

ENERGY ANALYSIS REPORT

Energy Performance Score

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► Annual Estimated Energy Use and Fuel Costs

	Current Home			After Upgrades		
	Energy	Fuel Cost*	Carbon	Energy	Fuel Cost*	Carbon
Heating	650 therms	\$910.00	7,565 lbs.	488 therms	\$683.00	5,680 lbs.
Cooling	0 kWh	\$0.00	0 lbs.	0 kWh	\$0.00	0 lbs.
Water Heating	2,907 kWh	\$238.00	4,078 lbs.	2,907 therms	\$238.00	4,078 lbs.
Lighting & Appliances	5,994 kWh	\$492.00	8,409 lbs.	5,103 kWh	\$419.00	7,179lbs.
Total (Rounded-off)	27,900 kWh	\$1,640.00	20,100 lbs.	22,300 kWh	\$1,340.00	16,900 lbs.

*Fuel costs are based on prices at the time the EPS is issued and do not include taxes and surcharges.

► Comparing Your Utility Bills with the EPS Score

You can determine how your household's energy use compares to the estimated average use for your home by comparing the energy totals on your utility bills with the EPS.

If the totals from your utility bills are

- **similar** to the EPS, you are using an average amount of energy for your home.
- **higher** than the EPS, you are using more energy than average for your home. Reasons for this may include housing more people than average in the home, using appliances more than average, or behaviors that use more hot water, electricity, and heating than average. There may be no- and low-cost ways that you can use to save energy.

- **lower** than the EPS, you are using less energy than average for your home. Reasons for this may include housing fewer people than average in the home, using appliances less than average, or behaviors that use less hot water, electricity, or heating than average.

To calculate your actual energy use, you will need to know the amount of energy that you used for each fuel type in your home for a full year. This information is available on your utility bills. You can visit the EPS Web site to use the online calculator, or calculate the amount manually using the formulas on the back of the EPS score sheet.

► Summary of Energy Performance Related Elements

Element	Description	Current Performance Poor • Average • Good
Air Leakage How tight your home is against air leaks.		
Ceiling & Attic The amount of insulation above the ceiling or in the roof.		
Walls The amount of insulation inside the walls.		
Floors The amount of insulation below the floors.		
Windows The insulation value and tightness of the windows.		
Heating How efficient is the heating system.		
Cooling How efficient is the cooling system.		
Ducts How well sealed and insulated are the ducts.		
Water Heating How efficient and insulated is the hot water system.		
Lights and Appliances How efficient are the lighting and appliances.		
Notes		

► Recommended Energy Upgrades

These recommended upgrades will improve the energy performance of this home. The cost for the upgrades will vary with the size and complexity of the home and the scope of work required. The Approximate Annual Savings are based on the estimated energy reductions with each upgrade.

	Typical Cost Range	Approximate Annual Savings
Lower-Cost Upgrades (under \$1,000)		
Air Sealing		
Attic/Ceiling Insulation		
Duct Sealing		
Duct Insulation (in unconditioned space)		
Appliances		
Other		
Higher-Cost Upgrades (over \$1,000)		
Heating System Upgrade		
Cooling System Upgrade		
Water Heater Upgrade		
Solar Water Heater		
Wall Insulation		
Other		
Additional Upgrades These upgrades have a considerably longer financial payback than those listed above.		
Windows		
Solar PV		

► Energy Upgrade Descriptions

Lower-Cost Upgrades

Air Sealing Air sealing is one of the most cost-effective energy upgrades you can make and should be done before installing insulation. Cold air can infiltrate small cracks and openings during the winter, while hot outdoor air can overheat your home in the summer resulting in drafts, moisture, and indoor air quality issues.

There are many types of air leaks and many strategies for sealing them. You can undertake this work yourself or hire a contractor who can use a blower door to identify and measure the effectiveness of various air sealing measures.

After your home is sealed, it is important to make sure that there is adequate ventilation to maintain proper indoor air quality and to prevent back drafting of combustion appliances. A certified EPS auditor or qualified professional will identify any potential problems due to insufficient ventilation.

Ceiling & Attic Insulation Attic or ceiling insulation is one of the most cost-effective upgrades you can make and should be done after air sealing in the attic. Attic or ceiling insulation slows heat loss through the roof in the winter and also slows heat gain through the roof in the summer. The insulation is usually installed on the floor of an unfinished attic (the ceiling of the finished room below) and under the roof if the attic space is finished.

Insulation is measured with an R-value, and the higher the R-value, the more effective the insulation value. Insulation is made of different materials and comes in several forms: batts, loose-fill or blown-in, foam, and rigid. Each type of insulation varies in terms of advantages, applications, and pricing.

Duct Sealing and Insulation Heating and cooling duct work that leaks into unconditioned space can be a major source of energy loss. Sealing and insulating your ducts helps to save energy by more effectively directing the heat or cooling to desired locations. Insulating ducts in semi-conditioned spaces such as basements may or may not be necessary depending on the circumstances.

Ducts should be sealed before insulating.

Appliances Older appliances can use significantly more energy than newer, energy efficient appliances. Look for ENERGY STAR refrigerators, freezers, dishwashers, clothes washers, and air conditioners. Even within ENERGY STAR there are more and less efficient models and you should look for the most efficient appliance that fits your budget and needs. If you consider the full life cycle costs, more efficient appliances often make up for any difference in price within a few years of operation.

Higher-Cost Upgrades

Heating System Upgrade Older, poorly maintained, and less efficient furnaces and heat pumps use more energy than newer, high-efficiency models. You may achieve energy savings by upgrading your system. Additionally, you should have your existing system periodically inspected to identify potential problems and extend the life of your system.

When upgrading a heating system, you should also have any connected duct system inspected for air leaks and appropriate upgrades.

Water Heater Upgrade The life cycle of water heaters is approximately 12-15 years. If your water heater is older, consider replacing it with a newer, more efficient one. All new tank water heaters have a built-in insulation layer to conserve energy. Solar water heating may also be an option: it can provide as much as 75% of your hot water needs and offers significant savings over time.

Solar Water Heater Installing a solar water heater on a roof that receives adequate sunlight can be a relatively cost-effective means of reducing your energy costs over the long term. These systems can preheat the water going to your hot water heater and significantly reduce, and at times eliminate, the need for additional water heating.

Wall Insulation Insulating walls will help you to keep heat inside your home during the winter and slow heat gain into your home during the summer. Retrofitting walls with insulation is generally more work and more costly than insulating an attic ceiling or a floor. Walls may be

insulated from the outside or inside and this is more easily accomplished during remodeling work which involves removal of or painting either of these surfaces.

More Energy and Carbon Savings

Windows Older windows can be responsible for draughts and heat loss in winter and heat gain in summer. They can significantly impact your comfort and energy use for heating and cooling. Storm windows can help eliminate some of

these issues. High efficiency, double paned, low-e, argon-filled windows with insulated frames can help save energy and make rooms more comfortable and quieter.

Solar Electric Panels Solar electric panels, also called photovoltaic (PV) panels, are an option for homeowners who would like to produce their own electricity from the sun. There are many resources available to determine whether this is a viable option for this home and what financial incentives are available.

► No- and Low-Cost Energy-Saving Strategies

No-Cost Strategies

In addition to the energy upgrades that you make to your home, here are steps that you can take to lower your energy use and bills.

Heating & Cooling

Turn down the heat. A good energy-saving setting when you are at home is 67-68 degrees and 55 degrees at night or when you are away. Each degree you lower your thermostat saves an estimated 2 percent on your heating bill. In summer, turn off you heating system or raise the thermostat setting to save on air conditioning.

Higher heat is not faster heat. Turning the thermostat higher will not warm your house faster; it just wastes energy. Lowering the air conditioning setting won't cool your house faster either.

Capture free solar heat. On cooler days, open curtains to catch the heat from the sun and warm your home.

Block the sun in hot weather. To keep your home cool, adjust window coverings to block the sun's hot summer rays. In the evening, open windows to catch cool breezes. Be sure attic vents and soffit vents are not blocked since this will allow hot air to escape your attic.

Water Heating

Lower your water heater thermostat to 120 degrees, or the lowest setting that is acceptable to you for bathing and dishwashing.

Wash laundry in cold water whenever possible. Ninety percent of energy used for washing laundry goes toward heating water. Only run the washer when you have a full load.

Use the dishwasher energy-saver mode and run the dishwasher only when it is full.

Don't let the hot water run while shaving or washing dishes.

Turn off hot water during vacations. Turn your water electric heater off at the breaker panel if you are leaving town for more than a couple of days. But don't do this during freezing weather. If you have a natural gas water heater, turn it to the "low" or "vacation" setting, but do not turn it off.

Generally

Eliminate Phantom Loads. Many home electronics such as computers, televisions, and battery chargers use energy when not in use or turned off. By unplugging these or plugging them into a power strip that can be turned off, you can ensure that no power is being used when these items are not in use.

Hang your clothes outside to dry whenever possible to reduce the use of your energy-intensive electric or gas dryer.

Close your fireplace damper when your fireplace is not in use (but first allow the fireplace to cool completely). If you have fireplace doors, keep them closed.

Low-Cost Strategies

Use a programmable thermostat. Older, manual thermostats are often not as accurate as new electronic models, and they require that you manually set them back each night. Some programmable thermostats have smart features such as preprogrammed “night” and “vacation” energy-saving settings that lower the temperature automatically. Different heating systems require different thermostats. Check the owner’s manual to be sure that your thermostat and heating system work effectively together.

Eliminate unnecessary lights and replace incandescent bulbs with energy-saving compact fluorescents (CFLs) or LED lights. You can save at least 75% of the energy used for lighting. CFLs that emit a warm color similar to incandescent bulbs (soft white color) and that turn on more quickly are now available. It is important to handle and recycle broken and burned out CFLs appropriately as they contain small amounts of mercury. Motion detectors, occupancy sensors, and timers can eliminate unnecessary lighting outside and in infrequently used rooms.

Install high-efficiency showerheads and faucet aerators.

New showerheads are required to meet a 2.5 gallon per

minute standard; the lower the number, the more you will save. If you have a pre-1992 showerhead, it could be using 5.5 gallons of water per minute or more. Look for low-flow aerators of 2.5 gallons or less to fit bathroom and kitchen faucets.

Put bathroom ventilation fans on a timer or on a humidity sensor which will automatically switch off the fan when the room is dry.

Use air movement to cool people during hot days. When it’s warm, use natural ventilation or window and ceiling fans to keep cool. Remember that fans cool people, not rooms. If these are insufficient, consider installing a whole house fan which will vent warm air from the home and pull in cooler outside air throughout the house at night.

Plant trees, bushes, and trellises that block unwanted sun in the winter. Strategically located plants on the east, west, and south sides of a house can provide natural cooling through shade. Deciduous plants will shade in summer and allow more light in winter. Plants can also form windbreaks to protect your home from winter winds. Be sure to plant away from the house so you do not trap moisture against the building.

► Financial Incentives See web site for more sources of financial assistance.

Energy Trust of Oregon Incentives Energy Trust of Oregon, Inc. is a nonprofit that provides the customers of Portland General Electric, Pacific Power, NW Natural, and Cascade Natural Gas with energy conservation information, assistance, and financial incentives. Incentives information includes those offered through Energy Trust, the state of Oregon tax credits, and ENERGY STAR. Energy Trust maintains a list of trade ally contractors who perform an array of energy efficiency work. Visit the Energy Trust Web site to learn about available resources related to energy upgrades. 1-866-368-7878 or www.energytrust.org/

State of Oregon Tax Credits and Loans You may qualify for Oregon Residential Energy Tax Credits on your personal income tax when you purchase qualifying energy efficient technology www.oregon.gov/ENERGY/CONS/RES/RETC.shtml

You can also learn about low interest loans. 1-800-221-8035 or www.oregon.gov/ENERGY/LOANS/selphm.shtml

Federal Tax Credits Home improvement tax credits are now available for home improvements placed in service from January 1, 2009, through December 31, 2009. Also available are tax credits for qualified solar water heating and photovoltaic systems placed in service from January 1, 2006, through December 31, 2016. www.energystar.gov/index.cfm?c=products.pr_tax_credits#s2