



Minnesota Energy Consortium

April 13, 2017

Cameron Macht

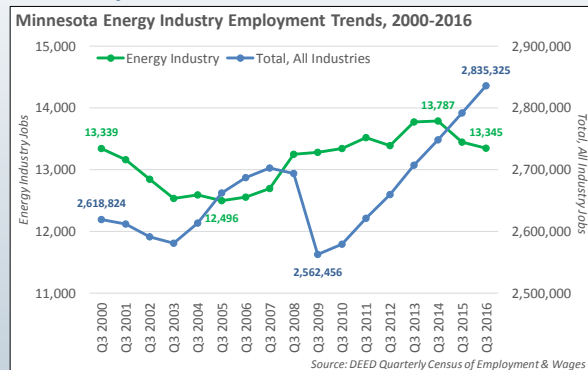
DEED Labor Market Information Office
Regional Analysis & Outreach

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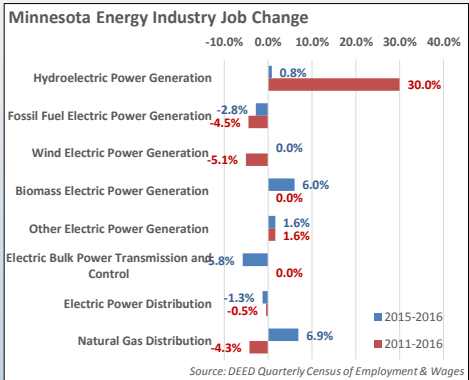
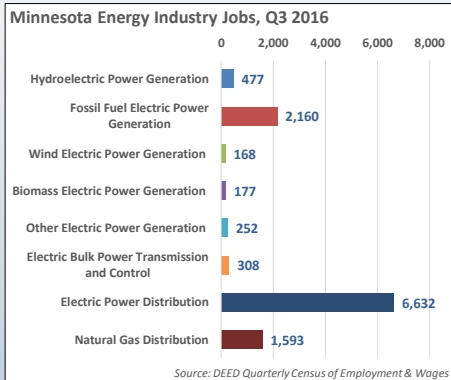
Minnesota Energy Industry

- **Minnesota has 336 energy establishments providing 13,345 jobs and \$332 million in quarterly payroll**
 - Electric Power Generation, Transmission & Distribution has 276 establishments and 11,752 jobs, \$296 million
 - Natural Gas Dist. has 60 firms and 1,593 jobs, and \$35.5 million
- **Energy industry is holding steady, but gained jobs during the Great Recession**



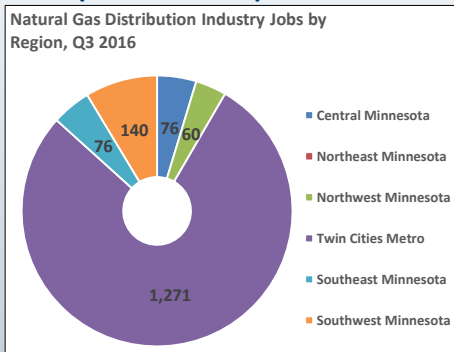
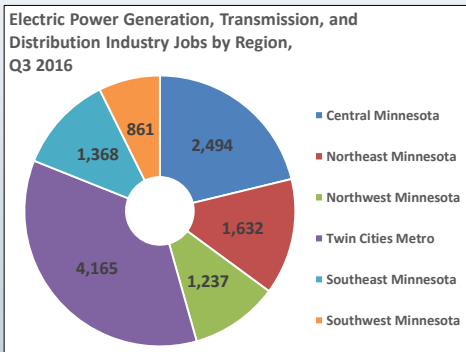
Minnesota Energy Industry

- **Electric Power Distribution is the largest sector**
- **Fossil Fuel Electric Power Generation is largest, but declining**
- **Job gains in Hydroelectric, Natural Gas, and Biomass**



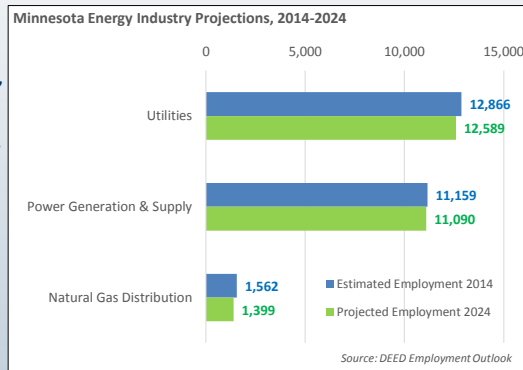
Minnesota Energy Industry

- **The Twin Cities has about 40% of statewide energy industry employment (62% of total, all industries)**
 - Central Minnesota has 19.2% (9.9% of total)
 - Northeast Minnesota has 12.2% (5.2% of total)



Minnesota Energy Industry

- **Power Generation & Supply is projected to decline -0.6% from 2014 to 2024, a loss of about 70 jobs**
- **Natural Gas Distribution is projected to drop -10.4%**
 - Jobs may be shifting:
 - *According to the 2015 CEWD report, Fossil Fuels, Natural Gas Dist., and Hydroelectric will decline, while Nuclear Power Generation and Electric Power Distribution will see big gains...*



Occupations in Demand

SOC Code	SOC Title	State of Minnesota		United States		Minnesota Educational Requirements
		Estimated State Employment	Median Hourly Wage	Estimated State Employment	Median Hourly Wage	
00-0000	Total, All Occupations	2,772,240	\$18.88	137,896,660	\$17.58	
49-9051	Electrical Power-Line Installers & Repairers	2,550	\$36.74	115,380	\$32.13	High School or less
51-8013	Power Plant Operators	600	\$34.98	37,510	\$35.01	High School or less
43-4051	Customer Service Representatives	54,110	\$17.73	2,595,990	\$15.42	High School or less
17-2071	Electrical Engineers	3,590	\$43.17	178,580	\$45.07	Bachelor's degree
49-2095	Electrical & Electronics Repairers, Power	340	\$35.49	23,070	\$35.69	Vocational training
49-1011	First-Line Supervisors of Mechanics & Installers	6,810	\$29.88	445,510	\$30.46	High School or less
51-1011	First-Line Supervisors of Production Workers	12,200	\$27.58	603,080	\$27.43	High School or less
11-1021	General & Operations Managers	38,820	\$41.76	2,145,140	\$47.75	Bachelor's degree
49-9012	Control & Valve Installers & Repairers	330	\$32.85	42,510	\$26.16	High School or less
17-2161	Nuclear Engineers	30	\$45.82	16,880	\$49.89	Bachelor's degree
43-5041	Meter Readers, Utilities	340	\$24.11	34,970	\$18.72	High School or less
49-9041	Industrial Machinery Mechanics	6,300	\$25.21	323,280	\$24.03	Vocational training
47-2111	Electricians	11,240	\$29.17	592,230	\$25.16	Vocational training
51-8012	Power Distributors & Dispatchers	160	\$42.30	11,540	\$39.34	High School or less
17-3023	Electrical & Electronics Engineering Technicians	2,510	\$27.91	139,080	\$29.63	Associate's degree
43-1011	First-Line Supervisors of Office & Admin. Workers	23,040	\$26.61	1,424,450	\$25.59	High School or less
43-9061	Office Clerks, General	53,930	\$15.88	2,944,420	\$14.38	High School or less
49-9071	Maintenance & Repair Workers, General	20,870	\$20.07	1,314,560	\$17.71	High School or less
13-1111	Management Analysts	12,200	\$36.72	614,110	\$39.73	Bachelor's degree
33-9032	Security Guards	10,550	\$14.53	1,097,660	\$11.96	High School or less

Source: DEED Occupational Employment Statistics

Occupations in Demand

- **Energy Industry has many high-paying occupations!**
 - Average annual wages were \$100,724 in Electric Power Generation, Transmission & Distribution
 - 84% higher than the total of all industries!
 - Natural Gas Distribution = \$89,232 (63% higher)
- **12 of the top 20 occupations in demand can be gained with a high school diploma or less**
 - Some are high-paying, some are “relatively” low-paying
- **4 require vocational training or associate’s degree**
- **4 require bachelor’s degrees or higher**
 - 4 of the top 6 highest-earning jobs need a bachelor’s degree

Occupations in Demand

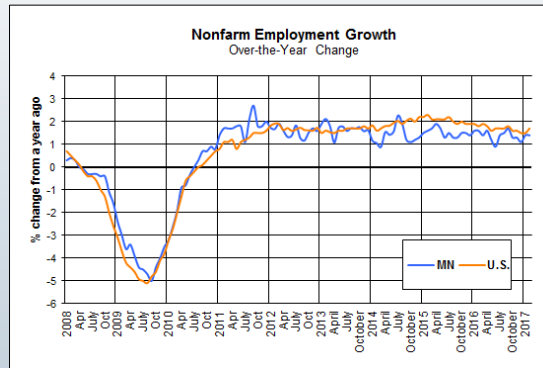
- **Growth is projected for a couple occupations:**
 - Industrial Machinery Mechanics, Electricians, Management Analysts

SOC Code	Occupation	Estimated Employment 2014	Projected Employment 2024	Percent Change 2014-2024	Numeric Change 2014-2024	2014-2024 Replacement Openings*	2014-2024 Total Openings**
00-0000	Total, All Occupations	3,007,000	3,137,000	4.3%	130,000	696,940	860,360
11-1021	General & Operations Managers	37,579	39,173	4.2%	1,594	9,510	11,100
13-1111	Management Analysts	14,502	15,748	8.5%	1,246	2,010	3,260
17-2071	Electrical Engineers	3,442	3,440	0.0%	-2	760	760
17-2161	Nuclear Engineers	230	229	-0.4%	-1	60	60
17-3023	Electrical & Electronics Engineering Technicians	2,438	2,334	-4.2%	-104	600	600
33-9032	Security Guards	10,947	11,275	2.9%	328	1,540	1,870
43-1011	First-Line Supervisors of Office & Admin. Workers	23,912	25,169	5.2%	1,257	3,610	4,870
43-4051	Customer Service Representatives	54,593	56,988	4.3%	2,395	13,440	15,840
43-5041	Meter Readers, Utilities	380	300	-21.0%	-80	70	70
43-9061	Office Clerks, General	57,497	57,877	0.6%	380	12,400	12,780
47-2111	Electricians	11,081	12,257	10.6%	1,176	1,690	2,870
49-1011	First-Line Supervisors of Mechanics & Installers	7,062	7,246	2.6%	184	1,410	1,590
49-2095	Electrical & Electronics Repairers, Power	388	387	-0.2%	-1	70	70
49-9012	Control & Valve Installers & Repairers	382	379	-0.7%	-3	150	150
49-9041	Industrial Machinery Mechanics	5,905	6,868	16.3%	963	1,530	2,490
49-9051	Electrical Power-Line Installers & Repairers	2,952	3,084	4.4%	132	1,180	1,310
49-9071	Maintenance & Repair Workers, General	22,489	23,448	4.2%	959	5,890	6,850
51-1011	First-Line Supervisors of Production Workers	12,412	12,177	-1.8%	-235	1,960	1,960
51-8012	Power Distributors & Dispatchers	196	194	-1.0%	-2	70	70
51-8013	Power Plant Operators	851	835	-1.8%	-16	290	290

Source: DEED Employment Outlook

The State of the State

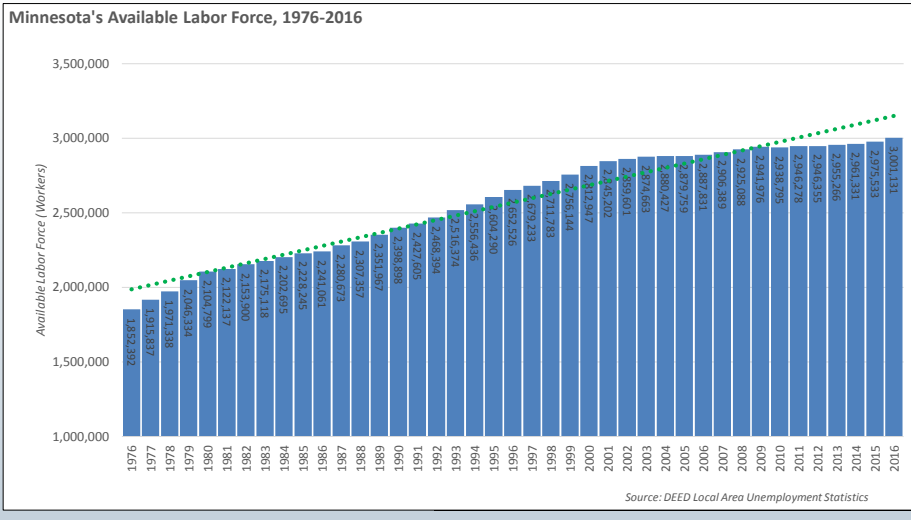
- Seven years after the end of the recession, Minnesota's economy continues to improve and, by many measures, ranks among the best in the country
 - *Some challenges are on the horizon, however*



The State of the State

- Tight market conditions suggested by our high participation and employment rates may explain why our job growth has been lagging the nation and some other states over the last two years
 - Have we started to experience the constraints imposed by a shortage of additional workers well ahead of many other states?
 - Will this constraint only tighten further and lead to even slower job growth in the coming years?
 - With nation-leading participation, do we have less room to maneuver through the coming worker shortage than other states?

Labor Force Constraints



Labor Force Constraints

- From 1976 to 2001, Minnesota gained 993,000 workers
 - Average of about 40,000 new workers per year
- From 2001 to 2016, Minnesota gained about 156,000 new workers
 - Average of about 10,400 workers per year
- From 2015 to 2030, Minnesota is projected to gain 62,275 workers
 - Average of about 4,000 workers per year
 - This includes a big decline in 45-64 year old workers
 - But a huge increase in workers aged 65 years and over!

	2015 Labor Force Projection	2030 Labor Force Projection	2015-2030 Change	
			Numeric	Percent
16-19 years	139,938	153,866	+13,928	+10.0%
20-24 years	274,329	267,537	-6,792	-2.5%
25-44 years	1,245,784	1,280,645	+34,861	+2.8%
45-54 years	661,860	643,042	-18,818	-2.8%
55-64 years	535,988	487,175	-48,813	-9.1%
65-74 years	126,182	200,349	+74,167	+58.8%
75 years & over	20,845	34,587	+13,742	+65.9%
Total Labor Force	3,004,926	3,067,201	+62,275	+2.1%

Source: Minnesota State Demographic Center

Labor Force Constraints

- Increased racial diversity will be a key component of growth
 - State Demographic Center projects that the minority population will grow +37.3%, compared to +4.1% for whites (*primarily due to aging*)

Table 4. Race and Hispanic Origin, 2015	Minnesota		
	Number	Percent	Change from 2000-2015
Total	5,419,171	100.0%	10.2%
White	4,594,367	84.8%	4.4%
Black or African American	299,176	5.5%	74.2%
American Indian & Alaska Native	56,561	1.0%	2.9%
Asian & Other Pac. Islander	242,756	4.5%	68.6%
Some Other Race	82,085	1.5%	24.7%
Two or More Races	144,226	2.7%	74.3%
Hispanic or Latino origin	270,984	5.0%	89.0%

Source: U.S. Census Bureau, 2011-2015 Amer

Employment Disparities

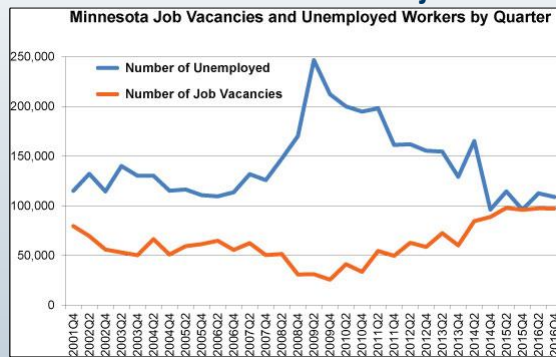
- Minnesota has significant employment disparities in all minority groups; but it's getting better
 - *Closing these gaps is crucial!*
- Participation rates are lower and unemployment rates are also higher for:
 - Younger workers
 - Workers with disabilities
 - People with lower educational attainment
- The challenges we face over the next 15 years are so great we'll need to tackle them with a multi-pronged approach to attract and retain workers *of all demographic characteristics*

Minnesota Labor Force and Employment Characteristics, 2015	Minnesota			United States	
	In Labor Force	Labor Force Partic. Rate	Unemp. Rate	Labor Force Partic. Rate	Unemp. Rate
Total Labor Force	3,039,978	69.9%	4.2%	63.1%	6.3%
16 to 19 years	151,181	53.0%	11.8%	37.8%	18.7%
20 to 24 years	309,516	85.3%	7.7%	74.2%	10.2%
25 to 44 years	1,255,517	88.3%	3.5%	82.1%	5.8%
45 to 54 years	647,793	87.0%	3.2%	79.9%	5.0%
55 to 64 years	530,957	72.8%	3.0%	64.1%	4.9%
65 to 74 years	124,198	27.5%	3.2%	25.3%	4.1%
75 years & over	21,553	6.1%	3.2%	6.3%	3.5%
Employment Characteristics by Race & Hispanic Origin					
White alone	2,618,136	69.8%	3.5%	62.8%	5.3%
Black or African American	152,114	69.7%	10.1%	62.0%	11.3%
American Indian & Alaska Native	23,016	57.2%	12.5%	58.1%	12.0%
Asian or Other Pac. Islanders	136,594	70.3%	5.6%	64.5%	5.2%
Some Other Race	46,947	79.8%	9.4%	69.2%	7.9%
Two or More Races	62,275	73.0%	7.9%	65.8%	9.4%
Hispanic or Latino	140,208	76.7%	7.4%	67.0%	7.4%
Employment Characteristics by Veteran Status					
Veterans, 18 to 64 years	115,458	79.2%	3.4%	75.9%	5.3%
Nonveterans, 18 to 64 years	2,718,545	83.5%	4.0%	75.5%	6.3%
Employment Characteristics by Disability					
With Any Disability	152,186	52.7%	9.6%	40.6%	13.5%
Employment Characteristics by Educational Attainment					
Population, 25 to 64 years	2,435,517	84.1%	3.3%	77.2%	5.2%
Less than H.S. Diploma	118,875	66.0%	9.1%	60.1%	9.6%
H.S. Diploma or Equivalent	510,509	78.4%	4.6%	71.9%	6.8%
Some College or Assoc. Degree	847,147	85.0%	3.2%	78.9%	5.2%
Bachelor's Degree or Higher	958,049	89.7%	2.0%	86.1%	2.9%

Source: 2015 American Community Survey, 1-Year Estimates

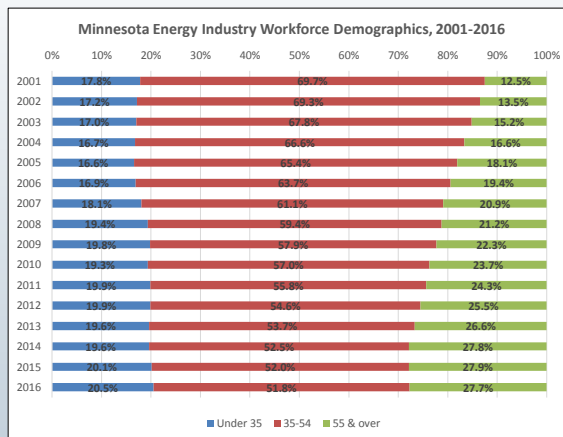
Job Vacancies

- How many jobseekers are there for every job vacancy?
 - 1.1 jobseekers for every 1 job vacancy (Qtr. 4 2016)
- Job vacancies in Minnesota support the picture of a strong labor market with extensive job opportunity
- Both 2015 and 2016 results showed the most unfilled jobs since 2001, averaging about **97,500 openings**
- By 4th quarter 2015, the ratio of job seekers to job vacancies statewide had dropped to 1-to-1
 - This ratio has fallen from 8.2 unemployed workers for each job vacancy during the 2009 recession
- <http://mn.gov/deed/jvs>



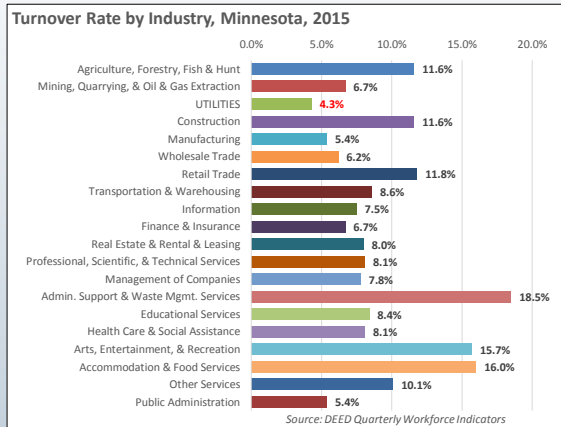
Workforce Demographics

- The concentration of 35-54 year old workers has dropped from 70% in 2001 to 52% in 2016
- 55 & over increased from 12.5% to 27.7% in 2016
- 35 & younger rose from 17.8% to 20.5% in 2016



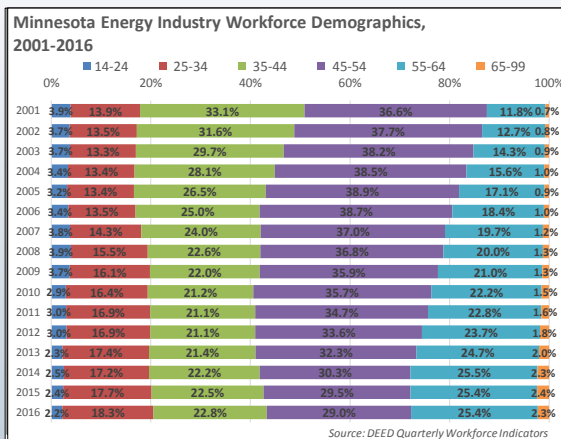
Workforce Demographics

- The concentration of 35-54 year old workers has dropped from 70% in 2001 to 52% in 2016
- The industry has very low turnover rates, so the workforce has been aging



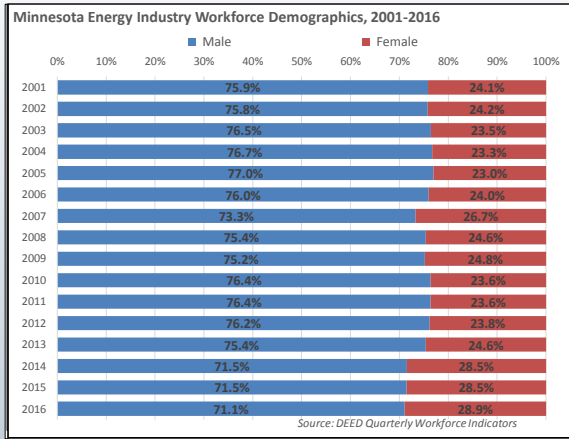
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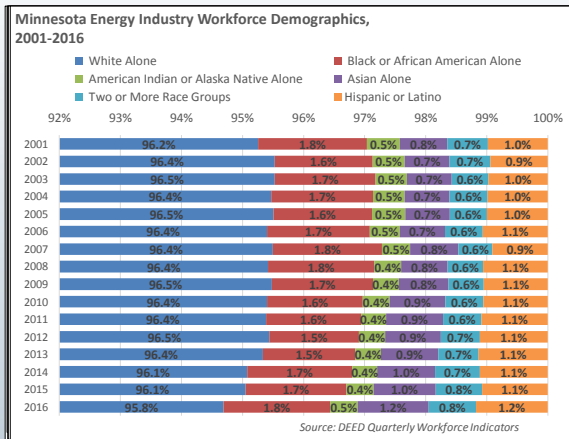
Workforce Demographics

- The concentration of 35-54 year old workers has dropped from 70% in 2001 to 52% in 2016
- The industry is primarily male (71.1%), but is changing over time



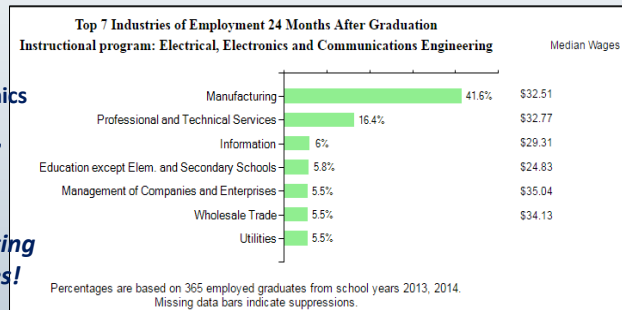
Workforce Demographics

- The concentration of 35-54 year old workers has dropped from 70% in 2001 to 52% in 2016
- The industry is primarily white (95.8%), and hasn't been changing much



Graduate Employment Outcomes

- **Minnesota colleges are graduating many workers**
 - Average of 490 graduates from “Electrical and Power Transmission Installers”
 - 365 Certificates; 124 Associate’s Degrees
 - Average of 527 grads from 2009-2012; Average of 431 grads from 2013-2014
 - 329 graduates from “Electrical, Electronics & Communications Engineering”
 - 191 Bachelor’s Degrees; 138 Graduate Degrees
 - 102 graduates from “Electrical Engineering Technologies”
 - 12 Certificates; 79 Associate’s
 - 11 graduates from “Electrical/Electronics Maintenance & Repair Technology”
 - 11 Certificates
- **Manufacturing and Construction are getting most of the graduates!**



Thank you!

- **QUESTIONS?**
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