
Competency Models In Action:

Identifying Common Competencies for Energy-Related Occupations

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- Collaborating with energy employers to identify workforce needs
- Articulating technical, academic and behavioral competencies for energy-related occupations
- Documenting common competency requirements for multiple energy industry sectors

Introduction

The Allegheny Conference on Community Development, in partnership with the Energy Alliance of Greater Pittsburgh, engaged a private consulting company to conduct an occupational analysis of energy-related jobs in a ten-county region of southwestern Pennsylvania. The resulting study, “Workforce Analysis Report: Energy Sector Jobs in Greater Pittsburgh,” was designed to identify “target jobs” in that region and determine the critical competencies required for success in those jobs. For purposes of this study, target jobs were defined as those meeting two criteria: 1) employers in the region anticipate high-volume hiring from the present through 2020, and 2) employers have experienced and continue to experience difficulty finding applicants with the required skills from within the current available workforce.¹

In addition to this initiative, the organization has demonstrated a competency-based approach for energy-related occupations in several other projects. Their ShaleNET Trade Adjustment Assistance Community College and Career Training grant enabled them to develop and implement industry-informed, stackable certificate and associate degree programs to address the rapid growth of the Marcellus shale industry in Pennsylvania, Ohio, West Virginia and Texas. In addition, their Service to Opportunity toolkit is focused on translating the military skills of returning veterans to industry-specific academic, technical and behavioral competencies for in-demand energy and related manufacturing jobs.

The Workforce Need

The Workforce Analysis Report on energy-sector jobs in greater Pittsburgh forecasts that over 7,000 hires for the period of 2012-2020 from 37 energy-related companies with almost 2,000 of those coming from difficult-to-fill target jobs. Approximately 40% of this forecasted hiring volume is attributable to growth in the industry, with the remaining hires linked to attrition/retirements in the current workforce.²

¹ Workforce Analysis Report: Energy Sector Jobs in Greater Pittsburgh, Executive Summary

² Ibid., p. 4

“Pittsburgh has the nation’s oldest working population,” says Laura Fisher, Senior Vice President, Allegheny Conference on Community Development. “There are 100,000 fewer Millennial and Generation X workers than the baby boomers who will be retiring in the next five years. We have a large cohort in our energy companies of both long-time workers who are 55 years or older and workers who have five or less years of experience in the industry. There’s very little in between. We need to be proactive in looking at supply and demand as they relate to the retiring boomers and the younger generation that needs to be prepared to fill their jobs.”

Approach

“We have over 1,000 energy-related companies in the greater Pittsburgh area,” says Ms. Fisher. “We took a ‘deep dive’ into 37 of them, analyzing online survey results, supplemented by information gleaned from focus groups and individual interviews with both human resources and operations staff. As a result of this research, we were able to identify 14 high demand energy-related occupations (target jobs) that were common to multiple sectors within the industry. Our study documented that hiring managers overall felt confident that they could find only one in five of the workers they would need who were suitably skilled for the openings they will have.”

Target Jobs Across Energy Sectors

TARGET JOBS	Coal	Gas	Nuclear	Solar	Transmission and Distribution	Wind
Mechanical Engineers	•	•	•	•	•	•
Electrical Engineers	•	•	•		•	•
First-Line Supervisors of Production and Operating Workers	•	•			•	•
Welders, Cutters, Solderers, and Braziers		•	•	•	•	
Computer-Controlled Machine Tool Operators, Metal and Plastic		•			•	•
Helpers—Installation, Maintenance, and Repair Workers		•			•	•
Industrial Machinery Mechanics	•	•			•	
Machinists	•		•	•		
Sales Managers	•	•			•	
First-Line Supervisors of Construction Trades and Extraction Workers	•	•				
Heavy and Tractor-Trailer Truck Drivers		•			•	
Inspectors, Testers, Sorters, Samplers, and Weighers			•	•		
Property, Real Estate Managers (Landman)	•	•				
Petroleum Engineers		•				

“Our mission was to identify a common set of competencies that productive workers in the energy industry must possess,” says Ms. Fisher. “Although we did not use the Energy and Renewable Energy Competency Models in our research, our work reflects the same approach. We’ve mapped out technical, academic and behavioral skills that are needed for each target job.”

“A consistent message that we’ve heard from employers is that behavioral skills are the biggest reason why people are not successful in their jobs,” says Ms. Fisher. “Many of the behavioral competencies identified in our report mirror the Personal Effectiveness and Workplace Competencies identified in the Energy and Renewable Energy Competency Models, e.g., Continuous Learning (Lifelong Learning); Building Trust (Integrity); Adaptability (Flexibility and Adaptability); Building a Successful Team (Teamwork); Decision Making (Problem Solving and Decision Making); and Planning and Organizing (Planning, Organizing and Scheduling).”

Next Steps

The report articulates eight Recommendations for Action, two of which are directly related to a competency-based approach in preparing individuals for energy-related occupations:

- In advising both youth and adults on career opportunities, *more emphasis should be placed on occupational competencies and skills that are required in multiple industry sectors*, rather than discussions focused solely on a single industry. As this analysis demonstrates, common skill sets are in high demand across numerous sectors. Such a focus will help talent better understand the depth of job opportunity and can also help create a more agile workforce.
- *Industry must take the lead* in proactively creating and supporting partnerships with and among regional secondary, technical and community colleges, helping to ensure effective curricula and learning tracks for each of the target jobs. New approaches need to be explored that would cover both the technical and behavioral skills identified in this study. Classroom instruction on “soft skills” (e.g., Decision Making, Communication, Teamwork), not just technical ones, should be accompanied by a workplace experience for students so that they can apply the required competencies in a real-world setting.³

Related Links

Workforce Analysis Report: Energy Sector Jobs in Greater Pittsburgh

<http://allegHENYconference.org/PDFs/Misc/WorkforceAnalysisReportComplete083012.pdf>

ShaleNET

<http://www.shalenet.org>

Service to Opportunity Toolkit

<http://www.ServiceToOpportunity.org>

³ Ibid., p. 8