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## Appendix B:

# USEER Occupational Wage Data

The following section includes the full tables for low (10<sup>th</sup> percentile), median (50<sup>th</sup> percentile), and high (90<sup>th</sup> percentile) for 101 occupations across energy sectors as provided by surveyed employers (Fuels, Electric Power Generation, Transmission, Distribution, and Storage, Energy Efficiency, and Motor Vehicles and Component Parts). In addition to the five major technology sectors, some wages were extrapolated for subsectors and included in Appendix B: Petroleum Fuels, Natural Gas Fuels, Other Fuels, Solar EPG, Wind EPG, Fossil Fuel EPG, Other EPG. These represent groupings for which there was a large enough sample size for additional wage analysis.

Table 1: Occupational Wages, Fuels (2024)

SOC	Occupation	Fuels		
		Low	Median	High
13-2011	Accountants and Auditors	\$54,226	\$78,356	\$128,249
45-2091	Agricultural Equipment Operators	\$31,242	\$42,578	\$57,782
11-9041	Architectural and Engineering Managers	\$107,189	\$157,522	\$216,431
51-2000	Assemblers and Fabricators	\$38,431	\$48,075	\$65,041
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$42,961	\$50,077	\$61,512
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists			
13-1199	Business Operations Specialists, All Other	\$47,720	\$79,245	\$139,149
47-2031	Carpenters			
47-2051	Cement Masons and Concrete Finishers	\$40,395	\$55,128	\$84,799
17-2051	Civil Engineers	\$68,056	\$96,596	\$148,634
53-7061	Cleaners Of Vehicles and Equipment	\$28,742	\$36,417	\$47,106
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,481	\$47,363	\$72,107
51-9161	Computer Numerically Controlled Tool Operators	\$46,593	\$57,175	\$74,708
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$44,508	\$70,065	\$98,534
13-1051	Cost Estimators	\$68,082	\$75,924	\$123,637
41-2021	Counter and Rental Clerks	\$29,013	\$38,644	\$61,345
43-4051	Customer Service Representatives	\$34,795	\$42,496	\$55,117
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$39,185	\$50,427	\$68,537
47-5011	Derrick Operators, Oil and Gas	\$42,930	\$62,740	\$84,620
53-3031	Driver/Sales Workers	\$28,281	\$43,196	\$65,135
47-5023	Earth Drillers, Except Oil and Gas	\$44,008	\$58,840	\$86,425
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,412	\$95,434	\$120,384
17-2071	Electrical Engineers	\$72,569	\$99,225	\$144,734
47-2111	Electricians	\$45,165	\$63,264	\$97,754
51-2031	Engine and Other Machine Assemblers	\$44,139	\$56,699	\$75,440
45-4021	Fallers	\$35,630	\$53,914	\$84,510
11-9013	Farmers, Ranchers, and Other Agricultural Managers	\$54,998	\$87,665	\$149,366
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$32,261	\$35,693	\$46,363
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	\$27,102	\$36,150	\$51,834

47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$55,694	\$81,799	\$127,548
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$39,603	\$59,342	\$90,854
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$53,403	\$75,224	\$108,868
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$49,297	\$68,574	\$100,540
51-1011	First-Line Supervisors of Production and Operating Workers	\$51,586	\$71,179	\$98,740
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$46,268	\$64,106	\$92,578
45-4011	Forest and Conservation Workers	\$33,051	\$43,680	\$54,184
11-1021	General and Operations Managers	\$78,349	\$86,641	\$117,004
45-2041	Graders and Sorters, Agricultural Products	\$30,493	\$35,422	\$43,285
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$47,693	\$62,706	\$79,761
47-3013	Helpers--Electricians	\$32,795	\$41,547	\$58,530
47-5081	Helpers--Extraction Workers	\$37,357	\$49,831	\$69,437
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$30,270	\$39,796	\$54,705
47-3015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	\$32,686	\$40,743	\$56,021
17-2112	Industrial Engineers	\$70,189	\$98,307	\$148,869
49-9041	Industrial Machinery Mechanics	\$48,960	\$66,360	\$93,381
11-3051	Industrial Production Managers	\$74,691	\$119,088	\$191,435
53-7051	Industrial Truck and Tractor Operators	\$37,797	\$47,969	\$63,580
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$38,579	\$51,247	\$78,833
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$29,800	\$37,576	\$51,200
23-1011	Lawyers	\$74,594	\$147,989	\$293,281
53-3033	Light Truck Drivers	\$30,121	\$44,324	\$78,959
45-4022	Logging Equipment Operators	\$35,048	\$49,213	\$72,280
51-4041	Machinists	\$39,379	\$57,153	\$79,392
49-9071	Maintenance and Repair Workers, General	\$45,159	\$55,395	\$74,440
13-1111	Management Analysts	\$58,715	\$95,310	\$159,672
11-9199	Managers, All Other	\$75,724	\$135,325	\$215,494
13-1161	Market Research Analysts and Marketing Specialists	\$46,245	\$78,173	\$140,087
17-2141	Mechanical Engineers	\$70,965	\$100,141	\$151,351
51-2090	Miscellaneous Assemblers and Fabricators	\$33,107	\$43,436	\$62,851
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$35,290	\$47,212	\$74,009
43-9061	Office Clerks, General	\$38,207	\$46,081	\$57,063
53-7064	Packers and Packagers, Hand	\$29,023	\$36,679	\$46,301
23-2011	Paralegals and Legal Assistants	\$45,736	\$64,906	\$99,088
41-2022	Parts Salespersons	\$31,301	\$41,091	\$65,702
17-2171	Petroleum Engineers	\$78,840	\$141,280	\$228,790
47-2152	Plumbers, Pipefitters, and Steamfitters	\$40,626	\$62,444	\$103,719
13-1082	Project Management Specialists	\$64,498	\$94,341	\$141,784
41-2031	Retail Salespersons	\$25,818	\$34,109	\$46,478
47-5012	Rotary Drill Operators, Oil and Gas	\$42,750	\$65,010	\$98,510
47-5071	Roustabouts, Oil and Gas	\$35,650	\$47,510	\$64,010
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$45,865	\$64,644	\$113,163
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$39,977	\$61,249	\$111,009
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$41,959	\$53,899	\$68,390



33-9032	Security Guards	\$32,819	\$41,115	\$61,634
47-5013	Service Unit Operators, Oil and Gas	\$40,010	\$57,980	\$93,820
43-5071	Shipping, Receiving, and Inventory Clerks	\$37,322	\$46,235	\$61,037
15-1252	Software Developers	\$81,033	\$118,463	\$208,474
53-7065	Stockers and Order Fillers	\$31,531	\$38,046	\$48,941
51-4121	Welders, Cutters, Solderers, and Brazers	\$38,635	\$51,669	\$76,832
53-7073	Wellhead Pumpers	\$39,110	\$70,010	\$97,470

Table 2: Occupational Wages, Electric Power Generation (2024)

SOC	Occupation	Electric Power Generation		
		Low	Median	High
13-2011	Accountants and Auditors	\$52,147	\$72,054	\$113,216
17-1011	Architects, Except Landscape and Naval	\$64,412	\$98,668	\$158,398
17-3011	Architectural and Civil Drafters	\$46,629	\$67,929	\$103,633
11-9041	Architectural and Engineering Managers	\$98,245	\$142,777	\$194,896
51-2000	Assemblers and Fabricators	\$40,708	\$48,320	\$61,710
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$45,842	\$59,249	\$80,793
13-1199	Business Operations Specialists, All Other	\$47,721	\$79,246	\$139,150
47-2031	Carpenters	\$41,713	\$58,622	\$90,812
47-2051	Cement Masons and Concrete Finishers	\$38,570	\$52,690	\$81,126
17-2051	Civil Engineers	\$68,831	\$98,303	\$152,042
53-7061	Cleaners Of Vehicles and Equipment	\$28,311	\$35,987	\$46,676
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,888	\$47,256	\$70,928
51-9161	Computer Numerically Controlled Tool Operators	\$48,606	\$58,238	\$74,199
47-4011	Construction and Building Inspectors	\$54,604	\$76,173	\$110,097
47-2061	Construction Laborers	\$37,062	\$43,303	\$58,632
11-9021	Construction Managers	\$73,511	\$84,378	\$102,575
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$44,323	\$70,562	\$99,791
13-1051	Cost Estimators	\$57,205	\$76,946	\$110,071
41-2021	Counter and Rental Clerks	\$32,693	\$41,659	\$62,794
43-4051	Customer Service Representatives	\$31,198	\$39,876	\$54,097
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$40,332	\$50,543	\$66,994
53-3031	Driver/Sales Workers	\$23,665	\$38,105	\$59,345
47-5023	Earth Drillers, Except Oil and Gas	\$45,207	\$58,836	\$84,182
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,145	\$93,518	\$117,356
17-2071	Electrical Engineers	\$77,991	\$97,726	\$131,418
49-9051	Electrical Power-Line Installers and Repairers	\$51,004	\$76,342	\$96,625
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	\$51,426	\$60,581	\$76,300
47-2111	Electricians	\$64,987	\$73,067	\$88,464
51-2031	Engine and Other Machine Assemblers	\$43,025	\$54,582	\$71,826
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$55,518	\$79,819	\$122,408
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$54,913	\$72,515	\$99,653
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$46,447	\$64,119	\$93,423



51-1011	First-Line Supervisors of Production and Operating Workers	\$53,979	\$66,593	\$84,337
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$45,202	\$62,270	\$89,513
11-1021	General and Operations Managers	\$75,743	\$82,808	\$108,677
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$44,278	\$59,216	\$81,775
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$40,963	\$56,726	\$74,634
47-3013	Helpers--Electricians	\$35,653	\$41,926	\$54,097
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$29,496	\$39,407	\$54,917
47-3015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	\$33,521	\$40,767	\$54,508
17-2112	Industrial Engineers	\$69,719	\$94,934	\$140,279
49-9041	Industrial Machinery Mechanics	\$49,013	\$63,983	\$87,231
11-3051	Industrial Production Managers	\$79,722	\$118,418	\$181,476
53-7051	Industrial Truck and Tractor Operators	\$37,804	\$47,896	\$63,384
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$41,851	\$52,553	\$75,859
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$34,938	\$41,976	\$54,306
23-1011	Lawyers	\$75,409	\$144,810	\$282,194
53-3033	Light Truck Drivers	\$29,951	\$44,452	\$79,814
51-4041	Machinists	\$40,712	\$56,334	\$75,879
49-9071	Maintenance and Repair Workers, General	\$43,373	\$54,309	\$74,658
13-1111	Management Analysts	\$59,107	\$90,033	\$144,423
11-9199	Managers, All Other	\$81,321	\$123,987	\$181,377
13-1161	Market Research Analysts and Marketing Specialists	\$45,757	\$75,594	\$133,453
17-2141	Mechanical Engineers	\$73,305	\$91,767	\$124,172
51-2090	Miscellaneous Assemblers and Fabricators	\$31,836	\$42,296	\$61,958
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$39,897	\$50,870	\$75,537
17-2161	Nuclear Engineers	\$88,290	\$127,520	\$187,430
51-8011	Nuclear Power Reactor Operators	\$99,300	\$122,610	\$152,690
19-4051	Nuclear Technicians	\$64,370	\$104,240	\$126,890
43-9061	Office Clerks, General	\$46,761	\$53,277	\$62,364
47-2073	Operating Engineers and Other Construction Equipment Operators	\$55,265	\$67,660	\$95,578
53-7064	Packers and Packagers, Hand	\$28,592	\$36,249	\$45,871
23-2011	Paralegals and Legal Assistants	\$39,493	\$60,406	\$97,698
41-2022	Parts Salespersons	\$30,842	\$40,429	\$64,530
47-2152	Plumbers, Pipefitters, and Steamfitters	\$42,030	\$59,654	\$92,995
51-8012	Power Distributors and Dispatchers	\$71,483	\$106,612	\$142,862
51-8013	Power Plant Operators	\$59,930	\$99,670	\$128,760
13-1082	Project Management Specialists	\$73,172	\$87,179	\$109,446
41-2031	Retail Salespersons	\$25,999	\$34,860	\$48,079
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$44,299	\$68,028	\$129,336
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$54,054	\$68,606	\$102,647
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$38,725	\$50,533	\$64,863
33-9032	Security Guards	\$29,939	\$38,110	\$58,320
43-5071	Shipping, Receiving, and Inventory Clerks	\$38,582	\$45,613	\$57,289
47-2231	Solar Photovoltaic Installers	\$39,070	\$51,860	\$80,150
15-1252	Software Developers	\$77,627	\$117,173	\$175,402

53-7065	Stockers and Order Fillers	\$30,020	\$37,204	\$49,219
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$46,113	\$64,270	\$93,378
51-4121	Welders, Cutters, Solderers, and Brazers	\$38,634	\$51,478	\$76,273
49-9081	Wind Turbine Service Technicians	\$49,110	\$62,580	\$88,090

Table 3: Occupational Wages, Transmission, Distribution, and Storage (2024)

SOC	Occupation	Transmission, Distribution, and Storage		
		Low	Median	High
13-2011	Accountants and Auditors	\$51,920	\$75,755	\$125,038
17-1011	Architects, Except Landscape and Naval	\$61,999	\$95,064	\$152,718
17-3011	Architectural and Civil Drafters	\$46,690	\$64,524	\$94,419
11-9041	Architectural and Engineering Managers	\$93,466	\$133,418	\$180,177
51-2000	Assemblers and Fabricators	\$40,449	\$48,433	\$62,479
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$45,953	\$54,916	\$69,317
13-1199	Business Operations Specialists, All Other	\$47,815	\$79,339	\$139,243
47-2031	Carpenters	\$40,973	\$56,593	\$86,329
47-2051	Cement Masons and Concrete Finishers	\$39,000	\$54,194	\$84,793
17-2051	Civil Engineers	\$68,768	\$94,226	\$140,644
53-7061	Cleaners Of Vehicles and Equipment	\$28,416	\$36,091	\$46,780
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,635	\$47,014	\$70,709
51-9161	Computer Numerically Controlled Tool Operators	\$48,935	\$58,103	\$73,293
47-4011	Construction and Building Inspectors	\$53,484	\$72,694	\$102,909
47-2061	Construction Laborers	\$37,235	\$43,422	\$58,618
11-9021	Construction Managers	\$74,921	\$85,324	\$102,745
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$43,625	\$70,636	\$100,724
13-1051	Cost Estimators	\$59,025	\$74,404	\$100,210
41-2021	Counter and Rental Clerks	\$29,564	\$38,531	\$59,665
43-4051	Customer Service Representatives	\$36,331	\$42,020	\$51,343
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$41,943	\$51,868	\$67,856
53-3031	Driver/Sales Workers	\$28,465	\$41,413	\$60,458
47-5023	Earth Drillers, Except Oil and Gas	\$45,116	\$58,744	\$84,091
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$60,790	\$92,858	\$114,469
17-2071	Electrical Engineers	\$76,342	\$96,036	\$129,660
49-9051	Electrical Power-Line Installers and Repairers	\$57,979	\$73,315	\$85,591
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	\$61,485	\$71,005	\$87,350
47-2111	Electricians	\$68,318	\$74,972	\$87,653
51-2031	Engine and Other Machine Assemblers	\$49,426	\$54,438	\$72,384
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$54,438	\$77,892	\$118,994
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$58,467	\$72,993	\$95,391
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$43,994	\$61,827	\$91,399
51-1011	First-Line Supervisors of Production and Operating Workers	\$63,646	\$73,898	\$88,320

53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$47,056	\$60,662	\$82,381
11-1021	General and Operations Managers	\$76,745	\$84,713	\$113,887
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$45,178	\$59,918	\$82,178
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$47,410	\$63,136	\$81,001
47-3013	Helpers--Electricians	\$39,093	\$44,858	\$56,043
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$31,849	\$41,184	\$55,793
47-3015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	\$33,585	\$41,034	\$55,158
17-2112	Industrial Engineers	\$73,019	\$97,490	\$141,496
49-9041	Industrial Machinery Mechanics	\$42,995	\$59,985	\$86,369
11-3051	Industrial Production Managers	\$75,735	\$111,460	\$169,677
53-7051	Industrial Truck and Tractor Operators	\$38,698	\$48,651	\$63,926
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$39,737	\$50,980	\$75,463
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$35,824	\$42,697	\$54,737
23-1011	Lawyers	\$75,409	\$144,810	\$282,194
53-3033	Light Truck Drivers	\$30,113	\$43,743	\$76,980
51-4041	Machinists	\$43,496	\$58,658	\$77,628
49-9071	Maintenance and Repair Workers, General	\$52,876	\$61,526	\$77,618
13-1111	Management Analysts	\$62,664	\$93,504	\$147,746
11-9199	Managers, All Other	\$75,722	\$113,438	\$164,170
13-1161	Market Research Analysts and Marketing Specialists	\$45,440	\$76,208	\$135,873
17-2141	Mechanical Engineers	\$78,560	\$94,101	\$121,379
51-2090	Miscellaneous Assemblers and Fabricators	\$31,820	\$41,929	\$60,931
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$47,900	\$58,844	\$83,443
43-9061	Office Clerks, General	\$43,986	\$53,926	\$67,787
47-2073	Operating Engineers and Other Construction Equipment Operators	\$47,884	\$62,353	\$94,942
53-7064	Packers and Packagers, Hand	\$28,697	\$36,353	\$45,976
23-2011	Paralegals and Legal Assistants	\$39,493	\$60,406	\$97,698
41-2022	Parts Salespersons	\$27,674	\$37,024	\$60,529
47-2152	Plumbers, Pipefitters, and Steamfitters	\$41,787	\$59,527	\$93,087
51-8012	Power Distributors and Dispatchers	\$71,375	\$106,098	\$141,929
13-1082	Project Management Specialists	\$70,215	\$81,934	\$100,564
41-2031	Retail Salespersons	\$25,935	\$34,038	\$46,127
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$45,657	\$65,756	\$117,684
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$42,913	\$61,074	\$103,557
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$37,919	\$50,949	\$66,761
33-9032	Security Guards	\$30,200	\$38,483	\$58,972
43-5071	Shipping, Receiving, and Inventory Clerks	\$37,915	\$44,982	\$56,718
15-1252	Software Developers	\$76,347	\$114,206	\$169,953
53-7065	Stockers and Order Fillers	\$30,020	\$37,204	\$49,219
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$44,113	\$62,439	\$91,818
51-4121	Welders, Cutters, Solderers, and Brazers	\$40,716	\$53,243	\$77,428

Table 4: Occupational Wages, Energy Efficiency (2024)

SOC	Occupation	Energy Efficiency		
		Low	Median	High
13-2011	Accountants and Auditors	\$50,669	\$73,945	\$122,074
17-1011	Architects, Except Landscape and Naval	\$65,401	\$99,420	\$158,740
17-3011	Architectural and Civil Drafters	\$49,479	\$66,702	\$95,571
11-9041	Architectural and Engineering Managers	\$94,834	\$127,674	\$166,109
51-2000	Assemblers and Fabricators	\$39,293	\$46,269	\$58,541
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$40,360	\$48,554	\$61,720
13-1199	Business Operations Specialists, All Other	\$47,728	\$79,253	\$139,157
47-2031	Carpenters	\$44,857	\$54,057	\$71,571
47-2051	Cement Masons and Concrete Finishers	\$41,225	\$52,674	\$75,732
17-2051	Civil Engineers	\$70,931	\$97,123	\$144,879
53-7061	Cleaners Of Vehicles and Equipment	\$27,311	\$35,299	\$46,425
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,908	\$47,378	\$71,264
51-9161	Computer Numerically Controlled Tool Operators	\$46,831	\$57,191	\$74,356
47-4011	Construction and Building Inspectors	\$55,783	\$78,052	\$113,077
47-2061	Construction Laborers	\$35,028	\$39,936	\$51,988
11-9021	Construction Managers	\$63,067	\$70,848	\$83,878
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$44,981	\$71,631	\$101,318
13-1051	Cost Estimators	\$57,887	\$69,195	\$88,170
41-2021	Counter and Rental Clerks	\$29,792	\$38,759	\$59,894
43-4051	Customer Service Representatives	\$33,630	\$41,593	\$54,641
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$39,876	\$49,317	\$64,528
53-3031	Driver/Sales Workers	\$25,259	\$38,632	\$58,302
47-5023	Earth Drillers, Except Oil and Gas	\$44,959	\$58,587	\$83,934
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,470	\$93,811	\$117,628
17-2071	Electrical Engineers	\$72,160	\$91,152	\$123,576
49-9051	Electrical Power-Line Installers and Repairers	\$49,061	\$69,331	\$85,557
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	\$49,658	\$58,241	\$72,978
47-2111	Electricians	\$57,164	\$64,834	\$79,450
51-2031	Engine and Other Machine Assemblers	\$47,708	\$59,291	\$76,574
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$53,621	\$71,518	\$102,881
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$54,763	\$65,533	\$82,139
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$48,552	\$66,356	\$95,880
51-1011	First-Line Supervisors of Production and Operating Workers	\$59,244	\$72,167	\$90,346
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$46,909	\$62,184	\$86,565
11-1021	General and Operations Managers	\$64,187	\$72,064	\$100,906
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$48,209	\$58,165	\$73,200
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$45,981	\$60,536	\$77,071
47-3013	Helpers--Electricians	\$35,668	\$41,805	\$53,713
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$30,820	\$39,906	\$54,125
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$34,541	\$41,661	\$55,162

17-2112	Industrial Engineers	\$78,867	\$97,704	\$131,578
49-9041	Industrial Machinery Mechanics	\$47,682	\$63,925	\$89,149
11-3051	Industrial Production Managers	\$69,901	\$105,439	\$163,350
53-7051	Industrial Truck and Tractor Operators	\$39,495	\$48,735	\$62,917
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$43,526	\$54,264	\$77,647
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$32,724	\$39,879	\$52,414
23-1011	Lawyers	\$74,835	\$146,736	\$289,071
53-3033	Light Truck Drivers	\$29,616	\$43,972	\$78,979
51-4041	Machinists	\$41,628	\$56,368	\$74,809
49-9071	Maintenance and Repair Workers, General	\$46,890	\$56,070	\$73,149
13-1111	Management Analysts	\$61,073	\$92,175	\$146,876
11-9199	Managers, All Other	\$62,090	\$83,170	\$111,524
13-1161	Market Research Analysts and Marketing Specialists	\$46,870	\$77,310	\$136,339
17-2141	Mechanical Engineers	\$73,677	\$92,204	\$124,723
51-2090	Miscellaneous Assemblers and Fabricators	\$31,642	\$41,957	\$61,345
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$40,404	\$50,912	\$74,533
43-9061	Office Clerks, General	\$42,704	\$50,308	\$60,911
47-2073	Operating Engineers and Other Construction Equipment Operators	\$54,318	\$64,012	\$85,846
53-7064	Packers and Packagers, Hand	\$28,575	\$36,232	\$45,854
23-2011	Paralegals and Legal Assistants	\$39,903	\$60,479	\$97,172
41-2022	Parts Salespersons	\$29,351	\$38,239	\$60,583
47-2152	Plumbers, Pipefitters, and Steamfitters	\$54,010	\$62,134	\$77,503
13-1082	Project Management Specialists	\$73,598	\$84,282	\$101,265
41-2031	Retail Salespersons	\$25,679	\$34,276	\$47,102
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$48,123	\$65,860	\$111,688
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$39,398	\$55,023	\$91,573
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$37,027	\$49,666	\$65,006
33-9032	Security Guards	\$30,200	\$38,483	\$58,972
43-5071	Shipping, Receiving, and Inventory Clerks	\$38,423	\$46,254	\$59,258
15-1252	Software Developers	\$83,588	\$122,213	\$179,085
53-7065	Stockers and Order Fillers	\$31,084	\$37,598	\$48,494
51-4121	Welders, Cutters, Solderers, and Brazers	\$40,785	\$52,934	\$76,388

Table 5: Occupational Wages, Motor Vehicles and Component Parts (2024)

SOC	Occupation	Motor Vehicles		
		Low	Median	High
13-2011	Accountants and Auditors	\$55,919	\$76,375	\$118,672
51-2000	Assemblers and Fabricators	\$40,503	\$46,422	\$56,833
53-6031	Automotive and Watercraft Service Attendants	\$27,870	\$34,850	\$45,240
49-3021	Automotive Body and Related Repairers	\$36,390	\$51,680	\$87,040
49-3022	Automotive Glass Installers and Repairers	\$35,080	\$47,260	\$67,480
49-3023	Automotive Service Technicians and Mechanics	\$33,660	\$49,670	\$80,850
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$41,161	\$49,088	\$61,826
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	\$45,914	\$57,509	\$73,024
13-1199	Business Operations Specialists, All Other	\$47,853	\$79,378	\$139,282
53-7061	Cleaners Of Vehicles and Equipment	\$28,646	\$36,517	\$47,478
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,639	\$47,489	\$72,165
51-9161	Computer Numerically Controlled Tool Operators	\$47,852	\$56,160	\$69,926
13-1051	Cost Estimators	\$56,393	\$72,281	\$113,355
41-2021	Counter and Rental Clerks	\$29,227	\$38,616	\$60,744
43-4051	Customer Service Representatives	\$35,962	\$41,879	\$51,576
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$43,848	\$53,051	\$67,879
53-3031	Driver/Sales Workers	\$35,987	\$45,224	\$58,811
17-2071	Electrical Engineers	\$70,002	\$95,045	\$137,800
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	\$43,640	\$52,874	\$68,727
47-2111	Electricians	\$48,213	\$60,945	\$85,206
51-2031	Engine and Other Machine Assemblers	\$45,541	\$55,587	\$70,576
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$55,196	\$65,729	\$81,969
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$43,106	\$58,038	\$82,800
51-1011	First-Line Supervisors of Production and Operating Workers	\$58,375	\$66,331	\$77,522
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$49,264	\$60,768	\$79,132
11-1021	General and Operations Managers	\$59,925	\$66,963	\$92,733
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$54,320	\$64,105	\$75,221
47-3013	Helpers--Electricians	\$32,309	\$40,219	\$55,567
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$30,847	\$40,462	\$55,509
17-2112	Industrial Engineers	\$68,263	\$87,900	\$123,214
49-9041	Industrial Machinery Mechanics	\$48,794	\$64,112	\$87,899
11-3051	Industrial Production Managers	\$69,614	\$100,189	\$150,013
53-7051	Industrial Truck and Tractor Operators	\$40,581	\$50,329	\$65,289
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$44,088	\$55,781	\$81,246
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$37,703	\$44,585	\$56,642
23-1011	Lawyers	\$77,316	\$144,742	\$278,217
53-3033	Light Truck Drivers	\$31,000	\$42,896	\$71,905
51-4041	Machinists	\$43,200	\$57,622	\$75,666
49-9071	Maintenance and Repair Workers, General	\$49,355	\$58,831	\$76,463
13-1111	Management Analysts	\$62,024	\$94,210	\$150,818
11-9199	Managers, All Other	\$67,951	\$112,269	\$171,882
13-1161	Market Research Analysts and Marketing Specialists	\$45,279	\$76,477	\$136,975
17-2141	Mechanical Engineers	\$69,634	\$88,174	\$120,716

51-2090	Miscellaneous Assemblers and Fabricators	\$32,528	\$42,540	\$61,357
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$40,163	\$52,098	\$78,925
43-9061	Office Clerks, General	\$39,440	\$44,799	\$52,273
53-7064	Packers and Packagers, Hand	\$27,192	\$35,741	\$46,484
23-2011	Paralegals and Legal Assistants	\$45,736	\$64,906	\$99,088
41-2022	Parts Salespersons	\$31,727	\$41,059	\$64,519
13-1082	Project Management Specialists	\$69,824	\$84,044	\$106,649
41-2031	Retail Salespersons	\$26,121	\$33,926	\$45,569
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$52,238	\$63,122	\$91,243
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$43,767	\$57,295	\$88,943
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$38,067	\$46,387	\$56,483
33-9032	Security Guards	\$31,946	\$40,119	\$60,334
43-5071	Shipping, Receiving, and Inventory Clerks	\$34,673	\$40,980	\$51,453
15-1252	Software Developers	\$76,882	\$123,820	\$192,934
53-7065	Stockers and Order Fillers	\$29,893	\$36,968	\$48,800
51-4121	Welders, Cutters, Solderers, and Brazers	\$39,838	\$52,155	\$75,935



Table 6: Occupational Wages, Petroleum Fuels (2024)

SOC	Occupation	Petroleum Fuels		
		Low	Median	High
13-2011	Accountants and Auditors	\$55,280	\$78,250	\$125,700
11-9041	Architectural and Engineering Managers	\$107,080	\$153,470	\$207,760
51-2000	Assemblers and Fabricators	\$39,890	\$47,920	\$62,910
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$42,820	\$50,250	\$61,900
13-1199	Business Operations Specialists, All Other	\$47,720	\$79,240	\$139,150
47-2051	Cement Masons and Concrete Finishers	\$40,480	\$54,700	\$83,580
17-2051	Civil Engineers	\$74,090	\$100,330	\$147,960
53-7061	Cleaners Of Vehicles and Equipment	\$28,720	\$36,600	\$47,540
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$33,370	\$45,420	\$65,910
51-9161	Computer Numerically Controlled Tool Operators	\$46,290	\$56,630	\$73,500
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$44,610	\$69,680	\$97,610
13-1051	Cost Estimators	\$65,410	\$72,730	\$112,650
41-2021	Counter and Rental Clerks	\$29,430	\$38,740	\$60,690
43-4051	Customer Service Representatives	\$35,970	\$43,810	\$57,500
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$39,920	\$50,360	\$67,670
47-5011	Derrick Operators, Oil and Gas	\$42,930	\$62,740	\$84,620
53-3031	Driver/Sales Workers	\$30,700	\$45,120	\$66,900
47-5023	Earth Drillers, Except Oil and Gas	\$44,010	\$58,840	\$86,420
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,270	\$94,220	\$118,450
17-2071	Electrical Engineers	\$75,720	\$100,200	\$142,110
47-2111	Electricians	\$52,340	\$66,580	\$93,520
51-2031	Engine and Other Machine Assemblers	\$46,360	\$58,290	\$76,150
45-4021	Fallers	\$35,630	\$53,910	\$84,510
11-9013	Farmers, Ranchers, and Other Agricultural Managers	\$55,000	\$87,660	\$149,370
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$32,260	\$35,690	\$46,360
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	\$27,100	\$36,150	\$51,830
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$61,030	\$85,650	\$128,640
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$39,600	\$59,340	\$90,850
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$55,500	\$74,070	\$102,530
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$50,150	\$67,780	\$97,000
51-1011	First-Line Supervisors of Production and Operating Workers	\$52,390	\$69,570	\$94,180
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$48,110	\$64,360	\$90,220
45-4011	Forest and Conservation Workers	\$33,050	\$43,680	\$54,180
11-1021	General and Operations Managers	\$76,750	\$84,350	\$103,160
45-2041	Graders and Sorters, Agricultural Products	\$30,490	\$35,420	\$43,280
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$47,820	\$63,050	\$80,770
47-3013	Helpers--Electricians	\$34,350	\$42,130	\$57,360
47-5081	Helpers--Extraction Workers	\$37,360	\$49,830	\$69,440
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$31,290	\$40,150	\$54,070

47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$32,570	\$40,430	\$55,330
17-2112	Industrial Engineers	\$70,240	\$96,360	\$141,880
49-9041	Industrial Machinery Mechanics	\$51,250	\$68,390	\$94,450
11-3051	Industrial Production Managers	\$73,190	\$113,330	\$178,740
53-7051	Industrial Truck and Tractor Operators	\$37,800	\$47,970	\$63,580
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$39,270	\$51,330	\$77,530
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$33,080	\$41,840	\$56,460
23-1011	Lawyers	\$74,590	\$147,990	\$293,280
53-3033	Light Truck Drivers	\$30,120	\$44,320	\$78,960
45-4022	Logging Equipment Operators	\$35,050	\$49,210	\$72,280
51-4041	Machinists	\$41,070	\$58,230	\$80,930
49-9071	Maintenance and Repair Workers, General	\$45,250	\$54,820	\$72,270
13-1111	Management Analysts	\$58,710	\$95,310	\$159,670
11-9199	Managers, All Other	\$75,480	\$131,490	\$207,070
13-1161	Market Research Analysts and Marketing Specialists	\$46,440	\$77,350	\$137,290
17-2141	Mechanical Engineers	\$75,960	\$101,980	\$147,120
51-2090	Miscellaneous Assemblers and Fabricators	\$33,110	\$43,440	\$62,850
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$37,620	\$50,200	\$77,350
43-9061	Office Clerks, General	\$39,600	\$46,070	\$55,510
53-7064	Packers and Packagers, Hand	\$29,020	\$36,680	\$46,300
23-2011	Paralegals and Legal Assistants	\$45,740	\$64,910	\$99,090
41-2022	Parts Salespersons	\$32,950	\$43,090	\$68,420
17-2171	Petroleum Engineers	\$78,840	\$141,280	\$228,790
47-2152	Plumbers, Pipefitters, and Steamfitters	\$41,010	\$62,140	\$102,130
13-1082	Project Management Specialists	\$68,560	\$89,680	\$123,190
41-2031	Retail Salespersons	\$25,820	\$34,110	\$46,480
47-5012	Rotary Drill Operators, Oil and Gas	\$42,750	\$65,010	\$98,510
47-5071	Roustabouts, Oil and Gas	\$35,650	\$47,510	\$64,010
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$44,050	\$63,560	\$114,530
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$43,900	\$63,810	\$110,470
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$42,730	\$53,080	\$65,700
33-9032	Security Guards	\$33,850	\$41,990	\$62,080
47-5013	Service Unit Operators, Oil and Gas	\$40,010	\$57,980	\$93,820
43-5071	Shipping, Receiving, and Inventory Clerks	\$39,510	\$48,010	\$62,970
15-1252	Software Developers	\$82,220	\$118,400	\$201,580
53-7065	Stockers and Order Fillers	\$31,530	\$38,050	\$48,940
51-4121	Welders, Cutters, Solderers, and Brazers	\$40,670	\$53,790	\$79,200
53-7073	Wellhead Pumpers	\$39,110	\$70,010	\$97,470

Table 7: Occupational Wages, Natural Gas Fuels (2024)

SOC	Occupation	Natural Gas Fuels		
		Low	Median	High
13-2011	Accountants and Auditors	\$56,380	\$79,250	\$126,500
11-9041	Architectural and Engineering Managers	\$106,950	\$156,370	\$214,220
51-2000	Assemblers and Fabricators	\$40,650	\$49,490	\$66,010
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$42,990	\$50,580	\$62,400
13-1199	Business Operations Specialists, All Other	\$47,720	\$79,240	\$139,150
47-2051	Cement Masons and Concrete Finishers	\$41,130	\$55,470	\$84,400
17-2051	Civil Engineers	\$69,190	\$96,450	\$146,060
53-7061	Cleaners Of Vehicles and Equipment	\$28,720	\$36,600	\$47,540
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,680	\$47,300	\$71,440
51-9161	Computer Numerically Controlled Tool Operators	\$49,020	\$58,980	\$75,220
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$44,510	\$70,060	\$98,530
13-1051	Cost Estimators	\$65,690	\$73,860	\$115,180
41-2021	Counter and Rental Clerks	\$29,430	\$38,740	\$60,690
43-4051	Customer Service Representatives	\$38,390	\$45,600	\$58,040
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$38,350	\$50,010	\$69,500
47-5011	Derrick Operators, Oil and Gas	\$42,930	\$62,740	\$84,620
53-3031	Driver/Sales Workers	\$32,350	\$46,910	\$68,950
47-5023	Earth Drillers, Except Oil and Gas	\$44,010	\$58,840	\$86,420
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,410	\$95,430	\$120,380
17-2071	Electrical Engineers	\$74,530	\$98,580	\$139,670
47-2111	Electricians	\$51,950	\$67,750	\$97,740
51-2031	Engine and Other Machine Assemblers	\$46,100	\$58,180	\$76,260
45-4021	Fallers	\$35,630	\$53,910	\$84,510
11-9013	Farmers, Ranchers, and Other Agricultural Managers	\$55,000	\$87,660	\$149,370
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$32,260	\$35,690	\$46,360
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	\$27,100	\$36,150	\$51,830
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$60,520	\$85,060	\$127,970
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$39,600	\$59,340	\$90,850
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$55,730	\$73,190	\$99,980
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$50,740	\$70,170	\$102,370
51-1011	First-Line Supervisors of Production and Operating Workers	\$51,280	\$70,070	\$96,840
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$47,030	\$64,030	\$91,090
45-4011	Forest and Conservation Workers	\$33,050	\$43,680	\$54,180
11-1021	General and Operations Managers	\$80,180	\$89,720	\$112,460
45-2041	Graders and Sorters, Agricultural Products	\$30,490	\$35,420	\$43,280
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$47,710	\$62,710	\$80,040
47-3013	Helpers--Electricians	\$34,540	\$42,680	\$58,620
47-5081	Helpers--Extraction Workers	\$37,360	\$49,830	\$69,440
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$32,120	\$40,660	\$54,090

47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$32,690	\$40,740	\$56,020
17-2112	Industrial Engineers	\$70,280	\$95,000	\$137,750
49-9041	Industrial Machinery Mechanics	\$51,420	\$69,210	\$96,120
11-3051	Industrial Production Managers	\$73,190	\$113,330	\$178,740
53-7051	Industrial Truck and Tractor Operators	\$37,800	\$47,970	\$63,580
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$39,070	\$52,040	\$79,960
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$32,380	\$41,160	\$55,950
23-1011	Lawyers	\$74,590	\$147,990	\$293,280
53-3033	Light Truck Drivers	\$30,120	\$44,320	\$78,960
45-4022	Logging Equipment Operators	\$35,050	\$49,210	\$72,280
51-4041	Machinists	\$41,070	\$58,230	\$80,930
49-9071	Maintenance and Repair Workers, General	\$46,350	\$55,290	\$71,510
13-1111	Management Analysts	\$59,920	\$95,840	\$159,020
11-9199	Managers, All Other	\$74,790	\$125,690	\$194,190
13-1161	Market Research Analysts and Marketing Specialists	\$46,240	\$78,170	\$140,090
17-2141	Mechanical Engineers	\$75,790	\$100,410	\$143,330
51-2090	Miscellaneous Assemblers and Fabricators	\$33,110	\$43,440	\$62,850
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$37,810	\$51,590	\$81,040
43-9061	Office Clerks, General	\$39,590	\$46,420	\$56,300
53-7064	Packers and Packagers, Hand	\$29,020	\$36,680	\$46,300
23-2011	Paralegals and Legal Assistants	\$45,740	\$64,910	\$99,090
41-2022	Parts Salespersons	\$32,950	\$43,090	\$68,420
17-2171	Petroleum Engineers	\$78,840	\$141,280	\$228,790
47-2152	Plumbers, Pipefitters, and Steamfitters	\$40,630	\$62,440	\$103,720
13-1082	Project Management Specialists	\$70,300	\$94,210	\$132,170
41-2031	Retail Salespersons	\$25,820	\$34,110	\$46,480
47-5012	Rotary Drill Operators, Oil and Gas	\$42,750	\$65,010	\$98,510
47-5071	Roustabouts, Oil and Gas	\$35,650	\$47,510	\$64,010
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$45,440	\$61,870	\$104,490
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$44,400	\$64,610	\$111,960
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$43,400	\$53,440	\$65,700
33-9032	Security Guards	\$32,820	\$41,120	\$61,630
47-5013	Service Unit Operators, Oil and Gas	\$40,010	\$57,980	\$93,820
43-5071	Shipping, Receiving, and Inventory Clerks	\$39,750	\$48,460	\$63,720
15-1252	Software Developers	\$81,460	\$119,010	\$206,650
53-7065	Stockers and Order Fillers	\$31,530	\$38,050	\$48,940
51-4121	Welders, Cutters, Solderers, and Brazers	\$41,040	\$54,030	\$79,210
53-7073	Wellhead Pumpers	\$39,110	\$70,010	\$97,470

Table 8: Occupational Wages, Coal Fuels (2024)

SOC	Occupation	Coal Fuels		
		Low	Median	High
13-2011	Accountants and Auditors	\$53,940	\$76,690	\$123,700
11-9041	Architectural and Engineering Managers	\$107,080	\$155,700	\$212,610
51-2000	Assemblers and Fabricators	\$37,950	\$46,660	\$62,690
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$42,520	\$49,760	\$61,160
13-1199	Business Operations Specialists, All Other	\$47,720	\$79,240	\$139,150
47-2051	Cement Masons and Concrete Finishers	\$41,240	\$54,720	\$81,980
17-2051	Civil Engineers	\$68,250	\$95,270	\$144,490
53-7061	Cleaners Of Vehicles and Equipment	\$28,720	\$36,600	\$47,540
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,480	\$47,070	\$71,160
51-9161	Computer Numerically Controlled Tool Operators	\$47,760	\$57,920	\$74,660
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$44,510	\$70,060	\$98,530
13-1051	Cost Estimators	\$67,470	\$75,080	\$117,800
41-2021	Counter and Rental Clerks	\$29,430	\$38,740	\$60,690
43-4051	Customer Service Representatives	\$34,740	\$42,320	\$54,810
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$40,050	\$52,240	\$72,300
47-5011	Derrick Operators, Oil and Gas	\$42,930	\$62,740	\$84,620
53-3031	Driver/Sales Workers	\$29,570	\$44,220	\$66,120
47-5023	Earth Drillers, Except Oil and Gas	\$44,010	\$58,840	\$86,420
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,410	\$95,430	\$120,380
17-2071	Electrical Engineers	\$72,560	\$98,110	\$141,750
47-2111	Electricians	\$46,380	\$61,780	\$91,040
51-2031	Engine and Other Machine Assemblers	\$44,050	\$56,220	\$74,380
45-4021	Fallers	\$35,630	\$53,910	\$84,510
11-9013	Farmers, Ranchers, and Other Agricultural Managers	\$55,000	\$87,660	\$149,370
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$32,260	\$35,690	\$46,360
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	\$27,100	\$36,150	\$51,830
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$60,400	\$84,460	\$126,490
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$39,600	\$59,340	\$90,850
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$53,610	\$73,170	\$103,270
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$52,170	\$70,670	\$101,340
51-1011	First-Line Supervisors of Production and Operating Workers	\$52,320	\$71,530	\$99,000
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$47,310	\$66,170	\$96,020
45-4011	Forest and Conservation Workers	\$33,050	\$43,680	\$54,180
11-1021	General and Operations Managers	\$66,360	\$74,720	\$98,850
45-2041	Graders and Sorters, Agricultural Products	\$30,490	\$35,420	\$43,280
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$47,040	\$61,840	\$78,810
47-3013	Helpers--Electricians	\$32,960	\$41,140	\$57,100
47-5081	Helpers--Extraction Workers	\$37,360	\$49,830	\$69,440
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$30,650	\$40,070	\$54,820

47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$32,690	\$40,430	\$55,060
17-2112	Industrial Engineers	\$70,380	\$97,470	\$145,220
49-9041	Industrial Machinery Mechanics	\$50,100	\$68,110	\$95,620
11-3051	Industrial Production Managers	\$75,320	\$118,500	\$188,870
53-7051	Industrial Truck and Tractor Operators	\$37,800	\$47,970	\$63,580
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$39,030	\$51,440	\$78,420
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$30,560	\$38,320	\$51,770
23-1011	Lawyers	\$77,110	\$148,270	\$289,170
53-3033	Light Truck Drivers	\$30,120	\$44,320	\$78,960
45-4022	Logging Equipment Operators	\$35,050	\$49,210	\$72,280
51-4041	Machinists	\$40,360	\$57,460	\$79,430
49-9071	Maintenance and Repair Workers, General	\$45,390	\$55,120	\$73,130
13-1111	Management Analysts	\$59,090	\$94,590	\$157,020
11-9199	Managers, All Other	\$73,990	\$128,630	\$202,160
13-1161	Market Research Analysts and Marketing Specialists	\$46,440	\$77,350	\$137,290
17-2141	Mechanical Engineers	\$69,440	\$96,150	\$142,620
51-2090	Miscellaneous Assemblers and Fabricators	\$33,110	\$43,440	\$62,850
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$36,780	\$49,380	\$76,950
43-9061	Office Clerks, General	\$36,090	\$42,970	\$52,670
53-7064	Packers and Packagers, Hand	\$29,020	\$36,680	\$46,300
23-2011	Paralegals and Legal Assistants	\$45,740	\$64,910	\$99,090
41-2022	Parts Salespersons	\$32,950	\$43,090	\$68,420
17-2171	Petroleum Engineers	\$78,840	\$141,280	\$228,790
47-2152	Plumbers, Pipefitters, and Steamfitters	\$40,740	\$60,620	\$98,210
13-1082	Project Management Specialists	\$67,150	\$91,700	\$130,680
41-2031	Retail Salespersons	\$25,790	\$33,860	\$45,900
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$46,230	\$64,610	\$112,690
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$44,170	\$63,920	\$110,200
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$40,120	\$50,690	\$63,530
33-9032	Security Guards	\$32,820	\$41,120	\$61,630
43-5071	Shipping, Receiving, and Inventory Clerks	\$36,640	\$45,100	\$59,300
15-1252	Software Developers	\$78,890	\$114,520	\$196,940
53-7065	Stockers and Order Fillers	\$31,530	\$38,050	\$48,940
51-4121	Welders, Cutters, Solderers, and Brazers	\$38,730	\$52,030	\$77,740

Table 9 provides Occupational Wages for all other Fuels subsectors combined (e.g. Nuclear).

Table 9: Occupational Wages, Other Fuels (2024)

SOC	Occupation	Other Fuels		
		Low	Median	High
13-2011	Accountants and Auditors	\$54,580	\$76,640	\$122,220
45-2091	Agricultural Equipment Operators	\$31,240	\$42,580	\$57,780
11-9041	Architectural and Engineering Managers	\$108,390	\$155,250	\$210,110
51-2000	Assemblers and Fabricators	\$40,740	\$48,930	\$64,800
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$44,610	\$52,040	\$63,400
13-1199	Business Operations Specialists, All Other	\$47,720	\$79,240	\$139,150
47-2051	Cement Masons and Concrete Finishers	\$40,620	\$53,400	\$79,380
17-2051	Civil Engineers	\$71,930	\$98,480	\$146,620
53-7061	Cleaners Of Vehicles and Equipment	\$29,760	\$37,130	\$47,370
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,480	\$47,070	\$71,160
51-9161	Computer Numerically Controlled Tool Operators	\$48,410	\$58,290	\$74,350
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$44,800	\$69,170	\$96,320
13-1051	Cost Estimators	\$63,870	\$71,700	\$110,160
41-2021	Counter and Rental Clerks	\$29,010	\$38,640	\$61,340
43-4051	Customer Service Representatives	\$35,600	\$42,810	\$55,650
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$39,240	\$50,600	\$69,410
47-5011	Derrick Operators, Oil and Gas	\$42,930	\$62,740	\$84,620
53-3031	Driver/Sales Workers	\$31,380	\$45,650	\$67,440
47-5023	Earth Drillers, Except Oil and Gas	\$44,010	\$58,840	\$86,420
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,410	\$95,430	\$120,380
17-2071	Electrical Engineers	\$74,330	\$98,210	\$139,010
47-2111	Electricians	\$50,710	\$63,230	\$86,940
51-2031	Engine and Other Machine Assemblers	\$45,070	\$56,670	\$74,120
45-4021	Fallers	\$35,630	\$53,910	\$84,510
11-9013	Farmers, Ranchers, and Other Agricultural Managers	\$55,000	\$87,660	\$149,370
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$32,260	\$35,690	\$46,360
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	\$27,100	\$36,150	\$51,830
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$57,440	\$82,770	\$126,860
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$39,600	\$59,340	\$90,850
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$52,760	\$69,640	\$95,530
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$52,610	\$70,610	\$100,430
51-1011	First-Line Supervisors of Production and Operating Workers	\$53,520	\$71,110	\$96,400
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$48,040	\$66,510	\$95,710
45-4011	Forest and Conservation Workers	\$33,050	\$43,680	\$54,180
11-1021	General and Operations Managers	\$73,570	\$83,320	\$106,540
45-2041	Graders and Sorters, Agricultural Products	\$30,490	\$35,420	\$43,280
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$47,760	\$61,730	\$77,980
47-3013	Helpers--Electricians	\$34,660	\$41,660	\$55,330



47-5081	Helpers--Extraction Workers	\$37,360	\$49,830	\$69,440
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$31,900	\$40,830	\$54,880
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$32,520	\$40,110	\$54,510
17-2112	Industrial Engineers	\$71,720	\$96,620	\$140,100
49-9041	Industrial Machinery Mechanics	\$49,680	\$67,720	\$94,960
11-3051	Industrial Production Managers	\$74,340	\$113,380	\$177,010
53-7051	Industrial Truck and Tractor Operators	\$37,910	\$47,770	\$62,950
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$40,110	\$52,540	\$79,210
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$33,710	\$41,230	\$54,100
23-1011	Lawyers	\$74,590	\$147,990	\$293,280
53-3033	Light Truck Drivers	\$30,370	\$44,390	\$78,550
45-4022	Logging Equipment Operators	\$35,270	\$48,960	\$71,260
51-4041	Machinists	\$40,440	\$57,400	\$79,410
49-9071	Maintenance and Repair Workers, General	\$44,910	\$54,420	\$71,620
13-1111	Management Analysts	\$62,970	\$98,150	\$160,030
11-9199	Managers, All Other	\$77,680	\$129,290	\$198,710
13-1161	Market Research Analysts and Marketing Specialists	\$46,440	\$77,350	\$137,290
17-2141	Mechanical Engineers	\$72,010	\$96,940	\$139,910
51-2090	Miscellaneous Assemblers and Fabricators	\$33,110	\$43,440	\$62,850
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$36,950	\$49,540	\$76,910
43-9061	Office Clerks, General	\$39,320	\$46,080	\$56,370
53-7064	Packers and Packagers, Hand	\$29,020	\$36,680	\$46,300
23-2011	Paralegals and Legal Assistants	\$45,740	\$64,910	\$99,090
41-2022	Parts Salespersons	\$32,260	\$42,520	\$68,180
17-2171	Petroleum Engineers	\$78,840	\$141,280	\$228,790
47-2152	Plumbers, Pipefitters, and Steamfitters	\$41,020	\$60,130	\$96,280
13-1082	Project Management Specialists	\$68,530	\$89,160	\$121,880
41-2031	Retail Salespersons	\$25,970	\$33,900	\$45,740
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$44,290	\$60,420	\$102,350
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$44,920	\$62,040	\$102,190
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$42,950	\$52,640	\$64,580
33-9032	Security Guards	\$32,820	\$41,120	\$61,630
43-5071	Shipping, Receiving, and Inventory Clerks	\$37,650	\$45,050	\$57,780
15-1252	Software Developers	\$78,320	\$114,540	\$195,210
53-7065	Stockers and Order Fillers	\$31,530	\$38,050	\$48,940
51-4121	Welders, Cutters, Solderers, and Brazers	\$40,600	\$53,790	\$79,340
53-7073	Wellhead Pumpers	\$39,110	\$70,010	\$97,470

Table 10: Occupational Wages, Solar Electric Power Generation (2024)

SOC	Occupation	Solar Electric Power Generation		
		Low	Median	High
13-2011	Accountants and Auditors	\$55,800	\$73,390	\$109,550
17-1011	Architects, Except Landscape and Naval	\$63,240	\$99,470	\$162,400
17-3011	Architectural and Civil Drafters	\$51,070	\$82,680	\$133,510
11-9041	Architectural and Engineering Managers	\$95,170	\$137,370	\$186,760
51-2000	Assemblers and Fabricators	\$38,700	\$45,130	\$57,850
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$46,060	\$57,270	\$74,160
13-1199	Business Operations Specialists, All Other	\$47,720	\$79,250	\$139,150
47-2031	Carpenters	\$44,130	\$57,580	\$83,310
47-2051	Cement Masons and Concrete Finishers	\$40,210	\$52,040	\$76,110
17-2051	Civil Engineers	\$69,910	\$97,550	\$147,760
53-7061	Cleaners Of Vehicles and Equipment	\$28,550	\$36,000	\$46,370
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,890	\$47,260	\$70,930
51-9161	Computer Numerically Controlled Tool Operators	\$49,890	\$58,760	\$73,300
47-4011	Construction and Building Inspectors	\$53,900	\$73,960	\$105,580
47-2061	Construction Laborers	\$36,580	\$41,970	\$54,840
11-9021	Construction Managers	\$69,670	\$79,660	\$96,340
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$43,860	\$69,330	\$97,710
13-1051	Cost Estimators	\$59,180	\$73,990	\$98,830
41-2021	Counter and Rental Clerks	\$33,070	\$41,530	\$61,460
43-4051	Customer Service Representatives	\$37,150	\$45,100	\$59,610
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$40,230	\$49,300	\$64,300
53-3031	Driver/Sales Workers	\$28,400	\$41,730	\$61,860
47-5023	Earth Drillers, Except Oil and Gas	\$45,210	\$58,840	\$84,180
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,780	\$92,650	\$115,500
17-2071	Electrical Engineers	\$75,460	\$92,150	\$120,670
49-9051	Electrical Power-Line Installers and Repairers	\$52,910	\$74,080	\$91,580
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	\$48,230	\$56,780	\$72,560
47-2111	Electricians	\$58,210	\$67,750	\$85,540
51-2031	Engine and Other Machine Assemblers	\$44,380	\$54,580	\$69,900
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$57,130	\$78,300	\$115,240
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$57,710	\$69,960	\$88,800
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$48,500	\$64,690	\$91,510
51-1011	First-Line Supervisors of Production and Operating Workers	\$55,170	\$65,620	\$80,900
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$47,440	\$62,560	\$86,560
11-1021	General and Operations Managers	\$72,330	\$82,100	\$105,380
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$47,480	\$60,070	\$78,250
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$49,440	\$63,910	\$81,720
47-3013	Helpers--Electricians	\$36,770	\$42,570	\$53,960
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$30,280	\$39,890	\$55,010

47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$33,920	\$41,100	\$54,620
17-2112	Industrial Engineers	\$69,840	\$92,770	\$132,530
49-9041	Industrial Machinery Mechanics	\$49,810	\$63,400	\$83,960
11-3051	Industrial Production Managers	\$76,680	\$111,230	\$167,540
53-7051	Industrial Truck and Tractor Operators	\$39,500	\$49,150	\$64,050
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$43,050	\$54,240	\$77,980
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$35,030	\$42,360	\$54,630
23-1011	Lawyers	\$77,710	\$143,030	\$272,380
53-3033	Light Truck Drivers	\$32,060	\$45,810	\$79,070
51-4041	Machinists	\$41,470	\$55,180	\$72,950
49-9071	Maintenance and Repair Workers, General	\$45,350	\$55,230	\$73,300
13-1111	Management Analysts	\$58,760	\$88,020	\$139,460
11-9199	Managers, All Other	\$77,260	\$112,310	\$159,540
13-1161	Market Research Analysts and Marketing Specialists	\$46,100	\$73,260	\$125,750
17-2141	Mechanical Engineers	\$70,450	\$87,320	\$116,730
51-2090	Miscellaneous Assemblers and Fabricators	\$31,760	\$41,590	\$60,260
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$37,920	\$48,600	\$72,200
17-2161	Nuclear Engineers	\$88,290	\$127,520	\$187,430
51-8011	Nuclear Power Reactor Operators	\$99,300	\$122,610	\$152,690
19-4051	Nuclear Technicians	\$64,370	\$104,240	\$126,890
43-9061	Office Clerks, General	\$43,050	\$48,830	\$57,810
47-2073	Operating Engineers and Other Construction Equipment Operators	\$58,760	\$69,530	\$93,720
53-7064	Packers and Packagers, Hand	\$28,590	\$36,250	\$45,870
23-2011	Paralegals and Legal Assistants	\$39,490	\$60,410	\$97,700
41-2022	Parts Salespersons	\$33,380	\$42,840	\$66,420
47-2152	Plumbers, Pipefitters, and Steamfitters	\$41,040	\$56,840	\$86,660
51-8012	Power Distributors and Dispatchers	\$71,480	\$106,610	\$142,860
51-8013	Power Plant Operators	\$59,930	\$99,670	\$128,760
13-1082	Project Management Specialists	\$69,780	\$82,670	\$103,040
41-2031	Retail Salespersons	\$26,420	\$34,910	\$47,580
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$51,030	\$72,790	\$129,430
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$50,010	\$63,630	\$95,630
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$40,010	\$49,300	\$60,800
33-9032	Security Guards	\$29,940	\$38,110	\$58,320
43-5071	Shipping, Receiving, and Inventory Clerks	\$37,460	\$43,810	\$55,320
47-2231	Solar Photovoltaic Installers	\$39,070	\$51,860	\$80,150
15-1252	Software Developers	\$76,620	\$114,510	\$170,210
53-7065	Stockers and Order Fillers	\$30,190	\$37,310	\$49,240
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$47,240	\$65,370	\$94,270
51-4121	Welders, Cutters, Solderers, and Brazers	\$39,830	\$52,830	\$78,010

Table 11: Occupational Wages, Wind Electric Power Generation (2024)

SOC	Occupation	Wind Electric Power Generation		
		Low	Median	High
13-2011	Accountants and Auditors	\$56,380	\$73,850	\$109,790
17-1011	Architects, Except Landscape and Naval	\$64,410	\$98,670	\$158,400
17-3011	Architectural and Civil Drafters	\$50,980	\$82,540	\$133,180
11-9041	Architectural and Engineering Managers	\$95,500	\$137,550	\$186,790
51-2000	Assemblers and Fabricators	\$40,240	\$47,080	\$60,210
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$46,930	\$59,430	\$79,220
13-1199	Business Operations Specialists, All Other	\$47,720	\$79,250	\$139,150
47-2031	Carpenters	\$45,440	\$59,050	\$85,100
47-2051	Cement Masons and Concrete Finishers	\$39,730	\$52,820	\$79,370
17-2051	Civil Engineers	\$71,370	\$98,100	\$146,810
53-7061	Cleaners Of Vehicles and Equipment	\$28,420	\$35,830	\$46,090
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$36,480	\$47,700	\$70,840
51-9161	Computer Numerically Controlled Tool Operators	\$48,500	\$57,880	\$73,270
47-4011	Construction and Building Inspectors	\$54,400	\$75,520	\$108,790
47-2061	Construction Laborers	\$38,400	\$44,340	\$58,510
11-9021	Construction Managers	\$73,650	\$82,770	\$98,010
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$44,620	\$69,800	\$97,850
13-1051	Cost Estimators	\$58,240	\$73,380	\$98,740
41-2021	Counter and Rental Clerks	\$33,070	\$41,530	\$61,460
43-4051	Customer Service Representatives	\$35,970	\$44,330	\$58,850
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$38,780	\$47,850	\$62,850
53-3031	Driver/Sales Workers	\$29,360	\$42,450	\$62,160
47-5023	Earth Drillers, Except Oil and Gas	\$45,210	\$58,840	\$84,180
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,140	\$93,520	\$117,360
17-2071	Electrical Engineers	\$78,610	\$97,000	\$128,420
49-9051	Electrical Power-Line Installers and Repairers	\$54,810	\$76,830	\$94,890
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	\$47,700	\$56,190	\$71,350
47-2111	Electricians	\$65,150	\$73,920	\$90,420
51-2031	Engine and Other Machine Assemblers	\$43,950	\$55,060	\$71,680
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$56,680	\$78,220	\$115,840
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$56,900	\$72,740	\$97,010
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$48,350	\$66,800	\$97,360
51-1011	First-Line Supervisors of Production and Operating Workers	\$54,070	\$66,200	\$83,830
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$48,100	\$64,930	\$91,660
11-1021	General and Operations Managers	\$77,300	\$88,540	\$115,290
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$45,250	\$60,280	\$82,380
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$44,190	\$60,180	\$79,110
47-3013	Helpers--Electricians	\$36,450	\$42,510	\$54,370
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$31,550	\$40,520	\$54,690

47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$33,790	\$40,950	\$54,490
17-2112	Industrial Engineers	\$68,320	\$91,510	\$131,570
49-9041	Industrial Machinery Mechanics	\$50,700	\$64,600	\$86,070
11-3051	Industrial Production Managers	\$78,060	\$113,600	\$171,510
53-7051	Industrial Truck and Tractor Operators	\$37,800	\$47,900	\$63,380
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$42,860	\$53,800	\$77,280
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$35,360	\$42,740	\$55,370
23-1011	Lawyers	\$77,710	\$143,030	\$272,380
53-3033	Light Truck Drivers	\$29,920	\$44,030	\$78,400
51-4041	Machinists	\$41,660	\$56,130	\$74,710
49-9071	Maintenance and Repair Workers, General	\$45,330	\$55,230	\$73,320
13-1111	Management Analysts	\$59,300	\$89,860	\$143,610
11-9199	Managers, All Other	\$78,560	\$110,880	\$154,500
13-1161	Market Research Analysts and Marketing Specialists	\$45,870	\$74,730	\$130,560
17-2141	Mechanical Engineers	\$70,480	\$88,730	\$120,300
51-2090	Miscellaneous Assemblers and Fabricators	\$31,840	\$42,300	\$61,960
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$39,400	\$50,280	\$74,610
17-2161	Nuclear Engineers	\$88,290	\$127,520	\$187,430
51-8011	Nuclear Power Reactor Operators	\$99,300	\$122,610	\$152,690
19-4051	Nuclear Technicians	\$64,370	\$104,240	\$126,890
43-9061	Office Clerks, General	\$46,820	\$52,610	\$61,170
47-2073	Operating Engineers and Other Construction Equipment Operators	\$58,730	\$71,300	\$99,530
53-7064	Packers and Packagers, Hand	\$28,590	\$36,250	\$45,870
23-2011	Paralegals and Legal Assistants	\$39,490	\$60,410	\$97,700
41-2022	Parts Salespersons	\$33,570	\$43,230	\$67,320
47-2152	Plumbers, Pipefitters, and Steamfitters	\$42,040	\$58,430	\$89,390
51-8012	Power Distributors and Dispatchers	\$71,480	\$106,610	\$142,860
51-8013	Power Plant Operators	\$59,930	\$99,670	\$128,760
13-1082	Project Management Specialists	\$72,160	\$85,560	\$106,780
41-2031	Retail Salespersons	\$26,000	\$34,860	\$48,080
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$43,710	\$66,400	\$125,670
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$51,140	\$65,190	\$98,110
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$40,780	\$51,290	\$64,190
33-9032	Security Guards	\$29,940	\$38,110	\$58,320
43-5071	Shipping, Receiving, and Inventory Clerks	\$38,430	\$45,210	\$56,980
15-1252	Software Developers	\$77,780	\$115,950	\$172,040
53-7065	Stockers and Order Fillers	\$30,020	\$37,200	\$49,220
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$47,440	\$65,400	\$93,930
51-4121	Welders, Cutters, Solderers, and Brazers	\$39,390	\$52,700	\$78,470
49-9081	Wind Turbine Service Technicians	\$49,110	\$62,580	\$88,090

Table 12 provides Occupational Wages for Fossil Fuel Electric Power Generation as categorized by BLS, combining Petroleum, Coal, and Natural Gas Electric Power Generation.

Table 12: Occupational Wages, Fossil Fuel Electric Power Generation (2024)

SOC	Occupation	Fossil Fuel Electric Power Generation		
		Low	Median	High
13-2011	Accountants and Auditors	\$54,470	\$72,590	\$109,860
17-1011	Architects, Except Landscape and Naval	\$64,740	\$101,900	\$166,240
17-3011	Architectural and Civil Drafters	\$47,410	\$68,670	\$104,180
11-9041	Architectural and Engineering Managers	\$98,370	\$141,610	\$192,230
51-2000	Assemblers and Fabricators	\$39,490	\$46,610	\$60,770
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$48,440	\$58,740	\$74,580
13-1199	Business Operations Specialists, All Other	\$47,720	\$79,250	\$139,150
47-2031	Carpenters	\$42,340	\$57,960	\$87,740
47-2051	Cement Masons and Concrete Finishers	\$38,570	\$52,690	\$81,130
17-2051	Civil Engineers	\$68,270	\$97,020	\$149,400
53-7061	Cleaners Of Vehicles and Equipment	\$29,150	\$36,780	\$47,300
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$35,870	\$47,060	\$70,300
51-9161	Computer Numerically Controlled Tool Operators	\$49,510	\$58,720	\$73,730
47-4011	Construction and Building Inspectors	\$56,180	\$77,710	\$111,640
47-2061	Construction Laborers	\$37,080	\$43,390	\$58,540
11-9021	Construction Managers	\$73,670	\$84,850	\$103,540
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$45,040	\$70,210	\$98,270
13-1051	Cost Estimators	\$57,570	\$74,340	\$102,440
41-2021	Counter and Rental Clerks	\$33,070	\$41,530	\$61,460
43-4051	Customer Service Representatives	\$36,010	\$43,100	\$55,950
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$39,550	\$48,680	\$63,800
53-3031	Driver/Sales Workers	\$29,280	\$41,640	\$60,340
47-5023	Earth Drillers, Except Oil and Gas	\$45,210	\$58,840	\$84,180
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$58,140	\$93,520	\$117,360
17-2071	Electrical Engineers	\$77,640	\$96,580	\$128,980
49-9051	Electrical Power-Line Installers and Repairers	\$52,380	\$74,720	\$93,400
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	\$48,060	\$56,080	\$70,450
47-2111	Electricians	\$64,180	\$73,120	\$89,930
51-2031	Engine and Other Machine Assemblers	\$46,740	\$56,690	\$71,620
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$55,030	\$77,860	\$117,790
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$58,960	\$73,580	\$95,960
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$47,840	\$66,140	\$96,470
51-1011	First-Line Supervisors of Production and Operating Workers	\$59,440	\$70,100	\$85,730
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$47,190	\$63,510	\$89,260
11-1021	General and Operations Managers	\$66,580	\$76,360	\$99,640
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$46,370	\$60,130	\$80,450
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$45,960	\$60,580	\$78,200



47-3013	Helpers--Electricians	\$36,450	\$42,510	\$54,370
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$30,520	\$39,560	\$53,820
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$33,520	\$40,770	\$54,510
17-2112	Industrial Engineers	\$67,660	\$90,830	\$129,520
49-9041	Industrial Machinery Mechanics	\$53,220	\$67,230	\$88,700
11-3051	Industrial Production Managers	\$79,950	\$114,310	\$170,300
53-7051	Industrial Truck and Tractor Operators	\$40,230	\$50,520	\$66,580
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$42,170	\$52,620	\$75,140
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$36,610	\$43,530	\$55,110
23-1011	Lawyers	\$75,410	\$144,810	\$282,190
53-3033	Light Truck Drivers	\$30,390	\$43,680	\$76,060
51-4041	Machinists	\$41,730	\$56,300	\$75,050
49-9071	Maintenance and Repair Workers, General	\$44,720	\$53,900	\$70,490
13-1111	Management Analysts	\$59,110	\$90,030	\$144,420
11-9199	Managers, All Other	\$75,200	\$105,430	\$146,280
13-1161	Market Research Analysts and Marketing Specialists	\$45,970	\$74,860	\$130,880
17-2141	Mechanical Engineers	\$68,840	\$88,880	\$123,190
51-2090	Miscellaneous Assemblers and Fabricators	\$31,610	\$41,900	\$61,350
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$45,410	\$56,900	\$81,920
43-9061	Office Clerks, General	\$44,910	\$50,930	\$60,180
47-2073	Operating Engineers and Other Construction Equipment Operators	\$55,990	\$67,270	\$92,650
53-7064	Packers and Packagers, Hand	\$28,670	\$36,420	\$46,110
23-2011	Paralegals and Legal Assistants	\$39,490	\$60,410	\$97,700
41-2022	Parts Salespersons	\$32,600	\$41,780	\$64,800
47-2152	Plumbers, Pipefitters, and Steamfitters	\$42,240	\$59,440	\$91,930
51-8012	Power Distributors and Dispatchers	\$71,480	\$106,610	\$142,860
51-8013	Power Plant Operators	\$59,930	\$99,670	\$128,760
13-1082	Project Management Specialists	\$69,640	\$82,650	\$103,230
41-2031	Retail Salespersons	\$26,000	\$34,860	\$48,080
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$45,280	\$64,600	\$114,920
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$50,190	\$64,490	\$98,080
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$40,370	\$50,380	\$62,770
33-9032	Security Guards	\$29,940	\$38,110	\$58,320
43-5071	Shipping, Receiving, and Inventory Clerks	\$38,700	\$45,260	\$56,740
15-1252	Software Developers	\$76,770	\$114,240	\$169,110
53-7065	Stockers and Order Fillers	\$30,020	\$37,200	\$49,220
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$46,310	\$64,310	\$93,040
51-4121	Welders, Cutters, Solderers, and Brazers	\$40,210	\$53,080	\$78,030



Table 13 provides Occupational Wages for all other Electric Power Generation combined (e.g. Water Power).

Table 13: Occupational Wages, Other Electric Power Generation

SOC	Occupation	Other Electric Power Generation		
		Low	Median	High
13-2011	Accountants and Auditors	\$56,600	\$74,240	\$110,450
17-1011	Architects, Except Landscape and Naval	\$65,370	\$99,560	\$158,990
17-3011	Architectural and Civil Drafters	\$51,760	\$83,280	\$133,720
11-9041	Architectural and Engineering Managers	\$97,930	\$137,310	\$183,420
51-2000	Assemblers and Fabricators	\$40,830	\$46,680	\$58,760
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$44,540	\$54,530	\$69,770
13-1199	Business Operations Specialists, All Other	\$47,720	\$79,250	\$139,150
47-2031	Carpenters	\$45,090	\$58,110	\$83,050
47-2051	Cement Masons and Concrete Finishers	\$40,630	\$52,880	\$77,770
17-2051	Civil Engineers	\$70,810	\$96,820	\$144,160
53-7061	Cleaners Of Vehicles and Equipment	\$28,320	\$35,450	\$45,350
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$36,480	\$47,700	\$70,840
51-9161	Computer Numerically Controlled Tool Operators	\$50,340	\$59,180	\$73,530
47-4011	Construction and Building Inspectors	\$54,780	\$76,330	\$110,330
47-2061	Construction Laborers	\$38,030	\$43,800	\$57,420
11-9021	Construction Managers	\$74,780	\$84,140	\$99,760
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$45,320	\$69,010	\$95,420
13-1051	Cost Estimators	\$61,970	\$76,410	\$100,600
41-2021	Counter and Rental Clerks	\$33,070	\$41,530	\$61,460
43-4051	Customer Service Representatives	\$35,890	\$42,060	\$53,910
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$39,830	\$47,910	\$61,440
53-3031	Driver/Sales Workers	\$30,720	\$42,400	\$60,030
47-5023	Earth Drillers, Except Oil and Gas	\$45,210	\$58,840	\$84,180
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$57,590	\$92,240	\$115,590
17-2071	Electrical Engineers	\$77,920	\$96,940	\$129,510
49-9051	Electrical Power-Line Installers and Repairers	\$54,600	\$74,020	\$90,320
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	\$48,870	\$57,120	\$72,280
47-2111	Electricians	\$66,210	\$74,340	\$89,520
51-2031	Engine and Other Machine Assemblers	\$46,320	\$56,440	\$71,620
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$56,500	\$76,850	\$112,450
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$59,820	\$73,610	\$94,640
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$47,390	\$66,220	\$97,410
51-1011	First-Line Supervisors of Production and Operating Workers	\$59,460	\$69,470	\$84,360
53-1040	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$48,930	\$63,580	\$86,610
11-1021	General and Operations Managers	\$68,290	\$77,860	\$100,650
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$47,000	\$60,420	\$80,030
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$46,190	\$60,370	\$77,480
47-3013	Helpers--Electricians	\$36,620	\$42,310	\$53,540

49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$31,960	\$40,490	\$53,930
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$33,440	\$40,450	\$53,730
17-2112	Industrial Engineers	\$69,050	\$89,900	\$124,300
49-9041	Industrial Machinery Mechanics	\$51,830	\$64,990	\$85,110
11-3051	Industrial Production Managers	\$77,340	\$110,760	\$165,240
53-7051	Industrial Truck and Tractor Operators	\$40,090	\$50,020	\$65,470
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$42,800	\$53,740	\$77,020
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$36,510	\$43,380	\$54,790
23-1011	Lawyers	\$76,900	\$143,980	\$276,790
53-3033	Light Truck Drivers	\$30,910	\$43,790	\$75,130
51-4041	Machinists	\$42,790	\$56,730	\$74,910
49-9071	Maintenance and Repair Workers, General	\$44,990	\$54,560	\$71,740
13-1111	Management Analysts	\$59,300	\$89,860	\$143,610
11-9199	Managers, All Other	\$73,610	\$100,640	\$137,170
13-1161	Market Research Analysts and Marketing Specialists	\$51,390	\$79,620	\$134,030
17-2141	Mechanical Engineers	\$68,600	\$86,830	\$117,910
51-2090	Miscellaneous Assemblers and Fabricators	\$30,270	\$39,080	\$59,850
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$46,770	\$58,820	\$84,650
17-2161	Nuclear Engineers	\$88,290	\$127,520	\$187,430
51-8011	Nuclear Power Reactor Operators	\$99,300	\$122,610	\$152,690
19-4051	Nuclear Technicians	\$64,370	\$104,240	\$126,890
43-9061	Office Clerks, General	\$41,330	\$46,330	\$54,330
47-2073	Operating Engineers and Other Construction Equipment Operators	\$59,260	\$69,600	\$92,820
53-7064	Packers and Packagers, Hand	\$28,670	\$36,420	\$46,110
23-2011	Paralegals and Legal Assistants	\$39,490	\$60,410	\$97,700
41-2022	Parts Salespersons	\$32,400	\$41,390	\$63,900
47-2152	Plumbers, Pipefitters, and Steamfitters	\$42,740	\$58,210	\$87,420
51-8012	Power Distributors and Dispatchers	\$71,480	\$106,610	\$142,860
51-8013	Power Plant Operators	\$59,930	\$99,670	\$128,760
13-1082	Project Management Specialists	\$70,990	\$85,600	\$108,670
41-2031	Retail Salespersons	\$26,170	\$34,880	\$47,860
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$45,170	\$64,240	\$113,890
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$53,400	\$69,640	\$107,920
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$40,870	\$49,820	\$60,950
33-9032	Security Guards	\$29,940	\$38,110	\$58,320
43-5071	Shipping, Receiving, and Inventory Clerks	\$38,330	\$44,430	\$55,490
15-1252	Software Developers	\$76,770	\$114,240	\$169,110
53-7065	Stockers and Order Fillers	\$30,020	\$37,200	\$49,220
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$47,440	\$65,400	\$93,930
51-4121	Welders, Cutters, Solderers, and Brazers	\$40,210	\$53,080	\$78,030

# Appendix C:

## Discussion of USEER Methodology

### 1. Survey overview

The USEER employs a methodology approved in 2016 by the Office of Management and Budget under “OMB Control Number 1910-5179.”

The 2025 USEER methodology relies on the most recently available data from the BLS QCEW (QCEW, second quarter 2024), the BLS Employment Situation Table B-1 monthly reports through December 2024, together with a detailed supplemental survey of business establishments across the U.S. designed and conducted by BW Research Partnership in partnership with the DOE. During a time of rapid change in energy technology and business employment structure, supplemental surveys are an important tool to capture developing trends. 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 a decade, including the Interstate Renewable Energy Council’s *National Solar Jobs Census* series, energy reports for state agencies in the Commonwealths of Massachusetts, and Pennsylvania, and the States of California, Connecticut, Maryland, Minnesota, New Hampshire, New York, Rhode Island, and Vermont, and numerous nonprofit agencies across the U.S.

The 2025 USEER survey uses a stratified sampling plan that is representative by industry code (NAICS or ANAICS),<sup>1</sup> establishment size and geography to determine the proportion of establishments that work with specific energy-related technologies, as well as the proportion of workers in such establishments that use the same. These data are then analyzed and applied to existing public data published by the BLS, effectively constraining the potential universe of energy establishments and employment. For more detail, see Section III, USEER Sampling Plan.

The 2025 USEER survey was administered by telephone (more than 1,350,000 outbound dials) and by web, with more than 264,000 emails sent to participants throughout the U.S. The phone survey was conducted by ReconMR. The web instrument was programmed internally, and each respondent was required to use a unique ID to prevent duplication.

The sample was split into two categories, referred to as the known and unknown universes. The known universe includes establishments that have previously been identified as energy related, either in prior research or in some other manner, such as membership in an industry association or participation in government programs. These establishments were surveyed census-style, and their associated establishment and employment totals were removed

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<sup>1</sup> ANAICS is a term used by BLS, which means Allocation NAICS, and refers to the industries included in the aggregation of industries likely to participate in said activities ([https://www.bls.gov/ggs/ggs\\_technote\\_extended.pdf](https://www.bls.gov/ggs/ggs_technote_extended.pdf))

from the unknown universe for both sampling and for resulting employment calculations and estimates.

The unknown universe included tens of thousands of businesses in potentially energy-related NAICS codes, across agriculture, mining and extraction, utilities, construction, manufacturing, wholesale trade, distribution (including pipeline distribution), professional and business services, and other services (e.g., repair and maintenance). Each of these segments and their total reported establishments (within the BLS QCEW) were carefully analyzed by size (employment) and state to develop representative clusters for sampling. In total, approximately 42,800 business establishments participated in the survey effort, with approximately 10,900 providing full responses to the survey. These responses were used to develop incidence rates among industries (by state) as well as to apportion employment across various industry categories in ways currently not provided by state and federal labor market information agencies. The margin of error for incidence in the USEER is  $\pm 0.47\%$  at a 95% confidence interval. The margin of error for all energy firms that answered questions related to energy employment in the survey is  $\pm 0.94\%$  at a 95% confidence interval. The margin of error increases for each subgroup of respondents that participated in the survey. For example, the margin of error for questions answered by all firms that identified as solar photovoltaic (PV) is  $\pm 2.83\%$  at a 95% confidence interval.

For several industries, particularly transportation of goods, the USEER uses the methodology developed by the DOE and the National Renewable Energy Laboratory (NREL) for the first installment of the QER. The proportion of employment was calculated by dividing the value of commodity shipments (in millions of dollars) for coal, fuel oil, gas, motor vehicles, petroleum and other coal and petroleum products by total commodity value at the state level by truck, rail, air and water transport. This proportion was applied to NAICS employment for truck transportation (NAICS 484), water transportation (NAICS 483), air transportation (NAICS 481) and Railroad Retirement Board (RRB) employment for rail transportation at the state level. With this analysis, truck transportation represents the majority of energy-related transportation employment (75%), followed by rail (16%), water (8%) and air (1%).

Of important note, the USEER expressly excludes any employment in retail trade NAICS codes except for fuel dealers (NAICS 454310). This excludes motor vehicle dealerships, gas stations,<sup>2</sup> appliance and hardware stores and other retail establishments.

All data in the USEER rely on the BLS QCEW data for the end of the second quarter of 2024, and the BLS Unemployment Situation Table B-1 monthly reports through December 2024. Employment extrapolations are based off BLS QCEW and survey data, resulting in totals that carry precise decimal values. As a result, some employment totals for tables in the report will sum differently due to rounding. The USEER survey was administered between October 22, 2024 and February 17, 2025 and averaged 19 minutes in length.

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<sup>2</sup> Gas station employment had been reported in previous years up to the 2021 USEER. The 2025 USEER excludes mention of employment in this industry.

## 2. Methodology Discussion

Employment data collected by the BLS provide information on many, but not all, energy-related job categories. Most notably, BLS does not collect data on employment levels by energy technology across business segments. For instance, residential solar installation establishments are typically labeled as electrical contractors (together with all other traditional electrical businesses) without being identified specifically as solar companies. Petroleum engineering firms are included in engineering services, with civil, mechanical, and other engineers, while electric vehicle prototype manufacturers are combined with gasoline- and diesel-fueled vehicle manufacturing. As a result, BLS employment data do not capture the full scope of energy employment trends.<sup>3</sup>

Given the complex relationship between energy and the overall economy, the 2025 USEER investigates, with a special supplemental survey, the energy production sectors — Fuels, Electric Power Generation, and Transmission, Distribution, and Storage — followed by individual analyses of employment in two important energy end-use sectors — Energy Efficiency and Motor Vehicles and Component Parts (as designated by 42 U.S.C. § 18841<sup>1</sup> (c)(2)(A).) The spread of business activities in each of the five analyzed sectors presents additional taxonomic challenges, as early-stage research and development, repair, and maintenance or professional and technical services vary across energy, energy efficiency, and manufacturing. Natural gas business activities, for instance, differ from business activities relating to advanced building materials and solar photovoltaic materials.

Historically, the BLS has conducted supplemental surveys to acquire more complete information on new industries, specific demographic profiles within the workforce or new labor force trends such as the role of contingent workers. In this way, significant modification to the current BLS structure of industry and occupational classifications is avoided by capturing the required energy employment data using a supplemental survey tool based on existing BLS data and classifications.

The 2025 USEER relies on such a comprehensive survey of 42,800 business representatives across the U.S., conducted by BW Research. The survey data were used to filter and analyze the concentration, intensity and distribution of various energy technologies and activities throughout traditional industry sectors, using second quarter 2024 employment data from the BLS QCEW and the BLS Unemployment Situation Table B-1 monthly reports through December 2024. USEER data also provide an additional layer of information to track sector-specific growth potential, obstacles, and opportunities. The data presented in the USEER are not intended to remove, replace, or replicate existing data from the BLS QCEW, but instead to reorganize categories and provide insight for policymakers and the public regarding trends in energy employment, energy production and energy consumption across the U.S.

The USEER provides data for direct employment only and does not attempt to estimate indirect employment or induced employment related to the analyzed sectors. Many

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<sup>3</sup> DOE, Quadrennial Energy Review: Energy Transmission, Storage, and Distribution Infrastructure, 8-7.

employment studies, such as those included in chapter 8 of the first installment of the QER, generate employment estimates that rely on input/output modeling. These studies typically define an activity based on reported expenditures or expenditures and associated levels of employment reported by a defined industry or activity, such as U.S. solar PV installation. In this example, solar PV installation firm employment would be the “direct” jobs. Most studies go at least one step further, identifying “indirect” employment, which includes the supply chain or other support services to the industry. In the Solar example, these would include U.S. manufacturing jobs related to producing PV equipment used in domestic installations (and their suppliers and vendors) as well as consulting, tax, legal, and other professional services to support domestic PV installation companies. Another typical calculation is “induced” jobs, which includes jobs created or supported by wages paid and other benefits provided by employers of direct and indirect employees.

In the USEER, by comparison, the direct job category of interest is defined as the solar industry generally, including utility-scale Solar, residential, and commercial installations, as well as the manufacturing, professional and business services, and wholesale trade that make up the sector. However, the indirect jobs that support this industry are **not** included, such as polysilicon production (the raw material used in solar panels), aluminum production and extrusion activities for frame manufacturing or other aspects of the solar energy value chain. Induced jobs — those created economy-wide as a result of the spending of wages by the employees whose income derives, in whole or part, from this industry — are also not included.

Employment numbers in the text, charts, and tables of the USEER are rounded to the nearest hundred or ten (for numbers under 100). All numbers in corresponding data tables provided outside of the report itself are reported at all place values to follow QCEW reporting. For information on margin of error, refer to the first paragraph on page B-2 of the methodology.

#### **For the USEER survey, a Qualifying Firm is --**

An organization with employees in the United States that is directly involved with researching, developing, producing, manufacturing, distributing, selling, implementing, installing, or repairing components, goods, or services related to:

- Fuels, including the extraction, processing, production, and distribution thereof;
- Electric Power Generation;
- Electric Power Transmission, Distribution, and Storage;
- Energy Efficiency, including heating, cooling, and building envelope; and
- Transportation, including Motor Vehicles.



### A Qualifying Worker is --

An employee of a qualifying firm that spends **some portion of their time** supporting the qualifying energy portion of the business.<sup>4</sup>

The 2025 USEER includes data on 101 detailed occupations across sector and subsector (depending on sample size). The data includes low, median, and high wage estimates for each occupation as well as data on hiring activity and employer healthcare contribution. For any occupations that are exclusively tied to the energy sector—meaning they are always considered energy-related occupations regardless of the industry or employer (e.g., Nuclear Technicians; Petroleum Engineers; Rotary Drill Operators, Oil and Gas; Wind Turbine Service Technicians)—the research team uses the unadjusted median wage as reported in the OEWS, as these wages are inherently representative of energy sector wages. For all remaining occupations (i.e., those whose job duties *can* be energy-related but are not *exclusively* energy-related, such as Electricians, Construction Workers, and Civil Engineers), median wages are reported based on survey responses. Supplemental questions were asked of USEER respondents who opted in, and respondents were presented with occupations based on their selected industry activity (agriculture & forestry, mining & extraction, utilities, construction, manufacturing, wholesale trade, professional and business services, and other services such as repair and maintenance).

After collecting wage data, the research team performed an outlier analysis based on two standard deviations to ensure accuracy, followed by a calculation of the median wage by occupation, industry, and sector. Because the survey collected only low and high percentile wage data, the research team estimated the median wage using a normalized interpolation method by calculating the relative position of the median within the interpercentile range and applying this normalized value to the wage range to estimate median wages. This method allows for a scalable estimation of median wages while adjusting for skewness in the wage data distribution. Occupational wage differences within each sector are then analyzed to calculate a “premium” or “discount” by sector, which is then applied to the OEWS occupational median, 10<sup>th</sup> percentile, and 90<sup>th</sup> percentile wages.

In cases where occupations are aggregated, the research team weights the occupational wage by the proportion of workers in each sector. In cases where detailed occupations are not available from secondary data, broad occupation categories are used. This provides an approximation of the median from available data. The weighting of wage data relied on staffing patterns developed by BW Research and include public staffing patterns from the Bureau of Labor Statistics, industry sources (such as RS Means), and proprietary survey data.

This report provides detail into levels of employment activity that include both “a portion of their time” and “a majority of their time” when referencing qualifying workers. This is

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<sup>4</sup> Data presented in this report exclude retail employees. Qualifying Workers in energy will be referenced as energy-related jobs; where “portion of their time” includes employees whose activities are less than 50 percent of their time, specific reference will be made of that fact.



especially true in the energy efficiency sector where the employing construction or repair firms frequently are engaged in both traditional energy-related construction or installation as well as high-efficiency activities that qualify for certified energy efficiency designation.

Primary energy consumption<sup>5</sup> in the U.S. is divided among four sectors: electric power sector (34.8%), residential and commercial buildings (11.4%), industrial (24%) and transportation (29.8%). This distribution of energy consumption by sector is based on total 2024 estimates published by the EIA.<sup>6</sup>

End-use electricity consumption, in turn, is divided with 71.4% consumed by residential and commercial buildings, 25.2% by industrial and 0.2% by transportation.<sup>7</sup> Thus, residential and commercial buildings consumed 37.1% of all energy (an amount consisting of their direct energy end use, their electricity end use and the electrical system energy losses allocated to the sector by EIA).<sup>8</sup>

The 2025 USEER identifies jobs that manufacture certified energy efficiency appliances and other certified labeled products, as well as employment in building design and contracting services that provide insulation, improve natural lighting, and reduce overall energy consumption across homes and businesses.<sup>9</sup> The 2025 USEER includes a section that disaggregates certified Energy Efficiency technologies more thoroughly, further highlighting the employment impacts.

Motor vehicles are included in this report primarily because of their intensive use of energy and contribution to carbon emissions.<sup>10</sup> This report delineates employment between traditional gas and diesel motor vehicles, hybrid and plug-in hybrid, electric, natural gas, hydrogen, and fuel cell technologies, as well as motor vehicle component parts for such vehicles. USEER does not, however, cover all sectors of transportation, such as aviation and maritime transportation. According to the EIA, the transportation sector accounted for 29.9% of U.S. primary energy consumption in 2024;<sup>11</sup> 69.9% of overall U.S. petroleum consumption was attributable to the transportation sector.<sup>12</sup>

Motor vehicles employment reported at the state level includes overall industry (manufacturing, wholesale trade, commodity flows or transport of motor vehicles, professional and business services and other services such as repair and maintenance) and employment by subsector (gas and diesel, hybrid, plug-in hybrid, electric, hydrogen and

<sup>5</sup> Primary energy consumption is the direct consumption of energy at its first point of use. Importantly, this does not include consumption of electricity, so that primary energy consumption in the residential and commercial building sector includes direct use of fuels like natural gas for heating, but not electricity used for lighting and cooling.

<sup>6</sup> EIA, *Monthly Energy Review*, Table 2.1 and Table 2.6. Percentages are based on primary energy consumption in 2024 and do not add up to 100.0% due to rounding.

<sup>7</sup> EIA, *Monthly Energy Review*, Table 7.6. Percentages of retail electricity sales in 2024.

<sup>8</sup> EIA, *Monthly Energy Review*, Table 2.1. Percentage based on total energy consumption in 2024.

<sup>9</sup> Estimates do not include retail employment.

<sup>10</sup> The USEER covers motor vehicle employment across vehicle parts manufacturing, automotive repair and maintenance, as well as vehicle, parts and supplies wholesalers, including air, rail, water, and truck transportation of motor vehicle parts and supplies. It does not capture jobs associated with the final assembly of some transportation equipment such as forklifts and golf carts.

<sup>11</sup> EIA, *Monthly Energy Review*, Table 2.1.

<sup>12</sup> EIA, *Monthly Energy Review*, Table 3.7c. Percentage calculated using the sum of sector totals in Tables 3.7a through 3.7c.

fuel cell, natural gas and other). Employment at the state level is not reported by industry within subsector.

BW Research, an independent research organization, collected and analyzed the data. The data set includes sector, subsector, industry, and energy employment data in all 50 U.S. states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands.<sup>13</sup> In a time of rapid change in energy technologies across the board, continued refinement of supplemental surveys will remain an important tool in analyzing existing BLS data sets.

Another benefit of using the QCEW framework and a supplemental survey is the ability to understand and report the concentration of energy-related activities in traditional industries, such as construction, manufacturing, and utilities. This helps illustrate the significant impact that energy and energy-related activities have on the overall economy. The impacts to the various selected industries are illustrated briefly below.<sup>14</sup>

### Demographic Data Collection Update

As with the 2023 and 2024 USEER, the 2025 USEER includes updated demographic estimates for “Black or African Americans” and “two or more races,” and an additional category (“unknown race”) for employers to place workers if they are unable to identify race. “Black or African American” is a combined category that was split between “Black or African American, Not Indigenous” and “Black, Indigenous” for the 2022 USEER. The “two or more races” category was not included in the questionnaire due to employers incorrectly categorizing workers of unknown race into “two or more races.” The “two or more races” category was extrapolated in 2025 from multiple response overage to the USEER race question in this year’s survey. This methodology was instituted with the help of the U.S. Census Bureau. Finally, “unknown race” was included in this year’s questionnaire for employers to place workers they were unable to categorize. This addition also limited incorrect placement of workers in the “two or more races” category as a default response.

## **3. USEER Sampling Plan**

### **1a. Universe**

Geographic coverage included the 50 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands. Private establishments and government units were included, but units with average employment of zero over the last 12 months were excluded. Data were collected for establishments in 266 detailed industries identified to be of specific interest for the USEER survey. The industries were defined using the six-digit detail of the NAICS (which includes 1,099 six-digit industries).

<sup>13</sup> Other U.S. territories are omitted from the analyses due to unavailability of territory employment data within the BLS QCEW data series outside of Puerto Rico and the U.S. Virgin Islands.

<sup>14</sup> Because the USEER uses modeling to estimate fuel-stock employment in agriculture and forestry, and because these industry codes are not effectively captured by QCEW, no estimate is made as to the percent of the total industry captured by the USEER.

The sampling frame is a representative sample of employers drawn from establishment totals from the QCEW Longitudinal Database (LDB) maintained by the BLS, stratified by employment size categories developed by the Census Bureau County Business Patterns (CBP) data set. The actual contact information and business names were drawn from a private data set, Data Axle USA, because the QCEW is confidential. About 3.2 million establishments with employment of 29.4 million were in the 266 in-scope industries.

For the purposes of USEER sample allocation, we aggregated 266 detailed industries into seven groups or “allocation” NAICS (ANAICS). For most in-scope industries, the ANAICS is the two-digit NAICS and includes all in-scope NAICS-defined industries in the two-digit code. In some two-digit industries, ANAICS splits out specific five- and six-digit NAICS industries that have historically had a higher incidence of energy activity. ANAICS two- and three-digit coding is the same as for NAICS, though restricted to USEER-eligible industries.

Industry sectors are also defined for use in allocation. Industry sectors are two-digit ANAICS with two exceptions. The manufacturing sector combines three two-digit codes. The trade sector combines retail trade and wholesale trade.

About 16,500 in-scope known universe establishments with 1 million employees were pre-identified as having energy activity. A database of known universe establishments was developed internally by BW Research by collecting industry association databases, approved utility contractor lists, and other public and private sources, as well as prior indication in a USEER survey collection. By comparing the information obtained through these sources and comparing the NAICS codes of these establishments in the QCEW, Known Universe establishments were matched to the QCEW/Data Axle USA data set and a “known” indicator was used to assist in oversampling known establishments.

### **1b. Sample**

BW Research contacts between 30,000 and 45,000 establishments per year. The total survey completion targets were based on a sample selected using the QCEW/Data Axle USA frame for the second quarter of 2024. Quotas were established for each NAICS or ANAICS code by size and state.

The USEER is stratified by six-digit NAICS and size class (1-9, 10-19, 20-49, 50-99 and 100+ employees) and systematic samples selected in the noncertainty strata. Known establishments can be of any ownership, are processed separately and are excluded from the other portions of the frame. Federal and state government stratification are both at the state level by industry sector. Local government stratification is at the state level by industry sector for these sectors: utilities; transportation and warehousing; professional, scientific, and technical Services; remediation services; educational services; arts, entertainment, and recreation; and public administration, with all other sectors combined to a residual category. For private establishments (excluding the known universe), three levels of stratification are examined during sample allocation: (1) at the state level by

industry sector, (2) national ANAICS, and (3) national six-digit NAICS. Further stratification by establishment size did not prove to be practical for similar studies.

## 2. Sample Design

USEER panels have a probability-based sample aimed at satisfying data needs at both the state by industry sector level and the national ANAICS level. The basic sampling unit is an establishment. Response quotas are set based on the representation of total establishments by six-digit NAICS, times the proportion of establishments in each size category as identified in the most recent available data from the Census Bureau County Business Patterns (CBP).

Restricted to in-scope industries, establishments on the QCEW frame are separated into five mutually exclusive parts that are separately sampled. Approximate sample counts refer to a sample selected from the QCEW frame for the second quarter of 2024.

- Known universe; census, with up to six attempts; stratification industry by size class (can have any ownership code)
- Federal government; sample size of 50; stratification at the state level by industry sector
- State government; sample size of 50; stratification at the state level by industry sector
- Private; sample size of 29,900; complex stratification using state and industry

Known sampling: All establishments in the known universe will be contacted up to six times. The responses will be treated separately, and the overall employment from the known universe sample will be de-duplicated from the appropriate panel of ANAICS, based on the known universe respondent NAICS code.

The allocation for private establishments and government (excluding known universe) has four basic steps:

1. Determine establishments by state — relying on the most recent data available from QCEW, the proportion of establishments in each selected NAICS is determined as a percentage of the total establishments in all selected NAICS.
2. Determine NAICS establishments by size — relying on the most recent data available in the Census Bureau County Business Patterns, the proportion of establishments within each size category in each six-digit NAICS is determined. The total NAICS quota is allocated by the size proportions to develop the percentage of total state-level sample.
3. De-duplicate known universe establishments from the sampling universe — verifying by name, NAICS, contact name, address, phone, and other identifying information, known universe establishments are removed from the private, state and federal government sampling universes.

4. Establish quotas — state-level quotas are established by multiplying the total number of proposed survey completions per state by the percentage determined in Steps 1 and 2.

## Appendix D:

# USEER 2024 Employer Survey

OMB No. **1910-5179** Expiration 2024

### Introduction:

Hello, my name is \_\_\_\_\_ and I am calling on behalf of the United States Department of Energy (DOE). We are conducting a national survey about energy and related industries. May I please speak to the person most knowledgeable about staffing at [organization]?

Is now a convenient time? [IF NO – Collect callback information and time]

This survey uses specific terms to describe various technologies and activities. If you require any definitions for clarification, please ask me at any time.

The survey is voluntary and can take up to 45 minutes of your time. (If needed): This important survey addresses businesses that research, develop, manufacture, construction, install or work with facilities or products that generate, distribute, store, or save energy.

(If needed): This important survey addresses businesses that research, develop, manufacture, install or work with products that generate, distribute, store, use (in the case of motor vehicles), or save energy.

(If needed) This includes firms that support the construction of manufacturing and warehousing facilities used to assemble and distribute energy products, as well as the build out of electric charging stations for electric vehicles and ports that are preparing or supporting offshore wind development or operations, or other energy related work.

(If needed): This includes organizations involved in fossil and renewable energy production, energy efficiency products and services, solar, wind, fossil and other energy sources, other energy related products and services, and motor vehicles.

(If needed): Your individual responses will not be published; only aggregated information will be used in reporting the survey results.

(If needed): Your participation will help determine how investments of time and money should be made to support the industry and prepare the present and future workforce.

(If needed): If you have any questions about DOE's involvement in this survey, please contact [Ava Kalina] at [202-573-5882]

**Privacy Act Statement**

The information you provide to the Department of Energy (DOE) during this study will be used to allow energy-related employment to be assigned by primary value chain activity, including: research and development; manufacturing; sales and distribution; installation, repair and maintenance; and professional services. It will also provide insight on wages, workforce demographics, and employers' ability to recruit qualified workers.

The data you supply will be used by industry, training organizations, community colleges, job seekers, federal agencies, and other stakeholders, to better inform the workforce development system by highlighting changes in the industry that are driving demand for workers. The data will also inform energy economic development planning activities at the local, state, and regional levels by providing a more detailed assessment of energy jobs, as well as the changing energy landscape and how such changes influence labor markets.

With your consent, the DOE will collect your response as you participate in the study. This includes responses to all survey questions for which your firm qualifies. Your feedback will be kept private and will not be linked to you. Only de-identified and aggregated information will be included in any final or published reports. None of your identifying information will be included in the reports. The DOE does not anticipate further disclosure of your personal information except as required by law.

**Paperwork Reduction Act Burden Disclosure Statement**

Public reporting burden for this collection of information is estimated to up to 48 minutes, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of the Chief Information Officer, Enterprise Policy Development & Implementation Office, IM-22, Paperwork Reduction Project OMB Control Number 1910-5179, U.S. Department of Energy, 1000 Independence Ave SW, Washington, DC, 20585-1290; and to the Office of Management and Budget (OMB), OIRA, Paperwork Reduction Project OMB Control Number 1910-5179, Washington, DC 20503.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB control number.

Submission of this data is voluntary.

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- A. Does your organization have at least one location with employees in the United States, including Puerto Rico and the Virgin Islands? (Please count yourself as an employee if you are an owner-operated business or sole proprietor).

- 1 Yes [CONTINUE]
- 2 No [TERMINATE]

For this survey, please only answer for your current business location. If your organization has other U.S. locations, please do not include their data. What is the zip code of your current location? [SHOW ADDRESS FROM SAMPLE FILE]

\_\_\_\_\_ (Accept all five-digit responses)

(DON'T READ) Have check box for Refused (Terminate if Refused)

- B. Is your organization involved, in whole or part, with an activity related to energy? (PAUSE, IF UNSURE OR NO READ REMAINDER OF QUESTION, IF YES GO TO SC) We define this as being directly involved with researching, developing, producing, manufacturing, distributing, selling, implementing, installing, or repairing components, constructing facilities (for energy product manufacturing and distribution) or other energy infrastructure projects such as EV charging and ports for offshore wind, and other goods or services related to:

- 1. Electric Power Generation;
- 2. Electric Power Transmission, Distribution, and Storage;
- 3. Energy Efficiency, Including Heating, Cooling and Building Envelope;
- 4. Fuels, including Extraction, Processing, Production, and Distribution;
- 5. and Transportation, including Motor Vehicles.

- 1 Yes [CONTINUE]
- 2 No [CONTINUE]
- 3 Not sure [TERMINATE]

- C. Is your organization participating in the building, construction, or retrofitting of manufacturing, assembling, or materials processing facilities?

- 1 Yes [CONTINUE TO SD]
- 2 No [GO TO SD]
- 3 Not sure [TERMINATE]

- D. Is your organization participating in the building, construction, or retrofitting of warehouses and related logistical facilities?

- 1 Yes [CONTINUE TO SE]
- 2 No [GO TO SE]
- 3 Not sure [TERMINATE]

E. Is your organization participating in the building, construction, or retrofitting of public facilities for infrastructure, energy, or transportation?

- 1 Yes [CONTINUE TO SF]
- 2 No [GO TO SF]
- 3 Not sure [TERMINATE]

F. Is your organization participating in the building, construction, expansion, or retrofitting of ports and port related facilities?

- 1 Yes [CONTINUE TO SG]
- 2 No [TERMINATE IF S=2 AND SC=2 AND SD=2 AND SE=2]
- 3 Not sure [TERMINATE]

IF SC=1 OR SD=1 OR SE=1 OR SF=1 ASK SG OTHERWISE SKIP

IF SC=2 AND SD=2 AND SE=2 AND SF=2 AND S=2, TERMINATE

G. In the last 12 months, has your organization been directly involved in the building and construction of any of the following types of facilities?

IF SC=1 ASK OTHERWISE SKIP

- 1. Manufacturing facilities related to wind energy (offshore or land-based), hydrogen, batteries or energy storage, solar energy, or other energy related manufacturing facilities?

- 1 Yes (specify type\_\_\_\_\_)
- 2 No
- 3 Not sure

IF SD=1 ASK OTHERWISE SKIP

- 2. Warehouse facilities and distribution centers related to energy and energy storage?

- 1 Yes (specify type\_\_\_\_\_)
- 2 No
- 3 Not sure

IF SE=1 ASK OTHERWISE SKIP

- 3. Electric charging stations for electric vehicles or other related infrastructure for electric or alternative vehicles?

- 1 Yes (specify type\_\_\_\_\_)
- 2 No
- 3 Not sure

IF SF=1 ASK OTHERWISE SKIP

4. Ports that are preparing or supporting offshore wind development or operations or the transportation of Liquified Natural Gas or other energy related work?

- 1 Yes (specify type\_\_\_\_\_)
- 2 No
- 3 Not sure

IF S=2 AND SG1=1 OR SG2=1 OR SG3=1 OR SG4=1 ASK Q0 AND Q2, THEN SKIP TO Q1, OTHERWISE TERMINATE

H. What is your role in your organization?

1. Human resources
2. Owner, manager, or proprietor
3. Other [Specify]

I. Which of the following industries describes your organization's work?

[ALLOW MULTIPLE RESPONSES] [IF NEEDED: If your organization is involved in energy research or professional services for the industry, please select the options that are most relevant to your organization.]

1. Electric Power Generation
2. Electric Power Transmission and Distribution, including electric vehicle charging stations
3. Storage, including electric vehicle batteries
4. Energy Efficiency, Including Heating, Cooling and Building Envelope (IF NEEDED THIS INCLUDES THERMAL OR HOT WATER SOLAR)
5. Fuels
6. Transportation Vehicles, including Motor Vehicles (IF NEEDED: Including industrial and agricultural vehicles, such as forklifts, tractors, and recreational vehicles, such as golf carts) e
7. Component Parts for Transportation Vehicles
8. Carbon Capture, Utilization, and Storage (CCUS)
9. Direct Air Capture (DAC)
10. Other (Specify \_\_\_\_\_) TERMINATE
11. DK/NA TERMINATE

[ASK SCREENER J IF SI COUNT>1]

J. Which do you consider your organization's primary industry, based on the majority of labor hours performed at your location? [PIPE IN SI CATEGORIES, ACCEPT ONE]

1. Electric Power Generation
2. Electric Power Transmission and Distribution, including electric vehicle charging stations
3. Storage, including electric vehicle batteries
4. Energy Efficiency, Including Heating, Cooling and Building Envelope (IF NEEDED THIS INCLUDES THERMAL OR HOT WATER SOLAR)
5. Fuels

6. Transportation, including Motor Vehicles (IF NEEDED: Including industrial and agricultural vehicles, such as forklifts, tractors, and recreational vehicles, such as golf carts)
7. Component Parts for Transportation Vehicles
8. Carbon Capture, Utilization, and Storage (CCUS)
9. Direct Air Capture (DAC)
10. Other

CREATE SJPRIME FROM SI IF SI COUNT=1, OR SJ IF SI COUNT>1

K. [ASK FOR EACH SI] Which of the following [INSERT SI RESPONSE] technologies is your organization directly engaged with? [READ LIST, ALLOW MULTIPLE RESPONSES]

**A. Electric Power Generation (IF SI=1) [RANDOMIZE]**

1. Solar Electric Generation [SET SOLAR=1]
2. Land-based Wind Generation
3. Offshore Wind Generation
4. Geothermal Generation
5. Bioenergy/Biomass Generation
6. Low-Impact Hydroelectric Generation such as run of river
7. Traditional Hydroelectric Generation
8. Marine and Hydrokinetic Generation
9. Advanced/Low Emission Natural Gas
10. Nuclear Generation
11. Coal Generation
12. Oil and other Petroleum Generation
13. Natural Gas Generation
14. Combined Heat and Power
15. Other Generation (Specify)

**B. Electric Power Transmission and Distribution (IF SI=2) [RANDOMIZE]**

1. Traditional Transmission and Distribution
2. Electric Vehicle Charging Stations
3. Smart Grid
4. Micro Grids
5. Other Grid Modernization
6. Other (Specify)

**C. Storage (IF SI=3) [RANDOMIZE] [IF SKA=1, "(including battery storage for solar generation)"]**

1. Pumped hydro-power storage
2. Battery storage, including electric vehicle batteries [IF SKA=1, "(including battery storage for solar generation)"]
3. Mechanical storage (flywheels, compressed air energy storage, etc.)
4. Thermal storage
5. Liquefied natural gas

6. Compressed natural gas
7. Crude oil
8. Refined petroleum fuels (liquid)
9. Refined petroleum fuels (gas)
10. Coal storage (piles, domes, etc.)
11. Biofuels, including ethanol and biodiesel
12. Nuclear fuel
13. Other gas fuel (Specify)
14. Other liquid fuel (Specify)
15. Other Storage
16. Other (Specify)

IF SKC=2, ASK H\_2, H\_3, and H\_4

H\_2. What type of Battery Storage do you work with? [READ LIST, ALLOW MULTIPLE RESPONSES] [RANDOMIZE]

1. Lithium batteries
2. Lead-based batteries
3. Other solid-electrode batteries (Specify)
4. Vanadium redox flow batteries
5. Other flow batteries (Specify)

H\_3. What is the application of your battery storage work? [READ LIST, ALLOW MULTIPLE RESPONSES] [RANDOMIZE]

1. Consumer devices
2. Vehicles or other transportation (including electric vehicles)
3. Behind-the-meter (buildings or industrial facilities)
4. Front-of-meter (electric grid)
5. Other (Specify)

H\_4: What stage of batteries do you work with? [READ LIST, ALLOW MULTIPLE RESPONSES] [RANDOMIZE]

1. Materials (lithium, cobalt, manganese, graphite, nickel, etc.)
2. Component parts
3. Cells
4. Modules/Packs
5. Other (Specify)

**D.** Energy Efficiency, Including Heating, Cooling and Building Envelope (IF SK=4)  
[RANDOMIZE]

1. Certified Appliances (not including HVAC)
2. Certified Heating, Ventilation, and Cooling (HVAC), except air-source and ground-source heat pumps
3. Certified Air-Source Heat Pumps
4. Certified Ground-source or geothermal heat pumps

5. Other high efficiency HVAC that are out of scope for certification (e.g. indirect evaporative coolers, air to water heat pumps, energy recovery systems, etc.)
6. Traditional HVAC goods, control systems, and services
7. Certified water heaters
8. Certified Electronics (TVs, Telephones, Audio/Video, etc.)
9. Certified Windows, Doors and Skylights
10. Certified Roofing
11. Certified Insulation
12. Air sealing
13. Certified Commercial Food Service Equipment
14. Certified Data Center Equipment
15. Certified LED lighting
16. Other LED, CFL, and efficient lighting
17. Solar thermal water heating and cooling [SET SOLAR=1]
18. Other renewable heating and cooling (biomass, etc.)
19. Advanced building materials/insulation
20. Recycled building materials
21. Reduced water consumption products and appliances
22. Energy auditing services
23. Other (Specify)

**E. Fuels (IF SK=5) [RANDOMIZE]**

1. Coal
2. Onshore petroleum, including gasoline and diesel
3. Offshore petroleum, including gasoline and diesel
4. Onshore natural gas
5. Offshore natural gas
6. Other Fossil Fuel
7. Corn Ethanol
8. Renewable Diesel
9. Biodiesel
10. Other Ethanol/Non-Woody Biomass
11. Woody Biomass/Cellulosic Biofuel
12. Waste Fuels
13. Other Biofuels
14. Nuclear Fuel
15. Other (Specify)

ASK KA IF SKE = 2 & 3

KA. Do you primarily work with onshore or offshore petroleum?

1. Onshore petroleum
2. Offshore petroleum
3. Don't know/ Refused

ASK KB IF SKE = 4 & 5

KB. Do you primarily work with onshore or offshore natural gas?

1. Onshore natural gas
2. Offshore natural gas
3. Don't know/ Refused

F. Transportation Vehicles, Including Motor Vehicles (IF SI=6) [RANDOMIZE]

1. Gasoline and Diesel Motor Vehicles (excluding freight transport)
2. Hybrid Electric Vehicles
3. Plug-In Hybrid Vehicles
4. Electric Vehicles
5. Natural Gas Vehicles
6. Hydrogen/Fuel Cell Vehicles
7. Other (Specify \_\_\_\_\_)

G. Component Parts for Transportation Vehicles (IF SI=7) [RANDOMIZE]

1. Transportation Vehicle Engine & Drive Parts
2. Transportation Vehicle Exhaust System Parts
3. Transportation Vehicle Body Parts
4. Other Transportation Vehicle Parts (Specify \_\_\_\_\_)

SET SOLAR=1 IF SKA=1 OR SKD=17

IF SK TOTAL>1, ASK SKPRIME, IF NOT, SKIP

SKPRIME. Which of the following technologies is your organization *PRIMARILY* engaged with?

[PIPE-IN RESPONSES FROM SKA-SKG]

[IF RESPONDENT ONLY IDENTIFIES WITH ONE INDUSTRY AT SCREENER I, USE THAT INDUSTRY FOR THE REMAINDER OF THE SURVEY IN PLACE OF "ENERGY" / IF MORE THAN ONE, CONTINUE TO USE "ENERGY." EXCEPTION - IF THE ONLY SELECTION AT SCREENER I IS "OTHER" OR "DK/NA," USE "ENERGY"]

L. Which of the following industry descriptions describe your organization's focus as it relates to the [energy/ SI] industry? [ALLOW MULTIPLE RESPONSES]

1. An organization involved in agricultural goods and services
2. An organization involved in mining and extraction
3. An organization that manufactures and/or assembles [energy/ SI] goods or produces components that go into energy products
4. An organization that conducts research and development and related services for [energy/ SI]
5. An organization involved in the wholesale trade and distribution of [energy/ SC] products and services
6. An organization that installs [energy/ SI] systems or provides services for installation of [energy/ SI] systems
7. A public or private utility



8. An organization that provides consulting, engineering, finance, legal, or other professional services related to energy
9. An organization that conducts operations and maintenance (O&M) for [energy/ SI] systems
10. An organization primarily involved in education and training
11. Other support services (Specify: \_\_\_\_\_)
12. Other (Specify: \_\_\_\_\_)
13. (DON'T READ) Not sure

[ASK SCREENER G IF MORE THAN ONE SELECTED AT SCREENER L

G. Which do you consider your organization's primary focus as it relates to the [energy/ SC] industry, based on the labor hours performed at your location

1. An organization involved in agricultural goods and services
2. An organization involved in mining and extraction
3. An organization that manufactures and/or assembles [energy/ SC] goods or produces components that go into energy products
4. An organization that conducts research and development and related services for [energy/ SI]
5. An organization involved in the wholesale trade and distribution of [energy/ SC] products and services
6. An organization that installs [energy/ SI] systems or provides services for installation of [energy/ SI] systems
7. A public or private utility
8. An organization that provides consulting, engineering, finance, legal, or other professional services related to energy
9. An organization that conducts operations and maintenance (O&M) for [energy/ SI] systems
10. An organization primarily involved in education and training
11. Other support services (Specify: \_\_\_\_\_)
12. Other (Specify: \_\_\_\_\_)
13. (DON'T READ) Not sure

SET SGPRIME BASED ON SCREENER G RESPONSE OR SCREENER L RESPONSE IF  
SCREENER L COUNT=1

ASK SH IF SKA=14 OR SKB=6 OR SKC = 13, 14, 15, OR 16 OR SKE = 15, AND SL = 4, 8, OR 10

H. Does your organization work with hydrogen fuel in any capacity?

1. Yes (Please specify)\_\_\_\_\_
2. No
3. Don't know/ Refused

IF SGPRIME=7, ASK SCREENER I

- I. Does your organization employ workers that are in charge of administering, managing, evaluating, or otherwise working on utility-led energy efficiency programs, rebates, and other activities?
- a. Yes
  - b. No
  - c. DK/NA

=====

For this survey, we will just be asking about the employees that work from or directly report to your current location.

IF S=2 AND SG1=1 OR SG2=1 OR SG3=1 OR SG4=1 ASK Q0 AND Q2, THEN SKIP TO Q4

1. Including all people, permanent and temporary, contract employees as well as any other individuals who may work for or be employed by other entities, how many people work at or from your current location doing work for your organization?

A. Record # of ALL people \_\_\_\_\_

(DON'T READ) Refused

Of the #\_(TAKE FROM Q1A)\_ people that work at or from your current location, how many are permanent employees, full-time or part-time. Please note this would include all of those employees that have taxes withheld by your organization in their paycheck.

B. Record # of permanent employees \_\_\_\_\_

(DON'T READ) Refused

Of the #\_(TAKE FROM Q1A)\_ people that work at or from your current location, how many are self-employed or independent contractors working for your organization. Please note this would include all of those individuals that receive a 1099 from your organization rather than wages with taxes withheld for them.

C. Record # of self-employed or independent contractors \_\_\_\_\_

(DON'T READ) Refused

Of the #\_(TAKE FROM Q1A)\_ people that work at or from your current location, how many are employed by another firm or entity, such as a temporary employment agency or a union hiring hall, but are providing services for your organization. Please note this would include all consultants, temporary workers or advisors that are employed by another firm but doing work for your organization.

D. Record # of people employed by another firm \_\_\_\_\_

(DON'T READ) Refused

[BUILD IN CHECK SO Q1B + Q1C + Q1D = Q1A]

Now we want to just ask about those permanent employees that work at or from your current location.

2. Based on [Take QOB #] full-time and part-time permanent employees at your location, how many employees do you expect to have at your location 12 months from now?

- 1 More [record #\_\_\_\_\_]
- 2 Fewer [record #\_\_\_\_\_]
- 3 (DON'T READ) Same number
- 4 (DON'T READ) Refused

[If amount differs by 10% or more in either direction, ask: ]

Just to confirm, you currently have \_\_\_\_ permanent employees at your current location and you expect to have \_\_\_\_ (more/fewer) employees, for a total of \_\_\_\_ permanent employees 12 months from now.

IF S=2 AND SG1=1 OR SG2=1 OR SG3=1 OR SG4=1 SKIP TO Q4

3. Of the [Take Q0 #] full time and part-time permanent employees at your current location, how many of these workers support the [energy/ SI] portion of your business? Please note that your response should include administrative staff supporting the energy portion of your business.

Record # of employees \_\_\_\_\_  
(DON'T READ) Have check box for Refused

[IF NEEDED: SUPPORT WORKERS ARE DEFINED AS THOSE INDIVIDUALS THAT SPEND ANY AMOUNT OF TIME, DIRECTLY WORKING ON ENERGY RELATED PROJECTS INCLUDING ADMINISTRATIVE SUPPORT WORKERS]

[Q3 SHOULD BE LESS THAN OR EQUAL TO Q1 - BUILD IN CHECK]

[IF S=2 AND SG1=1 OR SG2=1 OR SG3=1 OR SG4=1 ASK Q4, THEN SKIP TO Q6 OTHERWISE SKIP. IF YES TO MORE THAN ONE SG CATEGORY ASK QUESTION FOR EACH ONE THAT IS YES]

4. Of the [Take Q0 #] full time and part-time permanent employees at your current location, how many of these workers support the building and construction work related to manufacturing facilities / warehouses / infrastructure / ports? (PIPE IN RESPONSES FROM SG) Please note that your response should include administrative staff supporting this portion of your business.

Record # of employees \_\_\_\_\_  
(DON'T READ) Have check box for Refused

[IF NEEDED: SUPPORT WORKERS ARE DEFINED AS THOSE INDIVIDUALS THAT SPEND ANY AMOUNT OF TIME, DIRECTLY WORKING ON CONSTRUCTION RELATED PROJECTS INCLUDING ADMINISTRATIVE SUPPORT WORKERS]

[Q4 SHOULD BE LESS THAN OR EQUAL TO Q0- BUILD IN CHECK]

5. Of your [Take Q3 #] energy staff at your location (office staff and in the field), please classify them into the area where they spent most of their time over the last 12 months. Please count each employee only once.
- In-state within your region/metropolitan area [Record #]\_\_\_\_\_
  - In-state outside your region/metropolitan area [Record #]\_\_\_\_\_
  - Out-of-state [Record #]\_\_\_\_\_

IF SB=1 OR S=2 AND SG1=1 OR SG2=1 OR SG3=1 OR SG4=1 ASK Q6 AND Q7

6. How many full-time and part-time permanent employees did you have working at your current location 12 months ago that supported the [energy/ SI/ facilities construction] portion of your business?

Record # of employees \_\_\_\_\_  
(DON'T READ) Have check box for Refused

7. Based on [Take Q3 #] full-time and part-time permanent employees at your location that support the [energy/ SI/ facilities construction] portion of your business, how many employees do you expect to have at your location 12 months from now?

- More [record #\_\_\_\_\_]
- Fewer [record #\_\_\_\_\_]
- (DON'T READ) Same number
- (DON'T READ) Refused

Just to confirm, you currently have \_\_\_\_ permanent employees supporting the energy portion of your business and you expect that number to be \_\_\_\_ (more/fewer) 12 months from now, for a total of \_\_\_\_

IF RESPONDENTS ANSWERED Q3 ASK Q8A AND Q9A IF RESPONDENTS ANSWERED Q4 ASK Q8B AND Q9B

7. A. Thinking of your [INSERT Q3] energy employees, how many spend at least 50% of their time supporting the energy portion of your business?

Record: \_\_\_\_\_

B. Thinking of your [INSERT Q4] employees that support the building and construction work related to manufacturing facilities / warehouses / infrastructure / ports? (PIPE IN "YES" RESPONSES FROM SG), how many spend at least 50% of their time supporting that portion of your business?

Record: \_\_\_\_\_

8. A. Thinking of your [Q3 ANSWER] energy employees, how many spend all of their time supporting the energy portion of your business?

Record: \_\_\_\_\_

B. Thinking of your [INSERT Q4] employees that support the building and construction work related to manufacturing facilities / warehouses / infrastructure / ports? (PIPE IN "YES" RESPONSES FROM SG), how many spend all of their time supporting that portion of your business?

Record: \_\_\_\_\_

IF S=2 AND SG1=1 OR SG2=1 OR SG3=1 OR SG4=1 SKIP TO Q20

## SECTION 2 – Workforce Profile Questions

If SI COUNT > 1 response, ASK Q9

9. Thinking of your [Take Q3] [energy/ SI] workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the area where they spend the most time.

### PIPE IN SCREENER I RESPONSES

Record # of employees \_\_\_\_\_

If SI COUNT > 1 response and Q7>0, ASK Q10

10. Thinking of your [Take Q7] [energy/ SI] workers that spend at least 50% of their time supporting the energy portion of your business, please classify them in the following categories. Please count each employee only once and categorize them in the area where they spend the most time.

### PIPE IN SCREENER I RESPONSES AND EMPLOYMENT FROM Q7]

Record # of employees \_\_\_\_\_

BUILD CHECK SO TOTAL MUST = Q7

IF SI = 1 and Screener K.A > 1 response, ASK Q11 OTHERWISE SKIP

USE Q3 IN PLACE OF Q9 IF SELECTED COUNT AT SCREENER I WAS ONE (ONE CHOICE)

11. Thinking of your [PIPE IN Q9/Q3 GENERATION ANSWER] energy generation workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

### PIPE IN SCREENER K.A RESPONSES

Record # of employees \_\_\_\_\_

IF SI = 2 and Screener K.B > 1 response, ASK Q12 OTHERWISE SKIP

12. Thinking of your [PIPE IN Q9/Q3 ELECTRIC POWER TRANSMISSION AND DISTRIBUTION ANSWER] energy transmission, distribution, and storage workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER K.B RESPONSES

Record # of employees \_\_\_\_\_

IF SI = 3 and Screener K.C > 1 response, ASK Q13 OTHERWISE SKIP

13. Thinking of your [PIPE IN Q9/Q3 STORAGE ANSWER] storage workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER K.C RESPONSES

Record # of employees \_\_\_\_\_

IF Q13\_2(BATTERY STORAGE)>0, ASK Q14

14. Thinking of your [PIPE IN Q13\_2 #] battery storage workers at your location, please classify in them in the following categories. Please count each employee only once and categorize them in the battery storage application category where they spend the most time.

1. Consumer devices [Record # of employees]
2. Vehicles or other transportation [Record # of employees]
3. Buildings or industrial facilities [Record # of employees]
4. Electric Grid [Record # of employees]
5. Other (Specify) [Record # of employees]

IF SI = 4 and Screener K.D > 1 response, ASK Q15 OTHERWISE SKIP

15. Thinking of your [PIPE IN Q9/Q3 ENERGY EFFICIENCY, INCLUDING HEATING, COOLING AND BUILDING ENVELOPE ANSWER] energy efficiency, including heating, cooling and building envelope, workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER K.D RESPONSES

Record # of employees \_\_\_\_\_

IF SI = 5 and Screener K.E > 1 response, ASK Q16 OTHERWISE SKIP

16. Thinking of your [PIPE IN Q9/Q3 FUELS ANSWER] fuels-related workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER E.E RESPONSES

Record # of employees \_\_\_\_\_

IF SI = 6 and Screener K.F > 1 response, ASK Q17 OTHERWISE SKIP

17. Thinking of your [PIPE IN Q9/Q3 TRANSPORTATION VEHICLES ANSWER] motor-vehicle related workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER E.F RESPONSES

Record # of employees \_\_\_\_\_

IF SI = 5 and Screener K.G > 1 response, ASK Q18 OTHERWISE SKIP

18. Thinking of your [PIPE IN Q9/Q3 COMPONENT PARTS ANSWER] energy generation workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER K.G RESPONSES

Record # of employees \_\_\_\_\_

### Demographic questions

19. Thinking of your [Take Q3] [energy/ SI] employees, how many are:

- a) Men: Record # employees \_\_\_\_\_
- b) Women: Record # of employees \_\_\_\_\_
- c) Gender non-binary/other: Record # of employees \_\_\_\_\_
- d) (DON'T READ) Refused

Q19 a+b+c must = Q3

IF S1 **OR** S2 AND SG1=1 OR SG2=1 OR SG3=1 OR SG4=1ASK Q20 THROUGH Q**Error!**

**Reference source not found.23**

20. Thinking of your [Take Q3/Q4] [energy/ SI/ facilities construction] employees, please indicate the ethnicity:

- (a) Hispanic or Latino
- (b) Not Hispanic or Latino
- (c) (DON'T READ) Refused

Q20 a+b must = Q3

21. Thinking of your [Take Q3][energy/SI/ facilities construction] employees, please indicate the race and choose all that apply, including employees of two or more races:

- a) American Indian or Alaskan Native: Record # of employees \_\_\_\_\_
- b) Asian: Record # of employees \_\_\_\_\_
- c) Black or African American: Record # of employees \_\_\_\_\_
- d) Native Hawaiian or other Pacific Islander: Record # of employees \_\_\_\_
- e) White: Record # of employees \_\_\_\_\_
- f) Don't know: Record # of employees \_\_\_\_\_



g) (DON'T READ) Refused

22. Thinking of your [Take Q3] [energy/ SI/ facilities construction] employees, how many:

- a) Are Veterans of the U.S. Armed Forces Record # of employees \_\_\_\_\_
- b) Are 55 and over Record # of employees \_\_\_\_\_
- c) Are between 30 and 54 Record # of employees \_\_\_\_\_
- d) Represented by Unions, Collective Bargaining Agreements, and/or Project Labor Agreements Record # of employees \_\_\_\_\_
- e) Have a disability that requires accommodation
- f) Were formerly incarcerated
- g) (DON'T READ) Refused

23. Thinking of the current [Take Q3] [energy/ SI/ facilities construction] employees at your location, how many are in the following occupational categories?

(Please only assign one category to each employee that supports the [energy/ SI] portion of your business. If they fall into more than one category, please assign them to the category in which they devote more of their time.)

- a. Mining and Extraction Field positions (includes oil field workers, miners, etc.)
- b. Production/Manufacturing positions (includes workers in refineries and assembly workers and those involved in the design, quality control and manufacturing process)

Record # of employees \_\_\_\_\_  
(DON'T READ) Have check box for Refused

- c. Construction, installation or repair positions (includes technicians, building trades people, and supervisors that are working at project site)

Record # of employees \_\_\_\_\_  
(DON'T READ) Have check box for Refused

- d. Administrative positions (includes customer service representatives, clerks, office and operations support)

Record # of employees \_\_\_\_\_  
(DON'T READ) Have check box for Refused

- e. Management/Professional positions (**does not include** those supervisors that spend a majority of their time at project sites or sales managers)

Record # of employees \_\_\_\_\_  
(DON'T READ) Have check box for Refused

- f. Sales positions (includes cost estimators, sales representatives and sales managers)

Record # of employees \_\_\_\_\_

- (DON'T READ) Have check box for Refused  
g. Other (Specify: \_\_\_\_\_)

Record # of employees \_\_\_\_\_  
(DON'T READ) Have check box for Refused

(CREATE INTERNAL CONTROL SO Q23 A+B+C+D+E+F+G EQUALS Q3)

### SECTION 3 – Workforce Development & Training Needs

24. How many energy/ facilities construction workers have you hired over the last 12 months, either for new positions or to replace former workers?

Record \_\_\_\_\_

IF Q24>0, ask Q25-28 otherwise SKIP

25. Thinking of the [Insert Q24] energy/ facilities construction workers that you have hired at your location over the last 12 months, please indicate your level of difficulty finding qualified applicants to fill the positions.

1. Very difficult
2. Somewhat difficult
3. Not at all difficult
4. DK/NA

IF Q25 = 1 or 2 ask Q26 and Q27, otherwise SKIP

26. What are the two most significant reasons for the reported difficulty? \_\_\_\_\_

27. Please provide the two most difficult positions for your organization to fill at your location.

28. You reported [insert Q24] additional workers at your organization over the last 12 months. Of these [insert Q24] positions, how many:

- a. Were newly created positions?  
Record # of employees \_\_\_\_\_
- b. Were existing employees that added energy responsibilities?  
Record # of employees \_\_\_\_\_
- c. Were hired to replace workers due to turnover or retirement?  
Record # of employees \_\_\_\_\_
- d. Were positions that required previous work experience related to the position?  
Record # of employees \_\_\_\_\_
- e. Required a bachelors degree or beyond: \_\_\_\_\_  
Record # of employees \_\_\_\_\_

- f. Required an associate degree or academic certificate from an accredited college, but not a bachelors degree: \_\_\_\_\_  
Record # of employees \_\_\_\_\_
- g. Required a vocational or technical postsecondary certificate or credential: \_\_\_\_  
Record # of employees \_\_\_\_\_
- h. Are represented by a union, collective bargaining agreement, or a project labor agreement: \_\_\_\_\_  
Record # of employees \_\_\_\_\_

29. Does your firm have a formal or informal mentorship/sponsorship program?

- 1. Yes
- 2. No
- 3. DK/NA

30. Briefly describe the mentorship/sponsorship program?

#### SECTION 4 – Business Questions

38. The following is a list of factors that may contribute to difficulty growing a profitable business. Please rate the significance of each factor. [READ ITEM, THEN SAY] is it very significant, somewhat significant, or not at all significant. [RANDOMIZE]

- a. Lack of capital
- b. Lack of qualified talent
- c. Poor demand
- d. Cost or supply of materials
- e. Permitting delays
- f. Interconnection delays
- g. Policy challenges

IF S=1 OR S38=2 AND SG1=1 OR SG2=1 OR SG3=1 OR SG4=1ASK Q39-41

39. Thinking about your organization's energy related suppliers and vendors, what percent of your supply chain purchases (in dollars/value), are:

- a. In-state (Enter %)\_\_\_\_\_
- b. Out of state but in the United States (Enter %)\_\_\_\_\_
- c. Outside of the United States (Enter %)\_\_\_\_\_ (WEB ONLY SPECIFY COUNTRIES\_\_\_\_\_)
- d. DK/NA

40. Thinking about your organization's energy related customers, what percent are located:

- 1. In-State (Enter %)\_\_\_\_\_
- 2. In a bordering state but out of state (Enter %)\_\_\_\_\_
- 3. In the United States, but outside of a bordering state (Enter %)\_\_\_\_\_
- 4. Outside of the United States (Enter %)\_\_\_\_\_
- 5. DK/NA

41. Are you currently partnering with registered apprenticeship programs, community colleges, universities, government training programs, or private sector training programs? [SELECT ALL THAT APPLY]

1. Yes, registered apprenticeship programs
2. Yes, a community college or multiple community colleges
3. Yes, a university or multiple universities
4. Yes, a government training program or multiple government training programs
5. Yes, a private sector training program or multiple private sector training programs
6. No
7. (DON'T READ) DK/NA

42. Has your business been awarded any federal government grants, loans, or procurement contracts?

[SELECT ALL THAT APPLY]

1. Yes, grant (SPECIFY\_\_\_\_\_)
2. Yes, loan (SPECIFY\_\_\_\_\_)
3. Yes, contract (SPECIFY\_\_\_\_\_)
4. No
5. (DON'T READ) DK/NA

## SECTION 5 – Revenue Questions

Ask Q43 if SGPRIME = 5 or 6

43. Can you name any specific rebates or incentives that can reduce the cost of selling, distributing or installing energy for your customers? [Record up to 3]

Record: \_\_\_\_

44. Approximately how much of your organization's work at your current location, in terms of total gross revenue, is related to energy?

Record \$:\_\_\_\_\_

ASK Q45 if SK has multiple responses, otherwise SKIP

45. Approximately how much of your organization's work at your current location, in terms of total gross revenue, is related to each of the following products or services? (Use numbers to indicate percentages, for instance 20=20%)

1. INSERT SK RESPONSE 1 \_\_\_\_%
2. INSERT SK RESPONSE 2 \_\_\_\_%
3. INSERT SK RESPONSE 3 \_\_\_\_%
4. ...
5. All other revenue not related to energy \_\_\_\_%

Q45 total must equal 100%

**SECTION 6 – Motor Vehicles & Component Parts**

ASK Q44 if SI = 6, otherwise SKIP

44. With which of the following types of transportation vehicles does your firm primarily design, manufacture, sell, repair, or otherwise work with? [SELECT ONE]

1. Automobiles
2. Light- or Medium- Duty Vehicles
3. Heavy Duty Vehicles
4. Industrial Vehicles, such as forklifts
5. Recreational Vehicles, such as golf carts
6. Rail
7. Other (specify \_\_\_\_\_)

ASK Q45-Q47 if SI = 7, otherwise SKIP

45. Does your firm manufacture, design, sell, and/or distribute parts solely used for alternative vehicles, or vehicles with a fuel source other than gasoline or diesel?

1. Yes, electric vehicles
2. Yes, hydrogen fuel cell vehicles
3. Yes, other (Specify)\_\_\_\_\_
4. No
5. Don't know/ Refused

ASK Q46 IF Q45=1, otherwise SKIP

46. How much of your firm's work, as a percentage of your total revenue, is attributed to parts solely used for alternative vehicles, or vehicles with a fuel source other than gasoline or diesel?

1. All of it (100%)
2. Half to most of it (50% to 99%)
3. A quarter to almost half of it (25% to 49%)
4. Less than a quarter (1% to 24%)
5. (DON'T READ) DK/NA

47. Thinking of the type of fuel used, does your organization offer parts or products for any of the following types of transportation vehicles? [ALLOW MULTIPLE]

1. Gasoline and Diesel Motor Vehicles (excluding freight transport)
2. Hybrid Electric Vehicles
3. Plug-In Hybrid Vehicles
4. Electric Vehicles
5. Natural Gas Vehicles
6. Hydrogen Vehicles
7. Fuel Cell Vehicles
8. Other (Specify \_\_\_\_\_)

[If Q47 = 2,3, or 4, ask Q48, otherwise SKIP]

48. Which systems for electric and hybrid vehicles does your firm primarily work with?

- a. Body design or structure
- b. Batteries
- c. Charging components
- d. Electric propulsion (i.e. converter, controller, transmission, etc.)
- e. Auxiliaries (i.e. brakes, steering, climate control, etc.)
- f. Other (Specify\_\_\_\_\_)

## SECTION 7 – Energy Efficiency

IF SCREENER I=1, ASK Q49

49. How many of your [Take Q3#] energy employees work on administering, managing, evaluating, or otherwise working on utility-led energy efficiency programs, rebates, and other activities?

Record # of employees: \_\_\_\_\_

## SECTION 8 – Facilities Construction

IF S=2 AND SG1=1 OR SG2=1 OR SG3=1 OR SG4=1 ASK Q50

50. How important are the Bipartisan Infrastructure Law (BIL), Inflation Reduction Act (IRA), and other federal policies and investments to your company's growth?

- 1. Very important
- 2. Somewhat important
- 3. Not at all important
- 4. Don't know/ Refused

Thank you for completing the survey. Since it sometimes becomes necessary for the project manager to confirm responses to certain questions, please verify your contact information.

da. First and Last Name (Interview note enter 99 for REF)

- 1. First Name
- 2. Last name

db. Position (Interview note enter 99 for REF)

dc. Phone (Interviewer Note 9999999999 for REF)

dd. Email (Interview note enter 99 for REF)

de. Organization Name (Interview note enter 99 for REF)

df. Organization Street Address (Interview note enter 99 for REF)

dg. Organization City (Interview note enter 99 for REF)

dh. Organization State (Interview note enter 99 for REF)

di. Organization Zip (Interviewer Note 99999 for REF)

**Thank you very much for your time.**

HOW DID THE SURVEY END?

- 1 COMPLETED INTERVIEW
- 2 SURVEY SAID THEY DID NOT QUALIFY
- 3 CALLBACK NEEDED, PARTIAL
- 4 REFUSAL
- 5 SOMETHING ELSE

PLEASE DISPOSITION CALL CORRECTLY.  
Thank you for your time.

WAGE SECTION

USE SCREENERS FROM USEER (2025) TO CONFIRM INFORMATION LEARNED INITIALLY

For this survey, we will just be asking about the employees that work from or directly report to your current location.

DEVELOP OCCUPATIONAL MATRIX TO IDENTIFY UP TO 4 OCCUPATIONAL CATEGORIES

Now we'd like to DISPLAY you about occupational categories that work from or report to your current location.

1. Thinking about the different ways you hire [OCCUPATIONAL CATEGORY], please let us know if you hire this position for permanent full-time employment, permanent part-time employment, as a temporary or independent contractor employed by your organization, OR as a temporary or contract worker employed by another organization (employment agency) or union hiring hall). (SELECT ALL THAT APPLY)
- 1 = Permanent full-time employment (taxes withheld by employer)
  - 2 = Permanent part-time employment (taxes withheld by employer)
  - 3 = As a temporary or independent contractor paid by your organization (taxes are not withheld)
  - 4 = As a temporary or contract worker employed by another organization
  - 5 = Union hiring hall
  - 6 = No, we do not employ workers within this occupational category
  - 7 = Don't know/ No Answer

	1	2	3	4	5	6	DK/NA
A. Occupational Category #1 .....	1	2	3	4	5	6	7
B. Occupational Category #2 .....	1	2	3	4	5	6	7
C. Occupational Category #3 .....	1	2	3	4	5	6	7
D. Occupational Category #4 .....	1	2	3	4	5	6	7



We would like to DISPLAY you about your permanent full-time employees that work at or report to your current business location. [SKIP FOR ALL Q1A-D THAT DOES NOT EQUAL 1]

2. How many permanent full-time \_[OCCUPATIONAL CATEGORY TITLE]\_ report to or work from your current location? [IF NEEDED: This includes persons in the field or working remotely that report to this location]

Record # of employees for OC #1\_\_\_\_\_

Record # of employees for OC #2\_\_\_\_\_

Record # of employees for OC #3\_\_\_\_\_

Record # of employees for OC #4\_\_\_\_\_

(DON'T READ) Refused

3. What is the lowest starting or entry-level salary (excluding benefits) for [INSERT OC] ? [THIS IS PERMANENT FULL-TIME FOR Q3 – 5]

A	OC #1 _____	\$'s per hour / month / year
B	OC #2 _____	\$'s per hour / month / year
C	OC #3 _____	\$'s per hour / month / year
D	OC #4 _____	\$'s per hour / month / year

4. What is the highest salary for [INSERT OC] at your organization?

A	OC #1 _____	\$'s per hour / month / year
B	OC #2 _____	\$'s per hour / month / year
C	OC #3 _____	\$'s per hour / month / year
D	OC #4 _____	\$'s per hour / month / year

5. Over the last 12 months, have wages increased, decreased, or stayed the same for [INSERT OC] ? [THIS IS PERMANENT FULL-TIME]

1	Increased more than 10%
2	Increased from 5% to 10%
3	Increased from 1% to 4%
4	Decreased
5	Stayed the same
6	(DON'T READ) DK/NA

	1	2	3	4	5	DK/NA
A. Occupational Category #1 .....	1	2	3	4	5	6
B. Occupational Category #2 .....	1	2	3	4	5	6
C. Occupational Category #3 .....	1	2	3	4	5	6
D. Occupational Category #4 .....	1	2	3	4	5	6

Now we'd like to ask about benefits for those individuals that are permanent full-time employees that work at or report to your current business location.

6. What type of healthcare insurance contribution does your organization make for [INSERT OC]?

1 = Firm contributes ALL healthcare insurance costs for employee & family  
 2 = Firm contributes ALL healthcare insurance costs for employee only  
 3 = Firm contributes SOME BUT NOT ALL healthcare insurance costs for employee & family  
 4 = Firm contributes SOME BUT NOT ALL healthcare insurance costs for employee only  
 5 = Firm does not contribute to employee's healthcare insurance costs  
 6 = (DON'T READ) Don't know/ No Answer

	1	2	3	4	5	DK/NA
A. Occupational Category #1 .....	1	2	3	4	5	6
B. Occupational Category #2 .....	1	2	3	4	5	6
C. Occupational Category #3 .....	1	2	3	4	5	6
D. Occupational Category #4 .....	1	2	3	4	5	6

7. Does your organization contribute to some type of retirement plan (401k, pension, IRAs,...) for [INSERT OC]?

A OC #1 \_\_\_\_\_ 1 = YES, 2 = NO, 3 = (DON'T READ) DK/NA  
 B OC #2 \_\_\_\_\_ 1 = YES, 2 = NO, 3 = (DON'T READ) DK/NA  
 C OC #3 \_\_\_\_\_ 1 = YES, 2 = NO, 3 = (DON'T READ) DK/NA  
 D OC #4 \_\_\_\_\_ 1 = YES, 2 = NO, 3 = (DON'T READ) DK/NA

8. Does your organization offer paid time off (PTO) or paid vacation for [INSERT OC]?

A OC #1 \_\_\_\_\_ 1 = YES, 2 = NO, 3 = (DON'T READ) DK/NA  
 B OC #2 \_\_\_\_\_ 1 = YES, 2 = NO, 3 = (DON'T READ) DK/NA  
 C OC #3 \_\_\_\_\_ 1 = YES, 2 = NO, 3 = (DON'T READ) DK/NA  
 D OC #4 \_\_\_\_\_ 1 = YES, 2 = NO, 3 = (DON'T READ) DK/NA

Now I would like to ask some of the qualifications and promotion opportunities for full-time permanent positions that work at or report to your current business location.

9. Are there certificate(s), technical certification(s) or other specific educational degrees or training programs that are valued by your firm, when looking to hire [INSERT OCCUPATION]? [Single response, repeat for each occupation]

1. Yes, a certification is required for [INSERT OCCUPATION] (Specify certification) \_\_\_\_
2. Yes, a degree is required for [INSERT OCCUPATION] (Specify degree) \_\_\_\_\_
3. Yes, a certification is NOT required for [INSERT OCCUPATION], but workers with the certification are paid an additional wage premium (Specify certification and additional wage premium per hr/yr) \_\_\_\_\_
4. Yes, a degree is NOT required for [INSERT OCCUPATION], but workers with the degree are paid an additional wage premium (Specify degree and additional wage premium per hr/yr) \_\_\_\_\_
5. Yes, a certification is valued for [INSERT OCCUPATION] but not required nor paid an additional wage premium (Specify certification) \_\_\_\_\_

6. Yes, a degree is valued for [INSERT OCCUPATION] but not required nor paid an additional wage premium (Specify degree) \_\_\_\_\_
7. No
8. (DON'T READ) Not sure

10. At your organization do you typically promote individuals from within for [INSERT OCCUPATION], or do you primarily hire people from outside your organization?

- 1 Promote from within
- 2 Recruit from outside the organization
- 3 Both, promote from within and recruit from outside the organization
- 4 (DON'T READ) DK/NA

	1	2	3	DK/NA
A. Occupational Category #1 .....	1	2	3	4
B. Occupational Category #2 .....	1	2	3	4
C. Occupational Category #3 .....	1	2	3	4
D. Occupational Category #4 .....	1	2	3	4

[IF Q11 FOR A – D = 1 OR 3 DISPLAY Q12]

11. At your organization what are the primary positions that people have before they become [INSERT OCCUPATION]?

- A OC #1 \_\_\_\_\_
- B OC #2 \_\_\_\_\_
- C OC #3 \_\_\_\_\_
- D OC #4 \_\_\_\_\_

12. In your organization what are the primary positions that people move up to after working as a [INSERT OCCUPATION]?

- A OC #1 \_\_\_\_\_
- B OC #2 \_\_\_\_\_
- C OC #3 \_\_\_\_\_
- D OC #4 \_\_\_\_\_

13. What percentage of the [INSERT OCCUPATION] workers at your firm are covered by a Collective Bargaining Agreement or Project Labor Agreement or are otherwise members or covered by one or multiple labor unions?

- a. A few (1% - 25%)
- b. Some (26% - 50%)
- c. Most (51% - 75%)
- d. All or almost all (76% - 100%)
- e. None (0%)
- f. (DON'T READ) DK/NA

	1	2	3	4	5	6
A. Occupational Category #1 .....	1	2	3	4	5	6
B. Occupational Category #2 .....	1	2	3	4	5	6
C. Occupational Category #3 .....	1	2	3	4	5	6
D. Occupational Category #4 .....	1	2	3	4	5	6

14. Of the [INSERT OCCUPATION] workers at your firm, how many live within 50 miles of the office where they work from or report to?

- 1 A few (0% - 24%)
- 2 Some (25% - 49%)
- 3 Most (50% - 74%)
- 4 All or almost all (75% - 100%)
- 5 (DON'T READ) DK/NA

	1	2	3	4	DK/NA
A. Occupational Category #1 .....	1	2	3	4	5
B. Occupational Category #2 .....	1	2	3	4	5
C. Occupational Category #3 .....	1	2	3	4	5
D. Occupational Category #4 .....	1	2	3	4	5

15. Does your organization inquire about criminal records on applications for job seekers for the following occupations?

- 1 Yes, but a criminal offense does not automatically disqualify job seekers
- 2 Yes, and our organization prefers not hire those with any criminal offense
- 3 Yes, and legally the organization cannot hire those with a nonviolent criminal offense for this role
- 4 (DON'T READ) DK/NA

	1	2	3	DK/NA
A. Occupational Category #1 .....	1	2	3	4
B. Occupational Category #2 .....	1	2	3	4
C. Occupational Category #3 .....	1	2	3	4
D. Occupational Category #4 .....	1	2	3	4

# Appendix E: Summary of Energy-Related Employment in Existing Industries by NAICS Code

## NAICS 21: MINING, QUARRYING AND OIL AND GAS EXTRACTION (MINING AND EXTRACTION)

The 2025 USEER survey found that 429,858 workers (100% in Fuels) were associated with the Mining and Extraction of Oil, Gas, Coal, and Nuclear Fuel stock in 2024. This represents 73% of the total Mining and Extraction jobs (588,306) in the U.S. in that year, including support activities for mining (NAICS 213) (Figure 1).



Figure 1. Energy-Related Employment in NAICS 21

NAICS 22: UTILITIES

According to the standard industry definitions used by the Census Bureau, the Utilities sector comprises establishments engaged in the provision of the following utility services: electric power, Natural Gas, steam supply, water supply and sewage removal. In this sector, the specific activities associated with the utility services provided vary by utility — electric power includes generation, transmission and distribution; Natural Gas includes distribution; steam supply includes provision and/or distribution (Natural Gas transmission lines, however, are included under NAICS 486, Pipeline Transportation); water supply includes treatment and distribution; and sewage removal includes collection, treatment and disposal of waste through sewer systems and sewage treatment facilities.<sup>15</sup> This includes generating plants, but excludes waste management services.

Across the U.S., Utilities employed 860,410 workers in 2024, with nearly three-quarters working in energy generation, transmission, or distribution (Figure 2).

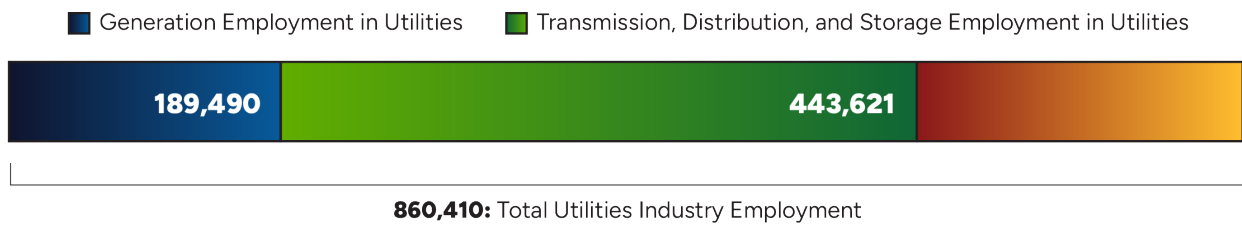


Figure 2. Energy-Related Employment in NAICS 22

<sup>15</sup> "Sector 22 — Utilities: The Sector as a Whole," 2022 NAICS Definition, North American Industry Classification System, U.S. Census Bureau, U.S. Department of Commerce.

### NAICS 23: CONSTRUCTION

Energy-related activities account for a significant amount of employment in the construction industry. In 2024, Electric Power Generation and Fuels, and Transmission, Distribution and Storage represented 10% of total Construction employment in the U.S., while Energy Efficiency activities accounted for an additional 15% of the Construction workforce (Figure 3).

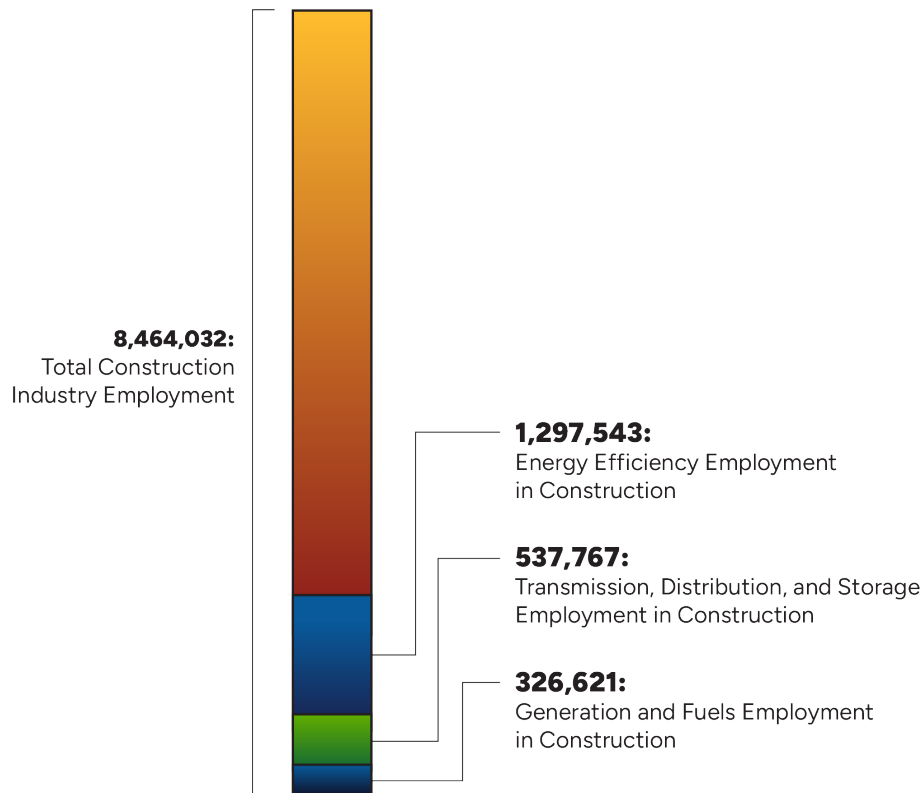


Figure 3. Energy-Related Employment in NAICS 23



### NAICS 31-33: MANUFACTURING

Manufacturing is an important component of the energy economy, and includes Petroleum refining, Nuclear enrichment and component and finished product assembly of Solar panels, Wind and Natural Gas turbines and mining equipment. In addition to the totals reported in USEER, many Manufacturing jobs are affected by Energy Efficiency in their processes but are not tracked herein. Traditional energy sectors (Electric Power Generation and Fuels and Transmission, Distribution, and Storage) accounted for about 3.4% of all Manufacturing jobs in the U.S. in 2024. Energy Efficiency product Manufacturing (composed of certified products and energy-related building materials, such as insulation, windows, and doors) added 2.6% and Motor Vehicle and Component Parts manufacturers added a further 7.8% (Figure 4).

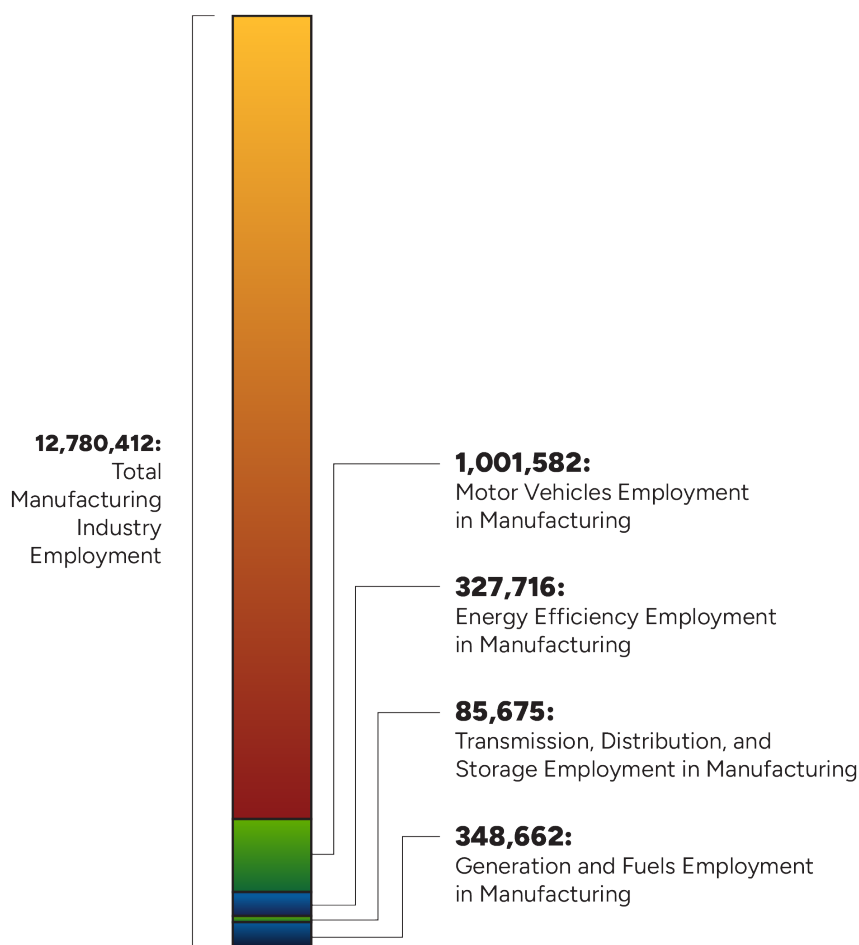


Figure 4. Energy-Related Employment in NAICS 31-33

**NAICS 42, 486, AND COMMODITY FLOW DATA: WHOLESALE TRADE, DISTRIBUTION AND TRANSPORT (WHOLESALE TRADE)**

Wholesale Trade, Distribution and Transport includes wholesale equipment and supplies merchant wholesalers of goods that are linked to the energy industry (including motor vehicles and motor vehicle parts and building materials). Also included in this NAICS category is all employment related to the Pipeline Transportation of Fuels and the transport (via truck, rail, air, and water) of energy commodities such as Coal, Fuel Oil, Natural Gas, Motor Vehicles and Petroleum.

**NAICS 51, 52, 53, 54, 55 AND 56: INFORMATION (SOFTWARE, ETC.), FINANCE, INSURANCE, PROFESSIONAL AND BUSINESS SERVICES (PROFESSIONAL AND BUSINESS SERVICES)**

Professional and Business Services provide support for energy-related activity in the U.S. Firms from this sector are primarily involved in software development and other information services; finance and insurance; real estate and rental and leasing; professional, scientific, and technical services; management of companies and enterprises and administrative support; and waste management and remediation services.

**NAICS 81: OTHER SERVICES (REPAIR AND MAINTENANCE/OTHER)**

Other Services are important to the energy economy, including Repair and Maintenance and nonprofit activity. Motor Vehicles accounted for over one-fifth (21.8%) of the workforce in the larger industry in 2024, driven by employment in automotive repair and maintenance. Electric Power Generation and Fuels combined for 1% of the overall workforce in Other Services.

# Appendix F: Electric Power Generation and Fuels Employment by Industry

## Agriculture and Forestry

The QCEW does not capture a significant portion of agricultural labor. The BLS estimates that its methodologies exclude the majority of agricultural workers (52%) due to the nature of the industry. In addition, Forestry and Logging employment is highly seasonal and relies heavily on unreported subcontractors. The 2025 USEER estimates employment in these segments using a customized model based on inputs on fuel stocks generated by the U.S. Department of Agriculture Economic Research Service (ERS).<sup>16</sup> Based on these inputs, an estimated 36,486 Agriculture and Forestry employees worked in 2024 to support Fuel production.<sup>17</sup>

## Mining, Extraction and Utility Generation

About 73% of all Mining and Extraction employment in the U.S. in 2024 was for Fuels used in energy production; this translates to nearly 430,000 workers in 2024. These workers support the Fuels sector through crude Petroleum<sup>18</sup> and Natural Gas extraction, as well as surface and underground Coal mining (Figure 5).<sup>19</sup>



Figure 5. Mining and Extraction Employment

<sup>16</sup> These data can be found in "U.S. Bioenergy Statistics," Economic Research Service, U.S. Department of Agriculture, <https://www.ers.usda.gov/data-products/us-bioenergy-statistics/>

<sup>17</sup> Energy- and fuel-related agricultural employment was derived using three different calculations for fuelwood, corn ethanol and biodiesel. The BLS QCEW cover exclusions were used to develop a factor for agricultural worker exclusions and this factor was applied to employment for the NAICS codes specific to each of the three fuel types. Additionally, a technology-specific percentage was derived from ERS estimates for the percentage of total wood, corn and biodiesel produced that is used for fuel. This percentage was applied together with the exclusion factor to the second quarter of 2024 QCEW employment data for fuelwood NAICS (113110, 113310, 115310), corn ethanol (11115) and biodiesel (11111) to determine the number of workers supporting agricultural fuel production.

<sup>18</sup> Petroleum is a liquid mixture of hydrocarbons that is present in certain rock strata and can be extracted and refined to produce fuels including gasoline, kerosene and diesel oil.

<sup>19</sup> These support workers are specific to fuel mining and extraction, and do not include support for other mining and extraction activities.

Electric utility generation (in which the generating equipment is operated by the utility) employed a total of 189,490 workers across Hydroelectric, fossil fuel, Nuclear, Solar, Wind, Geothermal, Biomass, steam, and air-conditioning supply (including CHP) and Other Electric Power Generation. It is important to note that utility generation employment excludes any Utilities that support water supply and irrigation systems or sewage treatment. It also excludes non-utility-owned or -operated generation from Wind, Solar, CHP, Biomass, Nuclear or fossil fuels (Figure 6).

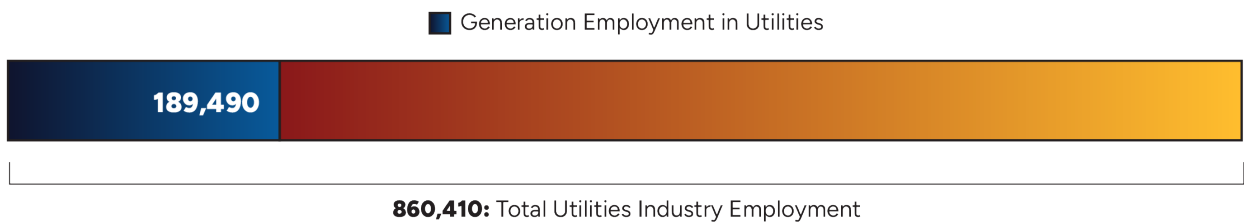


Figure 6. Utilities Employment

Construction

For the more than 8.4 million Construction workers in the U.S., roughly 93% of employment in 2024 was in Construction subsectors with workers that support energy generation technologies. In these subsectors, 326,621 Construction workers supported both Electric Power Generation and Fuels production technologies. Ninety-three percent of these employees were engaged in the Construction and installation of new electric generation technologies (Figure 7).

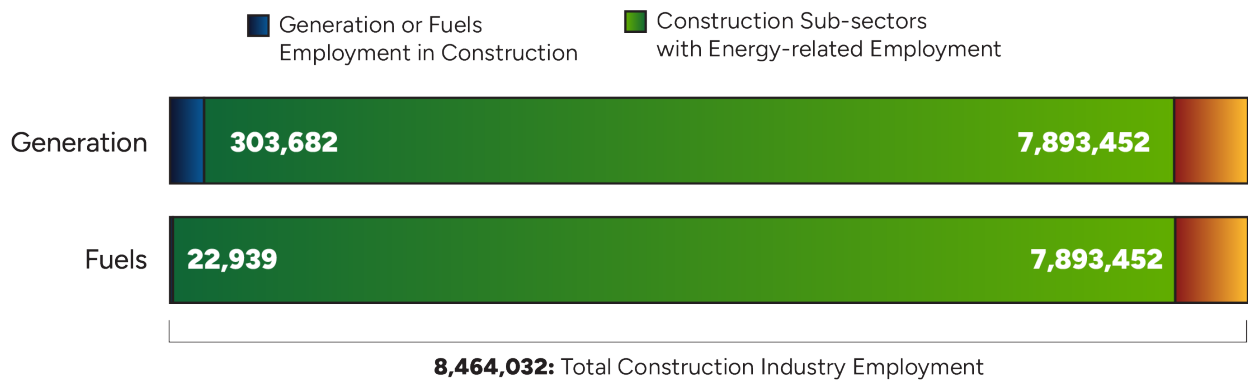


Figure 7. Construction Employment

Manufacturing

The national Manufacturing industry employed nearly 12.8 million workers in 2024. About 23.5% of that overall Manufacturing employment comprised subsectors that could support Electric Power Generation and Fuels technologies, including petrochemical, turbine, and generator manufacturing. These detailed industries accounted for more than 3,001,000 workers in 2024, nearly 8% of which supported fuels. Electric Power Generation and Fuels manufacturers include those firms working on PV arrays, turbine generators, oil and gas field machinery and other motor or generator manufacturing (Figure 8).

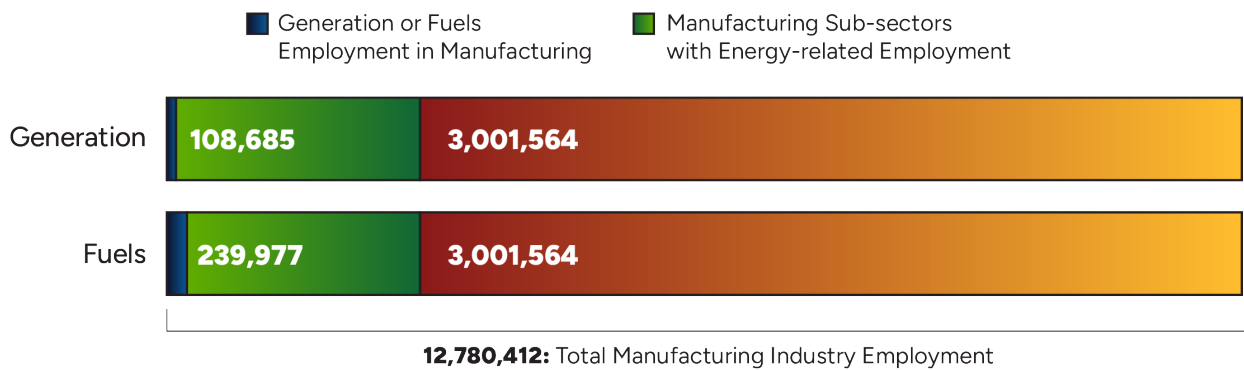


Figure 8. Manufacturing Employment

Wholesale Trade

Of the more than 8.3 million Wholesale Trade, Distribution, and Transport workers in the U.S., about 52% were working in detailed industries that could support Electric Power Generation and Fuels activities, including electric equipment, chemical and Petroleum merchant wholesalers. In these Wholesale trade, Distribution, and Transport industries, about 83,064 and 143,664 workers spent some amount of their time in 2024 supporting Electric Power Generation and Fuels applications, respectively.<sup>20</sup>

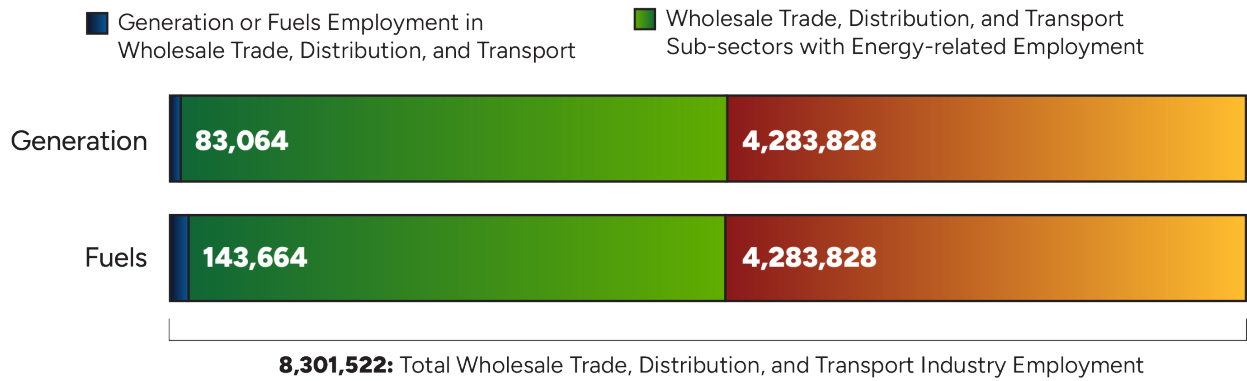


Figure 9. Wholesale Trade, Distribution, and Transport Employment

<sup>20</sup> Transmission and trade of fuels are included in the Transmission, Distribution, and Storage chapter of the report.



Professional and Business Services

The Professional and Business Services industry in the U.S. employed more than 32 million workers in 2024. In this aggregate industry, several detailed industries supported Electric Power Generation and Fuels operations with software, legal services, biotechnology research, architecture, and engineering. Of the more than 13.1 million jobs in these energy-related professional service industries in 2024, about 206,000 and 179,000 respectively supported Electric Power Generation and Fuels technologies (Figure 10).

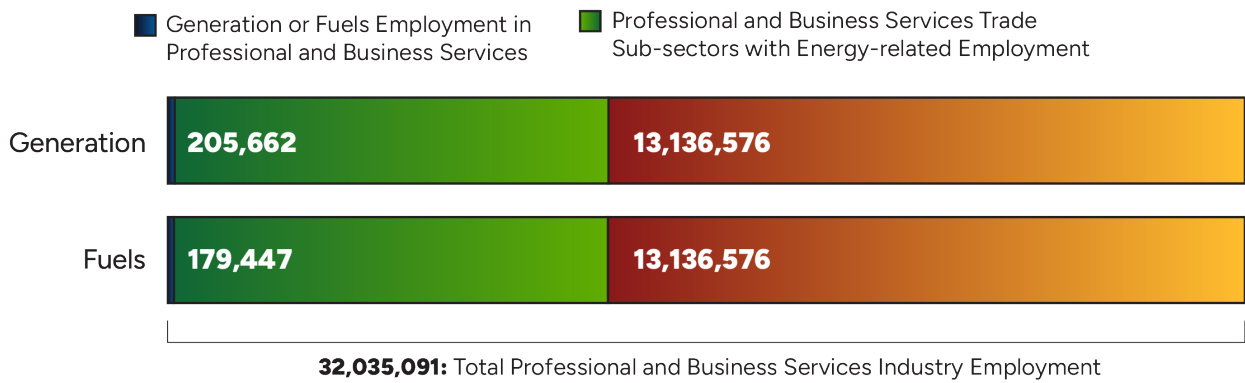


Figure 10. Professional and Business Services Employment

# Appendix G: Transmission, Distribution, and Storage Employment by Industry

As noted in the report, Transmission, Distribution, and Storage employed 1,463,659 workers in 2024.

Using survey data, the following sections illustrate a breakdown of sector-wide employment in five broad high-level industry classifications, including Construction and Manufacturing.

## Utilities

Utility companies<sup>21</sup> that employ transmission and distribution workers are captured entirely by their respective detailed NAICS classifications by BLS. Electric power transmission, control and distribution and Natural Gas distribution employed 443,621 Transmission, Distribution, and Storage workers across U.S. utility firms in 2024, an increase of nearly 6,000 from 2023. This number represents just over half of energy utility employment nationwide (Figure 11).

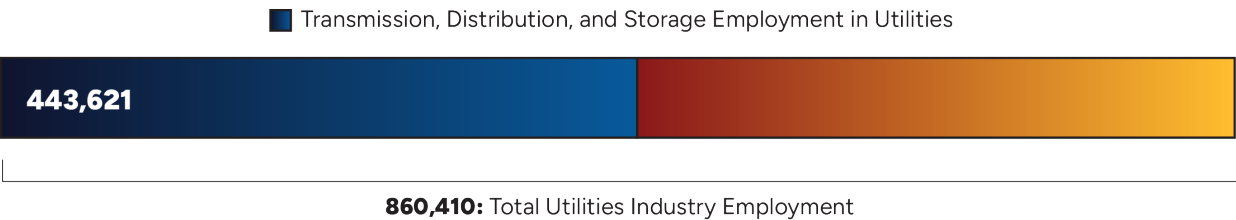


Figure 11. Utilities Employment

<sup>21</sup> As with all other industries in this report, this section relies on NAICS definitions. Utility-scale power generators, for example, are classified as utilities regardless of ownership or regulation.

Construction

Construction firms contributed the most employment to Transmission, Distribution, and Storage activities in 2024, with 537,767 jobs. This work included pipeline and electric transmission and distribution activity, as well as the development of Smart Grids and Microgrids (Figure 12).

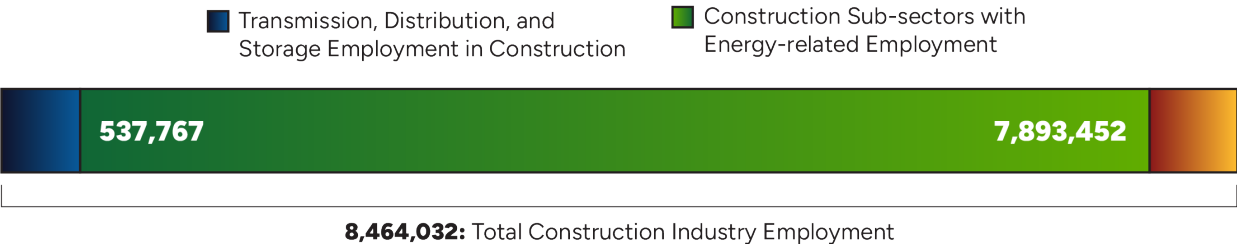


Figure 12. Construction Employment

Manufacturing

The Manufacturing jobs in Transmission, Distribution, and Storage are found in several energy-related detailed Manufacturing industries. These include bulk Manufacturing firms that assemble storage batteries, current-carrying wiring devices, air and gas compressors, sheet metal and other electrical and nonelectrical equipment or components. Of the nation’s nearly 12.8 million total Manufacturing jobs in 2024, more than 23% or more than 3 million were in energy-related industries that may support transmission-related infrastructure, and 2.9% of those, or approximately 85,675 workers, produced products for Transmission, Distribution, and Storage in 2024 (Figure 13).

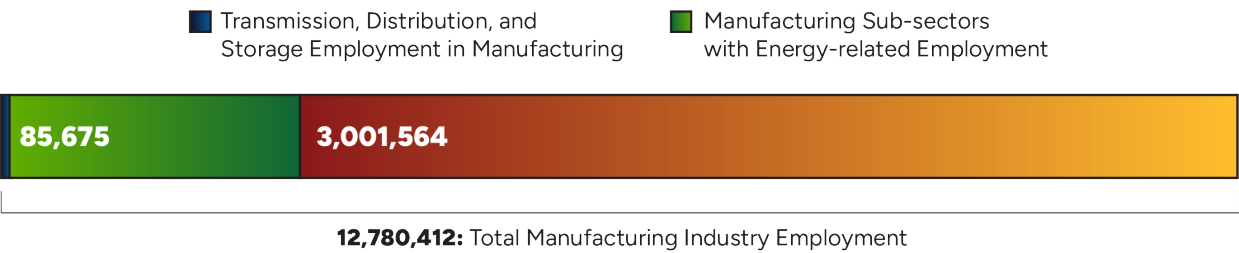


Figure 13. Manufacturing Employment

Wholesale Trade

Several industry codes used by BLS capture employment entirely dedicated to the transport of crude Oil, Natural Gas and other refined Petroleum products. About 124,300 jobs were included for 2024 by identifying proportional employment from energy-related commodity data for truck, rail, air, and water transport using the methodology from the first installment of the QER.<sup>22</sup> An additional 52,550 jobs identified by the survey are in detailed wholesale industries such as electrical equipment, wiring, appliance and electronics merchant wholesalers, while 57,047 were employed in Pipeline Transportation for crude Oil and Natural Gas. Together, fossil fuels transport and electrical equipment wholesalers employed nearly 234,000 Transmission, Distribution, and Storage workers in 2024 (Figure 14).<sup>23</sup>

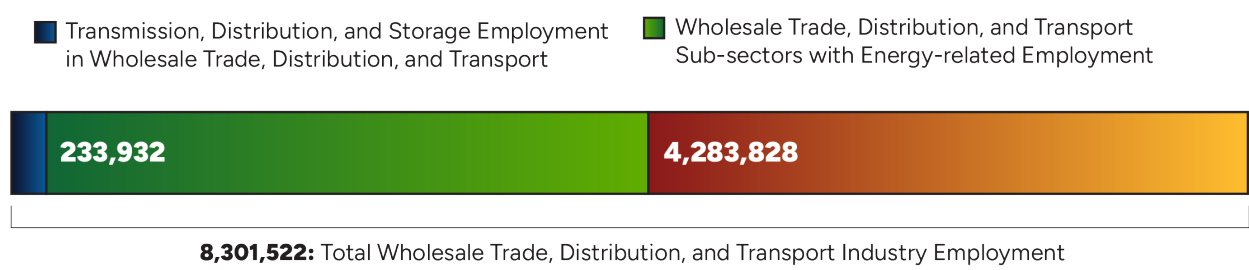


Figure 14. Wholesale Trade

<sup>22</sup> For the methodology, see this report’s Appendix A: Discussion of USEER Methodology.  
<sup>23</sup> This employment figure excludes raw material and component manufacturers; the limitations of a survey-based approach prevent accurate data collection for suppliers that are significantly upstream.

Professional and Business Services

A very small proportion (1.1%) of energy-related Professional and Business Services support Transmission, Distribution, and Storage infrastructure and technology. Of the 32 million workers in these detailed industry codes, the USEER identified about 147,461 who spent some of their time supporting these technologies in 2024 (Figure 15).

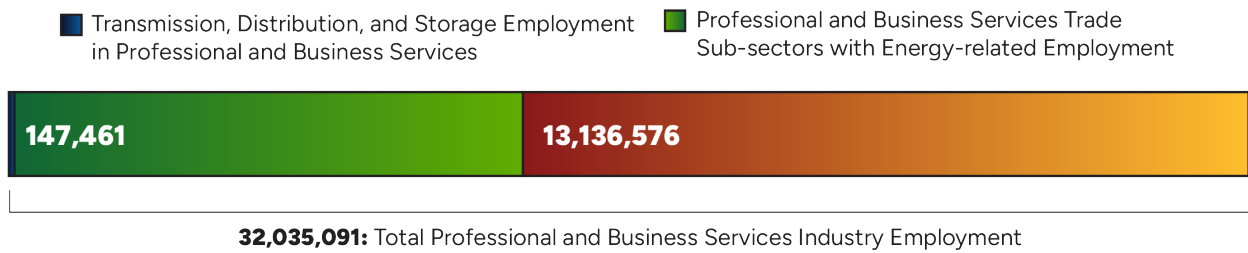


Figure 15. Professional and Business Services Employment

# Appendix H: Energy Efficiency Employment by Industry

## Construction

The majority of Energy Efficiency employment (54.5%) identified with USEER data was in Construction firms (1.298 million). Of the 8.46 million Construction workers in the U.S., about 15.3% worked in 2024 to support the Construction or installation of energy-efficient technologies (Figure 16).

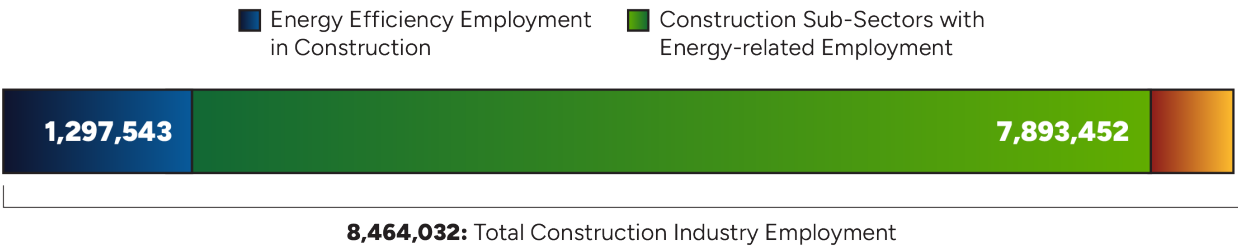


Figure 16. Construction Employment



Manufacturing

Manufacturing activity is a sizable portion of the U.S. Energy Efficiency sector (Figure 17). The jobs included in this section refer only to the manufacture of certified appliances or other products such as energy-efficient building and lighting services. They do not include process efficiency (e.g., manufacturers that produce goods using energy-efficient equipment, machinery, or processes). Of the 3,001,564 jobs found in relevant energy manufacturing subsectors in 2024 — such as lighting, household appliances or HVAC equipment manufacturing — about 327,716 workers manufactured energy-efficient products as defined in these appendices.

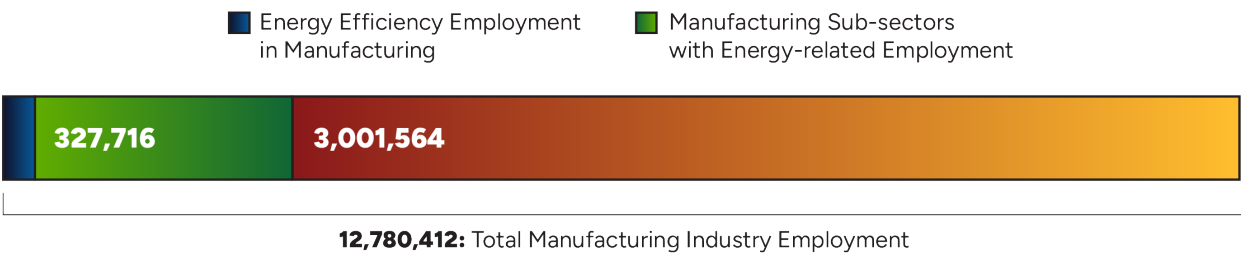


Figure 17. Manufacturing Employment

Wholesale Trade

Approximately 52% of the more than 8.3 million Wholesale Trade, Distribution and Transport jobs across the nation were in trade subsectors that support energy-related employment. Of these 4.28 million jobs, USEER survey data identified that about 4.9% of workers were engaged in efficiency-related work in 2023 (Figure 18).

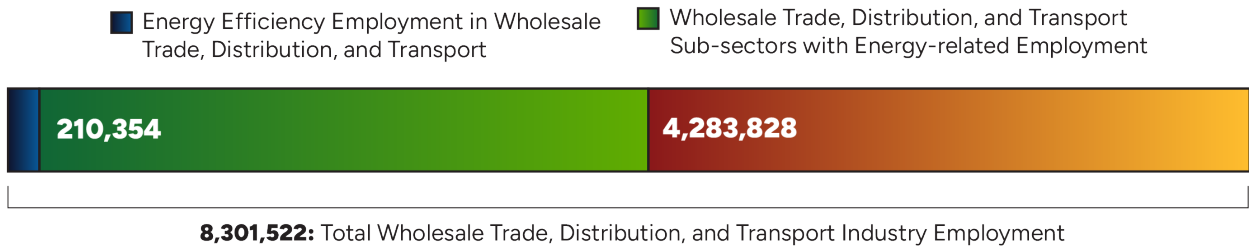


Figure 18. Wholesale Trade Employment

Professional and Business Services

Forty-one percent of Professional and Business Services jobs may have the capacity to support the energy industry through activities including software development, finance, management, and legal services. Of these detailed subsectors, USEER survey data identified 3.8% of employees, or 503,139, who worked to support energy-efficient products and services in 2024 (Figure 19).

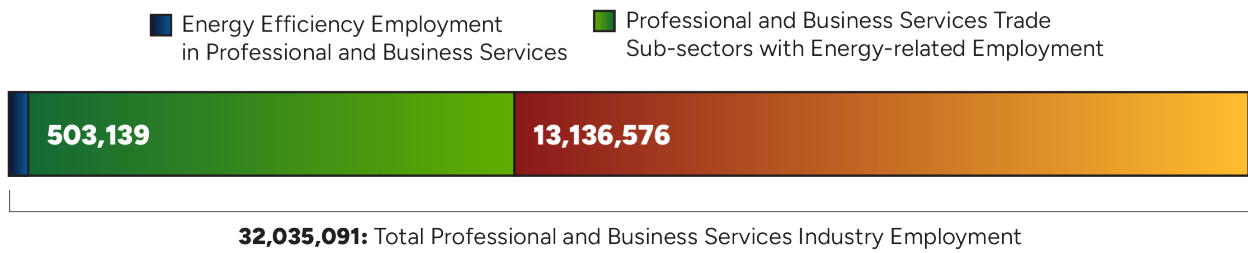
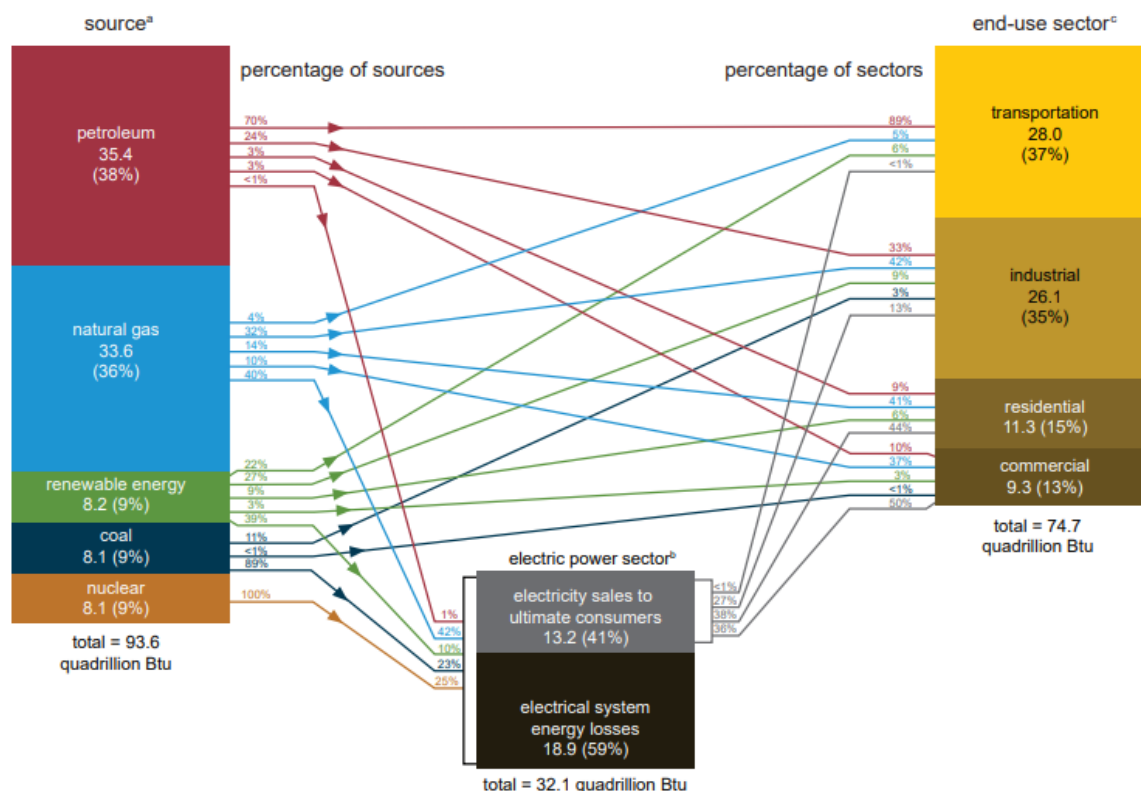


Figure 19. Professional and Business Services Employment

# Appendix I: Primary Energy Consumption by Source and Sector, 2023 (Quadrillion Btu)

## U.S. energy consumption by source and sector, 2023

quadrillion British thermal units (Btu)



Sources: U.S. Energy Information Administration (EIA), *Monthly Energy Review* (April 2024), Tables 1.3, 1.4c, and 2.1a-2.6.

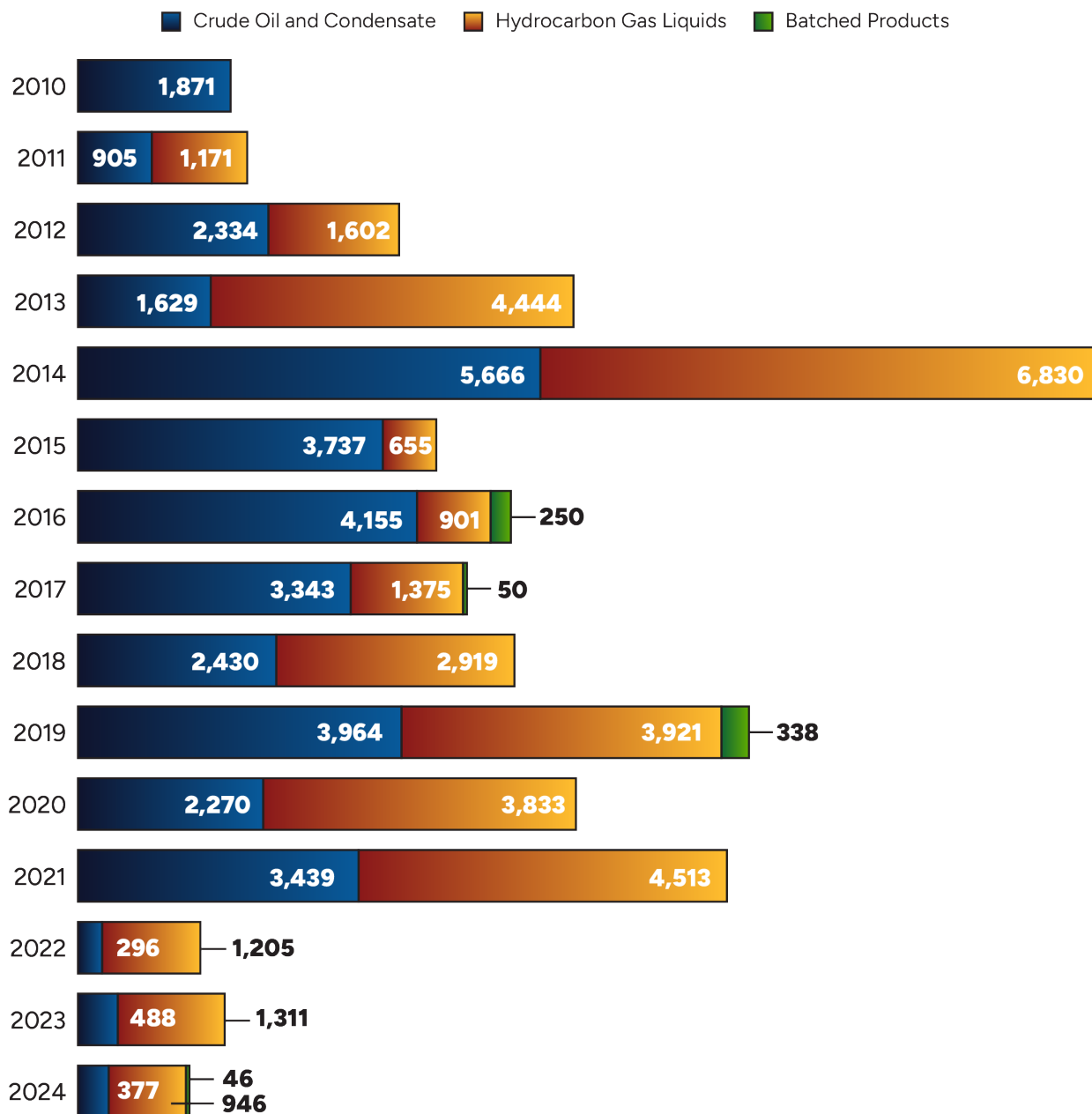
Note: Sum of components may not equal total due to independent rounding. All source and end-use sector consumption data include other energy losses from energy use, transformation, and distribution not separately identified. See "Extended Chart Notes" on next page.

<sup>a</sup> Primary energy consumption. Each energy source is measured in different physical units and converted to common British thermal units (Btu). See EIA's *Monthly Energy Review* (MER), Appendix A. Generation from noncombustible renewable energy sources are converted to Btu using the "Captured Energy Approach." See MER Appendix E.

<sup>b</sup> The electric power sector includes electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public. Energy consumed by these plants reflects the approximate heat rates for electricity in MER Appendix A. The total includes the heat content of are electricity net imports, not shown separately. Electrical system energy losses are calculated as primary energy consumed by the electric power sector minus the heat content of electricity sales to ultimate consumers. See Note 1, "Electrical System Energy Losses," at the end of MER Section 2.

<sup>c</sup> End-use sector consumption of primary energy and electricity sales to ultimate consumers, excluding electrical system energy losses. Industrial and commercial sectors consumption includes primary energy consumption by CHP and electricity-only plants contained within the sector.

## Appendix J: Completed Liquid Fuel Pipeline Miles, 2010-2024<sup>24</sup>



<sup>24</sup> Source: [https://www.eia.gov/petroleum/xls/EIA\\_LiqPipProject.xlsx](https://www.eia.gov/petroleum/xls/EIA_LiqPipProject.xlsx)

## Appendix K: Energy Sector, Sub Sector, and Industry Definitions

Pursuant to OMB Control Number 1910-5179, the United States Department of Energy conducted a national Energy and Jobs Survey about the energy, energy-related, and advanced manufacturing industries. The important survey addresses businesses that research, develop, manufacture, install or work with products that generate, distribute, or save energy. This includes organizations involved in fossil and renewable energy production, energy efficiency products and services, motor vehicles, solar, wind, fossil and other energy sources, and other energy related products and services.

Questions in the survey are directed at employers and their current workforce, except in the case where the survey asks about 12-month project employment totals.

### INDUSTRY DEFINITIONS<sup>25</sup>

1. Agriculture and Forestry – includes establishments that are primarily engaged in growing crops and harvesting timber from a farm or natural habitats.
2. Mining and Extraction – includes establishments that extract naturally occurring solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases such as natural gas.
3. Utilities – includes establishments engaged in the following utility services: electric power, natural gas, and steam supply. Specific activities associated with utility services vary by utility: electric power includes generation, transmission, and distribution; natural gas includes distribution; and steam supply includes provision and/or distribution.
4. Construction – includes establishments primarily engaged in the construction of buildings or engineering projects. Construction work done may include new work, additions, alterations, or maintenance and repairs.
5. Manufacturing – includes establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. Establishments in the industry are often described as plants, factories, or mills and use power-driven machines and material handling equipment.
6. Wholesale trade – includes establishments engaged in wholesaling merchandise, generally without transformation. Merchandise includes the outputs of agriculture, mining, and manufacturing.
7. Pipeline Transportation – includes establishments that operate and maintain transmission pipelines that transport products, such as crude oil, natural gas and refined petroleum products.
8. Professional and Business Services – includes establishments engaged in information (software, etc.), legal services, rental and leasing, finance, engineering,

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<sup>25</sup> Bureau of Labor Statistics and United States Census Bureau

research and development, architecture, management of companies and enterprises, etc.

9. Other Services – the Other Services industry includes establishments engaged in providing services not specifically provided for elsewhere in the classification system, such as equipment and machinery repair.

**SC & SD** — Which of the following sectors best describes your organization's work? [ALLOW MULTIPLE RESPONSES] [IF NEEDED: If your organization is involved in energy research or professional services for the industry, please select the options that are most relevant to your organization.]

1. Electric Power Generation - the process of generating electric power from other sources of primary energy whether connected to a distribution grid or not
2. Electric Power Transmission, Distribution, and Storage – stores electricity or carries electricity from suppliers to demand sites
3. Energy Efficiency, Including Heating, Cooling and Building Envelope (IF NEEDED THIS INCLUDES THERMAL OR HOT WATER SOLAR) - Goods and services that reduce electricity demand pursuant to EPA's Certified Standards or Department of Energy Efficiency Standards or 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
4. Fuel Production, including Fossil, Nuclear, and Renewable - substances that produces useful energy when they undergo a chemical or nuclear reaction
5. Transportation Vehicles, including Motor Vehicles - includes fossil and non-fossil fuel related rail, aircraft, vessels, and vehicles
6. Component Parts for Transportation Vehicles – parts for fossil and non-fossil fuel related rail, aircraft, vessels, and vehicles
7. Carbon Capture and Storage - the process of trapping carbon dioxide from industrial sources and storing it in such a way that it is unable to affect the atmosphere

**SE** — [ASK FOR EACH SCREENER C RESPONSE, EXCEPT SCREENER C = 7] Which of the following [INSERT SCREENER C RESPONSE] technologies is your organization directly engaged with?? [READ LIST, ALLOW MULTIPLE RESPONSES]

#### **A. Electric Power Generation**

1. Solar Photovoltaic Electric Generation - generating electrical power by converting solar radiation into direct current electricity using semiconductors that exhibit the photovoltaic effect.
2. Wind Generation - converting the wind's kinetic energy into electrical power
3. Geothermal Generation - using steam produced from reservoirs of hot water found a few miles or more below the Earth's surface to produce electricity.
4. Bioenergy/Biomass Generation - generating electricity from materials derived from biological sources or any organic material which has stored sunlight in the form of chemical energy.



5. Low-Impact Hydroelectric Generation including Wave/Kinetic Generation – similar to traditional, but certification criteria are aimed at ensuring that the certified dam adequately protects or mitigates its impacts in eight key resource areas: river flows, water quality, fish passage and protection, watersheds, threatened and endangered species, cultural resources, and public access and recreation opportunities. The eighth criterion requires that the dam not have been recommended for removal (LIHI – Low Impact Hydropower Institute).
6. Traditional Hydroelectric Generation - electricity generated by hydropower; the production of electrical power through the use of the gravitational force of falling or flowing water.
7. Marine and Hydrokinetic Generation - harnessing power from the natural movement of water, including waves, tides, and river and ocean currents
8. Advanced/Low Emission Natural Gas – efficient, low emission, leak free natural gas, including systems that use any of the following technologies High Efficiency Compressor, Advanced Low NOx Combustion Technology, First Application of Closed Loop Steam Cooling in an Industrial Gas Turbine, Advanced Turbine Blade and Vane Materials, High Temperature TBC and Abradable Coatings, Advanced Row 4 Turbine Blades, 3-D Aero Technology, Advanced Brush Seal.
9. Nuclear Generation - converting atomic energy into usable power.
10. Coal Generation – the burning of thermal coal to create electricity.
11. Oil and other Petroleum Generation - the burning of oil or other petroleum to create electricity.
12. Natural Gas Generation, other than Advanced Natural Gas Generation - the burning of natural gas to create electricity.
13. Combined Heat and Power - generating electricity and useful thermal energy in a single, integrated system. Heat that is normally wasted in conventional power generation is recovered as useful energy
14. Other Generation (specify) – any generation that is not captured in the categories listed previously or a category that is used when unable to split employment into a single category where employees spend “more of their time.”

## **B. Electric Power Transmission, Distribution, and Storage**

1. Traditional Transmission and Distribution - allow electricity to move across the country through infrastructure commonly referred to as “poles and wires.”
2. Electric Vehicle Charging Stations - Stations that charge vehicles which use one or more electric motors for propulsion with no onboard generator or non-electric motor.
3. Pumped Hydro Storage - hydroelectric energy storage used by electric power systems for load balancing. The method stores energy in the form of gravitational potential energy of water, pumped from a lower elevation reservoir to a higher elevation.
4. Battery Storage – using a cell or connected group of cells to convert chemical energy into electrical energy by reversible chemical reactions and that may be

- recharged by passing a current through it in the direction opposite to that of its discharge
5. Mechanical storage (flywheels, compressed air energy storage, etc.) - storing inputted energy through kinetic or gravitational forces.
  6. Thermal storage - heating or cooling a medium to store thermal energy.
  7. Liquefied natural gas storage - storing liquified natural gas in tanks.
  8. Compressed natural gas storage - storing compressed natural gas.
  9. Crude oil storage - storing crude oil in tanks.
  10. Refined petroleum fuels (liquid) - storing refined petroleum fuels in liquid form.
  11. Refined petroleum fuels (liquid) - storing refined petroleum fuels in gas form.
  12. Coal storage (piles, domes, etc.) - storing coal awaiting use or transportation.
  13. Biofuels - storing biofuels including ethanol and biodiesel.
  14. Nuclear fuel - storing spent nuclear fuel.
  15. Other Storage - any storage that is not captured in the categories listed previously or a category that is used when unable to split employment into a single category where employees spend "more of their time."
  16. Other gas fuel (Specify) - any gas fuel storage that is not captured in the categories listed previously or a category that is used when unable to split employment into a single gas fuel storage category where employees spend "more of their time."
  17. Other liquid fuel (Specify) - any liquid fuel storage that is not captured in the categories listed previously or a category that is used when unable to split employment into a single liquid fuel storage category where employees spend "more of their time."
  15. Smart Grid - an electricity supply network that uses digital communications technology to detect and react to local changes in usage.
  16. Micro Grids - a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid.
  17. Other Grid Modernization – other modernization of the Nation's electricity transmission and distribution system to maintain a reliable and secure electricity infrastructure that can meet future demand growth.
  18. Other (Specify)- any transmission, distribution, and storage that is not captured in the categories listed previously or a category that is used when unable to split employment into a single transmission, distribution, and storage category where employees spend "more of their time."

### **C. Energy Efficiency, Including Heating, Cooling and Building Envelope**

1. Certified Appliances – appliances that meet the international standard for energy efficient consumer products originated in the United States.
2. LED, CFL and Other Efficient Lighting – energy efficient lighting sources.

3. Traditional HVAC goods, control systems, and services - heating, ventilation, and air conditioning systems (HVAC), including building retro-commissioning and retrofits connected to heating and cooling.
4. Certified / High AFUE HVAC - HVAC that meets the international standard for energy efficient consumer products originated in the United States or has high Average Fuel Utilization Efficiency (AFUE) rating of 90 or greater or 15 SEER or greater.
5. Certified Air-Source Heat Pumps - air-source heat pumps that meet the international standard for energy efficient consumer products originated in the United States.
6. Certified Ground-source or geothermal heat pumps - heat pumps that use the earth's natural heat to provide heating and cooling, and meet the international standard for energy efficient consumer products originated in the United States.
7. Other high efficiency HVAC that are out of scope for certification (e.g. indirect evaporative coolers, air to water heat pumps, energy recovery systems, etc.)
8. Traditional HVAC goods, control systems, and services - include wall units, furnaces
9. Certified water heaters - water heaters, which can come with gas, solar, or electric heat pump technology, that meet the international standard for energy efficient consumer products originated in the United States.
10. Certified Electronics - electronic appliances such as TVs, Telephones, and Audio/Video devices that meet the international standard for energy efficient consumer products originated in the United States.
11. Certified Windows, Doors and Skylights - windows, doors, and skylights which meet the international standard for energy efficient consumer products originated in the United States.
12. Certified Roofing - certified roof products which reflect more of the sun's rays and decrease the amount of heat transferred into a building.
13. Certified Insulation - insulation products, including blankets, foam boards, and loose fill, which meet the international standard for energy efficient consumer products originated in the United States.
14. Air sealing - products that reduce the amount of air that leaks in and out of a building by sealing cracks and openings
15. Certified Commercial Food Service Equipment - Commercial kitchen equipment, including refrigerators, dishwashers, and ovens, which meet the international standard for energy efficient consumer products originated in the United States.
16. Certified Data Center Equipment - IT equipment, such as servers, uninterruptible power supplies, data storage, and network equipment, which meets the international standard for energy efficient consumer products originated in the United States.
17. Certified LED lighting - LED light bulbs which meet the international standard for energy efficient consumer products originated in the United States.
18. Other LED, CFL, and efficient lighting

19. Renewable Heating and Cooling (including Solar Thermal) - 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 (solar thermal - uses the sun's energy to generate thermal energy).
20. Advanced Building Materials/Insulation - all materials that represent advances in efficiency over the traditional materials.
21. Recycled building materials
22. Reduced water consumption products and appliances high efficiency (HE) washing machines, faucet aerators, low flow shower heads, etc.
23. Energy auditing services
24. 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."

#### D. Fuels

1. Coal - a combustible black or dark brown rock consisting mainly of carbonized plant matter, found mainly in underground deposits and widely used as fuel.
2. Petroleum - a liquid mixture of hydrocarbons that is present in certain rock strata and can be extracted and refined to produce fuels including gasoline, kerosene, and diesel oil; oil.
3. Natural Gas - flammable gas, consisting largely of methane and other hydrocarbons, occurring naturally underground (often in association with petroleum) and used as fuel.
4. Other Fossil Fuel - a natural fuel such as coal or gas, formed in the geological past from the remains of living organisms.
5. Corn Ethanol - ethanol produced from corn that is used as a biomass.
6. Renewable diesel - a fuel made from fats and oils, such as soybean oil or canola oil, that is processed to be chemically the same as petroleum diesel.
7. Biodiesel - a renewable fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant grease for use in diesel vehicles or any equipment that operates on diesel fuel.
8. Other Ethanol/Non-Woody Biomass Fuel, including Biodiesel – fuel made from other materials such as straw, manure, vegetable oil, animal fats, etc.
9. Woody Biomass/Cellulosic Biofuel – fuel developed from the by-product of management, restoration, and hazardous fuel reduction treatments, as well as the product of natural disasters, including trees and woody plants (limbs, tops, needles, leaves, and other woody parts, grown in a forest, woodland, or rangeland environment)
10. Other Biofuels – other fuel derived directly from living matter.
11. Nuclear Fuel - a substance that will sustain a fission chain reaction so that it can be used as a source of nuclear energy.

12. Other (Specify) - any fuel that is not captured in the categories listed previously or a category that is used when unable to split employment into a single fuel category where employees spend "more of their time."

#### **E. Transportation Vehicles, Including Motor Vehicles**

1. Gasoline and Diesel Motor Vehicles (excluding freight transport) – vehicles that run on gasoline and diesel internal combustion engines.
2. Hybrid Electric Vehicles - use two or more distinct types of power, such as internal combustion engine + electric motor.
3. Plug-In Hybrid Vehicles - a hybrid electric vehicle that uses two or more distinct types of power, such as internal combustion engine and an electric motor that is powered by rechargeable batteries, or another energy storage device, that can be recharged by plugging it in to an external source of electric power.
4. Electric Vehicles - a vehicle which uses one or more electric motors for propulsion with no onboard generator or non-electric motor.
5. Natural Gas Vehicles - an alternative fuel vehicle that uses compressed natural gas (CNG) or liquefied natural gas (LNG) as a cleaner alternative to other fossil fuels.
6. Hydrogen Vehicles - uses hydrogen as its onboard fuel for motive power.
7. Fuel Cell Vehicles - a type of hybrid vehicle which uses a fuel cell, instead of an engine, in combination with a storage device, such as a battery, to power its on-board electric motor.
8. Other - any motor vehicle technology that is not captured in the categories listed previously or a category that is used when unable to split employment into a single motor vehicle category where employees spend "more of their time."