

ENERGY STAR® Unit Shipment and Market Penetration Report Calendar Year 2022 Summary

This is the 21st 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 2022, 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 Coffee Brewers
- 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
- Connected Thermostats
- Coolers
- Data Center Storage
- Decorative Light Strings
- Dehumidifiers
- Dishwashers
- Displays
- Electric Vehicle Supply Equipment
- Enterprise Servers
- 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
- Storm Windows
- 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 80%. 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 CY2022 Unit Shipment Data:

Product Category	Response Rate	Number of Partners Required to Respond
Audio/Video	86%	29
Boilers	100%	40
Ceiling Fans	93%	27
Central ACs and Air-source Heat Pumps	80%	88
Clothes Washers	100%	27
Commercial Boilers	100%	14
Commercial Coffee Brewers	100%	3
Commercial Dishwashers	100%	15
Commercial Fryers	100%	12
Commercial Griddles	71%	7
Commercial Hot Food Holding Cabinets	100%	9
Commercial Ice Machines	95%	20
Commercial Ovens	88%	32
Commercial Refrigerators and Freezers	86%	50
Commercial Steam Cookers	100%	9
Commercial Water Heaters	100%	13
Computers	82%	71
Connected Thermostats	90%	21
Data Center Storage	100%	10
Decorative Light Strings	65%	40
Dehumidifiers	82%	72
Displays	84%	85
Electrical Vehicle Supply Equipment	98%	53
Enterprise Servers	94%	18
Furnaces	96%	23
Geothermal Heat Pumps	89%	27
Imaging Equipment	91%	68
Laboratory Grade Refrigerators and Freezers	96%	27
Lamps	67%	194
Light Commercial HVAC	100%	4
Luminaires	65%	475
Pool Pumps	100%	13
Refrigerated Beverage Vending Machines	100%	4
Refrigerators and/or Freezers	82%	122
Residential Clothes Dryers	100%	25
Residential Dishwashers	95%	56
Residential Storm Windows	100%	3
Residential Water Heaters	95%	42
Room Air Cleaners	86%	86
Room Air Conditioners	79%	62
Telephones	86%	7
Televisions	74%	19
Uninterruptible Power Supplies	82%	17
Ventilating Fans	87%	54
Water Coolers	61%	33
Total	80%	2126

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 2022 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 CY2022 Certified Units Shipped, Corresponding Estimated Market Penetration, and Relevant Specification Updates:

Product Category ¹	2022 Units Shipped (thousands unless otherwise stated)	2022 Estimated Market Penetration ²	Specification Revisions Affecting Future Market Penetration (Version - Effective Date)
Audio/Video Products			Revision in Process/Planned
<i>Blu-ray Players</i>	741	38%	
<i>DVD Players</i>	578	59%	
<i>Soundbars</i>	481	3%	
Boilers	205	59%	
<i>Residential Gas Boilers</i>	180	64%	
<i>Residential Oil Boilers</i>	25	37%	
CAC/ASHP	2,738	29%	Version 6.1 - January 2, 2023
<i>CAC</i>	998	18%	
<i>ASHP</i>	1,740	43%	
Ceiling Fans	450	2%	
<i>Ceiling Fan - Fan Only</i>	289	12%	
<i>Ceiling Fan - With Light Kit</i>	161	1%	
<i>Ceiling Fan - Light Kit Only</i>	83	3%	
Clothes Dryers	3,913	48%	Revision in Process/Planned
<i>Clothes Dryers - Electric</i>	3,130	46%	
<i>Clothes Dryers - Gas</i>	783	56%	
Clothes Washers	6,342	N/A	Revision in Process/Planned
<i>Residential Use</i>	6,238	61%	

¹ The number of ENERGY STAR certified products shipped, 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.

² For product categories where 2022 Market penetration reads "N/A", market penetration was unable to be calculated due to a lack of current market data.

<i>Commercial Use</i>	104	N/A	
Commercial Boilers	15	24%	
Commercial Coffee Brewers	12	6%	
Commercial Dishwashers	38	47%	
Commercial Fryers	39	26%	
Commercial Griddles	3	21%	
Commercial Hot Food Holding Cabinets	8	12%	
Commercial Ice Makers	99	28%	
Commercial Ovens	52	53%	Version 3.0 - January 12, 2023
Commercial Refrigerators & Freezers	476	50%	Version 5.0 - December 22, 2022
Commercial Steam Cookers	6	39%	
Com Water Heaters - Gas	42	51%	
Computers	82,880	68% ³	Revision in Process/Planned
<i>Desktop</i>	9,012	55%	
<i>Notebooks</i>	41,815	71%	
<i>Tablets</i>	31,470	69%	
<i>Thin Clients</i>	405	N/A	
<i>Workstations</i>	583	46%	
Connected Thermostats	4,365	55%	
Consumer Refrigeration	8,902	54%	Revision in Process/Planned
<i>Refrigerators</i> ⁴	7,998	66%	
<i>Freezers</i> ⁵	871	31%	
<i>Coolers</i>	32	2%	
Data Center Storage	29	N/A	
Decorative Light Strings	32,075	22%	
Dehumidifiers	2,600	90%	Revision in Process/Planned
Dishwashers ⁶	8,416	96%	Version 7.0 - July 19, 2023
Displays	22,448	N/A	
<i>LCD Monitors</i>	21,525	65%	
<i>Signage Display</i>	922	N/A	
Electric Vehicle Supply Equipment	412	35%	
Enterprise Servers	1,250	19%	Version 4.0 - January 12, 2024
Furnaces	1,417	36%	
<i>Residential Gas Furnaces</i>	1,410	36%	
<i>Residential Oil Furnaces</i>	7	24%	
Geothermal Heat Pumps	30	3%	
Imaging Equipment - Multi-function Devices and Printers	17,007	N/A	
Laboratory Grade Refrigerators and Freezers	60	N/A	

³ Market penetration for computers does not include thin clients.

⁴ Market penetration for refrigerators does not include compact products.

⁵ Market penetration for freezers includes compact products.

⁶ Market penetration for dishwashers includes compact products.

Lamps ⁷	337,727	28%	Sunset - December 31, 2024
<i>LED Lamps</i>	337,188	44%	
Light Commercial HVAC	41	5%	Version 4.0 - January 1, 2023
<i>Central Air Conditioner</i>	8	1%	
<i>Heat Pump</i>	33	14%	
Luminaires ⁸	122,300	N/A	Sunset - December 31, 2024 ⁹
<i>Indoor</i>	116,929	N/A	
<i>Outdoor</i>	5,371	N/A	
Pool Pumps	598	41%	
Room Air Cleaners	5,446	86%	
Room Air Conditioners	3,129	48%	Version 5.0 - October 30, 2023
Storm Windows	124	9%	
Telephony	6,309	43%	
<i>Analog¹⁰</i>	3,012	56%	
<i>VOIP</i>	3,297	36%	
Televisions	257	1%	Version 9.0 - October 20, 2022
Uninterruptible Power Supplies	4,611	N/A	
Vending Machines	19	27%	
Ventilating Fans ¹¹	8,450	N/A	
Water Coolers	1,343	39%	Version 3.0 - March 23, 2022
Water Heaters	1,179	N/A	
<i>Gas Storage</i>	339	8%	Version 5.0 – April 18, 2023
<i>Gas Tankless</i>	689	N/A	
<i>Heat Pump</i>	141	3%	Version 4.0 – January 5, 2022
<i>Solar</i>	10	N/A	
Windows, Doors and Skylights ¹²	N/A	N/A	Version 7.0 - October 23, 2023

⁷ This includes ENERGY STAR certified lamps as a percentage of all lamps, including fluorescent, incandescent, halogen and solid state. The market data for incandescent and halogen bulbs is only based on U.S. Census import data and assumes that all lamps are being imported to the U.S. It does not account for any products being manufactured and shipped in the U.S.

⁸ Consolidated market data is not available as solid state retrofit kits that are now included in the ENERGY STAR indoor luminaires shipments.

⁹ EPA has proposed to cover recessed downlights through a new specification.

¹⁰ Shipments and market penetration for telephony include corded and cordless analog telephones but do not include additional handsets.

¹¹ Shipments for ventilating fans do not include in-line ventilating fans.

¹² Shipment data and market penetration for windows, doors, and skylights will not be available until 2024 due to a transition in the data collection process.