



Pennsylvania defines industry clusters to serve as the basis for data-driven workforce development policies. An industry cluster includes industries closely linked by common products, labor pools, technologies, supplier chains and training needs. They take on strategic importance for long-term economic planning as changes that benefit one group member will generally impact other members of the cluster.

Industry clusters are comprised of specific six-digit North American Industry Classification System, or NAICS, codes. They are mutually exclusive, so that no two clusters contain the same NAICS code. Currently, there are 12 clusters identified, along with several critical sub-clusters. Combined, these 12 industry clusters account for nearly 83 percent of all employment in the commonwealth.

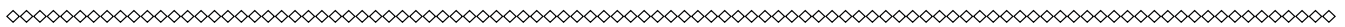
Cluster Summary

The Energy (ENGY) cluster includes industries associated with the production and distribution of energy, as well as the waste disposal industries associated with the remediation and environmental cleanup related to energy production. In the cluster you will find a wide variety of industries, from petroleum refineries to battery manufacturing to generator manufacturing.

	2015	2019	2020
Employer Units	5,899	5,802	5,802
Number of Jobs	139,020	138,462	126,357
Percent of Total Pennsylvania Jobs	2.4%	2.3%	2.3%
Average Annual Wages	\$77,755	\$84,975	\$86,094
Location Quotient (LQ)	1.14	1.14	1.14

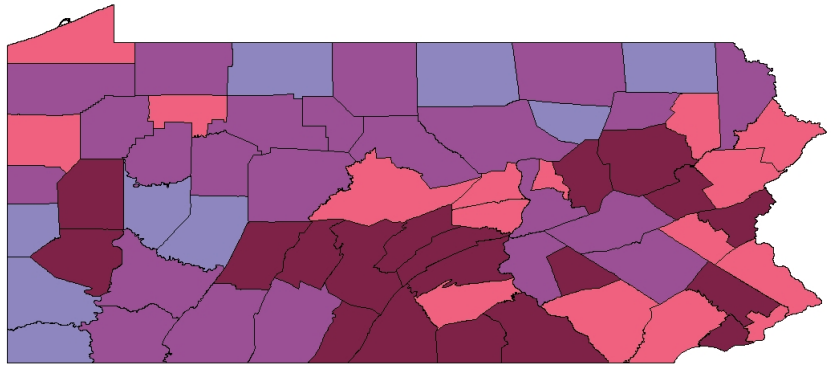
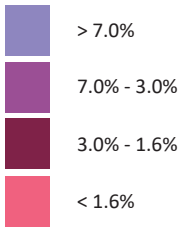
LQs greater than one suggest a competitive advantage.

Energy cluster employment decreased by 9 percent over the last five years. However, Pennsylvania’s competitiveness in this sector can be seen in comparison with the nation, as the Location Quotient (LQ) has stayed the same at 1.14. This competitiveness is further evident in specific local areas (as seen on page 3) like the Southwest Corner and Northern Tier Workforce Development Areas (WDAs), who have LQs of 5.33 and 3.25, respectively. The cluster pays an average wage much greater than the statewide average for all jobs (\$62,070) and the cluster's average wage has increased 10.7% in the time period.



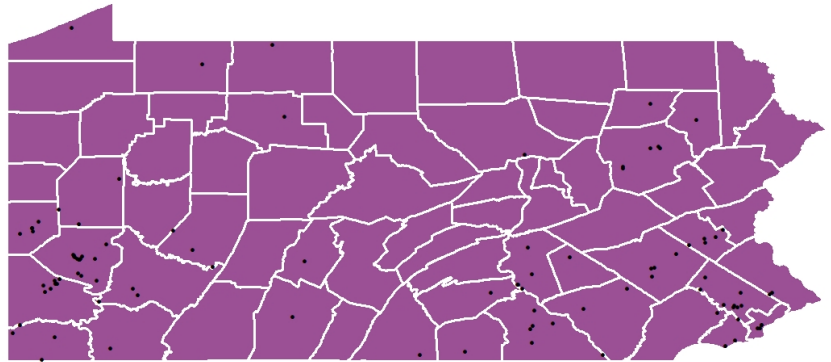
Note: The 2020 employment and wages data, as presented in this publication, reflect the effects of business and school closures implemented to mitigate the spread of Coronavirus (COVID-19).

Percent Employment by County



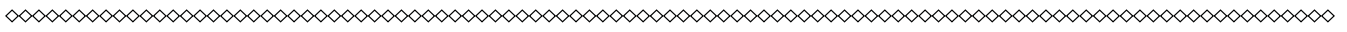
Major Employers

- East Penn Manufacturing Company
- Great Arrow Builders LLC
- PECO Energy Power Company
- TE Connectivity Corporation
- PPL Electric Utilities
- Philadelphia Gas Works



Top Industries Based on Employment

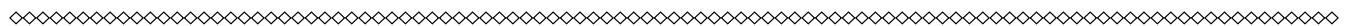
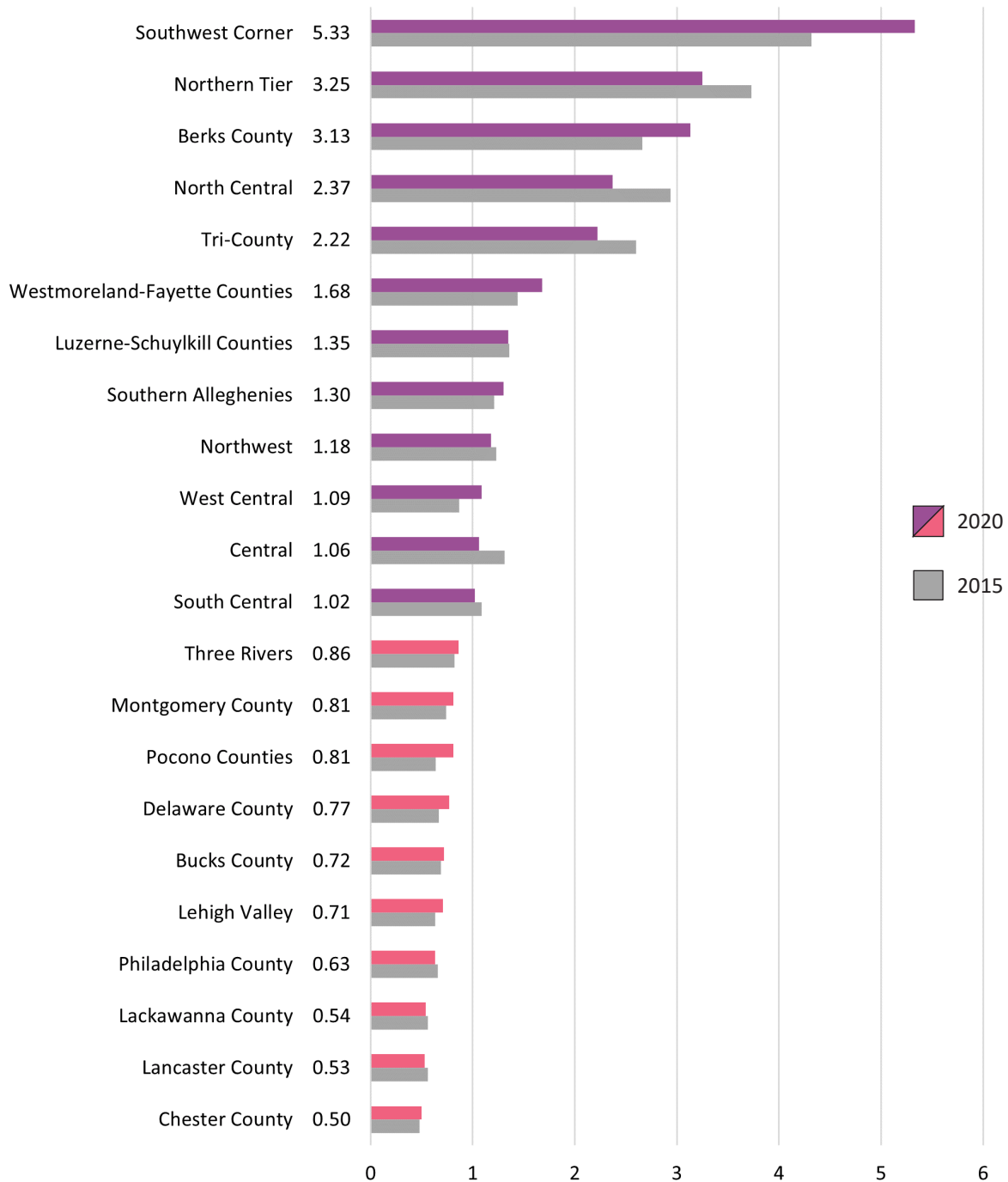
- Oil & Gas Pipeline Construction
- Electric Power Distribution
- Solid Waste Collection
- Water Supply & Irrigation Systems
- Support Activities for Oil & Gas Operations
- Primary Battery Manufacturing
- Natural Gas Distribution
- Fuel Dealers
- Power & Communication System Construction
- Sewage Treatment Facilities
- Air, Water & Waste Program Administration
- Current-Carrying Wiring Device Manufacturing
- Natural Gas Extraction
- Recyclable Material Merchant Wholesalers
- Bituminous Coal Underground Mining
- Nuclear Electric Power Generation
- Environment & Conservation Organizations
- Fossil Fuel Electric Power Generation
- Other Petroleum Merchant Wholesalers
- All Other Petroleum & Coal Products Manufacturing



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Employment Concentration

A location quotient, or LQ, compares a cluster's share of local employment to its share of national employment. This value can be used when evaluating the strength of an industry cluster within an area. An LQ greater than one indicates that the cluster has, on average, more employees locally than typically expected implying a possible competitive advantage. The Southwest Corner, Berks County, Westmoreland-Fayette Counties, Southern Alleghenies, and West Central WDAs all have LQs greater than one and have also increased their competitiveness since 2015.

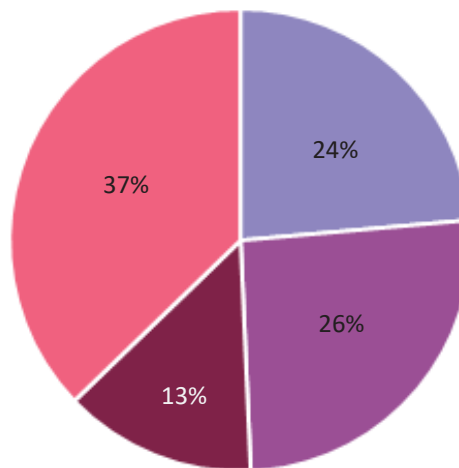


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Educational Requirements

This graph illustrates the minimum educational attainment levels for jobs found in this cluster's various industries. Only 37 percent of ENGY jobs require formal postsecondary training of any kind. Partnered with high average wages, this is an industry cluster that offers high rewards to those willing to work hard and learn on the job.

Short-Term OJT
Moderate-Term OJT
Long-Term Training
Work Experience/Some PS Training
Associate Degree
Bachelor's Degree
Advanced Degree

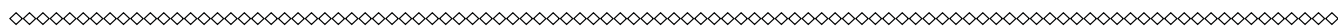


Occupations with Significant Employment

The following table lists occupations that employ at least 1,500 people in the ENGY cluster.

SOC Code	Occupation	Average Wage	Annual Demand	
			All Industries	Industry Cluster
47-2061	Construction Laborers	\$45,000	6,876	631
53-3032	Heavy & Tractor-Trailer Truck Drivers	\$49,850	10,865	602
53-7081	Refuse & Recyclable Material Collectors	\$36,780	896	532
47-2073	Operating Engineers & Other Construction Equipment Operators	\$56,240	2,796	508
53-7062	Laborers & Freight/Stock/Material Movers	\$33,910	23,346	449
47-1011	Supervisors - Construction Trades & Extraction Workers	\$75,690	2,624	407
43-9061	Office Clerks, General	\$38,360	19,111	355
51-2028	Electrical & Electromechanical Assemblers	\$37,540	1,656	301
49-9051	Electrical Power-Line Installers & Repairers	\$83,460	415	297
43-4051	Customer Service Representatives	\$38,760	16,186	279
11-1021	General & Operations Managers	\$131,060	7,980	262
47-5071	Roustabouts, Oil & Gas	\$36,760	238	231
41-4012	Sales Representatives	\$75,360	6,857	197
51-1011	Supervisors - Production & Operating Workers	\$64,400	2,995	190
49-9041	Industrial Machinery Mechanics	\$56,210	1,701	169

*The 2020 average annual wage reflects wages across all industries and is not specific to the cluster.



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