Energy Efficiency Jobs in America

America's energy efficiency (EE) economy consists of nearly 2.4 million workers designing, manufacturing, and installing energy saving products and technologies across 50 states.

NATIONAL SUMMARY

Americans with energy efficiency jobs continue to grow our economy.

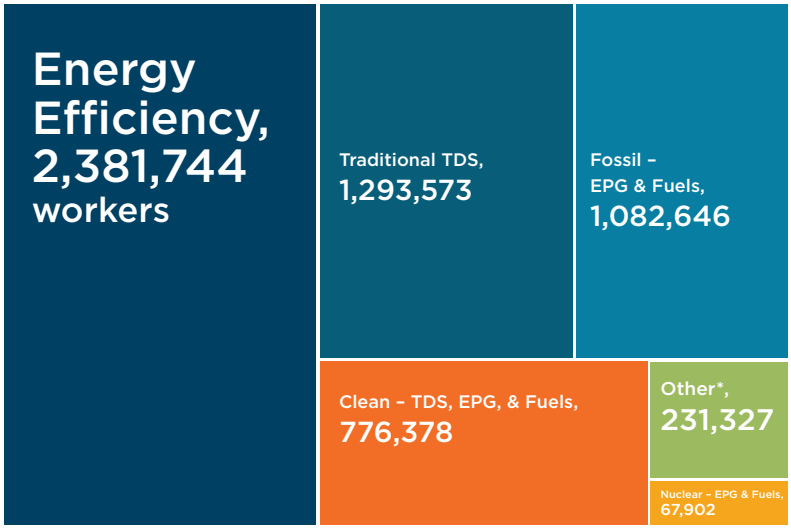
Energy efficiency saves Americans money on energy bills, improves air quality and home comfort, supports U.S. energy independence, reduces energy waste, and improves grid resilience—all while supporting a growing sector that employs nearly 2.4 million workers. That's more than a quarter of the total energy workforce.

EE is a job creation powerhouse that continues to grow nationwide. From 2023 to 2024, EE grew the fastest and added more jobs than any other energy sector, creating nearly 100,000 new jobs and increasing its growth rate year over year—nearly doubling since 2021.

New this year, detailed wage data reveals that the median wage for EE employment is 20% higher than the U.S. median wage. EE occupations run the gamut from energy auditors, insulation installers, technicians, and HVAC professionals to architects and electrical engineers and more.

Continued expansion of the industry supports both American manufacturing and energy independence.

Energy Jobs by Sector



TDS = Transmission, Distribution, & Storage
EPG = Electric Power Generation
*Includes other energy subsectors such as corn ethanol, woody biomass, large hydropower, and others.

KEY INSIGHTS

Energy efficiency (EE) grew the fastest—and more—than any energy sector from 2023 to 2024, increasing by nearly **100,000 jobs.**

EE is powered by **small businesses.** Nationwide, **94.1%** of EE businesses have fewer than 100 employees.

EE continues to support America's economy. EE is the **largest energy sector in 39 states** and the District of Columbia. 99% of U.S. counties host EE jobs.

EE offers good-paying jobs. The median wage for EE employment is **20% higher** than the U.S. median wage.

EE sits at a crossroads as some Federal investments in energy efficiency have recently been cut despite historically having bipartisan support.

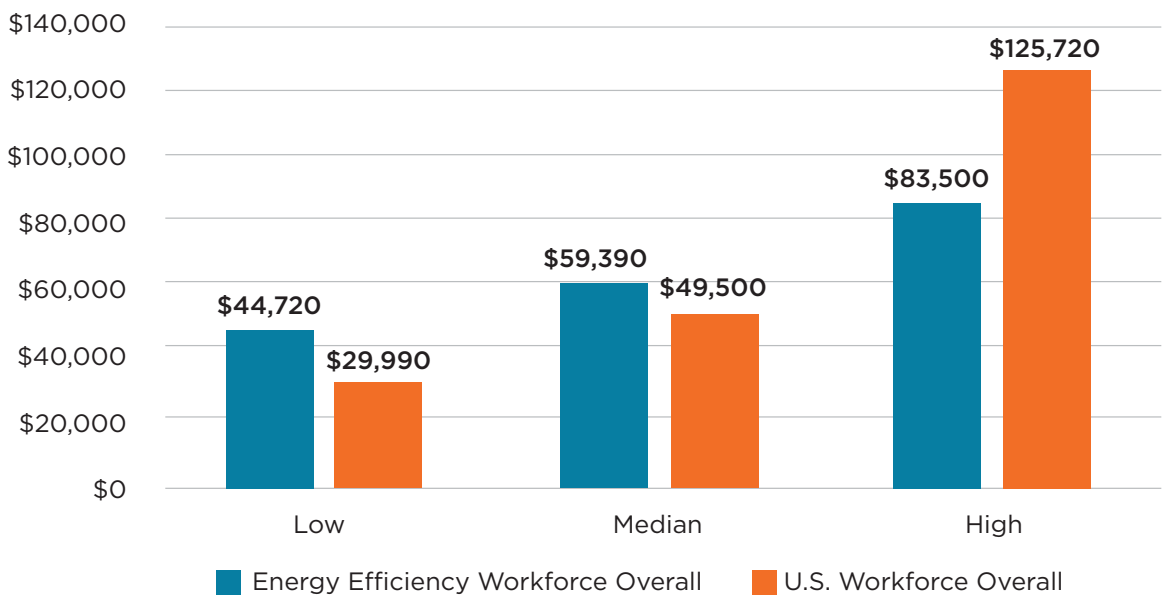
BIG PICTURE CONTEXT

Leveraging 2025 U.S. Energy & Employment Report data collected in 2024, this report focuses solely on the EE sector of the U.S. economy. It emphasizes the built environment, capturing only the jobs where workers use ENERGY STAR energy efficiency products and high-performance building materials. It omits EE jobs in transportation and electric grid technologies, water use or waste management, electric power generation, transmission, distribution, storage, and fuels, among other jobs where energy efficiency can also be a large component.[3]

WHAT IS AN EE JOB?[1]

EE jobs deliver goods and services that reduce energy use with a focus on ENERGY STAR appliances, buildings, financing, new technologies, and more. EE jobs do not include jobs in transportation, electric grid technologies, water use/management, electric power generation, fuels, or transmission, distribution, and storage energy subsectors.[2]

EE Wages vs. Overall U.S. Workforce



1 The USEER defines a Qualifying Worker as "an employee of a Qualifying Firm who spends some portion of their time supporting the qualifying energy portion of the business." Employees sometimes perform work across multiple energy subsectors but, per USEER methodology, they are only counted in the report under the one energy sector where they work "more of their time" (i.e., a plurality of their time) as compared to any other energy technology.

2 Please see appendix for more information on EE jobs.

3 Please see the "About the Report" section for more information about the report's data methodology.

ENERGY EFFICIENCY DOMINATES ACROSS ALL U.S. REGIONS

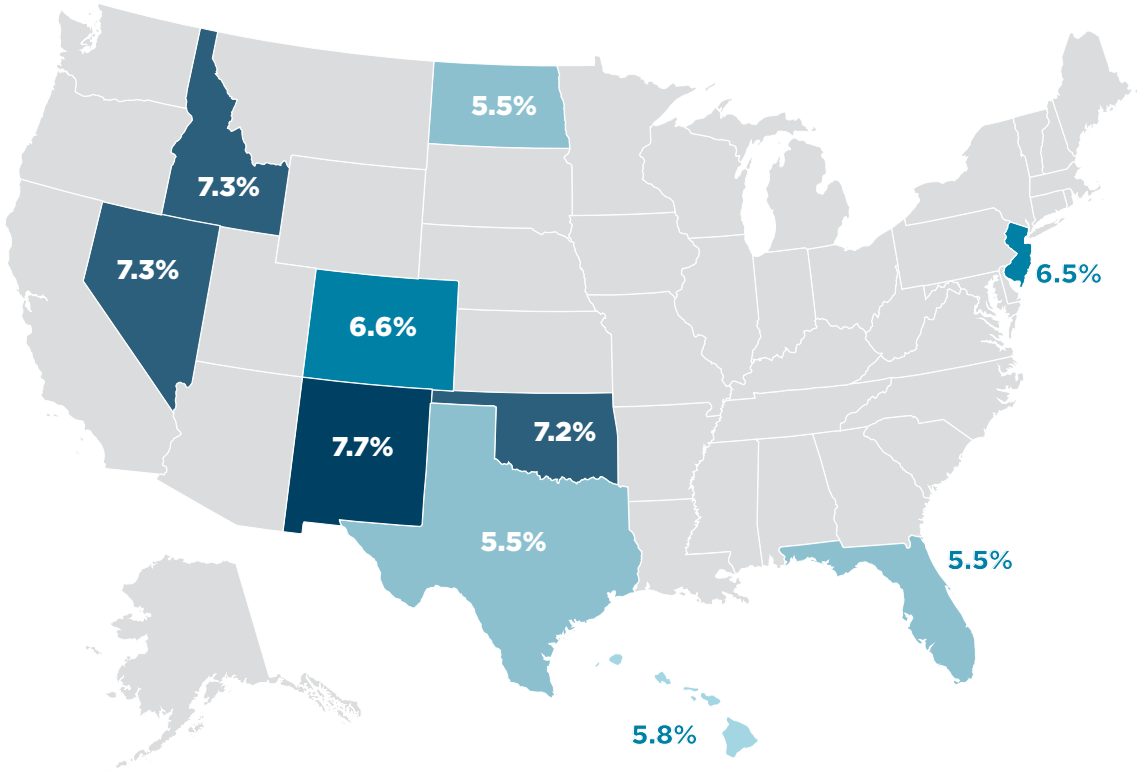
The rate of growth for the EE sector continues to increase, from around 3.4% for 2022-2023 to 4% for 2023-2024. EE jobs continue to provide the backbone of other clean energy investments, and EE remains the largest energy sector in most U.S. states. Additionally, EE jobs are in 99% of U.S. counties, showing that EE is deeply embedded in urban and rural communities nationwide.

New to the top five states with the fastest growing EE sectors this year: Idaho and Oklahoma (joining New Mexico, Nevada, and Colorado). In states where EE is not the largest energy sector, four states still have EE as the fastest growing sector: Louisiana, New Mexico, Nevada, and Texas.

Top Total Gross Jobs

1	2	3	4	5
California	Texas	New York	Florida	Illinois
312,090	182,506	135,393	132,060	89,878

Top 10 States with Fastest Growth



BUILDING AMERICA

Construction

EE has proved to be one of America's most resilient sectors, sustaining steady job growth while other sectors continue to struggle to recover post-COVID. With projects spanning homes, schools, and small businesses, the EE workforce helped keep construction strong and communities working. EE is an integral part of construction, employing nearly 1.3 million workers within the industry.

Between 2022 and 2024, EE remained a consistent and substantial component of the U.S. construction workforce, accounting for roughly 16% of all construction jobs.

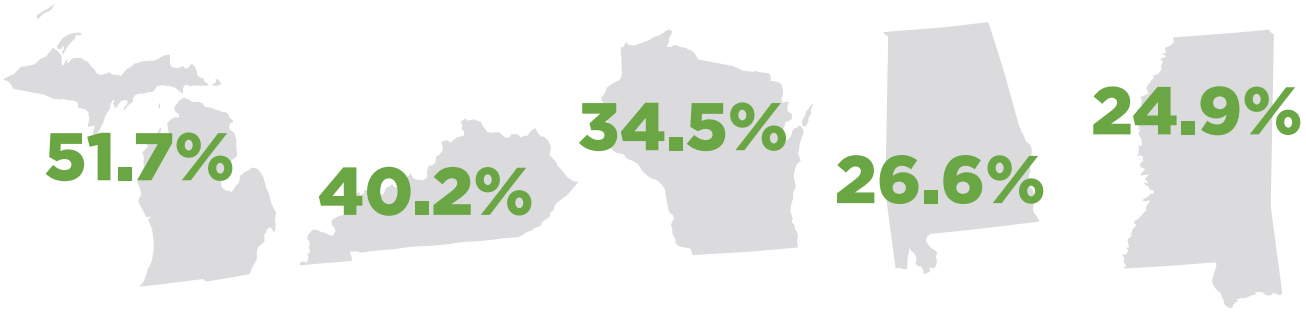
Manufacturing

From insulation to ENERGY STAR appliances, the efficiency economy is powered by American manufacturers creating the products that make buildings and businesses more efficient.

In states like Michigan, Kentucky, Wisconsin, Alabama, and Mississippi, manufacturing represents a quarter of all EE employment—and in Michigan, more than half.

EE is an integral part of the construction industry, employing nearly 1.3 million people.

Manufacturing Share of EE Jobs in Top States

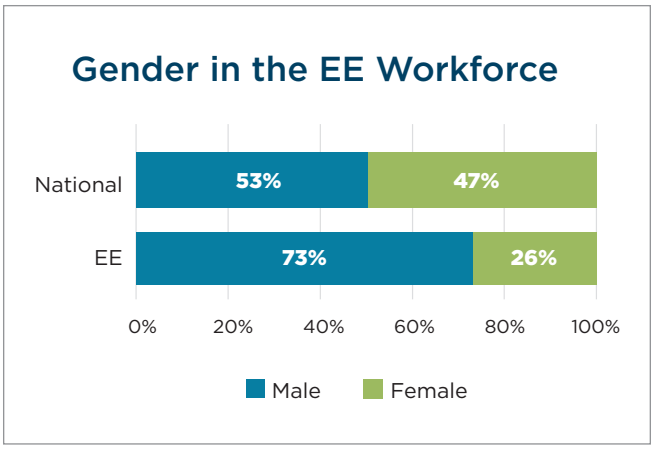


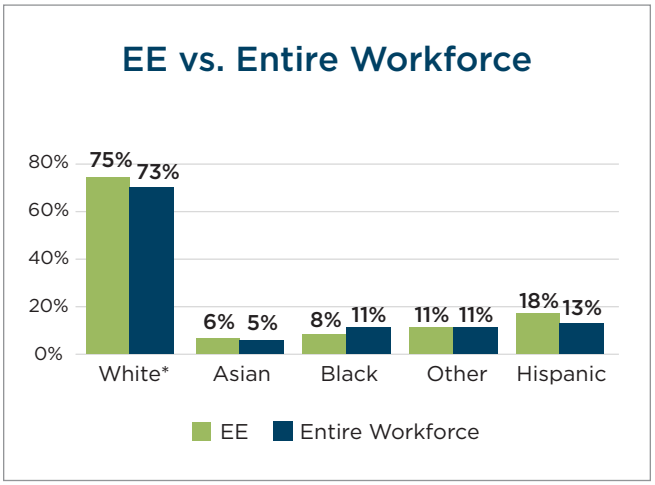
ENERGY EFFICIENCY WORKERS

Between 2019 and 2024, the share of energy efficiency workers aged 55 and over increased from 12% to 15.5% nationally. While younger workers continue to enter the field, these additions are not yet sufficient to offset retirements in the existing workforce. Creating workforce programs to provide resources to train and on-board new contractors, through state incentives or federal resources such as the Training for Residential Energy Contractors (TREC) grants for states, helps organizations and small businesses hire and train new EE employees. These programs are crucial to the future of the industry.

The industry is still primarily male-dominated, representing 73% of the workforce, while just 26% of EE workers are female. These numbers differ significantly than the national workforce percentages, which are 53% and 47%, respectively. Investment in wrap-around services to support a more diverse workforce should be considered.

A representative workforce is proven to boost innovation, productivity, employee satisfaction, and retention, as well as profits. Investing resources to ensure EE workforce trainings are deployed in underserved communities will allow for broader participation and better results.





Expanded federal programs can help ensure EE careers are accessible to all.

RECRUITMENT CHALLENGES

Despite the sector's growth, EE business owners still find hiring to be a challenge. Energy Efficiency business subsectors focused on Construction, Manufacturing & Trade, and Professional Services all continued to report very high levels of hiring difficulty, with 84% to 88% of companies in all three categories describing hiring as at least "somewhat difficult."

Though fewer EE Construction businesses reported finding hiring to be "very difficult," dropping from 62% in 2022 to 48% in 2024, the overall picture remains clear: nearly nine in ten surveyed companies still face hiring challenges. These data suggest that while the most acute hiring challenges may be easing, recruiting challenges remain top of mind for EE businesses.

RECRUITMENT SOLUTIONS

The most common reason for hiring difficulty was lack of experience, training, or technical skills. This further signals the need for additional investment into workforce grant programs and secondary school outreach.

Recruitment at Career and Technical Education schools can build awareness of EE jobs and provide hands-on training, job placement, and certification opportunities. There are also opportunities to braid EE concepts into existing curriculum programs such as those for HVAC or construction laborers. Introducing these skills to students earlier helps prepare them for in-demand jobs and will ultimately strengthen the workforce pipeline.

NATIONWIDE SUPPORT FOR SMALL BUSINESSES AND VETERANS

94.1% of EE businesses have **< 100 employees**

74.7% of EE businesses have **< 20 employees**

9% of EE workers are veterans, which is **4 percentage points** above the national average

Policy To Support Jobs

Smart state and federal policies support a robust EE jobs market. These jobs continue to grow in states across the country, are critical to local economies, and cannot be outsourced.

ENERGY EFFICIENCY AT A CROSSROADS

Energy efficiency has historically enjoyed broad bipartisan support—a continued consensus demonstrated in the current Congress via proposed annual appropriations and authorization legislation for key programs like the Weatherization Assistance Program (WAP). However, despite this support, energy efficiency sits at a crossroads as federal investment in this public good has been challenged.

The July 2025 passage of the One Big Beautiful Bill Act (OBBBA, H.R. 1) set several key energy efficiency incentives—all originally bipartisan and expanded as a part of IRA investment—on a path for termination, including:

- **The 25C Energy Efficient Home Improvement Tax Credit** (slated to sunset at the end of 2025), which allows homeowners to claim a 30% credit on home upgrades like insulation and efficient HVAC and water heating systems.
- **The 45L New Energy Efficient Home Credit** (slated to sunset in July 2026).
- **The 179D Energy Efficient Commercial Buildings Deduction** (slated to sunset in July 2026).
- Rescission of any unobligated funding for the **Training for Residential Energy Contractors (TREC**) state grants.

The benefits created by these incentives are not confined to taxpayers: They support jobs across the energy efficiency supply chain, including manufacturers, distributors, contractors, and training centers. The 25C Energy Efficient Home Improvement tax credit has been a particularly important tool for home retrofit businesses; contractors routinely advertise 25C to boost sales, helping small businesses to grow while saving families an average of $882 per tax return across all 50 states and lowering family energy bills by an average of $130 in the first year.

The sudden elimination of energy efficiency tax credits creates real uncertainty for businesses and homeowners alike. These rollbacks underscore the need for consistent, long-term bipartisan federal support for energy efficiency.

The sudden elimination of energy efficiency tax credits creates real uncertainty for businesses and homeowners alike, and is certain to reduce both investment in energy efficiency and its many ensuing benefits, including improved air quality, grid resilience, and lower energy costs.

While OBBBA rescinded a portion of unobligated funds from TREC, states have nevertheless set up programs via State Energy Program TREC formula funding to expand the home performance contractor workforce. With nearly 90% energy efficiency construction employers reporting difficulty in finding qualified workers, policy support for workforce development programs is vital to ensure that the industry continues to have skilled workers qualified to perform home energy upgrades.

SMART POLICY FOR GRID DEMANDS

As the country faces rising energy costs and the grid faces increasing demand—including from the construction of new data centers—long-term and consistent federal support for energy efficiency is more vital than ever.

While data centers accounted for roughly 4.4% of U.S. electricity use in 2023, the U.S. DOE projects this proportion could rise to as much as 12% in the next three years.

Strong federal support for home and building energy efficiency programs and policies can help offset this demand and lower energy costs while simultaneously supporting local jobs. Efficiency upgrades, paired with devices like smart thermostats and water heaters, can unlock significant reductions in peak demand that will allow utilities to connect new data centers to the grid without raising costs for ratepayers.

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POLICY RECOMMENDATIONS

The following policy recommendations are aimed at deploying energy efficiency and driving energy affordability.

Maintain and ensure robust funding for proven bipartisan federal EE programs.

This includes:

- DOE Building Technologies Office & Residential Buildings Integration, which collaborates with the home performance industry to develop tools and solutions to improve the EE of new and existing homes.
- DOE State Energy Program, which provides funding and technical assistance to states to enhance energy security and advance state-led energy initiatives.
- DOE Weatherization Assistance Program, which provides whole-home energy efficiency upgrades to low-income Americans.
- EPA ENERGY STAR, which helps consumers make smart energy choices
- HHS Low Income Home Energy Assistance Program (LIHEAP), which provides utility bill assistance to low-income Americans.

Ensure effective implementation of new and existing EE programs.

This includes:

- Voluntary residential rebate programs administered by State Energy Offices to drive energy affordability and job creation include the Home Owner Managing Energy Savings (HOMES) Rebates program and the High-Efficiency Electric Home Rebate (HEEHR) program. HOMES and HEEHR provide Americans with more affordable options to heat and cool their homes, saving them money on utility bills and reducing energy waste.
- State Training for Residential Energy Contractors (TREC) programs to expand the energy efficiency workforce (obligated funding only).

- Energy Auditor Training grant program for states to train individuals to conduct energy audits or conduct surveys of commercial and residential buildings.
- Energy Efficiency Revolving Loan Fund Capitalization Grant Program for states to establish revolving loan funds in support of loans and grants for energy efficiency audits, upgrades, and retrofits to increase building efficiency.
- Energy Efficiency and Conservation Block Grants for state, local, and tribal governments to create and manage a wide variety of EE projects.

Support policy initiatives that further advance EE nationwide.

This includes:

- Programs focused on resilience, energy efficiency, and air quality in public buildings.
- Energy audits, technical assistance, and financing options for large manufacturers.
- Healthy homes programs to address barriers to comprehensive energy upgrades and ensure more habitable and comfortable living conditions, especially in low-income communities.

Advance and prioritize workforce development in federal EE programs.

This includes:

- Strengthening workforce development and apprenticeship programs for the energy efficiency sector.
- Creating workforce grant programs to help organizations and small businesses hire and train new energy efficiency employees.
- Increasing grants and financing to deploy more efficiency projects in underserved communities that often carry greater energy burdens while developing career opportunities for local workers.

OPPORTUNITIES TO SUPPORT JOBS ON THE HOMEFRONT

State and local leaders can drive continued growth in EE jobs by:

- Supporting building energy codes and standards to ensure Americans live and work in safe, comfortable, and affordable homes.
- Adopting high efficiency and indoor air quality standards for new construction and existing buildings.
- Adopting energy benchmarking and reporting requirements for existing buildings.
- Developing workforce initiatives by partnering with trade schools to stand up apprenticeship programs, upskill existing workers, and provide support to small businesses.
- Incorporating broader use of performance contracting in public buildings.
- Advancing innovative energy efficiency financing, including bridge loans to contractors participating in residential rebate programs, green bank programs, and commercial property assessed clean energy (PACE) programs.
- Using the National Standard Practice Manual to update cost effectiveness testing; aligning utility incentives with investments in efficiency.
- Investing in advanced infrastructure to enable interval meter data, and to boost grid reliability.
- Promoting utility data sharing to allow consumers to access and share their utility data with third parties, including energy efficiency contractors.
- Launching statewide outreach and community-based campaigns designed to build awareness of EE careers.
- Working to accelerate the deployment of energy efficient upgrades incentivized by the HOMES and HEEHR rebate programs.
- Providing financial incentives for participation in demand response programs and investment in energy efficient products and services.

ABOUT THE REPORT

These figures featured in this report draw from the national 2025 U.S. Energy and Employment Report (USEER), which focuses on all energy jobs. The USEER analyzes data from the U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) to track employment across sectors including energy production, transmission, and distribution. In addition, the USEER relies on a unique supplemental survey of business representatives across the U.S. For the 2025 USEER, 42,800 businesses participated in the survey. Taken together, the BLS and survey data provide the most comprehensive calculation of energy-related employment available. The methodology has been used for local, state, and federal energy-related data collection and analysis for more than a decade. See the USEER Appendices for complete methodology details.

The 2025 EEJA presents further analysis on the 2025 USEER data, completed by BW Research. BW specifically breaks down the 2025 USEER energy sectors (Fuels, Electric Power Generation, TDS, Energy Efficiency, Motor Vehicles & Component Parts) into the following job sectors for the 2025 EEJA.

- **Energy Efficiency**, which includes ENERGY STAR HVAC, roofing, insulation and air sealing, lighting, building materials, and energy auditing services. Please note this EEJA sector is identical to the USEER EE sector.
- **Traditional TDS**, which includes traditional transmission and distribution and electric vehicle charging.
- **Clean** – TDS, EPG, & Fuels, which includes biodiesel and biofuels, solar and wind power generation, smart/micro grid T&D, and other renewable generation and storage.
- **Fossil** – EPG & Fuels, which includes coal, natural gas, and petroleum fuels and power generation.
- **Nuclear** – EPG & Fuels, which includes nuclear fuels and electric power generation.
- **Other**, which includes nuclear storage, corn ethanol and biomass fuels, traditional hydropower generation, and other types of storage.

The Motor Vehicles & Component Parts sector of the USEER is excluded from the 2025 EEJA. Please note that the bullets above are not complete lists of all job types in each sector. All analysis and conclusions presented in the 2025 EEJA are based upon the above energy sectors, not the 2025 USEER energy sectors. For more information on the breakdown of EEJA energy sectors and the EE jobs sector, please see the appendix.

For more report details, see Energy Efficiency Jobs in America FAQ or contact the Building Performance Association.

BUILDING PERFORMANCE ASSOCIATION

About BPA

The Building Performance Association (BPA) is a nonprofit industry association that serves as the hub for businesses, nonprofits, and government agencies working to make America's homes more energy-efficient, comfortable, healthy, and safe. Visit www.building-performance.org.

[bw] RESEARCH PARTNERSHIP

About BW Research

BW Research Partnership is a full-service, economic and workforce research consulting firm with offices in Carlsbad, California and Wrentham, Massachusetts. It is the nation's leading provider of accurate, comprehensive energy and clean energy research studies. BW is also the research firm that conducted the original 2025 USEER survey and analysis for DOE. Visit bwresearch.com.

Appendix A:

Definition of EE Sector Technologies

The Energy Efficiency sector includes the manufacture, design, installation, and maintenance of various energy efficient technologies; below is a list of technologies involved in EE jobs. The list is from the 2025 USEER Long Survey Instrument (via OMB), in response to the question, "Which of the following Energy Efficiency, including Heating, Cooling, and Building Envelope technologies is your organization directly engaged with?"[1].

1. ENERGY STAR Certified Appliances (not including HVAC) – appliances that meet the international ENERGY STAR standard for energy efficient consumer products originated in the United States.
2. ENERGY STAR Certified Heating, Ventilation, and Cooling (HVAC), except air-source and ground-source heat pumps.
3. ENERGY STAR Air-Source Heat Pumps - air-source heat pumps that meet the international ENERGY STAR standard for energy efficient consumer products originated in the United States.
4. ENERGY STAR Ground-source or geothermal heat pumps - heat pumps that use the earth's natural heat to provide heating and cooling, and meet the international ENERGY STAR standard for energy efficient consumer products originated in the United States.
5. Other high efficiency HVAC that are out of scope for ENERGY STAR certification (e.g. indirect evaporative coolers, air-to-water heat pumps, energy recovery systems, etc.).
6. Traditional HVAC goods, control systems, and services - include wall units, furnaces.
7. ENERGY STAR certified water heaters - water heaters, which can come with gas, solar, or electric heat pump technology, that meet the international ENERGY STAR standard for energy efficient consumer products originated in the United States.
8. ENERGY STAR Certified Electronics (TVs, telephones, audio/video, etc.) - electronic appliances such as TVs, Telephones, and Audio/Video devices that meet the international ENERGY STAR standard for energy efficient consumer products originated in the United States.
9. ENERGY STAR Certified Windows, Doors, and Skylights - windows, doors, and skylights which meet the international ENERGY STAR standard for energy efficient consumer products originated in the United States.
10. ENERGY STAR Certified Roofing - ENERGY STAR certified roof products which reflect more of the sun's rays and decrease the amount of heat transferred into a building.
11. ENERGY STAR Certified Insulation - insulation products, including blankets, foam boards, and loose fill, which meet the international ENERGY STAR standard for energy efficient consumer products originated in the United States.
12. Air sealing - products that reduce the amount of air that leaks in and out of a building by sealing cracks and openings.
13. ENERGY STAR Certified Commercial Food Service Equipment - Commercial kitchen equipment, including refrigerators, dishwashers, and ovens, which meet the international ENERGY STAR standard for energy efficient consumer products originated in the United States.

1 Additional category detail is supplemented using the 2024 USEER (p. A-60). While the additional details are from the 2024 USEER, this information accurately reflects the 2025 USEER technology descriptions.

14. ENERGY STAR Certified Data Center Equipment[2] - IT equipment, such as servers, uninterruptible power supplies, data storage, and network equipment, which meets the international ENERGY STAR standard for energy efficient consumer products originated in the United States.
15. ENERGY STAR Certified LED lighting - LED light bulbs which meet the international ENERGY STAR standard for energy efficient consumer products originated in the United States.
16. Other LED, CFL, and efficient lighting.
17. Solar thermal water heating and cooling - solar thermal uses the sun's energy to generate thermal energy.
18. Other renewable heating and cooling (biomass, etc.) - refers to establishments that are involved with heating, ventilation and air conditioning (HVAC) from Renewable Energy sources or work that increases the Energy Efficiency of HVAC systems.
19. Advanced building materials/insulation - all materials that represent advances in efficiency over the traditional materials.
20. Recycled building materials.
21. Reduced water consumption products and appliances - high efficiency (HE) washing machines, faucet aerators, low flow shower heads, etc.
22. Energy auditing services.
23. Other (Specify) - any energy efficiency that is not captured in the categories listed previously or a category that is used when unable to split employment into a single energy efficiency category where employees spend "more of their time."

2 This section mostly accounts for the manufacture and installation of energy efficient data center equipment, not the operation and/or maintenance of the data center.

Appendix B:

Breakdown of USEER Energy Sectors into EEJA Energy Sectors

The Building Performance Association (BPA) and BW Research breaks down the USEER energy sectors into the following sectors for this report: Energy Efficiency, Traditional Transmission, Distribution, and Storage (TDS), Clean – TDS, Electric Power Generation (EPG), & Fuels, Fossil – EPG & Fuels, Nuclear – EPG & Fuels, and Other. The 2025 EEJA excludes the USEER Motor Vehicles & Component Parts sector.

See below for a list of the data categories within each EEJA sector, based on 2025 USEER Public Data. The USEER and EEJA EE sectors are identical; see Appendix A for more details on what is included in the EE sector.

Traditional TDS

- Trad Transmission and Distribution, T&D
- EV Charging, T&D
- Other T&D, T&D

Clean – TDS, EPG, & Fuels

- Other Ethanol/Non-Woody Biomass, including Biodiesel, Fuels
- Renewable diesel fuels, Fuels
- Biodiesel fuels, Fuels
- Waste fuels, Fuels
- Other Biofuels, Fuels
- Solar, EPG
- Land-based Wind, EPG
- Offshore Wind, EPG
- Geothermal, EPG
- Bioenergy, EPG
- Low Impact Hydropower, EPG
- Combined Heat and Power, EPG
- Smart Grid, T&D
- Micro Grid, T&D
- Other Grid Modernization, T&D
- Pumped Hydro, Storage
- Battery, Storage
- Mechanical, Storage
- Thermal, Storage
- Biofuels, Storage

Fossil – EPG & Fuels

- Coal, Fuels
- Onshore Petroleum, Fuels
- Offshore Petroleum, Fuels
- Onshore Natural Gas, Fuels
- Offshore Natural Gas, Fuels
- Other Fossil Fuel, Fuels
- Advanced Natural Gas, EPG
- Coal, EPG
- Oil and Other Petroleum, EPG
- Nat Gas, EPG

Nuclear – EPG & Fuels

- Nuclear fuel, Fuels
- Nuclear, EPG

Other

- Corn Ethanol, Fuels
- Woody Biomass/Cellulosic Biofuel, Fuels
- Other fuels, Fuels
- Traditional Hydropower, EPG
- Other Generation, EPG
- LNG, Storage
- Compressed Natural Gas, Storage
- Crude Oil, Storage
- Refined Petrol Fuels (Liquid), Storage
- Refined Petrol Fuels (Gas), Storage
- Coal, Storage
- Nuclear, Storage
- Other Gas, Storage
- Other Liquid Fuel, Storage
- Other Storage, Storage
- Other, Storage