ENERGY STAR® Unit Shipment and Market Penetration Report Calendar Year 2009 Summary

This is the eighth 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:

In 2009, data was collected for the following ENERGY STAR qualified products:

• Audio/DVD	• Enterprise Servers
• Battery Charging Systems	• External Power Supplies (EPSs)
• Boilers	• Furnaces
• Ceiling Fans	• Geothermal Heat Pumps
• Central Air Conditioners and Air-Source Heat Pumps	• Imaging Equipment
• Commercial Dishwashers	• Light Commercial HVAC
• Commercial Fryers	• Monitors
• Commercial Griddles	• Residential Light Fixtures (RLF)
• Commercial Hot Food Holding Cabinets	• Roof Products
• Commercial Ice Machines	• Room Air Cleaners
• Commercial Ovens	• Set-top Box Service Providers
• Commercial Refrigerators and Freezers	• Set-top Boxes
• Commercial Steam Cookers	• Solid-State Lighting Luminaires (SSLs)
• Compact Fluorescent Lamps (CFL)	• Telephony
• Computers	• TV/VCRs
• Decorative Light Strings (DLS)	• Vending Machines
• Dehumidifiers	• Ventilating Fans
• Digital-to-Analog Converter Boxes (DTAs)	• Water Coolers
• End-Use Products with Qualified EPSs[1]	• Water Heaters

[1] Data is collected from End-Use Product partners to assist with assessing the External Power Supply market. End-Use Product market penetration is not calculated.

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 94%, 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 CY2009 Unit Shipment Data:

Product Category	Response Rate (%)	Number of Manufacturers Required to Respond
Audio/DVD	81%	32
Battery Charging Systems	87%	30
Boilers	100%	46
Ceiling Fans	100%	37
Central ACs and Air-Source Heat Pumps	100%	31
Commercial Dishwashers	95%	19
Commercial Fryers	100%	9
Commercial Griddles	100%	3
Commercial Hot Food Holding Cabinets	100%	21
Commercial Ice Machines	86%	7
Commercial Ovens	100%	9
Commercial Refrigerators and Freezers	95%	39
Commercial Steam Cookers	100%	12
Compact Fluorescent Lamps (CFL)	85%	204
Computers	89%	101
Decorative Light Strings	100%	19
Dehumidifiers	92%	24
Digital-to-Analog Converter Boxes (DTAs)	80%	10
End-Use Products with Qualified EPSs	100%	38
Enterprise Servers	100%	5
External Power Supplies (EPSs)	92%	156
Furnaces	96%	27
Geothermal Heat Pumps	96%	25
Imaging Equipment	92%	48
Light Commercial HVAC	100%	6
Monitors	92%	48
Residential Light Fixtures	97%	192
Roof Products	97%	272
Room Air Cleaners	95%	22
Set-top Box Service Providers	100%	4
Set-top Boxes	100%	5
Solid-State Lighting Luminaires (SSL)	100%	11
Telephony	89%	9
TV/VCRs	97%	37
Vending Machines	100%	5
Ventilating Fans	100%	29
Water Coolers	94%	18
Water Heaters	100%	45
Total	**94%**	**1655**

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.[2]

The below estimates of market penetration for calendar year 2009 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 CY2009 Qualified Units Shipped, Corresponding Estimated Market Penetration, and Relevant Specification Updates:

Key and notes	
(pink)	New specification effective in 2010; therefore, market penetration under the currently effective specification is likely to be lower.
(green)	New specification effective 2011 or beyond.
* Specification updated during Calendar Year 2009; therefore, shipment data may comprise a blend of products qualified under the old and new specifications.	

Product Category[3]	2009 Units Shipped (thousands unless otherwise stated)	2009 Estimated Market Penetration	Specification Revisions Affecting Future Market Penetration (Version/Tier Effective Date)
Audio/DVDs			Version 2.0 Tier 2 7/30/2010
Audio Separates	1,126	55%	
CD Players	131	75%	
DVD Players	22,576	80%	
Home Theater	1,815	58%	
Mini-systems	163	10%	
Battery Charging Systems	11,220	27%	Revision TBD
Boilers			Revision TBD
Residential Gas Boilers	88	46%	

[2] 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.

[3] 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.

Residential Oil Boilers	76	62%	
Ceiling Fans			
Ceiling Fan Only	1,266	16%	
Ceiling Fan with Light Kit	219	2%	
Light Kit Only	61	3%	
CAC/ASHP			
ASHP[4]	519	32%	
CAC	614	17%	
Commercial Dishwashers	29	78%	Version 2.0 TBD
Commercial Fryers	11	12%	Version 2.0 TBD
Commercial Griddles	1	5%	
Commercial Hot Food Holding Cabinets	22	75%	Version 2.0 5/1/2011
Commercial Ice Machines	60	42%	
Commercial Ovens	15	7%	
Commercial Refrigerators & Freezers	155	53%*	Version 2.0 (glass door) 4/1/2009 Version 2.0 (solid door) 1/1/2010
Commercial Steam Cookers	6	28%	
Compact Fluorescent Lamps (CFL)	252,136	15%	
Computers	36,581	55%	
Desktop	7,069	27%	
Notebooks	29,326	74%	
Small-Scale Servers	16	NA	
Thin Clients	95	0%	
Workstations	187	30%	
Decorative Light Strings	23,549	22%	
Dehumidifiers	1,346	82%	
Digital-to-Analog Converter Boxes (DTAs)	1,282	8%	
End-Use Products with Qualified EPSs	33,467	NA	
Enterprise Servers	40	2%	Version 2.0 TBD
External Power Supplies (EPSs)	394,429	59%	
Furnaces			Version 3.0 9/1/2011
Residential Gas Furnaces	1,095	50%	

[4] As percent of heat pump market.

Residential Oil Furnaces	13	24%	
Geothermal Heat Pumps (% of heat pump market)	74	59%*	Version 3.0 Tier 2 1/1/2011
Imaging Equipment[5]			Version 1.1 7/1/2009
Copiers – Office	149	78%*	
Copiers – Residential	0	NA	
Digital Duplicators	9	NA	
Fax Machines – Office	65	7%*	
Fax Machines – Residential	191	7%*	
Mailing Machines	24	NA	
Multi-function Devices – Office	7,892	48%*	
Multi-function Devices – Residential	1,066	42%*	
Printers – Office	2,499	67%*	
Printers – Residential	1,964	67%*	
Scanners – Office	121	97%*	
Scanners – Residential	295	97%*	
Light Commercial HVAC			Version 2.0 Tier 1 5/1/2010
CACs and Heat Pumps	279 million sq. ft.	37%	
Gas/Electric Package Units	107	NA	
Monitors			Version 5.0 Tier 1 (displays < 30 in.) 10/30/2009 Version 5.0 Tier 1 (displays 30-60 in.) 1/30/2010
CRT	0	NA*	
Digital Picture Frames	0	0%*	
LCD	26,448	90%*	
≤ 29 inch	26,413	90%*	
30 inch	35	54%*	
Professional Displays PDP	0	0%*	
Residential Light Fixtures[6]	12,227	7%	Version 1.0 (Luminaires) TBD
Indoor	7,554	6%	
Outdoor	4,673	16%	
Roof Products			Version 2.1 8/13/2009
Commercial	1,494,435,971 sq. ft. 27,224,200 gal.	26%*[7]	
Residential	677,357,509 sq. ft.	15%*	
Room Air Cleaners	500	19%	
Set-top Boxes	14,840	50%	Version 3.0 9/1/2011
Telephony			
Answering Machines	0	NA	

[5] The total number of imaging equipment units shipped and corresponding market penetration do not include mailing machines and digital duplicators.
[6] Residential Light Fixtures, Indoor, and Outdoor numbers were updated in November 2011 to reflect new information on shipments that significantly impacted the market penetration.
[7] Gallons were converted to square feet for the purpose of estimating market penetration.

Cordless Telephones	4,193	69%	
DSS Cordless Telephones	4,502	69%	
Combination Telephones	632	78%	
DSS Combination Telephones	11,391	78%	
Additional Handsets	377	62%	
TVs	40,434	95%[8]	Version 4.1 5/1/2010
CRT	65	9%	
LCD	36,485	98%	
≤ 23 inch	6,941	NA	
24 - 34 inch	14,877	NA	
35 - 39 inch	2,390	NA	
40 - 44 inch	6,256	NA	
45 - 49 inch	3,596	NA	
≥ 50 inch	2,427	NA	
OLED	0	0%	
Plasma	3,548	96%	
≤ 49 inch	1,309	NA	
50 - 59 inch	2,129	NA	
≥ 60 inch	110	NA	
Rear Projection	336	27%	
≤ 49 inch	0	0%	
50 - 54 inch	0	0%	
55 - 59 inch	0	0%	
≥ 60 inch	336	27%	
TV-VCRs	2,882	NA	
VCRs	0	0%	
Vending Machines	45	18%	
Ventilating Fans[9]	1,090	17%	
Water Coolers	575	43%	Version 1.2 1/22/2010

[8] Based on correspondence with the Consumer Electronics Association, August 31, 2010.
[9] Market penetration for ventilating fans does not include in-line ventilating fans.