

# ENERGY EFFICIENCY

## Spring/Summer Guide

### Inside:

- Answers to Questions Customers Ask
- Saving Energy 101: You Can Do This!
- The Best Value for Your Dollar
- Smart Thermostats
- Checklist for Homebuyers
- For Sale or Rent: A Comfortable, Efficient Home
- Tap Into Savings
- The ABCs of Water Heaters
- Pyramid of Savings





# Questions Customers Ask

Theresa Drake, Senior Manager of Customer Relations and Energy Efficiency

**"Many of you contact Idaho Power about your bills, our services and how to save energy at home. Here are some answers to questions that may be on your mind during this unusually challenging time."**

**Q: With my children home, we're all spending more time in the house than usual. How can I keep my energy use in check?**

**A:** Saving energy is easier (and more fun) when you do it together. Here are some easy changes the whole family can make:

- Decide what you want before you open the refrigerator.
- Open curtains and use daylight when possible.
- Turn off lights, TVs, computers and other electronics when not in use.
- Fire up the grill, try a new salad recipe or master a microwave entrée.
- Take short showers instead of long baths.
- Wash full loads of dishes and laundry — and line dry clothes.
- Spend time away from electronics. Read a book, take a bicycle ride with your family or create some art.
- Use a sink stopper when washing dishes by hand.

Make saving energy a game. See who can find the most places where electricity is being wasted in your home and who can make the most changes using the tips above. Reward the winner with a prize!

**"At this time and throughout the year, we encourage everyone to stay healthy and safe. We hope the tips and information in this guide and on our website will help you meet your energy-savings goals."**

**Q: I'm concerned about my finances. What can I do to keep my bills down as we head into summer?**

**A:** Warm weather makes it easy to get into attics and crawl spaces, so take advantage of this. Here are some inexpensive options that will help:

- Open crawl-space vents now **and** make a note on your calendar to close them in October.
- Change the filter in your air handler and clean the debris on and around your outdoor A/C unit.
- Replace any remaining incandescent bulbs with LEDs.
- Weatherstrip and caulk to minimize air leaks.
- Reverse your ceiling fans so they blow air down into the room.
- Repair leaky faucets
- Set your water heater temp. to 120° F.
- Get your summer wardrobe ready to maximize your comfort without cranking up the A/C.
- When things return to normal, ask a contractor to check your home's insulation levels. Evaluations are usually free.

## Saving Energy 101: You can do this!



You've decided it's time to save energy — but where do you start? It's easy to feel overwhelmed.

**Start by looking at the lighting in your house.** Which lights do you use the most?

Replace your five most-used light bulbs with LEDs — it's super easy and takes little time. Plus, you won't have to worry about changing light bulbs for a long, long time. Keeping the bulbs clean is also a simple tip — dust can cut light output by as much as 25%.

**Next, look at your heating and cooling.**

Can you adjust the temperature up a few degrees in the summer or down in the winter? Programmable or smart thermostats can make this easy — especially at night or when you are away from home.

**Smaller appliances use less energy,** so think about using your pressure cooker, crock pot or microwave when making meals. Match the size of your cooking pans to the size of the surface unit on your stove so you won't waste heat. When you do use your oven, bake multiple items.

**What about your bathroom?** Showers generally use less hot water than baths. Most folks like to warm up the shower before stepping in. Try to keep warming time to a minimum, or use a thermostatic shower valve to reduce the water to a trickle until it's ready.

**Use the power-save settings and a smart power strip** when setting up a TV, cable box, gaming console or computer system.





# The Best Value for Your Dollar

Many factors weigh into home-improvement decisions, including changing lifestyles, comfort, appearance and money.

You may be surprised, however, to find some small and modest upgrades to your home can provide more energy savings than other, more costly improvements. Compare your home's features to those in the chart below to find out where to invest your dollars to get the biggest bang for your buck.



## Elements of an Energy-smart Home

Cost of the upgrade

Features are listed in priority order based on expected energy savings

No Low Med Med-hi High

ENERGY SAVINGS Higher Lower	Minimum insulation levels: attic R-49, walls R-19, floors above crawl space R-30*					
	HVAC systems that meet current ENERGY STAR® standard					
	Ducts insulated, sealed with mastic, free of kinks and appropriately secured					
	Minimal air leakage (openings in walls, floors and ceilings weather stripped and sealed)					
	Water heater temperature at 120° F					
	Functional exhaust fans					
	High-efficiency Water Sense showerheads					
	LED light bulbs and fixtures throughout					
	ENERGY STAR appliances and electronics with powersave settings enabled					
	Programmable or smart thermostat with ENERGY STAR recommended set points (heat pumps need a heat pump thermostat)					
	Timers installed on block heaters, stock tank heaters, landscape pumps and lighting					
	Windows with a U-Factor of .30 or less					
	Insulated exterior doors					

## Smart Thermostats

Smart thermostats have many features not found in older thermostats, such as occupancy sensing, which adjusts the room's temperature when it senses no one is home. Some models have geo-fencing: the thermostat monitors your distance from home through your smart phone. At a pre-determined distance, your system will turn on. This feature can take the place of having to program a daily temperature schedule. You can even adjust your thermostat remotely using a phone app. These thermostats help put you in control of the energy use and operating costs of your heating and cooling system.

**Idaho Power offers a \$75 cash incentive when you install an internet-enabled smart thermostat in a home with an electric furnace or heat pump.**



**Did you know?**

Each appliance you buy has two price tags — the price you pay at the store and the price you pay to operate it. To save more, buy the most efficient ENERGY STAR® appliance you can afford. It often costs less over the long run even if it costs a bit more upfront.



\*Most contractors will assess your insulation levels for free. We recommend getting three bids if work needs to be done.



# Checklist for Home Buyers

- ✓ **Is the homeowner willing to share the home's energy bill history?**
- ✓ **When was the home built?** In 1991, energy efficiency standards were added to building codes; however, they've become more stringent since then.
- ✓ **Are exterior walls 2x6 construction?** More insulation increases comfort and lowers heating and cooling costs. 2x6 walls are generally insulated to R-19, whereas 2x4 walls are typically R-13.
- ✓ **Do you see signs of spiders or critter-entry?** If so, there may be gaps and air leaks that need to be plugged.
- ✓ **Is there evidence of routine home maintenance,** i.e., is the furnace filter clean and free of debris?
- ✓ **Are windows double-pane with non-metal frames?** Signs of moisture damage point to broken seals or inadequate ventilation.
- ✓ **What direction do windows face?** South provides needed winter warmth — west adds unwanted summer heat.
- ✓ **Will you be able to rely on natural light during the day?** How many light bulbs are there? An average home in Idaho has 63 bulb sockets.
- ✓ **Did you check the efficiency ratings on the furnace and water heater?** (a sticker required by law)
- ✓ **Are there shade trees on the west/northwest and east** to help reduce summer heat gain? Is the southern exposure fully open to the winter sun's warming rays?



# For Sale or Rent: A Comfortable, Efficient Home

Whether you are considering the purchase of a new home, trying to sell an existing home, or just looking to make the home or apartment you're in more comfortable and attractive, consider adding an energy efficiency lens to the project. When you do, you'll have a better chance of maximizing your comfort, minimizing future energy use and increasing market appeal.

## In the Market to Buy?

### Building or Buying a New Home

One of the easiest ways to ensure you are getting an all-electric, energy-efficient home is to work with a builder who constructs Idaho Power Residential New Construction Program certified homes. These homes are inspected and tested by a certified third-party energy rater throughout construction and meet strict requirements that make them at least 10% more efficient than homes built to Idaho's standard energy code.

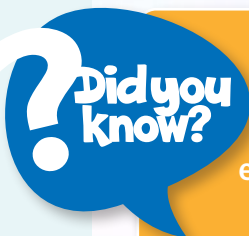
### Purchasing an Existing Home

Be a savvy consumer and get more detail to inform your purchase decision. Ask your home inspector to point out trouble areas or efficiency opportunities. He can specify the attic insulation levels and pay special attention to ductwork, air sealing and insulation.

## In the Market to Sell?

If this is your year to sell, you should know many home buyers are keyed into energy use as an important feature for comfort and long-term savings. If your home is energy efficient and you have comparatively low energy bills given your home's size and occupancy, consider sharing your bill history and highlighting this benefit for prospective buyers.

Being transparent and forthcoming with your home's energy use and your efforts to improve its performance will increase buyer confidence and ensure energy efficiency is weighed appropriately in the sales price.



You can earn cash back from Idaho Power when you purchase a new electrically heated ENERGY STAR® certified manufactured home.



## Renting?



Almost all renters pay their own energy bills, but few have options relating to the efficiency and quality of the heating and cooling systems, appliances and windows in their rental. Even so, there are many steps renters can take to save.

### Before Signing a Lease

- Ask about the energy use. What are typical summer/winter bills? How old are the appliances? Are the windows double-pane? Is there a programmable thermostat?
- Ask to see the HVAC system: is it clean and does it appear to be well maintained? Older systems (10–15+ years old) are less efficient and cost more to operate.
- Which direction does the apartment face? An apartment facing west or east may experience higher temperatures, resulting in higher summer energy bills.

### Once You're Settled In

- Set your refrigerator to 38–40° F and your freezer to 0–5° F.
- Program your thermostat, or manually dial it up a few degrees at night or while you are away to save on A/C costs.
- Lower your water heater temperature to 120° F.

### Take It with You

- Invest in LED light bulbs.
- Use smart power strips — especially on TVs, game consoles and computer systems.
- Installing high-efficiency showerheads and aerators is also an easy way to cut water-heating bills.
- Consider replacing your non-programmable thermostat with a smart or learning thermostat that will detect your patterns and program itself.

## Remodeling?

Many remodeling jobs offer opportunities to see what's behind the walls and reduce the cost of energy efficiency upgrades by coupling them with the remodel. When you're in the midst of the mess and anxious for a speedy completion, it's easy to skip these opportunities. Don't do it, or you may miss a chance to improve comfort and increase your home's value at minimal cost. When you consider air sealing, increased insulation and fixture upgrades during the planning process, you can make them happen without delaying other aspects of the job.



## INVESTING IN ENERGY EFFICIENCY

# How Do I Know What My House Needs?

We asked weatherization contractors and other local energy efficiency experts to give us their prioritized recommendations for homes of various ages. Here's what they told us:

### PRE-1970 HOMES



- ✓ Add insulation in this order: attic, walls, floors
- ✓ Seal and insulate ductwork
- ✓ Seal air leaks and duct chases as you insulate
- ✓ Upgrade to an efficient heat source
- ✓ Replace single-pane windows and uninsulated exterior doors

### 70s AND 80s HOMES

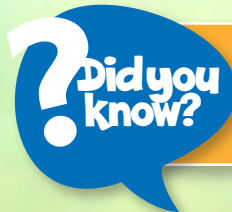


- ✓ Seal and insulate ductwork
- ✓ Add insulation in this order: attic, floors
- ✓ Seal air leaks and duct chases as you insulate
- ✓ Consider upgrading the heat source to a high-efficiency system
- ✓ Replace aging appliances
- ✓ Ensure exhaust fans work

### 90s AND BEYOND



- ✓ Consider replacing single-pane or metal-frame windows
- ✓ Seal ducts, boots and plenums
- ✓ Seal air leaks and duct chases
- ✓ Check quality of insulation installation
- ✓ Add floor insulation
- ✓ Check HVAC equipment for correct sizing



Energy costs per square foot in rented apartments can run 76% higher than in owner-occupied, single-family homes.\*

\*September 2014 issue of Building Research & Information.





# Tap into Savings

Any time you heat water, it takes energy. To find ways to save, consider the efficiency of the water heater, the system that moves water to where you need it and the end appliance (i.e., dishwasher, clothes washer or showerhead).

## Water Heater

### Set the right temperature for you

It's common to find factory settings of 140° F. Use a thermometer to check the temperature at the faucet farthest from the water heater. If it's higher than 120° F, refer to the owner's manual or check online for instructions about how to adjust the dial. Check the temperature again when you're done. In addition to saving energy, you'll increase the life of the water heater and reduce the risk of scalding.

### Insulate your tank and pipes

If your tank is in the garage or an unheated basement, you may want to insulate it with a water heater blanket purchased from a local hardware store. Insulating the first 3–6 feet of the hot- and cold-water supply pipes with pipe wrap is also a good idea.

### Perform maintenance

Over time, sediment from water can reduce efficiency. To help avoid this problem, flush a quart of water from the system periodically. Go online or refer to your owner's manual to learn more about regular maintenance.

### Know when it's time to buy

On average, water heaters last about 13–15 years. If your tank is getting old, think about making a planned replacement instead of waiting until it fails. When it's urgent, you may be tempted to go for the quick fix rather than the best, long-term choice.

## Water Use

### Faucets

Save large amounts of hot water with little cost when you install WaterSense showerheads, faucets and faucet aerators. New high-efficiency showerheads use as little as 1.5–2 gallons per minute (gpm) without compromising water pressure. Some older faucets use up to 5.5 gpm, so the savings could be significant.

### Drips and Leaks

Find and fix them. A dripping hot water faucet or shower costs you more than you may think. Cold water leaks can be expensive, too, when they keep a well pump running.

### Laundry

To reduce costs, wash only full loads of laundry in warm or cool water. Read your detergent label to make sure it works with cool water — most do. Always rinse with cold water.

### Dishes

An energy-efficient dishwasher may use less energy than washing by hand when you operate it with full loads and avoid using the heat/dry cycle.



**Did you know?**

Roughly one-third of all water heater purchases are emergency replacements. As a result, many consumers don't research the available options like they would with other major purchases.

## Cool Facts

**64**  
GALLONS

The amount of water used by the average U.S. household EACH DAY!

**\$400–600**

The amount of money the average household spends on water heating EACH YEAR.

**200**  
GALLONS

The amount of water a leaky toilet can waste per day. That would be like flushing your toilet more than 50 times!

**5 million**

The number of homes that could be powered for a year with the electricity used to treat, pump and heat water in the U.S.

Sources: [energy.gov/energysaver](http://energy.gov/energysaver), [energystar.gov](http://energystar.gov) and [epa.gov](http://epa.gov)

**Quick Tip!**

Lower your water heater temperature to 120° F without worry. Dishwashers now have on-board boosters to ensure the water is hot enough to clean your dishes.

**Did you know?**

It costs about 10 times more to wash/rinse a load of laundry using hot water than to wash/rinse in cold water?



# the ABCs of Water Heaters

With a typical life span of 10–15 years, a water heater is one of your home’s most-used but rarely seen appliances. Tucked away in a closet or the basement, it gets little or no attention until it breaks down. Exploring options before your water heater fails will help you find one that meets your needs and saves you money. You should consider efficiency, type, size, fuel source and cost.

**A. Tank water heaters** are the most common type of water heater. They can be less expensive, easier to install, and fueled by either electricity or gas. An electric water heater typically heats a tank of water using heating elements. The electric design is simple; however, the technology is somewhat inefficient when compared to electric heat pump tank water heaters. With a gas water heater there is a condensing type that is more efficient than the non-condensing type.

**B. Heat pump water heaters\*** also have a tank but use electricity and a compressor system to absorb heat from the surrounding air and transfer it into the tank to heat the water. They are about twice as efficient as those with heating elements. When they run, they remove heat from the house while exhausting cool air into the space —

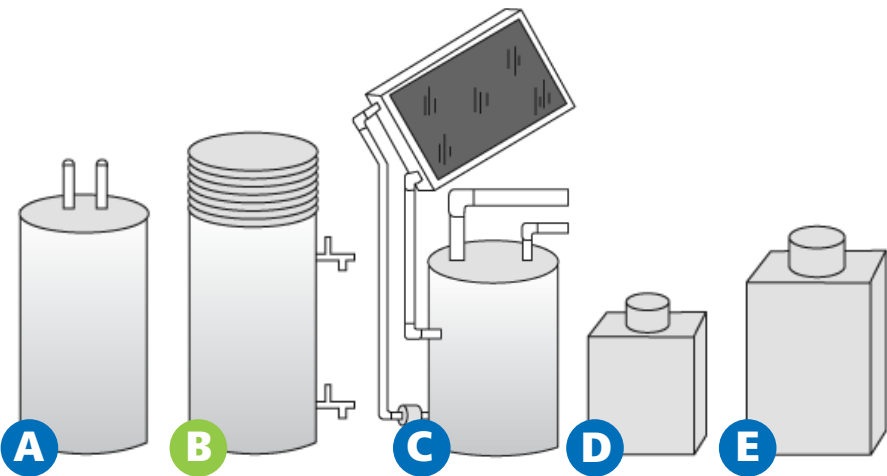
a summer benefit. In winter an optional duct kit can exhaust the cool air to the outside while also drawing in intake air.

**C. Solar thermal tank water heating systems** use the sun to pre-heat water in a storage tank. They have higher upfront costs, are more complex to install and usually need a backup heat source, such as electric elements, to work well. They can be a good long-term investment if your household uses a lot of hot water and you can afford the higher upfront costs.

**D. Tankless or on-demand systems** are placed near where the water is needed. Water is heated “on demand,” avoiding standby losses like you have with a tank water heater. When fueled by gas, they can provide a constant supply of hot water, but only up to a certain flow rate. Because of this, they may have trouble supplying enough hot

water for many activities at once if they are not sized correctly. You may need multiple units for high use. Although on-demand systems can be fueled by electricity, Idaho Power does not recommend them. They often require so much electricity (up to 36 kW) they can overload the transformer serving the home as well as surrounding homes. For this reason, the rules governing residential electrical service in Idaho specify a 6-kW limitation for a single water heater.

**E. Gas hybrid** water heaters are self-contained cabinets with a gas burner and a small water storage tank, usually a few gallons. They heat the water tank to temperatures higher than the levels normally used at the faucet. Therefore, they have tempering mixing valves in the cabinet that mix the cold water with the hot water, bringing the supply water down to a safe level as it leaves the cabinet.



## Picking a Water Heater

This chart shows the pros and cons for the main types of water heaters. Depending on your use, paying more upfront to improve efficiency can save over the long-run.

WATER HEATER TYPE	COST	INSTALLATION	EFFICIENCY	OF NOTE
<b>Standard Tank</b> (gas or electric element)	\$	Simple	😊	Will cost more to operate.
<b>Efficient Tank</b> (electric or gas element)	\$ \$	Simple	😊😊	A little more upfront will save money in operating costs.
<b>Heat Pump Tank*</b> (most efficient electric)	\$ \$ \$ \$	Involved	😊😊😊😊	Idaho Power offers an incentive.
<b>Solar Thermal</b> (w/backup)	\$ \$ \$ \$ \$	Complex	😊😊😊😊😊	Uses roof mounted panels and may need backup system.
<b>Tankless</b> (gas)	\$ \$ \$ \$	Involved	😊😊😊	Sizing is critical. You may need multiple units.
<b>Gas Hybrid</b>	\$ \$	Involved	😊😊	Compact size. Less standby losses.

\*Idaho Power offers an incentive for heat pump water heaters, learn more at [idahopower.com/heatingcooling](http://idahopower.com/heatingcooling).

# Pyramid of Savings



## Where Do I Begin?

If you want to save energy but don't know where to begin, start at the base of the pyramid and work your way up. Items at the bottom are simpler and cost less. Items at the top require more money and/or time.



Idaho Power has tips, programs and incentives related to many of these opportunities. Your path to success starts today at [idahopower.com/save](https://idahopower.com/save).