

U.S. Environmental Protection Agency

CONSUMER MESSAGING GUIDE FOR ENERGY STAR® CERTIFIED APPLIANCES



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PURPOSE OF THIS GUIDE

The U.S. Environmental Protection Agency (EPA) recognizes the importance of your partnership to the success of the ENERGY STAR program. This guide provides the latest program details for partners' use in their promotion of ENERGY STAR certified appliances. Included are energy savings facts, tips for consumers and other information that will help you communicate effectively about your partnership with ENERGY STAR and what ENERGY STAR appliances offer.¹ The goal is to make it easy for partners to help consumers save money and protect the environment. All of us have the power to make a change for the better if we work together.

USE THIS GUIDE TO:

- Enhance your website content
- Develop point-of-purchase materials
- Launch a promotional campaign

ENERGY STAR is a widely recognized and trusted label on products that meet strict energy-efficiency requirements set by the EPA. ENERGY STAR products are third-party certified and subject to ongoing verification.

Products that have earned the ENERGY STAR help consumers save energy and money without sacrificing performance. By using less energy, these products also help reduce greenhouse gas emissions that contribute to climate change.

Today, the ENERGY STAR label can be found on more than 75 different kinds of products found in our homes and workplaces including lighting, appliances, office equipment, consumer electronics, and heating and cooling equipment. Energy-efficient new and renovated homes as well as schools, government buildings, and commercial and industrial buildings also can earn the ENERGY STAR. Learn more at www.energystar.gov.

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¹ Partners are free to use any of the charts, facts, and other information from this guide in promotional materials. However, EPA must approve any major educational or promotional campaigns that feature the ENERGY STAR name, mark or messaging prior to the final production. Please contact your ENERGY STAR representative with any questions.

ENERGY STAR CERTIFIED APPLIANCES

Every appliance comes with two price tags: the purchase price and the cost of operating the product. ENERGY STAR certified appliances help consumers save money on operating costs by reducing energy use without sacrificing performance.

Approximately 65% of U.S. electricity comes from burning fossil fuels, which releases greenhouse gases into the atmosphere and contributes to climate change.² ENERGY STAR certified appliances meet strict energy efficiency specifications set by EPA and use less energy, which helps to reduce environmental impact.

QUICK FACTS:

If every clothes washer, clothes dryer, dishwasher, and refrigerator purchased in the United States this year earned the ENERGY STAR, we would:

- Prevent greenhouse gas emissions equivalent to the emissions from more than 465,000 cars
- Save more than 2.7 billion kWh/yr of electricity
- Save more than \$645 million in annual energy costs
- Save more than 23 billion gallons of water per year³

Approximately 45% of U.S. households knowingly purchased an ENERGY STAR certified product in the past year. Of these purchasers:

- 74% reported the label as influential in their purchasing decision
- 80% reported that they are likely to recommend products that have earned the ENERGY STAR to friends⁴



² Energy Information Administration (EIA), Annual Energy Outlook 2016 edition.

³ Includes ENERGY STAR certified clothes washer, clothes dryer, dishwasher, and refrigerator. Dollars savings reflect savings generated from the reduction of energy and water usage.

⁴ EPA Office of Air and Radiation, Climate Protection Partnerships Division. National Awareness of ENERGY STAR® for 2016: Analysis of 2016 CEE Household Survey. U.S. EPA, 2017.

ENERGY STAR CERTIFIED CLOTHES WASHERS

ENERGY STAR VS. STANDARD MODELS – THE BENEFITS ARE CLEAR

Clothes washers that have earned the ENERGY STAR use approximately 33% less water and 25% less energy for washing than standard models. The following information details performance requirements, technological features, savings assumptions, and savings facts that can be used to promote the benefits of ENERGY STAR.

ENERGY STAR REQUIREMENTS	
PRODUCT TYPE	CURRENT LEVELS ⁵
ENERGY STAR front loading (> 2.5 cu-ft)	IMEF \geq 2.76 IWF \leq 3.2
ENERGY STAR top loading (> 2.5 cu-ft)	IMEF \geq 2.06 IWF \leq 4.3
ENERGY STAR Clothes Washers (\leq 2.5 cu-ft)	IMEF \geq 2.07 IWF \leq 4.2

The latest ENERGY STAR specification became effective on February 5, 2018.

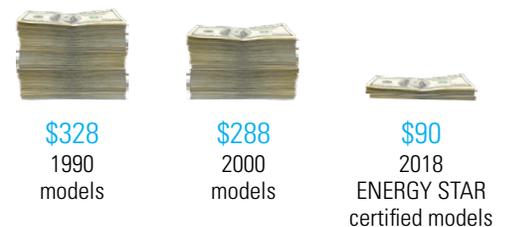
ENERGY SAVINGS

If all clothes washers sold in the United States were ENERGY STAR certified, the energy cost savings would grow to more than \$3.3 billion each year and more than 19 billion pounds of annual greenhouse gas emissions would be prevented, equivalent to the emissions from over 1.8 million vehicles.

Over the lifetime of the product, an ENERGY STAR certified clothes washer saves:

- 1,000 kWh and more than 3.6 million BTUs of natural gas
- 22,000 gallons of water
- \$380 over the product's lifetime⁶

How Much Does it Cost to Run Your Clothes Washer Each Year?



Source: US EPA ENERGY STAR Program, 2019.



Beware of high efficiency claims associated with this label. This designation is intended to match certain washer types (e.g. front load) with specially designed laundry detergent. There are no standards for energy efficiency behind it. Only products that have earned the ENERGY STAR are independently certified to save energy.

⁵ Clothes washer efficiency is measured by the Integrated Modified Energy Factor (IMEF) and Integrated Water Factor (IWF). IMEF is a comprehensive energy efficiency measurement that considers the energy used to run the washer, heat the water, and run the dryer, as well as the combined low power mode energy consumption. The higher the IMEF, the more efficient the clothes washer. IWF is a measurement of water efficiency for all wash cycles that is calculated as gallons of water used per cubic foot of capacity. The lower the IWF, the more efficient the clothes washer.

⁶ Clothes washer savings estimate includes both savings from the washer (machine, hot water), and dryer (since more efficient washers receive "credit" for spinning more water out of clothes).

Age of Clothes Washers in the U.S.



17% of U.S. households do not use a clothes washer at home.

Source: Residential Energy Consumption Survey, Energy Information Administration, 2015.

TECHNOLOGICAL ADVANCES

ENERGY STAR certified clothes washers deliver superior efficiency and performance by incorporating advanced features such as:

- **Multiple configurations** – ENERGY STAR certified clothes washers are available in either front-load or redesigned top-load configurations which both include technical innovations that help save energy and water.
- **Sophisticated wash systems** – ENERGY STAR certified top-load machines clean your clothing just like standard models without wasting water by filling up the tub. Instead, these machines use sophisticated wash systems to cycle clothes through a mixture of water and detergent, allowing the clothes to be scrubbed and cleaned without using excess water or detergent.
- **No central agitator** – Front-load machines tumble clothes through a small amount of water instead of rubbing clothes against an agitator, while advanced top-load machines lift and tumble clothes through a reduced stream of water. Both designs dramatically reduce the amount of hot water and energy used in the wash cycle.
- **High spin speeds** – Efficient motors spin clothes two to three times faster to extract more water. Less moisture in the clothes means less time in the dryer and less energy spent drying clothes.
- **Long live your clothes** – Front-load and advanced top-load clothes washers' sophisticated wash systems use a variety of methods to lift and tumble your laundry, lengthening the life of often-washed items. Additionally, because they are so gentle, many models can safely clean silk, wool, and other hand-washables.
- **Laundry Made Better** – Together, a laundry pair that has earned the ENERGY STAR not only saves you energy and money while it effectively does the job, it also helps protect the planet, demonstrating that laundry is just better with ENERGY STAR – better for your clothes, better for you and your family, better for the environment.

SAVINGS ASSUMPTIONS

EPA uses the following assumptions for ENERGY STAR savings estimates:

- Average life = 11 years
- Average cycles per year⁷ = 295
- Annual utility bill savings for ENERGY STAR vs. non-certified models = \$37
- Annual water savings = nearly 2,000 gallons

Residential Clothes Washer Water Usage Per Load



20 gallons
standard
washers



14 gallons
ENERGY STAR
certified washers

Source: US EPA ENERGY STAR Program, 2019.

⁷ DOE Test Procedure found in 10 CFR part 430, subpart B, appendix J2.

ENERGY STAR CERTIFIED CLOTHES DRYERS

ENERGY STAR VS. STANDARD MODELS – THE BENEFITS ARE CLEAR

Electric clothes dryers that have earned the ENERGY STAR use approximately 20% less energy than standard models. Gas clothes dryers that have earned the ENERGY STAR use approximately 18% less energy than standard models. The following information details performance requirements, technological features, savings assumptions, and savings facts that can be used to promote the benefits of ENERGY STAR.

ENERGY STAR REQUIREMENTS	
PRODUCT TYPE	COMBINED ENERGY FACTOR (lbs/kWh)
Vented Gas	3.48
Ventless or Vented Electric, Standard (4.4 cu-ft or greater capacity)	3.93
Ventless or Vented Electric, Compact (120V) (less than 4.4 cu-ft capacity)	3.80
Vented Electric, Compact (240V) (less than 4.4 cu-ft capacity)	3.45
Ventless Electric, Compact (240V) (less than 4.4 cu-ft capacity)	2.68
Cycle Time Requirement	
Maximum Test Cycle Time	80 Minutes

The latest ENERGY STAR specification became effective on May 5, 2017.

ENERGY SAVINGS

If all clothes dryers sold in the United States were ENERGY STAR certified, the energy cost savings would grow to more than \$1.5 billion each year and 22 billion pounds of annual greenhouse gas emissions would be prevented, equivalent to the emissions from more than 2 million vehicles.

- Over the lifetime of the product, a full size electric ENERGY STAR certified clothes dryer saves 1,900 kWh of electricity and \$215 in energy bills.
- Over the lifetime of the product, a full size gas ENERGY STAR certified clothes dryer saves more than 6 million BTUs of natural gas and \$65 in energy bills.

Beware of high efficiency claims associated with this label. This designation is intended to match certain washer types (e.g. front load) with specially designed laundry detergent. There are no standards for energy efficiency behind it. Only products that have earned the ENERGY STAR are independently certified to save energy.



Age of Clothes Dryers in the U.S.



19% of U.S. households do not use a clothes dryer at home.

Source: Residential Energy Consumption Survey, Energy Information Administration, 2015.

ADVANCED FUNCTIONALITY

ENERGY STAR certified clothes dryers deliver superior efficiency and performance by incorporating advanced features such as:

- **Low Heat Setting** – Longer drying cycles on a low heat setting use less energy. When you purchase an ENERGY STAR certified clothes dryer, look for the cycle that uses the least amount of energy, sometimes known as the “energy-saving” selection.
- **Steam Cycles** – Many ENERGY STAR dryers also include convenient features, such as a steam cycle that can help save time on ironing clothes by preventing wrinkles.
- **Automatic Cycle Termination** – Use automatic termination to help prevent your clothes from over-drying. Not only will this feature save energy, but it will also save wear and tear on your clothes caused by over-drying.

MAXIMIZE SAVINGS

- **Sensor Drying** – ENERGY STAR dryer models incorporate improved sensors to help you reduce your dryer’s energy use. This feature ensures that your dryer will automatically shut off when clothes are dry.
- **Consider ENERGY STAR Certified Heat Pump Dryers** – Heat pump dryers use advanced technology requiring about half the energy of a standard electric dryer. These models take in ambient air, heat it, and then recirculate it in the dryer to maintain the temperature while using less energy. They can save 20 to 50% more than conventional clothes dryers, and the ventless and compact models can be installed almost everywhere. Consumers with high clothes dryer usage and high electricity rates have the potential for large energy and cost savings. For more information about this technology, purchasing considerations, and EPA’s video about this exciting product, please see Appendix 5 on page 23.
- **Laundry Made Better** – Together, a laundry pair that has earned the ENERGY STAR not only saves you energy and money while it effectively does the job, it also helps protect the planet, demonstrating that laundry is just better with ENERGY STAR – better for your clothes, better for you and your family, better for the environment.

SAVINGS ASSUMPTIONS

EPA uses the following assumptions for ENERGY STAR savings estimates:

- Average life = 12 years
- Average cycles per year = 283
- Annual utility bill savings for ENERGY STAR vs. non-certified models = \$20.8 (electric); \$6.4 (gas)

ENERGY STAR CERTIFIED DISHWASHERS

ENERGY STAR VS. STANDARD MODELS – THE BENEFITS ARE CLEAR

ENERGY STAR certified dishwashers are on average about 12% more energy efficient and 30% more water efficient than standard models. The following information details performance requirements, technological features, savings assumptions, and savings facts that can be used to promote the benefits of ENERGY STAR.

ENERGY STAR REQUIREMENTS	
PRODUCT TYPE	CURRENT LEVELS (Version 6.0)
Standard Dishwasher (≥ 8 place settings + 6 serving pieces)	≤ 270 kWh/yr ≤ 3.5 gallons/cycle
Compact Dishwasher (< 8 place settings + 6 serving pieces)	≤ 203 kWh/yr ≤ 3.1 gallons/cycle

The new specification became effective on January 29, 2016.

ENERGY SAVINGS

On average, a new ENERGY STAR certified dishwasher costs about \$35 a year to run and will save 3,870 gallons of water over its lifetime.

If all dishwashers sold in the United States were ENERGY STAR certified, the cost savings would grow to more than \$415 million each year and more than 3.5 billion pounds of annual greenhouse gas emissions would be prevented, equivalent to the emissions from over 350,000 vehicles.

ENERGY SAVING TIPS

Load it up. Run full loads whenever possible. Dishwashers use about the same amount of energy and water regardless of the number of dishes inside.

Skip the heat. Use a rinse agent and select the no-heat drying option. It gives good drying results with less energy.

How Much Does It Cost to Run Your Dishwasher Each Year?



Source: US EPA ENERGY STAR Program, 2019.

Age of Dishwashers in the U.S.



32% of U.S. households do not use a dishwasher at home.

Source: Residential Energy Consumption Survey, Energy Information Administration, 2015.

TECHNOLOGICAL ADVANCES

ENERGY STAR certified dishwashers deliver superior efficiency and performance by incorporating advanced features such as:

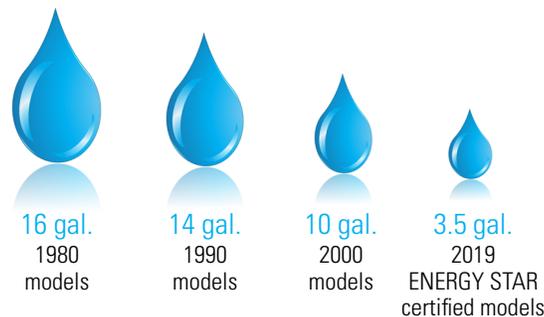
- **More effective jets** – ENERGY STAR certified models feature high-pressure jets that eliminate the need to pre-rinse dishes.
- **Soil sensors** – Soil sensors test how dirty the dishes are throughout the wash and adjust the cycle to achieve optimum cleaning with minimum water and energy use.
- **Efficient motors** – ENERGY STAR certified dishwashers have more efficient motors and more precise controls and settings.
- **Internal water heaters** – Internal water heaters in ENERGY STAR certified models reduce water heating costs.
- **Strategic design** – Innovative dish rack designs maximize cleaning through strategic dish positioning.

SAVINGS ASSUMPTIONS

EPA uses the following assumptions for ENERGY STAR savings estimates:

- Average life = 12 years
- Average cycles per year⁸ = 215
- Annual utility bill savings for ENERGY STAR vs. non-certified models = \$7
- Annual water savings = 321 gallons

Residential Dishwasher Water Usage Per Load



Source: US EPA ENERGY STAR Program, 2019.

⁸ DOE Test Procedure found in 10 CFR part 430, subpart B, appendix C1.

ENERGY STAR CERTIFIED DEHUMIDIFIERS

ENERGY STAR VS. STANDARD MODELS – THE BENEFITS ARE CLEAR

ENERGY STAR certified dehumidifiers remove the same amount of moisture as a similarly-sized conventional unit, but use nearly 15% less energy than standard models. The following information details performance requirements, technological features, savings assumptions, and savings facts that can be used to promote the benefits of ENERGY STAR.

ENERGY STAR REQUIREMENTS		
EQUIPMENT	SPECIFICATION	
	PRODUCT CAPACITY/ CASE VOLUME	INTEGRATED ENERGY FACTOR UNDER TEST CONDITIONS (L/kWh)
Portable Dehumidifiers	≤ 25.00 pints/day	≥ 1.57
	25.01 to 50.00 pints/day	≥ 1.80
	≥ 50.00 pints/day	≥ 3.30
Whole-Home Dehumidifiers	≤ 8.00 ft ³	≥ 2.09
	> 8.00 ft ³	≥ 3.30

The latest ENERGY STAR specification became effective on October 31, 2019.

ENERGY SAVINGS

On average, a new ENERGY STAR certified portable dehumidifier can save nearly \$90 over the life of the unit, while avoiding more than 1,200 pounds of greenhouse gas emissions. An ENERGY STAR certified whole home dehumidifier can save consumers over \$300 in its lifetime and avoid more than 4,100 pounds of greenhouse gas emissions.

In fact, the annual energy saved by an ENERGY STAR certified dehumidifier could power your ENERGY STAR certified refrigerator for four months.

TECHNOLOGICAL ADVANCES

ENERGY STAR certified dehumidifiers deliver superior efficiency and performance by incorporating advanced features such as:

- **Operating Temperature** – There are ENERGY STAR certified dehumidifiers available that are rated for use at temperatures as low as 42 degrees. If the space being dehumidified has temperatures that typically fall below 65 degrees (F), you may want to consider buying a product that is specified for use at lower temperatures. Frost can form on the condensing coils if the air temperature drops below 65 degrees and may negatively affect the performance of the product.

Integrated Energy Factor – ENERGY STAR certified dehumidifiers remove more water per kilowatt-hour (kWh) of energy consumed. The energy efficiency of dehumidifiers is measured by its integrated energy factor, in liters of water removed per kilowatt-hour (kWh) of energy consumed or L/kWh. In general, a higher integrated energy factor means a more efficient dehumidifier.

MAXIMIZE SAVINGS

Choose the right capacity. The dehumidifier “size” or capacity of the unit is usually measured in pints per 24 hours. The capacity you need depends on two factors: the size of the space that needs to be dehumidified and the conditions that exist in the space without dehumidification. If you are replacing an existing dehumidifier, you can judge by how much water you empty each day. Remember, it’s better to oversize than undersize!

Place it properly. Most portable dehumidifiers have top-mounted air discharge and can be placed against walls, but if you do not have top-mounted discharge, make sure the dehumidifier is located away from walls and furniture, so that air can circulate freely around the unit. Also remember to close doors and windows in the space while the unit is running. Proper placement will help ensure the space is dehumidified as efficiently as possible.

Consider a whole-home dehumidifier. If you live in a humid climate and have central air conditioning, an ENERGY STAR certified whole-home dehumidifier may be the right choice for you. Whole-home dehumidifiers, when sized and installed properly by a professional, can save you energy, increase indoor comfort, and prevent mildew and bacterial growth, thereby increasing the quality of the air you breathe.

TIPS FOR REDUCING HUMIDITY IN THE HOME

Improve drainage. Reduce the need for dehumidification in your basement by improving drainage around the foundation of your home. Some ways to improve drainage include:

- Extend downspouts from your gutters away from the foundation of your home.
- Keep gutters and downspouts clear and open.
- Ensure that the soil slopes away from your foundation, to avoid pooling of water around your home.
- Avoid over-watering of foundation plantings.

Consider installing an A/C vent. If your home uses central A/C, you could install an A/C vent to take advantage of the dehumidifying capabilities of your A/C system. This will also help with air circulation between the humid parts of your home and the drier parts.

Ensure clothes dryers are vented to outdoors. If you do not use a clothes dryer, dry your clothes outdoors as opposed to hanging them inside for drying.

Use vent fans in bathrooms and kitchens to remove humidity at the source.

Repair leaking Outdoor faucets. Not only will this help reduce humidity, but it will also save you money on your water bills.

SAVINGS ASSUMPTIONS

EPA uses the following assumptions for ENERGY STAR savings estimates:

- Average life = 11 years
- Annual utility cost savings for ENERGY STAR vs. non-certified models = \$22

ENERGY STAR CERTIFIED REFRIGERATORS

ENERGY STAR VS. STANDARD MODELS – THE BENEFITS ARE CLEAR

ENERGY STAR certified refrigerators are about 9% more energy efficient than models that meet the federal minimum energy efficiency standard. The following information details performance requirements, technological features, savings assumptions, and savings facts that can be used to promote the benefits of ENERGY STAR.

ENERGY STAR REQUIREMENTS		
EQUIPMENT	VOLUME	CRITERIA
Full Size Refrigerators	7.75 cubic feet or greater	At least 10% more energy efficient than the minimum federal government standard (NAECA)
Compact Refrigerators	Less than 7.75 cubic feet	At least 10% more energy efficient than the minimum federal government standard (NAECA)

The latest ENERGY STAR specification became effective on September 15, 2014.

ENERGY SAVINGS

If all refrigerators sold in the United States were ENERGY STAR certified, the energy cost savings would grow to nearly \$700 million each year and 9 billion pounds of annual greenhouse gas emissions would be prevented, equivalent to the emissions from more than 870,000 vehicles.

How Much Does it Cost to Run Your Refrigerator Each Year?



Source: US EPA ENERGY STAR Program, 2019.

ENERGY SAVING TIPS

Keep your fridge cool. Position your refrigerator away from heat sources such as ovens and dishwashers. Heat sources make your fridge work harder to keep your food cold.

Give it space to breathe. Leave a space between the wall and the refrigerator to allow air to circulate — this keeps the coils cooler so your refrigerator doesn't have to work as hard. Consult your refrigerator owner manual for the recommended distance to ensure optimum energy savings.

Don't let your second fridge weigh down your utility bill. If you have an older refrigerator in your basement or garage, it could be costing you \$125 per year to run it.

Choose ENERGY STAR for your second fridge. For families that need a second refrigerator year round, replace the old one with a new ENERGY STAR certified unit and save about \$60 a year in operating costs!

Age of Refrigerators in the U.S.



Less than 1% of U.S. households do not use a refrigerator at home.

Source: Residential Energy Consumption Survey, Energy Information Administration, 2015.

Flip Your Fridge! On average, an older refrigerator uses twice as much energy as a new ENERGY STAR refrigerator. By properly recycling your old refrigerator and replacing it with a new ENERGY STAR certified model, you could save more than \$300 over the next five years and reduce your carbon footprint by more than 10,500 pounds of greenhouse gas emissions. Learn more at energystar.gov/flipyourfridge.



TECHNOLOGICAL ADVANCES

ENERGY STAR certified refrigerators offer high performance features such as:

- **High-efficiency compressors** – ENERGY STAR certified refrigerators have high-efficiency compressors that create less heat when they are running, use less energy, and are often quieter than standard compressors.
- **Improved insulation** – Improved insulation located in doors and exterior walls helps food stay cold and muffles noise.
- **Temperature and defrost mechanisms** – More precise temperature and defrost mechanisms help the refrigerator operate more efficiently, while ensuring food is kept at the optimum temperature.

You can find the ENERGY STAR label on the most advanced refrigerators in a variety of designs, including French door, four-door, side-by-side, bottom-mount freezer, and top-mount freezer. Many ENERGY STAR certified refrigerators use innovative drawer designs and improved temperature controls to keep your food fresher, longer.

SAVINGS ASSUMPTIONS⁹

EPA uses the following assumptions for ENERGY STAR savings estimates:

- Average life = 12 years
- Annual utility bill savings for ENERGY STAR vs. non-certified models = \$6

⁹ Savings assumptions are based only on standard full size refrigerator models.

ENERGY STAR CERTIFIED FREEZERS

ENERGY STAR VS. STANDARD MODELS – THE BENEFITS ARE CLEAR

ENERGY STAR certified freezers are at least 10% more energy efficient than the minimum federal standard. The following information details performance requirements, technological features, savings assumptions, and savings facts that can be used to promote the benefits of ENERGY STAR.

ENERGY STAR REQUIREMENTS		
EQUIPMENT	VOLUME	CRITERIA
Full Size Freezers	7.75 cubic feet or greater	At least 10% more energy efficient than the minimum federal government standard (NAECA)
Compact Freezers	Less than 7.75 cubic feet	At least 10% more energy efficient than the minimum federal government standard (NAECA)

The latest ENERGY STAR specification became effective on September 15, 2014.

ENERGY SAVINGS

An ENERGY STAR certified chest freezer costs about \$30 per year to run and certified upright freezer costs about \$50 per year to run. A new chest freezer that has earned the ENERGY STAR uses less energy than a 40-watt light bulb.

ENERGY SAVING TIPS

Allow air circulation. Leave a few inches between the wall and the freezer to allow air circulation behind the unit. Consult your freezer owner manual for the recommended distance to ensure optimum energy savings.

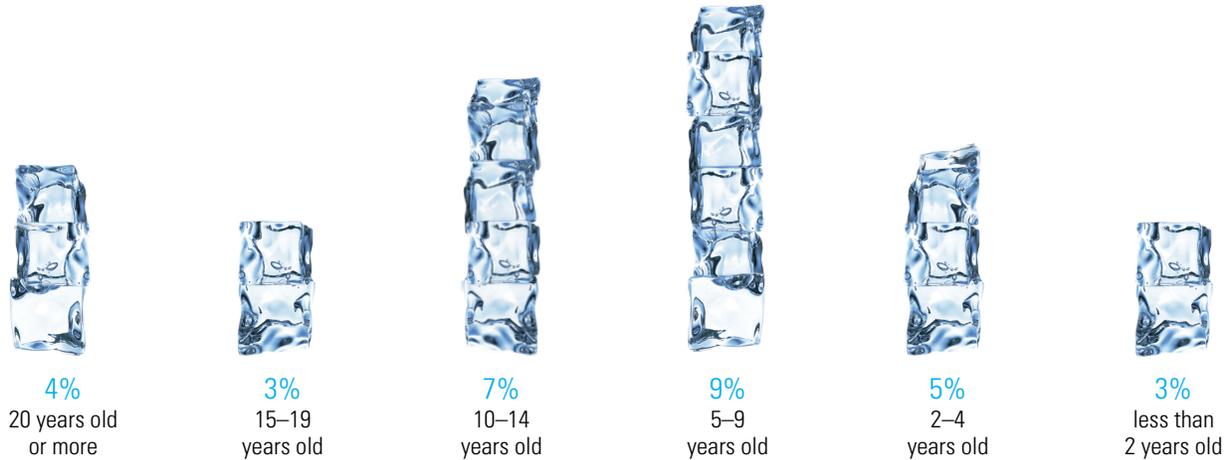
Keep it cool, but not too cold. In addition to turning ice cream into a spoon-bending block of ice, setting your freezer to “max cold” uses more energy and money. Set the temperature at 0 degrees Fahrenheit.

Keep it indoors. Unless you live in a mild climate, keep your freezer indoors, such as in the basement. Extreme temperatures are hard on the compressor and can reduce the life of your freezer.

Check that seal. Make sure the door seals are tight. If not, you could be losing cold air and using more energy.

Replace and Recycle. Save \$195 over the next five years and reduce your carbon footprint by 5,400 pounds of greenhouse gas emissions over the lifetime of the freezer by replacing your old freezer with one that has earned the ENERGY STAR. Further reduce your environmental impact when you properly recycle the old one.

Age of Freezers in the U.S.



68% of U.S. households do not use a separate freezer at home.

Source: Residential Energy Consumption Survey, Energy Information Administration, 2015.

TECHNOLOGICAL ADVANCES

ENERGY STAR certified freezers offer high performance features such as:

- **High-efficiency compressors** – ENERGY STAR certified freezers have high-efficiency compressors that create less heat when they are running, use less energy, and are often quieter than standard compressors.
- **Improved insulation** – Improved insulation located in doors and exterior walls helps food stay cold and muffles noise.
- **Temperature and defrost mechanisms** – More precise temperature and defrost mechanisms help the freezer operate more efficiently, while ensuring food is kept at the optimum temperature.
- **Improved design** – Better design of gaskets and doors reduces heat leakage into freezers that occurs around door edges. The addition of certain valves can prevent refrigerant migration and bring substantial energy savings.
- **High-efficiency evaporators** – Enhanced evaporator performance helps decrease energy consumption.
- **Get the latest features.** Many ENERGY STAR certified freezers have innovative compartment designs, such as removable lift-out bins, slide-out baskets, and glass shelving to help you organize frozen goods.

SAVINGS ASSUMPTIONS

EPA uses the following assumptions for ENERGY STAR savings estimates:

- Average life = 11 years
- Annual utility bill savings for ENERGY STAR vs. non-certified models = \$4

How Much Does It Cost to Run Your Freezer Each Year?



Source: US EPA ENERGY STAR Program, 2019.

ENERGY STAR CERTIFIED ROOM AIR CONDITIONERS

ENERGY STAR VS. STANDARD MODELS – THE BENEFITS ARE CLEAR

ENERGY STAR certified room air conditioners are 10% more energy efficient than standard models. The following information details program requirements, technological features, savings assumptions, and savings facts that can be used to promote the benefits of ENERGY STAR.

ENERGY STAR REQUIREMENTS		
CAPACITY (BTU/HR)	ENERGY STAR EER, WITH LOUVERED SIDES	ENERGY STAR EER, WITHOUT LOUVERED SIDES
< 6,000	≥ 12.1	≥ 11.0
6,000 to 7,999		
8,000 to 10,999	≥ 12.0	≥ 10.6
11,000 to 13,999		≥ 10.5
14,000 to 19,999	≥ 11.8	≥ 10.2
20,000 to 27,999	≥ 10.3	≥ 10.3
≥ 28,000	≥ 9.9	
CASEMENT	ENERGY STAR EER	
Casement-only	≥ 10.5	
Casement-slider	≥ 11.4	
REVERSE CYCLE		
CAPACITY (BTU/HR)	ENERGY STAR EER, WITH LOUVERED SIDES	ENERGY STAR EER, WITHOUT LOUVERED SIDES
< 14,000	n/a	≥ 10.2
≥ 14,000		≥ 9.6
< 20,000	≥ 10.8	n/a
≥ 20,000	≥ 10.2	

The new specification became effective on October 26, 2015.

ENERGY SAVINGS

If all room air conditioners sold in the United States were ENERGY STAR certified, the energy cost savings would grow to more than \$350 million each year and more than 6 billion pounds of annual greenhouse gas emissions would be prevented, equivalent to the emissions from more than 570,000 vehicles.

How Much Does it Cost to Run Your Room Air Conditioner Each Year?



Source: US EPA ENERGY STAR Program, 2019.

ENERGY SAVING TIPS

Keep the peace. ENERGY STAR certified units run more quietly, so your room isn't just more comfortable, it's more peaceful, too.

Age of Room Air Conditioners in the U.S.



73% of U.S. households do not use a room air conditioner at home.

Source: Residential Energy Consumption Survey, Energy Information Administration, 2015.

Size your AC for comfort and savings. Proper sizing of your room air conditioner is key to saving. An oversized air conditioner is actually less effective—and wastes energy at the same time. Air conditioners remove both heat and humidity from the air. If the unit is too large, it will cool the room quickly, but only remove some of the humidity. This leaves the room with a damp, clammy feeling. A properly sized unit will remove humidity effectively as it cools.

Proper AC installation is the key to cool. New ENERGY STAR certified room air conditioners come with better materials and clearer instructions to improve sealing and insulation around the unit so costly and uncomfortable air leaks are minimized. They also come with tight-fitting side panels, an innovative new design, to provide increased insulation effectiveness. By closely following the installation instructions in the unit's user guide, consumers can ensure effectiveness and energy savings.

Make the Cool Choice for Room AC. When the weather heats up, make the cool choice of a new ENERGY STAR certified room air conditioner. You'll get cool comfort, energy savings, and improved sealing and insulation around the unit—and it'll cost less than \$75 per year to run! Some ENERGY STAR models come with smart functionality offering you even more control.

TECHNOLOGICAL ADVANCES

The following technical features help room air conditioners achieve better energy efficiency:

- **Connected functionality** – ENERGY STAR room air conditioners with connected functionality offer consumers additional convenience, comfort, and energy-savings, including the ability to turn off the unit remotely using your phone or computer, schedule changes to temperature settings based on your needs, and receive feedback on the energy use of the product.
- **R-32** – Some ENERGY STAR room air conditioners use an EPA-approved refrigerant called R-32, which has a much lower impact on the climate; two-thirds lower than the refrigerant commonly used in other room air conditioner models.
- **Higher quality insulation** – ENERGY STAR room air conditioners come with higher quality insulation materials, improving comfort and savings by allowing a better seal of the area between the unit and the window opening.
- **Variable speed technology** – There are now ENERGY STAR room air conditioners available with variable speed technology. Units with efficient variable speed compressors are able to vary the speed of the internal compressor motor in order to continuously control the temperature. This allows the room air conditioner to more quietly regulate the temperature and save even more energy.

SAVINGS ASSUMPTIONS

EPA uses the following assumptions for ENERGY STAR savings estimates:

- Average life = 9 years
- Annual utility bill savings for ENERGY STAR vs. non-certified models = \$7

ENERGY STAR CERTIFIED ROOM AIR PURIFIERS

ENERGY STAR VS. STANDARD MODELS – THE BENEFITS ARE CLEAR

ENERGY STAR certified room air purifiers, sometimes referred to as room air cleaners, are 40% more energy efficient than standard models. The following information details performance requirements, technological features, savings assumptions, and savings facts that can be used to promote the benefits of ENERGY STAR.



This product earned the ENERGY STAR by meeting strict energy efficiency guidelines set by the US EPA. US EPA does not endorse any manufacturer claims of healthier indoor air from the use of this product.

ENERGY STAR REQUIREMENTS	
EQUIPMENT	SPECIFICATION
ROOM AIR CLEANERS	Must produce a minimum 50 CADR ¹⁰ for dust to be considered under the specification.
	Minimum Performance Requirement = 2.0 CADR/Watt (dust)
	Standby Power Requirement = 2.0 Watts Qualifying models that perform secondary consumer functions (e.g. clock, remote control) must meet the standby power requirement.
	UL Safety Requirement: Models that emit ozone as a byproduct of air cleaning must meet UL Standard 867 (ozone protection must not exceed 50ppb)

The latest ENERGY STAR specification became effective on July 20, 2011.

ENERGY SAVINGS

If all room air purifiers sold in the United States were ENERGY STAR certified, the energy cost savings would grow to more than \$1.2 billion each year and nearly 18 billion pounds of annual greenhouse gas emissions would be prevented, equivalent to the emissions from more than 1.7 million vehicles.

Did you know a standard room air purifier, operating continuously, uses approximately 550 kWh/year in electricity? This is more than the energy used by some new refrigerators. Be sure to look for ENERGY STAR. Over the product's lifetime, you'll save on average \$235.

ENERGY SAVING TIPS

Save on your utility bill. Be sure to look for the ENERGY STAR when buying a new room air purifier. You'll save \$30 annually on utility bills!

SAVINGS ASSUMPTIONS

EPA uses the following assumptions for ENERGY STAR savings estimates:

- Average life = 9 years
- Annual utility cost savings for ENERGY STAR vs. non-certified models = \$30

¹⁰ Clear Air Delivery Rate (CADR) must be measured according to the latest ANSI/AHAM AC-1-2006 Standard (Go to www.aham.org for information regarding the latest edition of the AC-1 Standard).

APPENDICES

APPENDIX 1: THE ENERGY STAR BRAND

ENERGY STAR MARKET POSITION

ENERGY STAR emphasizes three broad messages across the program and encourages partners to do the same:

- Emphasis on the power of the individual in making a difference
- Highlighting ENERGY STAR as the environmental choice that provides energy savings without compromising quality or comfort
- Showcasing ENERGY STAR as a government-backed symbol providing valuable, unbiased information to businesses and consumers

ENERGY STAR LOGO USAGE

The ENERGY STAR identity is a valuable asset which must be properly used and protected. Partners should take care in using the ENERGY STAR marks in all communication and outreach materials. Below are general guidelines:

- The ENERGY STAR name should always appear in capital letters. There should not be a hyphen between ENERGY and STAR.
- The registered symbol ® must be used the first time “ENERGY STAR” appears on a document or website.
- When writing about ENERGY STAR, it is correct to state that a product is “ENERGY STAR certified,” “ENERGY STAR qualified,” or that the “product has earned the ENERGY STAR.”
- The color for the mark is ENERGY STAR blue (100% cyan).

There are specific ENERGY STAR marks for partners’ various needs:

ENERGY STAR MARK	SPECIFICATION
 Certification Mark	Use this mark as a label on products, homes, and buildings that have earned the ENERGY STAR.
 Partner Mark	Use this mark to promote a partner’s commitment and partnership in the ENERGY STAR program. It may only be used by ENERGY STAR partners who have signed a Partnership Agreement.
 Linkage Phrase Mark	Use this mark in marketing materials and on websites to show that a company sells ENERGY STAR certified products or services.
 Promotional Mark	Use this mark in public education campaigns on the benefits of ENERGY STAR, including in brochures, media kits, and fliers.

The above guidelines are not comprehensive. For more information, visit www.energystar.gov/logouse.

ENERGY STAR BOILERPLATE

ENERGY STAR® is the simple choice for energy efficiency. For more than 25 years, people across America have looked to EPA's ENERGY STAR program for guidance on how to save energy, save money, and protect the environment. Behind each blue label is a product, building, or home that is independently certified to use less energy and cause fewer of the emissions that contribute to climate change. Today, ENERGY STAR is the most widely recognized symbol for energy efficiency in the world, helping families and businesses save nearly 4 trillion kilowatt-hours of electricity and achieve over 3 billion metric tons of greenhouse gas reductions since 1992. Join the millions who are already making a difference at energystar.gov.

ENERGY STAR REVIEW POLICY

Advertisements where the certification mark is placed next to certified products do not need to be approved. However, EPA must approve any major educational or promotional campaigns that feature the ENERGY STAR name, mark, or messaging prior to the final production. Please contact your ENERGY STAR representative with any questions.

APPENDIX 2: PARTNER RESOURCES

ENERGY STAR makes it easy for your customers to choose products that not only save them money, but help the environment by preventing greenhouse gases associated with climate change—all this without sacrificing the quality they expect from these products. The ENERGY STAR Program provides a variety of tools and resources partners can leverage to increase sales and customer loyalty by promoting energy-saving behaviors and environmental benefits associated with ENERGY STAR products and practices.

1. ENERGY STAR Products Pages: www.energystar.gov/products

A quick overview of ENERGY STAR products where you can access:

- Consumer buying guidance and tips
- ENERGY STAR specifications
- Seasonal product promotions

2. ENERGY STAR Partner Resource Page: www.energystar.gov/partners

A resource center for ENERGY STAR partners including:

- Logos, savings calculators, and more
- ENERGY STAR Identity Guidelines

3. ENERGY STAR Marketing Tools & Resources: www.energystar.gov/marketing_materials

A comprehensive list of resources organized by product category and featuring upcoming promotions.

- Sales and marketing materials

4. ENERGY STAR Product Finder: www.energystar.gov/productfinder

An interactive tool that provides users with the opportunity to refine, filter, and sort through ENERGY STAR certified products and related energy efficiency information, including:

- Filter, share, and compare product information
- Price and location information for refrigerators, room air conditioners, clothes washers, clothes dryers, and coming soon for dishwashers.
- API guidance to help you build your own tools and apps
- Access to the full ENERGY STAR data set

5. ENERGY STAR Retail Products Platform: www.energystar.gov/esrpp

The ENERGY STAR Retail Products Platform (ESRPP) is a collaborative midstream initiative of ENERGY STAR, energy efficiency program sponsors, retailer partners, and other key stakeholders, facilitated by the U.S. Environmental Protection Agency.

- Background information about the initiative
- Current program year products and participants
- Additional program resources

6. ENERGY STAR Social Media

Connect with ENERGY STAR on social media and share the latest energy efficiency advice, videos, and promotions.

- Facebook – www.facebook.com/ENERGYSTAR
- Twitter – www.twitter.com/ENERGYSTAR
- YouTube – www.youtube.com/EPAENERGYSTAR

7. ENERGY STAR Training Center: www.energystar.gov/training

Sales associate trainings and consumer messaging organized by product category.

APPENDIX 3: RECYCLING RESOURCES

In addition to promoting ENERGY STAR certified appliances, EPA encourages removal of old units from the electric grid and proper disposal.

WHY RECYCLE?

Aging appliances spell sales opportunities. There are approximately 107 million old appliances still in use.¹¹ Help consumers save energy and money, and protect the environment from the beginning of a product's life to the end.

Replacing old, inefficient appliances reduces the amount of electricity needed to power them and, therefore, the amount of indirect greenhouse gas emissions released, helping to protect the environment. In addition, recycling durable materials from appliances prevents indirect GHG emissions associated with the generation of electricity, which would have otherwise been needed to produce virgin materials.

Properly recycling appliances ensures that:

- Refrigerant is recovered and reclaimed or destroyed;
- Insulation foam is recovered and destroyed, or the blowing agent is recovered and reclaimed;
- Metals, plastic, and glass are recycled; and
- Polychlorinated biphenyls (PCBs), mercury, and used oil are recovered and properly disposed of.

WHAT CAN YOU DO?

Partners can encourage consumers to recycle their old appliances. Utility, retailer, and manufacturer partners all play important roles in encouraging recycling.

JOIN EPA'S RAD PROGRAM

EPA's Responsible Appliance Disposal (RAD) Program is a voluntary partnership program that helps protect the ozone layer and reduce emissions of greenhouse gases. RAD program partners recover ozone-depleting chemicals from old refrigerators, freezers, window air conditioners, and dehumidifiers. Find out more information at www.epa.gov/ozone/partnerships/rad.

¹¹ Includes appliances 10 years and older. Source: U.S. Energy Information Administration, Residential Energy Consumption Survey, 2005, 2009.

OFFER INCENTIVE PROGRAMS

- Consider launching a new, or expanding an existing, incentive program for recycling with utility rebate incentives for participants.
- Consider offering free pick-up of old appliances or other promotions for consumers who recycle old products.
- Partner with a manufacturer, retailer, or utility to defray the costs of appliance recycling.

COMMUNICATE WITH YOUR CUSTOMERS

Use EPA materials and tools to educate sales associates and customers about ENERGY STAR certified appliances and the benefits of recycling old products. For example, EPA's Flip Your Fridge promotion can help raise awareness of the benefits of properly recycling and replacing an old refrigerator with an ENERGY STAR certified model. Visit www.energystar.gov/products and www.energystar.gov/flipyourfridge for additional information.

APPENDIX 4: PROMOTIONAL OPPORTUNITIES WITH ENERGY STAR

EPA provides a variety of promotional opportunities to ENERGY STAR partners, which are detailed below. Various platforms help you connect with consumers and other stakeholders to promote energy efficiency. EPA encourages all partners to take full advantage of the partnership through active engagement in all that the ENERGY STAR program has to offer.

RESOURCES FOR PARTNER USE:

1. ENERGY STAR Pledge: www.energystar.gov/pledge

Join millions of Americans who are taking action to protect the climate by pledging to take small, individual steps that reduce greenhouse gas emissions:

- Integrate the ENERGY STAR Pledge into your promotions.
- Add the ENERGY STAR Pledge link to your website.

2. Organize events with Campaign kits and materials to promote energy efficiency

- Contact EPA with your plans to participate in the upcoming seasonal campaigns and promote ENERGY STAR, as support is available for partners.
- Find sales and marketing resources to support your efforts at www.energystar.gov/marketing_materials.

3. Database for Incentives & Joint Marketing Exchange (DIME): www.energystar.gov/DIME

This searchable database contains information about:

- Appliances and other product rebates by location
- Incentive amounts
- Program start and end dates
- Name, location, and contact information of rebate sponsors

4. Partners can:

- Connect with other stakeholders
- Engage in joint ENERGY STAR promotional and marketing opportunities
- Promote their program

5. ENERGY STAR Rebate Finder: www.energystar.gov/rebatefinder

This online search engine/tool helps consumers find:

- ENERGY STAR Partner-sponsored special offers, including sales tax exemptions, credits, and rebates
- Information about local recycling initiatives

To learn more about these and other exciting opportunities, please contact your ENERGY STAR representative.

APPENDIX 5: HEAT PUMP CLOTHES DRYERS

THE TECHNOLOGY

Heat pump dryers belong to the category of ventless dryers, which offer increased versatility due to the fact that they do not need to be vented to the outside. Whereas traditional tumbler dryers must vent the humid air they produce, closed-cycle heat pump dryers use built-in technology to dehumidify the air. In addition to rendering a vent unnecessary, heat pump dryers are typically more efficient than conventional dryers because the heat is conserved within the dryer instead of being released outside. Heat pump dryers require about half the energy of a standard electric dryer. Compared to the decades-old technology found in most clothes dryers, heat pump dryers offer a modern, sophisticated solution to drying clothes.

PURCHASING CONSIDERATIONS

- While heat pump dryers may carry a higher price tag than other models, they can save more energy and money with each load. This can represent significant savings over time, since the average consumer runs 283 cycles per year.
- Heat pump dryers are especially well-suited for homes without existing vents, as homeowners that do have vents are advised to remove or seal the vent to prevent air leakage, adding to the total cost.
- Ventless heat pump dryers are also well-suited for new multifamily homes by allowing architects to design installations virtually anywhere in the residence and saving construction costs from not installing additional vents and plumbing stacks.
- Because heat pump dryers remove moisture from the air during the drying process, the resulting water must be drained. Solutions include installation of a drain, manually draining the water tank after each load, or installing a device sold by the manufacturer that allows the dryer to “borrow” the clothes washer drain.

MARKETING RESOURCES

EPA has created a new video as part of our appliance marketing toolkit: Meet the Energy Saving Heat Pump Dryer. This short, animated video takes viewers step-by-step through the drying process, showcasing why this technology is definitely one to consider for their next purchase.

The video is available for sharing on the ENERGY STAR YouTube channel: <https://youtu.be/zw183KZQNwc>

EPA encourages partners to share the video on their website, with sales associates, through social media, or through any of other customer outreach channels



