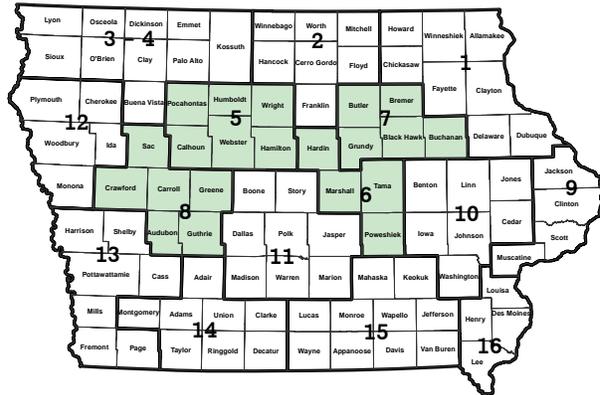


REGIONS 5, 6, 7, 8

WORKFORCE DEVELOPMENT

GREEN JOBS



INCREASED DEMAND OCCUPATIONS

REGION 5

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4]									
	2012 Est	2022 Proj	Annual Growth Rate (%)	2015 Mean Wage	2015 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)									
Carpenters	280	365	3.0	17.08	35,531	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Industrial Machinery Mechanics	340	425	2.5	21.45	44,606	HS	N	L	T9	T1	T5	T11	T8					
Electricians	385	460	1.9	18.70	38,904	HS	N	A	T11	T9	B2	B3	T5	T8				
Mixing & Blending Machine Setters, Operators, & Tenders	255	295	1.6	18.16	37,777	HS	N	M	T5	T4	B6	B7	B2	T8				
Team Assemblers	420	470	1.2	13.76	28,618	HS	N	M	SO1	B2	B3	B9	B6	B7				
Customer Service Reps	255	275	0.8	16.08	33,446	HS	N	S	B2	B9	SO5	SO4	B7					
Welders, Cutters, Solderers, & Brazers	230	245	0.7	16.16	33,623	HS	N	M	B3	B2	B6	SY1	T4	T5				

REGION 6

Industrial Machinery Mechanics	160	205	2.8	20.95	43,570	HS	N	L	T9	T1	T5	T11	T8					
Carpenters	265	330	2.5	N.A.	N.A.	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Team Assemblers	710	840	1.8	14.83	30,856	HS	N	M	SO1	B2	B3	B9	B6	B7				
Electricians	230	265	1.5	28.63	59,541	HS	N	A	T11	T9	B2	B3	T5	T8				
Operating Engineers & Other Construction Equipment Operators	215	250	1.4	20.50	42,637	HS	N	M	T4	T5	B2	B6	B9					
Laborers & Freight, Stock, & Material Movers, Hand	735	815	1.1	13.15	27,345	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			
Customer Service Reps	335	370	1.0	13.75	28,600	HS	N	S	B2	B9	SO5	SO4	B7					

REGION 7

Carpenters	640	805	2.6	16.39	34,087	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Cement Masons & Concrete Finishers	260	330	2.5	18.04	37,530	< HS	N	M	B6	B2	SO1	B3	SY1					
Industrial Machinery Mechanics	555	690	2.4	21.53	44,793	HS	N	L	T9	T1	T5	T11	T8					
Heating, AC, & Refrigeration Mechanics & Installers	235	285	2.1	20.64	42,935	PS	N	L	T3	T11	T9	T1	T5					
Laborers & Freight, Stock, & Material Movers, Hand	2,085	2,475	1.9	14.03	29,184	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			
Operating Engineers & Other Construction Equipment Operators	575	675	1.7	24.30	50,553	HS	N	M	T4	T5	B2	B6	B9					
Computer-Controlled Machine Tool Operators, Metal/Plastic	315	365	1.6	17.71	36,843	HS	N	M	B6	T5	B3	T8	T4					
Customer Service Reps	1,245	1,435	1.5	14.86	30,918	HS	N	S	B2	B9	SO5	SO4	B7					
Electricians	375	425	1.3	20.57	42,788	HS	N	A	T11	T9	B2	B3	T5	T8				
Production, Planning, & Expediting Clerks	240	260	0.8	20.59	42,832	HS	N	M	B7	B2	B3	B9	R4					
First-Line Supervisors of Mechanics, Installers, & Repairers	290	310	0.7	29.07	60,466	HS	< 5	N	R3	B6	SO1	B3	R4					
Welders, Cutters, Solderers, & Brazers	910	955	0.5	18.64	38,761	HS	N	M	B3	B2	B6	SY1	T4	T5				
First-Line Supervisors of Production & Operating Workers	750	775	0.4	28.49	59,269	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9			
Team Assemblers	1,460	1,505	0.3	17.68	36,774	HS	N	M	SO1	B2	B3	B9	B6	B7				
Structural Metal Fabricators & Fitters	200	200	0.3	N.A.	N.A.	HS	N	M	B2	B3	B9	B6	B7	SO6				
Industrial Truck & Tractor Operators	905	850	-0.6	15.27	31,765	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6			

REGION 8

Industrial Machinery Mechanics	220	275	2.5	17.90	37,231	HS	N	L	T9	T1	T5	T11	T8					
Carpenters	285	350	2.3	15.55	32,337	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Team Assemblers	520	595	1.3	14.19	29,507	HS	N	M	SO1	B2	B3	B9	B6	B7				
Customer Service Reps	385	425	1.0	13.80	28,697	HS	N	S	B2	B9	SO5	SO4	B7					
Laborers & Freight, Stock, & Material Movers, Hand	1,110	1,180	0.6	13.02	27,085	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			

ENHANCED SKILLS OCCUPATIONS REGION 5

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4]											
	2012 Est	2022 Proj	Annual Growth Rate (%)	2015 Mean Wage	2015 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)											
Construction Laborers	375	470	2.5	14.27	29,679	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6					
Heavy & Tractor-Trailer Truck Drivers	1,480	1,735	1.7	23.27	48,400	PS	N	S	T4	T5	B6	B2	B3	T8						
Maintenance & Repair Workers, General	395	455	1.5	16.03	33,343	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4	
General & Operations Managers	375	415	1.1	36.37	75,646	BA	< 5	N	B2	B7	B9	B3	B6							
Automotive Service Technicians & Mechanics	415	435	0.5	19.52	40,593	HS	N	L	T1	T9	T11	T2	T8							
Farmers, Ranchers, & Other Agricultural Managers	3,535	3,250	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4						

REGION 6

Construction Laborers	325	375.0	1.7	15.23	31,671	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6					
Heavy & Tractor-Trailer Truck Drivers	965	1,115.0	1.6	15.86	32,990	PS	N	S	T4	T5	B6	B2	B3	T8						
Machinists	220	250.0	1.4	N.A.	N.A.	HS	N	L	T5	T8	T4	T11	B3	B6						
General & Operations Managers	540	590.0	0.9	39.79	82,764	BA	< 5	N	B2	B7	B9	B3	B6							
Maintenance & Repair Workers, General	615	660.0	0.7	16.36	34,033	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4	
Shipping, Receiving, & Traffic Clerks	310	330.0	0.5	15.47	32,177	HS	N	S	B7	B2	SY1	B6	R4							
Inspectors, Testers, Sorters, Samplers, & Weighers	345	340.0	-0.1	17.92	37,273	HS	N	M	B3	B2	B9	B7	B6	T5						
Farmers, Ranchers, & Other Agricultural Managers	3,110	2,820.0	-0.9	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4						

REGION 7

Construction Laborers	885	1,090	2.3	15.95	33,180	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6					
Heating, AC, & Refrigeration Mechanics & Installers	235	285	2.1	20.64	42,935	PS	N	L	T3	T11	T9	T1	T5							
Plumbers, Pipefitters, & Steamfitters	465	560	2.0	18.63	38,752	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9				
Construction Managers	225	265	1.8	35.05	72,909	B	N	M	R4	B2	B3	R3	B9							
Heavy & Tractor-Trailer Truck Drivers	2,150	2,510	1.7	18.72	38,935	PS	N	S	T4	T5	B6	B2	B3	T8						
General & Operations Managers	1,030	1,150	1.2	40.70	84,649	B	< 5	N	B2	B7	B9	B3	B6							
Bus & Truck Mechanics & Diesel Engine Specialists	225	250	1.1	21.29	44,285	HS	N	L	T9	T11	T1	T4	T5							
Automotive Service Technicians & Mechanics	535	590	1.0	17.34	36,074	HS	N	L	T1	T9	T11	T2	T8							
Machinists	835	915	1.0	18.96	39,441	HS	N	L	T5	T8	T4	T11	B3	B6						
Maintenance & Repair Workers, General	1,520	1,645	0.8	18.27	38,012	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4	
Shipping, Receiving, & Traffic Clerks	505	540	0.7	15.79	32,848	HS	N	S	B7	B2	SY1	B6	R4							
Inspectors, Testers, Sorters, Samplers, & Weighers	930	975	0.5	19.29	40,117	HS	N	M	B3	B2	B9	B7	B6	T5						
Farmers, Ranchers, & Other Agricultural Managers	5,585	4,995	-1.1	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4						

REGION 8

Construction Laborers	380	455	2.0	13.68	28,462	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6					
Heavy & Tractor-Trailer Truck Drivers	1,405	1,575	1.2	18.94	39,400	PS	N	S	T4	T5	B6	B2	B3	T8						
Maintenance & Repair Workers, General	345	385	1.2	16.48	34,273	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4	
Automotive Service Technicians & Mechanics	295	325	0.8	16.40	34,112	HS	N	L	T1	T9	T11	T2	T8							
General & Operations Managers	375	400	0.7	46.63	96,997	BA	< 5	N	B2	B7	B9	B3	B6							
Farmers, Ranchers, & Other Agricultural Managers	3,035	2,805	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4						

Legend/Methodology/Selection Criteria:

The basis for **Regional 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/>.

Annual Growth Rate = Ten year growth rate (not shown) divided by ten; **Mean Wage** = Average wage computed by dividing the estimated total wage for a reported occupation by its weighted employment; **N.A.** = Not Available; Compensation provided in wage (hourly) and salary (annual) formats; Missing compensation 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.

Education/Work Experience/Job Training levels are determined by the U.S. Department of Labor's Bureau of Labor Statistics (BLS). Alternative pathways may exist as well as differing educational, training, or licensing requirements per state. Iowa requirements are used in this publication when available. These include: **1 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. **2 Work Experience** (typical work experience level commonly considered necessary for entry into an occupation, or substitutable for formal types of training): > 5 = More than 5 years; 1 to 5 = 1 to 5 years; < 1 = Less than 1 year; N = None. **3 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.

Sources:

Education/Training Level: Bureau of Labor Statistics, U.S. Department of Labor; **Employment:** 2012-2022 Occupational Projections (based on 2012 annual employment 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:** 2015 Iowa Wage Survey estimates, Labor Market and Workforce Information Division, Iowa Workforce Development. Estimates developed from the 2nd quarter 2014 Occupational Employment Statistics (OES) Wage Survey updated to the second quarter of 2015 using the Employment Cost Index; **Logo:** Developed by Gary Anderson, nontrademarked recycled symbol used to bring awareness to sustainable and/or "green" economic activities. This workforce product was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The product was created by the recipient and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This product is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner. 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 www.iowalmi.gov to obtain the latest workforce data trends including this document. Published 11/2015.