

INNOVATION. PERFORMANCE. SAVINGS.  
ENERGY STAR® Makes It Simple.



**DISHWASHERS**  
2007 PARTNER RESOURCE GUIDE



**ENERGY STAR**

## SECTION I : CONSUMER INFORMATION



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[energystar.gov](http://energystar.gov)

ENERGY STAR is a government-backed program that helps consumers identify the most energy-efficient products.

This document is designed to help partners promote new ENERGY STAR® qualified dishwashers by highlighting the benefits of using an ENERGY STAR qualified dishwasher instead of washing dishes by hand.

- Section I includes the latest consumer messaging on usage tips, product benefits, fun facts, and features.
- Section II summarizes the most recent data on ENERGY STAR market share, ENERGY STAR criteria, energy savings, and cost effectiveness.

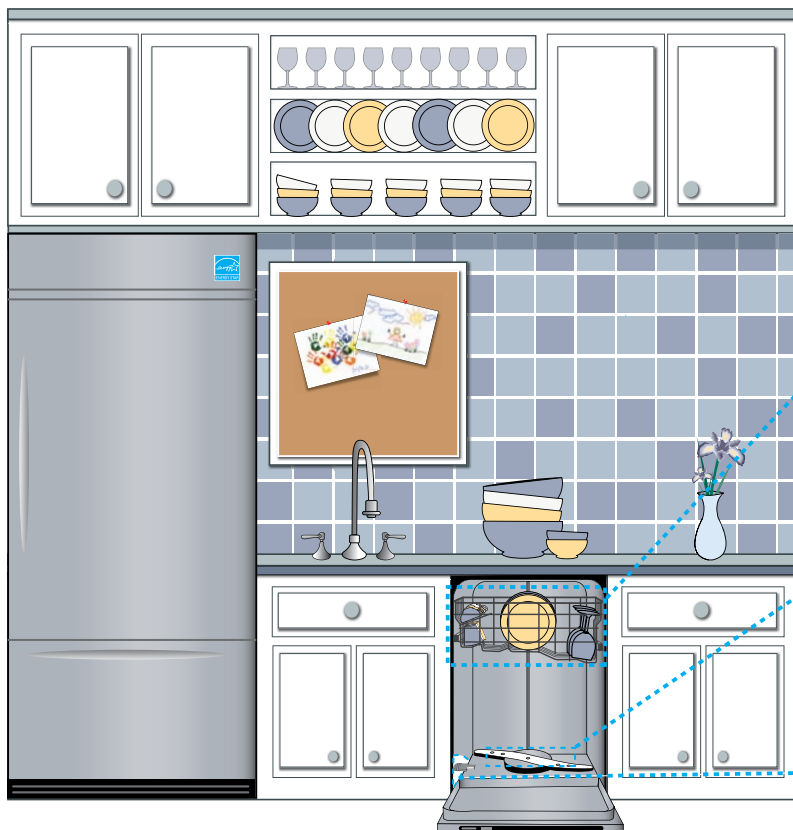
### ADVANCED TECHNOLOGY

ENERGY STAR qualified dishwashers have improved dramatically over the last decade. New ENERGY STAR qualified models include several technical innovations that reduce energy and water consumption and improve performance, including soil sensors, more efficient jets, and innovative dish rack designs.

## TECHNOLOGY SAVES YOU MONEY

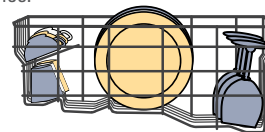


CHANGE FOR THE  
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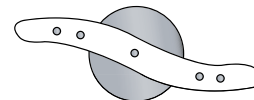
### INNOVATIVE DISH RACK DESIGNS

Maximize cleaning by strategically situating the dishes.



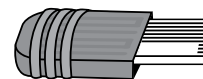
### MORE EFFICIENT JETS

Use less energy to spray detergent and water over the dishes when cleaning.

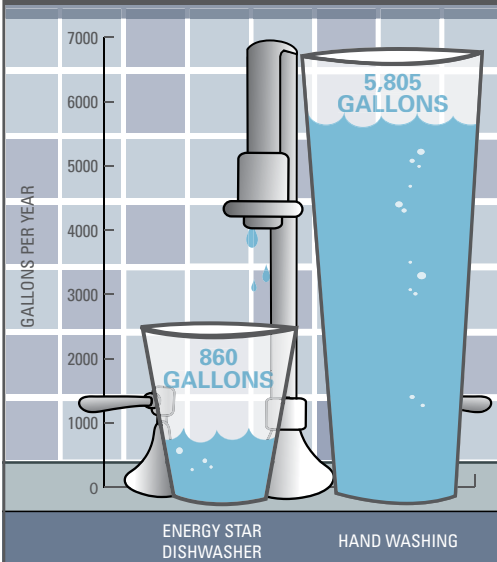


### SOIL SENSORS

Test how dirty the dishes are throughout the wash and adjust the cycle to achieve optimum cleaning with minimum water and energy use.



## ANNUAL WATER CONSUMPTION ENERGY STAR® AUTOMATIC DISHWASHER vs. HAND WASHING



An ENERGY STAR qualified dishwasher can save nearly 5,000 gallons of water per year compared to washing dishes by hand.

## DOLLAR SAVINGS AND OTHER BENEFITS

If you still wash your dishes by hand, you're probably wasting more than just your valuable time.

### ■ SAVE MONEY

Using an ENERGY STAR qualified dishwasher instead of washing dishes by hand can cut utility bills by more than \$40 per year.

### ■ SAVE TIME

Using an ENERGY STAR qualified dishwasher will save over 230 hours of personal time over the course of a year. That's almost 10 entire days! Instead of scrubbing and rinsing each individual dish, ENERGY STAR dishwashers require you to simply load the dishes and press start.

### ■ BETTER CLEANING

A number of ENERGY STAR qualified dishwasher features result in better cleaning. For example, ENERGY STAR qualified dishwashers boost water temperatures to 140 degrees—well above scalding temperatures. Washing dishes with hotter water allows for improved disinfection compared to washing by hand at much lower temperatures.

### ■ MORE QUIET TIME

More insulation and better components mean that ENERGY STAR qualified dishwashers run quieter than older models—over 50% quieter than models produced 10 years ago!

### ■ SAVE ENERGY

A new ENERGY STAR qualified dishwasher uses less than half as much energy as washing dishes by hand.

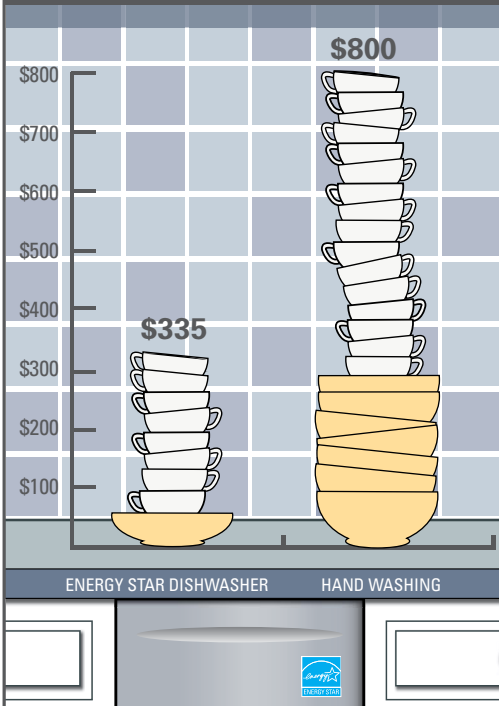
### ■ SAVE WATER

A new ENERGY STAR qualified dishwasher saves nearly 5,000 gallons of water per year, compared to washing dishes by hand.

### ■ SAVE THE ENVIRONMENT

Because they use less energy, these products reduce air pollution and greenhouse gases caused by burning fossil fuels. By reducing water consumption, they also help protect our lakes, streams and oceans.

**LIFETIME OPERATING COSTS\***  
ENERGY STAR® AUTOMATIC DISHWASHER  
vs. HAND WASHING



Washing dishes by hand costs over \$450 more in additional energy and water bills than using an ENERGY STAR dishwasher.

**LEGEND**

= WATER COSTS    = ENERGY COSTS

\*Assumes average dishwasher lifetime of nine years.

**GETTING THE MOST FROM YOUR DISHWASHER**

■ **SCRAPE DON'T RINSE**

Rinsing dishes can use up to 20 gallons of water before the dishes are even loaded. Save yourself the rinsing—just scrape food off the dishes. ENERGY STAR qualified dishwashers and today's detergents<sup>1</sup> are designed to do the cleaning so you don't have to. If your dirty dishes are going to sit overnight, use your dishwasher's rinse feature. It uses a fraction of the water needed to hand rinse.

■ **LOAD IT FULL**

Most dishwashers use about the same amount of energy and water regardless of how full they are. Fill your dishwasher to capacity to get the most out of the energy and water you're using.

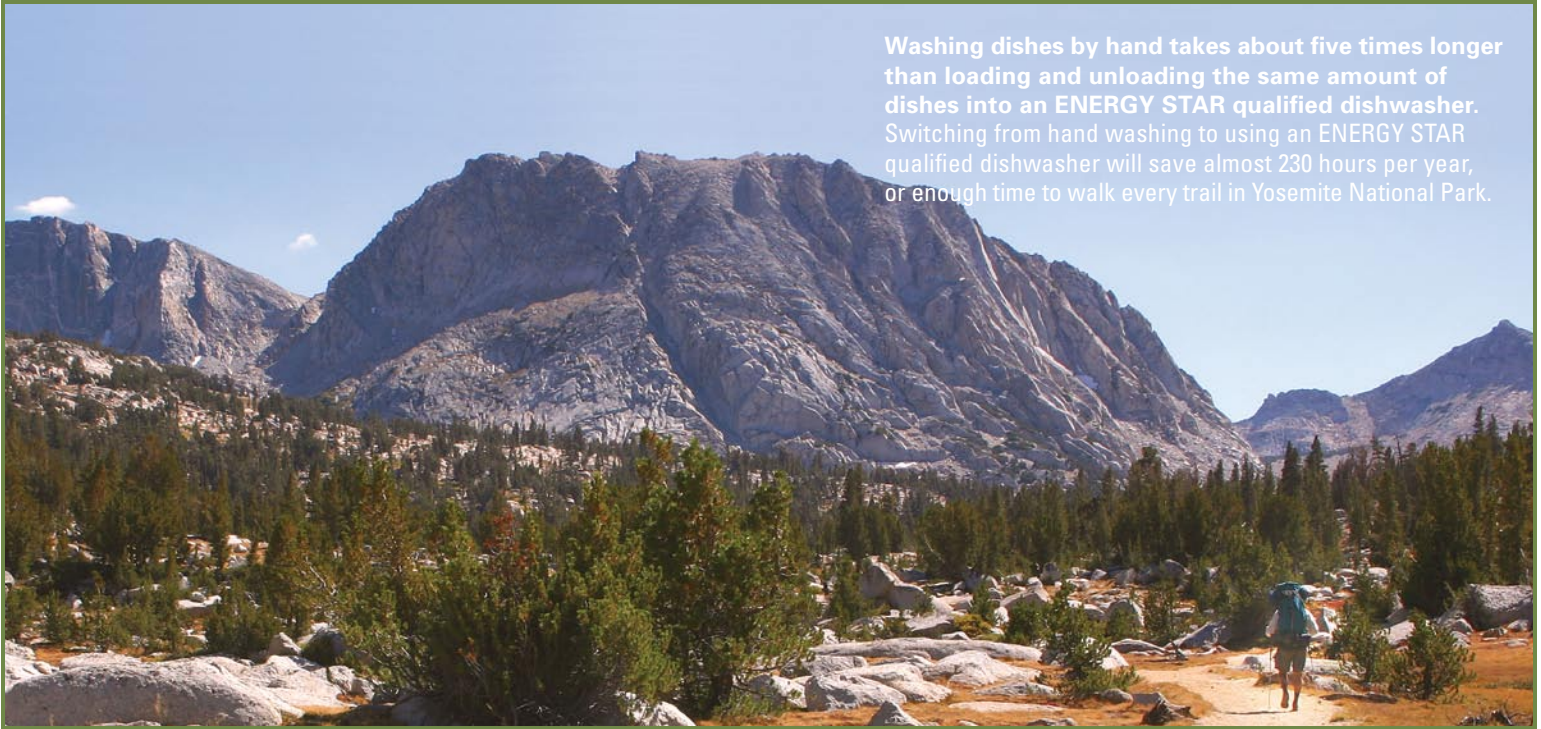
■ **GET GOOD DRYING RESULTS WITH LESS ENERGY**

Use a rinse agent for drying instead of the heated dry feature.



Scrape food off of dishes instead of rinsing them before loading the dishwasher and save up to 20 gallons of water per cycle.

<sup>1</sup> Many dishwasher detergents now contain enzymes to break down stuck-on soils and soil suspension ingredients so dishes rinse efficiently.



Washing dishes by hand takes about five times longer than loading and unloading the same amount of dishes into an ENERGY STAR qualified dishwasher. Switching from hand washing to using an ENERGY STAR qualified dishwasher will save almost 230 hours per year, or enough time to walk every trail in Yosemite National Park.

## FUN FACTS<sup>2</sup>

Using an ENERGY STAR qualified dishwasher instead of hand washing saves nearly **5,000 gallons of water a year**. Over the 11-year life of the dishwasher, that's enough water to:

- wash your car 530 times
- take over 2,000 showers
- provide a lifetime of drinking water for four people
- fill two backyard swimming pools

ENERGY STAR qualified dishwashers save **more than \$40** over washing dishes by hand. Over the 11-year life of the dishwasher, that's enough money to buy:

- a new ENERGY STAR dishwasher
- 95 boxes of dishwasher detergent (or enough detergent to do the dishes for more than its expected lifetime)
- two iPods
- two six megapixel digital camera
- 70 movie tickets
- a new toaster oven, counter-top microwave, blender, and coffee maker
- a complete set of new cookware, place-settings, silverware and glassware

ENERGY STAR qualified dishwashers save almost **230 hours per year** compared to hand washing dishes. That's enough time to:

- take a 10-day vacation
- drive cross-country six times
- fly cross-country 47 times
- bike the Tour de France three times
- spend two hours gardening every weekend for four years
- take your family to 93 baseball games

<sup>2</sup> Hand washing water consumption estimates and time estimates are based on data from the University of Bonn, 2004.

## SECTION II : MARKET DATA



### PERFORMANCE IMPROVEMENTS<sup>3</sup>

PERFORMANCE DIMENSION	PERCENT IMPROVEMENT (1993-2003)
CLEANING SCORES	16%
USABLE CAPACITY	15%
WATER USAGE	30%
ELECTRICITY USAGE	27%
SOUND LEVELS	50%

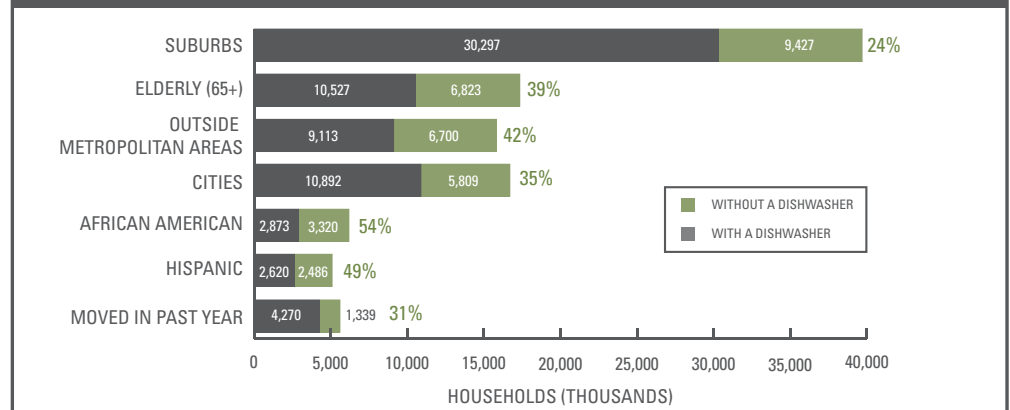
Many consumers that dislike automatic dishwashers due to bad experiences in the past are unaware of the dramatic improvements over the last 10 years. Not only are today's dishwashers more resource efficient, they also clean better and make less noise.

### HOUSEHOLD SATURATION

Over 30% of U.S. owner-occupied households still do not own a dishwasher.<sup>4</sup> Some of these 22 million households simply do not have the space, but many consumers choose to hand wash because they don't realize that automatic dishwashers clean better and cost less to operate.

Some demographic groups, such as the elderly and the Hispanic population, are below the national average for dishwasher ownership, which presents an opportunity to develop more targeted marketing activities to reach these consumers.

### PERCENT OF OWNER-OCCUPIED HOUSEHOLDS WITHOUT AN AUTOMATIC DISHWASHER<sup>5</sup>



<sup>3</sup> Whirlpool Corporation, 2006.

<sup>4</sup> American Housing Survey, U.S. Census Bureau, 2003.

<sup>5</sup> Ibid.



Washing dishes by hand may be costing you over \$450 in energy and water bills.

## ENERGY STAR CRITERIA

Dishwasher energy efficiency is measured by Energy Factor (EF), which includes machine electrical energy and energy used to heat the water, and is expressed in cycles per kWh. The higher the EF, the more efficient the dishwasher.

The new ENERGY STAR criteria for dishwashers took effect on January 1, 2007, and to meet it, models must be at least 41% more energy efficient than the minimum federal standard.

ENERGY STAR CRITERIA		
DISHWASHER TYPE	FEDERAL STANDARD EFFECTIVE 1/1/94	ENERGY STAR EFFECTIVE 1/1/07
STANDARD ≥ 8 PLACE SETTINGS + 6 SERVING PIECES	EF ≥ 0.46	EF ≥ 0.65
COMPACT ≤ 8 PLACE SETTINGS + 6 SERVING PIECES	EF ≥ 0.62	EF ≥ 0.88





## COST EFFECTIVENESS

- Average life = 11 years<sup>6</sup>
- Average cycles per year = 215
- ENERGY STAR price premium = \$30 – \$60
- Time to recover price premium = 2 – 6 years
- ENERGY STAR dishwasher price range = \$170 – \$1,750<sup>7</sup>
- Regular dishwasher price range = \$160 – \$450<sup>8</sup>

## ENERGY STAR SAVINGS

The annual dollar savings of an ENERGY STAR qualified dishwasher compared to washing dishes by hand vary depending on which fuel a customer uses to heat their water. Homes that have a gas water heater—about 59% of U.S. Households—will save an average of \$40 per year, whereas consumers that use electric water heating—41% of U.S. households—will save an average of \$46 per year. The national weighted average is \$42 per year.

### SWITCHING FROM HAND WASHING TO AN ENERGY STAR DISHWASHER<sup>9</sup>

	GAS WATER HEATING			ELECTRIC WATER HEATING		
	ENERGY STAR DISHWASHER	HAND WASHING	SAVINGS	ENERGY STAR DISHWASHER	HAND WASHING	SAVINGS
ENERGY USE (therms/year)	6.5	28	21	N/A	N/A	N/A
ENERGY USE (kWh/year)	135	N/A	-135 <sup>10</sup>	307	539	232
WATER USE (gallons/year)	860	5,805	4,945	860	5,805	4,945
ENERGY AND WATER BILL (\$/year) <sup>11</sup>	\$27	\$67	\$40	\$35	\$81	\$46

### BUYING A NEW ENERGY STAR DISHWASHER INSTEAD OF A REGULAR DISHWASHER

	GAS WATER HEATING			ELECTRIC WATER HEATING		
	ENERGY STAR DISHWASHER	NON-QUALIFIED	SAVINGS	ENERGY STAR DISHWASHER	NON-QUALIFIED	SAVINGS
ENERGY USE (therms/year)	6.5	9	2.5	N/A	N/A	N/A
ENERGY USE (kWh/year)	135	158	23	307	358	41
WATER USE (gallons/year)	860	1,290	430	860	1,290	430
ENERGY AND WATER BILL (\$/year)	\$27	\$35	\$8	\$35	\$42	\$7

<sup>6</sup> Annual Portrait of the U.S. Appliance Industry, *Appliance Magazine*, September 2006.

<sup>7</sup> Based on data from national retailer Web sites, 2006.

<sup>8</sup> Ibid.

<sup>9</sup> Average household savings.

<sup>10</sup> For homes with gas water heating, installing a dishwasher will lead to an increase in electricity consumption (to operate the dishwasher) and a decrease in gas consumption (from reduced hot water needs). The net effect is a reduction in both total energy use (Btu) and total utility bills.

<sup>11</sup> Utility rates used to estimate dollar amounts are as follows: 10.19c/kWh, \$1.46/therm (Source: U.S. Department of Energy, 2006) and \$0.004529/gallon. (Source: Raftelis Water and Wastewater Rate Survey, 2004).





United States  
Department of Energy

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