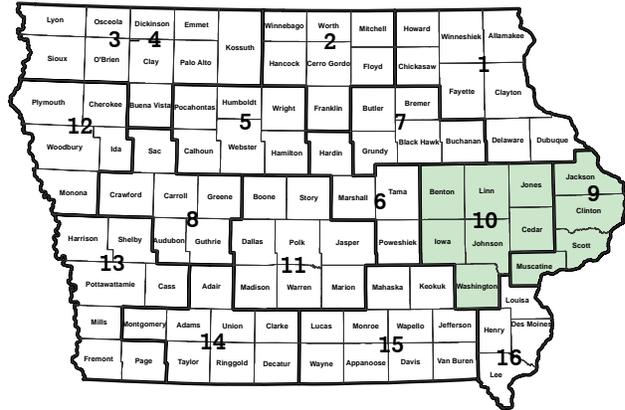


REGIONS 9, 10

WORKFORCE DEVELOPMENT

GREEN JOBS



INCREASED DEMAND OCCUPATIONS

REGION 9

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)											
Carpenters	910	1,195	3.1	19.20	39,944	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4		
Dispatchers, Ex Police, Fire, & Ambulance	160	205	2.8	16.93	35,207	HS	N	M	B2	B9	SO1	B7	R4							
Computer-Controlled Machine Tool Operators, Metal & Plastic	295	365	2.4	17.54	36,487	HS	N	M	B6	T5	B3	T8	T4							
Cement Masons & Concrete Finishers	580	715	2.3	17.20	35,769	< HS	N	M	B6	B2	SO1	B3	SY1							
Operating Engineers & Other Construction Equipment Operators	320	390	2.2	19.05	39,628	HS	N	M	T4	T5	B2	B6	B9							
Customer Service Representatives	2,295	2,705	1.8	13.49	28,052	HS	N	S	B2	B9	SO5	SO4	B7							
Electricians	775	905	1.7	28.33	58,932	HS	N	A	T11	T9	B2	B3	T5	T8						
Structural Iron & Steel Workers	150	180	1.7	27.37	56,932	HS	N	A	T4	T5	SO1	B3	SY1	B6	B7	B9				
Laborers & Freight, Stock, & Material Movers, Hand	2,400	2,760	1.5	12.42	25,835	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9					
Production, Planning, & Expediting Clerks	280	320	1.4	18.70	38,900	HS	N	M	B7	B2	B3	B9	R4							
Team Assemblers	2,570	2,890	1.2	15.82	32,916	HS	N	M	SO1	B2	B3	B9	B6	B7						
Welders, Cutters, Solderers, & Brazers	1,085	1,200	1.1	17.39	36,179	HS	N	M	B3	B2	B6	SY1	T4	T5						
First-Line Supervisors of Production & Operating Workers	1,195	1,295	0.9	23.92	49,756	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9					
Industrial Engineers	295	320	0.8	33.68	70,049	BA	N	N	B7	B2	C1	B3	B10							
First-Line Supervisors of Mechanics, Installers, & Repairers	425	460	0.8	28.43	59,135	HS	< 5	N	R3	B6	SO1	B3	R4							
Industrial Production Managers	330	355	0.8	38.33	79,734	BA	> 5	N	SO1	B2	B6	R3	R4							
Chemical Plant & System Operators	430	465	0.7	N.A.	N.A.	HS	N	L	T5	T4	B6	T8	B3							
Industrial Truck & Tractor Operators	820	880	0.7	15.08	31,376	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6					

REGION 10

Carpenters	1,600	2,060	2.9	19.70	40,966	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Cement Masons & Concrete Finishers	640	815	2.7	19.17	39,884	< HS	N	M	B6	B2	SO1	B3	SY1					
Industrial Machinery Mechanics	835	1,050	2.6	23.18	48,213	HS	N	L	T9	T1	T5	T11	T8					
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	415	515	2.4	25.02	52,036	PS	N	L	T3	T11	T9	T1	T5					
Computer-Controlled Machine Tool Operators, Metal & Plastic	350	425	2.3	18.92	39,348	HS	N	M	B6	T5	B3	T8	T4					
Electricians	1,345	1,645	2.2	25.44	52,909	HS	N	A	T11	T9	B2	B3	T5	T8				
Operating Engineers & Other Construction Equipment Operators	690	805	1.7	20.77	43,201	HS	N	M	T4	T5	B2	B6	B9					
Dispatchers, Ex Police, Fire, & Ambulance	455	530	1.6	17.77	36,967	HS	N	M	B2	B9	SO1	B7	R4					
Laborers & Freight, Stock, & Material Movers, Hand	2,825	3,210	1.4	13.26	27,588	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			
Chemists	265	300	1.3	33.48	69,646	BA	N	N	B8	B7	B2	B3	C1	B9				
Millwrights	350	395	1.3	23.61	49,113	HS	N	A	T3	T1	T5	B3	T9	T11				
Team Assemblers	1,905	2,130	1.2	15.66	32,583	HS	N	M	SO1	B2	B3	B9	B6	B7				
Electrical Power-Line Installers & Repairers	400	435	0.9	26.07	54,230	HS	N	L	B2	B6	B3	T11	B1	C1	SY1	T4	T5	T8
Welders, Cutters, Solderers, & Brazers	695	755	0.9	18.35	38,172	HS	N	M	B3	B2	B6	SY1	T4	T5				
First-Line Supvs of Mechanics, Installers, & Repairers	585	625	0.7	30.32	63,071	HS	< 5	N	R3	B6	SO1	B3	R4					
Software Developers, Systems Software	1,300	1,385	0.7	N.A.	N.A.	BA	N	N	B3	B2	T7	B7	C1					
Industrial Truck & Tractor Operators	1,300	1,380	0.6	15.31	31,842	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6			
Production, Planning, & Expediting Clerks	1,655	1,755	0.6	21.41	44,528	HS	N	M	B7	B2	B3	B9	R4					
Electrical/Electronics Repairers, Commercial & Industrial Equip	410	430	0.5	24.29	50,516	PS	N	L	T9	T8	T5	T11	B3	T1				
Mixing & Blending Machine Setters, Operators, & Tenders	435	455	0.5	20.58	42,804	HS	N	M	T5	T4	B6	B7	B2	T8				
First-Line Supvs of Production & Operating Wkrs	1,130	1,185	0.4	27.48	57,151	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9			
Industrial Engineers	640	645	0.1	34.40	71,550	BA	N	N	B7	B2	C1	B3	B10					
Industrial Production Mgrs	600	595	-0.1	42.99	89,410	BA	> 5	N	SO1	B2	B6	R3	R4					
Electrical & Electronic Equipment Assemblers	795	740	-0.7	N.A.	N.A.	HS	N	S	B2	B6	B9	B7	T5					

ENHANCED SKILLS OCCUPATIONS

REGION 9

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)											
Construction Laborers	800	990	2.4	14.32	29,782	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6					
Heavy & Tractor-Trailer Truck Drivers	3,065	3,645	1.9	19.41	40,382	PS	N	S	T4	T5	B6	B2	B3	T8						
Plumbers, Pipefitters, & Steamfitters	750	890	1.9	25.99	54,057	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9				
Sheet Metal Workers	215	255	1.9	25.18	52,375	HS	N	A	B3	SY1	R4	B5	B2	SO1	B6	B7	B9			
General & Operations Managers	1,650	1,890	1.5	42.86	89,157	BA	< 5	N	B2	B7	B9	B3	B6							
Machinists	520	595	1.4	19.53	40,629	HS	N	L	T5	T8	T4	T11	B3	B6						
Inspectors, Testers, Sorters, Samplers, & Weighers	735	815	1.1	N.A.	N.A.	HS	N	M	B3	B2	B9	B7	B6	T5						
Automotive Service Technicians & Mechanics	995	1,100	1.1	17.96	37,350	HS	N	L	T1	T9	T11	T2	T8							
Maintenance & Repair Workers, General	2,085	2,305	1.1	17.83	37,090	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4	
Shipping, Receiving, & Traffic Clerks	665	700	0.5	14.46	30,067	HS	N	S	B7	B2	SY1	B6	R4							
Farmers, Ranchers, & Other Agricultural Managers	6,970	6,160	-1.2	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4						

REGION 10

Personal Financial Advisors	195	260	3.3	43.99	91,503	BA	N	N	B3	B9	B7	SY1	B10							
Plumbers, Pipefitters, & Steamfitters	1,160	1,450	2.5	24.38	50,706	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9				
Construction Laborers	1,700	2,125	2.5	16.21	33,726	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6					
Heavy & Tractor-Trailer Truck Drivers	11,160	13,980	2.5	20.78	43,223	PS	N	S	T4	T5	B6	B2	B3	T8						
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	415	515	2.4	25.02	52,036	PS	N	L	T3	T11	T9	T1	T5							
Civil Engineers	370	450	2.2	39.98	83,164	BA	N	N	C1	B3	SY1	B5	T6	B7						
Construction Mgrs	395	480	2.2	36.15	75,198	BA	N	M	R4	B2	B3	R3	B9							
Sheet Metal Wkrs	310	375	2.1	25.09	52,190	HS	N	A	B3	SY1	R4	B5	B2	SO1	B6	B7	B9			
Training & Development Specialists	440	515	1.7	27.37	56,931	BA	< 5	N	B9	SO2	B4	B7	B2							
Inspectors, Testers, Sorters, Samplers, & Weighers	660	765	1.6	22.40	46,592	HS	N	M	B3	B2	B9	B7	B6	T5						
Machinists	385	445	1.6	20.50	42,632	HS	N	L	T5	T8	T4	T11	B3	B6						
Roofers	305	350	1.5	16.02	33,314	< HS	N	M	SO1	T4	B2	B3	R4							
Bus & Truck Mechanics & Diesel Engine Specialists	665	750	1.4	18.07	37,586	HS	N	L	T9	T11	T1	T4	T5							
Maintenance & Repair Wkrs, General	1,825	2,070	1.3	20.60	42,840	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4	
General & Operations Mgrs	2,585	2,930	1.3	45.37	94,369	BA	< 5	N	B2	B7	B9	B3	B6							
Automotive Service Technicians & Mechanics	1,365	1,525	1.2	17.31	36,001	HS	N	L	T1	T9	T11	T2	T8							
Sales Reps, Wholesale & Mfg, Tech & Scientific Products	365	395	1.0	42.64	88,691	BA	N	M	B9	SO4	B2	SO6	SO3	B7	SO5					
Marketing Mgrs	335	370	0.9	53.58	111,444	BA	> 5	N	B2	SO4	SO6	B9								
Financial Analysts	395	425	0.9	35.80	74,474	BA	N	N	B3	B7	B10	B2	C1							
Shipping, Receiving, & Traffic Clerks	780	840	0.8	15.86	32,981	HS	N	S	B7	B2	SY1	B6	R4							
Electrical Engineers	885	905	0.2	39.00	81,123	BA	N	N	B3	B7	B2	C1	B10							
Architectural & Engineering Mgrs	585	585	0.0	N.A.	N.A.	BA	> 5	N	B2	B7	B9	B10	C1	SO1	R3	B6	T6	R4		
Aerospace Engineers	500	500	0.0	N.A.	N.A.	BA	N	N	B2	B3	C1	B9	SY1	B7						
Electrical & Electronics Engineering Technicians	530	525	-0.1	28.65	59,588	AS	N	N	C1	B7	R4	B2	B3	B9						
Farmers, Ranchers, & Other Agricultural Mgrs	11,430	10,160	-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 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.