

104,000+ CLEAN ENERGY JOBS IN PENNSYLVANIA; SECTOR GREW 3.7% IN 2024

CLEAN ENERGY OVERALL: Pennsylvania's clean energy sector employed 104,499 people at the end of 2024. By adding 3,722 workers, the clean energy job growth rate topped 3.7 percent, higher than the rest of Pennsylvania's employment growth rate of 0.7 percent. More than 17,500 clean energy jobs have been created in Pennsylvania since 2020, an increase of more than 20 percent.

Most workers were in the construction and manufacturing industries. At the sector level, energy efficiency employed 76,209 people, while renewable energy employed more than 12,328 led by solar and wind.

While the state ranks No. 10 nationally for clean energy jobs, it sits behind five states with smaller populations: Illinois, Michigan, Massachusetts, Ohio, and North Carolina each have between 113,000 and 132,000 clean energy jobs. Four Pennsylvania counties made the Top 100 list for most clean energy jobs nationally: Allegheny (13,702 jobs), Montgomery (10,127), Philadelphia (9,652), and Lehigh (8,379).

Jobs data in this report predates the July 2025 passage of the One Big Beautiful Bill Act, which is forecast to slow clean energy job growth nationwide. Nevertheless, the story emerging from these numbers is one of a clean energy industry and workforce that is resilient and dynamic. As energy demand grows, Pennsylvania's clean energy workers are positioned to play an increasingly important role in shaping the commonwealth's evolving economic future.

KEY FINDINGS

#10

104,499 Pennsylvanians work in clean energy—**No. 10 in the U.S.** for most clean energy jobs by state

3,722

new clean energy jobs were added last year, a **3.7 percent** growth rate

5x

Pennsylvania's clean energy sector added jobs **more than 5X** the rest of state's economy

SECTOR SUMMARY HIGHLIGHTS



RENEWABLE GENERATION: Energy efficiency is by far Pennsylvania's largest clean energy sector with 76,289 jobs. The sector's workforce grew 4.6 percent in 2024, the 15th-fastest growing energy efficiency workforce in the nation.



ENERGY EFFICIENCY: Pennsylvania's renewable generation industry had 12,328 jobs at the end of 2024, led by solar (6,914) and wind (3,314). The state's renewable generation workforce grew 2.6 percent in 2024 and it is the 12th-largest in the country.



STORAGE AND GRID MODERNIZATION: Jobs in battery, storage, and grid modernization totaled 4,468 in 2024—11th-largest in the nation. Pennsylvania's storage and grid modernization workforce grew 4.5 percent in 2024, making it the state's second-fastest growing clean energy sector behind energy efficiency.



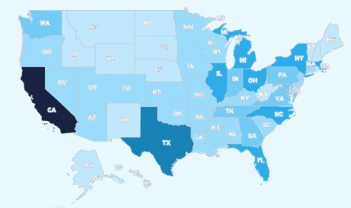
CLEAN VEHICLES: The clean vehicles sector had a declining workforce, falling 1.9 percent in 2024 to employ 9,946 workers as the entire motor vehicle industry lost jobs nationwide in 2024. While the sector lost jobs overall, clean vehicle employment has grown 58 percent since 2020 compared to the gas and diesel vehicle sector which has grown less than two percent.



BIOFUELS: Pennsylvania's biofuels industry has the smallest workforce in the state's clean energy sector with 1,468 jobs. The biofuels workforce grew 2.2 percent.

EXPLORE THE DATA FURTHER

Dive deeper into clean jobs data at www.cleanjobsamerica.e2.org to explore the latest state and county clean energy employment data across the entire U.S., including national and statewide rankings by total clean energy jobs, jobs per capita, and employment growth.



For information on methodology and this report's analysis—including what technologies and sectors are counted as clean energy, what jobs are not counted, definitions of clean energy sectors and subsectors, and more—visit www.cleanjobsamerica.e2.org.



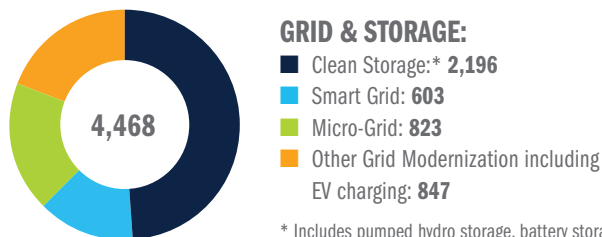
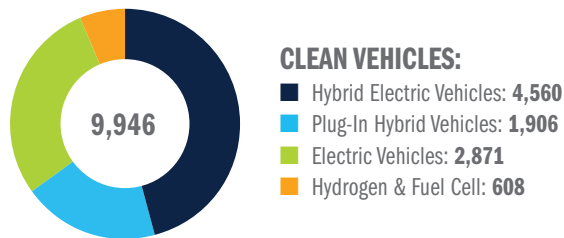
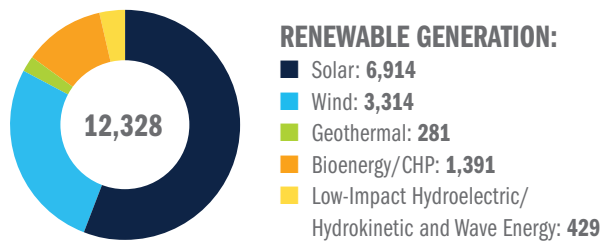
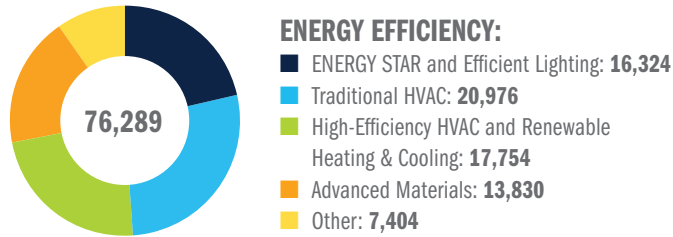
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PENNSYLVANIA CLEAN ENERGY ECONOMY—AT A GLANCE

FIG 1 // PENNSYLVANIA CLEAN ENERGY EMPLOYMENT by sectors



* Includes pumped hydro storage, battery storage, thermal storage, and mechanical storage detailed technologies

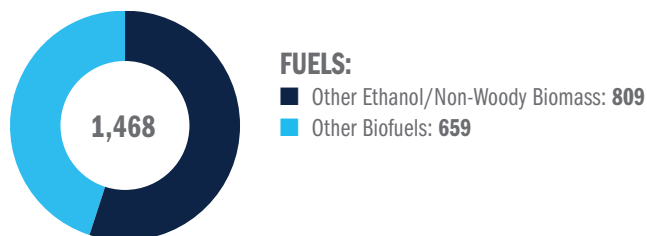


FIG 2 // PENNSYLVANIA CLEAN ENERGY EMPLOYMENT by value chain

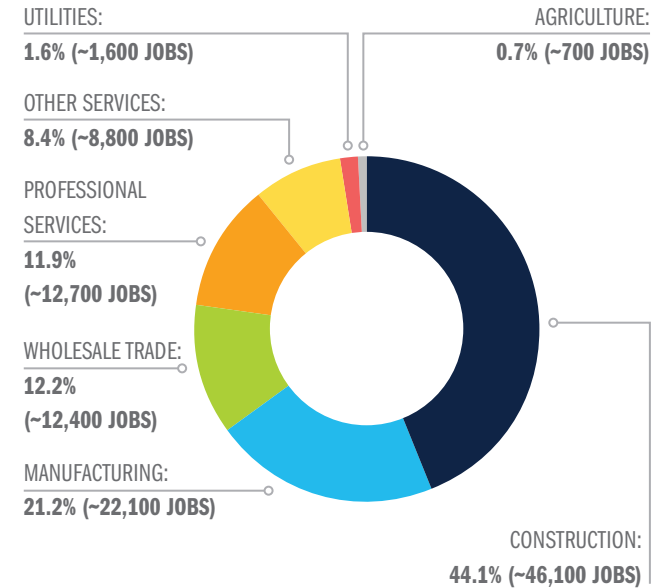
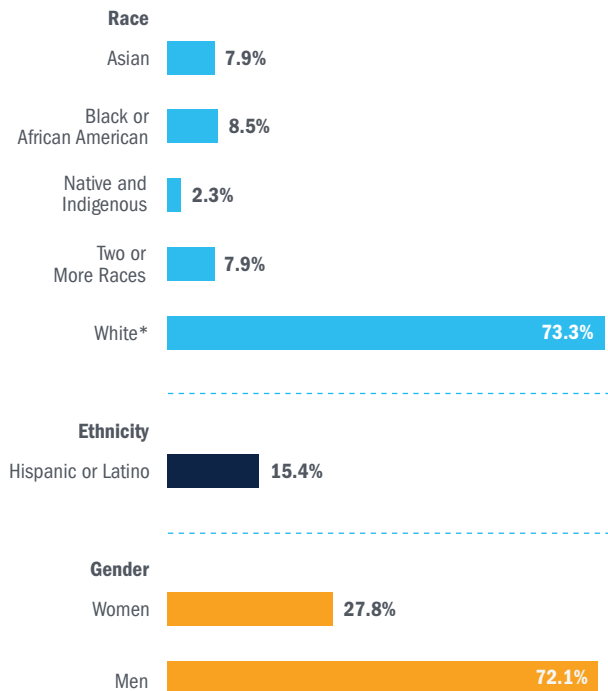


FIG 3 // PENNSYLVANIA CLEAN ENERGY EMPLOYMENT by demographics²



* Includes non-Hispanic and Hispanic whites

Table 1 // PENNSYLVANIA ENERGY EMPLOYMENT jobs added Q4 2023–2024

Sector	2024 Growth	Jobs Added	Jobs Added Since 2020
Renewable Generation	2.6%	314	2,855
Storage and Grid	4.5%	194	870
Energy Efficiency	4.6%	3,376	10,892
Biofuels	2.2%	32	225
Clean Vehicles	-1.9%	-195	2,735
TOTAL	3.7%	3,722	17,577

FIG 4 // PENNSYLVANIA ENERGY EMPLOYMENT by clean energy sector employment growth

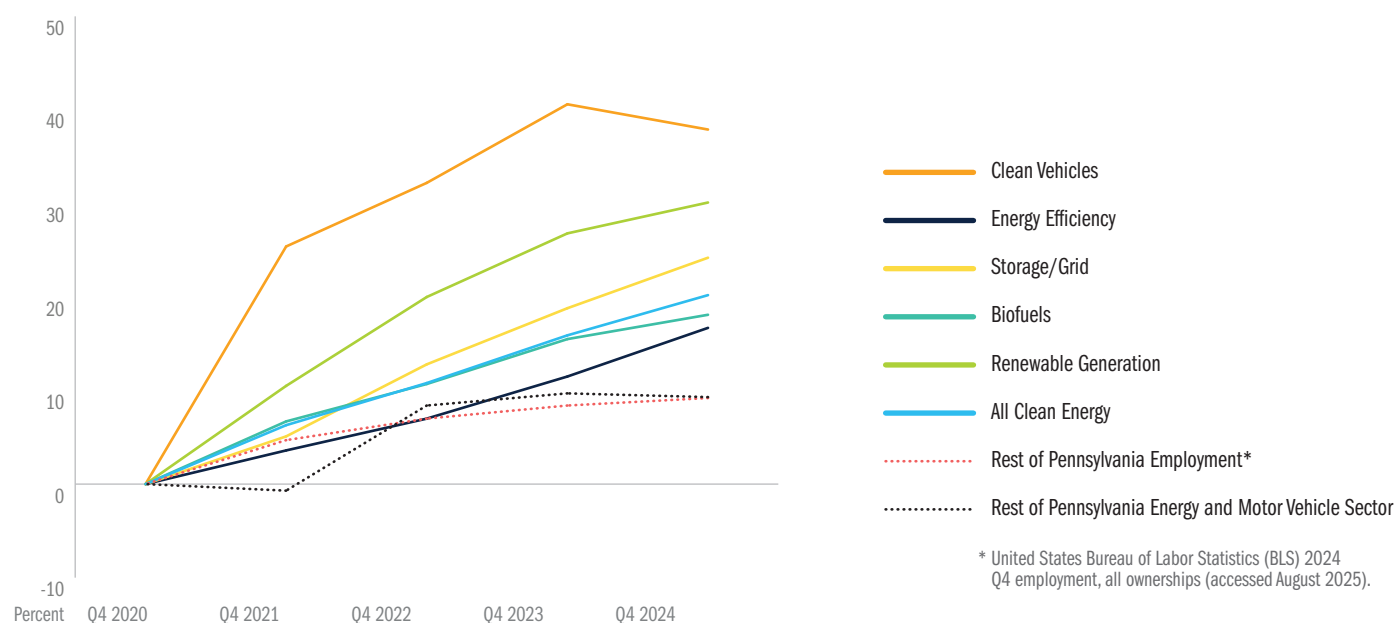


Table 2 // PENNSYLVANIA CLEAN ENERGY EMPLOYMENT by year Q4 2020–2024

Sector	Q4 2024	Q4 2023	Q4 2022	Q4 2021	Q4 2020
All Clean Energy	104,499	100,778	96,327	92,394	86,922
Renewable Generation	12,328	12,014	11,370	10,466	9,473
Biofuels	1,468	1,436	1,376	1,326	1,243
Storage and Grid	4,468	4,274	4,059	3,781	3,598
Energy Efficiency	76,289	72,913	69,990	67,782	65,397
Clean Vehicles	9,946	10,141	9,533	9,040	7,211
Rest of Pennsylvania Energy and Motor Vehicle Sector*	178,197	178,743	176,638	161,875	162,964
Rest of Pennsylvania Employment	5,972,033	5,928,235	5,852,999	5,727,808	5,468,464

* United States Bureau of Labor Statistics (BLS) 2024 Q4 employment, all ownerships (accessed August 2025).

COUNTY DATA

Clean energy puts people to work in all 67 Pennsylvania counties. Four counties even cracked the top 100 list for most clean energy jobs in the nation: Allegheny County (13,702 jobs), Montgomery County (10,127), Philadelphia County (9,652), and Lehigh County (8,379). Bucks, Lancaster, and Chester counties each tallied more than 5,000 clean energy jobs, while Berks, York, and Delaware counties each had more than 3,400 and rounded out the state’s own Top 10. The fastest clean energy job growth rates were in McKean (36.3 percent), Forest (8.9), and Luzerne (8.2) counties. The counties with the highest density of clean energy jobs were Lehigh (41 jobs per 1,000 residents) and Jefferson (40).

PENNSYLVANIA CLEAN ENERGY ECONOMY—APPENDIX

Table A1 // PENNSYLVANIA CLEAN ENERGY EMPLOYMENT by county

County	Total Clean Energy	Renewable Gen.	Storage/Grid	Clean Fuels	Energy Efficiency	Clean Vehicles	Job Growth	Workers Per 1K Jobs
Adams	492	140	16	280	<10	47	-1.7%	15
Allegheny	13,702	1,846	589	10,466	167	634	3.7%	20
Armstrong	191	30	<10	122	<10	31	3.0%	12
Beaver	955	413	31	424	<10	79	0.3%	20
Bedford	291	10	27	197	<10	54	3.2%	18
Berks	3,944	1,319	166	1,843	35	581	4.4%	22
Blair	784	39	42	574	<10	123	0.0%	14
Bradford	198	<10	<10	145	<10	32	-1.4%	9
Bucks	5,558	722	154	3,908	70	704	2.7%	20
Butler	1,563	102	44	1,192	29	197	2.2%	18
Cambria	668	47	21	471	<10	124	1.3%	14
Cameron	11	<10	<10	<10	<10	<10	-2.5%	7
Carbon	180	30	<10	105	<10	39	3.6%	10
Centre	1,116	168	54	824	11	59	4.0%	16
Chester	5,106	416	186	3,990	104	409	1.5%	20
Clarion	185	45	<10	101	<10	36	2.8%	15
Clearfield	305	20	14	193	29	50	-20.1%	10
Clinton	269	26	<10	150	<10	84	3.4%	21
Columbia	322	34	<10	207	<10	74	-3.9%	13
Crawford	282	53	<10	175	<10	44	-3.3%	10
Cumberland	1,937	156	43	1,507	19	212	2.8%	14
Dauphin	2,293	204	196	1,631	34	228	0.9%	12
Delaware	3,414	326	130	2,621	45	291	2.2%	15
Elk	132	<10	<10	94	<10	16	4.5%	10
Erie	1,587	185	43	1,153	35	171	-1.0%	13
Fayette	587	137	30	321	<10	94	4.0%	16
Forest	12	<10	<10	<10	<10	<10	8.9%	7

County	Total Clean Energy	Renewable Gen.	Storage/Grid	Clean Fuels	Energy Efficiency	Clean Vehicles	Job Growth	Workers Per 1K Jobs
Franklin	742	24	11	559	<10	141	5.0%	12
Fulton	62	<10	14	<10	<10	<10	-0.8%	12
Greene	243	15	22	187	<10	16	2.1%	21
Huntingdon	150	24	12	100	<10	12	2.0%	12
Indiana	378	30	28	274	<10	40	0.1%	14
Jefferson	576	386	<10	148	<10	30	2.4%	40
Juniata	72	<10	<10	36	<10	16	5.1%	11
Lackawanna	1,263	94	118	876	21	154	0.6%	13
Lancaster	5,212	837	64	3,515	51	744	3.0%	20
Lawrence	453	21	<10	381	<10	39	1.1%	17
Lebanon	688	72	14	441	<10	155	6.0%	13
Lehigh	8,379	160	84	7,424	36	675	3.4%	41
Luzerne	1,981	515	28	1,221	22	195	8.2%	13
Lycoming	775	54	38	563	12	109	5.4%	16
McKean	257	<10	62	161	<10	20	36.3%	18
Mercer	510	13	<10	371	<10	111	-0.7%	12
Mifflin	172	<10	<10	129	<10	31	0.8%	10
Monroe	463	20	<10	350	<10	78	0.7%	8
Montgomery	10,127	1,129	377	7,663	179	778	4.2%	20
Montour	133	<10	<10	27	<10	77	3.3%	8
Northampton	1,317	45	30	1,073	17	152	2.0%	11
Northumberland	436	33	46	238	<10	113	0.3%	17
Perry	128	<10	<10	89	<10	20	-1.6%	16
Philadelphia	9,652	829	135	7,978	253	458	3.6%	13
Pike	109	16	<10	67	<10	13	2.0%	9
Potter	53	<10	16	<10	<10	<10	1.3%	11
Schuylkill	566	74	<10	383	14	87	-0.8%	11
Snyder	218	<10	15	153	<10	37	2.2%	14
Somerset	495	77	13	273	<10	126	4.8%	21
Sullivan	25	<10	<10	<10	<10	<10	1.8%	17
Susquehanna	128	<10	<10	87	<10	19	3.3%	15
Tioga	255	59	17	136	<10	40	1.6%	21
Union	197	62	<10	107	<10	25	2.7%	11
Venango	176	12	<10	119	<10	36	6.6%	11
Warren	109	13	<10	55	<10	27	-0.6%	9
Washington	1,527	47	65	1,256	24	135	3.1%	17
Wayne	268	16	<10	204	<10	40	4.6%	18
Westmoreland	2,395	316	77	1,724	40	237	1.9%	18
Wyoming	135	29	<10	74	<10	19	2.8%	14
York	3,864	614	173	2,584	39	454	2.9%	21
N/A	2,845	143	217	2,396	34	57	1.3%	9

Note: 2,845 clean energy jobs are in an unknown or undefined county.

- 1 Unless otherwise stated, all data is based on 2024 Q4 employment data and surveys collected and analyzed by the BW Research Partnership for the 2024 U.S. Energy and Employment Report (USEER), September 2025, Department of Energy (DOE). Employment data used in this analysis comes from the U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) and a nationwide employer survey of 42,800 business establishments administered in Q4 2024.
- 2 Information on the representation of people with disabilities, lesbian, gay, bisexual, transgender, intersex, and queer people, migrants, religious minorities, and different age demographics in clean energy is limited. Based on the available data from the Bureau of Labor Statistics (BLS) and the supplemental employer survey used by the USEER, this analysis was unable to produce any findings regarding those groups



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