



Alternative Fuels & Chemicals Coalition

*Advocating for Public Policies to Promote the Development and Production of
Alternative Fuels, Renewable Chemicals, and Bio-Based Products,
with a Focus on Sustainable Aviation Fuels*

Data Supporting the Continued Use & Expansion of Renewable Energy Projects & Technologies

Generating Jobs & Economic Growth, Meeting Demand Quickly & Economically, and Maintaining U.S. Global Competitiveness

[bold face emphasis has been added in the data quoted below]

International Energy Agency (IEA)

<https://www.iea.org/reports/world-energy-employment-2022/executive-summary>

“There is tremendous growth for energy employment on the horizon, driven primarily by new investments [in renewable energy].”

“Energy employment is set to shift rapidly as countries and companies accelerate efforts to decarbonise and meet net zero emissions pledges.”

“The energy sector employed over 65 million people in 2019, equivalent to around 2% of global employment. These jobs are roughly equally distributed across fuel supply (21 million), in the power sector (20 million), and in end uses (24 million) such as energy efficiency and vehicle manufacturing.”

“Clean energy employs over 50% of total energy workers, owing to the substantial growth of new projects coming online ... Many clean energy segments rival the workforce in conventional energy segments. Low-carbon power generation, mainly solar and wind, employs 7.8 million, on par with oil supply. Vehicle manufacturing employment, which stands at 13.6 million globally, already employs 10% of its workforce in the manufacture of EVs, their components and batteries.”

“Energy companies in North America and Europe maintain global market strength and anchor a sizeable employment base working on domestic and overseas projects, as is the case in oil and gas, wind, and vehicle engineering.”

“The construction of new projects, including the manufacture of their components, is the largest driver of energy employment across the value chain. Over 60% of the workforce is employed to develop new projects, including building power plants, bringing oil wells online and laying pipelines, manufacturing cars, carrying out efficiency retrofits and installing high-efficiency electric heat pumps.”

A Collaborative Government Affairs Effort

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“The energy sector requires higher-skilled workers than other industries. Around 45% of energy workers today are in high-skilled occupations, compared to only one-quarter across the economy. This share is even higher for jobs in research and development for new energy innovations, many of which are set to grow rapidly to 2030. Strategic planning can ensure that scaling is not hampered by a shortage of skilled workers. Establishing market strength in these segments relies on new training and certification, and can be a focus for industry along with ministries of energy, labour, and education.”

“Workers in coal and other fossil fuels have many of the skills needed to fill positions in growing clean energy sectors. Fossil fuels employ almost 32 million globally today. Some companies are transferring their workers to low-carbon segments internally to retain talent, and allow for flexibility to shift workers between different business segments as needs arise. However, this is not an option everywhere, and ensuring a just transition for affected workers is a growing focus for policy makers in many regions, especially for coal, which has already seen consistent declines since 2015.”

The New York Times

“As Oil Companies Stay Lean, Workers Move to Renewable Energy”

“Solar, wind, geothermal, battery and other alternative-energy businesses are adding workers from fossil fuel companies, where employment has fallen.” February 27, 2023
<https://www.nytimes.com/2023/02/27/business/energy-environment/oil-gas-renewable-energy-jobs.html>

“Oil and gas companies laid off roughly 160,000 workers in 2020, and they maintained tight budgets and hired cautiously over the last two years. But many renewable businesses expanded rapidly after the early shock of the pandemic faded, snapping up geologists, engineers and other workers from the likes of Exxon and Chevron. Half of Fervo’s 38 employees come from fossil fuel companies, including BP, Hess and Chesapeake Energy.

“Executives and workers in energy hubs in Houston, Dallas and other places say steady streams of people are moving from fossil fuel to renewable energy jobs. It’s hard to track such movements in employment statistics, but the overall numbers suggest such career moves are becoming more common. Oil, gas and coal employment has not recovered to its pre-pandemic levels. But the number of jobs in renewable energy, including solar, wind, geothermal and battery businesses, is rising.

“The oil and gas industry had roughly 700,000 fewer workers last year than six years earlier, a decline of over 20 percent. Much of that drop had to do with the slowing of the shale drilling boom and greater automation. **By comparison, employment in wind energy grew nearly 20 percent from 2016 to 2021, to more than 113,000 workers.**



“In more than a dozen interviews, energy workers and executives said they had switched to renewable energy because they felt that the oil and gas industry’s best days were behind it. Others said they were no longer willing to tolerate the extreme ups and downs of oil and gas prices, and the accompanying cycle of rapid hiring followed by crushing layoffs.”

USA Facts

“How many energy jobs are there in the US?”

“In 2022, the US boasted an energy workforce of 8.12 million people, indicating a sizeable contribution to the national employment landscape.” April 12, 2024

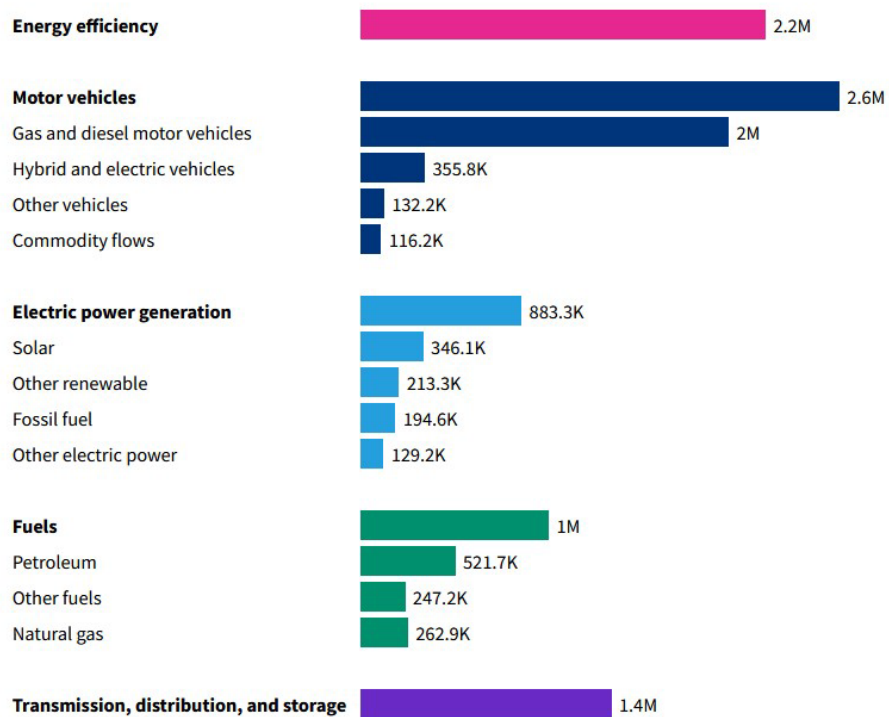
<https://usafacts.org/articles/renewable-energy-jobs-grew-in-2020-while-fossil-fuel-jobs-dropped/>

“The energy sector is a critical part of the US economy, offering employment opportunities across industries.

“In 2022, 8.12 million people had energy-related jobs, a substantial contribution to the national employment landscape — roughly [5% of all jobs in 2022^{\[1\]}](#), and exceeded the number of people [employed by federal and all state governments](#) combined.

The gas and diesel vehicles, oil, and natural gas sectors made up over one-third of all energy-related jobs.

Total employment by energy technology, 2022



The arrow indicates the change in jobs by sector between 2016 and 2022.

Source: [Department of Energy](#) • [Get the data](#) • [Embed](#) • [Download image](#) • [Download SVG](#)

“This figure includes people in a spectrum of roles across electric power generation, transmission, distribution, storage, fuels, energy efficiency, and motor vehicles. As of 2022, the energy sector has [recovered 71% of the jobs lost in 2020’s pandemic-driven economic downturn.](#)”



“Approximately 38% of these positions, or 3.1 million, are classified as [clean energy jobs](#) by the Department of Energy (DOE). These jobs focus on energy conservation, alternative energy development, pollution reduction, or recycling.”

“Where does the following data come from?”

“Data for this article and the Energy-Related Jobs by Sector table below comes from the [US Energy and Employment Jobs Report \(USEER\)](#). Launched in 2016, the USEER provides an annual snapshot of employment trends across the US energy sector. It compiles comprehensive data on jobs within various energy industries and technologies, including insights into unionization rates, demographics, and employer growth perspectives.”

Energy-Related Jobs by Sector			▼ Change in employment (2016-2022)
Main category	Sub-category	2022 Jobs	▼ Change in employment (2016-2022)
Fuels	Corn ethanol	35,152	22.9%
Motor vehicles	Motor vehicle commodity flows	116,184	13.8%
Fuels	Woody biomass	34,164	12.2%
Fuels	Nuclear fuels	9,264	7.8%
Motor vehicles	Hydrogen/fuel cell vehicles	17,774	6.2%
Transmission, distribution, and storage	Traditional transmission and distribution	963,750	5.5%
Motor vehicles	Gasoline and diesel vehicles	2,014,071	5.1%
Fuels	Oil (petroleum and other fossil fuels)	537,430	3.2%
Energy efficiency	Energy efficiency	2,215,432	1.6%
Transmission, distribution, and storage	Other transmission, distribution, or storage	294,476	0.5%

Source: [Department of Energy](#) • [Get the data](#) • [Embed](#) • [Download image](#) • [Download SVG](#)



Fuels	Other ethanol and non-woody biomass	20,939	-9.3%
Fuels	Coal fuels	64,858	-12.5%
Fuels	Other biofuels	19,209	-14.6%
Fuels	Natural gas fuels	262,886	-15.2%
Electric power generation	Nuclear	56,921	-16.5%
Electric power generation	Coal	64,051	-25.6%

Source: [Department of Energy](#) • [Get the data](#) • [Embed](#) • [Download image](#) • [Download SVG](#)

Main category	Sub-category	2022 Jobs	▼ Change in employment (2016-2022)
Fuels	Other fuels	47,896	-25.7%
Motor vehicles	Other vehicles	99,096	-36.6%
Motor vehicles	Natural gas vehicles	15,285	-65.6%

Source: [Department of Energy](#) • [Get the data](#) • [Embed](#) • [Download image](#) • [Download SVG](#)

Main category	Sub-category	2022 Jobs	▼ Change in employment (2016-2022)
Transmission, distribution, and storage	Storage	90,444	-0.4%
Electric power generation	Traditional hydropower	54,595	-3.0%
Electric power generation	Oil/petroleum	12,020	-6.4%
Electric power generation	Solar	346,143	-7.4%



The New York Times

“Want Cheap Power, Fast? Solar and Wind Firms Have a Suggestion”

“Renewable energy companies are shifting strategy under President Trump, emphasizing the economic benefits of low-carbon electricity.” March 17, 2025

<https://www.nytimes.com/2025/03/17/climate/renewable-energy-trump-electricity.html?smid=nytcare-ios-share&referringSource=articleShare&sgrp=g&pvid=F0396487-7699-44F3-86DF-3B6ABD6CB2EC>

“As President Trump works to blunt the growth of wind and solar power and expand fossil fuel production in the United States, the renewable energy industry is making a new pitch: You need us.

“Wind and solar developers are increasingly pointing out that America’s [demand for electricity is soaring](#), driven by a boom in data centers, and it’s proving difficult to build enough new gas plants to supply all the extra power that the nation needs.

“Wind, solar and battery storage are relatively quick and cheap to construct. That could help avert energy shortages and keep prices low, an argument that renewable energy firms are making to policymakers.

‘Our message to the administration is, let’s be realistic about this,’ **John Ketchum, the chief executive of NextEra Energy, one of the country’s largest power producers, said in an interview. ‘If you take renewables and storage off the table, we’re going to force electricity prices to the moon.’**

“These are tough times, politically, for the renewable energy industry. Mr. Trump has been a blistering critic of wind turbines for years and openly promotes fossil fuels like oil and gas, riding into office on a promise to ‘drill, baby, drill.’ He has [halted federal approvals for wind farms](#), placed a [moratorium on large solar arrays](#) on public lands and [frozen billions of dollars in spending](#) for battery factories and electric grid upgrades.

“At the same time, Republican leaders in Congress are talking about ending federal subsidies in the form of [tax credits for low-carbon electricity](#), which have been expected to supercharge the growth of wind and solar power. Uncertainty around those credits has paralyzed the renewable energy industry, with companies delaying projects and laying off workers.

“... an environmental argument won’t get far with a president who dismisses global warming. So, many wind and solar companies are now casting their industries as essential to achieving U.S. energy abundance.



“The focus is, what do we need to ensure that we have enough energy to retain our dominance in manufacturing, in electrification, in artificial intelligence?’ said Sandhya Ganapathy, chief executive of EDP Renewables North America, a leading wind and solar developer.

“Over the next 15 years, U.S. electricity demand could increase by up to 50 percent as tech companies build massive data centers for artificial intelligence, factories expand and millions of people plug in electric cars, according to a [new study](#) by S & P Global Commodity Insights.

“Renewable companies say they are well positioned to help meet that growth in the near future. **This year, wind, solar and batteries are projected to make up 93 percent of new electric capacity added to American grids — with the rest coming from power plants that burn natural gas.** In many places, building new wind turbines or installing solar panels are often the cheapest ways to generate additional electrons.

“... The A.I. revolution is coming, it’s going to be big, it’s going to take a lot of power ...

“ ... **power companies now have to wait up to five years to order new gas turbines as manufacturers struggle to keep up with global demand. Any new gas projects that aren’t already under development are unlikely to come online before 2030, he said. Other nascent technologies like advanced nuclear power are even farther off.**

“ **By contrast, many wind and solar projects can be built within 12 to 18 months.**

“**The cost of building new gas power plants has also nearly tripled since the inflation shock of 2022, Mr. Ketchum said, while wind and solar prices have increased only modestly.**

“Mr. Ketchum added that the intermittent nature of renewables isn’t always a problem, since wind and solar are just one component of a larger electric system. Some regions might have gas turbines that don’t currently run much at night, so ramping those up and then adding solar and batteries for the daytime could help provide additional round-the-clock power.

“”Look, nobody’s built more gas-fired generation in the last 20 years than we have, and we agree we’re going to need more gas,’ Mr. Ketchum said. ‘But there’s a time problem and there’s a cost problem. **So our message is, don’t pull away from renewables, because they’re the only thing we have as a country that we can build to meet the demand that’s here right now and that’s really low cost ...”.**



Electrik

“Solar adds more new capacity to the US grid in 2024 than any energy source in 20 years”

March 10, 2025 https://electrek.co/2025/03/10/solar-new-capacity-us-grid-2024/?utm_source=flipboard&utm_content=topic/sustainability

“The US installed 50 gigawatts (GW) of new solar capacity in 2024, the largest single year of new capacity added to the grid by any energy technology in over two decades. That’s enough to power 8.5 million households.

“According to the [US Solar Market Insight 2024 Year in Review report](#) released today by the Solar Energy Industries Association (SEIA) and Wood Mackenzie, **solar and storage account for 84% of all new electric generating capacity added to the grid last year.**

“In addition to historic deployment, surging US solar manufacturing emerged as a landmark economic story in 2024. **Domestic solar module production tripled last year, and at full capacity, US factories can now produce enough to meet nearly all demand for solar panels in the US.** Solar cell manufacturing also resumed in 2024, strengthening the US energy supply chain.

“Solar and storage can be built faster and more affordably than any other technology, ensuring the United States has the power needed to compete in the global economy and meet rising electricity demand,” said SEIA president and CEO Abigail Ross Hopper.

“America’s solar and storage industry set historic deployment and manufacturing records in 2024, creating jobs and driving economic growth. It’s critical that lawmakers continue to support an ‘all of the above’ energy strategy that fosters the growth of American energy sources like solar and storage.’

“Total US solar capacity is expected to reach 739 GW by 2035, but the report forecasts include scenarios showing how policy changes could impact the solar market. **Sudden changes to federal tax credits, supply chain availability, and permitting policy will create uncertainty for investors, increase costs for developers and manufacturers, and cause a slowdown in solar deployment.**

“The low case forecast shows a 130 GW decline in solar deployment over the next decade compared to the base case, representing nearly \$250 billion of lost investment. A slowdown at this scale could leave the US without the electricity needed to meet rising demand, threatening growth in the manufacturing and technology sectors that rely on abundant power.



“Many of the fastest-growing solar states such as Texas, Indiana, and Florida would see the largest declines in deployment under the low-case scenario. [Texas alone could lose out on over \\$50 billion of solar investment over the next decade.](#)”

“Last year’s record-level of installations was aided by several solar policies and credits within the Inflation Reduction Act that helped drive interest in the solar market,” said Sylvia Levya Martinez, principal analyst, North America utility-scale solar for Wood Mackenzie. “We still have many challenges ahead, including unprecedented load growth on the power grid. If many of these policies were eliminated or significantly altered, it would be very detrimental to the industry’s continued growth.”

“Texas led all states for new solar capacity additions last year, replicating a record-setting 2023 with 11.6 GW of new installations. In total, 21 states set new annual installation records, and 13 states added over 1 GW of new solar capacity in 2024.

“The utility-scale segment saw historic gains in 2024, growing by 33% year-over-year with a record 41.4 GW of installed capacity. The community and commercial solar markets also set annual records, growing by 35% and 8%, respectively.

“The residential solar market experienced its lowest year of installations since 2021 due to state-level policy changes and elevated interest rates nationally. [Forecasts show](#) that the market is expected to rebound over the next decade. “