



**IDAHO**  
DEPARTMENT OF LABOR

C.L. "Butch" Otter, Governor  
Roger B. Madsen, Director

# ILLUMINATING IDAHO'S ENERGY INDUSTRY

Communications and Research Division

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# Illuminating Idaho's Energy Industry

## Executive Summary

Beginning with construction of the first dams to produce electricity in the early 1900s, the energy cluster in Idaho has evolved. From the development of advanced power research in 1949 at the National Reactor Testing Station, now known as the Idaho National Laboratory, to the current focus on research and deployment of energy technologies that harness the clean, renewable and efficient power of the sun and wind, energy production and development have been integral to the Idaho economy.

Understanding the state's energy cluster offers a window on the future that will enable more informed strategy and policy development to optimize future energy options.

Idaho's share of employment in the national energy cluster is a relatively low 0.6 percent, ranking it 40<sup>th</sup> among the states. That is a smaller percentage than in any of the bordering states. However, Idaho ranks 14<sup>th</sup> in the nation in the concentration of the state's employment in the energy cluster at 5.8 percent.

Occupations in Idaho's energy cluster offer higher wages than the state's median wage. Workers in the cluster earn on average \$25,000 more per year than workers in all industries in the state. A few occupations pay more than the national median wage. Pay in these occupations corresponds to increases in educational requirements. The majority of energy occupations are projected to experience growth over the next decade while only 10 are expected to decline.

Research and development in the physical, engineering and life sciences, as well as other heavy construction were identified as key industries. The manufacturing industries – electric power and specialty transformer, electrical equipment and heavy gauge metal tanks – along with the support activities for metal mining emerged as potential growth industries.

This industry scan relies on databases available to the Idaho Department of Labor's Communications and Research Division to identify the tapestry of businesses and workers that form Idaho's energy cluster.

Two approaches are used. The foundation is a taxonomy developed by the Center for Regional Development at Purdue University that includes 77 specific industries across 11 sectors of the economy and throughout this paper is designated by an apple icon. Because employment in some sectors is spread well beyond energy in Idaho, this Purdue taxonomy was further refined to 41 industries in five sectors, eliminating residential construction, some manufacturing such as semiconductors, trade including wholesale and retail, transportation and warehousing, finance and insurance, real estate and government. This Core taxonomy is designated by an apple core icon.

With this information, dynamics of the energy cluster in Idaho are compared with those of the nation and the 49 other individual states, and the geographic and occupational makeup of the cluster is analyzed to assist stakeholders and decision-makers in directing policy formation.

Change has been a constant through history, and the energy cluster in Idaho is no exception. This study generates additional questions, illuminating the path and direction for further investigation.



Purdue  
Taxonomy



Core  
Taxonomy

## State-by-State Industry Analysis

### National Comparisons: Employment (Jobs), Earnings per Worker (EPW) and Establishments<sup>1</sup>

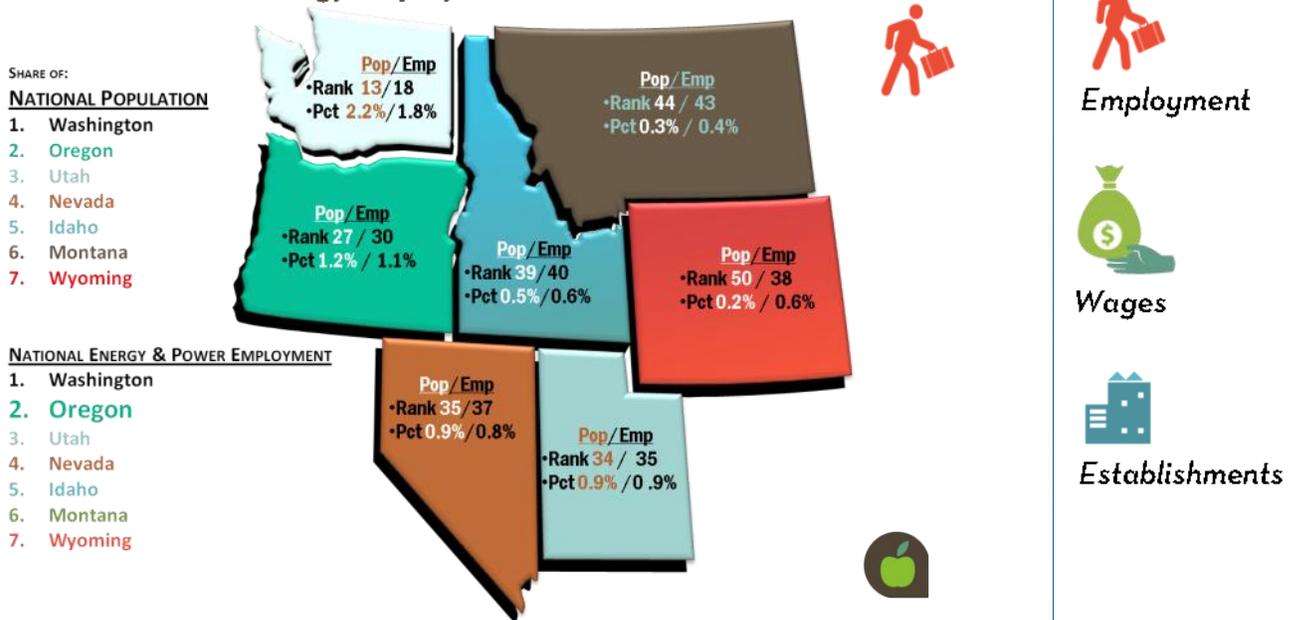
Energy accounted for about 6 percent of jobs and 7 percent of businesses in Idaho, ranking the state 14th and 22nd respectively among the states. From 2007 to 2010, Idaho employment in this sector was hit hard by the recession, falling 15 percent. Idahoans working in the energy industrial cluster made on average \$25,000 more per year than the overall average wage earner in the state, based on a comparison of Idaho energy job and establishment attributes with those of the nation and the other 49 states.<sup>2</sup> The national comparisons were made using complete employment estimates from Economic Modeling Specialists Inc. (EMSI)<sup>3</sup>.

### Share of National Employment<sup>4</sup>

Idaho supplies about 0.5 percent of the nation's total employment, 0.5 percent of the nation's total population, and ranks 40<sup>th</sup> among the states by supplying about 0.6 percent of the nation's total energy jobs. While California ranks first in both its share of the nation's total jobs and population, it is second in the nation in the number of total jobs in energy. Texas ranks first with 14 percent of the nation's energy jobs while Rhode Island is last with just 0.2 percent. Although Wyoming has the smallest population, it ranks at 38<sup>th</sup>, two spots higher than Idaho, in its share of the country's energy jobs.

Focusing on the northwestern states, the rank in order of the share of national energy jobs is Washington, Oregon, Utah, Nevada, Wyoming, Idaho and Montana. See Figure 1.

Figure 1. Northwest Comparison: Percent of National Population and Energy Employment



<sup>1</sup>Energy and All Industry tables discussed in this section are in the Appendix.

<sup>2</sup>For the purposes of the national comparisons, the Purdue taxonomy was used with the exception of government. EMSI does not estimate government to the NAICS industry level.

<sup>3</sup>Refer to the methodology section for more information on the EMSI data sets.

<sup>4</sup>"Relative Size" and "Relative Growth" components are on Appendix Table 3 and Appendix Table 4.

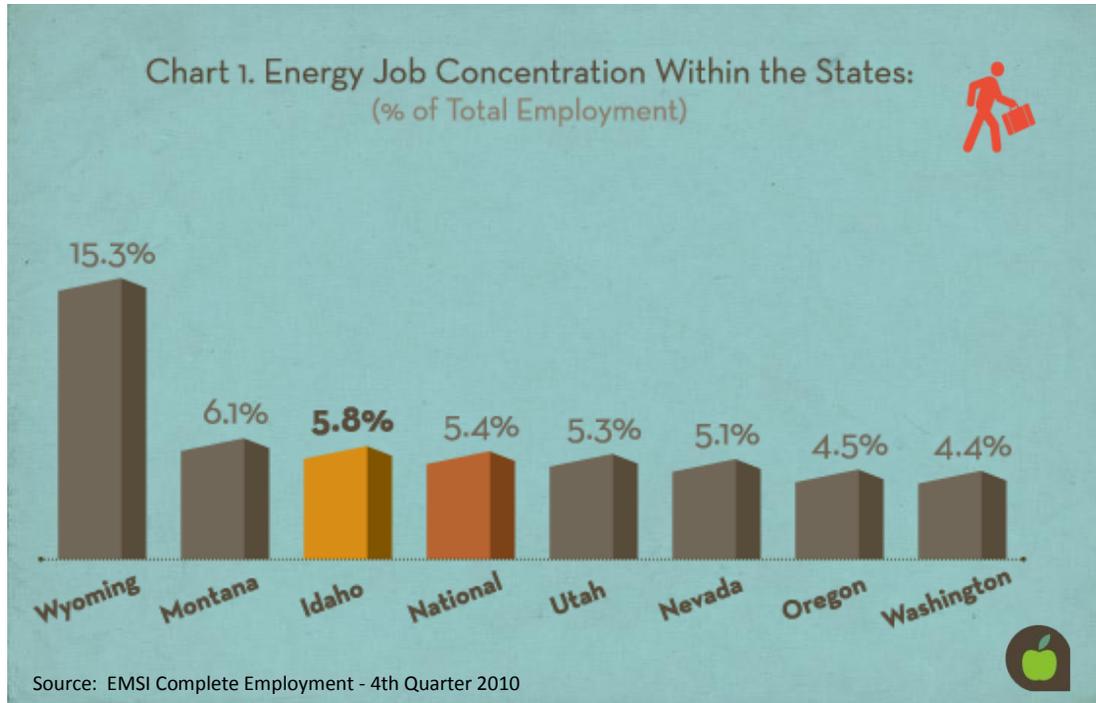
### Relative Size<sup>5</sup>

In terms of the concentration of energy jobs in each state, Idaho ranks 14<sup>th</sup> with about 6 percent of all jobs in the energy cluster. Energy employment is a large component of total employment in Wyoming at 15 percent. Oklahoma has about 11 percent, Louisiana, West Virginia and New Mexico each with about 10 percent and Texas with 9 percent. Of the northwestern states, Wyoming and Montana had the highest concentrations of employment in the energy sector ahead of Idaho, Utah, Nevada, Oregon and Washington.

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*Idaho ranks 14<sup>th</sup> with about 6 percent of all jobs in the energy cluster.*

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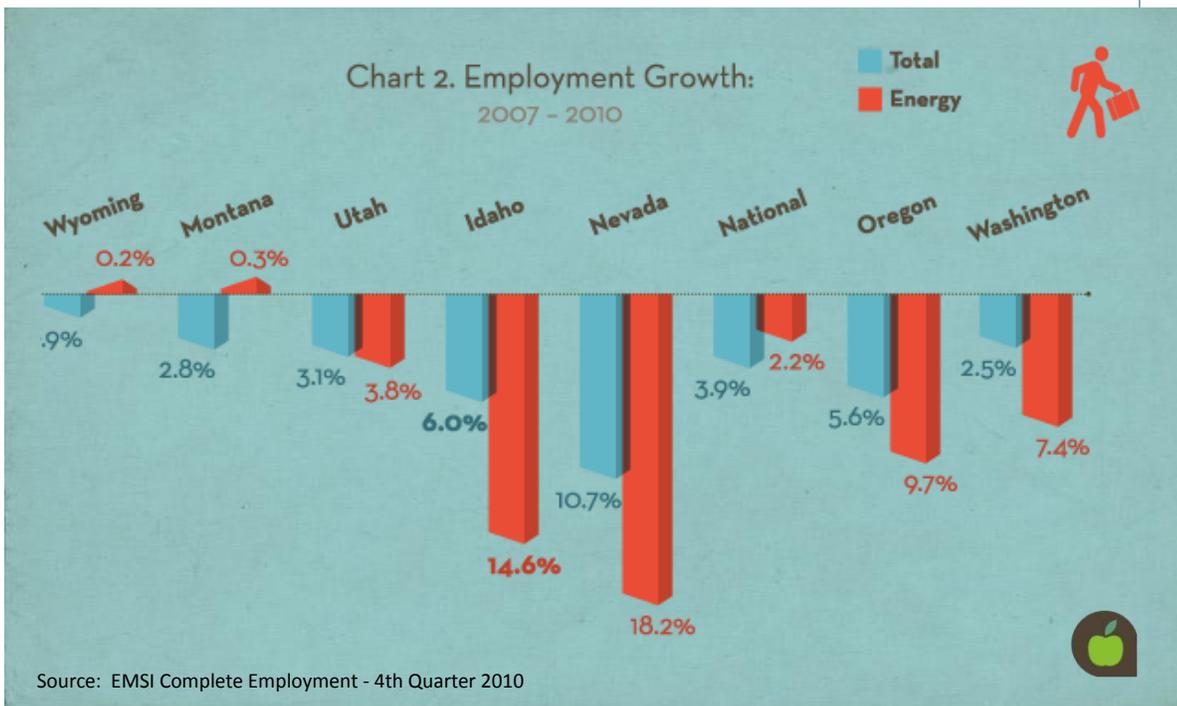
### Relative Growth<sup>6</sup>

From 2002 to 2010, Idaho's employment growth in all industries was 11 percent while energy employment fell 2 percent. That ranked Idaho 38<sup>th</sup> among all states. The nation saw a 5 percent increase in total employment and a 10 percent increase in energy employment. During the growth period from 2002 to 2006, Idaho experienced 12 percent growth in energy employment, ranking 17<sup>th</sup> among all states.

<sup>5</sup>"Relative Size" component of both Appendix Table 3 and Appendix Table 4.

<sup>6</sup>"Relative Growth" component of both Appendix Table 3 and Appendix Table 4.

The lingering effects of the recession are evident in Appendix Table 4 on page 40 where, according to EMSI’s complete employment estimates, from 2007 to 2010 only five states had total employment growth – North Dakota, Alaska, Texas, Louisiana and Oklahoma. Appendix Table 3 on page 39 shows that the nation as a whole had energy employment decreases from 2007 to 2010<sup>7</sup>. Only 17 states saw growth with Oklahoma, North Dakota and Kansas showing 20 percent or greater increases in energy employment. Idaho experienced a 15 percent decrease in energy employment during this same period. Only Arizona with a 16 percent decline and Nevada with an 18 percent reduction had larger decreases than Idaho. Of the six surrounding states, Montana and Wyoming had employment increases while Utah, Washington, Oregon and Nevada had decreases.



### Earnings<sup>8</sup>

EMSI defines earnings per worker (EPW) as the “total annual earnings of a regional industry (wages, salaries, profits, benefits and other compensation) divided by the number of jobs in the industry.” Appendix Table 4 on page 40 shows South Dakota, Idaho and Montana at the bottom of the nation, each with an all industry EPW under \$40,000 – \$11,000 under the national average. Appendix Table 3 on page 39 shows the energy EPW for the nation at \$78,600. At more than \$23,000 higher than the national average, Alaska ranks first. South Dakota ranks last with an EPW of \$50,900, almost \$28,000 below the national average. Idaho ranks 37th at \$64,100. Looking at the difference between the EPW of each

<sup>7</sup>The Great Recession started in the fourth quarter of 2007 and ended in the second quarter of 2009.

<sup>8</sup>“Earnings per Worker” component of both Appendix Table 3 and Appendix Table 4.

## Energy & Idaho

state energy cluster relative to its all-industry EPW showed that Texas has the largest gap at \$47,300 and Iowa the smallest at \$10,700. Idahoans working in the energy cluster make on average \$ 24,900 more per year than the overall average wage earner in the state. Of the seven northwest states, Wyoming had the highest wage followed by Oregon, Washington, Nevada, Montana, Utah and then Idaho. See Figures 2 and 3.

Idahoans working in the energy cluster make on average \$24,900 more per year than the overall average wage earner in the state.

Figure 2. National Comparison: Average Earnings

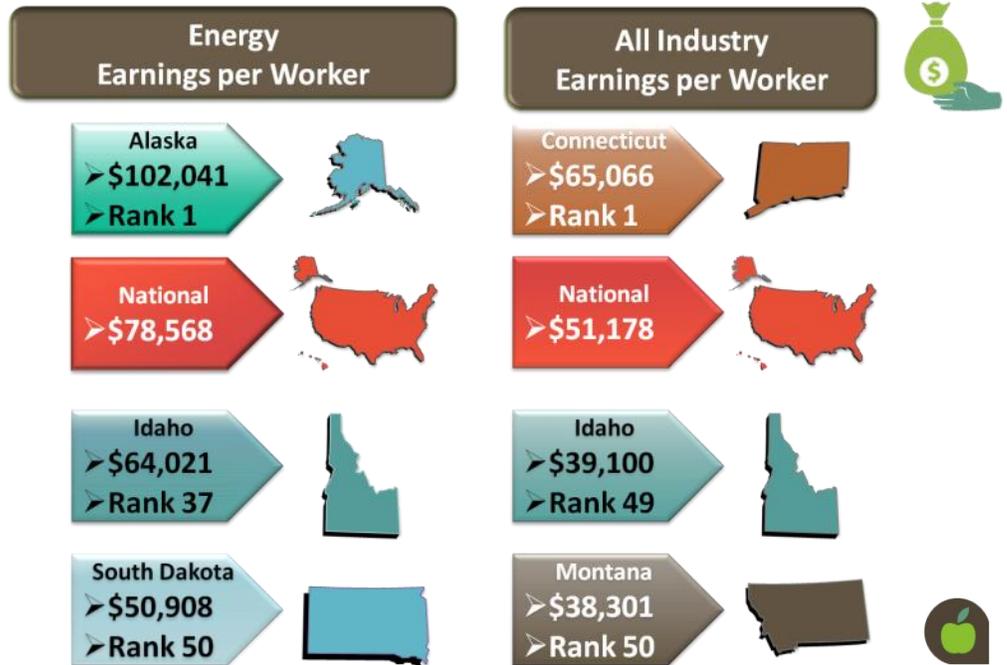
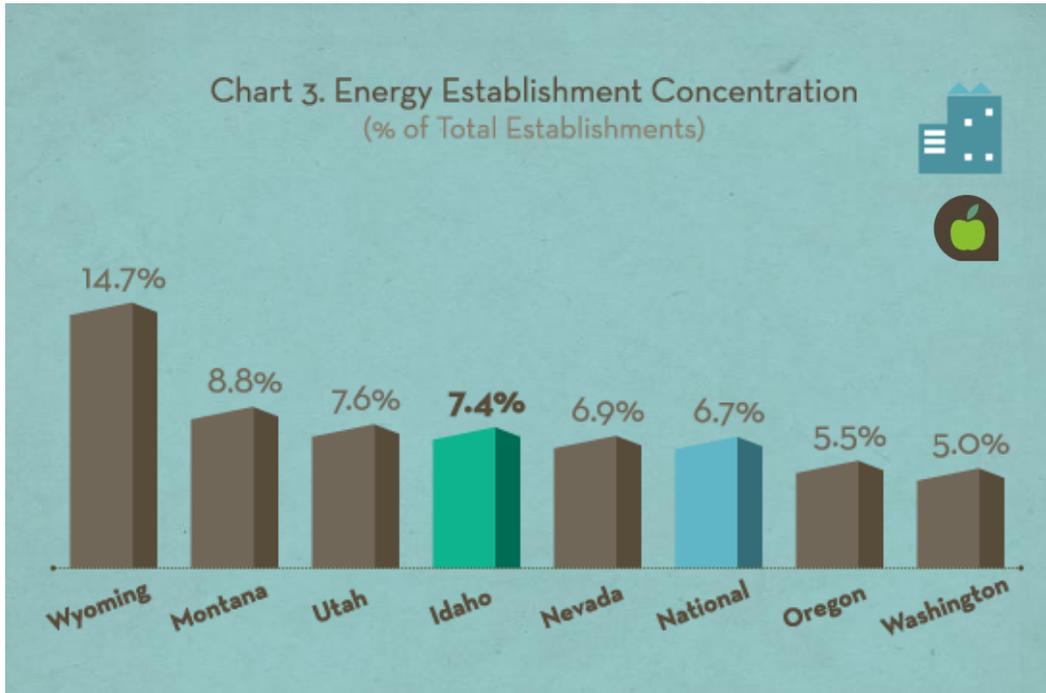


Figure 3. National Comparison: Energy Industry Average Earnings per Worker



## Establishments<sup>9</sup>

As it did in the concentration of state jobs nationally, Wyoming ranks first in the concentration of energy establishments with 15 percent of Wyoming establishments participating in the energy cluster. Idaho ranks 22<sup>nd</sup> with 7 percent while the nation was also 7 percent. California ranks the lowest in energy establishment concentration at 5 percent.



Of the seven northwest states, Wyoming, Montana, Utah, Idaho and Nevada had a higher concentration of energy establishments than the nation as a whole.

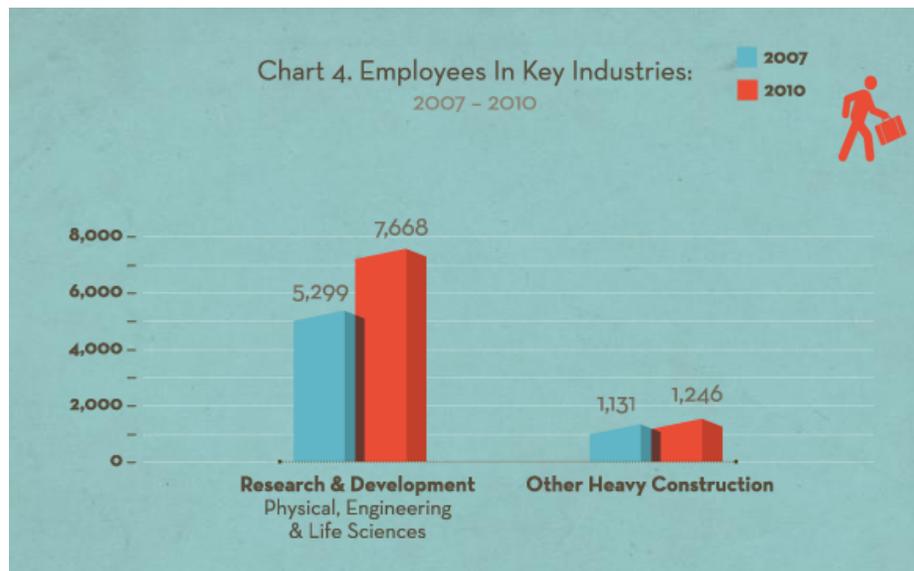
<sup>9</sup>“Relative Establishments” component on Appendix - 3.

## Energy Industry Cluster Report

In this section the focus is turned from how Idaho compares to the nation and other states to the specific industries that are driving Idaho's energy cluster. To do this, the competitive advantage Idaho exhibits is highlighted by identifying industries that would fit into one of four categories — key industries, potential growth industries, stable industries or industries hit by the recession.

### Key Industries

Key industries are larger employers that experienced employment growth over the study period accompanied by increasing concentration, or location quotient, in the state due to local competitiveness<sup>10</sup>. Research and development in the physical, engineering and life sciences as well as heavy construction are key industries in the energy cluster in Idaho.



### Research and Development in the Physical, Engineering and Life Sciences

The 7,700 jobs in research and development comprise over 18 percent of Idaho's private employment in the energy cluster, which added nearly 2,400 jobs from 2007 to 2010. Despite a portion of this increase being attributable to NAICS code changes, the real growth in this industry remains statistically significant and a valid consideration when examining employment in the energy cluster<sup>11</sup>. State and national employment increases in research and development point to the overall strength of the industry and the competitive advantage the industry has in Idaho.

The location quotient of 3.88 for the research and development industry shows Idaho's share of local employees is close to four times the national employment concentration in the industry. This location quotient increased by just over 40 percent from 2007 to 2010, when combined with its strong employment growth and high regional competitiveness scores, points to the increasing importance of research and development in Idaho's energy cluster.

<sup>10</sup>The appendix contains further information on the methodology used for this analysis.

<sup>11</sup>Idaho businesses are sometimes recoded under NAICS as part of an annual verification process.

### Other Heavy Construction

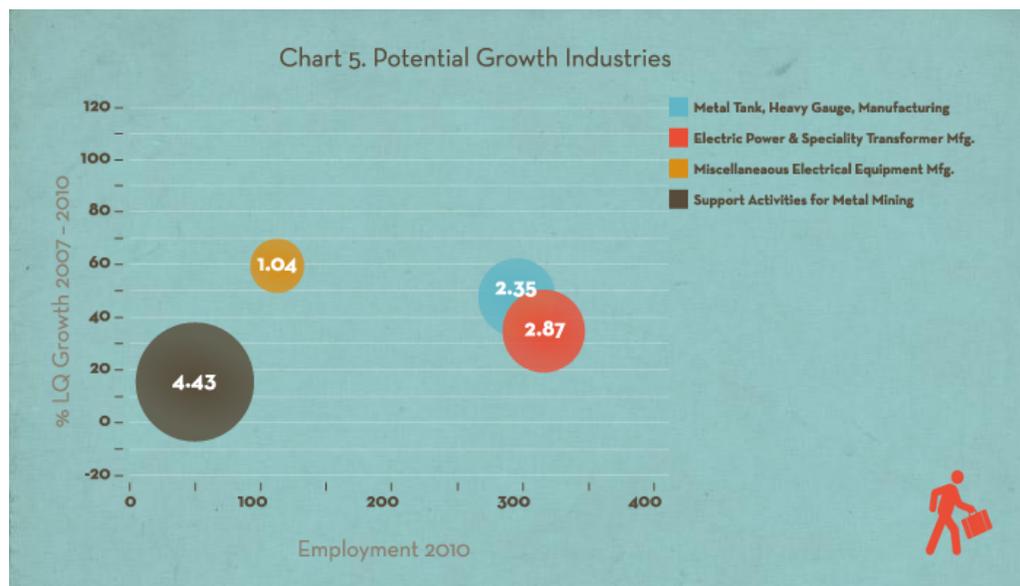
This industry comprises establishments primarily engaged in heavy and engineering construction projects excluding highway, street, bridge and distribution line construction. The work performed may include new work, reconstruction, rehabilitation and repairs. Specialty trade contractors are included in this group if they are engaged in activities primarily related to engineering construction projects. For example, dam construction is included in this industry (NAICS 2007, Census).

Employment in other heavy construction industries accounts for close to 3 percent of private employment in the energy cluster. The industry grew by close to 10 percent between 2007 and 2010, or 100 jobs to 1,200. This employment gain contrasts with trends in the rest of the construction sector, where large declines were seen over the study period.

The shift-share analysis indicates that the continued industry growth is a result of the competitive advantage found in Idaho<sup>12</sup>. The increasing location quotient of 2.84 indicates that Idaho has 2.8 times the national employment concentration in the industry. The growth of the industry in Idaho combined with a national decline of the industry accounted for the over 35 percent increase in the location quotient over the study period.

### Potential Growth Industries

Potential growth industries are comparatively small industries, accounting for less than one percent of employment in the energy cluster respectively, that are increasing their concentration in Idaho as a result of employment growth. These emerging industries, although currently small, are important components of the energy cluster in Idaho, and have the potential to generate future employment growth. Several industries within the manufacturing sector show potential for growth as well as support activities for metal mining. The industries identified as emerging are the most sensitive to policies that promote their success, or serve as roadblocks that inhibit them; creating challenges for which they would otherwise continue to grow.



<sup>12</sup>Description of shift-share analysis is found on page 33.

### *Electric Power and Specialty Transformer Manufacturing*

The potential growth industry within the manufacturing sector with the highest location quotient is electric power and specialty transformer manufacturing. This industry saw an employment increase of 26 to 319 jobs over the study period. In analyzing the components of the state's growth in this industry, local competitiveness counteracted the declines attributed to overall national economic conditions and national industry trends.

Despite the small number of jobs, this industry has a significant and increasing location quotient of 2.8, meaning Idaho has close to three times the national share of employment in this industry. The location quotient increased by more than 30 percent from 2007 to 2010, demonstrating increasing specialization in Idaho.

### *Metal Tank, Heavy Gauge, Manufacturing*

Heavy gauge metal tanks are important components in geothermal and biomass plants. The industry's location quotient increased between 2007 and 2010 almost 50 percent to 2.35. In analyzing the components of the state's growth in this industry, shift-share analysis showed local competitiveness counteracted the declines attributed to overall national economic conditions and industry trends.

### *Other Bright Spots in Manufacturing*

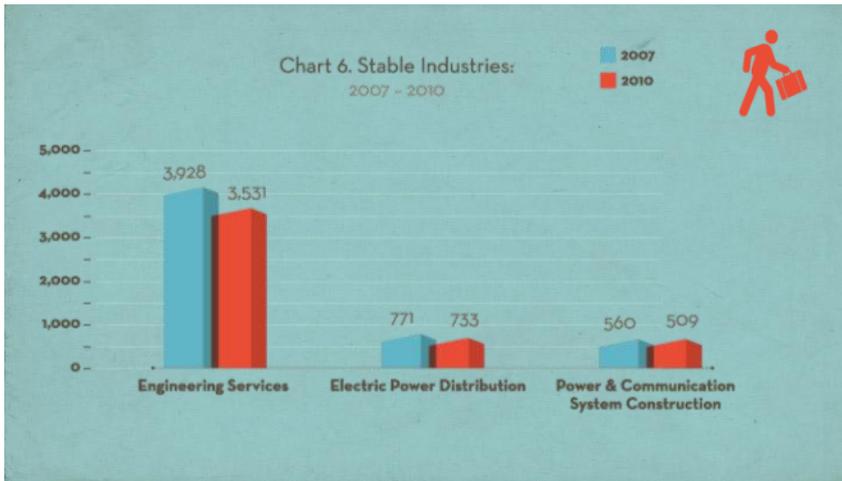
Miscellaneous electrical equipment manufacturing rounds out the manufacturing industries under the potential growth umbrella. This industry along with other emerging industries will generate some of the innovative new products in clean energy.

### *Support Activities for Metal Mining*

Despite the small number of jobs in support activities for metal mining, the industry has a significant location quotient of 4.43.

### Stable Industries

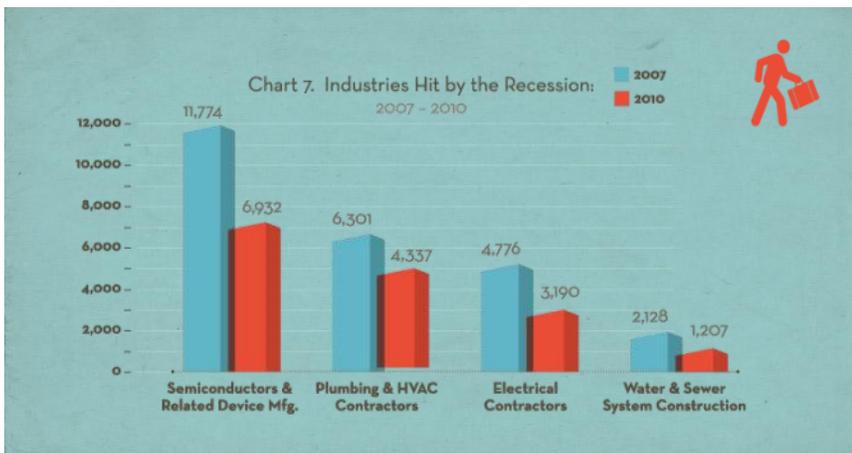
Stable industries are those significant employers that experienced an employment decline during the study period but had relatively stable location quotients. It is important to note that the study period covered a deep recession that saw significant employment declines across many industries. Classification within this category denotes an industry that



showed stability through the recession despite some declines in overall employment numbers. Engineering services, electric power distribution and power and communication system construction are in this category.

### Industries Hit by The Great Recession

Industries hit by the recession have experienced considerable employment and location quotient declines. These industries include semiconductor and related device manufacturing and several construction-related industries. These declines during the study period highlight the dramatic decrease that occurred in Idaho as the result of the Great Recession. Despite the losses, these industries are still important drivers of energy cluster employment. In fact, semiconductor and related device manufacturing has experienced an increase in employment over the past five quarters, which in part can be attributed to their investment in the energy cluster.



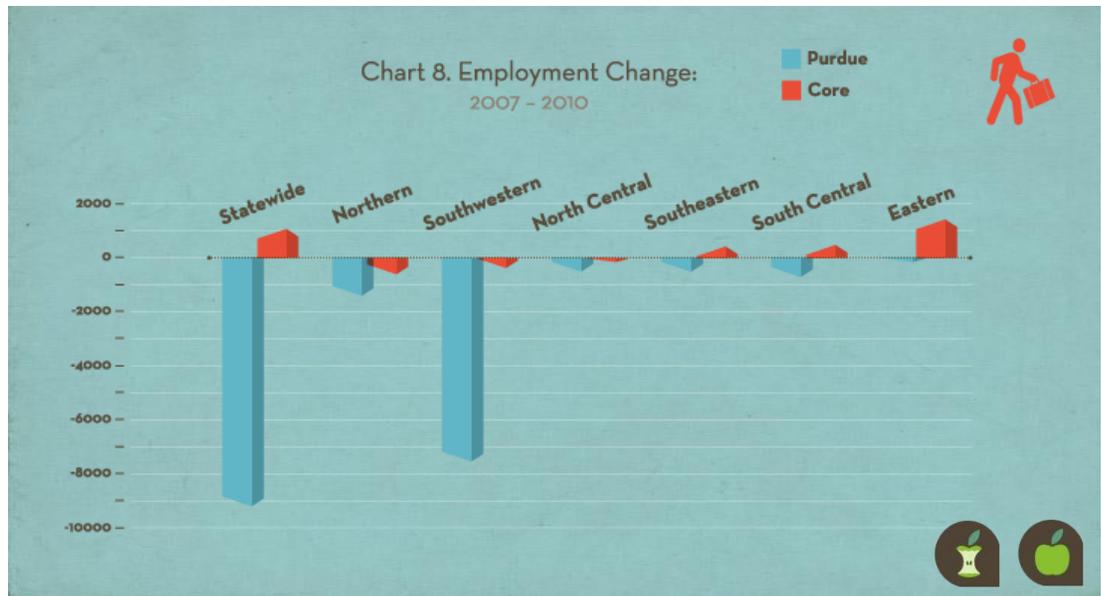
## Idaho Energy Cluster Overview

### Employers and Employment

Purdue energy cluster covered employment peaked in 2007 at 51,100 jobs. From 2007 to 2010 the sector declined 17 percent, mainly as a result of contraction in the semiconductor manufacturing industry and the construction sector. The core energy cluster has proven to be a much more stable industry cluster, increasing by 4 percent, or 700 jobs, between 2007 and 2010. Eastern Idaho contributed over 70 percent of this increase, or 500 jobs. Job gains were also seen in the south central and southeastern regions of the state. The largest decline was experienced in the northern region at 150 jobs. Both the north central and southwestern core energy sectors proved to be relatively stable, declining only about 1 percent.

*The benefits of co-location are compelling in eastern Idaho, providing a statistically significant concentration of establishments in the professional and technical services sector.*

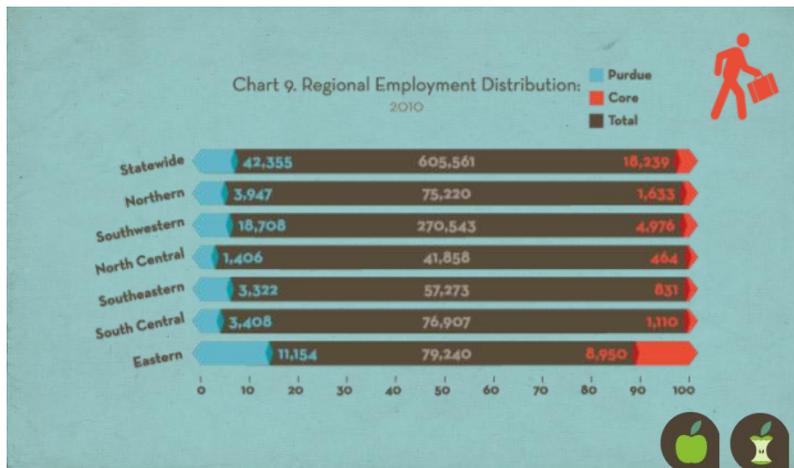
The job gains are clustered in south central, southeastern and eastern Idaho, which is home to the Idaho National Laboratory – a U.S. Department of Energy site charged with developing the next generation of nuclear power generators (Black, Holley, Church, INL Impacts, 2010). The benefits of co-location are compelling in eastern Idaho, providing a statistically significant concentration of establishments in the professional and technical services sector. Professional and technical services includes engineering, specialized design and scientific research and development. The economic impact of INL is not confined to the eastern region’s borders. It spills into both the south central and southeastern regions.



## Regional Employment Distribution

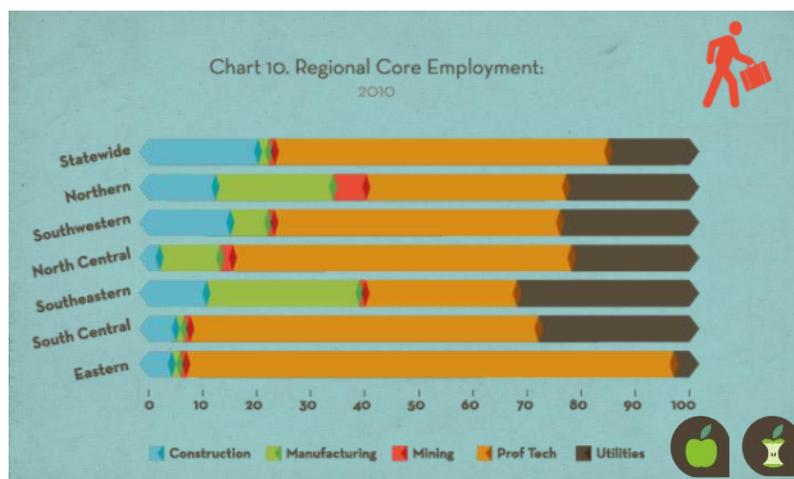
Statewide, 7 percent of covered employment is in the Purdue energy cluster. But the six regions vary from 3 percent in north central Idaho to 14 percent in eastern Idaho. The remaining four regions fall between 4 percent and 7 percent.

The core energy cluster accounts for 3 percent of statewide employment. Similar to the Purdue cluster, the highest concentration of employment is in the eastern region at 11 percent. The other five regions have a core energy job concentration of 1 percent to 2 percent.



The distribution of employment across the industry subgroups varies by region. The professional, technical and scientific services sector employs the most people in Idaho compared to the other groups in both the core and the Purdue taxonomies. This sector includes engineering services, testing labs, surveying and scientific research and development. The industry mix within this sector varies by region and is largely dependent on the economic drivers of each specific region.

Statewide utilities is the second largest employer in the core energy cluster followed by construction. Manufacturing and mining account for less than 10 percent of employment in the cluster.

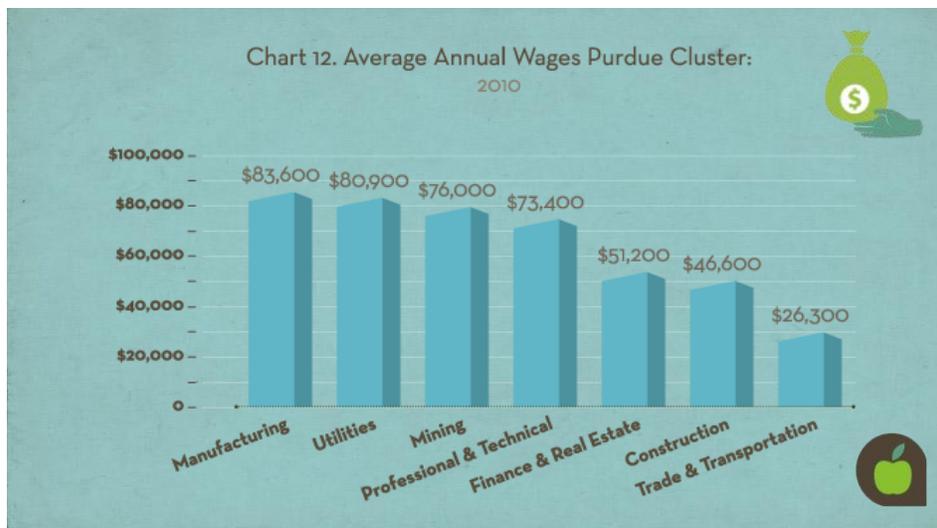
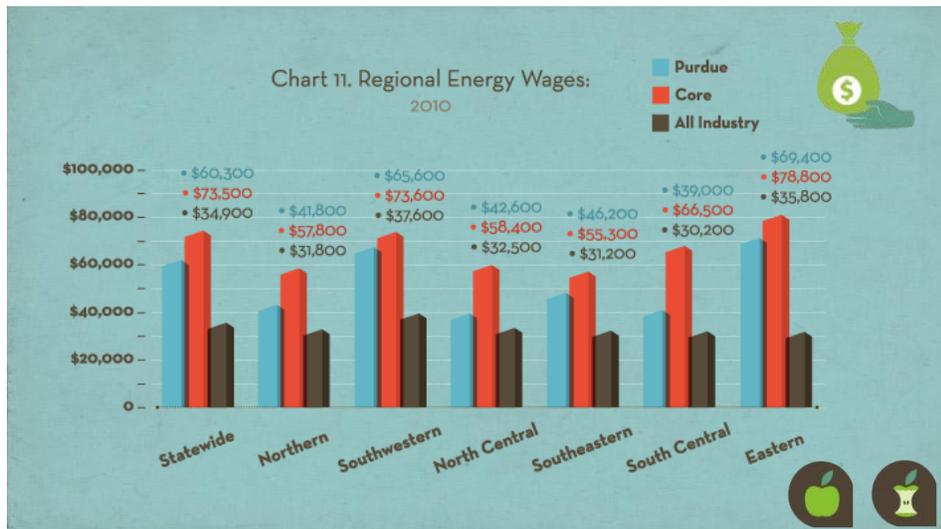


**Wages**

On average, the wage for energy jobs is significantly higher than for all jobs in Idaho. The average annual wage for jobs in the core energy cluster is \$73,500 and for the Purdue cluster \$60,300, both considerably higher than the less than \$35,000 average annual wage for all Idaho workers.

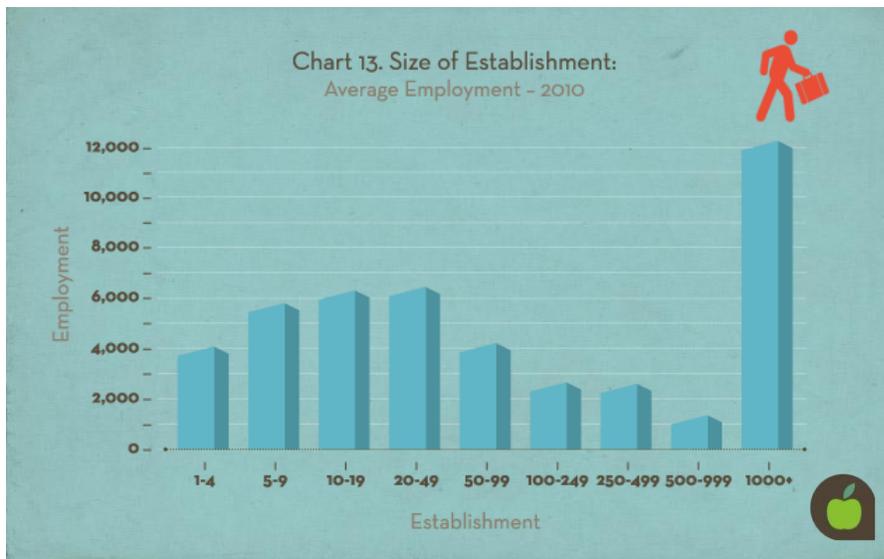
The highest average wage for both the Purdue and core clusters was paid in eastern Idaho at \$78,800 in the core cluster and \$69,400 in the Purdue cluster. The southwestern region is not far behind at \$73,600 for the core and \$65,600 for the Purdue cluster. The other four regions have core cluster averages between \$55,300 and \$66,500 and Purdue cluster averages between \$39,000 and \$46,200. Much of the wage differences among the regions is explained by the industry and sector mix in each region. The top wage earners work in manufacturing and utilities, where the average annual wage exceeds \$80,000, and mining and professional and technical with an average annual wage exceeding \$70,000. There is a sizeable spread among wages in sectors with a large number of occupations requiring varying degrees of education and experience.

*There is a sizeable spread among wages in sectors with a large number of occupations requiring varying degrees of education and experience.*



## Size of Establishment

The dynamics of employment vary by size of establishment. Twenty-eight percent of the employment in the energy cluster is in the largest establishments – those employing 1,000 or more people. But the largest number of jobs in this cluster is with businesses of fewer than 100 employees. Fewer than 4,000 jobs are in the smallest of establishments or those with payrolls under four. Establishment size is largely dependent on human and physical capital demands. Within the energy cluster, large employers can be found in the capital intensive sectors of construction, manufacturing, professional and technical services and utilities. Construction has the largest number of establishments followed by trade and transportation and professional and technical services. Mining has the fewest establishments. The largest number of establishments by far are in the smaller size categories.



## Energy & Idaho

*Within the energy cluster, large employers can be found in the capital intensive sectors of construction, manufacturing, professional and technical services and utilities.*

Table 1. Employers by Payroll Size

Industry	1-09	10-49	50-99	100-249	250+
Energy Total	2,581	665	55	18	13
<b>Construction</b>	<b>1,099</b>	<b>212</b>	<b>20</b>	<b>NR</b>	<b>NR</b>
Finance & Real Estate	49	9	NR	NR	0
Manufacturing	72	21	5	5	NR
Mining	26	6	NR	0	0
Professional & Technical	623	114	11	NR	NR
Trade & Transportation	640	266	10	0	0
Utilities	64	34	8	NR	NR

NR=Not Releasable



## Geospatial Analysis

### Directional Distribution and Mean Center

The last decade saw a significant shift in new employment towards the eastern region of the state, highlighting this region's growing importance to the energy cluster. The red circle represents a weighted standard deviational ellipse that encompasses approximately 68

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*The last decade saw a significant shift in new employment towards the eastern region of the state, highlighting this region's growing importance to the energy cluster.*

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Figure 4. Distribution: Core Energy Cluster



percent of core energy cluster employment in businesses established between 2000 and 2010. The startup business concentration in eastern Idaho underscores the importance of this region to the energy cluster.

This representation was possible through geographic information systems, which provide the capability to map the distribution of industry clusters over space and time, help analyze broad spatial patterns and measure the intensity of clustering. The Quarterly Census of Employment and Wage data was analyzed using several of the spatial statistics tools available through ESRI's ArcGIS. These tools allow mapping of the directional distribution and mean center of the cluster, the hot spots and outliers of cluster employment and, the average distance between neighbors within the cluster.

Figure 5. Energy Cluster and Outlier Analysis



## Energy & Idaho

*A well-developed cluster reaps all of the benefits of co-location, making the inclusion of the outliers in a sector strategy that much more important.*

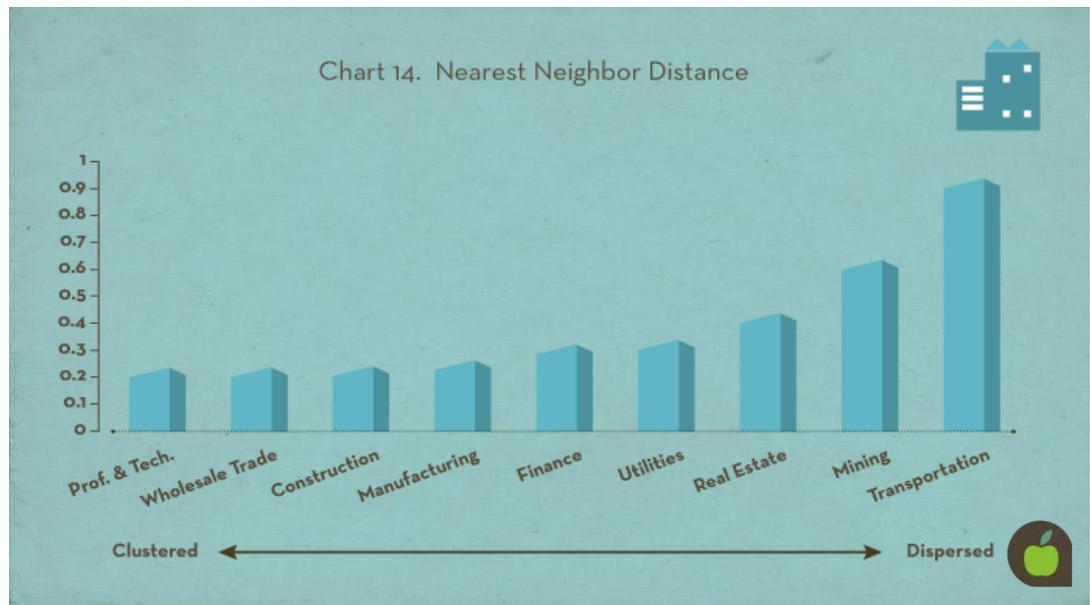
### Cluster and Outlier Analysis

Cluster and outlier analysis identifies establishments clustering together with statistically significant high levels of employment and spatial outliers with high levels of cluster employment<sup>13</sup>. The red dots on the map are large employers that have formed a statistically significant cluster of energy employment. The blue dots are outliers that are large employers in the energy cluster surrounded by smaller establishments. The map identifies a significant cluster of research and development around the Idaho National Laboratory and a cluster in southwestern Idaho of semiconductor manufacturing, heavy construction and utilities. The outliers include Power Engineers in Hailey, CH2M in Arco and On Semiconductor in Pocatello. A well-developed cluster reaps all of the benefits of co-location, making the inclusion of the outliers in a sector strategy that much more important.

<sup>13</sup>Figure 5 only shows companies that have signed disclosure agreements with the Idaho Department of Labor and is not an exhaustive representation of the energy cluster.

### Nearest Neighbor Distance

The “nearest neighbor distance” is an index that measures the intensity of clustering. Nearest neighbor distances were calculated for all the sectors within the energy cluster by looking at the average distance between each establishment within that sector. According to ESRI, “If the index is less than 1, the pattern exhibits clustering. If the index is greater than one, the trend is toward dispersion or competition” (ArcGIS10 help). Professional and technical services, wholesale trade, construction and manufacturing show the most intense clustering with nearest neighbor indexes below 0.25, indicating underlying geographic processes that point to the benefits of co-location in these sectors. Co-location is less prevalent for finance, utilities and real estate, but these sectors still have low nearest neighbor indexes. Mining and transportation have the highest indexes among the energy sectors, indicating that co-location is less important for these two industries.

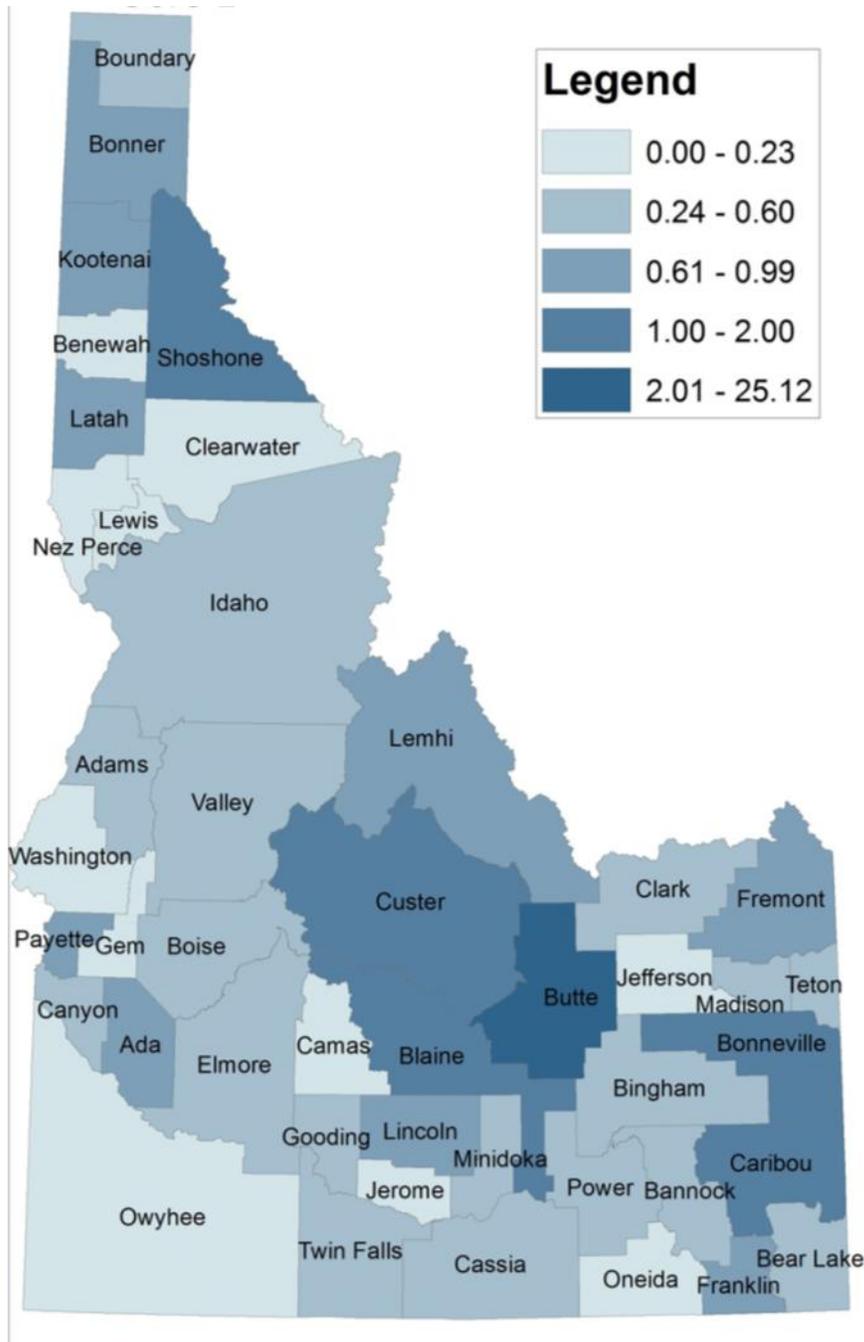


### Location Quotient by County

Butte County has the highest location quotient for the energy cluster at 25. Because the Idaho National Laboratory is in the county, there is a high concentration of professional and technical services in this sparsely populated area. Bonneville County also benefits from the location of the INL with a high concentration of professional and technical jobs as well as heavy construction. Other counties with heavy core energy employment include Custer with a high concentration of utility employment and Caribou with a mix of industries including construction and utilities. Blaine County is a center of engineering employment, and Shoshone County is located in a rich mining region so it has a high concentration of engineering services and testing laboratories.

The dark blue on the map identifies the counties with high concentrations of employment in the core energy cluster. The six counties mentioned previously have location quotients above one. Five of the six counties are neighbors – three in eastern Idaho, one each in southeastern, south central and northern regions of Idaho.

Figure 6. Core Energy Cluster Location Quotient Scores by County



## Energy Occupation Analysis

Determining which occupations belong in an energy group can be accomplished in a variety of ways – by the concentration of a defined level of education or training, through reverse staffing patterns for a specific industry taxonomy, through analyst research and interpretation or a survey. Each method has its advantages and disadvantages. For this business scan, energy occupations were determined using a combination of reverse staffing patterns and analyst research and interpretation, based on the core energy taxonomy. The department has energy occupation data on education and training requirements, wages, employment counts and occupation projections.

### Education and Training, Wages and Employment

Of Idaho’s core energy occupations requiring on-the-job training, three occupations had median hourly wages above the national median hourly wage. Utility meter readers were \$1 an hour above the national wage, surveying and mapping technicians were \$2 above the national wage and electrical power line installers and repairers were more than \$2 above the national wage. Of the on-the-job training occupations – electrical power-line installers and repairers, machinists, team assemblers and surveying and mapping technicians – ranked on the list of short-term hot jobs as seen in Table 7 HotJobs<sup>14</sup> on page 27 .

*Of Idaho’s core energy occupations requiring on-the-job training, three occupations had median hourly wages above the national median hourly wage.*

Table 2. Occupations Requiring Only On-the-Job Training

Occupations	National Median Hourly Wage	Idaho Median Hourly Wage
<b>Short-Term On-the-Job Training (Less than One Month)</b>		
Electrical equipment assemblers	\$13.76	\$11.83
Electromechanical equipment assemblers	\$14.73	\$12.80
Meter readers, utilities	\$17.18	<b>\$18.58</b>
<b>Moderate-Term On-the-Job Training (One to 12 Months)</b>		
Team assemblers <sup>H</sup>	\$12.96	\$12.64
Construction laborers	\$14.86	\$13.13
Operating engineers	\$18.94	\$17.65
Surveying and mapping technicians <sup>H</sup>	\$18.50	\$20.58
<b>Long-Term On-the-Job Training (Over One Year)</b>		
Welders, cutters, solderers, and brazers <sup>H</sup>	\$17.30	\$14.54
Machinists <sup>H</sup>	\$18.06	\$16.63
Plumbers, pipefitters, and steamfitters	\$21.51	\$17.75
Electricians	\$21.84	\$20.02
Power plant operators	\$29.28	\$23.63
Electrical power-line installers and repairers <sup>H</sup>	\$27.11	<b>\$29.84</b>

<sup>H</sup> = Occupation is listed on the Idaho Department of Labor's Short-Term Hot Jobs Listing

Source: EMSI Complete Employment - 1st Quarter 2011

<sup>14</sup>Hot Jobs are those that on average rank high in three major criteria — the abundance of jobs in the economy, jobs which are growing the fastest and jobs with the highest pay.

Of the core energy occupations requiring postsecondary vocational training, electrical and electronics drafters earned almost \$5 more than the national median hourly wage and mechanical drafters earned 60 cents more. None of the occupations in this category made it on the list of hot jobs.

Table 3. **Occupations Requiring Postsecondary Vocational Training**

Occupations Requiring Vocational Training	National Median Hourly Wage	Idaho Median Hourly Wage
<b>Postsecondary Vocational Training (Certificate or Diploma)</b>		
Drafters, all other	\$24.51	\$19.26
Mobile heavy equipment mechanics, except engines	\$21.60	\$18.45
Architectural and civil drafters	\$21.83	\$20.71
Mechanical drafters	\$22.84	<b>\$23.47</b>
Electrical and electronics drafters	\$24.54	<b>\$29.53</b>
Electrical and electronics repairers, powerhouse, substation and relay	\$30.08	\$29.53

<sup>H</sup> = Occupation is listed on the Idaho Department of Labor's Short-Term Hot Jobs Listing

Source: EMSI Complete Employment - 1st Quarter 2011

Of the core energy occupations requiring an associate degree, environmental engineering technicians earned over \$1 more than the national median hourly wage, and mechanical engineering technicians earned about 50 cents more. Forest and conservation technician is the only occupation to make the short-term hot job list, ranking 22<sup>nd</sup> out of 100.

**Table 4. Occupations Requiring Associate's Degree**

Occupations Requiring an Associate Degree	National Median Hourly Wage	Idaho Median Hourly Wage
<b>Associate's Degree</b>		
Environmental science technicians	\$20.23	\$11.87
Geological and petroleum technicians	\$28.62	\$13.81
Biological technicians	\$18.36	\$13.94
Chemical technicians	\$20.18	\$14.31
Forest and conservation technicians <sup>H</sup>	\$15.65	\$14.90
Industrial engineering technicians	\$22.38	\$19.78
Civil engineering technicians	\$22.02	\$20.29
Engineering technicians, all other	\$27.39	\$21.12
Environmental engineering technicians	\$20.28	<b>\$21.35</b>
Mechanical engineering technicians	\$23.43	<b>\$23.94</b>
Electrical engineering technicians	\$25.95	\$24.67
Nuclear technicians	\$30.87	\$27.32

<sup>H</sup> = Occupation is listed on the Idaho Department of Labor's Short-Term Hot Jobs Listing

Source: EMSI Complete Employment - 1st Quarter 2011

Of the core energy occupations requiring a bachelor's degree, four had median hourly wages higher than the national wage. Industrial engineers and mechanical engineers earn \$2 more, nuclear engineers about \$7 more and chemists \$3 more. Of the 17 occupations in this category, nine were on the short-term hot jobs list. See Table 6. on page 27

Table 5. Occupations Requiring Bachelor's Degree		
Occupations Requiring Bachelor or Degree plus Experience	National Median Hourly Wage	Idaho Median Hourly Wage
<b>Bachelor's Degree</b>		
Construction managers	\$23.00	\$16.89
Surveyors	\$25.85	\$22.03
Computer programmers <sup>H</sup>	\$31.24	\$22.34
Architects, except landscape and naval	\$28.75	\$26.72
Physical scientists, all other	\$37.16	\$27.38
Environmental engineers <sup>H</sup>	\$36.60	\$29.96
Civil engineers <sup>H</sup>	\$34.97	\$30.33
Computer software engineers, applications <sup>H</sup>	\$39.90	\$31.90
Engineers, all other <sup>H</sup>	\$39.35	\$34.32
Chemists	\$32.57	<b>\$35.68</b>
Computer software engineers, systems <sup>H</sup>	\$42.43	\$36.27
Industrial engineers <sup>H</sup>	\$35.77	<b>\$37.98</b>
Mechanical engineers <sup>H</sup>	\$36.25	<b>\$38.47</b>
Electrical engineers	\$39.02	\$39.01
Nuclear engineers	\$40.61	<b>\$47.35</b>
<b>Degree Plus Work Experience</b>		
Natural sciences managers <sup>H</sup>	\$52.89	\$40.44
Engineering managers	\$55.38	\$49.16

<sup>H</sup> = Occupation is listed on the Idaho Department of Labor's Short-Term Hot Jobs Listing

Source: EMSI Complete Employment - 1st Quarter 2011

Many of Idaho's core energy occupations are abundant, growing fast and pay well as indicated in the Idaho Department of Labor's hot jobs listing.

Idaho's core energy group has a number of occupations requiring a graduate degree. Microbiologists earn \$2 more than the national hourly wage for that occupation and physicists earn a dollar more. None of the occupations in this category are on the hot jobs list.

Table 6. Occupations Requiring Graduate Degree		
Occupations Requiring Graduate Degrees	National Median Hourly Wage	Idaho Median Hourly Wage
<b>Master's Degree</b>		
Urban and regional planners	\$29.49	\$24.08
Geoscientists	\$36.20	\$26.13
Environmental scientists	\$28.37	\$27.55
Operations research analysts	\$33.09	\$29.41
Hydrologists	\$33.11	\$29.88
<b>Doctoral Degree</b>		
Biochemists and biophysicists	\$37.55	\$27.63
Microbiologists	\$30.58	<b>\$32.67</b>
Computer and information scientists	\$44.71	<b>\$39.67</b>
Physicists	\$47.19	<b>\$48.22</b>

<sup>h</sup> = Occupation is listed on the Idaho Department of Labor's Short-Term Hot Jobs Listing

Source: EMSI Complete Employment - 1st Quarter 2011

Many of Idaho's core energy occupations are abundant, growing fast and pay well as indicated in Idaho Department of Labor's hot jobs listing. Not only do many of these jobs offer higher wages than the Idaho median hourly wage, but some offer wages higher than the national median hourly wage. Table 9 on pages 28 to 29 lists all of the core energy jobs. Forty-three of these jobs show at least some growth over the next 10 years while nine show a decline in employment.

Table 7. Energy Short-Term Hot Jobs List				
Hot Job Rank	Title	2011 Employment	Net Change	Annual Openings
7	Computer Software Engineers, Applications	1,017	72	42
9	Computer Software Engineers, Systems Software	1,259	64	40
22	Forest and Conservation Technicians	2,494	138	174
36	Engineers, All Other	1,127	30	35
46	Civil Engineers	788	30	26
57	Machinists	1,423	64	49
62	Industrial Engineers	682	22	27
63	Mechanical Engineers	1,179	14	36
73	Team Assemblers	3,363	116	130
77	Electrical Power-Line Installers and Repairers	1,237	6	43
88	Natural Sciences Managers	465	16	19
89	Surveying and Mapping Technicians	778	33	30
96	Computer Programmers	2,451	3	46
96	Environmental Engineers	352	19	16

Source: Idaho Department of Labor, 2009-2011 TOP 100 HOT JOBS

Table 8. 2008-2018 Long-Term Projections				
SOC	Description	2008 Employment	2018 Employment	Net Change
51-2092	Team assemblers	3,846	4,675	829
51-4121	Welders, cutters, solderers, and brazers	2,992	3,553	561
15-1031	Computer software engineers, applications	1,009	1,461	452
15-1032	Computer software engineers, systems software	1,383	1,779	396
47-2061	Construction laborers	6,691	7,084	393
51-4041	Machinists	1,486	1,808	322
17-2051	Civil engineers	801	1,016	215
17-2199	Engineers, all other	1,183	1,390	207
17-3029	Engineering technicians, except drafters, all other	869	1,060	191
11-9021	Construction managers	3,635	3,796	161
17-2112	Industrial engineers	801	945	144
17-3031	Surveying and mapping technicians	784	925	141
49-9051	Electrical power-line installers and repairers	1,343	1,474	131
17-2081	Environmental engineers	351	479	128
19-2041	Environmental scientists and specialists, including health	505	629	124
49-3042	Mobile heavy equipment mechanics, except engines	1,102	1,208	106
47-2073	Operating engineers and other construction equipment operators	2,317	2,413	96
17-3026	Industrial engineering technicians	386	466	80
17-1011	Architects, except landscape and naval	564	639	75
17-3022	Civil engineering technicians	512	584	72
19-2042	Geoscientists, except hydrologists and geographers	272	336	64
19-3051	Urban and regional planners	292	356	64
19-4091	Environmental science and protection technicians, including health	278	336	58
17-2141	Mechanical engineers	1,412	1,469	57
17-2161	Nuclear engineers	233	290	57
17-1022	Surveyors	398	454	56
17-3013	Mechanical drafters	366	420	54
11-9041	Engineering managers	1,132	1,184	52
19-2031	Chemists	290	339	49
15-2031	Operations research analysts	332	376	44
17-3011	Architectural and civil drafters	483	526	43
15-1021	Computer programmers	2,623	2,663	40
19-4021	Biological technicians	794	829	35

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SOC	Description	2008 Employment	2018 Employment	Net Change
11-9121	Natural sciences managers	469	500	31
15-1011	Computer and information scientists, research	94	124	30
51-8013	Power plant operators	175	203	28
19-4051	Nuclear technicians	102	125	23
19-4031	Chemical technicians	150	172	22
19-2012	Physicists	66	83	17
19-2043	Hydrologists	149	163	14
17-3019	Drafters, all other	152	165	13
19-1022	Microbiologists	70	79	9
17-3025	Environmental engineering technicians	67	74	7
17-3023	Electrical and electronic engineering technicians	1,243	1,236	(7)
47-2152	Plumbers, pipefitters, and steamfitters	2,485	2,476	(9)
51-2022	Electrical and electronic equipment assemblers	977	946	(31)
17-3012	Electrical and electronics drafters	202	170	(32)
19-4093	Forest and conservation technicians	2,427	2,370	(57)
43-5041	Meter readers, utilities	594	522	(72)
47-2111	Electricians	4,212	4,084	(128)
17-3027	Mechanical engineering technicians	720	579	(141)
17-2071	Electrical engineers	1,828	1,657	(171)
19-1021	Biochemists and biophysicists	NA	NA	NA
49-2095	Electrical and electronics repairers, powerhouse, substation, and relay	NA	NA	NA
51-2023	Electromechanical equipment assemblers	NA	NA	NA
19-4041	Geological and petroleum technicians	NA	NA	NA
19-2099	Physical scientists, all other	NA	NA	NA

Source: Idaho Department of Labor 2008-2018 Long-term Projections  
NA indicates no projection data available

## Summary

The energy cluster is a complex, dynamic and important aspect of the Idaho economy. This scan defines the full array of industries that comprise the energy cluster using a national taxonomy developed by Purdue University, which was then used to compare Idaho's unique energy cluster with those of the nation and the other 49 states.

The data show Idaho ranking low in its share of the nation's energy cluster workers. However, Idaho has a modest ranking for the percentage of a state's businesses in the cluster. Looking at the internal composition of Idaho using the more focused and narrower core taxonomy reveals that the energy cluster is strongest in the eastern part of the state, where the Idaho National Laboratory is located and is creating a concentration of well paying jobs in the professional and technical service industry. As the state recovers from the Great Recession, this is where the energy industry is growing.

While this study generates additional questions, the business scan identifies several areas to be considered when evaluating energy policies. The location quotient and shift-share analyses highlight the significant industries. Their detection as key, potential growth, stable or those hit by the recession is not necessarily a prescription but a warrant for further examination to understand what policy strategies, if any, should be advocated.

The energy cluster in Idaho has changed in the last few years since the downturn from 2007 to 2009. Change has been a constant for this cluster through history and will continue to be. One of the greatest strengths of the cluster is the will to forge ahead on the cutting edge of that change.

## Appendix

### Data Sources

Data for this scan are from three internal department sources and one external.

Internal sources include employment, establishment and wage data for Idaho from the Quarterly Census of Employment and Wages; occupational data from the Occupational and Employment Survey and projections data maintained by the Idaho Department of Labor.

Economic Modeling Specialists Inc. is the external source providing establishment data, estimates for complete employment and earnings per worker and occupational data from the other 49 states and the nation. These data were vital to this scan and allowed for a timely and cost-effective means of comparing the state of Idaho and understanding its role among the states in the energy cluster.

### Methodology

#### Taxonomy

The taxonomy is the array of industries as classified by the North American Industry Classification System (NAICS), which, when combined form the energy cluster. NAICS consists of five levels of classification detail. The most detailed level, referred to as the six-digit or industry level, is defined as “a group of establishments that produce similar products or provide similar services” (Bureau of Labor Statistics, 2011). The broadest category is the two-digit level, or sector level, which encompasses establishments that produce common products or services (Bergman & Feser, 1999). The terms industry and sector are used in this study to refer to the six-digit and two-digit classification levels respectively.

A meaningful assessment of the energy cluster in Idaho requires the selection of industries that participate in this economic function. No cluster is an island. The energy cluster is not an enclosed system with just utility companies providing its own inputs and consuming the entirety of its own outputs. There is the complexity of an entire value chain across the spectrum of industries that participate at various points in the supply and distribution chain. The reason for this complexity is the nature and economy of any cluster. There may be companies crossing multiple industries – segments in finance, construction and research, for example – each focusing on its own aspect of the energy cluster through its unique business function. Due to this complexity, determining the appropriate mix of industries is not a simple, straightforward process, and this business scan adopted the energy cluster taxonomy published by the Center for Regional Development at Purdue University in West Lafayette, Ind., “Unlocking Rural Competitiveness: The Role of Regional Clusters.” One pillar of the Purdue project was the identification of various clusters through the widely accepted framework of cluster analysis that focuses on the competitive advantage industries gain through co-location (Doeringer & Terkla, 1995). These advantages are present through the entire supply chain, which includes supporting industries

and consists of innovative collaborations, entrepreneurial activity, increased research and development, economies of scale and the development of a skilled workforce (Porter, 1990, Rosenfeld, 1997, & Doeringer & Terkla, 1995). The Purdue study identified energy as one of 17 separate industry clusters, and the composite subsectors of this cluster as classified by NAICS. The final, Purdue taxonomy includes 77 distinct industries in 11 sectors as designated by NAICS. Employment in these industries was used to compare the Idaho energy cluster with the clusters of the other 49 states and the nation.

### Modified Taxonomy

While allowing comparisons to be made across the nation, the Purdue taxonomy includes a number of industries that account for a large portion of total employment in Idaho. These include construction, semiconductor manufacturing and services including retail – industries which suffered the greatest during the recession. Their recession experience obscures the experience of the establishments and employment that have energy generation as their principal focus. This is most pronounced in the analysis of the downturn from 2007 to 2009 with the loss of 4,300 computer and electronic manufacturing jobs, and 21,100 jobs in construction from the fourth quarter of 2007 to the fourth quarter of 2010. These losses overwhelmed what was taking place in the core power generation and development industries.

To counter this effect, a second taxonomy was developed from the Purdue taxonomy, cutting the 77 industries to 41 core industries by excluding residential construction, some manufacturing such as semiconductors and industries with no employment in Idaho. Because of their large share of employment in Idaho outside of their functions related to the energy cluster, trade including wholesale and retail, transportation and warehousing, finance and insurance, real estate and public administration were also eliminated from the core energy cluster. While each of the industries that make up the full taxonomy is a vital part of the Idaho economy and participates in the energy cluster to some degree, their inclusion in the analysis of Idaho's internal energy cluster was inconsistent with the spirit of this business scan without going beyond the results of the scan using the Purdue taxonomy. The intent of the core 41 industries is to provide a methodical approach to understanding the unique energy cluster of Idaho. This modified taxonomy is referred to as the core cluster throughout this scan.

The impact of this is clear. From 2007 to 2010 during the recession industries in the Purdue cluster declined 17 percent while industries in the smaller core cluster increased 4 percent. Job gains in the core energy cluster from 2007 and 2010 were centered mostly in eastern Idaho, home of the Idaho National Laboratory, with spillover in the south central and southeastern regions.

## Energy Occupations

Energy occupations were obtained from reverse staffing patterns using the core industry taxonomy. The occupations were then organized by quantity of jobs and education level. Analyst interpretation was then used to remove service type occupations, similar to the core industry taxonomy itself.

## Framework

Competitive advantage is assessed using a methodology developed by the Central Pennsylvania Workforce Development Corp. In this methodology, competitive advantage exists if “the output, productivity and growth of a cluster are high relative to other regions” (Smith, 2003, p. 4). This cluster analysis includes location quotient and shift-share analysis, calculated for Idaho using the Quarterly Census of Employment and Wages data for all industries in the energy cluster for the period 2007-2010.

## Location Quotient

The location quotient is a ratio that indicates how concentrated a particular industry is within an area, allowing comparisons between small and large areas. In this analysis, Idaho is compared with the nation. A location quotient of 1.0 indicates that an industry share of all local employment is equal to the national industry share of all employment for that industry. Assuming uniform patterns of consumption and productivity, a location quotient above one indicates a concentration higher than the comparison region and could point to an industry that exports its goods or services out of the area and generates wealth for the region (Smith, 2003 & Munnich, 1999). A location quotient below one indicates an industry that may not meet all of the needs of the study area and requires the import into the area of the good or service the industry produces.

## Shift-Share Analysis

While the location quotient looks at one point in time, the shift-share analysis looks at the trend over time. There are three parts used to explain the growth or decline of an industry over time. The national share component is how much any employment gain or decline can be attributed to the overall national economic conditions. The industry mix component indicates how much gain or loss is attributable to the trend of the industry nationally. The regional competitiveness component is the growth captured as a result of the competitive advantage of the location. The equation for the shift-share analysis is:

Industry Employment Change = National Share + Industry Mix + Regional Competitiveness

This portion of the scan of Idaho’s energy cluster is derived from the methodological framework developed by the Central Pennsylvania Workforce Development Corp. to examine the employment, location quotient and shift-share data for all industries within the energy cluster for the 44 counties in Idaho. Slight modifications were made to accommodate the nuances of the Idaho labor market. Industries were placed into four major categories:

1. **Key Industries** – significant industries based on number of employees with positive employment, location quotient and local competitiveness over the study period of 2007 to 2010

2. **Potential Growth Industries** – smaller industries based on employment size that exhibited strong employment growth and location quotient increases over the study period
3. **Stable Industries** – those significant employers that experienced an employment decline during the study period but had relatively stable location quotients
4. **Industries Hit by the Recession** – those industries that showed significant employment and location quotient decreases during the study period (Smith, 2003, p. 7)

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## Appendix Table 1. Purdue Taxonomy

NAICS	NAICS Description
<b>Mining, Quarrying, and Oil and Gas Extraction (10 Industries)</b>	
211111	- Crude Petroleum and Natural Gas Extraction
211112	- Natural Gas Liquid Extraction
212111	- Bituminous Coal and Lignite Surface Mining
212112	- Bituminous Coal Underground Mining
212113	- Anthracite Mining
212291	- Uranium-Radium-Vanadium Ore Mining
213111	- Drilling Oil and Gas Wells
213112	- Support Activities for Oil and Gas Operations
213113	- Support Activities for Coal Mining
213114	- Support Activities for Metal Mining
<b>Utilities (8 Industries)</b>	
221111	- Hydroelectric Power Generation
221112	- Fossil Fuel Electric Power Generation
221113	- Nuclear Electric Power Generation
221119	- Other Electric Power Generation
221121	- Electric Bulk Power Transmission and Control
221122	- Electric Power Distribution
221210	- Natural Gas Distribution
221330	- Steam and Air-Conditioning Supply
<b>Construction (8 Industries)</b>	
237110	- Water and Sewer Line and Related Structures Construction
237120	- Oil and Gas Pipeline and Related Structures Construction
237130	- Power and Communication Line and Related Structures Construction
237990	- Other Heavy and Civil Engineering Construction
238211	- Residential electrical contractors
238212	- Nonresidential electrical contractors
238221	- Residential plumbing and HVAC contractors
238222	- Nonresidential plumbing and HVAC contractors
<b>Manufacturing (24 Industries)</b>	
324110	- Petroleum Refineries
324199	- All Other Petroleum and Coal Products Manufacturing
325110	- Petrochemical Manufacturing
325120	- Industrial Gas Manufacturing
325191	- Gum and Wood Chemical Manufacturing
325193	- Ethyl Alcohol Manufacturing
332410	- Power Boiler and Heat Exchanger Manufacturing
332420	- Metal Tank (Heavy Gauge) Manufacturing
333131	- Mining Machinery and Equipment Manufacturing
333132	- Oil and Gas Field Machinery and Equipment Manufacturing
333414	- Heating Equipment (except Warm Air Furnaces) Manufacturing
333611	- Turbine and Turbine Generator Set Units Manufacturing
334413	- Semiconductor and Related Device Manufacturing
334519	- Other Measuring and Controlling Device Manufacturing
335311	- Power, Distribution, and Specialty Transformer Manufacturing
335312	- Motor and Generator Manufacturing
335313	- Switchgear and Switchboard Apparatus Manufacturing
335314	- Relay and Industrial Control Manufacturing
335911	- Storage Battery Manufacturing
335912	- Primary Battery Manufacturing
335929	- Other Communication and Energy Wire Manufacturing
335931	- Current-Carrying Wiring Device Manufacturing
335991	- Carbon and Graphite Product Manufacturing
335999	- All Other Miscellaneous Electrical Equipment and Component Manufacturing

*Continued on next page.*

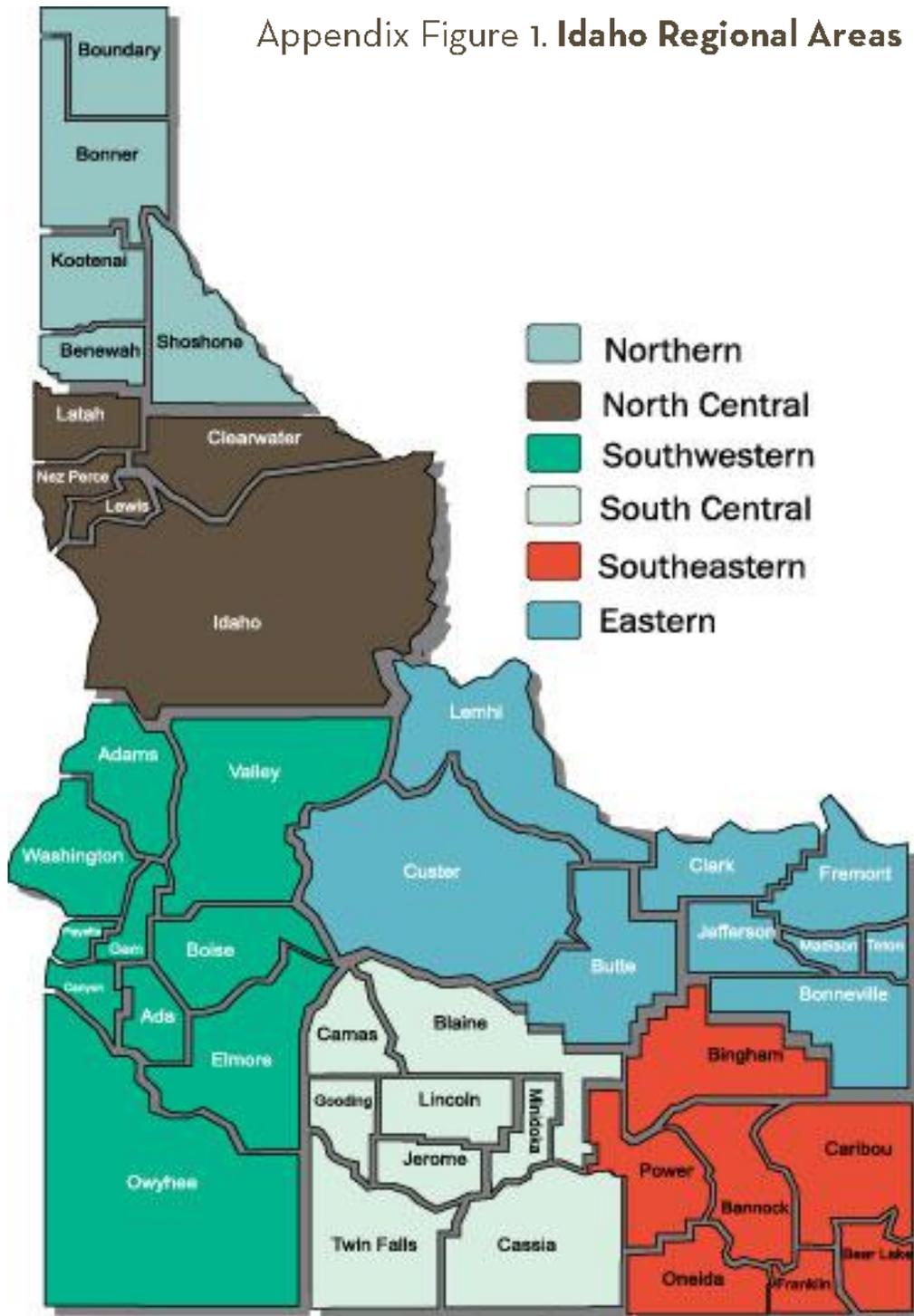
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Appendix Table 1. Purdue Taxonomy	
NAICS	NAICS Description
<b>Wholesale Trade (6 Industries)</b>	
423520	- Coal and Other Mineral and Ore Merchant Wholesalers
423610	- Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers
423690	- Other Electronic Parts and Equipment Merchant Wholesalers
423720	- Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers
424710	- Petroleum Bulk Stations and Terminals
424720	- Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)
<b>Retail Trade (5 Industries)</b>	
447110	- Gasoline Stations with Convenience Stores
447190	- Other Gasoline Stations
454311	- Heating Oil Dealers
454312	- Liquefied Petroleum Gas (Bottled Gas) Dealers
454319	- Other Fuel Dealers
<b>Transportation and Warehousing (4 Industries)</b>	
486110	- Pipeline Transportation of Crude Oil
486210	- Pipeline Transportation of Natural Gas
486910	- Pipeline Transportation of Refined Petroleum Products
486990	- All Other Pipeline Transportation
<b>Finance and Insurance (2 Industries)</b>	
523910	- Miscellaneous Intermediation
523999	- Miscellaneous Financial Investment Activities
<b>Real Estate and Rental and Leasing (2 Industries)</b>	
532412	- Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing
533110	- Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)
<b>Professional, Scientific and Technical Services (7 Industries)</b>	
541330	- Engineering Services
541360	- Geophysical Surveying and Mapping Services
541380	- Testing Laboratories
541620	- Environmental Consulting Services
541690	- Other Scientific and Technical Consulting Services
541711	- Research and Development in Biotechnology
541712	- Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)
<b>Government - Public Administration (1 Industry)</b>	
926130	- Regulation and administration of communications, electric, gas, and other utilities

## Appendix Table 2. Core Taxonomy

NAICS	NAICS Description
<b>Mining, Quarrying and Oil and Gas Extraction</b>	
211111	- Crude Petroleum and Natural Gas Extraction
211112	- Natural Gas Liquid Extraction
212291	- Uranium-Radium-Vanadium Ore Mining
213111	- Drilling Oil and Gas Wells
213112	- Support Activities for Oil and Gas Operations
213113	- Support Activities for Coal Mining
213114	- Support Activities for Metal Mining
<b>Utilities</b>	
221111	- Hydroelectric Power Generation
221112	- Fossil Fuel Electric Power Generation
221119	- Other Electric Power Generation
221121	- Electric Bulk Power Transmission and Control
221122	- Electric Power Distribution
221210	- Natural Gas Distribution
221330	- Steam and Air-Conditioning Supply
<b>Construction</b>	
237120	- Oil and Gas Pipeline and Related Structures Construction
237130	- Power and Communication Line and Related Structures Construction
237990	- Other Heavy and Civil Engineering Construction
<b>Manufacturing</b>	
324110	- Petroleum Refineries
325120	- Industrial Gas Manufacturing
325193	- Ethyl Alcohol Manufacturing
332420	- Metal Tank (Heavy Gauge) Manufacturing
333131	- Mining Machinery and Equipment Manufacturing
333132	- Oil and Gas Field Machinery and Equipment Manufacturing
333414	- Heating Equipment (except Warm Air Furnaces) Manufacturing
333611	- Turbine and Turbine Generator Set Units Manufacturing
334519	- Other Measuring and Controlling Device Manufacturing
335311	- Power, Distribution, and Specialty Transformer Manufacturing
335312	- Motor and Generator Manufacturing
335313	- Switchgear and Switchboard Apparatus Manufacturing
335314	- Relay and Industrial Control Manufacturing
335929	- Other Communication and Energy Wire Manufacturing
335931	- Current-Carrying Wiring Device Manufacturing
335991	- Carbon and Graphite Product Manufacturing
335999	- All Other Miscellaneous Electrical Equipment and Component Manufacturing
<b>Professional, Scientific and Technical Services</b>	
541330	- Engineering Services
541360	- Geophysical Surveying and Mapping Services
541380	- Testing Laboratories
541620	- Environmental Consulting Services
541690	- Other Scientific and Technical Consulting Services
541711	- Research and Development in Biotechnology
541712	- Research and Development in the Physical, Engineering and Life Sciences (except Biotechnology)

Appendix Figure 1. Idaho Regional Areas



Note: Appendix Tables 3 and 4 can be viewed in an 11" x 17" format on the last two pages of the report.

SIZE		RELATIVE SIZE		RELATIVE GROWTH		RELATIVE GROWTH		EARNINGS PER WORKER (EPW)		RELATIVE ESTABLISHMENTS	
Area	Percent	Area	Percent	Area	Percent	Area	Percent	Area	Difference	Area	Percent
State Energy Employment to National Energy Employment	State Energy Employment to Total Employment	Growth Rate of Energy Employment	State Energy EPW	National EPW	State Energy EPW Minus All Industry EPW	State Energy EPW Minus All Industry EPW	State Energy Establishments to State Total Establishments	State Total Establishments			
Texas	14.1%	1	15.3%	North Dakota	66.6%	1	23.1%	Alaska	\$102,041	1	14.7%
California	10.9%	2	10.7%	Wyoming	56.4%	2	22.9%	Texas	\$99,449	2	10.8%
New York	4.6%	3	10.0%	North Dakota	29.0%	2	19.8%	Texas	\$20,881	2	10.5%
Florida	4.5%	4	10.0%	Wyoming	47.5%	3	19.8%	Massachusetts	\$20,359	3	9.8%
Pennsylvania	4.0%	5	9.7%	Kansas	35.8%	4	21.6%	California	\$14,714	4	9.7%
Illinois	3.4%	6	9.2%	Texas	34.6%	5	20.9%	New Jersey	\$14,575	5	9.3%
Ohio	3.1%	7	8.5%	Texas	33.0%	6	20.3%	Connecticut	\$12,137	6	9.3%
Virginia	2.9%	8	7.7%	South Dakota	29.0%	7	18.2%	West Virginia	\$7,416	7	9.0%
Louisiana	2.7%	9	6.9%	Ohio	27.9%	8	18.2%	Delaware	\$5,828	8	9.0%
Michigan	2.5%	10	6.7%	Hawaii	27.9%	9	18.0%	New York	\$5,830	9	8.9%
North Carolina	2.5%	11	6.1%	West Virginia	27.9%	10	17.0%	New York	\$5,830	9	8.9%
Dakota	2.5%	12	6.1%	Montana	26.3%	11	15.1%	Maryland	\$4,423	10	8.8%
Massachusetts	2.4%	13	5.9%	Alaska	22.1%	12	15.1%	Louisiana	\$3,877	11	8.7%
Georgia	2.3%	14	5.8%	Virginia	19.5%	13	14.3%	Wyoming	\$3,014	12	8.2%
Colorado	2.3%	15	5.8%	California	19.0%	14	14.3%	Illinois	\$2,930	13	7.9%
New Jersey	2.3%	16	5.7%	West Virginia	18.9%	15	14.3%	Nevada	\$2,866	14	7.9%
Maryland	2.1%	17	5.7%	Texas	18.9%	15	14.3%	Kentucky	\$2,626	15	7.8%
Washington	1.8%	18	5.7%	Washington	16.2%	16	12.5%	Alabama	\$2,651	16	7.8%
Arizona	1.7%	19	5.3%	Ohio	12.9%	17	11.3%	North Carolina	\$2,630	16	7.7%
Idaho	1.7%	20	5.3%	Colorado	11.9%	18	11.3%	Illinois	\$2,680	17	7.6%
Indiana	1.6%	21	5.0%	South Carolina	9.9%	19	10.5%	Arkansas	\$2,659	18	7.6%
Wisconsin	1.6%	22	5.0%	Virginia	9.9%	20	9.9%	Utah	\$2,659	19	7.6%
Minnesota	1.6%	23	5.0%	North Carolina	9.9%	21	9.9%	South Carolina	\$2,659	20	7.5%
Alabama	1.5%	24	5.1%	Alabama	7.6%	22	8.8%	Missouri	\$2,659	21	7.5%
Kentucky	1.4%	25	5.0%	Florida	6.7%	23	8.8%	West Virginia	\$2,659	22	7.4%
South Carolina	1.3%	26	4.9%	Nebraska	6.7%	24	8.3%	Kansas	\$2,659	23	7.3%
Connecticut	1.3%	27	4.9%	Nebraska	6.7%	25	8.3%	Hawaii	\$2,659	24	7.3%
New Mexico	1.1%	28	4.8%	Nebraska	6.7%	26	8.3%	Missouri	\$2,659	25	7.2%
Oregon	1.1%	29	4.8%	Nebraska	6.7%	27	8.3%	Minnesota	\$2,659	26	7.2%
West Virginia	1.0%	30	4.7%	Nebraska	6.7%	28	8.3%	Nebraska	\$2,659	27	7.0%
Mississippi	1.0%	31	4.5%	Nebraska	6.7%	29	8.3%	Nebraska	\$2,659	28	7.0%
Arkansas	0.9%	32	4.5%	Nebraska	6.7%	30	8.3%	Nebraska	\$2,659	29	6.8%
Utah	0.9%	33	4.5%	Nebraska	6.7%	31	8.3%	Nebraska	\$2,659	30	6.7%
Iowa	0.9%	34	4.5%	Nebraska	6.7%	32	8.3%	Nebraska	\$2,659	31	6.7%
Nevada	0.8%	35	4.4%	Nebraska	6.7%	33	8.3%	Nebraska	\$2,659	32	6.6%
Wyoming	0.8%	36	4.4%	Nebraska	6.7%	34	8.3%	Nebraska	\$2,659	33	6.6%
Nebraska	0.6%	37	4.3%	Nebraska	6.7%	35	8.3%	Nebraska	\$2,659	34	6.5%
Idaho	0.6%	38	4.3%	Nebraska	6.7%	36	8.3%	Nebraska	\$2,659	35	6.5%
New Hampshire	0.6%	39	4.3%	Nebraska	6.7%	37	8.3%	Nebraska	\$2,659	36	6.4%
North Dakota	0.4%	40	4.3%	Nebraska	6.7%	38	8.3%	Nebraska	\$2,659	37	6.4%
Montana	0.4%	41	4.3%	Nebraska	6.7%	39	8.3%	Nebraska	\$2,659	38	6.4%
Alaska	0.4%	42	4.3%	Nebraska	6.7%	40	8.3%	Nebraska	\$2,659	39	6.4%
Maine	0.4%	43	4.3%	Nebraska	6.7%	41	8.3%	Nebraska	\$2,659	40	6.3%
Delaware	0.4%	44	4.3%	Nebraska	6.7%	42	8.3%	Nebraska	\$2,659	41	6.2%
Hawaii	0.3%	45	4.2%	Nebraska	6.7%	43	8.3%	Nebraska	\$2,659	42	6.1%
South Dakota	0.3%	46	4.2%	Nebraska	6.7%	44	8.3%	Nebraska	\$2,659	43	6.1%
Delaware	0.3%	47	4.2%	Nebraska	6.7%	45	8.3%	Nebraska	\$2,659	44	6.1%
Vermont	0.3%	48	4.1%	Nebraska	6.7%	46	8.3%	Nebraska	\$2,659	45	5.9%
Rhode Island	0.2%	49	4.0%	Nebraska	6.7%	47	8.3%	Nebraska	\$2,659	46	5.5%
National	100.0%	NA	3.7%	Nebraska	6.7%	48	8.3%	Nebraska	\$2,659	47	5.5%
				Nebraska	6.7%	49	8.3%	Nebraska	\$2,659	48	5.1%
				Nebraska	6.7%	50	8.3%	Nebraska	\$2,659	49	4.8%
				Nebraska	6.7%	50	8.3%	Nebraska	\$2,659	50	4.8%

Note: Appendix Tables 3 and 4 can be viewed in an 11" x 17" format on the last two pages of the report.

Appendix Table 4: 50 State All Industry Labor Force Comparison – 2010																				
SIZE	RELATIVE GROWTH				EARNINGS PER WORKER				RELATIVE EARNINGS PER WORKER				Population							
	Growth Rate of Employment		Growth Rate of Employment		Growth Rate of Employment		Growth Rate of Employment		All Industry EPW (EPW)		State EPW to National EPW		Percent of Total Population							
Area	Percent	Rank	Area	2002-2010 Rank	Area	2002-2006 Rank	Area	2007-2010 Rank	Area	Rank	Area	Rank	Area	Percent	Rank					
California	11.5%	1	Utah	17.0%	1	Nevada	24.1%	1	North Dakota	2.7%	1	Connecticut	\$65,066	1	Connecticut	127.1%	1	California	12.1%	1
Texas	8.2%	2	Texas	15.5%	2	Arizona	18.7%	2	Alaska	2.6%	2	New York	\$64,301	2	New York	125.6%	2	Texas	8.1%	2
New York	6.3%	3	Wyoming	15.0%	3	Utah	15.1%	3	Texas	0.9%	3	Massachusetts	\$62,309	3	Massachusetts	121.7%	3	New York	6.4%	3
Florida	5.6%	4	Nevada	13.4%	4	Florida	14.5%	4	Louisiana	0.1%	4	New Jersey	\$61,914	4	New Jersey	121.0%	4	Florida	6.1%	4
Illinois	4.2%	5	Alaska	12.4%	5	Idaho	14.5%	5	Oklahoma	0.1%	5	California	\$58,010	5	California	113.3%	5	Illinois	4.2%	5
Pennsylvania	4.1%	6	North Dakota	12.1%	6	Hawaii	11.5%	6	South Dakota	-0.2%	6	Alaska	\$56,504	6	Alaska	110.4%	6	Pennsylvania	4.1%	6
Ohio	3.7%	7	Arizona	11.8%	7	Wyoming	10.8%	7	Wyoming	-0.9%	7	Maryland	\$55,926	7	Maryland	109.3%	7	Ohio	3.8%	7
North Carolina	3.0%	8	Idaho	11.1%	8	Georgia	10.4%	8	West Virginia	-1.3%	8	Virginia	\$55,459	8	Virginia	108.4%	8	Michigan	3.3%	8
Georgia	3.0%	9	Hawaii	10.6%	9	Texas	10.2%	9	Nebraska	-1.4%	9	Illinois	\$54,007	9	Illinois	105.5%	9	Georgia	3.2%	9
Michigan	2.9%	10	Washington	10.0%	10	New Mexico	9.7%	10	New York	-1.5%	10	Washington	\$53,405	10	Washington	104.4%	10	North Carolina	3.1%	10
New Jersey	2.9%	11	Montana	9.6%	11	Montana	9.6%	11	Kansas	-1.8%	11	Delaware	\$53,025	11	Delaware	103.6%	11	New Jersey	2.8%	11
Virginia	2.7%	12	Oklahoma	8.8%	12	Oregon	9.5%	12	Massachusetts	-2.2%	12	Texas	\$52,140	12	Texas	101.9%	12	Virginia	2.6%	12
Massachusetts	2.4%	13	New Mexico	8.3%	13	Washington	9.1%	13	Iowa	-2.3%	13	Colorado	\$51,379	13	Colorado	100.4%	13	Washington	2.2%	13
Washington	2.2%	14	South Dakota	8.2%	14	South Carolina	8.8%	14	Maryland	-2.4%	14	National	\$51,178	NA	National	100.0%	NA	Arizona	2.2%	14
Tennessee	2.1%	15	Virginia	7.9%	15	Virginia	8.4%	15	New Hampshire	-2.4%	15	Rhode Island	\$50,615	14	Rhode Island	98.9%	14	Massachusetts	2.2%	15
Indiana	2.1%	16	North Carolina	7.5%	16	Alabama	8.3%	16	Pennsylvania	-2.4%	16	Pennsylvania	\$50,509	15	Pennsylvania	98.7%	15	Indiana	2.1%	16
Missouri	2.0%	17	Maryland	7.0%	17	North Carolina	8.3%	17	Virginia	-2.4%	17	New Hampshire	\$49,884	16	New Hampshire	97.5%	16	Tennessee	2.1%	17
Wisconsin	2.0%	18	South Carolina	6.9%	18	Delaware	7.8%	18	Washington	-2.5%	18	Hawaii	\$49,558	17	Hawaii	96.8%	17	Missouri	2.0%	18
Minnesota	2.0%	19	Colorado	6.8%	19	Florida	7.4%	19	Arkansas	-2.7%	19	Minnesota	\$49,250	18	Minnesota	96.2%	18	Maryland	1.9%	19
Maryland	1.9%	20	Florida	6.8%	20	Alaska	7.3%	20	Montana	-2.8%	20	Nevada	\$48,312	19	Nevada	94.4%	19	Wisconsin	1.8%	20
Arizona	1.8%	21	Oregon	5.9%	21	Tennessee	7.1%	21	Connecticut	-3.0%	21	Arizona	\$48,118	20	Arizona	94.0%	20	Minnesota	1.7%	21
Colorado	1.8%	22	Georgia	5.9%	22	National	6.8%	NA	Colorado	-3.1%	22	Michigan	\$48,042	21	Michigan	93.9%	21	Colorado	1.6%	22
Louisiana	1.5%	23	New Hampshire	5.6%	23	New Hampshire	6.7%	22	Utah	-3.1%	23	Georgia	\$47,311	22	Georgia	92.4%	22	Alabama	1.5%	23
Alabama	1.4%	24	New York	5.6%	24	Colorado	6.6%	23	Minnesota	-3.3%	24	Wyoming	\$47,278	23	Wyoming	92.4%	23	South Carolina	1.5%	24
South Carolina	1.4%	25	Delaware	5.2%	25	North Dakota	6.6%	24	Vermont	-3.5%	25	Louisiana	\$46,544	24	Louisiana	90.9%	24	Louisiana	1.5%	25
Kentucky	1.4%	26	Louisiana	5.2%	26	California	6.3%	25	Kentucky	-3.5%	26	Ohio	\$45,680	25	Ohio	89.3%	25	Kentucky	1.4%	26
Oregon	1.3%	27	National	4.7%	NA	New Jersey	6.1%	26	New Mexico	-3.5%	26	Tennessee	\$45,296	26	Tennessee	88.5%	26	Oregon	1.2%	27
Connecticut	1.3%	28	Alabama	4.6%	27	South Dakota	6.0%	27	Hawaii	-3.6%	28	Oregon	\$45,222	27	Oregon	88.4%	27	Oklahoma	1.2%	28
Oklahoma	1.3%	29	West Virginia	4.3%	28	Arkansas	5.9%	28	Maine	-3.6%	29	Florida	\$45,118	28	Florida	88.2%	28	Connecticut	1.1%	29
Iowa	1.1%	30	Nebraska	4.2%	29	Oklahoma	5.6%	29	Missouri	-3.7%	30	North Carolina	\$45,079	29	North Carolina	88.1%	29	Iowa	1.0%	30
Kansas	1.1%	31	Arkansas	4.2%	30	Minnesota	5.1%	30	Delaware	-3.8%	31	Missouri	\$44,976	30	Missouri	87.7%	30	Mississippi	1.0%	31
Utah	0.9%	32	Iowa	3.8%	31	Kentucky	4.9%	31	National	-3.9%	NA	Kansas	\$44,770	31	Kansas	87.5%	31	Arkansas	0.9%	32
Arkansas	0.9%	33	Kansas	3.7%	32	Wisconsin	4.7%	32	North Carolina	-4.1%	32	New Mexico	\$44,365	32	New Mexico	86.7%	32	Kansas	0.9%	33
Mississippi	0.9%	34	Tennessee	3.4%	33	Iowa	4.7%	33	New Jersey	-4.2%	33	Alabama	\$44,054	33	Alabama	86.1%	33	Utah	0.9%	34
Nevada	0.9%	35	Pennsylvania	3.2%	34	Rhode Island	4.5%	34	Mississippi	-4.2%	34	Oklahoma	\$43,911	34	Oklahoma	85.8%	34	Nevada	0.9%	35
Nebraska	0.7%	36	Kentucky	3.1%	35	New York	4.4%	35	Illinois	-4.4%	35	Wisconsin	\$43,937	35	Wisconsin	85.7%	35	New Mexico	0.7%	36
New Mexico	0.6%	37	Minnesota	3.1%	36	Missouri	4.4%	36	South Carolina	-4.5%	36	Indiana	\$43,745	36	Indiana	85.5%	36	West Virginia	0.6%	37
West Virginia	0.5%	38	Connecticut	3.0%	37	Connecticut	4.1%	37	Wisconsin	-4.6%	37	Kentucky	\$43,695	37	Kentucky	85.4%	37	Nebraska	0.6%	38
Idaho	0.5%	39	New Jersey	3.0%	38	Vermont	4.0%	38	Indiana	-5.0%	38	West Virginia	\$43,148	38	West Virginia	84.3%	38	Idaho	0.5%	39
Hawaii	0.5%	40	Massachusetts	2.1%	39	West Virginia	4.0%	39	Tennessee	-5.1%	39	Nebraska	\$43,084	39	Nebraska	84.2%	39	New Hampshire	0.4%	40
New Hampshire	0.5%	41	California	2.0%	40	Mississippi	3.9%	40	Oregon	-5.6%	40	Utah	\$42,912	40	Utah	83.8%	40	Maine	0.4%	41
Maine	0.5%	42	Missouri	1.8%	41	Pennsylvania	3.9%	41	Alabama	-5.7%	41	North Dakota	\$42,715	41	North Dakota	83.5%	41	Hawaii	0.4%	42
Montana	0.4%	43	Mississippi	1.7%	42	Nebraska	3.9%	42	California	-5.8%	42	Iowa	\$42,197	42	Iowa	82.5%	42	Rhode Island	0.3%	43
Rhode Island	0.3%	44	Vermont	1.6%	43	Maine	3.6%	43	Ohio	-5.9%	43	Vermont	\$41,679	43	Vermont	81.4%	43	Montana	0.3%	44
South Dakota	0.3%	45	Maine	1.3%	44	Indiana	3.3%	44	Idaho	-6.0%	44	South Carolina	\$41,146	44	South Carolina	80.4%	44	Delaware	0.3%	45
Delaware	0.3%	46	Wisconsin	1.0%	45	Illinois	3.2%	45	Rhode Island	-6.3%	45	Arkansas	\$41,057	45	Arkansas	80.2%	45	South Dakota	0.3%	46
North Dakota	0.3%	47	Illinois	0.5%	46	Kansas	2.7%	46	Georgia	-6.4%	46	Maine	\$40,910	46	Maine	79.9%	46	Alaska	0.2%	47
Alaska	0.3%	48	Indiana	-0.6%	47	Massachusetts	2.5%	47	Florida	-7.9%	47	Mississippi	\$40,140	47	Mississippi	78.4%	47	North Dakota	0.2%	48
Vermont	0.2%	49	Rhode Island	-0.9%	48	Ohio	1.8%	48	Arizona	-8.3%	48	Idaho	\$39,938	48	Idaho	76.0%	48	Wyoming	0.2%	49
Wyoming	0.2%	50	Ohio	-3.4%	49	Louisiana	1.3%	49	Michigan	-8.3%	49	South Dakota	\$39,100	49	South Dakota	75.4%	49	Wyoming	0.2%	50
National	100.0%	NA	Michigan	-8.6%	50	Michigan	0.3%	50	Nevada	-10.7%	50	Montana	\$36,301	50	Montana	74.8%	50	National	100.0%	NA

Source: EPMIS Complete Employment - 4th Quarter 2010, EPMIS Complete Employment - 1st Quarter 2011, U.S. Census Bureau

Idaho Department of Labor, Energy Business Scan 2011

Appendix Table 3. 50 State Energy Industry Labor Force Comparison -- 2010

SIZE			RELATIVE SIZE			RELATIVE GROWTH						EARNINGS PER WORKER (EPW)						RELATIVE ESTABLISHMENTS								
State Energy Employment to National Energy Employment			State Energy Employment to State Total Employment			Growth Rate of Energy Employment		Growth Rate of Energy Employment		Growth Rate of Energy Employment		Energy EPW			National Comparison: State Energy EPW Minus National EPW			State Comparison: Energy EPW Minus All Industry EPW			State Energy Establishments to State Total Establishments					
Area	Percent	Rank	Area	Percent	Rank	Area	2002-2010	Rank	Area	2002-2006	Rank	Area	2007-2010	Rank	Area	Energy EPW	Rank	Area	Difference	Rank	Area	Difference	Rank	Area	Percent	Rank
Texas	14.1%	1	Wyoming	15.3%	1	North Dakota	62.6%	1	Wyoming	36.4%	1	Oklahoma	23.1%	1	Alaska	\$102,041	1	Alaska	\$23,473	1	Texas	\$47,309	1	Wyoming	14.7%	1
California	10.9%	2	Oklahoma	10.7%	2	Oklahoma	56.4%	2	Nevada	29.0%	2	North Dakota	22.9%	2	Texas	\$99,449	2	Texas	\$20,881	2	Alaska	\$45,537	2	Oklahoma	10.8%	2
New York	4.6%	3	Louisiana	10.0%	3	Wyoming	47.5%	3	New Mexico	21.6%	3	Kansas	19.8%	3	Massachusetts	\$98,927	3	Massachusetts	\$20,359	3	Massachusetts	\$36,618	3	Louisiana	10.5%	3
Florida	4.5%	4	West Virginia	10.0%	4	Kansas	35.8%	4	Utah	21.1%	4	Texas	21.1%	4	California	\$93,282	4	California	\$14,714	4	California	\$35,272	4	North Dakota	9.8%	4
Pennsylvania	4.0%	5	New Mexico	9.7%	5	Texas	34.6%	5	Florida	20.9%	5	Alaska	10.3%	5	New Jersey	\$93,143	5	New Jersey	\$14,575	5	Oregon	\$34,836	5	New Mexico	9.7%	5
Illinois	3.4%	6	Texas	9.2%	6	Alaska	33.0%	6	Hawaii	20.3%	6	West Virginia	9.9%	6	Connecticut	\$90,705	6	Connecticut	\$12,137	6	Colorado	\$34,605	6	Mississippi	9.3%	6
Ohio	3.1%	7	Alaska	8.5%	7	South Dakota	29.0%	7	North Dakota	20.0%	7	Louisiana	6.2%	7	Colorado	\$85,984	7	Colorado	\$7,416	7	Louisiana	\$33,611	7	West Virginia	9.3%	7
Virginia	2.9%	8	North Dakota	7.7%	8	Utah	29.0%	8	Oklahoma	18.2%	8	Arkansas	6.0%	8	Delaware	\$85,828	8	Delaware	\$7,260	8	New Mexico	\$33,058	8	Texas	9.0%	8
Louisiana	2.7%	9	Colorado	6.9%	9	Hawaii	27.9%	9	Montana	18.0%	9	South Dakota	4.9%	9	New York	\$84,198	9	New York	\$5,630	9	Oklahoma	\$32,934	9	Colorado	8.9%	9
Michigan	2.5%	10	Kansas	6.7%	10	West Virginia	27.9%	10	South Dakota	17.0%	10	Nebraska	2.5%	10	Maryland	\$81,423	10	Maryland	\$2,855	10	Wyoming	\$32,826	10	Montana	8.8%	10
North Carolina	2.5%	11	Montana	6.1%	11	Montana	26.3%	11	Alaska	15.1%	11	New York	1.6%	11	Louisiana	\$80,155	11	Louisiana	\$1,587	11	Delaware	\$32,803	11	Alabama	8.7%	11
Oklahoma	2.5%	12	Mississippi	6.1%	12	New Mexico	22.1%	12	Virginia	15.1%	12	Montana	0.3%	12	Wyoming	\$80,104	12	Wyoming	\$1,536	12	New Jersey	\$31,229	12	Alaska	8.2%	12
Massachusetts	2.4%	13	Vermont	5.9%	13	Louisiana	19.5%	13	California	14.3%	13	Mississippi	0.3%	13	Oregon	\$80,058	13	Oregon	\$1,490	13	National	\$27,390	NA	Vermont	7.9%	13
Georgia	2.3%	14	Idaho	5.8%	14	Colorado	19.0%	14	West Virginia	13.0%	14	Iowa	0.3%	14	Illinois	\$79,887	14	Illinois	\$1,319	14	Pennsylvania	\$26,866	13	South Dakota	7.9%	14
Colorado	2.3%	15	Maryland	5.8%	15	Nebraska	18.4%	15	Texas	12.5%	15	Wyoming	0.2%	15	National	\$78,568	NA	National	\$0	NA	North Dakota	\$26,624	14	Kentucky	7.8%	15
New Jersey	2.3%	16	Virginia	5.7%	16	Arkansas	16.2%	16	Washington	12.5%	16	Kentucky	0.1%	16	New Mexico	\$77,423	15	New Mexico	(\$1,145)	15	Montana	\$26,551	15	Maine	7.8%	16
Maryland	2.1%	17	Alabama	5.7%	17	Mississippi	12.4%	17	Idaho	12.4%	17	Hawaii	0.1%	17	Pennsylvania	\$77,375	16	Pennsylvania	(\$1,193)	16	Arizona	\$26,330	16	North Carolina	7.7%	17
Washington	1.8%	18	Arkansas	5.7%	18	California	11.5%	18	Colorado	12.3%	18	Pennsylvania	-0.1%	18	Oklahoma	\$76,845	17	Oklahoma	(\$1,723)	17	Illinois	\$25,880	17	Arkansas	7.6%	18
Arizona	1.7%	19	Kentucky	5.5%	19	Virginia	10.4%	19	South Carolina	11.5%	19	Colorado	-0.5%	19	Washington	\$75,003	18	Washington	(\$3,565)	18	Connecticut	\$25,639	18	Utah	7.6%	19
Missouri	1.6%	20	National	5.4%	NA	Washington	9.9%	20	Maryland	10.5%	20	Arizona	-2.0%	20	Arizona	\$74,448	19	Arizona	(\$4,120)	19	Maryland	\$25,497	19	South Carolina	7.6%	20
Indiana	1.6%	21	Massachusetts	5.4%	20	National	9.7%	NA	Georgia	9.6%	21	National	-2.2%	NA	Virginia	\$74,377	20	Virginia	(\$4,191)	20	Vermont	\$25,063	20	Kansas	7.5%	21
Tennessee	1.6%	22	Utah	5.3%	21	Maryland	9.3%	21	Alabama	9.4%	22	Ohio	-2.6%	21	Hawaii	\$73,355	21	Hawaii	(\$5,213)	21	Idaho	\$24,921	21	Idaho	7.4%	22
Wisconsin	1.6%	23	Pennsylvania	5.2%	22	Nevada	7.6%	22	North Carolina	8.8%	23	Massachusetts	-2.7%	22	Michigan	\$70,931	22	Michigan	(\$7,637)	22	West Virginia	\$24,448	22	Virginia	7.4%	23
Minnesota	1.5%	24	Nevada	5.1%	23	Florida	6.8%	23	Arizona	8.6%	24	Illinois	-3.6%	23	North Dakota	\$69,339	23	North Dakota	(\$9,229)	23	Kansas	\$24,233	23	Tennessee	7.3%	24
Alabama	1.5%	25	California	5.1%	24	Alabama	6.7%	24	National	8.3%	NA	Utah	-3.8%	24	Kansas	\$69,003	24	Kansas	(\$9,565)	24	Hawaii	\$23,797	24	Georgia	7.3%	25
Kentucky	1.4%	26	Delaware	5.0%	25	Iowa	6.3%	25	Nebraska	7.6%	25	New Mexico	-3.9%	25	New Hampshire	\$68,096	25	New Hampshire	(\$10,472)	25	Michigan	\$22,889	25	New Hampshire	7.2%	26
Kansas	1.3%	27	Arizona	5.0%	26	Pennsylvania	5.4%	26	Kansas	7.4%	26	Connecticut	-4.3%	26	West Virginia	\$67,596	26	West Virginia	(\$10,972)	26	Alabama	\$21,689	26	Nebraska	7.0%	27
South Carolina	1.3%	28	South Dakota	4.9%	27	Kentucky	4.3%	27	Mississippi	7.1%	27	Virginia	-5.1%	27	Minnesota	\$67,161	27	Minnesota	(\$11,407)	27	Washington	\$21,598	27	Indiana	7.0%	28
New Mexico	1.1%	29	South Carolina	4.8%	28	New York	3.8%	28	Louisiana	7.0%	28	Minnesota	-5.3%	28	Vermont	\$66,742	28	Vermont	(\$11,826)	28	Utah	\$21,115	28	Nevada	6.9%	29
Oregon	1.1%	30	Michigan	4.7%	29	South Carolina	3.8%	29	Tennessee	6.2%	29	Indiana	-5.8%	29	Nevada	\$66,227	29	Nevada	(\$12,341)	29	Wisconsin	\$20,428	29	Iowa	6.8%	30
Connecticut	1.0%	31	New Hampshire	4.7%	30	Massachusetts	2.4%	30	Rhode Island	5.2%	30	New Hampshire	-5.9%	30	Alabama	\$65,743	30	Alabama	(\$12,825)	30	New York	\$19,897	30	Maryland	6.7%	31
West Virginia	1.0%	32	Oregon	4.5%	31	Ohio	1.3%	31	Arkansas	5.2%	31	California	-6.0%	31	Rhode Island	\$65,741	31	Rhode Island	(\$12,827)	31	Mississippi	\$19,795	31	National	6.7%	NA
Mississippi	1.0%	33	North Carolina	4.5%	32	Tennessee	1.1%	32	Iowa	5.1%	32	Alabama	-6.1%	32	Montana	\$64,852	32	Montana	(\$13,716)	32	Missouri	\$19,403	32	Massachusetts	6.6%	32
Arkansas	0.9%	34	Maine	4.5%	33	North Carolina	-0.2%	33	Maine	5.0%	33	Tennessee	-7.3%	33	Ohio	\$64,846	33	Ohio	(\$13,722)	33	Kentucky	\$19,222	33	Arizona	6.6%	33
Utah	0.9%	35	Ohio	4.5%	34	Georgia	-0.3%	34	Wisconsin	4.8%	34	Washington	-7.4%	34	Washington	\$64,279	34	Missouri	(\$14,289)	34	Ohio	\$19,166	34	Florida	6.6%	34
Iowa	0.9%	36	Washington	4.4%	35	Missouri	-1.1%	35	Missouri	4.3%	35	Wisconsin	-7.6%	35	Wisconsin	\$64,265	35	Wisconsin	(\$14,303)	35	Virginia	\$18,918	35	Minnesota	6.5%	35
Nevada	0.8%	37	New Jersey	4.4%	36	New Hampshire	-1.3%	36	New Hampshire	4.1%	36	New Jersey	-7.7%	36	New Jersey	\$64,027	36	Utah	(\$14,541)	36	New Hampshire	\$18,212	36	Michigan	6.4%	36
Wyoming	0.6%	38	Missouri	4.3%	37	Wisconsin	-1.4%	37	Oregon	3.9%	37	Missouri	-8.1%	37	Idaho	\$64,021	37	Idaho	(\$14,547)	37	South Carolina	\$18,152	37	Connecticut	6.4%	37
Nebraska	0.6%	39	Nebraska	4.3%	38	Idaho	-1.6%	38	Massachusetts	3.3%	38	Rhode Island	-8.3%	38	Kentucky	\$62,917	38	Kentucky	(\$15,651)	38	Nevada	\$17,915	38	Wisconsin	6.4%	38
Idaho	0.6%	40	Florida	4.3%	39	Minnesota	-1.7%	39	Ohio	2.7%	39	Maine	-8.8%	39	Georgia	\$61,415	39	Georgia	(\$17,153)	39	Minnesota	\$17,911	39	Delaware	6.4%	39
New Hampshire	0.4%	41	Illinois	4.3%	40	Connecticut	-2.7%	40	Kentucky	2.2%	40	Michigan	-9.3%	40	Indiana	\$61,131	40	Indiana	(\$17,437)	40	Indiana	\$17,386	40	Rhode Island	6.3%	40
North Dakota	0.4%	42	Wisconsin	4.3%	41	Indiana	-3.3%	41	Pennsylvania	2.0%	41	Vermont	-9.3%	41	North Carolina	\$60,564	41	North Carolina	(\$18,004)	41	North Carolina	\$15,485	41	Ohio	6.2%	41
Montana	0.4%	43	Indiana	4.3%	42	Maine	-3.8%	42	Minnesota	1.8%	42	Oregon	-9.7%	42	Mississippi	\$59,935	42	Mississippi	(\$18,633)	42	Rhode Island	\$15,126	42	New Jersey	6.1%	42
Alaska	0.4%	44	Connecticut	4.2%	43	Oregon	-5.4%	43	Indiana	0.1%	43	Delaware	-9.8%	43	South Carolina	\$59,298	43	South Carolina	(\$19,270)	43	Arkansas	\$15,036	43	Missouri	6.1%	43
Maine	0.4%	45	Georgia	4.2%	44	Rhode Island	-5.7%	44	New Jersey	0.1%	44	South Carolina	-10.4%	44	Florida	\$58,761	44	Florida	(\$19,807)	44	Georgia	\$14,104	44	Pennsylvania	6.1%	44
Hawaii	0.3%	46	Minnesota	4.2%	45	Arizona	-6.2%	45	New York	-1.4%	45	Georgia	-11.2%	45	Tennessee	\$58,157	45	Tennessee	(\$20,411)	45	Nebraska	\$13,864	45	Illinois	5.9%	45
South Dakota	0.3%	47	Tennessee	4.2%	46	Illinois	-6.5%	46	Delaware	-1.4%	46	North Carolina	-11.5%	46	Nebraska	\$56,948	46	Nebraska	(\$21,620)	46	Florida	\$13,643	46	Oregon	5.5%	46
Delaware	0.3%	48	Iowa	4.1%	47	New Jersey	-7.0%	47	Connecticut	-2.1%	47	Florida	-12.2%	47	Arkansas	\$56,093	47	Arkansas	(\$22,475)	47	Tennessee	\$12,861	47	Hawaii	5.5%	47
Vermont	0.3%	49	New York	4.0%	48	Delaware	-10.6%	48	Michigan	-3.9%	48	Idaho	-14.6%	48	Iowa	\$52,870	48	Iowa	(\$25,698)	48	Maine	\$11,603	48	New York	5.1%	48
Rhode Island	0.2%	50	Rhode Island	3.7%	49	Illinois	-13.8%	49	Illinois	-5.0%	49	Arizona	-16.4%	49	Maine	\$52,513	49	Maine	(\$26,055)	49	South Dakota	\$10,970	49	Washington	5.0%	49
National	100.0%	NA	Hawaii	3.4%	50	Vermont	-14.9%	50	Vermont	-6.1%	50	Nevada	-18.2%	50	South Dakota	\$50,908	50	South Dakota	(\$27,660)	50	Iowa	\$10,673	50	California	4.8%	50

Source: EMSI Complete Employment - 4th Quarter 2010

Idaho Department of Labor, Energy Business Scan 2011

Source: EMSI Complete Employment - 1st Quarter 2011

Appendix Table 4. 50 State All Industry Labor Force Comparison – 2010

SIZE		RELATIVE GROWTH						EARNINGS PER WORKER (EPW)			RELATIVE EARNINGS PER WORKER			Population						
State Employment to National Employment			Growth Rate of Employment		Growth Rate of Employment		Growth Rate of Employment		All Industry EPW			State EPW to National EPW			Percent of Total Population					
Area	Percent	Rank	Area	2002-2010	Rank	Area	2002-2006	Rank	Area	2007-2010	Rank	Area	EPW	Rank	Area	Percent	Rank	Area	Percent	Rank
California	11.5%	1	Utah	17.0%	1	Nevada	24.1%	1	North Dakota	2.7%	1	Connecticut	\$65,066	1	Connecticut	127.1%	1	California	12.1%	1
Texas	8.2%	2	Texas	15.5%	2	Arizona	18.7%	2	Alaska	2.6%	2	New York	\$64,301	2	New York	125.6%	2	Texas	8.1%	2
New York	6.3%	3	Wyoming	15.0%	3	Utah	15.1%	3	Texas	0.9%	3	Massachusetts	\$62,309	3	Massachusetts	121.7%	3	New York	6.4%	3
Florida	5.6%	4	Nevada	13.4%	4	Florida	14.5%	4	Louisiana	0.1%	4	New Jersey	\$61,914	4	New Jersey	121.0%	4	Florida	6.1%	4
Illinois	4.2%	5	Alaska	12.4%	5	Idaho	14.5%	5	Oklahoma	0.1%	5	California	\$58,010	5	California	113.3%	5	Illinois	4.2%	5
Pennsylvania	4.1%	6	North Dakota	12.1%	6	Hawaii	11.5%	6	South Dakota	-0.2%	6	Alaska	\$56,504	6	Alaska	110.4%	6	Pennsylvania	4.1%	6
Ohio	3.7%	7	Arizona	11.8%	7	Wyoming	10.8%	7	Wyoming	-0.9%	7	Maryland	\$55,926	7	Maryland	109.3%	7	Ohio	3.8%	7
North Carolina	3.0%	8	Idaho	11.1%	8	Georgia	10.4%	8	West Virginia	-1.3%	8	Virginia	\$55,459	8	Virginia	108.4%	8	Michigan	3.3%	8
Georgia	3.0%	9	Hawaii	10.6%	9	Texas	10.2%	9	Nebraska	-1.4%	9	Illinois	\$54,007	9	Illinois	105.5%	9	Georgia	3.2%	9
Michigan	2.9%	10	Washington	10.0%	10	New Mexico	9.7%	10	New York	-1.5%	10	Washington	\$53,405	10	Washington	104.4%	10	North Carolina	3.1%	10
New Jersey	2.9%	11	Montana	9.6%	11	Montana	9.6%	11	Kansas	-1.8%	11	Delaware	\$53,025	11	Delaware	103.6%	11	New Jersey	2.8%	11
Virginia	2.7%	12	Oklahoma	8.8%	12	Oregon	9.5%	12	Massachusetts	-2.2%	12	Texas	\$52,140	12	Texas	101.9%	12	Virginia	2.6%	12
Massachusetts	2.4%	13	New Mexico	8.3%	13	Washington	9.1%	13	Iowa	-2.3%	13	Colorado	\$51,379	13	Colorado	100.4%	13	Washington	2.2%	13
Washington	2.2%	14	South Dakota	8.2%	14	South Carolina	8.8%	14	Maryland	-2.4%	14	National	\$51,178	NA	National	100.0%	NA	Arizona	2.2%	14
Tennessee	2.1%	15	Virginia	7.9%	15	Virginia	8.4%	15	New Hampshire	-2.4%	15	Rhode Island	\$50,615	14	Rhode Island	98.9%	14	Massachusetts	2.2%	15
Indiana	2.1%	16	North Carolina	7.5%	16	Alabama	8.3%	16	Pennsylvania	-2.4%	16	Pennsylvania	\$50,509	15	Pennsylvania	98.7%	15	Indiana	2.1%	16
Missouri	2.0%	17	Maryland	7.0%	17	North Carolina	8.3%	17	Virginia	-2.4%	17	New Hampshire	\$49,884	16	New Hampshire	97.5%	16	Tennessee	2.1%	17
Wisconsin	2.0%	18	South Carolina	6.9%	18	Delaware	7.8%	18	Washington	-2.5%	18	Hawaii	\$49,558	17	Hawaii	96.8%	17	Missouri	2.0%	18
Minnesota	2.0%	19	Colorado	6.8%	19	Maryland	7.4%	19	Arkansas	-2.7%	19	Minnesota	\$49,250	18	Minnesota	96.2%	18	Maryland	1.9%	19
Maryland	1.9%	20	Florida	6.8%	20	Alaska	7.3%	20	Montana	-2.8%	20	Nevada	\$48,312	19	Nevada	94.4%	19	Wisconsin	1.8%	20
Arizona	1.8%	21	Oregon	5.9%	21	Tennessee	7.1%	21	Connecticut	-3.0%	21	Arizona	\$48,118	20	Arizona	94.0%	20	Minnesota	1.7%	21
Colorado	1.8%	22	Georgia	5.9%	22	National	6.8%	NA	Colorado	-3.1%	22	Michigan	\$48,042	21	Michigan	93.9%	21	Colorado	1.6%	22
Louisiana	1.5%	23	New Hampshire	5.6%	23	New Hampshire	6.7%	22	Utah	-3.1%	23	Georgia	\$47,311	22	Georgia	92.4%	22	Alabama	1.5%	23
Alabama	1.4%	24	New York	5.6%	24	Colorado	6.6%	23	Minnesota	-3.3%	24	Wyoming	\$47,278	23	Wyoming	92.4%	23	South Carolina	1.5%	24
South Carolina	1.4%	25	Delaware	5.2%	25	North Dakota	6.6%	24	Vermont	-3.5%	25	Louisiana	\$46,544	24	Louisiana	90.9%	24	Louisiana	1.5%	25
Kentucky	1.4%	26	Louisiana	5.2%	26	California	6.3%	25	Kentucky	-3.5%	26	Ohio	\$45,680	25	Ohio	89.3%	25	Kentucky	1.4%	26
Oregon	1.3%	27	National	4.7%	NA	New Jersey	6.1%	26	New Mexico	-3.5%	27	Tennessee	\$45,296	26	Tennessee	88.5%	26	Oregon	1.2%	27
Connecticut	1.3%	28	Alabama	4.6%	27	South Dakota	6.0%	27	Hawaii	-3.6%	28	Oregon	\$45,222	27	Oregon	88.4%	27	Oklahoma	1.2%	28
Oklahoma	1.3%	29	West Virginia	4.3%	28	Arkansas	5.9%	28	Maine	-3.6%	29	Florida	\$45,118	28	Florida	88.2%	28	Connecticut	1.1%	29
Iowa	1.1%	30	Nebraska	4.2%	29	Oklahoma	5.6%	29	Missouri	-3.7%	30	North Carolina	\$45,079	29	North Carolina	88.1%	29	Iowa	1.0%	30
Kansas	1.1%	31	Arkansas	4.2%	30	Minnesota	5.1%	30	Delaware	-3.8%	31	Missouri	\$44,876	30	Missouri	87.7%	30	Mississippi	1.0%	31
Utah	0.9%	32	Iowa	3.8%	31	Kentucky	4.9%	31	National	-3.9%	NA	Kansas	\$44,770	31	Kansas	87.5%	31	Arkansas	0.9%	32
Arkansas	0.9%	33	Kansas	3.7%	32	Wisconsin	4.7%	32	North Carolina	-4.1%	32	New Mexico	\$44,365	32	New Mexico	86.7%	32	Kansas	0.9%	33
Mississippi	0.9%	34	Tennessee	3.4%	33	Iowa	4.7%	33	New Jersey	-4.2%	33	Alabama	\$44,054	33	Alabama	86.1%	33	Utah	0.9%	34
Nevada	0.9%	35	Pennsylvania	3.2%	34	Rhode Island	4.5%	34	Mississippi	-4.2%	34	Oklahoma	\$43,911	34	Oklahoma	85.8%	34	Nevada	0.9%	35
Nebraska	0.7%	36	Kentucky	3.1%	35	New York	4.4%	35	Illinois	-4.4%	35	Wisconsin	\$43,837	35	Wisconsin	85.7%	35	New Mexico	0.7%	36
New Mexico	0.6%	37	Minnesota	3.1%	36	Missouri	4.4%	36	South Carolina	-4.5%	36	Indiana	\$43,745	36	Indiana	85.5%	36	West Virginia	0.6%	37
West Virginia	0.5%	38	Connecticut	3.0%	37	Connecticut	4.1%	37	Wisconsin	-4.6%	37	Kentucky	\$43,695	37	Kentucky	85.4%	37	Nebraska	0.6%	38
Idaho	0.5%	39	New Jersey	3.0%	38	Vermont	4.0%	38	Indiana	-5.0%	38	West Virginia	\$43,148	38	West Virginia	84.3%	38	Idaho	0.5%	39
Hawaii	0.5%	40	Massachusetts	2.1%	39	West Virginia	4.0%	39	Tennessee	-5.1%	39	Nebraska	\$43,084	39	Nebraska	84.2%	39	New Hampshire	0.4%	40
New Hampshire	0.5%	41	California	2.0%	40	Mississippi	3.9%	40	Oregon	-5.6%	40	Utah	\$42,912	40	Utah	83.8%	40	Maine	0.4%	41
Maine	0.5%	42	Missouri	1.8%	41	Pennsylvania	3.9%	41	Alabama	-5.7%	41	North Dakota	\$42,715	41	North Dakota	83.5%	41	Hawaii	0.4%	42
Montana	0.4%	43	Mississippi	1.7%	42	Nebraska	3.9%	42	California	-5.8%	42	Iowa	\$42,197	42	Iowa	82.5%	42	Rhode Island	0.3%	43
Rhode Island	0.3%	44	Vermont	1.6%	43	Maine	3.6%	43	Ohio	-5.9%	43	Vermont	\$41,679	43	Vermont	81.4%	43	Montana	0.3%	44
South Dakota	0.3%	45	Maine	1.3%	44	Indiana	3.3%	44	Idaho	-6.0%	44	South Carolina	\$41,146	44	South Carolina	80.4%	44	Delaware	0.3%	45
Delaware	0.3%	46	Wisconsin	1.0%	45	Illinois	3.2%	45	Rhode Island	-6.3%	45	Arkansas	\$41,057	45	Arkansas	80.2%	45	South Dakota	0.3%	46
North Dakota	0.3%	47	Illinois	0.5%	46	Kansas	2.7%	46	Georgia	-6.4%	46	Maine	\$40,910	46	Maine	79.9%	46	Alaska	0.2%	47
Alaska	0.3%	48	Indiana	-0.6%	47	Massachusetts	2.5%	47	Florida	-7.9%	47	Mississippi	\$40,140	47	Mississippi	78.4%	47	North Dakota	0.2%	48
Vermont	0.2%	49	Rhode Island	-0.9%	48	Ohio	1.8%	48	Arizona	-8.1%	48	South Dakota	\$39,938	48	South Dakota	78.0%	48	Vermont	0.2%	49
Wyoming	0.2%	50	Ohio	-3.4%	49	Louisiana	1.3%	49	Michigan	-8.3%	49	Idaho	\$39,100	49	Idaho	76.4%	49	Wyoming	0.2%	50
National	100.0%	NA	Michigan	-8.6%	50	Michigan	0.3%	50	Nevada	-10.7%	50	Montana	\$38,301	50	Montana	74.8%	50	National	100.0%	NA

Source: EMSI Complete Employment - 4th Quarter 2010, EMSI Complete Employment - 1st Quarter 2011, U.S. Census Bureau