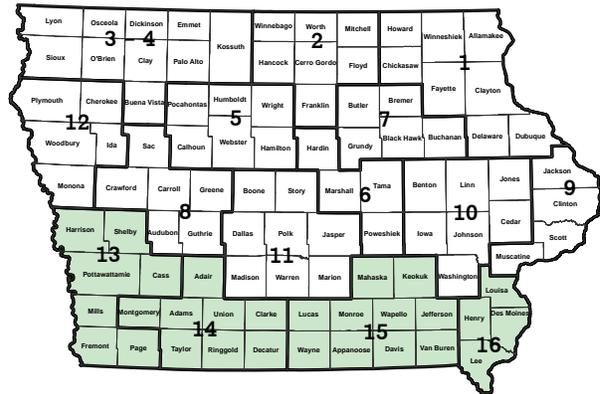


REGIONS 13, 14, 15, 16

WORKFORCE DEVELOPMENT

GREEN JOBS



INCREASED DEMAND OCCUPATIONS

REGION 13

Occupational Title	Employment ⁽¹⁾			\$ ⁽²⁾		Career Preparation ⁽³⁾			Top Skills ⁽⁴⁾											
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)											
Cement Masons & Concrete Finishers	270	350	3.1	17.78	36,983	< HS	N	M	B6	B2	SO1	B3	SY1							
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	205	265	2.9	16.46	34,233	PS	N	L	T3	T11	T9	T1	T5							
Carpenters	405	525	2.8	17.84	37,113	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4		
Industrial Machinery Mechanics	230	295	2.8	18.01	37,461	HS	N	L	T9	T1	T5	T11	T8							
Electricians	195	240	2.3	20.62	42,884	HS	N	A	T11	T9	B2	B3	T5	T8						
Operating Engineers & Other Construction Equipment Operators	210	250	1.9	20.52	42,681	HS	N	M	T4	T5	B2	B6	B9							
Laborers & Freight, Stock, & Material Movers, Hand	1,945	2,305	1.8	12.43	25,848	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9					
Team Assemblers	1,115	1,270	1.4	13.03	27,097	HS	N	M	SO1	B2	B3	B9	B6	B7						
Customer Service Representatives	650	725	1.2	12.56	26,126	HS	N	S	B2	B9	SO5	SO4	B7							
Welders, Cutters, Solderers, & Brazers	405	445	1.0	15.60	32,438	HS	N	M	B3	B2	B6	SY1	T4	T5						
First-Line Supervisors of Mechanics, Installers, & Repairers	285	310	0.9	27.32	56,829	HS	< 5	N	R3	B6	SO1	B3	R4							
First-Line Supervisors of Production & Operating Wkrs	405	430	0.7	25.00	51,999	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9					

REGION 14

Laborers & Freight, Stock, & Material Movers, Hand	425	470	1.1	12.13	25,221	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9				
Customer Service Representatives	290	315	0.9	15.91	33,085	HS	N	S	B2	B9	SO5	SO4	B7						
Team Assemblers	485	525	0.8	13.40	27,866	HS	N	M	SO1	B2	B3	B9	B6	B7					

REGION 15

Carpenters	340	440	2.8	N.A.	N.A.	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4	
Industrial Machinery Mechanics	185	230	2.4	19.01	39,534	HS	N	L	T9	T1	T11	T8	B3	T4	T5				
Operating Engineers & Other Construction Equipment Operators	345	405	1.7	19.96	41,517	HS	N	M	T4	T5	B2	B6	B9						
Laborers & Freight, Stock, & Material Movers, Hand	740	835	1.3	11.87	24,693	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9				
Customer Service Representatives	360	400	1.1	13.87	28,842	HS	N	S	B2	B9	SO5	SO4	B7						
Welders, Cutters, Solderers, & Brazers	435	460	0.6	16.41	34,135	HS	N	M	B3	B2	B6	SY1	T4	T5					
Team Assemblers	580	605	0.5	15.72	32,698	HS	N	M	SO1	B2	B3	B9	B6	B7					
First-Line Supervisors of Production & Operating Workers	520	540	0.4	20.92	43,513	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9				
Industrial Truck & Tractor Operators	495	490	-0.1	16.93	35,224	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6				

REGION 16

Carpenters	345	450	3.0	N.A.	N.A.	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4	
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	145	180	2.4	N.A.	N.A.	PS	N	L	T3	T11	T9	T1	T5						
Industrial Machinery Mechanics	300	365	2.2	22.32	46,426	HS	N	L	T9	T1	T5	T11	T8						
Electricians	205	245	1.7	23.94	49,804	HS	N	A	T11	T9	B2	B3	T5	T8					
Laborers & Freight, Stock, & Material Movers, Hand	1,360	1,550	1.4	13.80	28,706	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9				
Welders, Cutters, Solderers, & Brazers	415	455	1.0	17.54	36,483	HS	N	M	B3	B2	B6	SY1	T4	T5					
Customer Service Representatives	465	510	0.9	15.45	32,129	HS	N	S	B2	B9	SO5	SO4	B7						
Team Assemblers	1,000	1,055	0.6	15.09	31,385	HS	N	M	SO1	B2	B3	B9	B6	B7					
First-Line Supervisors of Production & Operating Workers	465	480	0.3	24.12	50,176	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9				
Structural Metal Fabricators & Fitters	295	295	0.0	17.79	37,003	HS	N	M	B2	B3	B9	B6	B7	SO6					
Industrial Truck & Tractor Operators	345	340	-0.1	14.95	31,102	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6				

ENHANCED SKILLS OCCUPATIONS

REGION 13

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4]										
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)										
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	205	265	2.9	16.46	34,233	PS	N	L	T3	T11	T9	T1	T5						
Construction Laborers	620	775	2.6	14.93	31,046	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6				
Plumbers, Pipefitters, & Steamfitters	255	320	2.5	17.53	36,454	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9			
Heavy & Tractor-Trailer Truck Drivers	1,815	2,125	1.7	18.41	38,284	PS	N	S	T4	T5	B6	B2	B3	T8					
Inspectors, Testers, Sorters, Samplers, & Weighers	295	345	1.7	15.23	31,675	HS	N	M	B3	B2	B9	B7	B6	T5					
General & Operations Managers	735	835	1.4	34.35	71,450	BA	< 5	N	B2	B7	B9	B3	B6						
Maintenance & Repair Workers, General	795	895	1.2	16.30	33,911	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4
Automotive Service Technicians & Mechanics	505	550	0.9	18.92	39,356	HS	N	L	T1	T9	T11	T2	T8						
Shipping, Receiving, & Traffic Clerks	260	270	0.6	13.25	27,569	HS	N	S	B7	B2	SY1	B6	R4						
Farmers, Ranchers, & Other Agricultural Managers	5,100	4,595	-1.0	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4					

REGION 14

Construction Laborers	165	200	2.1	N.A.	N.A.	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6				
Heavy & Tractor-Trailer Truck Drivers	870	975	1.2	22.47	46,743	PS	N	S	T4	T5	B6	B2	B3	T8					
Maintenance & Repair Workers, General	335	370	1.0	18.10	37,642	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4

REGION 15

Construction Laborers	270	330	2.2	14.14	29,414	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6				
Plumbers, Pipefitters, & Steamfitters	260	315	2.1	21.98	45,713	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9			
Heavy & Tractor-Trailer Truck Drivers	1,730	1,925	1.1	15.90	33,066	PS	N	S	T4	T5	B6	B2	B3	T8					
Machinists	410	450	1.0	15.72	32,700	HS	N	L	T5	T8	T4	T11	B3	B6					
Maintenance & Repair Workers, General	770	835	0.8	16.81	34,967	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4
General & Operations Managers	580	630	0.8	36.00	74,882	BA	< 5	N	B2	B7	B9	B3	B6						
Automotive Service Technicians & Mechanics	280	295	0.5	16.24	33,774	HS	N	L	T1	T9	T11	T2	T8						
Farmers, Ranchers, & Other Agricultural Managers	4,945	4,525	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4					

REGION 16

Construction Laborers	265	340	2.8	15.92	33,114	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6				
Plumbers, Pipefitters, & Steamfitters	275	340	2.4	N.A.	N.A.	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9			
Sheet Metal Workers	250	305	2.2	26.70	55,531	HS	N	A	B3	SY1	R4	B5	B2	SO1	B6	B7	B9		
Machinists	215	240	1.2	17.48	36,351	HS	N	L	T5	T8	T4	T11	B3	B6					
Automotive Service Technicians & Mechanics	525	585	1.1	15.58	32,402	HS	N	L	T1	T9	T11	T2	T8						
General & Operations Managers	435	475	0.9	39.95	83,099	BA	< 5	N	B2	B7	B9	B3	B6						
Inspectors, Testers, Sorters, Samplers, & Weighers	435	480	0.9	15.34	31,902	HS	N	M	B3	B2	B9	B7	B6	T5					
Maintenance & Repair Workers, General	725	790	0.9	18.75	38,995	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4
Mechanical Engineers	200	210	0.5	37.53	78,063	BA	N	N	C1	B3	B2	SY1	B5	B7					
Farmers, Ranchers, & Other Agricultural Managers	3,200	2,855	-1.1	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4					

Legend/Methodology/Selection Criteria:

The basis for **Iowa's Green Jobs** comes from occupational effects orientative research (or the "greening" of occupations) conducted by O*NET, a primary occupational data source of the Employment and Training Administration, U.S. Department of Labor. As defined by O*NET, the "greening" of occupations "refers to the extent to which green economy activities and technologies increase the demand for existing occupations, shape the work and worker requirements needed for occupational performance, or generate unique work and worker requirements." This report focuses on growing occupations from two O*NET-identified occupational categories describing the effects of activities and technologies on occupational performance: **Green Increased Demand Occupations** (occupations impacted by green economy activities and technologies causing an increase in demand but no significant change to the occupation's tasks) and **Green Enhanced Skills Occupations** (occupations impacted by green economy activities and technologies with significant changes to the work and worker requirements but not necessarily an increase in demand). Residual or undefined occupations were not included in this report which may include "new and emerging" green jobs not representative enough in the general economy to warrant a separate and distinct classification of their own (Examples may include Geothermal Technicians, Recycling Coordinators, Sustainability Specialists, and Wind Turbine Service Technicians.). Additional information on "green occupations" can be viewed on the O*NET OnLine website at <http://online.onetcenter.org/>.

[1] Employment includes: **Estimated** = Estimation of labor force by occupation (rounded); **Projected** = Projection of future labor force by occupation (rounded); and **Annual Growth Rate (%)** = Ten year growth rate (not shown) divided by ten.

[2] Mean (Average) Wage & Salary (\$) = dividing the estimated total pay for an occupation by its weighted employment. Pay provided in wage (hourly) and salary (annual) formats; Missing pay data may be derived from calculation or proration of reported wage/salary data if available (i.e., legislator pay based on 4-months service, education and coaching pay based on 12-months service); Occupations with limited or no compensation data (which inhibits either wage or salary calculated derivations) are subsequently omitted from any methodological calculations.

[3] Career Preparation determined by the U.S. Department of Labor's Bureau of Labor Statistics (BLS). Alternative employment pathways may exist as well as differing educational, training, or licensing requirements per state. Iowa requirements are used in this publication when available. Career Preparation areas/levels include:

Education (typical education level needed to enter an occupation): DP = Doctoral or Professional degree; MA = Master's degree; BA = Bachelor's degree; AS = Associate's degree; PS = Postsecondary non-degree award; SC = Some college, no degree; HS = High school diploma or equivalent; < HS = Less than high school; **Work Experience** (typical work experience level commonly considered necessary for entry into an occupation, or substitutable for formal types of training): > 5 = 5 years or more; < 5 = Less than 5 years; N = None; and **Job Training** (typical on-the-job training level needed to attain occupational competency): I = Internship/residency; A = Apprenticeship; L = Long-term on-the-job training; M = Moderate-term on-the-job training; S = Short-term on-the-job training; None = N.

[4] Top Skills refers to the the top five (or more if tied) most important skills for a particular occupation as identified by sampled workers' questionnaire responses conducted by occupational analysts of the U.S. Department of Labor's Occupational Information Network (O*NET). These include: **Basic Skills**: B1 = Active Learning; B2 = Active Listening; B3 = Critical Thinking; B4 = Learning Strategies; B5 = Mathematics; B6 = Monitoring; B7 = Reading Comprehension; B8 = Science; B9 = Speaking; B10 = Writing; **Complex Problem Solving Skills**: C1 = Complex Problem Solving; **Resource Management Skills**: R1 = Management of Financial Resources; R2 = Management of Material Resources; R3 = Management of Personnel Resources; R4 = Time Management; **Social Skills**: SO1 = Coordination; SO2 = Instructing; SO3 = Negotiation; SO4 = Persuasion; SO5 = Service Orientation; SO6 = Social Perceptiveness; **Systems Skills**: SY1 = Judgment and Decision Making; SY2 = Systems Analysis; SY3 = Systems Evaluation; and **Technical Skills**: T1 = Equipment Maintenance; T2 = Equipment Selection; T3 = Installation; T4 = Operation and Control; T5 = Operation Monitoring; T6 = Operations Analysis; T7 = Programming; T8 = Quality Control Analysis; T9 = Repairing; T10 = Technology Design; T11 = Troubleshooting. N.A. = Not Available.

Sources:

Education/Work Experience/Job Training: Bureau of Labor Statistics, U.S. Department of Labor; **Employment**: 2012-2022 Occupational Projections estimates based on 2012 annual industry employment data and 2013 2nd quarter occupational staffing pattern data, Labor Market and Workforce Information Division, Iowa Workforce Development; **Skills**: Occupational Information Network (O*NET), Employment and Training Administration, U.S. Department of Labor; **Wages**: 2014 Iowa Wage Survey estimates (based on 2013 2nd quarter occupational wage data updated from 2014 2nd quarter using Employment Cost Index), Labor Market and Workforce Information Division, Iowa Workforce Development.

This publication was produced by the Labor Market and Workforce Information Division of Iowa Workforce Development. Revisions and/or corrections made when necessary. Inquiries may be directed to Brent Paulson at 515.281.3439 or Brent.Paulson@iwd.iowa.gov. Visit <http://iwin.iowaworkforce.org/> to obtain the latest workforce data and trends including this document under the **Publications** tab. Published 10/2014.