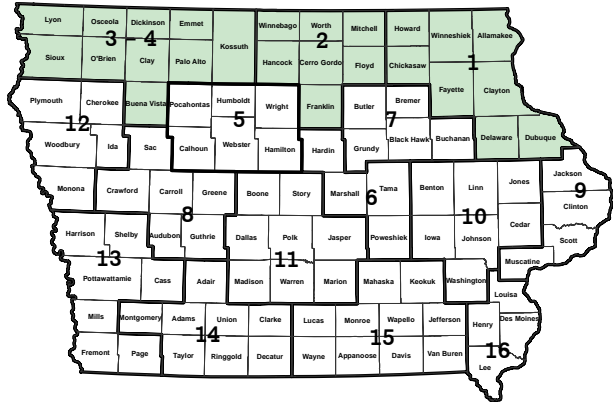


REGIONS 1, 2, 3-4

GREEN JOBS



INCREASED DEMAND OCCUPATIONS

REGION 1

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	690	900	3.0	19.05	39,633	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	17.42	36,227	< HS	N	M	B6	B2	SO1	B3	SY1					
Industrial Machinery Mechanics	520	640	2.3	21.61	44,956	HS	N	L	T9	T1	T5	T11	T8					
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	175	215	2.3	19.89	41,365	PS	N	L	T3	T11	T9	T1	T5					
Operating Engineers & Other Construction Equipment Operators	635	770	2.1	21.47	44,652	HS	N	M	T4	T5	B2	B6	B9					
Computer-Controlled Machine Tool Operators, Metal & Plastic	1,020	1,230	2.1	17.77	36,957	HS	N	M	B6	T5	B3	T8	T4					
Electricians	590	690	1.7	21.91	45,571	HS	N	A	T11	T9	B2	B3	T5	T8				
Production, Planning, & Expediting Clerks	305	350	1.5	16.62	34,570	HS	N	M	B7	B2	B3	B9	R4					
Customer Service Reps	1,225	1,405	1.5	13.80	28,701	HS	N	S	B2	B9	SO5	SO4	B7					
Laborers & Freight, Stock, & Material Movers, Hand	1,920	2,135	1.1	13.19	27,431	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			
Team Assemblers	2,070	2,250	0.9	16.79	34,913	HS	N	M	SO1	B2	B3	B9	B6	B7				
Welders, Cutters, Solderers, & Brazers	765	830	0.8	16.21	33,711	HS	N	M	B3	B2	B6	SY1	T4	T5				
First-Line Supervisors of Mechanics, Installers, & Repairers	330	355	0.8	25.44	52,911	HS	< 5	N	R3	B6	SO1	B3	R4					
First-Line Supervisors of Production & Operating Workers	650	690	0.5	24.49	50,941	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9			
Industrial Truck & Tractor Operators	550	560	0.2	15.41	32,053	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6			

REGION 2

Carpenters	385	510	3.2	20.58	42,797	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Industrial Machinery Mechanics	190	240	2.6	20.22	42,053	HS	N	L	T9	T1	T5	T11	T8					
Operating Engineers & Other Construction Equipment Operators	200	250	2.3	19.30	40,145	HS	N	M	T4	T5	B2	B6	B9					
Mixing & Blending Machine Setters, Operators, & Tenders	295	345	1.7	18.06	37,560	HS	N	M	T5	T4	B6	B7	B2	T8				
Team Assemblers	1,590	1,795	1.3	14.88	30,954	HS	N	M	SO1	B2	B3	B9	B6	B7				
Customer Service Representatives	545	600	1.0	16.34	33,989	HS	N	S	B2	B9	SO5	SO4	B7					
Welders, Cutters, Solderers, & Brazers	780	840	0.8	14.99	31,173	HS	N	M	B3	B2	B6	SY1	T4	T5				
Laborers & Freight, Stock, & Material Movers, Hand	800	850	0.6	13.03	27,108	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			
Industrial Truck & Tractor Operators	335	325	-0.3	14.91	31,003	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6			

REGION 3-4

Carpenters	405	510	2.6	15.61	32,468	HS	N	A	B3	T2	T5	B2	SO1	SY1	B5	B6	T8	R4
Cement Masons & Concrete Finishers	470	580	2.4	17.52	36,435	< HS	N	M	B6	B2	SO1	B3	SY1					
Industrial Machinery Mechanics	645	785	2.2	18.39	38,251	HS	N	L	T9	T1	T5	T11	T8					
Operating Engineers & Other Construction Equipment Operators	305	355	1.6	16.56	34,439	HS	N	M	T4	T5	B2	B6	B9					
Electricians	285	320	1.4	21.49	44,701	HS	N	A	T11	T9	B2	B3	T5	T8				
Customer Service Representatives	855	970	1.3	16.20	33,706	HS	N	S	B2	B9	SO5	SO4	B7					
Industrial Engineers	265	300	1.3	31.42	65,362	BA	N	N	B7	B2	C1	B3	B10					
Team Assemblers	880	965	1.0	15.31	31,848	HS	N	M	SO1	B2	B3	B9	B6	B7				
Computer-Controlled Machine Tool Operators, Metal & Plastic	210	230	1.0	14.84	30,869	HS	N	M	B6	T5	B3	T8	T4					
Welders, Cutters, Solderers, & Brazers	530	560	0.6	16.22	33,740	HS	N	M	B3	B2	B6	SY1	T4	T5				
First-Line Supervisors of Mechanics, Installers, & Repairers	275	290	0.5	24.80	51,574	HS	< 5	N	R3	B6	SO1	B3	R4					
Laborers & Freight, Stock, & Material Movers, Hand	1,900	1,980	0.4	12.96	26,958	< HS	N	S	B2	B3	T5	SO1	B6	B7	B9			
First-Line Supervisors of Production & Operating Workers	660	680	0.3	24.12	50,159	PS	< 5	N	B3	R4	B2	B9	SO1	R3	B9			
Industrial Truck & Tractor Operators	415	390	-0.6	14.01	29,146	< HS	N	S	T4	T5	SO1	T1	B2	B3	B6			

ENHANCED SKILLS OCCUPATIONS

REGION 1

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4] (L-R in order of significance)									
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training										
Personal Financial Advisors	270	345	2.8	32.85	68,324	BA	N	N	B3	B9	B7	SY1	B10					
Construction Laborers	1,185	1,495	2.6	15.44	32,105	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6			
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	175	215	2.3	19.89	41,365	PS	N	L	T3	T11	T9	T1	T5					
Plumbers, Pipefitters, & Steamfitters	290	345	1.7	22.33	46,455	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9		
Machinists	465	540	1.7	17.79	36,994	HS	N	L	T5	T8	T4	T11	B3	B6				
Heavy & Tractor-Trailer Truck Drivers	3,015	3,425	1.4	18.28	38,024	PS	N	S	T4	T5	B6	B2	B3	T8				
General & Operations Managers	1,205	1,350	1.2	38.23	79,528	BA	< 5	N	B2	B7	B9	B3	B6					
Maintenance & Repair Workers, General	1,110	1,235	1.2	16.24	33,780	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7
Automotive Service Technicians & Mechanics	625	695	1.1	16.75	34,839	HS	N	L	T1	T9	T11	T2	T8					
Bus & Truck Mechanics & Diesel Engine Specialists	305	330	0.8	20.32	42,261	HS	N	L	T9	T11	T1	T4	T5					
Shipping, Receiving, & Traffic Clerks	345	360	0.4	14.29	29,731	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	13.58	28,239	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6			
Heavy & Tractor-Trailer Truck Drivers	1,540	1,710	1.1	18.64	38,765	PS	N	S	T4	T5	B6	B2	B3	T8				
Automotive Service Technicians & Mechanics	375	410	0.9	16.42	34,150	HS	N	L	T1	T9	T11	T2	T8					
Maintenance & Repair Workers, General	435	480	0.9	17.47	36,329	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7
General & Operations Managers	605	645	0.7	35.73	74,318	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	13.52	28,112	< HS	N	S	B9	SO1	B2	B3	T4	T5	SO6			
Heavy & Tractor-Trailer Truck Drivers	2,490	2,820	1.3	16.75	34,834	PS	N	S	T4	T5	B6	B2	B3	T8				
Machinists	565	630	1.1	15.82	32,896	HS	N	L	T5	T8	T4	T11	B3	B6				
Inspectors, Testers, Sorters, Samplers, & Weighers	345	375	0.9	16.98	35,323	HS	N	M	B3	B2	B9	B7	B6	T5				
Automotive Service Technicians & Mechanics	415	450	0.8	17.48	36,359	HS	N	L	T1	T9	T11	T2	T8					
Maintenance & Repair Workers, General	830	900	0.8	16.43	34,180	HS	N	L	T9	T1	T11	B3	C1	T2	B6	T5	T8	B7
General & Operations Managers	905	980	0.8	37.68	78,376	BA	< 5	N	B2	B7	B9	B3	B6					
Shipping, Receiving, & Traffic Clerks	285	295	0.4	15.14	31,498	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 **lowa'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.