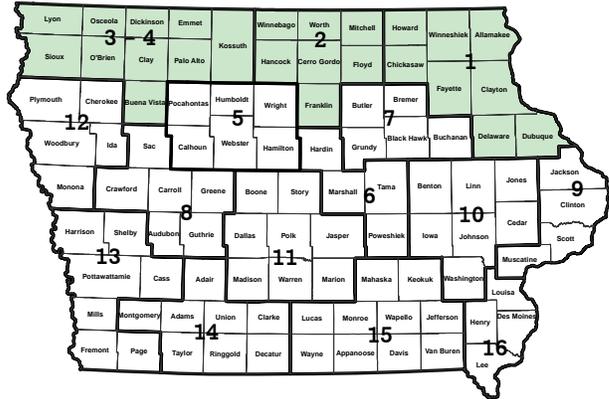


REGIONS 1, 2, 3-4

GREEN JOBS



INCREASED DEMAND OCCUPATIONS

REGION 1

Occupational Title	Employment <sup>[1]</sup>			\$ <sup>[2]</sup>		Career Preparation <sup>[3]</sup>			Top Skills <sup>[4]</sup>									
	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	690	900	3.0	20.33	42,294	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Software Developers, Systems Software	460	585	2.7	N.A.	N.A.	BA	N	N	B3	B2	T7	B7	C1					
Cement Masons & Concrete Finishers	320	410	2.7	17.91	37,250	< HS	N	M	B6	B2	SO1	B3	SY1					
Industrial Machinery Mechanics	520	640	2.3	22.37	46,531	HS	N	L	T9	T1	T5	T11	T8					
Heating, AC, & Refrigeration Mechanics & Installers	175	215	2.3	24.91	51,818	PS	N	L	T3	T11	T9	T1	T5					
Operating Engineers & Other Const Equipment Operators	635	770	2.1	22.69	47,191	HS	N	M	T4	T5	B2	B6	B9					
Computer-Controlled Machine Tool Operators, Metal & Plastic	1,020	1,230	2.1	N.A.	N.A.	HS	N	M	B6	T5	B3	T8	T4					
Electricians	590	690	1.7	26.11	54,303	HS	N	A	T11	T9	B2	B3	T5	T8				
Production, Planning, & Expediting Clerks	305	350	1.5	17.64	36,690	HS	N	M	B7	B2	B3	B9	R4					
Customer Service Reps	1,225	1,405	1.5	N.A.	N.A.	HS	N	S	B2	B9	SO5	SO4	B7					
Laborers & Freight, Stock, & Material Movers, Hand	1,920	2,135	1.1	12.93	26,900	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			
Team Assemblers	2,070	2,250	0.9	15.24	31,690	HS	N	M	SO1	B2	B3	B9	B6	B7				
Welders, Cutters, Solderers, & Brazers	765	830	0.8	17.60	36,612	HS	N	M	B3	B2	B6	SY1	T4	T5				
First-Line Supervisors of Mechanics, Installers, & Repairers	330	355	0.8	28.03	58,306	HS	< 5	N	R3	B6	SO1	B3	R4					
First-Line Supervisors of Production & Operating Wkrs	650	690	0.5	25.38	52,793	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9			
Industrial Truck & Tractor Operators	550	560	0.2	16.40	34,117	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6			

REGION 2

Carpenters	385	510	3.2	18.47	38,409	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Industrial Machinery Mechanics	190	240	2.6	20.69	43,036	HS	N	L	T9	T1	T5	T11	T8					
Operating Engineers & Other Const Equipment Operators	200	250	2.3	20.19	41,986	HS	N	M	T4	T5	B2	B6	B9					
Mixing & Blending Machine Setters, Operators, & Tenders	295	345	1.7	19.10	39,729	HS	N	M	T5	T4	B6	B7	B2	T8				
Team Assemblers	1,590	1,795	1.3	14.54	30,233	HS	N	M	SO1	B2	B3	B9	B6	B7				
Customer Service Reps	545	600	1.0	15.74	32,731	HS	N	S	B2	B9	SO5	SO4	B7					
Welders, Cutters, Solderers, & Brazers	780	840	0.8	15.48	32,207	HS	N	M	B3	B2	B6	SY1	T4	T5				
Laborers & Freight, Stock, & Material Movers, Hand	800	850	0.6	13.43	27,943	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			
Industrial Truck & Tractor Operators	335	325	-0.3	13.84	28,793	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6			

REGION 3-4

Carpenters	405	510	2.6	17.29	35,957	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Cement Masons & Concrete Finishers	470	580	2.4	N.A.	N.A.	< HS	N	M	B6	B2	SO1	B3	SY1					
Industrial Machinery Mechanics	645	785	2.2	19.31	40,174	HS	N	L	T9	T1	T5	T11	T8					
Operating Engineers & Other Construction Equipment Operators	305	355	1.6	17.57	36,535	HS	N	M	T4	T5	B2	B6	B9					
Electricians	285	320	1.4	20.97	43,617	HS	N	A	T11	T9	B2	B3	T5	T8				
Customer Service Reps	855	970	1.3	16.62	34,574	HS	N	S	B2	B9	SO5	SO4	B7					
Industrial Engineers	265	300	1.3	32.95	68,531	BA	N	N	B7	B2	C1	B3	B10					
Team Assemblers	880	965	1.0	15.33	31,885	HS	N	M	SO1	B2	B3	B9	B6	B7				
Computer-Controlled Machine Tool Operators, Metal & Plastic	210	230	1.0	15.66	32,566	HS	N	M	B6	T5	B3	T8	T4					
Welders, Cutters, Solderers, & Brazers	530	560	0.6	16.41	34,135	HS	N	M	B3	B2	B6	SY1	T4	T5				
First-Line Supervisors of Mechanics, Installers, & Repairers	275	290	0.5	27.38	56,943	HS	< 5	N	R3	B6	SO1	B3	R4					
Laborers & Freight, Stock, & Material Movers, Hand	1,900	1,980	0.4	13.72	28,547	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			
First-Line Supervisors of Production & Operating Workers	660	680	0.3	25.20	52,422	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9			
Industrial Truck & Tractor Operators	415	390	-0.6	14.36	29,876	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6			

# ENHANCED SKILLS OCCUPATIONS

## REGION 1

Occupational Title	Employment <sup>(1)</sup>			\$ <sup>(2)</sup>		Career Preparation <sup>(3)</sup>			Top Skills <sup>(4)</sup>										
	2012 Est	2022 Proj	Annual Growth Rate (%)	2015 Mean Wage	2015 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)										
Personal Financial Advisors	270	345	2.8	38.35	79,764	BA	N	N	B3	B9	B7	SY1	B10						
Const Laborers	1,185	1,495	2.6	16.98	35,328	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6				
Heating, AC, & Refrigeration Mechanics & Installers	175	215	2.3	24.91	51,818	PS	N	L	T3	T11	T9	T1	T5						
Plumbers, Pipefitters, & Steamfitters	290	345	1.7	24.24	50,417	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9			
Machinists	465	540	1.7	18.82	39,153	HS	N	L	T5	T8	T4	T11	B3	B6					
Heavy & Tractor-Trailer Truck Drivers	3,015	3,425	1.4	21.00	43,676	PS	N	S	T4	T5	B6	B2	B3	T8					
General & Operations Managers	1,205	1,350	1.2	50.24	104,492	BA	< 5	N	B2	B7	B9	B3	B6						
Maintenance & Repair Wkrs, General	1,110	1,235	1.2	17.91	37,249	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4
Automotive Service Technicians & Mechanics	625	695	1.1	19.65	40,873	HS	N	L	T1	T9	T11	T2	T8						
Bus & Truck Mechanics & Diesel Engine Specialists	305	330	0.8	21.01	43,698	HS	N	L	T9	T11	T1	T4	T5						
Shipping, Receiving, & Traffic Clerks	345	360	0.4	14.83	30838	HS	N	S	B7	B2	SY1	B6	R4						
Farmers, Ranchers, & Other Agricultural Managers	7,195	6,555	-0.9	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4					

## REGION 2

Construction Laborers	770	1,000	3.0	14.46	30,070	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6				
Heavy & Tractor-Trailer Truck Drivers	1,540	1,710	1.1	19.63	40,840	PS	N	S	T4	T5	B6	B2	B3	T8					
Automotive Service Technicians & Mechanics	375	410	0.9	17.14	35,649	HS	N	L	T1	T9	T11	T2	T8						
Maintenance & Repair Wkrs, General	435	480	0.9	17.23	35,843	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4
General & Operations Managers	605	645	0.7	35.81	74,479	BA	< 5	N	B2	B7	B9	B3	B6						
Farmers, Ranchers, & Other Agricultural Managers	4,180	3,830	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4					

## REGION 3-4

Construction Laborers	875	1,060	2.1	14.52	30,195	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6				
Heavy & Tractor-Trailer Truck Drivers	2,490	2,820	1.3	16.64	34,602	PS	N	S	T4	T5	B6	B2	B3	T8					
Machinists	565	630	1.1	16.32	33,950	HS	N	L	T5	T8	T4	T11	B3	B6					
Inspectors, Testers, Sorters, Samplers, & Weighers	345	375	0.9	16.57	34,458	HS	N	M	B3	B2	B9	B7	B6	T5					
Automotive Service Technicians & Mechanics	415	450	0.8	19.38	40,305	HS	N	L	T1	T9	T11	T2	T8						
Maintenance & Repair Workers, General	830	900	0.8	16.73	34,800	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7	R4
General & Operations Managers	905	980	0.8	37.14	77,256	BA	< 5	N	B2	B7	B9	B3	B6						
Shipping, Receiving, & Traffic Clerks	285	295	0.4	15.32	31,859	HS	N	S	B7	B2	SY1	B6	R4						
Farmers, Ranchers, & Other Agricultural Managers	6,485	5,945	-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: **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 = More than 5 years; 1 to 5 = 1 to 5 years; < 1 = Less than 1 year; N = None. **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. **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](http://www.iowalmi.gov) to obtain the latest workforce data trends including this document. Published 11/2015.