

ENERGY STAR® Unit Shipment and Market Penetration Report Calendar Year 2011 Summary

This is the tenth year in which ENERGY STAR has collected unit shipment data from partners and/or their representative associations and used it to project the market penetration of ENERGY STAR qualified products.

Data:

For 2011, data was collected for the following ENERGY STAR qualified products:

- | | |
|---|---------------------------------|
| • Audio/Video | • Displays |
| • Battery Charging Systems | • Furnaces |
| • Boilers | • Geothermal Heat Pumps |
| • Ceiling Fans | • Imaging Equipment |
| • Central Air Conditioners and Air-Source Heat Pumps (CAC/ASHP) | • Lamps |
| • Clothes Washers | • Light Commercial HVAC |
| • Commercial Dishwashers | • Luminaires |
| • Commercial Fryers | • Refrigerators and Freezers |
| • Commercial Griddles | • Roof Products |
| • Commercial Hot Food Holding Cabinets | • Room Air Cleaners |
| • Commercial Ice Machines | • Room Air Conditioners |
| • Commercial Ovens | • Set-top Box Service Providers |
| • Commercial Refrigerators and Freezers | • Set-top Boxes |
| • Commercial Steam Cookers | • Telephony |
| • Computer Servers | • Televisions |
| • Computers | • Vending Machines |
| • Decorative Light Strings (DLS) | • Ventilating Fans |
| • Dehumidifiers | • Water Coolers |
| • Dishwashers | • Water Heaters |

Methodology:

ENERGY STAR market penetrations for a given year are derived by dividing ENERGY STAR qualified product shipments by total U.S. shipments.

ENERGY STAR Shipment Data

ENERGY STAR shipment data is collected from program partners for each calendar year. EPA uses this data as the representative value of all ENERGY STAR qualified product shipments for the respective year; that is, no adjustments are made to the totals to account for partners that fail to report their shipments. Using the reported data represents a conservative approach. Though this method may underestimate ENERGY STAR market penetration, the data are reliable and the method is easily replicated. Further, response rates for all collected product categories average approximately 89%, suggesting that reported shipments closely approximate actual ENERGY STAR qualified product shipments.

U.S. Shipment Data

U.S. shipments are based on modeled and documented data. Industry data is used as a direct input whenever available and compared to forecast assumptions to ensure data comparability. Industry sources include trade associations, publications, and commercially available market research.

Response Rate:

Percent of Partners that Submitted CY2011 Unit Shipment Data:

| Product Category | Response Rate (%) | Number of Manufacturers Required to Respond |
|---------------------------------------|-------------------|---|
| Audio/Video | 88% | 26 |
| Battery Charging Systems | 77% | 43 |
| Boilers | 93% | 45 |
| Ceiling Fans | 86% | 49 |
| Central ACs and Air-Source Heat Pumps | 91% | 33 |
| Clothes Washers | 100% | 16 |
| Commercial Dishwashers | 100% | 19 |
| Commercial Fryers | 100% | 11 |
| Commercial Griddles | 100% | 7 |
| Commercial Hot Food Holding Cabinets | 100% | 23 |
| Commercial Ice Machines | 86% | 7 |
| Commercial Ovens | 100% | 16 |
| Commercial Refrigerators and Freezers | 100% | 41 |
| Commercial Steam Cookers | 92% | 12 |
| Computer Servers | 100% | 12 |
| Computers | 71% | 96 |
| Decorative Light Strings | 84% | 32 |
| Dehumidifiers | 88% | 24 |
| Dishwashers | 100% | 17 |
| Displays | 89% | 55 |
| Furnaces | 96% | 26 |
| Geothermal Heat Pumps | 100% | 25 |
| Imaging Equipment | 100% | 57 |
| Lamps | 88% | 187 |
| Light Commercial HVAC | 100% | 9 |
| Luminaires | 91% | 214 |
| Refrigerators and Freezers | 97% | 38 |
| Roof Products | 85% | 310 |
| Room Air Cleaners | 97% | 29 |
| Room Air Conditioners | 94% | 16 |
| Set-top Box Service Providers | 100% | 5 |
| Set-top Boxes Manufacturers | 87% | 15 |
| Telephony | 100% | 12 |
| Televisions | 83% | 46 |
| Vending Machines | 89% | 9 |
| Ventilating Fans | 98% | 42 |
| Water Coolers | 100% | 27 |
| Water Heaters | 77% | 48 |
| Total | 89% | 1699 |

Results:

The goal of the ENERGY STAR program is to reduce greenhouse gas and other emissions associated with avoidable energy consumption by transforming the market for energy efficient products, buildings and services, so that more energy efficient options become the norm and persist in the marketplace. As this occurs, EPA looks for additional opportunities to improve efficiency by tightening energy and environmental performance standards for a given product or service, and revising specifications accordingly.¹

The below estimates of market penetration for calendar year 2011 provide a key indicator of whether the market is being transformed for a given product, and are used to inform the specification revision process. As noted in highlights, significant market penetration was anticipated for some product categories, and new criteria have already been established or are currently being developed.

ENERGY STAR CY2011 Qualified Units Shipped, Corresponding Estimated Market Penetration, and Relevant Specification Updates:

| Key and notes | |
|----------------------|--|
| | New specification effective in 2012; market penetration under the currently effective specification is likely to be lower. |
| | New specification effective in 2013 or beyond. |

| Product Category ² | 2011 Units Shipped (thousands unless otherwise stated) | 2011 Estimated Market Penetration | Specification Revisions Affecting Future Market Penetration (Version/Tier Effective Date) |
|---|---|-----------------------------------|--|
| Audio/Video Products – Consumer | 15,528 | 55% | Version 3.0 - May 1, 2013 |
| <i>Audio Separates</i> | 13 | 1% | |
| <i>CD Players</i> | 0 | 0% | |
| <i>DVD Players</i> | 14,717 | 66% | |
| <i>Home Theater</i> | 532 | 23% | |
| <i>Mini-systems</i> | 239 | 13% | |
| Audio/Video Products – Professional/Commercial – Amplifiers | 27 | N/A | |
| Battery Charging Systems | 18,556 | 22% | Version 2.0 - TBD |
| Boilers | 145 | 46% | |
| <i>Residential Gas Boilers</i> | 82 | 42% | |

¹ The approach and criteria for revising ENERGY STAR product specifications are documented in *Specification Development Guiding Principles* (www.energystar.gov/ia/partners/prod_development/downloads/guiding_princip.pdf). Detailed documentation for the rationale for revising specific products is available online by product category at www.energystar.gov/productdevelopment.

² Number of ENERGY STAR qualified shipments and market penetrations are provided for select, notable subcategories of products. The totals and market penetrations for each main product category may be comprised of additional subcategories.

| | | | |
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| <i>Residential Oil Boilers</i> | 64 | 52% | |
| Ceiling Fans | | | |
| <i>Ceiling Fan Only</i> | 1,023 | 13% | |
| <i>Ceiling Fan with Light Kit</i> | 581 | 6% | Version 1.1 (Luminaires) - April 1, 2012 |
| <i>Light Kit Only</i> | 67 | 3% | |
| CAC/ASHP | 1,338 | 26% | |
| <i>ASHP³</i> | 559 | 32% | |
| <i>CAC</i> | 779 | 23% | |
| Clothes Washers | 4,690 | 60% | |
| <i>Residential Use</i> | 4,625 | 61% | Version 7.0 - TBD |
| <i>Commercial Use</i> | 65 | 32% | Version 6.0 - February 1, 2013 |
| Commercial Dishwashers | 37 | 66% | Version 2.0 - February 1, 2013 |
| Commercial Fryers | 14 | 15% | |
| Commercial Griddles | 1 | 5% | |
| Commercial Hot Food Holding Cabinets | 23 | 62% | Version 2.0 – October 1, 2011 |
| Commercial Ice Machines | 75 | 62% | Version 2.0 - February 1, 2013 |
| Commercial Ovens | 30 | 45% | Version 2.0 - TBD |
| Commercial Refrigerators & Freezers | 404 | 65% | |
| Commercial Steam Cookers | 6 | 38% | |
| Computer Servers | 417 | 20% | Version 2.0 - TBD |
| Computers | 50,870 | 54% | Version 6.0 - TBD |
| <i>Desktop</i> | 6,391 | 17% | |
| <i>Notebooks</i> | 42,930 | 75% | |
| <i>Small-Scale Servers</i> | 475 | N/A | |
| <i>Thin Clients</i> | 925 | N/A | |
| <i>Workstations</i> | 150 | 20% | |
| Decorative Light Strings | 34,019 | 25% | |
| Dehumidifiers | 1,355 | 99% | Version 3.0 - October 1, 2012 |
| Dishwashers | 5,309 | 96% | Version 5.0 - January 20, 2012 |
| Displays | 23,515 | 58% | Version 6.0 - June 1, 2013 |
| <i>Digital Picture Frames</i> | 397 | 5% | |
| <i>LCD Monitors</i> | 22,922 | 85% | |
| <i>Professional Displays PDP</i> | 195 | 3% | |
| Freezers | 432 | 21% | Version 5.0 - TBD |
| Furnaces | 1,375 | 54% | Version 3.0 - February 1, 2012 |
| <i>Residential Gas Furnaces</i> | 1,360 | 55% | |
| <i>Residential Oil Furnaces</i> | 15 | 27% | |

³ As percent of heat pump market.

| | | | |
|--|-------------------|------------------|--|
| Geothermal Heat Pumps | 54 | 36% | Water-to-Air & Water-to-Water Version 3.0 Tier 3 - January 1, 2012 |
| Imaging Equipment ⁴ | 30,833 | 93% | Version 2.0 - TBD |
| <i>Copiers</i> | 119 | 80% | |
| <i>Digital Duplicators</i> | 6 | N/A | |
| <i>Fax Machines</i> | 212 | 6% | |
| <i>Mailing Machines</i> | 275 | 99% | |
| <i>Multi-function Devices and Printers</i> | 29,141 | 100% | |
| <i>Scanners</i> | 1,080 | N/A | |
| Lamps ⁵ | 303,978 | 17% | Version 1.0 - TBD |
| <i>Compact Fluorescent Lamps (CFL)</i> | 294,601 | 76% | |
| <i>Integral LED Lamps</i> | 9,377 | 63% | |
| Light Commercial HVAC | 247 | 33% | |
| Luminaires ⁶ | 19,119 | 10% | Version 1.1 Luminaires - April 1, 2012 |
| <i>Indoor</i> | 13,676 | 9% | |
| <i>Outdoor</i> | 5,443 | 18% | |
| Refrigerators | 5,008 | 56% | Version 5.0 - TBD |
| Roof Products | 7 billion sq. ft. | 34% | Version 3.0 - TBD |
| <i>Residential</i> | 2 billion sq. ft. | 32% | |
| <i>Commercial</i> | 6 billion sq. ft. | 34% ⁷ | |
| Room Air Cleaners | 797 | 30% | |
| Room Air Conditioners | 4,724 | 62% | Version 3.0 - October 1, 2013 |
| Set-top Boxes ⁸ | 18,941 | 62% | Version 4.1 – TBD (Version 3.0 – September 1, 2011) |
| Telephony | 25,307 | 98% | Version 3.0 - TBD |
| Televisions | 32,935 | 96% | Version 6.0 - June 1, 2013 (Version 5.3 - September 30, 2011) |
| <i>LCD</i> | 27,850 | 97% | |
| <i>LCD less than or equal to 23 inches</i> | 4,598 | 100% | |
| <i>LCD 24-34 inches</i> | 11,423 | 90% | |
| <i>LCD 35-39 inches</i> | 1,084 | 100% | |
| <i>LCD 40-44 inches</i> | 4,992 | 89% | |
| <i>LCD 45-49 inches</i> | 3,453 | 100% | |
| <i>LCD 50-59 inches</i> | 2,042 | 83% | |

⁴ The total number of imaging equipment units shipped and corresponding market penetration do not include mailing machines and digital duplicators.

⁵ This includes ENERGY STAR light bulbs as a percent of all light bulbs, including incandescent.

⁶ Shipments include solid state lighting luminaires.

⁷ Gallons were converted to square feet for the purpose of estimating market penetration.

⁸ Includes manufacturers' shipments to consumers and retailers, to ENERGY STAR service providers, and to non ENERGY STAR service providers for Version 3.0 only.

| | | | |
|---|--------|-----|--|
| <i>LCD greater than or equal to 60 inches</i> | 258 | 30% | |
| <i>OLED</i> | 0 | 0% | |
| <i>Plasma</i> | 3,605 | 93% | |
| <i>Rear Projection</i> | 86 | 34% | |
| <i>TV Combination Units</i> | 1,394 | 52% | |
| Vending Machines | 77 | 31% | Version 3.0 - March 1, 2013 |
| Ventilating Fans ⁹ | 1,347 | 41% | Version 1.1 (Luminaires) - April 1, 2012 |
| Water Coolers | 1,348 | 62% | Version 2.0 - TBD |
| Water Heaters | 477 | 6% | Version 2.0 - TBD |
| <i>Gas Storage</i> | 107 | 3% | |
| <i>Gas Tankless</i> | 337 | N/A | |
| <i>Heat Pump</i> | 23 | 1% | |
| <i>Solar</i> | 10 | N/A | |
| Windows, Doors and Skylights | 36,784 | 79% | Version 6.0 - TBD |
| <i>Windows</i> | 29,788 | 79% | |
| <i>Doors</i> | 6,447 | 80% | |
| <i>Skylights</i> | 550 | 70% | |

⁹ Market penetration for ventilating fans does not include in-line ventilating fans.