

2019 Florida Energy & Employment Report

A JOINT PROJECT OF NASEO & EFI



Florida

ENERGY AND EMPLOYMENT REPORT — 2019

SUMMARY

The 2019 Florida Energy and Employment Report (FLEER) analyzes the following five sectors of the Florida economy:

- Fuels;
- Electric Power Generation;
- Transmission, Distribution and Storage;
- Energy Efficiency; and
- Motor Vehicles.

The first three of these sectors make up the Traditional Energy sector.¹

Based on a comprehensive analysis of employer data collected in the fourth quarter of 2018, the 2019 FLEER finds that the Traditional Energy and Energy Efficiency sectors in 2018 employed approximately 240,000 Floridians or 3.2 percent of a workforce of roughly 7.6 million. Employment in these sectors increased in 2018 by 3.4 percent from the previous year, adding 7,826 net new jobs, nearly 5 percent of all new jobs in the state.²

The Fuels sector employed 17,735, an increase of 280 or 1.6 percent in 2018.

- Petroleum fuels added the most jobs in the Fuels sector, with more than 1,100 new positions, an increase of 23 percent to 4,060 jobs.
- Natural gas provided the most Fuel sector jobs, 9,090, while declining by more than 1,670 jobs.
- Coal added almost 470 jobs, an increase of almost 145 percent.

The Electric Power Generation sector employed 52,290 workers in FL and grew by 0.7 percent, adding 350 jobs. Job losses in nuclear and coal generation were more than offset by gains in solar, natural gas, and wind. Florida was one of 28 states that added net jobs in Electric Power Generation in 2018.

- Solar energy firms employed 10,360 employees who spent the majority of their time on solar.³ The number of majority-time solar jobs in Florida increased by 1,770 or 20.6 percent.

¹ Industry employment in Florida was revised from the 2018 USEER due to availability of more granular data from EIA and BLS.

² Due to differing time frames for the USEER report, the reports on employment in 2015, 2017, and 2018 reference BLS second quarter employment data, whereas the report on 2016 report uses BLS first quarter employment data. Energy employment growth in the period between the second quarter of 2017 and the second quarter of 2018 represented 7 percent of all employment growth in the United States. Unless otherwise stated, all increases or decreases described in this report for 2018 (whether whole numbers or percentages) are relative to 2017.

³ The Solar Foundation 2018 Solar Jobs Census.

- There were more than 400 additional workers employed at wind energy firms across the state in 2018, an increase of 10 percent, for a total of 4,460 jobs.
- Bioenergy and Combined Heat and Power generation employs more than 5,220 workers in FL, a decline of more than 910 jobs.
- Advanced natural gas employment in Electric Power Generation increased by almost 750 jobs (7 percent), for a total of almost 11,490 jobs.
- Nuclear, coal, and conventional natural gas generation employment each declined by 200 jobs, 220 jobs, and 320 jobs, respectively.

Transmission, Distribution, and Storage employed more than 51,450 Floridians. Excluding retail trade (gasoline stations and fuel dealers), this represents an increase of 1,400 new jobs or nearly 3 percent, compared to a 2.6% increase nationally.

- Construction and utilities were the two strongest industries in the Transmission, Distribution, and Storage sector in Florida, making up more than 84 percent of the sector.

Energy Efficiency employed 118,400 Floridians, in whole or in part, in the design, installation, and manufacture of Energy Efficiency products and services, adding nearly 5,800 net jobs in 2018 (over 5 percent).

- Nearly 90,480 of Florida's Energy Efficiency jobs are in the construction industry, an increase of almost 4,430 jobs from 2017.
- Energy Efficiency professional services, wholesale trade, manufacturing, and other services all gained jobs, with professional services increasing by 510 jobs, wholesale trade increasing by almost 470 jobs, manufacturing increasing by 285 jobs, and other services increasing by more than 100 jobs.
- Over 5,800 Floridians are now employed in manufacturing jobs, producing ENERGY STAR certified products and energy efficient building materials.

Motor Vehicles (including component parts) employed more than 89,760 workers, excluding automobile dealerships and retailers, adding more than 2,500 jobs in 2018 in Florida, an increase of almost 3 percent.

- The repair and maintenance sector provides the largest share of this employment, making up nearly two thirds of the sector.
- Alternative fuels' vehicles, including electric, plug-in hybrids, hybrids, natural gas, and hydrogen/fuel cells, now employ 9,360 Floridians, roughly 10% of all Motor Vehicles' jobs.

Hiring and Demographics

Overall, Traditional Energy firms in Florida anticipate 6.1 percent employment growth for 2019, compared to 4.1 percent nationally.

- Energy Efficiency employers project the highest growth rate over 2019 (8.7 percent),
- Transmission, Distribution, and Storage (3.8 percent),
- Electric Power Generation (3.5 percent),
- Fuels (3.3 percent),
- Motor Vehicles sector (2.5 percent).

Hiring difficulty exceeded the national average in Florida in Electric Power Generation, Transmission, Distribution and Storage, and Energy Efficiency. 44, 38, and 56 percent respectively of these employers reported it was very difficult to hire new employees.

- 84.6 percent of Energy Efficiency employers reported that it was very difficult or somewhat difficult to hire new employees. Energy Efficiency employers also predicted the highest anticipated growth of all sectors.

Demographically, the surveyed sectors fluctuate above and below national averages.

- Women are a smaller portion of the workforce in these sectors, ranging from 19 percent to 35 percent, compared to the overall Florida economy, where women make up 50 percent of the workforce.
- A majority of these energy sectors saw increased self-identification of employees belonging to “2 or more races,” surpassing Florida’s workforce average.
- All sectors reported Black or African American workers as underrepresented compared to Florida’s workforce average, and Hispanic or Latino workers were underrepresented in all sectors but Electric Power Generation.
- Veterans comprise from 9 to 11 percent of these sectors—higher than the Florida average of 7 percent.
- Between 14 percent and 21 percent of this workforce is 55 years of age or older, compared to the Florida average of 23 percent.
- The unionization rates for Electric Power Generation, TDS, Energy Efficiency, and Motor Vehicles are all above the Florida private sector rate of 6%, while Fuels is at 3%

Wages

- The wage survey, conducted across 216 occupations in the Traditional Energy and Energy Efficiency sectors, showed that in only 20% of those occupations Florida wages exceeded the national average.
- The highest wage differentials are paid for gas compressor and gas pumping station operators, chief executives, and dredge operators.
- The majority of those occupations that paid less than the national median were in engineering positions and other managerial positions.

Conclusion

2018 marked another year in the evolution of Florida's energy system, one in which market forces, technology development and maturation, tax policy, and declining federal regulation (countered by increased regulation in some states) affected the changing profile of our energy workforce. In spite of one of the highest levels of employment in recent FL history, the traditional energy and energy efficiency sectors continued to outperform the FL economy as a whole, adding nearly 7,830 new jobs, almost 5 percent of the 2018 increase.

Similar to the national energy workforce, Florida added jobs in advanced natural gas and wind generation while losing jobs in coal and nuclear generation. However, bucking the national trend, FL lost jobs in conventional natural gas generation and added jobs in solar generation. While the national solar industry lost 8,000 majority-time jobs, Florida gained nearly 1,770.

Florida added over 280 fuels' jobs, primarily in the wholesale trade and professional and business services sectors.

Florida's Transmission, Distribution and Storage workforce grew 3%, more than the national average which jumped 2.6% in 2018, reflecting increased investments in energy infrastructure.

Energy Efficiency employment continued its steady growth, even in a high employment environment, challenged by the toughest hiring climate found in the USEER survey. In the past year, Florida has added more than 5,800 energy efficiency jobs. Almost 4,430 of these were in the production, installation, and servicing of Energy Star products, efficient lighting, and high efficiency HVAC systems.

CHAPTER 1 — FUELS

Fuels employment encompasses work related to fuel extraction, mining, and processing, including petroleum refineries and firms that support coal mining, oil, and gas field machinery manufacturing. Workers across both the forestry and agriculture sectors who support fuel production with corn ethanol, biodiesels, and fuel wood are also included in the fuel employment data.

OVERVIEW

The Fuels sector employed 17,735 workers in 2018, compared to the previous year's level of 17,450 workers. This represents a jump in employment of almost 2 percent. As shown in Figure 1, wholesale trade jobs comprised nearly 54 percent of the Florida Fuels sector, while professional and business services jobs made up 31 percent of Fuels employment in 2018. When analyzed by subtechnology in Figure 2, natural gas jobs represented over 51 percent of Florida Fuels employment in 2018.

Wholesale trade employment increased by more than 150 jobs in 2018, while professional and business services employment added nearly 90 new jobs in 2018. As shown in Figure 2, the 2019 FLEER found large increases in 2018 for petroleum production jobs (more than 1,100 additional jobs, for a total of more than 4,000 jobs), and large declines in natural gas jobs (nearly 1,700 jobs dropped, for a total of more than 9,000 jobs).

Figure 1.
Fuels Employment by Industry, 2017-181

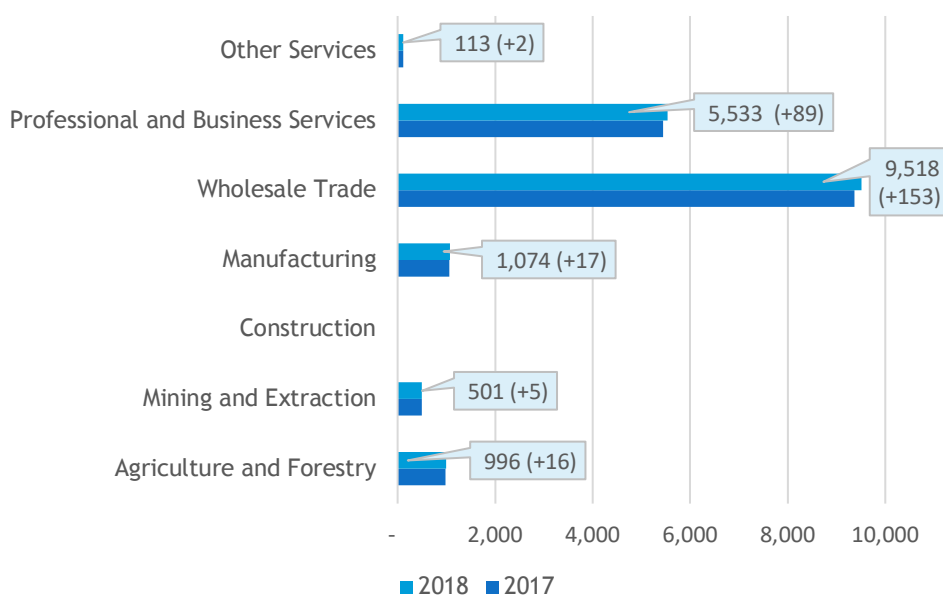
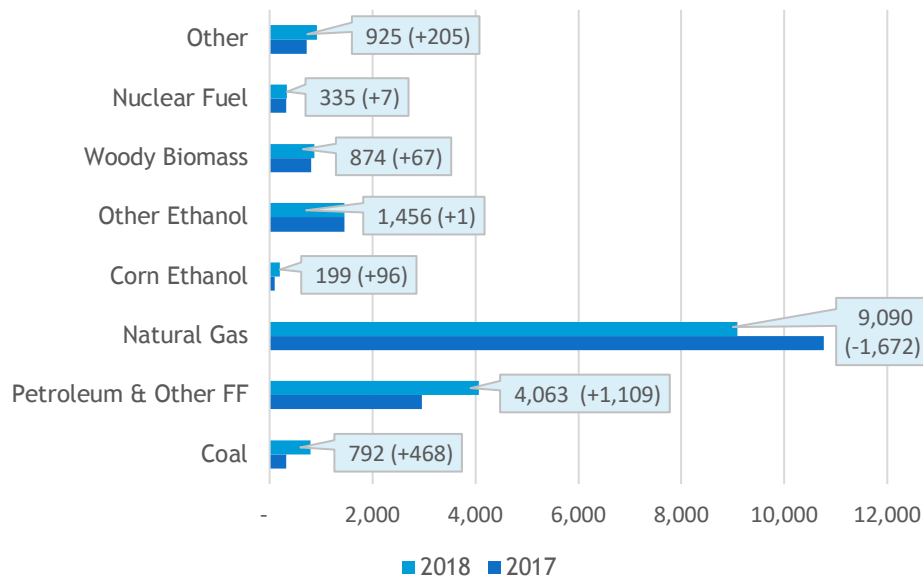
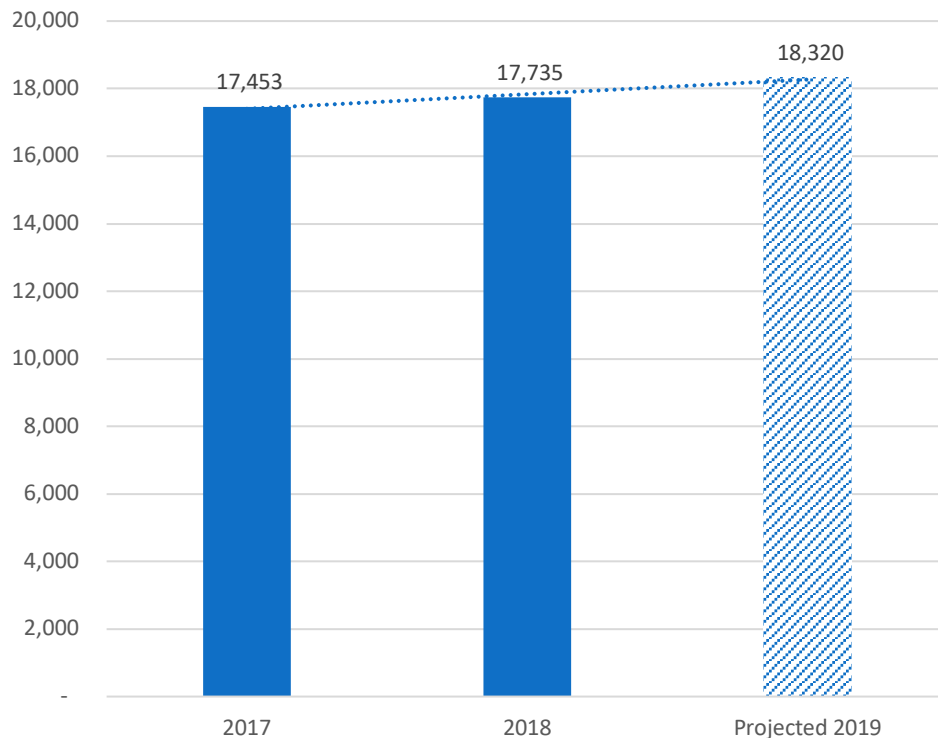


Figure 2.
Fuels Employment by Detailed Technology Application, 2017-2018



Employers in the Fuels sector expect to see employment increase by more than 3 percent in 2019, adding almost 600 new jobs for a total of 18,320 jobs.

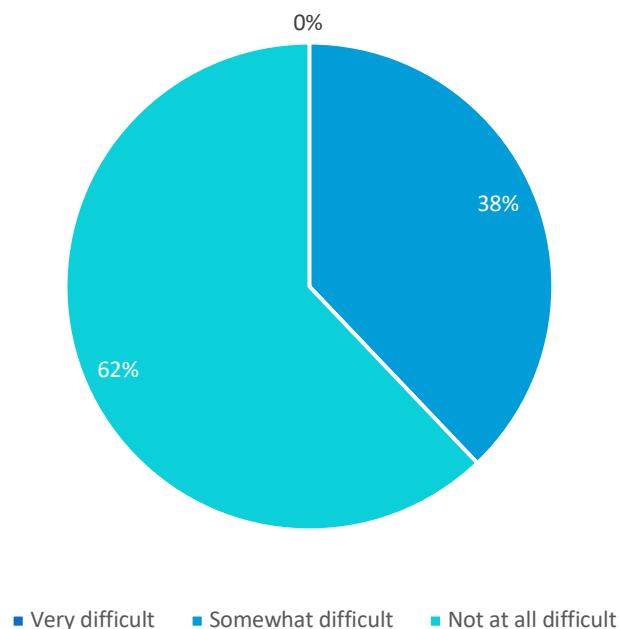
Figure 34.
Fuels Employment Growth, 2017-2019 Projected



HIRING DIFFICULTY

Of the Fuels companies in Florida that hired in 2018, 38 percent found hiring to be somewhat difficult, and 62 percent found hiring to be not at all difficult.

Figure 45.
Fuels Hiring Difficulty



The following table outlines the median hourly wages for different occupations in Florida's Fuels sector.

Figure 5.
Fuels Sector Occupations, Median Hourly Earnings

Description	US Median Wage	FL Median Wage
Chief Executives	\$ 88.11	\$ 88.46
Petroleum Engineers	\$ 63.60	\$ 48.70
General and Operations Managers	\$ 48.27	\$ 48.46
Gas Compressor and Gas Pumping Station Operators	\$ 30.20	\$ 40.60
Engineers, All Other	\$ 46.75	\$ 39.78
Accountants and Auditors	\$ 33.34	\$ 35.10
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$ 37.90	\$ 32.37
Construction Managers	\$ 43.93	\$ 31.72
Business Operations Specialists, All Other	\$ 33.66	\$ 30.04
Dredge Operators	\$ 20.78	\$ 27.93

First-Line Supervisors of Production and Operating Workers	\$ 28.31	\$ 27.81
Engineering Technicians, Except Drafters, All Other	\$ 29.92	\$ 26.24
Boilermakers	\$ 29.93	\$ 24.58
Control and Valve Installers and Repairers, Except Mechanical Door	\$ 26.85	\$ 24.04
Production, Planning, and Expediting Clerks	\$ 22.44	\$ 23.22
Industrial Machinery Mechanics	\$ 24.69	\$ 22.10
Electricians	\$ 26.01	\$ 21.36
Drafters, All Other	\$ 24.18	\$ 21.21
Structural Iron and Steel Workers	\$ 25.30	\$ 20.78
Plumbers, Pipefitters, and Steamfitters	\$ 25.28	\$ 20.76
Rotary Drill Operators, Oil and Gas	\$ 25.95	\$ 20.37
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$ 22.64	\$ 20.27
Brickmasons and Blockmasons	\$ 23.93	\$ 19.65
Heavy and Tractor-Trailer Truck Drivers	\$ 20.42	\$ 19.62
Material Moving Workers, All Other	\$ 14.23	\$ 19.13
Sheet Metal Workers	\$ 23.07	\$ 18.95
Derrick Operators, Oil and Gas	\$ 22.18	\$ 18.90
Bookkeeping, Accounting, and Auditing Clerks	\$ 18.87	\$ 18.81
Operating Engineers and Other Construction Equipment Operators	\$ 22.61	\$ 18.57
Welders, Cutters, Solderers, and Brazers	\$ 19.35	\$ 18.52
Surveying and Mapping Technicians	\$ 20.84	\$ 18.28
Insulation Workers, Mechanical	\$ 21.90	\$ 17.99
Carpenters	\$ 21.71	\$ 17.83
Laborers and Freight, Stock, and Material Movers, Hand	\$ 13.00	\$ 17.48
Drywall and Ceiling Tile Installers	\$ 20.60	\$ 16.92
Installation, Maintenance, and Repair Workers, All Other	\$ 18.65	\$ 16.70
Metal Workers and Plastic Workers, All Other	\$ 17.22	\$ 16.48
Maintenance and Repair Workers, General	\$ 18.11	\$ 16.21
Helpers—Electricians	\$ 14.68	\$ 15.54
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$ 17.11	\$ 15.46
Roofers	\$ 18.74	\$ 15.39
Assemblers and Fabricators, All Other, Including Team Assemblers	\$ 14.75	\$ 15.26
Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$ 14.37	\$ 15.21
Helpers--Carpenters	\$ 14.35	\$ 15.19
Pipelayers	\$ 18.46	\$ 15.16
Roustabouts, Oil and Gas	\$ 17.77	\$ 15.08

Insulation Workers, Floor, Ceiling, and Wall	\$ 17.81	\$ 14.63
Construction Laborers	\$ 16.60	\$ 13.63
Helpers—Installation, Maintenance, and Repair Workers	\$ 13.70	\$ 12.26
Driver/Sales Workers	\$ 11.56	\$ 11.11

Workforce Characteristics

In 2018, the Fuels sector employed fewer women, Hispanic or Latino workers, and Black or African American workers than the Florida workforce average. Union workers represented 3 percent of Florida's Fuels industry in 2018, half of the Florida private sector average. Veteran employment exceeded the Florida workforce average.

Fuels Sector – Demographics, Q4 2018

	Fuels	Florida Workforce Averages	National Workforce Averages
Male	73%	50%	53%
Female	27%	50%	47%
Hispanic or Latino	16%	23%	17%
Not Hispanic or Latino	70%	77%	83%
American Indian or Alaska Native	1%	>1%	1%
Asian	5%	4%	6%
Black or African American	5%	21%	12%
Native Hawaiian or other Pacific Islander	1%	>1%	>1%
White	80%	72%	78%
Two or more races	8%	2%	2%
Veterans	9%	7%	6%
55 and over	20%	23%	23%
Union (private sector)	3%	6%	6%

Source: EMSI and Bureau of Labor Statistics 2018

CHAPTER 2 — ELECTRIC POWER GENERATION

Electric Power Generation (EPG) covers all utility and non-utility employment across electric generating technologies, including fossil fuels, nuclear, and renewable energy technologies. Also included in the employment totals are any firms engaged in facility construction, turbine and other generation equipment manufacturing, and wholesale parts distribution for all electric generation technologies.

OVERVIEW

The Electric Power Generation sector employed 52,290 workers in 2018, compared to the previous year's level of 51,940 workers. This represents a jump in employment of almost 1 percent. Construction jobs comprised more than 52 percent of the Florida EPG sector, while utilities jobs made up 22 percent of EPG employment in 2018. Majority-time solar jobs represented almost 20 percent of Florida EPG employment in 2018, and advanced natural gas jobs represented 22 percent.

Utilities employment increased by more than 460 jobs in 2018, while other industries remained relatively stable. As shown in Figure 7, the 2019 FLEER found large increases in 2018 for majority-time solar jobs (nearly 1,770 additional jobs, for a total of 10,360 jobs) and other jobs (nearly 1,100 additional jobs, for a total of 7,570 jobs).

Figure 6.
EPG Employment by Industry, 2017-18

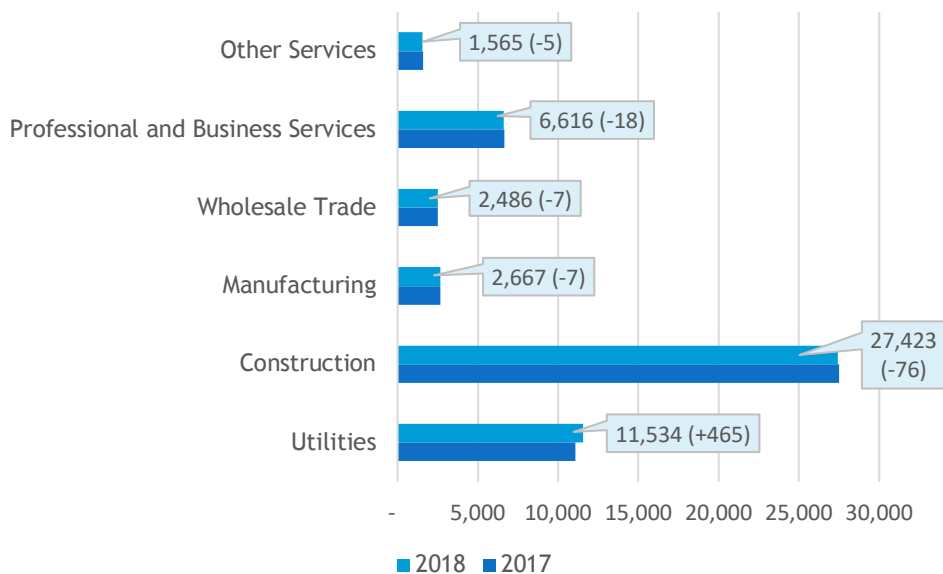
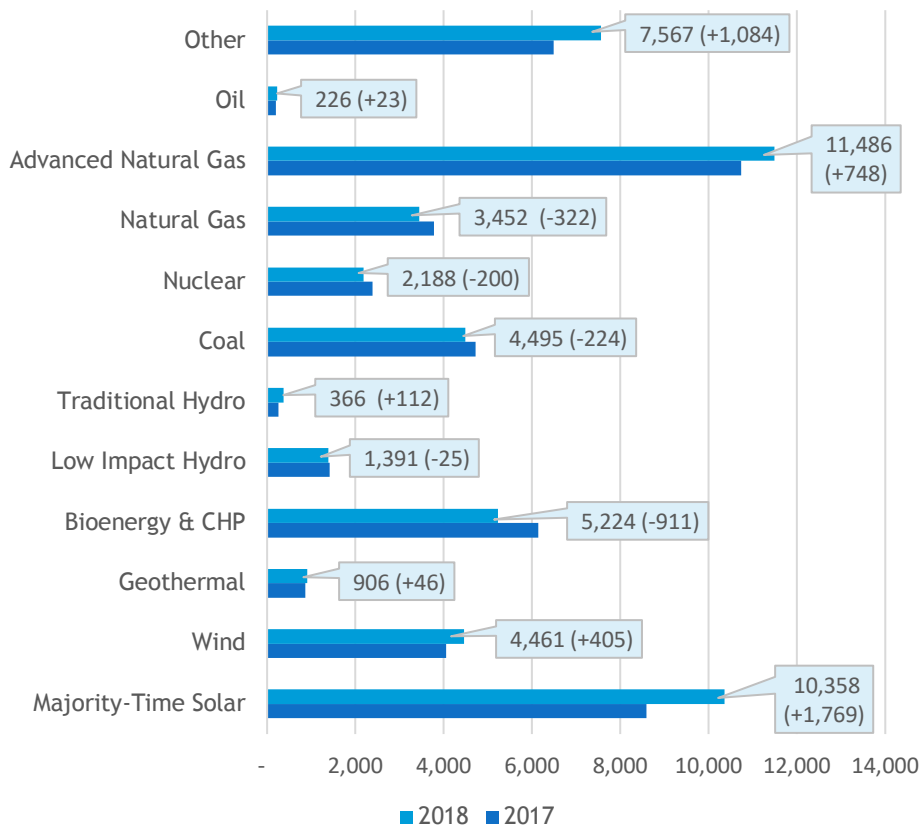
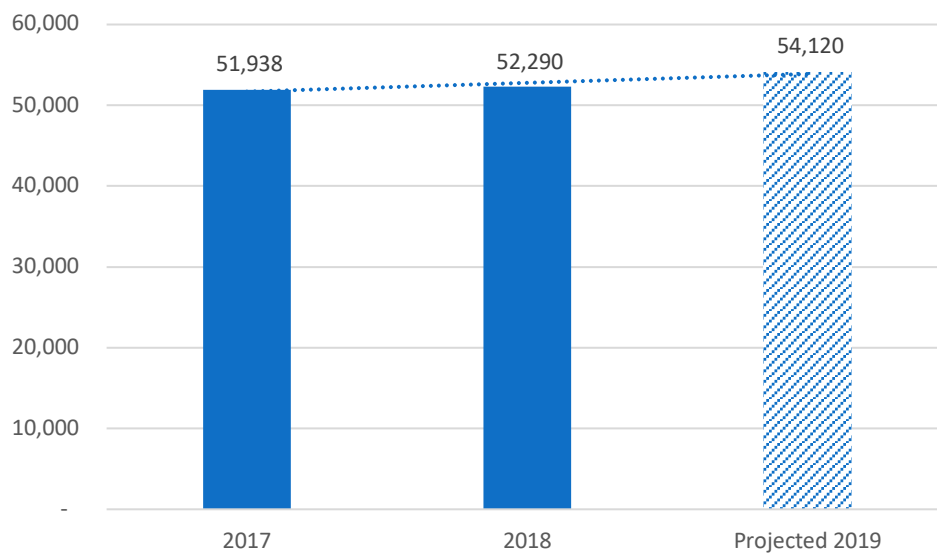


Figure 7.
EPG Employment by Detailed Technology Application, 2017-1889



Employers in the EPG sector expect to see employment increase by almost 4 percent in 2019, adding more than 1,830 new jobs.

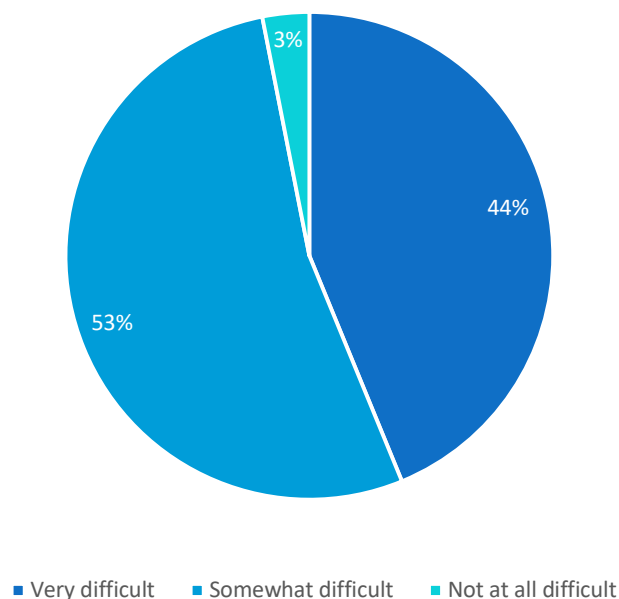
Figure 810.
EPG Employment Growth, 2017-2019 Projected



HIRING DIFFICULTY

Of the EPG companies in Florida that hired in 2018, 44 percent found hiring to be very difficult, while 53 percent found it to be somewhat difficult. Only 3 percent of firms did not find hiring to be difficult at all.

Figure 911.
EPG Hiring Difficulty



The following table outlines the median hourly wages for different occupation in Florida's EPG sector.

Figure 10.
EPG Sector Occupations, Median Hourly Earnings

Description	US Median Wage	FL Median Wage
Chief Executives	\$ 88.11	\$ 94.60
General and Operations Managers	\$ 48.27	\$ 51.83
Petroleum Engineers	\$ 63.60	\$ 48.70
Engineers, All Other	\$ 46.75	\$ 41.83
Accountants and Auditors	\$ 33.34	\$ 36.80
Power Distributors and Dispatchers	\$ 39.67	\$ 35.93
Power Plant Operators	\$ 37.10	\$ 35.68
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$ 37.70	\$ 34.51
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$ 37.90	\$ 33.86
Construction Managers	\$ 43.93	\$ 33.73
Business Operations Specialists, All Other	\$ 33.66	\$ 32.26

Information Security Analysts	\$ 45.92	\$ 32.17
First-Line Supervisors of Mechanics, Installers, and Repairers	\$ 31.15	\$ 30.38
Computer Occupations, All Other	\$ 42.56	\$ 29.81
Gas Compressor and Gas Pumping Station Operators	\$ 30.20	\$ 28.74
Gas Plant Operators	\$ 33.19	\$ 28.67
First-Line Supervisors of Production and Operating Workers	\$ 28.31	\$ 28.27
Engineering Technicians, Except Drafters, All Other	\$ 29.92	\$ 27.30
Electrical Power-Line Installers and Repairers	\$ 33.36	\$ 26.07
Boilermakers	\$ 29.93	\$ 25.47
Control and Valve Installers and Repairers, Except Mechanical Door	\$ 26.85	\$ 24.74
Plant and System Operators, All Other	\$ 27.08	\$ 24.53
Wind Turbine Service Technicians	\$ 25.91	\$ 24.04
Production, Planning, and Expediting Clerks	\$ 22.44	\$ 23.63
Mobile Heavy Equipment Mechanics, Except Engines	\$ 24.45	\$ 23.13
Industrial Machinery Mechanics	\$ 24.69	\$ 22.75
Electricians	\$ 26.01	\$ 22.14
Drafters, All Other	\$ 24.18	\$ 22.07
Structural Iron and Steel Workers	\$ 25.30	\$ 21.53
Plumbers, Pipefitters, and Steamfitters	\$ 25.28	\$ 21.52
Bus and Truck Mechanics and Diesel Engine Specialists	\$ 22.29	\$ 21.08
Bookkeeping, Accounting, and Auditing Clerks	\$ 18.87	\$ 21.04
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$ 22.64	\$ 20.86
Brickmasons and Blockmasons	\$ 23.93	\$ 20.37
Dredge Operators	\$ 20.78	\$ 19.78
Sheet Metal Workers	\$ 23.07	\$ 19.64
Operating Engineers and Other Construction Equipment Operators	\$ 22.61	\$ 19.24
Automotive Body and Related Repairers	\$ 20.18	\$ 19.09
Surveying and Mapping Technicians	\$ 20.84	\$ 19.02
Insulation Workers, Mechanical	\$ 21.90	\$ 18.64
Miscellaneous Construction and Related Workers	\$ 20.40	\$ 18.54
Carpenters	\$ 21.71	\$ 18.48
Welders, Cutters, Solderers, and Brazers	\$ 19.35	\$ 18.04
Automotive Service Technicians and Mechanics	\$ 19.02	\$ 17.99
Drywall and Ceiling Tile Installers	\$ 20.60	\$ 17.53
Installation, Maintenance, and Repair Workers, All Other	\$ 18.65	\$ 17.18
Maintenance and Repair Workers, General	\$ 18.11	\$ 16.69

Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$ 17.11	\$ 16.49
Metal Workers and Plastic Workers, All Other	\$ 17.22	\$ 16.05
Roofers	\$ 18.74	\$ 15.95
Assemblers and Fabricators, All Other, Including Team Assemblers	\$ 14.75	\$ 15.75
Pipelayers	\$ 18.46	\$ 15.71
Helpers--Electricians	\$ 14.68	\$ 15.54
Solar Photovoltaic Installers	\$ 18.98	\$ 15.22
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$ 14.37	\$ 15.21
Helpers--Carpenters	\$ 14.35	\$ 15.19
Insulation Workers, Floor, Ceiling, and Wall	\$ 17.81	\$ 15.16
Meter Readers, Utilities	\$ 18.86	\$ 15.10
Fence Erectors	\$ 16.02	\$ 14.56
Production Workers, All Other	\$ 13.89	\$ 14.23
Construction Laborers	\$ 16.60	\$ 14.13
Material Moving Workers, All Other	\$ 14.23	\$ 13.54
Helpers--Installation, Maintenance, and Repair Workers	\$ 13.70	\$ 12.62
Laborers and Freight, Stock, and Material Movers, Hand	\$ 13.00	\$ 12.37

Workforce Characteristics

In 2018, the EPG sector employed fewer women and Black or African American workers than the Florida workforce average. However, the EPG sector employs more Hispanic or Latino workers, Asian workers, and workers of two or more races than the Florida workforce averages. Union workers made up 10 percent of Florida's EPG sector in 2018, 4 percentage points higher than the Florida private sector unionization rate. Workers 55 and older were underrepresented in the EPG sector compared to the workforce average.

EPG Sector — Demographics, Q4 2018

	EPG	Florida Workforce Averages	National Workforce Averages
Male	65%	50%	53%
Female	35%	50%	47%
Hispanic or Latino	24%	23%	17%
Not Hispanic or Latino	76%	77%	83%
American Indian or Alaska Native	1%	>1%	1%
Asian	9%	4%	6%
Black or African American	7%	21%	12%
Native Hawaiian or other Pacific Islander	1%	>1%	>1%
White	59%	72%	78%
Two or more races	22%	2%	2%
Veterans	9%	7%	6%
55 and over	14%	23%	23%
Union (private sector)	10%	6%	6%

Source: EMSI and Bureau of Labor Statistics 2018

CHAPTER 3 — TRANSMISSION, DISTRIBUTION AND STORAGE

Transmission, Distribution, and Storage encompasses the employment associated with constructing, operating, and maintaining this energy infrastructure. It includes workers associated with the entire network of power lines that transmit electricity from generating stations to customers, as well as activities that support power and pipeline construction, fuel distribution and transport, and the manufacture of electrical transmission equipment. However, similar to the USEER, the FLEER does not include gas station employment in this analysis.

OVERVIEW

The Transmission, Distribution, and Storage sector employed nearly 51,450 workers in 2018, compared to the previous year's level of 50,050 workers. This represents an almost 3 percent increase in employment, adding nearly 1,400 jobs over 2018.

As shown in Figure 11, construction jobs comprised more than 55 percent of the Florida TDS sector, while utilities jobs made up nearly 29 percent of TDS employment in 2018. Traditional TDS jobs which include the manufacture, construction, repair and operation of traditional electrical, natural gas, and petroleum transmission and distribution systems represented 81 percent of Florida EPG employment in 2018.

Construction employment increased by nearly 840 jobs (nearly 3 percent) in 2018, while utilities increased by almost 390 jobs. As shown in Figure 12, the 2019 FLEER found large increases in 2018 for Traditional TDS jobs (more than 1,440 additional jobs, for a total of nearly 41,800 jobs), and Micro Grid jobs (600 additional jobs, for a total of almost 1,770 jobs).

Figure 11.
TDS Employment by Industry, 2017-18

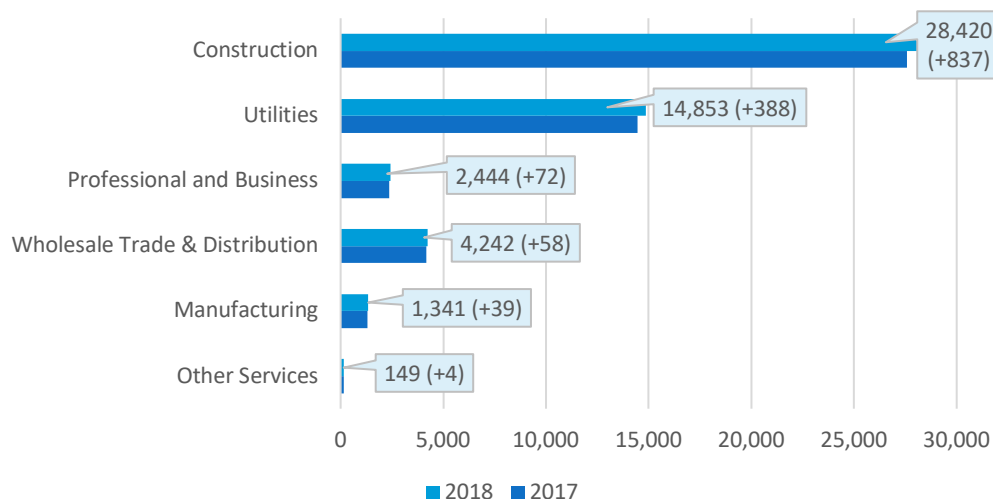
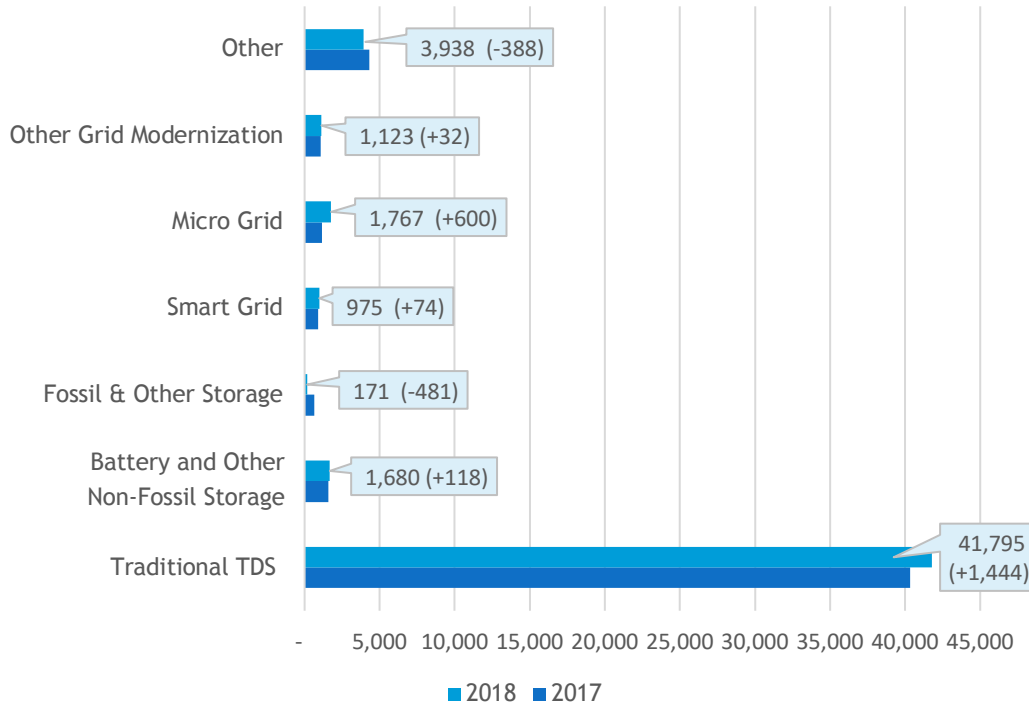
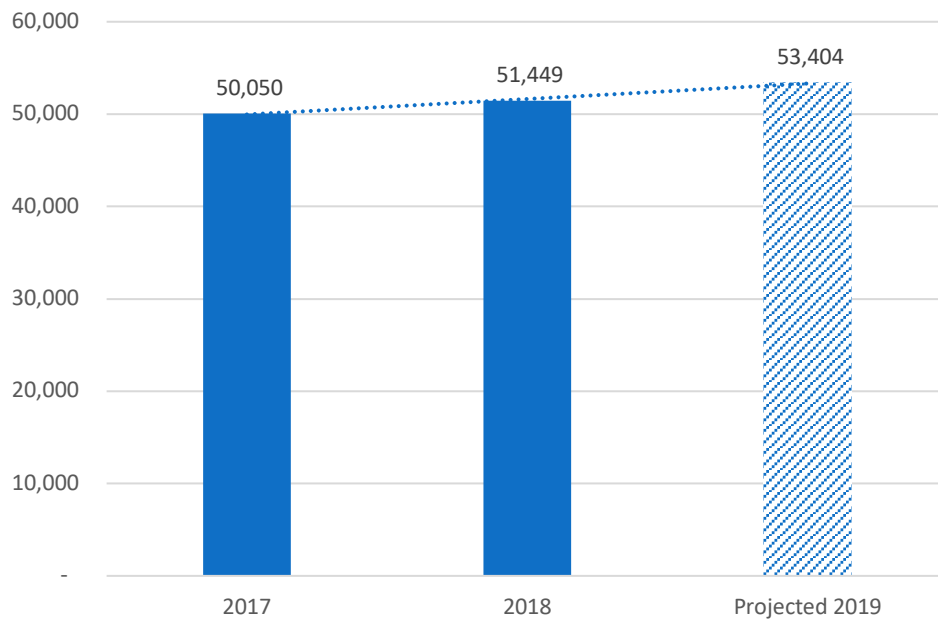


Figure 12.**TDS Employment by Detailed Technology Application, 2017-2018**

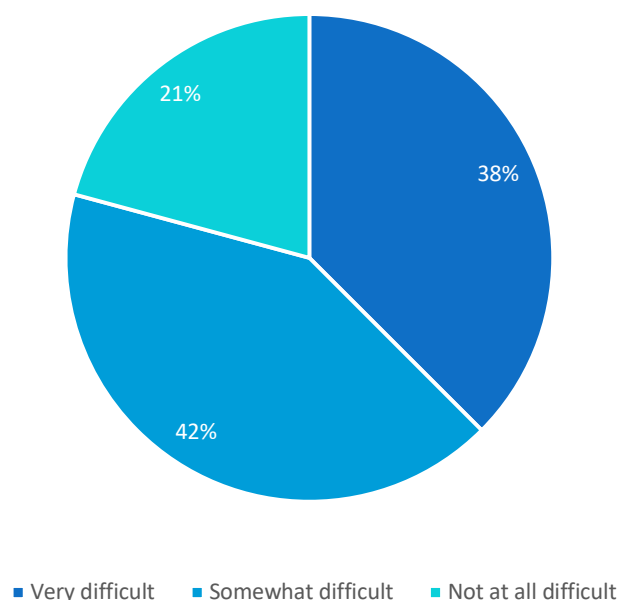
Employers in the TDS sector expect to see employment increase by nearly 4 percent in 2019, adding more than 1,950 new jobs.

Figure 1315.**TDS Employment Growth, 2017-2019 Projected**

HIRING DIFFICULTY

Of the TDS companies in Florida that hired in 2018, 38 percent found hiring to be very difficult, 42 percent found it to be somewhat difficult, and 21 percent did not find hiring to be difficult at all.

Figure 1416.
TDS Hiring Difficulty



The following table outlines the median hourly wages for different occupation in Florida's TDS sector.

Figure 15.
TDS Sector Occupations, Median Hourly Earnings

Description	US Median Wage	FL Median Wage
Chief Executives	\$ 88.11	\$ 96.08
General and Operations Managers	\$ 48.27	\$ 52.64
Petroleum Engineers	\$ 63.60	\$ 48.70
Construction Managers	\$ 43.93	\$ 39.74
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	\$ 37.70	\$ 37.47
Power Plant Operators	\$ 37.10	\$ 35.68
Power Distributors and Dispatchers	\$ 39.67	\$ 35.40
Accountants and Auditors	\$ 33.34	\$ 32.14
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$ 37.90	\$ 31.48

Gas Compressor and Gas Pumping Station Operators	\$ 30.20	\$ 30.72
Gas Plant Operators	\$ 33.19	\$ 28.67
Mobile Heavy Equipment Mechanics, Except Engines	\$ 24.45	\$ 27.42
First-Line Supervisors of Mechanics, Installers, and Repairers	\$ 31.15	\$ 26.64
Boilermakers	\$ 29.93	\$ 26.56
Electrical Power-Line Installers and Repairers	\$ 33.36	\$ 26.07
First-Line Supervisors of Production and Operating Workers	\$ 28.31	\$ 26.03
Bus and Truck Mechanics and Diesel Engine Specialists	\$ 22.29	\$ 25.00
Control and Valve Installers and Repairers, Except Mechanical Door	\$ 26.85	\$ 24.93
Plant and System Operators, All Other	\$ 27.08	\$ 24.17
Electricians	\$ 26.01	\$ 23.08
Industrial Machinery Mechanics	\$ 24.69	\$ 22.92
Automotive Body and Related Repairers	\$ 20.18	\$ 22.63
Structural Iron and Steel Workers	\$ 25.30	\$ 22.45
Plumbers, Pipefitters, and Steamfitters	\$ 25.28	\$ 22.43
Welders, Cutters, Solderers, and Brazers	\$ 19.35	\$ 21.94
Production, Planning, and Expediting Clerks	\$ 22.44	\$ 21.59
Automotive Service Technicians and Mechanics	\$ 19.02	\$ 21.33
Brickmasons and Blockmasons	\$ 23.93	\$ 21.24
Dredge Operators	\$ 20.78	\$ 21.14
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$ 22.64	\$ 21.02
Sheet Metal Workers	\$ 23.07	\$ 20.47
Operating Engineers and Other Construction Equipment Operators	\$ 22.61	\$ 20.06
Bookkeeping, Accounting, and Auditing Clerks	\$ 18.87	\$ 19.95
Metal Workers and Plastic Workers, All Other	\$ 17.22	\$ 19.52
Insulation Workers, Mechanical	\$ 21.90	\$ 19.43
Carpenters	\$ 21.71	\$ 19.27
Drywall and Ceiling Tile Installers	\$ 20.60	\$ 18.28
Miscellaneous Construction and Related Workers	\$ 20.40	\$ 18.22
Installation, Maintenance, and Repair Workers, All Other	\$ 18.65	\$ 17.32
Maintenance and Repair Workers, General	\$ 18.11	\$ 16.81
Roofers	\$ 18.74	\$ 16.63
Pipelayers	\$ 18.46	\$ 16.38
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$ 17.11	\$ 16.20
Insulation Workers, Floor, Ceiling, and Wall	\$ 17.81	\$ 15.80
Helpers--Electricians	\$ 14.68	\$ 15.41

Meter Readers, Utilities	\$ 18.86	\$ 15.10
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$ 14.37	\$ 15.09
Helpers--Carpenters	\$ 14.35	\$ 15.06
Construction Laborers	\$ 16.60	\$ 14.73
Material Moving Workers, All Other	\$ 14.23	\$ 14.47
Fence Erectors	\$ 16.02	\$ 14.31
Assemblers and Fabricators, All Other, Including Team Assemblers	\$ 14.75	\$ 14.00
Laborers and Freight, Stock, and Material Movers, Hand	\$ 13.00	\$ 13.22
Helpers--Installation, Maintenance, and Repair Workers	\$ 13.70	\$ 12.72
Production Workers, All Other	\$ 13.89	\$ 12.42

Workforce Characteristics

In 2018, the TDS sector employed fewer women, Hispanic or Latino workers, and Black or African American workers than the Florida workforce average. The sector is more unionized than the Florida private sector average. Workers 55 and older were underrepresented in the TDS sector compared to the Florida workforce average.

TDS Sector — Demographics, Q4 2018

	TDS	Florida Workforce Averages	National Workforce Averages
Male	76%	50%	53%
Female	24%	50%	47%
Hispanic or Latino	18%	23%	17%
Not Hispanic or Latino	82%	77%	83%
American Indian or Alaska Native	2%	>1%	1%
Asian	7%	4%	6%
Black or African American	11%	21%	12%
Native Hawaiian or other Pacific Islander	1%	>1%	>1%
White	69%	72%	78%
Two or more races	10%	2%	2%
Veterans	9%	7%	6%
55 and over	19%	23%	23%
Union (Private Sector)	13%	6%	6%

Source: EMSI and Bureau of Labor Statistics 2018

CHAPTER 4 — ENERGY EFFICIENCY

Energy Efficiency employment covers both the production and installation of energy-saving products and the provision of services that reduce end-use energy consumption. These jobs, as specified in the current survey, include the manufacture of ENERGY STAR®-labeled products, as well as building design and contracting services that provide insulation, improve natural lighting, and reduce overall energy consumption across homes and businesses.

OVERVIEW

The Energy Efficiency (EE) sector employed more than 118,400 workers in 2018, compared to the previous year's level of 112,620 workers. This represents a jump in employment of 5%, adding nearly 5,800 jobs over 2018. As shown in Figure 13, construction jobs comprised 76 percent of the Florida EE sector in 2018.

When analyzed by subtechnology in Figure 14, Energy STAR® & Efficient Lighting jobs represented the largest sector with more than 27 percent of Florida EE employment in 2018, while Advanced Materials made up more than 26 percent of the Florida EE workforce.

Construction employment increased by almost 4,430 jobs in 2018, while professional and business services increased by 510 jobs. As shown in Figure 14, the 2019 FLEER found large increases in 2018 for Energy STAR® & Efficient Lighting jobs (more than 1,740 additional jobs, for a total of almost 32,500 jobs), Traditional HVAC (almost 1,750 additional jobs, for a total of more than 19,000 jobs), and High Efficiency HVAC & Renewable Heating and Cooling (more than 1,600 jobs, for a total of more than 22,340 jobs).

Figure 13.

Energy Efficiency Employment by Industry, 2017-2018

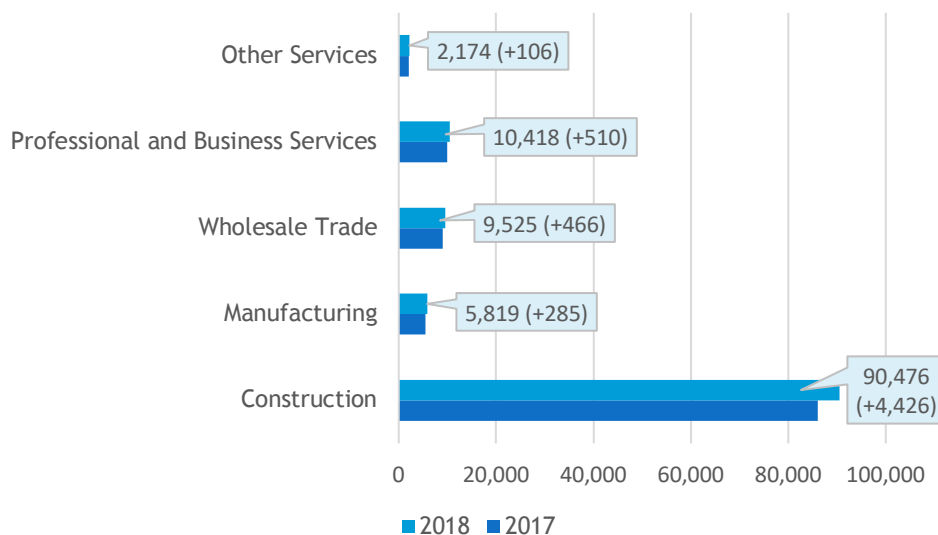
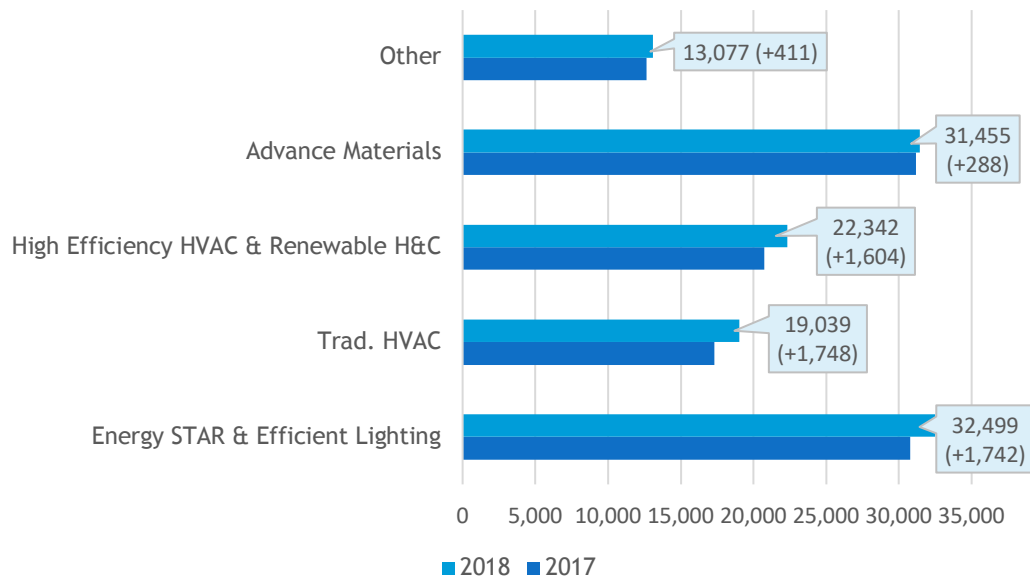


Figure 14.

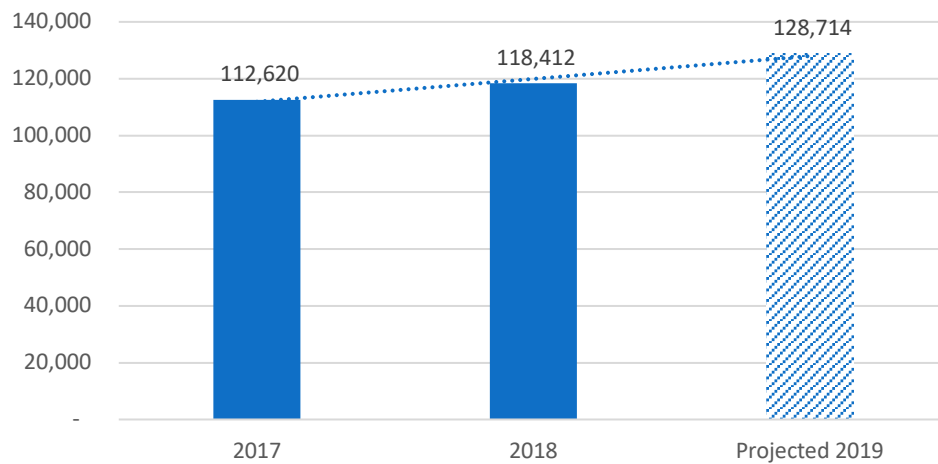
Energy Efficiency Employment by Detailed Technology Application, 2017-2019



Employers in the EE sector expect to see employment increase by nearly 9 percent in 2019, adding approximately 10,300 new jobs.

Figure 1520.

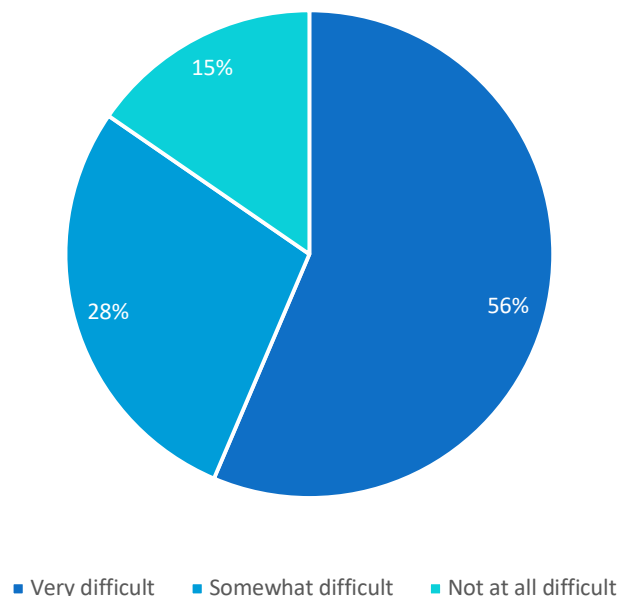
Energy Efficiency Employment Growth, 2017-2019 Projected



HIRING DIFFICULTY

Of the EE companies in Florida that hired in 2018, 56 percent found hiring to be very difficult, while 28 percent found it to be somewhat difficult. Only 15 percent of firms did not find hiring to be difficult at all.

Figure 1621.
Energy Efficiency Hiring Difficulty



The following table outlines the median hourly wages for different occupation in Florida's EE sector.

Figure 15.
EE Sector Occupations, Median Hourly Earnings

Description	US Median Wage	FL Median Wage
Chief Executives	\$ 88.11	\$ 88.95
General and Operations Managers	\$ 48.27	\$ 48.73
Engineers, All Other	\$ 46.75	\$ 41.06
Power Distributors and Dispatchers	\$ 39.67	\$ 39.66
Accountants and Auditors	\$ 33.34	\$ 36.31
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$ 37.90	\$ 31.24
Construction Managers	\$ 43.93	\$ 31.22
Business Operations Specialists, All Other	\$ 33.66	\$ 28.23
Gas Compressor + Gas Pumping Station Operators	\$ 30.20	\$ 28.02
First-Line Supervisors of Production and Operating Workers	\$ 28.31	\$ 27.10

Plant and System Operators, All Other	\$ 27.08	\$ 27.07
Boilermakers	\$ 29.93	\$ 24.82
Control and Valve Installers and Repairers, Except Mechanical Door	\$ 26.85	\$ 23.88
Industrial Machinery Mechanics	\$ 24.69	\$ 21.96
Production, Planning, and Expediting Clerks	\$ 22.44	\$ 21.71
Electricians	\$ 26.01	\$ 21.57
Structural Iron and Steel Workers	\$ 25.30	\$ 20.98
Plumbers, Pipefitters, and Steamfitters	\$ 25.28	\$ 20.96
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$ 22.64	\$ 20.13
Brickmasons and Blockmasons	\$ 23.93	\$ 19.84
Bookkeeping, Accounting, and Auditing Clerks	\$ 18.87	\$ 19.37
Dredge Operators	\$ 20.78	\$ 19.28
Sheet Metal Workers	\$ 23.07	\$ 19.13
Welders, Cutters, Solderers, and Brazers	\$ 19.35	\$ 18.91
Operating Engineers and Other Construction Equipment Operators	\$ 22.61	\$ 18.75
Miscellaneous Construction and Related Workers	\$ 20.40	\$ 18.64
Insulation Workers, Mechanical	\$ 21.90	\$ 18.16
Carpenters	\$ 21.71	\$ 18.00
Drywall and Ceiling Tile Installers	\$ 20.60	\$ 17.08
Metal Workers and Plastic Workers, All Other	\$ 17.22	\$ 16.83
Installation, Maintenance, and Repair Workers, All Other	\$ 18.65	\$ 16.59
Maintenance and Repair Workers, General	\$ 18.11	\$ 16.11
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$ 17.11	\$ 16.03
Roofers	\$ 18.74	\$ 15.54
Pipelayers	\$ 18.46	\$ 15.31
Insulation Workers, Floor, Ceiling, and Wall	\$ 17.81	\$ 14.77
Fence Erectors	\$ 16.02	\$ 14.63
Assemblers and Fabricators, All Other, Including Team Assemblers	\$ 14.75	\$ 14.39
Helpers--Electricians	\$ 14.68	\$ 14.30
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$ 14.37	\$ 14.00
Helpers--Carpenters	\$ 14.35	\$ 13.98
Construction Laborers	\$ 16.60	\$ 13.76
Material Moving Workers, All Other	\$ 14.23	\$ 13.20
Helpers--Installation, Maintenance, and Repair Workers	\$ 13.70	\$ 12.18
Laborers and Freight, Stock, and Material Movers, Hand	\$ 13.00	\$ 12.06

Workforce Characteristics

In 2018, the EE sector employed fewer women and Black or African American workers than the Florida workforce average. However, the EE sector employed more Hispanic or Latino workers, Native Hawaiian or other Pacific Islander workers, and workers of two or more races than the Florida workforce averages. Union workers made up 9 percent of the EE workforce 3 percentage points higher than the Florida private sector workforce average. Workers 55 and older were underrepresented in the EE sector compared to the Florida workforce average while veterans were one percentage point higher.

Energy Efficiency Sector – Demographics, Q4 2018

	Energy Efficiency	Florida Workforce Averages	National Workforce Averages
Male	78%	50%	53%
Female	22%	50%	47%
Hispanic or Latino	27%	23%	17%
Not Hispanic or Latino	73%	77%	83%
American Indian or Alaska Native	2%	>1%	1%
Asian	4%	4%	6%
Black or African American	9%	21%	12%
Native Hawaiian or other Pacific Islander	2%	>1%	>1%
White	77%	72%	78%
Two or more races	7%	2%	2%
Veterans	11%	7%	6%
55 and over	14%	23%	23%
Union (Private Sector)	9%	6%	6%

Source: EMSI and Bureau of Labor Statistics 2018

CHAPTER 5 — MOTOR VEHICLES + COMPONENT PARTS

Though not considered a sector of the Traditional Energy industry, the Motor Vehicles and Component Parts sector, which includes cars, light-duty and heavy-duty trucks, trailers, and component parts of the foregoing, is included in this report, given both the high energy consumption of their manufacture and their contribution to end-use energy consumption.

OVERVIEW

The Motor Vehicles and Component Parts (MVCP) sector employed 89,760 workers in 2018, compared to the previous year's level of nearly 87,250 workers. This represents a jump in employment of nearly 3%, adding more than 2,510 jobs over 2017. As shown in Figure 17, repair and maintenance jobs represented more than 65 percent of the Florida MVCP sector, while wholesale trade jobs made up 18 percent of MVCP employment in 2018.

When analyzed by MVCP subtechnology in Figure 18, gasoline and diesel motor vehicle jobs represented 83 percent of Florida MVCP employment in 2018. Repair and maintenance employment increased by almost 2,060 jobs in 2018, while wholesale trade employment increased by 700 jobs. As shown in Figure 18, the 2019 FLEER found increases in 2018 for electric vehicle jobs (more than 510 additional jobs), plug-in hybrid jobs (almost 490 additional jobs), and hybrid electric jobs (almost 480 additional jobs).

Figure 17.
Motor Vehicles Employment by Industry, 2017-2018

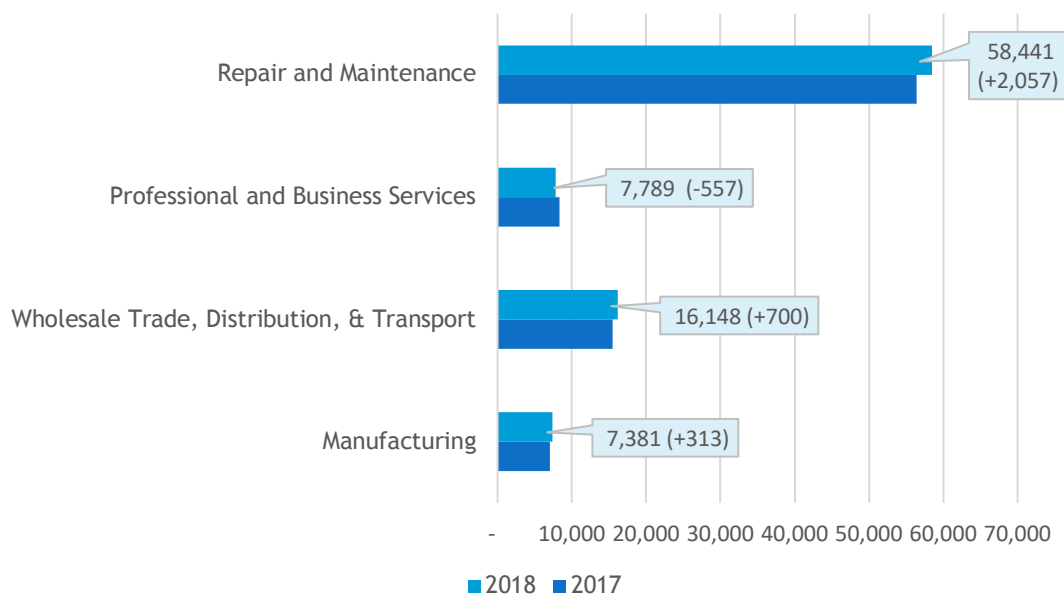
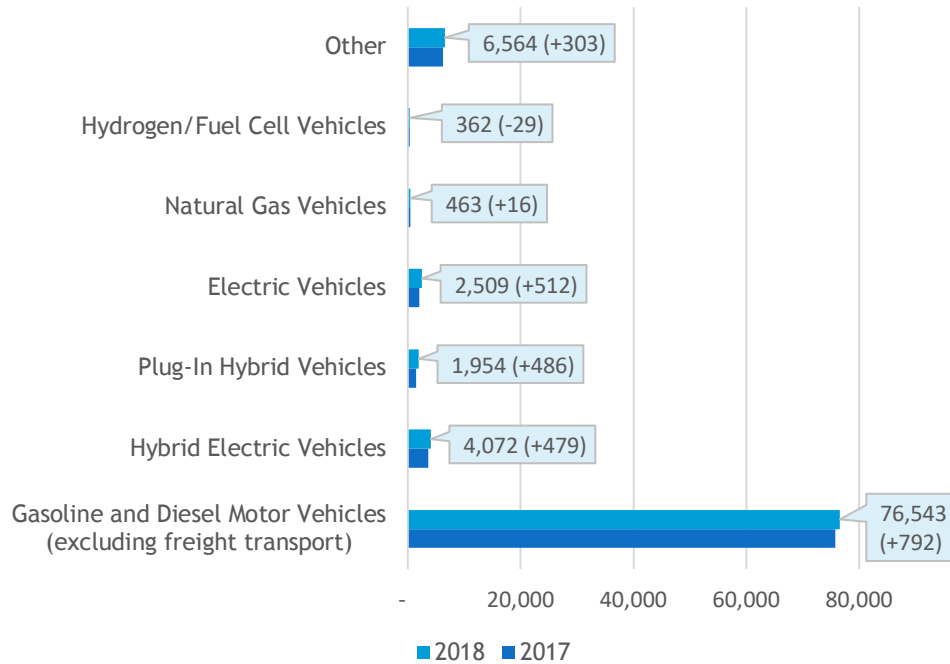


Figure 18.

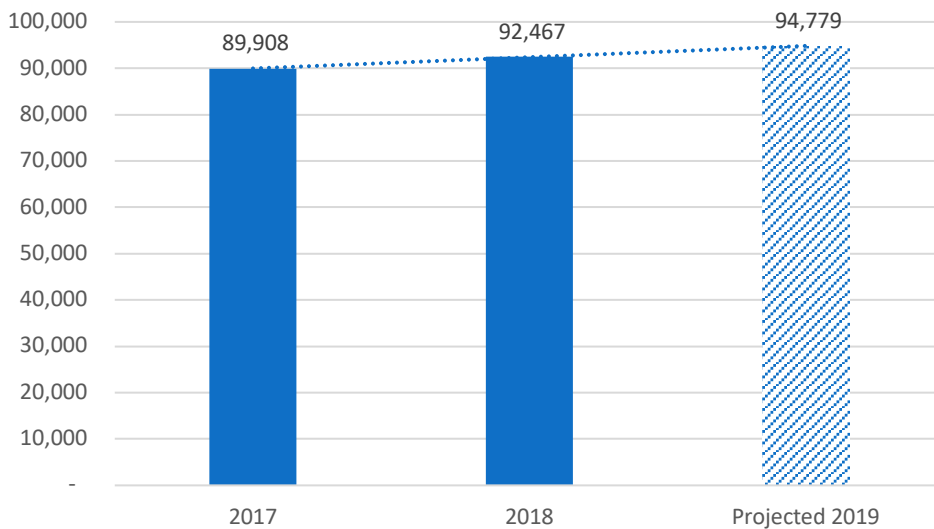
Motor Vehicles Employment by Detailed Technology Application, 2017-182324



Employers in the MVCP sector expect to see employment increase by more than 2 percent in 2019, adding more than 2,300 new jobs for a total of nearly 94,780 jobs.

Figure 1925.

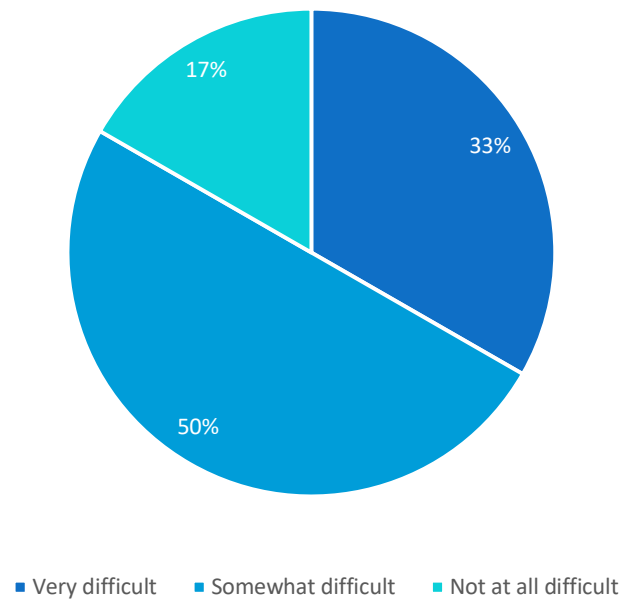
MVCP Employment Growth, 2017-2019 Projected



HIRING DIFFICULTY

Of the MVCP companies in Florida that hired in 2018, one third found hiring to be very difficult, while half found it to be somewhat difficult. 17 percent of firms did not find hiring to be difficult at all.

Figure 2026.
Motor Vehicles Hiring Difficulty



Workforce Characteristics

In 2018, the MVCP sector employed fewer women and Black or African American workers than the Florida workforce average. However, the MVCP sector employed more Hispanic or Latino workers, and workers of two or more races than the Florida workforce averages. This sector was also 5 percentage points more unionized than the Florida private sector workforce average. Workers 55 and older were underrepresented in the MVCP sector compared to the Florida workforce average.

Motor Vehicles and Component Parts Sector — Demographics, Q4 2018

	Motor Vehicles	Florida Workforce Averages	National Workforce Averages
Male	81%	50%	53%
Female	19%	50%	47%
Hispanic or Latino	28%	23%	17%
Not Hispanic or Latino	72%	77%	83%
American Indian or Alaska Native	2%	>1%	1%
Asian	5%	4%	6%
Black or African American	7%	21%	12%
Native Hawaiian or other Pacific Islander	0%	>1%	>1%
White	79%	72%	78%
Two or more races	6%	2%	2%
Veterans	9%	7%	6%
55 and over	21%	23%	23%
Union (Private Sector)	11%	6%	6%

Source: EMSI and Bureau of Labor Statistics 2018