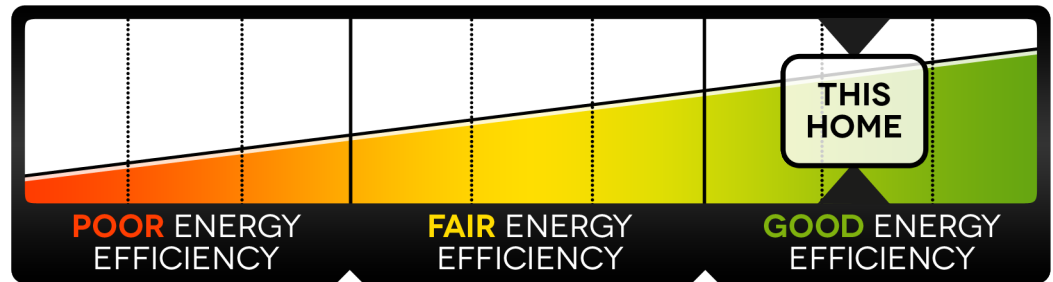


INTERNACHI HOME ENERGY INSPECTION

FOR 1750 30TH STREET



ESTIMATED YEARLY ENERGY COSTS: **\$1,491** PER YEAR

Dear Client,

This house has been scored on a scale of 1 to 100. A 100 would represent a home with perfect energy performance whereas a 1 would represent a home that needs significant energy upgrades. You can use this score to compare homes. A higher score generally means a lower energy bill and a more efficient home (with less of an environmental impact).

In order to generate your Home Energy Inspection Report, I conducted a brief walk-through of the home and collected about 45 data points related to energy.

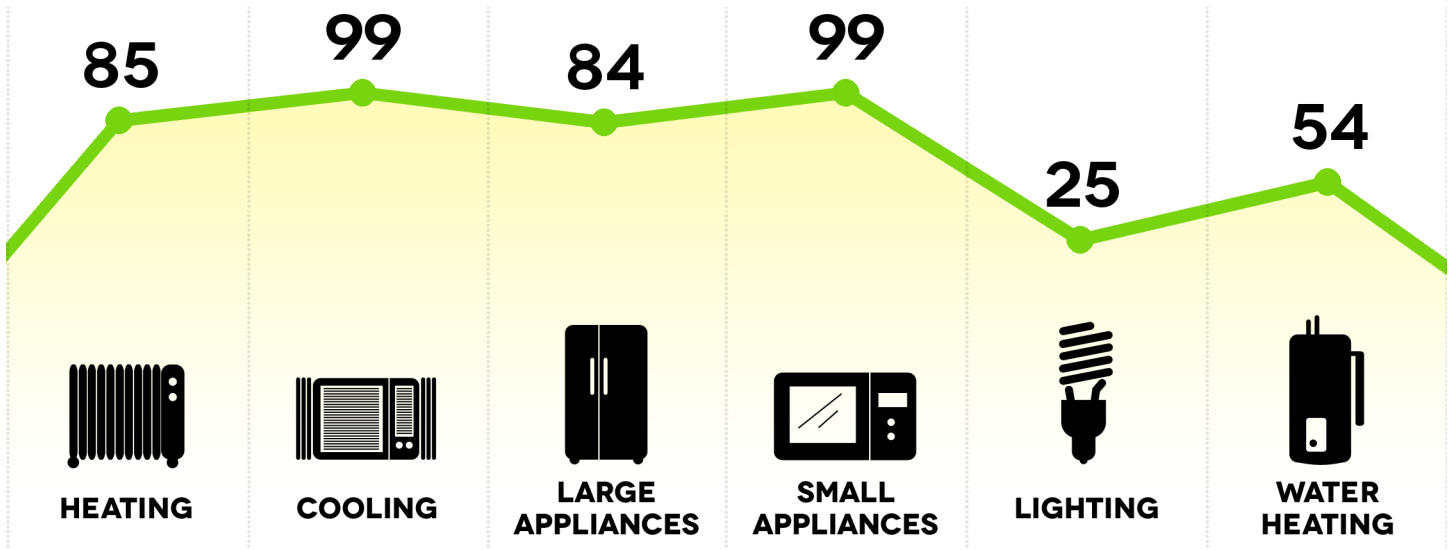
I then used an advanced energy calculator developed by the International Association of Certified Home Inspectors to:

- estimate the home's yearly energy usage,
- pinpoint potential energy inefficiencies,
- calculate a score based on these estimations, and
- develop recommendations for energy improvements.

On the following pages you will find information about the efficiency of major systems in the home, and recommendations for upgrades.

OVERVIEW OF MAJOR COMPONENTS

Along with scoring your home as a whole, we have calculated a score for each major component of the home. This information is helpful for determining the source of energy inefficiencies, and can help prioritize upgrades in the future.



ESTIMATIONS

We have also estimated the operating cost of each component and calculated the potential yearly savings from upgrading that component (recommendations included later in this report).

COMPONENT	ESTIMATED COST	AFTER UPGRADES	POTENTIAL SAVINGS
Heating	\$557	\$404	\$153
Cooling	\$62	\$62	\$0
Large Appliances	\$427	\$307	\$120
Small Appliances	\$132	\$132	\$0
Lighting	\$147	\$51	\$96
Water Heating	\$166	\$87	\$79
Total	\$1,491	\$1,043	\$448

DETAILED ENERGY USAGE

All calculations are based on detailed estimations of home energy usage. This table is particularly useful when pricing energy sources.

		CURRENT	AFTER UPGRADES	POTENTIAL SAVINGS	REDUCTION
Whole House	Energy Bill	\$1,491	\$1,043	\$448	30%
	Electricity	6,848 kWh	4,314 kWh	2,534 kWh	37%
	Natural Gas	812 Therms	618 Therms	194 Therms	24%
	Emissions	22,382 CO2	15,346 CO2	7,036 lb. CO2	31%
Heating	Energy Bill	\$557	\$404	\$153	28%
	Electricity	114 kWh	77 kWh	37 kWh	33%
	Natural Gas	559 Therms	406 Therms	153 Therms	27%
	Emissions	6,746 lb. CO2	4,887 lb. CO2	1,859 lb. CO2	28%
Cooling	Energy Bill	\$62	\$62	\$0	0%
	Electricity	606 kWh	606 kWh	0 kWh	0%
	Emissions	1,141 lb. CO2	1,141 lb. CO2	0 lb. CO2	0%
Hot Water	Energy Bill	\$166	\$87	\$79	48%
	Natural Gas	170 Therms	89 Therms	81 Therms	47.6%
	Emissions	1,986 lb. CO2	1,040 lb. CO2	946 lb. CO2	48%
Large Appliances	Energy Bill	\$427	\$307	\$120	28%
	Electricity	3,393 kWh	1,834 kWh	1,559 kWh	46%
	Natural Gas	83 Therms	123 Therms	-40 Therms	-48%
	Emissions	7,359 lb. CO2	4,894 lb. CO2	2,465 lb. CO2	34%
Small Appliances	Energy Bill	\$132	\$132	\$0	0%
	Electricity	1,290 kWh	1,290 kWh	0 kWh	0%
	Emissions	2,429 lb. CO2	2,429 lb. CO2	0 lb. CO2	0%
Lighting	Energy Bill	\$147	\$51	\$96	65%
	Electricity	1,445 kWh	507 kWh	938 kWh	65%
	Emissions	2,721 lb. CO2	955 lb. CO2	1,766 lb. CO2	65%

YEARLY HEATING AND COOLING RESULTS

	Total Cost
Cost	\$619
Heating	\$557
Cooling	\$62

	Total Energy
Energy Use	\$1279
Heating	\$673
Cooling	\$606

Notes: This house is 0% heated by wood fuel.
100% of the floor area is heated and 100% cooled.

Heating electricity values include fan or pumping energy for homes that have forced-air or water-based heating systems powered by circulation pumps.

YEARLY LARGE APPLIANCES AND WATER HEATING RESULTS

Appliance	Total Cost
First Refrigerator	\$109
Stove	\$37
Oven	\$24
Clothes Dryer	\$149
Clothes Washer	\$59
Dishwasher	\$49
Hot Water: Taps and Faucets	\$166
Totals	\$593

Equipment energy is the energy used by motors, heating elements, and burners inside your appliances. This number excludes the energy consumed by your water heater to supply hot water for appliances such as clothes washers and dishwashers (which is included instead in the rows for those appliances).

YEARLY SMALL APPLIANCES RESULTS

Appliance	Energy Use	Total Cost
Entertainment	345 kWh	\$35
Home Office	361 kWh	\$37
Miscellaneous Kitchen	464 kWh	\$47
Other Appliances	120 kWh	\$12

YEARLY LIGHTING RESULTS

Room	Energy Use	Energy Costs
All Bathrooms	101 kWh	\$10.3
All Bedrooms	34 kWh	\$3.47
Dining Room	120 kWh	\$12.24
Family Room	77 kWh	\$7.85
Garage	75 kWh	\$7.65
Hall	57 kWh	\$5.81
Kitchen	104 kWh	\$10.61
Living Room	91 kWh	\$9.28
Master Bedroom	34 kWh	\$3.47
Outdoor Lighting	120 kWh	\$12.24

DETAILED UPGRADE RECOMMENDATIONS

UPGRADE PACKAGE SUMMARY:

Estimate Yearly Bill Savings:	\$448
Estimated Lifetime Energy Savings:	\$5824
Estimated Added Cost:	\$232
Maximum Price for 10 Year Payback:	\$4173
Return on Investment:	32%
Upgrade Pays for Itself in:	3 year(s)

We recommend the following upgrades:

- When replacing your electric clothes dryer, switch to natural gas model
- Replace high use incandescent lamps with compact fluorescent lamps
- Install a programmable thermostat
- When replacing your gas water heater, choose an energy efficient model
- When replacing your clothes washer, choose an ENERGY STAR-labeled model
- When replacing your gas furnace, choose an ENERGY STAR-labeled model

WHEN REPLACING YOUR ELECTRIC CLOTHES DRYER, SWITCH TO NATURAL GAS MODEL

Economic Benefits:

Estimate Yearly Bill Savings:	\$87
Estimated Lifetime Energy Savings:	\$1131
Estimated Added Cost:	\$160
Maximum Price for 10 Year Payback:	\$870
Return on Investment:	54%
Upgrade Pays for Itself in:	2 year(s)

Additional Benefits:

Natural gas clothes dryers reduce your home's peak load on the power grid compared

to an electric dryer.

Upgrade Description:

When replacing your electric clothes dryer, select a natural gas model. In many situations, this will reduce your overall energy bill because natural gas tends to cost less than electricity, for the same heating value.

Note: Our calculations bill savings, typical upgrade costs, and cost-effectiveness are for a minimum-efficiency natural gas dryer model. The default upgrade cost provided here assumes that a natural gas connection is available at your clothes dryer. If this is not the case, be sure to include the cost of extending

Purchasing Tips:

- To use a gas dryer, your laundry room must have a gas hookup, with proper connections and safe venting of the gas's exhaust, in addition to an electrical outlet
- Look for a dryer with a moisture sensor, and use the dryness settings rather than timed drying.
- When replacing your clothes washer, choose a model with high-speed spin cycles. This feature removes more water from clothes, which reduces the energy and time required for drying.

More Information:

- [Laundry - Saving Money by Saving Energy \(https://www.nachi.org/energy-laundry.htm\)](https://www.nachi.org/energy-laundry.htm)

REPLACE HIGH USE INCANDESCENT LAMPS WITH COMPACT FLUORESCENT LAMPS

Economic Benefits:

Estimate Yearly Bill Savings:	\$52
Estimated Lifetime Energy Savings:	\$676
Estimated Added Cost:	\$88

Maximum Price for 10 Year Payback:	\$520
Return on Investment:	52%
Upgrade Pays for Itself in:	2 year(s)

Additional Benefits:

Fluorescent lamps last several times longer than ordinary incandescent bulbs, which saves you the time and expense of replacing bulbs when they burn out.

Upgrade Description:

Replace high-use incandescent lamps with compact fluorescent lamps. These units can save up to 75% of the energy used by an ordinary incandescent bulb.

Purchasing Tips:

- Compare the light output in Lumens of the bulb you are replacing to ensure you are using the appropriate CFL. Most CFLs list their light output and equivalent incandescent wattage on their package.
- CFLs are available in many shapes and sizes, which will allow replacing nearly any incandescent bulb.
- When buying new light fixtures, look for ENERGY STAR qualified models.
- CFLs are a good investment for lights that are used 2-3 hours per day on average or more.

More Information:

- [Energy Saving Tips: Lighting \(https://www.nachi.org/energy-lighting.htm\)](https://www.nachi.org/energy-lighting.htm)

INSTALL A PROGRAMMABLE THERMOSTAT

Economic Benefits:

Estimate Yearly Bill Savings:	\$86
Estimated Lifetime Energy Savings:	\$1118
Estimated Added Cost:	\$320

Maximum Price for 10 Year Payback:	\$860
Return on Investment:	26%
Upgrade Pays for Itself in:	4 year(s)

Additional Benefits:

Programmable thermostats can help keep your home more comfortable.

Upgrade Description:

Install an ENERGY STAR labeled programmable thermostat, and program it to change the temperature settings when you are away from home and at night. EPA estimates that ENERGY STAR-labeled programmable thermostats can save consumers 10-15% on heating and cooling bills when used properly. Note: Our calculations bill savings and cost-effectiveness assume that the heating-season set-point is decreased 4 degrees F during the day 9 am to 5 pm and at night 11 am to 7 pm, while the cooling-season set-point is increased 3 degrees F during those same periods. Larger set-point adjustments can provide additional bill savings.

Purchasing Tips:

- Some programmable thermostats have a "smart" feature designed to maximize energy savings. These thermostats continually monitor usage patterns in order to determine the best time to turn the system on in order to reach the desired temperature setting, while minimizing energy use.

More Information:

- [Programmable Thermostats \(https://www.nachi.org/energy-thermostats.htm\)](https://www.nachi.org/energy-thermostats.htm)

WHEN REPLACING YOUR GAS WATER HEATER, CHOOSE AN ENERGY EFFICIENT MODEL

Economic Benefits:

Estimate Yearly Bill Savings:	\$45
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Estimated Lifetime Energy Savings:	\$585
Estimated Added Cost:	\$170
Maximum Price for 10 Year Payback:	\$450
Return on Investment:	26%
Upgrade Pays for Itself in:	4 year(s)

Additional Benefits:

Efficient gas-fired water heaters may hold their temperature longer following power interruptions and operate more safely.

Upgrade Description:

When replacing your gas water heater, choose an energy-efficient model with an Energy Factor of 0.62 or higher.

Note: Our calculations bill savings, typical upgrade costs, and cost-effectiveness assume the efficient water heater has an energy factor of 0.62 and recovery efficiency of 0.76. Higher efficiency units are available, and would provide additional energy savings.

Purchasing Tips:

- The most important measure of efficiency for water heaters is the Energy Factor EF. The higher the EF, the more efficient the water heater.
- Purchase a water heater whose tank is internally insulated with at least R-16. [5](#)
- A water heater that is too large for your home not only has a higher purchase cost but will increase your energy costs due to excessive cycling and standby losses. The resources below provide good, simple guidance on proper sizing of water heaters. The size, or "capacity", of a fuel-fired water heater should be judged by its first hour rating FHR, not its tank size. Due to larger burners, some gas water heaters with smaller tanks actually have higher capacities FHRs than models with larger tanks.
- Many types of water heaters are now available, such as "demand" tankless, "indirect" or "integrated", and solar-assisted water heaters. [More Information](#)
- New and/or efficient gas water heaters may have different venting and flue requirements. When replacing your water heater make sure your contractor assesses your existing flue, follows new code requirements for venting water heaters, and obtains necessary permits and inspections. [3](#)

WHEN REPLACING YOUR CLOTHES WASHER, CHOOSE AN ENERGY STAR-LABELED MODEL

Economic Benefits:

Estimate Yearly Bill Savings:	\$46
Estimated Lifetime Energy Savings:	\$598
Estimated Added Cost:	\$180
Maximum Price for 10 Year Payback:	\$460
Return on Investment:	24%
Upgrade Pays for Itself in:	4 year(s)

Additional Benefits:

ENERGY STAR® clothes washers can reduce water use significantly, leave the clothes drier thus reducing drying time and energy consumption, and reduce wear and tear on clothes.

Upgrade Description:

When replacing your clothes washer, choose an ENERGY STAR-labeled model. ENERGY STAR clothes washers can reduce energy consumption by up to 70% and are available in top-loading and front-loading designs. Some ENERGY STAR models use up to 50% less water in addition to saving energy.

Note: Our calculations bill savings, typical upgrade costs, and cost-effectiveness are for a model with the lowest efficiency that qualifies for the ENERGY STAR label.

Purchasing Tips:

- Choose a clothes washer with high-speed spin cycles. This feature removes more water from clothes, which reduces the energy and time required for drying.
- Select a low water-use, high efficiency washer. Front-loading tumble-action washers can cut energy use by up to 70 percent, reduce water consumption significantly, and may actually get clothes cleaner. ¹
- Look for pre-soaking and/or "suds saver" options which conserve energy.
- Clothes washers come with [EnergyGuide](#) yellow and black labels. Use these labels to

select the most efficient model for the capacity you have chosen.

WHEN REPLACING YOUR GAS FURNACE, CHOOSE AN ENERGY STAR-LABELED MODEL

Economic Benefits:

Estimate Yearly Bill Savings:	\$79
Estimated Lifetime Energy Savings:	\$1027
Estimated Added Cost:	\$473
Maximum Price for 10 Year Payback:	\$790
Return on Investment:	15%
Upgrade Pays for Itself in:	6 year(s)

Additional Benefits:

ENERGY STAR® gas-fired furnaces make your home more comfortable. Some models are less prone to causing indoor air quality problems or house fires.

Upgrade Description:

When replacing your gas furnace, choose an ENERGY STAR-labeled model. These units can save 15% or more of your heating bill.

Note: Our calculations bill savings, typical upgrade costs, and cost-effectiveness are for a furnace with the lowest efficiency that qualifies for the ENERGY STAR label 90 AFUE. Higher efficiency models are available, which can provide additional bill savings.

Purchasing Tips:

- Buy the right size of furnace for your needs. If you have upgraded your home's insulation or windows since your last furnace was installed, you may be able to down-size your furnace i.e., buy a smaller-capacity furnace which can reduce the cost. If you buy a furnace that is too big for your home's needs, it will have short cycle times and reduced efficiency as a result. A furnace that is properly sized costs less to operate. Be sure to have your contractor perform a heat-loss, heat-gain calculation,

and do not rely on rule-of-thumb sizing estimates, which are often inaccurate. ³

- If you live in a large house, consider purchasing one of the higher efficiency furnaces that come with two-stage burners. These burners allow the furnace to operate at lower burn rates using less fuel when the home's heating demand is low. When the heating demand is higher, the second stage burner is employed. The additional savings from this feature may well be worth the cost if you live in a large home. ³
- New and/or efficient furnaces often have different venting and flue requirements. When replacing your furnace make sure your contractor assesses your existing flue, follows new code requirements for venting furnaces, and obtains necessary permits and inspections. ³
- All new furnaces are labeled with their Annual Fuel Utilization Efficiency AFUE. The higher the AFUE, the more efficient the unit.
- Consider selecting a furnace with an electronically commutated, or ECM, blower motor. ECM motors are considerably more efficient than standard motors. Consider this feature especially if you run your furnace fan all year long for such things as comfort or air cleaning. A furnace fan with an ECM motor could cut the cost of running the furnace fan by a factor of 5. ³
- If your duct system has leaks or disconnected portions, you will not reap the full energy savings you could get from a high efficiency furnace. Consider having your heating contractor check the entire length of your ductwork for leaks and seal any leaks with mastic-type sealant, not duct tape. It's now possible for a contractor to perform verified duct sealing by using a special fan to test duct system leakage before and after sealing. Also have the contractor check for and repair disconnected ducts - a common problem. Insulate any ducts in unheated spaces to at least R-6.
- If you don't already have one, consider purchasing a programmable thermostat and having your contractor install it along with your new furnace.



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