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RENOVATION UPGRADE REPORT

ENERGUIDE

[redacted]

Year built: 1994

Assessment date:	**Evaluated by:**	**Quality assured by:**
March 25, 2025	[redacted]	[redacted]

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. **Upgrade windows**	2. **Upgrade doors**	3. **Upgrade ventilation system**	4. **Upgrade heating system**	*Additional recommendations on next pages*
[Save 10 GJ/year]	[Save 3 GJ/year]	[Save -2 GJ/year]	[Save 35 GJ/year]	

By implementing all upgrades, you are helping to fight climate change and could **reduce GHG emissions by up to 2.3 tonnes per year.**

RECOMMENDED ENERGY EFFICIENCY UPGRADES

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

1. Upgrade windows

❑ **Replace 12 windows with ENERGY STAR certified models.**

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

Did you know?

Windows account for 23 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

It is recommended that 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. 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 the

ENERGY STAR certification mark, Manufacturer model code/number, AND U-factor/Energy Rating (ER).

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

- Name of the homeowner and address of the house;
- Date of installation;
- Window make and model numbers;
- NRCan Reference Number;
- Indication of whether windows are ENERGY STAR or ENERGY STAR Most Efficient certified;
- Number of windows and location of each installation;
- U-factor/Energy Rating (ER);
- Itemized cost of each window 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.

CODY: New windows can do a lot for a home, including reducing its heat loss and improving its energy efficiency.

Other great reasons to invest in windows include a marked increase in the value of the home, easier operability,

ease of maintenance, less road noise, increased security, and pride of ownership.

Good luck with your planned retrofit.

2. Upgrade doors

❑ **Replace 2 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

Consider installing ENERGY STAR certified door or door system. Replacing old, damaged or leaky hinged doors

with new ENERGY STAR certified products can help you save energy and improve comfort. A door system installed in a rough opening may consist of one or more doors and may include sidelights and transoms. It is required that a photo of each newly-installed door system showing a portion of the surrounding wall assembly from the inside, outside or both, AND A photo of each ENERGY STAR label affixed to each component of the door system that clearly shows the ENERGY STAR certification mark, Manufacturer model code/number, U-factor/Energy Rating 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, then it is your responsibility

to acquire a detailed invoice with the appropriate information and provide this to the energy advisor at the time of the post-retrofit evaluation.

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.

[redacted]: As secure, solid, and relatively low square footage of the building envelope (proportionally), doors can improve energy efficiency when installed well, but are often most valued for their operability and pride of ownership.

Good luck with your planned retrofit.

3. 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

For your health, an HRV unit pulls in fresh air and flushes out stale air. This means that fresh air is circulated throughout your home 24 hours a day. Indoor air quality can be dramatically improved with an HRV unit thanks to a reduction of the allergens swirling around in your home.

CODY: We can't live in a balloon, as homes get tighter and tighter, they may need mechanical equipment to provide sufficient fresh air and dehumidification for safe indoor air quality.

4. Upgrade heating system

- ❑ **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 35 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

Although significant energy savings can be achieved by installing a heat pump, this may not translate into lower

utility costs. A mechanical system contractor can advise on whether a heat pump is the right choice for your

circumstances. The contractor is responsible for specifying (including load calculations, sizing and selection) and

installing the new system to meet all requirements. It is highly recommended that the heat pump has been

installed by a trained and licensed professional certified in your province or territory, and that it is capable of

distributing heat throughout the entire conditioned space in the home.

To determine the eligibility of the product, 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 Initiative.

CODY: Consider an ASHP when/if you are evaluating central air conditioning. ASHP performs the service you

expect from an air conditioner, as well as providing efficient electrical heating for the months around the very

depth of winter.

5. 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 22 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

Integrated Heat Pump water heaters are a valuable piece of the electrified home and are especially valuable for

homes with on-site generation.

[redacted]: The DWHR device is a great investment that requires no maintenance, improves the performance of any

water heating technology and is surprisingly effective.

6. Perform air sealing

- ❑ **Improve the airtightness of your house by 10% to achieve 2.49 air change(s) per hour at 50 pascals.**

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

Did you know?

Air leakage accounts for 16 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
- ❑ Windows
- ❑ Doors
- ❑ [redacted]: Your single most significant air sealing opportunity is the elimination of the combustion air supply for your
- ❑ conventional furnace and water heating appliances. When/if you upgraded that equipment to sealed combustion
- ❑ this could make a material impact on improving your home's air tightness. If this action is taken, please discuss
- ❑ the installation of an ENERGY STAR HRV (separate upgrade recommendation) to ensure adequate fresh air
- ❑ supply is available. Embrace air sealing through work that lends itself to improving air tightness, and do not

- ❑ tolerate drafts that are a nuisance. However, proactive air sealing may push the home to a point where it has
- ❑ insufficient natural air exchanges which could begin to compromise indoor air quality. It may be worthwhile to
- ❑ monitor relative humidity with the use of a hygrometer.

7. Add a renewable energy system

❑ **Install a photovoltaic system designed to deliver 2706.4 kilowatt-hours per year.**

This upgrade could reduce the energy consumption of your house by 10 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

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 (i.e. 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 PV panel must have peak power capacity higher than or equal to 1.0 kW DC. The system must be composed of PV panels certified to CSA Standards and, if required, of inverters also 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 a grid connected system, a copy of the letter of approval or permission for interconnection issued by the local electrical or building authority is required. For more information, refer to Natural Resources Canada's Solar Ready Guidelines.

CODY: Solar costs continue to decline, and with any increase in electricity rates this will become an increasingly compelling investment opportunity.

Solar was coded as the number one opportunity in the home. The report software de-prioritizes it in favor of efficiency first. Good luck with the installation. Please ensure your solar contractor completes the attestation indicating they are qualified to complete the work in the context of the grant program.

Additional energy advisor comments

Hiring a contractor is required for several of the home retrofits and strongly recommended for the others. The contractor is responsible for complying with local bylaws and relevant provincial, territorial, and federal legislation and guidelines. 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 retrofits, find out about the appropriate products, safety, and installation techniques, and ensure that all retrofits meet local building codes and by-laws.

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

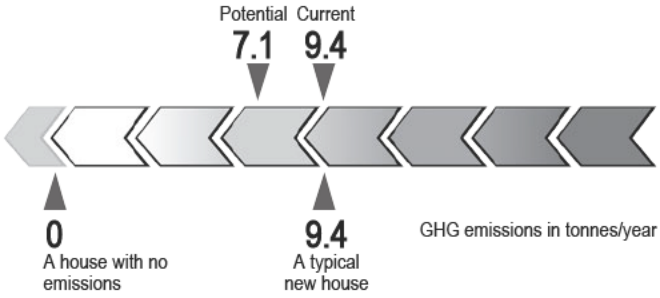
A **gigajoule (GJ)** is a unit of energy that can represent all energy sources found in Canadian homes such as electricity, fossil fuels and wood.

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

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.

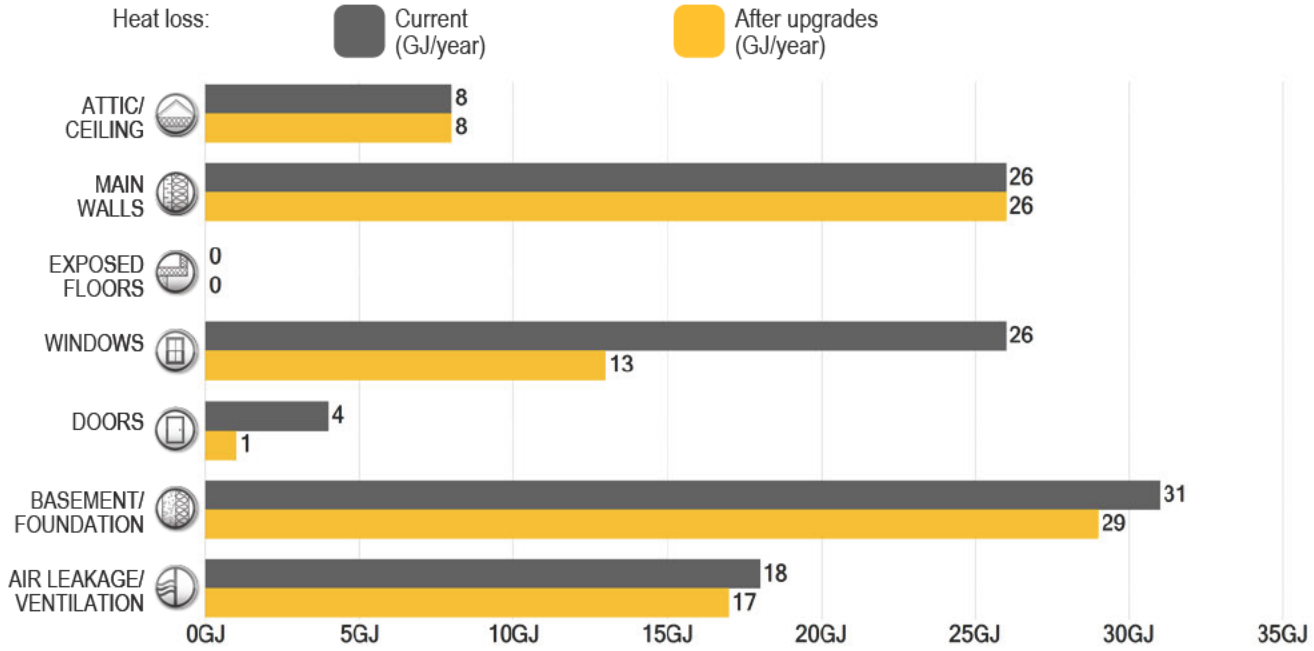
Rated greenhouse gas (GHG) emissions



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.

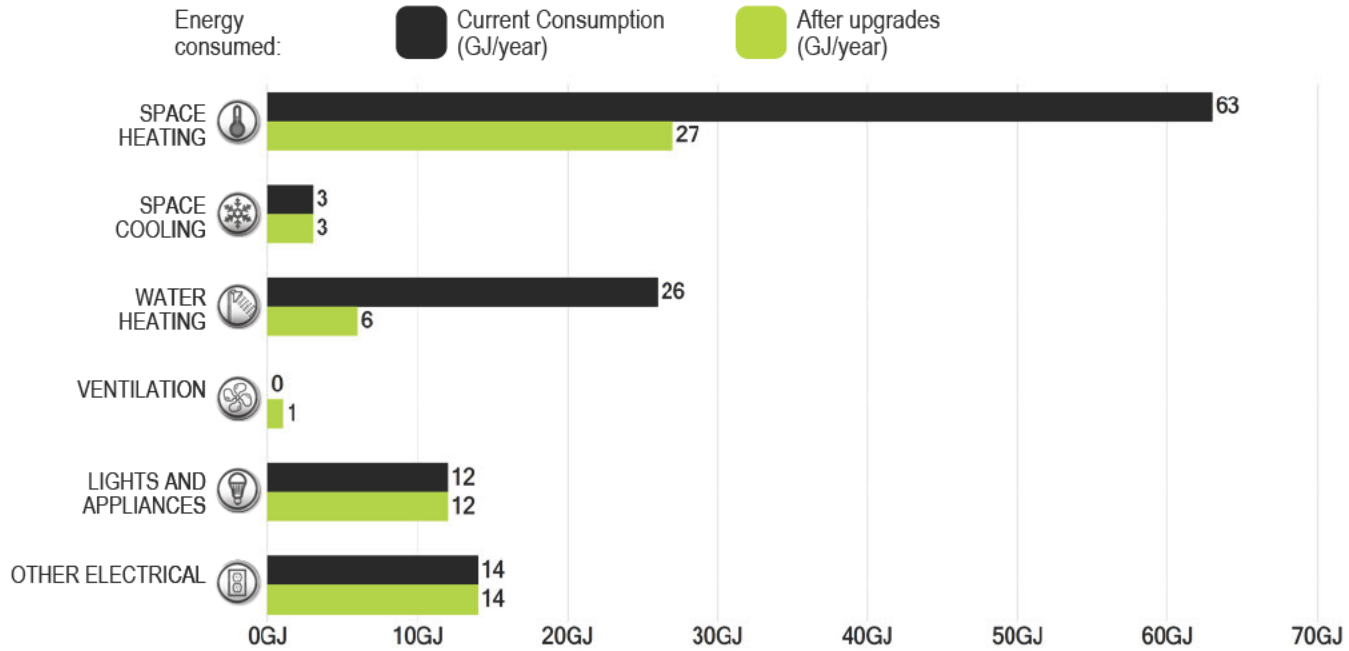
BEFORE AND AFTER: Estimated heat loss through the building envelope*

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 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.