERGY STAR labels on your windows and doors until after your post-retrofit evaluation.

Important:

• A new window unit can be inserted into the existing frame of an old window, but replacements of only the glass, sash or door without a frame are not eligible.

• A maximum of $250 per rough opening up to cap of $5000.

6. Upgrade doors

❑ **Replace 2 doors with ENERGY STAR certified models.**

This upgrade could increase the energy consumption of your house by 0 gigajoules per year.

Did you know?

Doors account for 2 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 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 on energy and improve comfort. To determine eligibility of the product you are seeking to purchase, confirm that it is included on the list of eligible equipment as found on the Canada Greener Homes Grant webpage.

Replace hinged doors, with or without sidelites or transoms ENERGY STAR certified models:

- U-Factor 1.22 W/m²K or
- Energy Rating 34
- $125 per door

7. Insulate main walls

❑ **Increase the insulation value of your main walls (Wall - 1st) by RSI 2.20 (R-12.5).**

This upgrade could reduce the energy consumption of your house by 8 gigajoules per year.

Did you know?

Main walls account for 18 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

Through the Canada Greener Homes Grant initiative, a grant of up to $5,000 is available for adding insulation to 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.

Add R7.5 to R12 to exterior walls

20% of all above grade exterior walls = $660

100% of all above grade exterior walls = $3,300

8. Insulate foundation

- ❑ Increase the insulation value of 100% of your basement walls (Basement) from the exterior by RSI 2.22 (R-12.6).
- ❑ Increase the insulation value of your basement floor (Basement) by RSI 2.22 (R-12.6).
- ❑ Increase the insulation value of your foundation headers (Floor Header) by RSI 2.20 (R-12.5).

This upgrade could reduce the energy consumption of your house by 12 gigajoules per year.

Did you know?

Your foundation accounts for 31 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

Basement Insulation - Wall

The Canada Greener Homes Grant initiative offers grants of up to $1500 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.

Eligibility criteria for reimbursement:

•Insulate a minimum of 20% of the wall area of the foundation, including basement and crawlspace walls.

Important:

•You can combine the grants shown below: i.e. adding insulation to the basement header and wall insulation.

•For a semi- detached or end unit row house, you will not qualify for the full amount of the grant - the maximum you would be eligible for is 75% of the listed amounts.

•For a middle unit row house, the maximum grant you would qualify for is 50% of the listed amounts.

•There are no grants available for insulation of walls between individual units.

•When both a basement and crawlspace are present, all applicable grants are pro-rated to a maximum of $1,500 based on the total wall area and the additional insulation.

Basement Insulation- Slab

Through the Canada Greener Homes Grant initiative, a grant of $400 is available for adding insulation to your basement slab. Adding board insulation on top of the slab can significantly improve the comfort of a basement area. The grant of $400 is available when RSI 0.62 (R-3.5) is added to at least 50% of the slab.

9. Upgrade ventilation system

- ❑ Install a heat recovery ventilator or energy recovery ventilator certified by the Home Ventilating Institute (HVI) or that is ENERGY STAR certified.

This upgrade could increase the energy consumption of your house by 2 gigajoules per year.

Did you know?

Upgrading your ventilation system can improve indoor air quality and comfort. A heat recovery ventilator (HRV) or energy recovery ventilator (ERV) saves energy compared to conventional ventilation systems by recovering heat from stale indoor air as it is exhausted. An HRV/ERV simultaneously exhausts stale indoor air and brings in outdoor air by passing the two separate airflows through a heat exchanger.

Useful tips

When purchasing an HRV or ERV, choose a model that is certified by the Heating and Ventilating Institute (HVI) and consider models that have a high efficiency motor to help reduce electrical consumption. Ensure that the HRV or ERV system is designed, installed and balanced by a technician certified by a recognized mechanical organization. Select equipment tailored to your needs.

Keep contaminants away from the fresh air intake when your HRV/ERV is operating. For example, avoid putting trash next to the air intake, do not use pesticides and herbicides nearby and keep your barbecue downwind. If you must generate pollutants near the air intake temporarily, turn the HRV/ERV off until you complete the activity.

Consult Natural Resources Canada's publication about Heat Recovery Ventilators at *www.nrcan.gc.ca/energy/products/categories/cooling-ventilating/ventilating/hrv/16197*.

Your energy advisor's comments

If your air tightness result is lower than around 4 ACH, and/or you are planning on reducing this further towards 0 ACH, it is highly recommended to install a ventilation system with heat recovery.

Think of it as the lungs of the house, or the fresh air machine, or the automatic window!

Considering our cold dry winters and hot humid summers, we recommend an Enthalpy/Energy Recovery Ventilator (ERV) over a Heat Recovery Ventilator (HRV). ERV's exchange heat, just like HRVs but they also transfer moisture. This helps prevent excessive drying in the winter and helps summertime comfort by cutting the humidity of the fresh air coming in.

When looking for ERVs, the Sensible Recovery Efficiency should be high, 75% or higher, and the wattage should be low 50W or lower, and the supply and exhaust air flows should be balanced by your installer to within 10% of each other.

Another option are ventilation units that have heat pumps as their heat exchange core. These units provide ventilation, but can also provide some space heating, some space cooling, and a lot of dehumidification! If the space heating and cooling loads are low enough, such as with individual MURB units or Passive Houses, then these units have the potential to provide all the space conditioning needs for the unit, with very minimal additional heating in the winter.

10. Add a renewable energy system

❑ **Install a photovoltaic system designed to deliver 10921.4 kilowatt-hours per year.**

This upgrade could reduce the energy consumption of your house by 41 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

By implementing all the upgrades suggested in this report, your total annual energy consumption could be reduced from 89 GJ/yr down to 23 GJ/yr or about 6282 kWh/yr.

At this point, the most sustainable and carbon neutral action to take next is to install a solar PV system. A typical 10 kW array would likely be enough to power your house and future Electric Vehicles. If the Net Metering program is available in your area then your annual energy bills would be reduced to about $300-$500, a year.

Through the Canada Greener Homes Grant initiative, a grant of $1,000 per KW is available for installing a photovoltaic solar panel. If you choose to install a photovoltaic (PV) system, it is strongly recommended that a full assessment by a professional solar photovoltaic installer, including the measuring 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.

Eligibility criteria for reimbursement (Footnote4):

• All equipment must be purchased in Canada

• Online purchases are only eligible if they are ordered from an online distributor in Canada.

• The system must be composed of photovoltaic (PV) panel and inverter certified to CSA Standards

• The rated PV panel must have peak power capacity higher than or equal to 1.0 kW

Option: Incentive amount Single-family home MURBs

Install solar panels (photovoltaic (PV) system) 1.0 kW $1,000 per kW

Footnote 4

NRCan does not endorse the services of any contractor, nor any specific product, and accepts no liability in the selection of materials, products, contractors or performance of workmanship. Before undertaking upgrades or renovations, find out about the appropriate products and installation techniques, and ensure that all renovations meet local building codes and by-laws.

Batteries Connected to Photovoltaic Systems to Provide Standby Power for Home

Through the Canada Greener Homes Grant initiative, a 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.

Additional energy advisor comments

1) In order to be eligible for reimbursement for your retrofit, you must complete at least one retrofit that is both eligible and recommended by an energy advisor in this Renovation Upgrade Report.

2) If you wish to undertake resiliency measures or purchase a thermostat, you must also undertake another eligible energy efficiency measure in order to qualify for a grant.

3) Purchased equipment such as heat pumps and windows must meet eligibility criteria and must be on the eligible product list as found on the Canada Greener Homes Grant website. This information can also be found in the Homeowner Information Kit.

4) All mechanical and electrical systems, with the exception of thermostats, must be installed by a licensed and trained professional.

5) It is highly recommended that you use the attestation forms found on the Canada Greener Homes Grant website and Canada Greener Homes Grant Portal (if applicable for your retrofit) confirming that:

- installation of an electrical or mechanical system has been completed by a trained and licensed professional*

- an earth-energy (ground or water) system was installed in accordance with CSA standards

- the heat pump has been sized to your entire home

*When using a licensed professional, it is highly recommended that you obtain proof of their licence to install equipment in your province or territory.

6)All products must be purchased in Canada. Online purchases are only eligible if they are ordered from an online distributor located in Canada.

ADDITIONAL OPPORTUNITIES FOR INCENTIVES

You may access and combine grant funding from the Canada Greener Homes Grant with funding from other retrofit grant programs in your region. The sum of the funding you receive from all sources must not exceed 100% of the total cost of the pre- and post-retrofit EnerGuide evaluations and of each eligible retrofit measure.

Participants will be required to declare through the Canada Greener Homes Grant Portal funding or rebates received from other sources.

Thermostats

Under the Canada Greener Homes Grant initiative, a grant of $50 is available for replacing one manual thermostat by a programmable or smart/adaptive thermostat.

Roofing Membrane - Self-adhering roofing underlayment applied to entire roof

Through the Canada Greener Homes Grant, a grant of $150 is available for installing a self-adhering roofing underlayment applied to the entire roof surface. This resiliency measure must be combined with an energy efficiency retrofit from the Canada Greener Homes Grant to be eligible.

Foundation Water-Proofing

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.

Moisture Proofing Crawl Space Floor, Walls and Headers

Through the Canada Greener Homes Grant, a grant of $600 is available for moisture proofing 100% of the crawl space floor, walls and headers. This resiliency measure must be combined with an energy efficiency retrofit from the Canada Greener Homes Grant to be eligible.

NOTES:

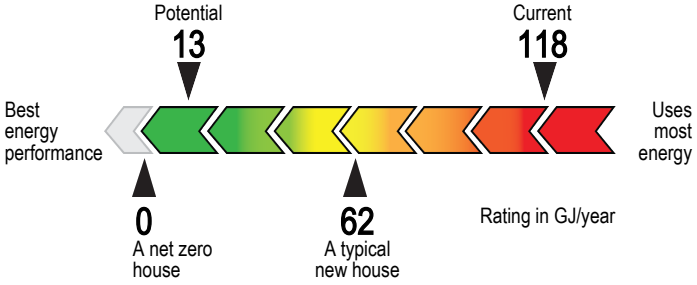
- Energy use reductions are calculated with each upgrade taken on its own. Combinations of upgrades may produce slightly different results.
- If negative savings are shown, please see your energy advisor's comments for an explanation.

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.

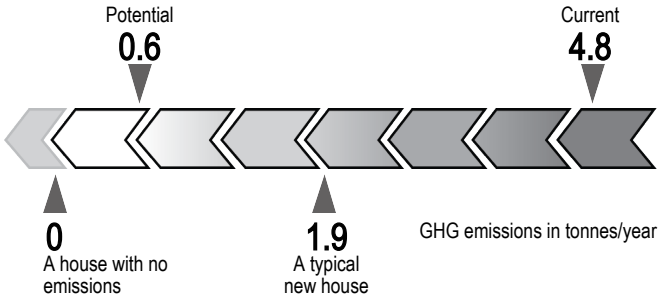
Rated energy intensity

Potential: 0.36 GJ/m²/year

Current : 0.82 GJ/m²/year

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

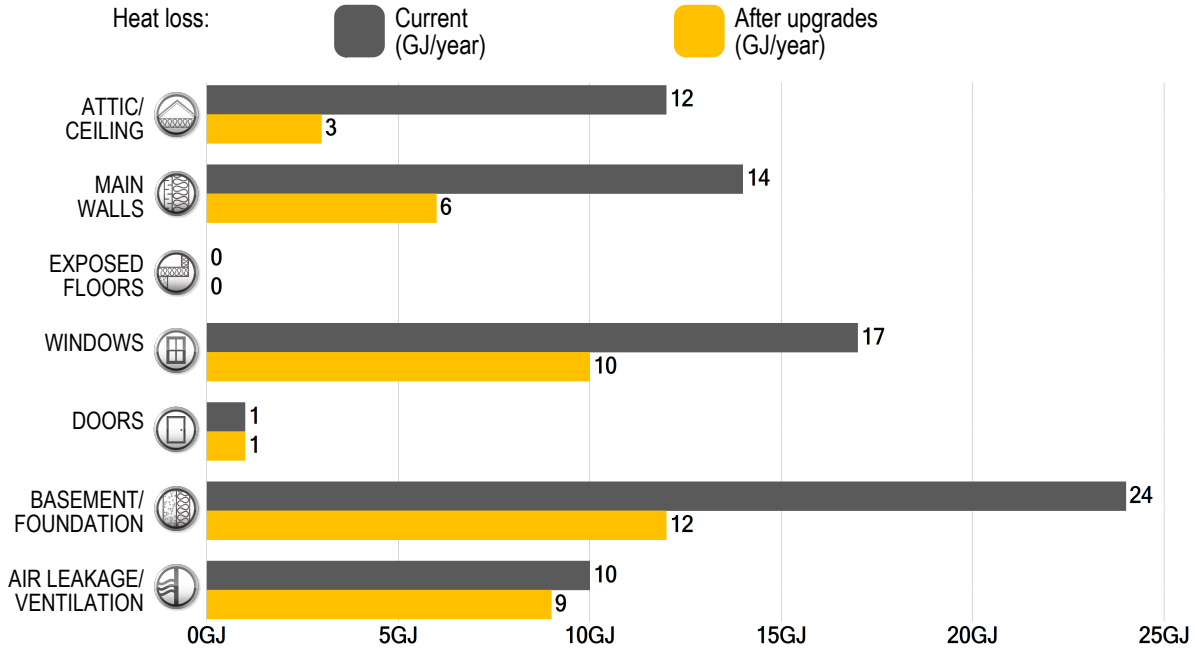


Every time we use energy from fossil fuels such as oil and gas, we produce **greenhouse gas (GHG) emissions** that contribute to climate change. We can reduce these emissions by making homes more energy efficient and lowering energy use.

ENERGY EFFICIENCY FORECAST - CONTINUED

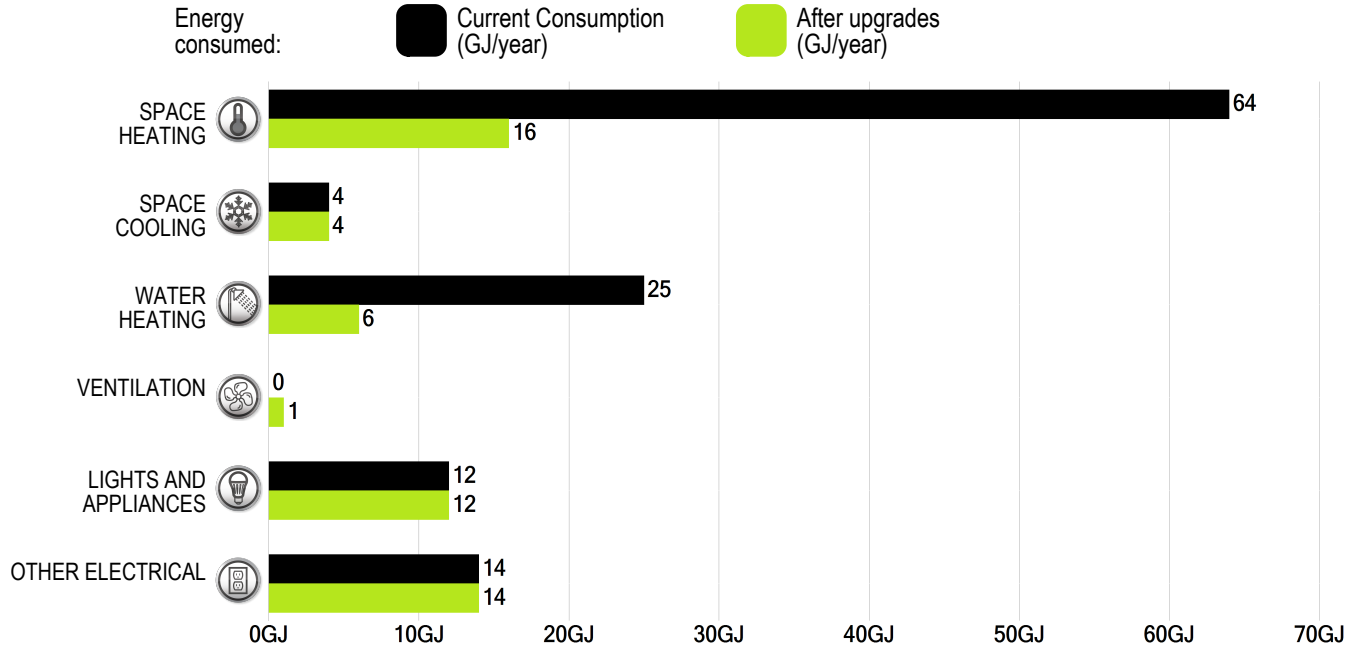
BEFORE AND AFTER: Estimated heat loss through the building envelope*

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.

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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.