

ENERGY STAR® Unit Shipment and Market Penetration Report Calendar Year 2018 Summary

This is the 17th 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 2018, data was collected for the following ENERGY STAR certified products:

- Audio/Video Products
- Boilers
- Ceiling Fans
- Central Air Conditioners and Air-Source Heat Pumps
- Clothes Dryers
- Clothes Washers
- Commercial Boilers
- Commercial Dishwashers
- Commercial Fryers
- Commercial Griddles
- Commercial Hot Food Holding Cabinets
- Commercial Ice Makers
- Commercial Ovens
- Commercial Refrigerators and Freezers
- Commercial Steam Cookers
- Commercial Water Heaters
- Computers
- Computer Servers
- Connected Thermostats
- Data Center Storage
- Decorative Light Strings
- Dehumidifiers
- Dishwashers
- Displays
- Electric Vehicle Supply Equipment
- Freezers
- Furnaces
- Geothermal Heat Pumps
- Imaging Equipment
- Laboratory Grade Refrigerators and Freezers
- Lamps
- Light Commercial HVAC
- Luminaires
- Pool Pumps
- Refrigerators
- Room Air Cleaners
- Room Air Conditioners
- Set-top Boxes
- 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 82%. Since many non-responsive partners are no longer shipping ENERGY STAR products, the shipments reported 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 CY2018 Unit Shipment Data:

Product Category	Response Rate	Number of Partners Required to Respond
Audio/Video Equipment	78%	27
Boilers	100%	35
Ceiling Fans	91%	35
Central ACs and Air Source Heat Pumps	69%	89
Clothes Dryers	100%	10
Clothes Washers	100%	15
Commercial Boilers	100%	8
Commercial Dishwashers	94%	18
Commercial Fryers	100%	8
Commercial Griddles	100%	9
Commercial Hot Food Holding Cabinets	100%	10
Commercial Ice Makers	94%	17
Commercial Ovens	100%	24
Commercial Refrigerators and Freezers	92%	37
Commercial Steam Cookers	100%	8
Commercial Water Heaters	100%	11
Computers ¹	72%	76
Computer Servers	81%	21
Connected Thermostats	100%	11
Data Center Storage	100%	10
Decorative Light Strings	78%	41
Dehumidifiers	91%	58
Dishwashers	97%	33
Displays	80%	51
Electric Vehicle Supply Equipment	86%	7
Furnaces	100%	18
Geothermal Heat Pumps	88%	24
Imaging Equipment	90%	71
Lab Grade Refrigerators and Freezers	100%	13
Lamps	80%	234
Light Commercial HVAC	100%	3
Luminaires	71%	480
Pool Pumps	81%	16
Refrigerators and Freezers	85%	86
Room Air Cleaners	77%	52
Room Air Conditioners	90%	42
Set-top Boxes	80%	5
Small Network Equipment	100%	4
Telephony	100%	6
Televisions	76%	25
Uninterruptible Power Supplies	85%	20
Vending Machines	100%	6
Ventilating Fans	95%	39
Water Coolers	82%	22
Water Heaters	96%	25
Total	82%	1860

¹ Response rates for products with specification revisions effective in the calendar year for which data was collected typically have lower response rates due to partners who have not yet certified models to the new specification version.

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 2018 provide a key indicator of whether the market is being transformed for a given product, and are used to inform the [specification revision process and the annual ENERGY STAR Product Development Workplan](#). For most products with high market share, new criteria have already been established or are currently being developed.

ENERGY STAR CY2018 Certified Units Shipped, Corresponding Estimated Market Penetration, and Relevant Specification Updates:

Product Category ²	2018 Units Shipped (thousand units)	2018 Estimated Market Penetration ³	Recent and Upcoming Specification Revisions (Version - Effective Date)
Audio/Video Products ⁴			Revision In Process/Planned
<i>Blu-ray Players</i>	3,203	83%	
<i>DVD Players</i>	1,596	49%	
<i>Soundbars</i>	1,354	16%	
Boilers	161	53%	
<i>Residential Gas Boilers</i>	136	53%	
<i>Residential Oil Boilers</i>	25	53%	
Ceiling Fans			Version 4.0 - June 15, 2018
<i>Ceiling Fan - Fan Only</i>	853	36%	
<i>Ceiling Fan - With Light Kit</i>	468	3%	
<i>Ceiling Fan - Light Kit Only</i>	296	13%	
CAC/ASHP ⁵	2,818	34%	Revision In Process/Planned
<i>ASHP</i>	1,258	43%	
<i>CAC⁴</i>	1,559	29%	
Clothes Dryers	2,652	35%	
<i>Clothes Dryers - Electric</i>	2,019	32%	
<i>Clothes Dryers - Gas</i>	633	46%	
Clothes Washers ⁴	4,923	50%	Version 8.0 - February 5, 2018
<i>Residential Use⁴</i>	4,875	51%	
<i>Commercial Use</i>	48	25%	
Commercial Boilers	8	18%	

² The number of ENERGY STAR certified products shipped and market penetrations are provided for select, notable subcategories of products.

³ For product categories where 2018 Market Penetration reads "N/A", market penetration was unable to be calculated due to a lack of market data.

⁴ Market penetration and shipments were corrected in August 2020 after discovering an issue with data aggregation.

⁵ Market penetration and shipments were corrected based on updated information from partners.

Product Category ²	2018 Units Shipped (thousand units)	2018 Estimated Market Penetration ³	Recent and Upcoming Specification Revisions (Version - Effective Date)
Commercial Dishwashers ⁶	48	56%	Revision In Process/Planned
Commercial Fryers ⁶	24	22%	
Commercial Griddles ⁶	3	18%	
Commercial Hot Food Holding Cabinets ⁶	9	10%	
Commercial Ice Makers ⁶	76	23%	Version 3.0 - January 28, 2018
Commercial Ovens ⁶	44	47%	Revision In Process/Planned
Commercial Refrigerators & Freezers ⁶	369	41%	
Commercial Steam Cookers ^{6, 7}	7	43%	
Commercial Water Heaters - Gas	53	56%	Version 2.0 - October 2, 2018
Computers	74,817	65%	
<i>Desktop</i>	10,348	63%	Revision In Process/Planned
<i>Notebooks</i>	41,072	82%	Version 7.0 - November 16, 2018
<i>Tablets</i>	23,263	48%	
<i>Thin Clients</i>	806	N/A ³	
<i>Workstations</i>	135	14%	
Computer Servers	719	17%	Version 3.0 - June 17, 2019
Connected Thermostats ^{4, 8}	4,321	58%	
Data Center Storage ⁹	45	N/A	Revision In Process/Planned
Decorative Light Strings	38,972	20%	
Dehumidifiers	2,625	87%	Version 5.0 - October 31, 2019
Dishwashers ¹⁰	7,285	90%	Revision In Process/Planned
Displays	18,956	80%	
<i>LCD Monitors</i>	18,533	80%	
<i>Signage Display</i>	423	90%	Version 8.0 - January 28, 2020
Electric Vehicle Supply Equipment	50	7%	Revision In Process/Planned
Freezers ¹¹	669	37%	
Furnaces	886	26%	
<i>Residential Gas Furnaces</i>	878	26%	
<i>Residential Oil Furnaces</i>	8	21%	
Geothermal Heat Pumps	28	N/A	
Imaging Equipment			
<i>Multi-function Devices and Printers</i>	23,551	99%	Version 3.0 – October 11, 2019

⁶ Market penetration estimates for commercial dishwashers, fryers, griddles, hot food holding cabinets, commercial ice makers, commercial ovens, commercial refrigerators & freezers, and commercial steam cookers were updated in August 2020 based on improved estimates of ENERGY STAR partners' share of the commercial food service market.

⁷ Shipments were corrected based on updated information from partners.

⁸ Market penetration for connected thermostats was updated based on more recent market information. This market share is a percentage of smart thermostat shipments, not including other programmable thermostats.

⁹ Market data not available for data center storage products covered by the current ENERGY STAR specification for 2018.

¹⁰ Market penetration for dishwashers includes compact products.

¹¹ Market penetration for freezers includes compact products.

Product Category ²	2018 Units Shipped (thousand units)	2018 Estimated Market Penetration ³	Recent and Upcoming Specification Revisions (Version - Effective Date)
Laboratory Grade Refrigerators and Freezers	32	N/A	Revision In Process/Planned
Lamps ¹²	374,859	14%	
<i>Compact Fluorescent Lamps (CFL)</i> ¹³	60	0%	
<i>LED Lamps</i>	374,799	46%	
Light Commercial HVAC	39	16%	
Luminaires ¹⁴	68,457	29%	
<i>Indoor</i>	63,817	31%	
<i>Outdoor</i>	4,640	15%	
<i>Solid State Retrofit Kits</i>	47,937	N/A	
Pool Pumps	302	40%	Version 2.0 - January 2, 2019
Refrigerators ¹⁵	5,249	46%	
Room Air Cleaners	1,704	35%	Revision In Process/Planned
Room Air Conditioners	3,350	42%	
Set-top Boxes ¹⁶	5,074	11%	Revision In Process/Planned
Small Network Equipment	138	0%	
Telephony	5,824	34%	
<i>Analog</i> ¹⁷	3,793	37%	
<i>VOIP</i>	2,032	25%	
Televisions	18,107	43%	Version 8.0 - March 1, 2019
Uninterruptible Power Supplies	4,474	90%	Version 2.0 - January 1, 2019
Vending Machines ¹⁸	39	45%	Version 4.0 – April 29, 2020
Ventilating Fans ¹⁹	4,390	N/A	
Water Coolers ²⁰	1,445	46%	Revision In Process/Planned
Water Heaters	803	N/A	
<i>Gas Storage</i>	287	6%	
<i>Gas Tankless</i>	444	N/A	
<i>Heat Pump</i>	65	2%	
<i>Solar</i>	7	N/A	
Windows, Doors and Skylights ²¹	52,783	83%	Revision In Process/Planned

¹² This includes ENERGY STAR certified lamps as a percentage of all lamps, including fluorescent, incandescent, halogen and solid state.

¹³ CFL shipments do not include pin-based lamps

¹⁴ Shipments and market penetration for luminaires and indoor luminaires do not include solid state lighting retrofit kits or ceiling fan light kits

¹⁵ Market penetration for refrigerators does not include compact products.

¹⁶ Includes shipments to consumers, retailers, and set-top box service providers including both ENERGY STAR partners and non-partners.

¹⁷ Shipments and market penetration for telephony include corded and cordless analog telephones but do not include additional handsets.

¹⁸ The total market for vending machines was updated and is significantly smaller than previously estimated.

¹⁹ Shipments for ventilating fans do not include in-line ventilating fans.

²⁰ Market share was updated in August 2020 based on an updated market report on water coolers.

²¹ Shipment data and market penetration for windows, doors, and skylights is determined by Ducker Worldwide, LLC through a separate process and will be available at a later date.