ENERGY STAR® Unit Shipment and Market Penetration Report Calendar Year 2015 Summary

This is the 14th year in which EPA has collected unit shipment data for the ENERGY STAR Program from program partners and/or their representative associations and used it to project the market penetration of ENERGY STAR certified products.

Data:

For 2015, data was collected for the following ENERGY STAR certified products:

- Audio/Video
- Boilers
- Ceiling Fans
- Central Air Conditioners and Air-Source Heat Pumps (CAC/ASHPs)
- Clothes Dryers
- Clothes Washers
- Commercial Dishwashers
- Commercial Fryers
- Commercial Griddles
- Commercial Hot Food Holding Cabinets
- Commercial Ice Machines
- Commercial Ovens
- Commercial Refrigerators and Freezers
- Commercial Steam Cookers
- Commercial Water Heaters
- Computer Servers
- Computers
- Data Center Storage
- Decorative Light Strings (DLS)
- Dehumidifiers
- Dishwashers
- Displays
- Furnaces
- Geothermal Heat Pumps
- Imaging Equipment
- Lamps
- Light Commercial HVAC
- Luminaires
- Pool Pumps
- Refrigerators and Freezers
- Roof Products
- Room Air Cleaners
- Room Air Conditioners
- Set-top Boxes
- Set-top Box Service Providers
- Small Network Equipment
- Telephony
- Televisions
- Uninterruptible Power Supplies
- Vending Machines
- Ventilating Fans
- Water Coolers
- Water Heaters

Methodology:

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

U.S. 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 certified 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 87%, suggesting that reported shipments closely approximate actual ENERGY STAR certified product shipments.

Total U.S. Shipment Data

> Total 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 Rates:

Percent of Partners that Submitted CY2015 Unit Shipment Data:

Product Category	Response Rate	Number of Partners Required to Respond
Audio/Video	93%	28
Boilers	100%	36
Ceiling Fans	88%	40
Central ACs and Air-Source Heat Pumps	88%	51
Clothes Dryers	100%	9
Clothes Washers	100%	18
Commercial Dishwashers	100%	17
Commercial Fryers	100%	11
Commercial Griddles	100%	10
Commercial Hot Food Holding Cabinets	100%	10
Commercial Ice Machines	100%	14
Commercial Ovens	100%	18
Commercial Refrigerators and Freezers	95%	42
Commercial Steam Cookers	88%	8
Commercial Water Heaters	100%	13
Computers	84%	63
Computer Servers	100%	17
Data Center Storage	100%	14
Decorative Light Strings	70%	40
Dehumidifiers	95%	41
Dishwashers	92%	26
Displays	74%	58
Furnaces	94%	18
Geothermal Heat Pumps	93%	27
Imaging Equipment	93%	73
Lamps	82%	321
Light Commercial HVAC	100%	8
Luminaires	81%	415
Pool Pumps	82%	11
Refrigerators and Freezers	86%	64
Roof Products	95%	237
Room Air Cleaners	90%	39
Room Air Conditioners	88%	32
Set-top Box Service Providers	75%	4
Set-top Box Brand Owners	89%	9
Small Network Equipment	100%	5
Telephony	100%	7
Televisions	75%	51
Uninterruptible Power Supplies	94%	16
Vending Machines	100%	6
Ventilating Fans	93%	43
Water Coolers	80%	25
Water Heaters	86%	29
Total	**87%**	**2024**

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 criteria for a given product or service, and revising specifications accordingly.

The below estimates of market penetration for calendar year 2015 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 CY2015 Certified Units Shipped, Corresponding Estimated Market Penetration, and Relevant Specification Updates:

Key and notes	
	New specification version effective in 2015 or 2016; market penetration under the new version is likely to be lower.
	New specification version effective in late 2016 or later.

Product Category[1]	2015 Units Shipped (thousand units unless otherwise stated)	2015 Estimated Market Penetration	Specification Revisions Affecting Future Market Penetration (Version - Effective Date)
Audio/Video Products			
Blu-ray Players	*4,970*	*61%*	Revision Planned 2017
DVD Players	*3,868*	*57%*	
Soundbars	*2,806*	*48%[2]*	
Boilers	138	45%	
Residential Gas Boilers	*112*	*45%*	Revision Planned 2018
Residential Oil Boilers	*26*	*45%*	
Ceiling Fans			
Ceiling Fan – Fan Only	*2,069*	*25%*	
Ceiling Fan - With Lights	*526*	*5%*	
Ceiling Fan – Light Kit Only	*130*	*6%*	
CAC/ASHP	1,972	29%	
ASHP[3]	*888*	*39%*	Version 5.0 – September 15, 2015
CAC	*1,084*	*24%*	

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[1] The number of ENERGY STAR certified products shipped and market penetrations are provided for select, notable subcategories of products.
[2] Modified on August 17, 2017 based on updated market data.
[3] As percent of heat pump market.

Clothes Dryers	1,088	*15%*	
Electric	*862*	*15%*	
Gas	*226*	*17%*	
Clothes Washers	5,206	56%	Version 7.0 – March 7, 2015
Residential Use	*5,127*	*56%*	
Commercial Use	*79*	*40%*	
Commercial Dishwashers	48	67%	Revision Planned 2017
Commercial Fryers	20	21%	
Commercial Griddles	3	20%	
Commercial Hot Food Holding Cabinets	8	17%	
Commercial Ice Machines	126	61%	Revision Planned 2016
Commercial Ovens	29	50%	Revision Planned 2018
Commercial Refrigerators & Freezers	422	57%	Revision Planned 2016
Commercial Steam Cookers	7	53%	Revision Planned 2017
Commercial Water Heaters - Gas	44	45%	Revision Planned 2017
Computer Servers	543	15%	
Computers	70, 217	53%	Revision Planned 2017
Desktop	*7,566*	*39%*	
Notebooks	*43,106*	*95%*	
Tablets	*19,467*	*29%*	
Thin Clients	*908*	*N/A*	
Workstations	*77*	*10%*	
Data Center Storage	60	57%[4]	
Decorative Light Strings	41,017	26%	
Dehumidifiers	2,067	84%	Version 4.0 – October 25, 2016
Dishwashers[5]	6,133	84%	Version 6.0 – January 29, 2016
Displays	19,608	92%	Version 7.0 – July 1, 2016
LCD Monitors	*19,438*	*93%*	
Signage Displays	*170*	*29%*	
Freezers[6]	612	30%	
Furnaces	739	26%	
Residential Gas Furnaces	*732*	*26%*	
Residential Oil Furnaces	*7*	*19%*	
Geothermal Heat Pumps[7]	40	16%	

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[4] The goal of the data center storage specification is transparency for buyers and availability of data such that the program can drive greater energy savings going forward. As such, high market share is desirable at present.

[5] Market penetration for dishwashers includes compact products.

[6] Market penetration for freezers includes compact products.

[7] Market penetration as a percent of commercial and residential geothermal heat pumps. ENERGY STAR is focused on the residential market, which is known to be decreasing in contrast to the commercial market.

Imaging Equipment			Revision Planned 2017
Multi-function Devices and Printers	*22,465*	*100%*	
Scanners	*1,025*	*N/A*	
Lamps[8,9]	333,400	19%	
Compact Fluorescent Lamps (CFL)[10]	*181,023*	*63%*	
LED Lamps[11]	*152,377*	*N/A*	
Light Commercial HVAC[12]	80	16%	
Luminaires[13]	38,267	18%	
Indoor	*35,236*	*19%*	
Outdoor	*3,031*	*10%*	
Solid State Retrofit Kits	*19,953*	*N/A*	
Pool Pumps	230	33%[14]	Revision Planned 2017
Refrigerators[15]	4,738	46%	Revision Planned 2017
Roof Products[16,17,18]	7.4 billion sq. ft.	35%	
Residential	*1.4 billion sq. ft.*	*28%*	
Commercial	*6 billion sq. ft.*	*36%*	
Room Air Cleaners[19]	1,236	29%	
Room Air Conditioners	3,424	54%	Version 4.0 - October 26, 2015

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[8] This includes ENERGY STAR certified lamps as a percentage of all lamps, including incandescent, fluorescent, halogen and solid state.

[9] CFL and LED shipments modified on August 17, 2017 based on revised shipment data provided by partners.

[10] CFL shipments do not include pin-based lamps.

[11] Market penetration for LED lamps not included due to uncertainty in market information.

[12] Shipments for light commercial HVAC are now represented in units rather than converting to corresponding floor area.

[13] Shipments and market penetration for luminaires and indoor luminaires do not include solid state lighting retrofit kits or ceiling fan light kits.

[14] Modified on August 17, 2017 based on updated market data.

[15] Market penetration for refrigerators does not include compact products.

[16] Shipments for roof products were converted from gallons to square feet at a factor of 100 square feet per gallon for the purpose of estimating market penetration.

[17] To avoid double-counting, shipments for roof products include only original equipment manufacturer built-up-roofs, coatings, metals, modified bitumen, single-ply, shingles, spray polyurethane foam, tile, and private labeler metals. Discussions with the industry revealed that all ENERGY STAR metal roofing is created using ENERGY STAR coatings. To reflect the coatings not already applied to metal roofing, coatings associated with private labeler and OEM metal shipments have been subtracted at a factor of 1000 square feet per gallon from the aggregate total for roofing products.

[18] Residential and Commercial roof product shipments modified on August 17, 2017 based on revised shipment data provided by partners.

[19] New data source used to characterize market in 2015 (versus 2014).

Set-top Boxes[20]	21,895	45%	Version 5.0 – January 1, 2017 (Thin Client – January 1, 2018)
Cable	*5,782*	*41%*	
Satellite	*3,867*	*67%*	
Over the Top IP	*4,637*	*31%*	
MVPD IP	*1,245*	*28%*	
Thin Client/Remote	*6,364*	*73%*	
Small Network Equipment	1,206	2%	
Telephony	3,818	19%	
Analog[21]	*2,796*	*22%*	
VOIP	*1,021*	*14%*	
Televisions	33,879	89%	Version 7.0 – October 30, 2015
LCD	*33,827*	*89%*	
LCD < 40	*12,691*	*81%*	
LCD ≥ 40	*21,135*	*94%*	
OLED	*53*	*73%*	
Uninterruptible Power Supplies	3,121	N/A	
Vending Machines	52	21%	
Ventilating Fans	3,263	N/A	
Water Coolers	1,474	62%	Revision Planned 2017
Water Heaters[22]	330	4%	Version 3.0 – April 16, 2015
Gas Storage	*275*	*6%*	
Gas Tankless	*297*	*N/A*	
Heat Pump	*55*	*1%*	
Solar	*8*	*N/A*	
Windows, Doors and Skylights[23]	48,681	82%	Version 6.0 – January 1, 2015 January 1, 2016 (for northern zone windows)

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[20] Includes shipments to consumers, retailers, and set-top box service providers including both ENERGY STAR partners and non-partners.

[21] Shipments and market penetration for telephony now include corded and cordless analog telephones but no longer include additional handsets.

[22] Shipments and market penetration for water heaters include gas storage and heat pump as a percent of electric.

[23] Shipment data and market share for windows, door, and skylights is determined by Ducker Worldwide, LLC through a separate process.