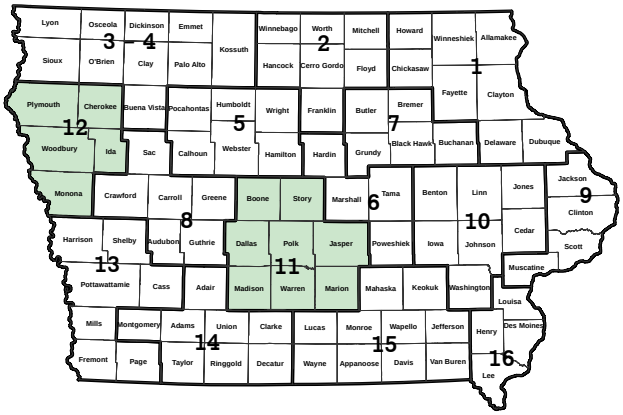

regions' 11 & 12 green jobs

2014-2024 november 2016

increased demand occupations

region 11

Occupational Title	Employment[1] 2014 Estimated	Employment[1] 2024 Projected	Employment[1] Annual Growth Rate (%)	$[2] 2016 Mean Wage	$[2] 2016 Mean Salary	Career Preparation[3] Educ	Career Preparation[3] Work Exp	Career Preparation[3] Job Training	Top Skills[4] (L-R in order of significance)
Industrial Machinery Mechanics	1,305	1,665	2.7	22.90	47,630	HS	N	L	T9 T1 T5 T11 T8
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	1,345	1,675	2.5	24.80	51,583	PS	N	L	T3 T11 T9 T1 T5
Software Developers, Systems Software	825	1,020	2.4	43.81	91,132	BA	N	N	B3 B2 T7 B7 C1
Electricians	2,310	2,830	2.3	26.69	55,505	HS	N	A	T11 T9 B2 B3 T5 T8
Electrical Power-Line Installers & Repairers	275	320	1.8	30.16	62,726	HS	N	L	B2 B6 B3 T11 B1 C1 SY1 T4 T5 T8 T9
Computer-Controlled Machine Tool Operators, Metal/Plastic	705	830	1.8	16.21	33,710	HS	N	M	B6 T5 B3 T8 T4
Cement Masons & Concrete Finishers	980	1,150	1.7	17.97	37,376	NE	N	M	B6 B2 SO1 B3 SY1
Customer Service Reps	10,310	12,075	1.7	17.08	35,534	HS	N	S	B2 B9 SO5 SO4 B7
Helpers--Installation, Maintenance, & Repair Wkrs	220	255	1.6	14.80	30,790	HS	N	S	B2 T5 T1 T2 B6 T4 T8 B9
Carpenters	2,900	3,310	1.4	20.91	43,483	HS	N	A	B3 T2 T5 B2 SO1 SY1 B5 B6 T8 R4
Occupational Health & Safety Specialists	230	260	1.3	30.59	63,620	BA	N	N	B2 B9 B3 C1 SY1 SO6 B10
Operating Engineers & Other Construction Equipment Operators	1,290	1,455	1.3	24.16	50,248	HS	N	M	T4 T5 B2 B6 B9
Dispatchers, Ex Police, Fire, & Ambulance	480	540	1.3	20.75	43,155	HS	N	M	B2 B9 SO1 B7 R4
Environmental Scientists & Specialists, Incl Health	290	325	1.2	30.96	64,394	BA	N	N	B8 B3 B7 B9 B2 B10
First-Line Supervisors of Mechanics, Installers, & Repairers	1,420	1,585	1.2	28.89	60,093	HS	< 5	N	R3 B6 SO1 B3 R4
Structural Iron & Steel Wkrs	305	340	1.1	27.81	57,848	HS	N	A	T4 T5 SO1 B3 SY1 B6 B7 B9
Laborers & Freight, Stock, & Material Movers, Hand	6,855	7,625	1.1	13.40	27,882	NE	N	S	B2 B3 T5 SO1 B6 B7 B9
Chemical Technicians	190	210	1.1	N.A.	N.A.	AS	N	M	B8 B7 B3 B6 B10
Bus Drivers, Transit & Intercity	380	415	0.9	15.96	33,190	HS	N	M	T4 T5 B2 R4 B3 SO5 SO6 B9
Industrial Engineers	490	535	0.9	36.31	75,528	BA	N	N	B7 B2 C1 B3 B10
Production, Planning, & Expediting Clerks	800	870	0.8	24.28	50,501	HS	N	M	B7 B2 B3 B9 R4
Industrial Production Managers	555	600	0.7	44.51	92,581	BA	> 5	N	SO1 B2 B6 R3 R4
Industrial Truck & Tractor Operators	1,315	1,405	0.7	16.39	34,093	NE	N	S	T4 T5 SO1 T1 B2 B3 B6
Welders, Cutters, Solderers, & Brazers	1,120	1,185	0.6	17.40	36,191	HS	N	M	B3 B2 B6 SY1 T4 T5
Team Assemblers	3,710	3,930	0.6	15.51	32,266	HS	N	M	SO1 B2 B3 B9 B6 B7
Mixing & Blending Machine Setters, Operators, & Tenders	295	310	0.5	16.94	35,237	HS	N	M	T5 T4 B6 B7 B2 T8
First-Line Supervisors of Production & Operating Wkrs	1,500	1,550	0.3	24.98	51,959	HS	< 5	N	B3 R4 B2 B9 SO1 R3 B9

region 12

Industrial Machinery Mechanics	335	420	2.5	23.30	48,466	HS	N	L	T9 T1 T5 T11 T8
Electricians	300	350	1.7	23.36	48,579	HS	N	A	T11 T9 B2 B3 T5 T8
Operating Engineers & Other Construction Equipment Operators	490	540	1.0	21.12	43,922	HS	N	M	T4 T5 B2 B6 B9
Carpenters	555	605	1.0	20.70	43,058	HS	N	A	B3 T2 T5 B2 SO1 SY1 B5 B6 T8 R4
Laborers & Freight, Stock, & Material Movers, Hand	1,485	1,630	1.0	13.91	28,922	NE	N	S	B2 B3 T5 SO1 B6 B7 B9
Welders, Cutters, Solderers, & Brazers	545	595	0.9	19.39	40,328	HS	N	M	B3 B2 B6 SY1 T4 T5
Electrical Power-Line Installers & Repairers	165	185	0.9	26.28	54,652	HS	N	L	B2 B6 B3 T5 T11
Industrial Truck & Tractor Operators	585	630	0.8	16.04	33,371	NE	N	S	T4 T5 SO1 T1 B2 B3 B6
Customer Service Reps	560	595	0.6	16.44	34,199	HS	N	S	B2 B9 SO5 SO4 B7
Team Assemblers	470	490	0.5	12.81	26,641	HS	N	M	SO1 B2 B3 B9 B6 B7
First-Line Supervisors of Production & Operating Wkrs	490	510	0.4	27.47	57,142	HS	< 5	N	B3 R4 B2 B9 SO1 R3 B9

enhanced skills occupations
region 11

Occupational Title	Employment[1] 2014 Estimated	Employment[1] 2024 Projected	Employment[1] Annual Growth Rate (%)	$ [2] 2016 Mean Wage	$ [2] 2016 Mean Salary	Career Preparation[3] Educ	Career Preparation[3] Work Exp	Career Preparation[3] Job Training	Top Skills[4] (L-R in order of significance)
Personal Financial Advisors	715	915	2.8	35.38	73,600	BA	N	L	B3 B9 B7 SY1 B10
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	1,345	1,675	2.5	24.80	51,583	PS	N	L	T3 T11 T9 T1 T5
Construction Laborers	3,165	3,875	2.3	18.44	38,357	NE	N	S	B9 SO1 B2 B3 T4 T5 SO6
Bus & Truck Mechanics & Diesel Engine Specialists	995	1,210	2.1	22.35	46,489	HS	N	L	T9 T11 T1 T4 T5
Roofers	440	525	1.9	20.74	43,142	NE	N	M	SO1 T4 B2 B3 R4
Marketing Managers	625	740	1.8	56.23	116,965	BA	> 5	N	B2 SO4 SO6 B9
Financial Analysts	1,355	1,585	1.7	N.A.	N.A.	BA	N	N	B3 B7 B10 B2 C1
Plumbers, Pipefitters, & Steamfitters	1,550	1,800	1.6	26.34	54,788	HS	N	A	SO1 R4 B3 T5 B2 SY1 B6 B9
Machinists	740	850	1.5	16.75	34,844	HS	N	L	T5 T8 T4 T11 B3 B6
Sales Reps, Wholesale & Mfg, Technical & Scientific Products	1,140	1,305	1.4	33.78	70,257	BA	N	M	B9 SO4 B2 SO6 SO3 B7 SO5
Architects, Ex Landscape & Naval	320	365	1.4	33.51	69,699	BA	N	I	B2 B3 C1 B9 SY1 B7
Civil Engineers	895	1,020	1.4	38.32	79,708	BA	N	N	C1 B3 SY1 B5 T6 B7
Construction Managers	1,085	1,235	1.4	37.26	77,508	BA	N	M	R4 B2 B3 R3 B9
Heavy & Tractor-Trailer Truck Drivers	7,635	8,655	1.3	21.29	44,280	PS	N	S	T4 T5 B6 B2 B3 T8
Training & Development Specialists	1,090	1,235	1.3	28.11	58,463	BA	< 5	N	B9 SO2 B4 B7 B2
Sheet Metal Wkrs	425	480	1.3	24.98	51,949	HS	N	A	B3 SY1 R4 B5 B2 SO1 B6 B7 B9
Architectural & Engineering Managers	285	320	1.2	54.41	113,174	BA	> 5	N	B2 B7 B9 B10 C1 SO1 R3 B6 T6 R4
Public Relations Specialists	980	1,105	1.2	29.33	61,007	BA	N	N	B9 B2 B3 B7 B10
Transportation, Storage, & Distribution Managers	375	420	1.2	38.67	80,426	HS	> 5	N	B7 B9 B2 SO1 B3 R4
Mechanical Engineers	480	535	1.1	38.23	79,514	BA	N	N	C1 B3 B2 SY1 B5 B7
General & Operations Managers	5,675	6,295	1.1	51.13	106,358	BA	> 5	N	B2 B7 B9 B3 B6
Refuse & Recyclable Material Collectors	320	355	1.1	15.66	32,581	NE	N	S	T4 T5 SO1 B3 B2 SY1 B6 SO6 B9
Soil & Plant Scientists	1,425	1,580	1.1	35.61	74,072	BA	N	N	B8 B2 B3 B9 SY1 B7
Maintenance & Repair Wkrs, General	3,795	4,175	1.0	18.65	38,785	HS	N	L	T9 T1 T11 B3 C1 T2 B6 T5 T8 B7 R4
Wholesale & Retail Buyers, Ex Farm Products	315	345	1.0	24.92	51,834	BA	N	L	B2 SO3 SO4 B9 B3
Agricultural & Food Science Technicians	480	525	0.9	18.77	39,032	AS	N	M	B7 B3 B10 B2 C1 SO1 B9
Automotive Service Technicians & Mechanics	2,585	2,825	0.9	20.16	41,937	PS	N	S	T1 T9 T11 T2 T8
Inspectors, Testers, Sorters, Samplers, & Weighers	1,135	1,230	0.8	16.94	35,235	HS	N	M	B3 B2 B9 B7 B6 T5
Construction & Building Inspectors	205	220	0.7	28.53	59,353	HS	> 5	M	B2 B7 C1 B3 SY1 B9
Shipping, Receiving, & Traffic Clerks	1,345	1,395	0.4	16.61	34,548	HS	N	S	B7 B2 SY1 B6 R4
Farmers, Ranchers, & Other Agricultural Managers	5,255	5,155	-0.2	38.28	79,625	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Reporters & Correspondents	285	260	-0.9	23.66	49,203	BA	N	N	B2 B9 B10 B7 B3 R4

region 12

Bus & Truck Mechanics & Diesel Engine Specialists	315	375	1.9	17.62	36,642	HS	N	L	T9 T11 T1 T4 T5
Construction Laborers	685	805	1.8	14.49	30,142	NE	N	S	B9 SO1 B2 B3 T4 T5 SO6
Plumbers, Pipefitters, & Steamfitters	470	535	1.4	22.26	46,292	HS	N	A	SO1 R4 B3 T5 B2 SY1 B6 B9
Heavy & Tractor-Trailer Truck Drivers	2,600	2,905	1.2	20.87	43,420	P	N	S	T4 T5 B6 B2 B3 T8
General & Operations Managers	930	1,010	0.9	40.78	84,813	BA	> 5	N	B2 B7 B9 B3 B6
Inspectors, Testers, Sorters, Samplers, & Weighers	235	255	0.9	17.93	37,288	HS	N	M	B3 B2 B9 B7 B6 T5
Maintenance & Repair Wkrs, General	770	825	0.8	17.77	36,955	HS	N	L	T9 T1 T11 B3 C1 T2 B6 T5 T8 B7 R4
Automotive Service Technicians & Mechanics	555	585	0.5	18.46	38,392	P	N	S	T1 T9 T11 T2 T8
Farmers, Ranchers, & Other Agricultural Managers	4,685	4,750	0.1	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 Occu*pations** (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' questionaire 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:** 2014-2024 Occupational Projections estimates based on 2014 annual industry employment data and 2015 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:** 2016 Iowa Wage Survey estimates (based on 2015 2nd quarter occupational wage data updated to 2015 2nd quarter using Employment Cost Index), Labor Market and Workforce Information Division, Iowa Workforce Development. This workforce product was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration; **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 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 and trends including this document. Published 11/2016.