



Idaho Green Human Capital Report 2011

IDAHO
DEPARTMENT OF LABOR
C.L. "BUTCH" OTTER, GOVERNOR
ROGER B. MADSEN, DIRECTOR

Idaho Green Human Capital Report



C.L. "BUTCH" OTTER, GOVERNOR
ROGER B. MADSEN, DIRECTOR

Communications and Research
Georgia Smith, Deputy Director

Report by Cheryl Foster, Senior Research Analyst

Acknowledgements:

The Idaho Green Human Capital Report was produced in collaboration with Bob Uhlenkott, Chief Research Officer; Sara Scudder, Research Analyst Principal; Margaret Havey, Research Analyst; Polly Lorenz, Technical Records Specialist II; Keri Ro, Research Analyst; Bob Fick, Communications Manager and Jean Cullen, Public Information Specialist.

The team also wishes to acknowledge the data provided to the Idaho Department of Labor by Idaho postsecondary institutions regarding their academic programs.

This publication is available online at <http://lmi.idaho.gov/>.

For more information, contact Sara Scudder at (208) 332-3570 ext. 3246 or sara.scudder@labor.idaho.gov.

This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee 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 solution 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.

The Idaho Department of Labor is an Equal Opportunity Employer and Service Provider. We are committed to providing employment services and programs and will not discriminate on the basis of race, color, national origin, religion, political affiliation or belief, sex, age or disability.

Idaho Human Capital

As part of the American Recovery and Reinvestment Act of 2009, the Idaho Department of Labor received a State Labor Market Information Improvement Grant to conduct research related to green occupations. The purpose is to ascertain the current condition of green employment in the state of Idaho and to project which occupations and industries are expected to provide jobs in the future.

As part of the grant-related research, analysts compiled supply and demand data on certain occupations to identify workforce gaps.

The primary research commenced with the 2010 Idaho Green Jobs Survey of 5,000 Idaho businesses to establish the number and types of green jobs in Idaho. Employers reported over 211 unique occupations with green jobs. The 30 with the largest green employment in Idaho were analyzed. But the analysis has provided only a tool for beginning to evaluate certain occupations. The data available for the occupations is insufficient to conduct a complete gap analysis. The assessment follows.

Projected Demand for Green Jobs

Demand can be estimated from various sources – short-term and long-term projections, vacancy information, real-time labor market information analysis and consulting with industry experts on particular occupations. For this report, demand is estimated using the growth rate from the 2008-2018 Idaho Department of Labor Long-Term Projections, 2010 Idaho Job Vacancy Survey and 2010 Idaho Green Jobs Survey.

The projected demand for each of the top 30 occupations is displayed in Table 1 on page 7. The estimated demand is derived from the Idaho Department of Labor 2008-2018 Long-Term Projections growth rate. The number of annual openings includes new positions due to growth as well as replacement positions due to persons retiring or otherwise leaving the occupation.

The estimated vacancies come from primary research for the Idaho Department of Labor's 2010 Idaho Job Vacancy Survey. Employers were asked to describe their then-current job vacancies and whether each vacancy was a newly created position. Twenty-four of the top 30 green occupations reported job vacancies.

The 2010 number of green workers is estimated from the 2010 Idaho Green Jobs Survey. The 2010 annual green openings are calculated using the same growth rate as the 2008-2018 long-term projections. These jobs are a subset of the 2008-2018 annual openings.

The occupations with the largest number of annual openings are also the ones with the most overall employment in Idaho. Of the top 30 occupations, the ones with the most overall employment in Idaho are retail salesperson, general and operations manager and heavy and tractor-trailer truck driver. Retail salesperson is the occupation with the largest employment in the state, and it also has the largest number of annual openings at 1,161. Heavy and tractor-trailer truck driver is the fourth largest in employment and is the green occupation with the second largest number of annual openings with 519. General and operations manager is the fifth largest occupation in employment statewide and has the third largest number of annual openings at 477. Not surprisingly, retail salespersons and heavy tractor-trailer truck drivers also had the most vacancies in 2010. The high demand for these occupations is correlated with their high employment.

Of the occupations with the most green employment, construction laborer is first followed by landscaping and groundkeeping worker, hazardous materials removal worker and heavy and tractor-trailer truck driver. However, construction laborer is not the occupation with the highest number of annual green openings. Landscaping and groundskeeping worker, hazardous materials removal worker, heavy and tractor-trailer truck driver, farmworker and laborer for crop, nursery and greenhouse and environmental scientist and specialist including health each have over 20 annual green openings.

The occupations with the highest percentage of annualized growth are architectural and engineering manager, hazardous materials removal worker and environmental engineer.

Projected Supply for Green Jobs

Occupations with verifiable barriers to entry such as a license are easier to capture for calculating the potential supply of workers into that occupation. For other occupations that require a minimum level of education such as engineers, a secondary resource for estimating a supply base is the count of graduates from educational program that prepare students for work in that occupation.

It is much more difficult to calculate the supply of workers for those occupations requiring less than postsecondary education such as on-the-job training. Theoretically, any employable person with the ability to learn the job is counted in the supply. This includes persons overqualified for the occupation. In fact, many persons currently in occupations with short-term on-the-job training requirements such as retail salespersons may be underemployed if they have received training toward another occupation.

Table 2 on page 8 shows the top 30 occupations along with the minimum educational levels required to perform those duties. Of the top 30 occupations, 15 have an education requirement of at least an associate degree. For those occupations, it is possible to count the graduates from related education programs.

Most Idaho postsecondary schools report the number of graduates from their academic programs to the Integrated Postsecondary Educational Data System (IPEDS). Each academic program is assigned a Classification of Instructional Programs, or CIP, code. Each CIP code filters into specific Standard Occupational Classification, or SOC, codes as defined by the U.S. Department of Labor's Occupational Outlook Handbook. Using EMSI's Occupational Analysis reporting tool, the list of academic programs from IPEDS was cross-referenced against the CIP-2000-2010 Crosswalk from the U.S. Department of Education to find CIP to SOC code relationships. The CIP-2000-2010 Crosswalk provides detailed analysis of educational programs. It is only possible to collect prospective supply information for academic programs reported to the IPEDS.

In order to speculate on the supply for an occupation, graduates from related Idaho academic programs were counted according to the level of completion. Only graduates attaining the minimum education level are counted in the human capital supply for that occupation. For example, environmental scientists and specialists, including health has a minimum education level of a master's degree. Idaho colleges and universities graduated 50 students with bachelor's degrees in the same CIP codes identified with that occupation. However, only the 19 graduates with master's degrees from those programs are qualified.

Because of the large numbers of CIP codes associated with these occupations, management occupations were not analyzed because the core competencies for those jobs are addressed in the lower related occupations. Two of the top 30 occupations are within the management group: general and operations managers number 22 and architecture and engineering managers number 25.

Analysts were unsuccessful in obtaining meaningful data on the trade occupations. The department obtained data from a few of the community colleges and some of the trade unions that offer training programs. However, analysts found that there are no records kept for tracking the movement of apprentices to licensure. The 2009 completer information provided for heating, air conditioning and refrigeration mechanics and installers in Table 2 on page 8 is strictly what schools reported to the IPEDS.

The top 30 occupation with the largest supply of eligible graduates from Idaho colleges and universities is mechanical engineer at 11 with 193 mechanical engineering graduates from University of Idaho, Boise State University, Idaho State University and Brigham Young University-Idaho.

Gap Analysis

A gap analysis is intended to compare the demand for an occupation relative to supply. To properly conduct a gap analysis, adequate data must exist to illuminate the actual supply and demand. However, any data source has limitations. The following caveats must be considered in order to properly conduct a supply and demand gap analysis.

- Academic programs may lead to jobs in more than one occupation. The number of potential workers summed across all occupations is greater than the total number of graduates. Each occupation must be evaluated separately, recognizing that the numbers represent only the Idaho “potential” for that occupation.
- Likewise, occupations can be comprised of more than one CIP code. This is especially true for supervisory and management positions. Generally, supervisory positions include all of the CIP codes associated with the occupations they supervise.
- The IPEDS data may be incomplete for certain occupations. Only schools that accept federal funding are required to report to the system.
- An inclusive but measurable geographic area must be defined for including schools. A suitable analysis will include all schools that regularly supply workers for a particular occupation regardless of geographic proximity.
- There are no assurances that graduates of a particular academic program will work in that field or within the defined geographic area.

This page is intentionally blank.

Table 1: Estimated Demand for Top 30 Occupations with Green Jobs

Rank of Top 30 Green Jobs	SOC	SOC Title	Minimum Education Level*	2008-2018 Annual Openings	Annualized Growth	2010 Estimated Vacancies	2010 Estimated New Vacancies	2010 Green Workers	2010 Annual Green Openings
1	47-2061	Construction Laborers	MT	84	0.57%	29	0	1,007	13
2	37-3011	Landscaping and Groundskeeping Workers	ST	205	2.03%	95	8	603	21
3	47-4041	Hazardous Materials Removal Workers	MT	21	3.60%	NA	NA	599	21
4	53-3032	Truck Drivers, Heavy and Tractor-Trailer	ST	519	1.74%	336	181	570	21
5	47-2152	Plumbers, Pipefitters and Steamfitters	LT	50	-0.04%	8	8	536	11
6	19-4091	Environmental Science and Protection Technicians, Including Health	A	18	1.91%	9	0	526	18
7	49-9021	Heating, Air Conditioning and Refrigeration Mechanics and Installers	PVA	45	1.34%	11	0	471	14
8	45-2092	Farmworkers and Laborers, Crop, Nursery and Greenhouse	ST	401	1.45%	193	0	469	20
9	47-2073	Operating Engineers and Other Construction Equipment Operators	MT	50	0.41%	46	14	411	9
10	19-2041	Environmental Scientists and Specialists, Including Health	M	26	2.22%	6	0	391	20
11	17-2141	Mechanical Engineers	B	42	0.40%	22	6	312	9
12	13-1199	Business Operations Specialists, All Other	B	143	1.51%	6	0	310	12
13	19-1023	Zoologists and Wildlife Biologists	B	13	0.37%	6	5	291	10
14	53-7081	Refuse and Recyclable Material Collectors	ST	54	2.17%	NA	NA	282	15
15	51-9199	Production Workers, All Other	MT	48	0.28%	NA	NA	277	11
16	19-4021	Biological Technicians	B	32	0.43%	24	6	257	10
17	11-1021	General and Operations Managers	B+	477	0.58%	71	4	250	9
18	47-2111	Electricians	LT	102	-3.04%	5	0	246	7
19	19-1032	Foresters	B	2	-0.04%	NA	NA	244	2
20	37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	ST	288	0.98%	23	10	244	7
21	41-2031	Retail Salespersons	ST	1,161	1.94%	530	64	237	12
22	47-2181	Roofers	MT	15	-1.38%	NA	NA	235	4
23	19-2031	Chemists	B	15	1.57%	4	0	234	12
24	19-4051	Nuclear Technicians	A	6	2.05%	43	13	229	6
25	11-9041	Architectural and Engineering Managers	B+	28	4.59%	5	0	229	6
26	47-4099	Construction and Related Workers, All Other	MT	22	0.98%	NA	NA	212	9
27	17-2051	Civil Engineers	B	36	2.41%	27	15	206	9
28	17-2081	Environmental Engineers	B	20	3.16%	17	0	203	12
29	17-2199	Engineers, All Other	B	46	1.63%	30	0	202	8
30	17-2071	Electrical Engineers	B	42	-0.98%	44	1	197	5

Top 30 Green Jobs, Source: 2010 Idaho Green Jobs Survey, SOC Code, Source: 2010 Standard Occupational Classification Codes, Minimum Education Level, Source: Bureau of Labor

Statistics, 2008-2018 Annual Openings, Source: 2008-2018 Long-Term Occupation Projections, Idaho Department of Labor (includes openings due to both growth and net replacement);

Annualized Growth, Source: 2008-2018 Long-Term Occupation Projections, Idaho Department of Labor, 2010 Estimated Vacancies, Source: 2010 Idaho Job Vacancy Survey; 2010

Estimated New Vacancies, Source: 2010 Idaho Job Vacancy Survey (subset of estimated vacancies for newly created positions); 2010 Annual Green Openings, Source: 2010 Idaho Green

Jobs Survey (includes openings due to both growth and net replacement; subset of the 2008-2018 annual openings).

Table 2: Estimated Supply for Top 30 Occupations with Green Jobs

Rank of Top 30 Green Jobs	SOC	SOC Title	WIA Training		CIP	Minimum Education Level*	2009 Idaho Completers
			Y	Y			
1	47-2061	Construction Laborers	Y	46,9999		MT	4
2	37-3011	Landscaping and Groundskeeping Workers	Y	01,0605		ST	57
3	47-4041	Hazardous Materials Removal Workers	Y	46,9999		MT	4
4	53-3032	Truck Drivers, Heavy & Tractor-Trailer	Y	49,0205		ST	41
5	47-2152	Plumbers, Pipefitters and Steamfitters	Y	None reported in Idaho		LT	.
6	19-4091	Environmental Science and Protection Technicians, Including Health	Y	03,0103, 03,0104		A	50
7	49-9021	Heating, Air Conditioning and Refrigeration Mechanics and Installers	Y	47,0201		PVA	20
8	45-2092	Farmworkers and Laborers, Crop, Nursery and Greenhouse	N	None reported in Idaho		ST	.
9	47-2073	Operating Engineers and Other Construction Equipment Operators	Y	None in Idaho		MT	.
10	19-2041	Environmental Scientists and Specialists, Including Health	Y	03,0103, 03,0104		M	19
11	17-2141	Mechanical Engineers	Y	14,1901		B	215
12	13-1199	Business Operations Specialists, All Other	Y	None reported in Idaho		B	.
13	19-1023	Zoologists and Wildlife Biologists	Y	26,0701, 26,0702, 26,0707, 26,1301, 03,0601, 26,0799		B	69
14	53-7081	Refuse and Recyclable Material Collectors	N	NONE		ST	NA
15	51-9199	Production Workers, All Other	Y	NONE		MT	NA
16	19-4021	Biological Technicians	Y	None reported in Idaho		B	.
17	11-1021	General and Operations Managers	Y	46,0302		B+	NA
18	47-2111	Electricians	Y	03,0201, 03,0502, 03,0506, 03,0509,		LT	.
19	19-1032	Foresters	Y	03,0201, 03,0502, 03,0506, 03,0509,		B	94
20	37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	N	NONE		ST	NA
21	41-2031	Retail Salespersons	N	None reported in Idaho		ST	14
22	47-2181	Roofers	N	None reported in Idaho		MT	.
23	19-2031	Chemists	N	40,0501		B	68
24	19-4051	Nuclear Technicians	Y	41,0299		A	17**
25	11-9041	Architectural and Engineering Managers	Y			B+	NA
26	47-4099	Construction and Related Workers, All Other	Y	46,9999		MT	4
27	17-2051	Civil Engineers	Y	14,0801, 14,0805		B	97
28	17-2081	Environmental Engineers	Y	14,1401		B	14
29	17-2199	Engineers, All Other	N	14,0101, 14,1301, 14,2701, 14,3901, 14,1201, 14,9999, 14,1101		B	13
30	17-2071	Electrical Engineers	Y	14,1001		B	106

Abbreviations: SOC - Standard Occupational Code; WIA - Workers trained for these occupations through the Workforce Investment Act training programs in Idaho; CIP - Classification of Instructional Programs.
Notes: NONE = No CIP is correlated with this occupation; None reported in Idaho = No CIP related to this occupation is offered at Idaho postsecondary schools; NA - Not possible to do an analysis of this occupation.

Source: Rank of Top 30 Green Jobs, Source: 2010 Idaho Green Jobs Survey; Minimum Education Level Source: U.S. Bureau of Labor Statistics; CIP / SOC crosswalk, Source: U.S. Department of Education's National Center for Education Statistics; 2009 Idaho Completers, Source: Economic Modeling Specialists, Inc. - 2009 graduates from Idaho postsecondary schools reporting to IPEDS.

*M = Master's Degree; B+ = Work Experience, plus a Bachelor's or Higher Degree; B = Bachelor's Degree; A = Associate Degree; PVA = Postsecondary Vocational Training; LT = Long-Term On-the-Job Training; MT = Moderate-Term On-the-Job Training; ST = Short-Term On-the-Job Training.

**These graduates are of an academic program of at least one, but less than two academic years.