
Competency Models In Action:

Center for Energy Workforce Development Identifies Key Industry Credentials

August 2014

- Collaborating with industry and educators to prepare the future energy workforce
- Correlating industry credentials with the Energy Competency Model tiers
- Identifying credentialed competencies that lead to multiple energy career pathways

Introduction

The Center for Energy Workforce Development (CEWD), one of the original industry champions for the U.S. Department of Labor, Employment and Training Administration’s (ETA) Energy Competency Model, continues to strive to identify the critical skills, knowledge and abilities that are required for key occupations in the energy industry. CEWD, with extensive input from education providers and employers, has created a framework for industry credentialing that includes both existing and new credentials. The goal is for these credentials to be a viable option for energy industry-recognized, portable credentials required by all stakeholders – secondary and postsecondary education, government, the workforce system and employers.¹

The Workforce Need

In 2013, CEWD disseminated a “Gaps in the Energy Workforce Pipeline” survey. It focused on four key job categories that are considered critical to the industry: lineworkers, technicians, plant and field operators, and engineers. The survey revealed that more than one third (36%) of the skilled technicians and engineers in the industry may need to be replaced in the next five years, with the potential for almost half needing replacement in the next ten years.²

Job Category	Potential Replacements 2013 - 2017		Potential Replacements 2018 - 2022	
	Potential Attrition & Retirement	Estimated Number of Replacements	Potential Retirement	Estimated Number of Replacements
Lineworkers	32%	24,100	14%	10,300
Technicians	41%	28,300	14%	10,100
Plant Operators	42%	14,900	13%	4,600
Engineers	34%	9,200	12%	2,900

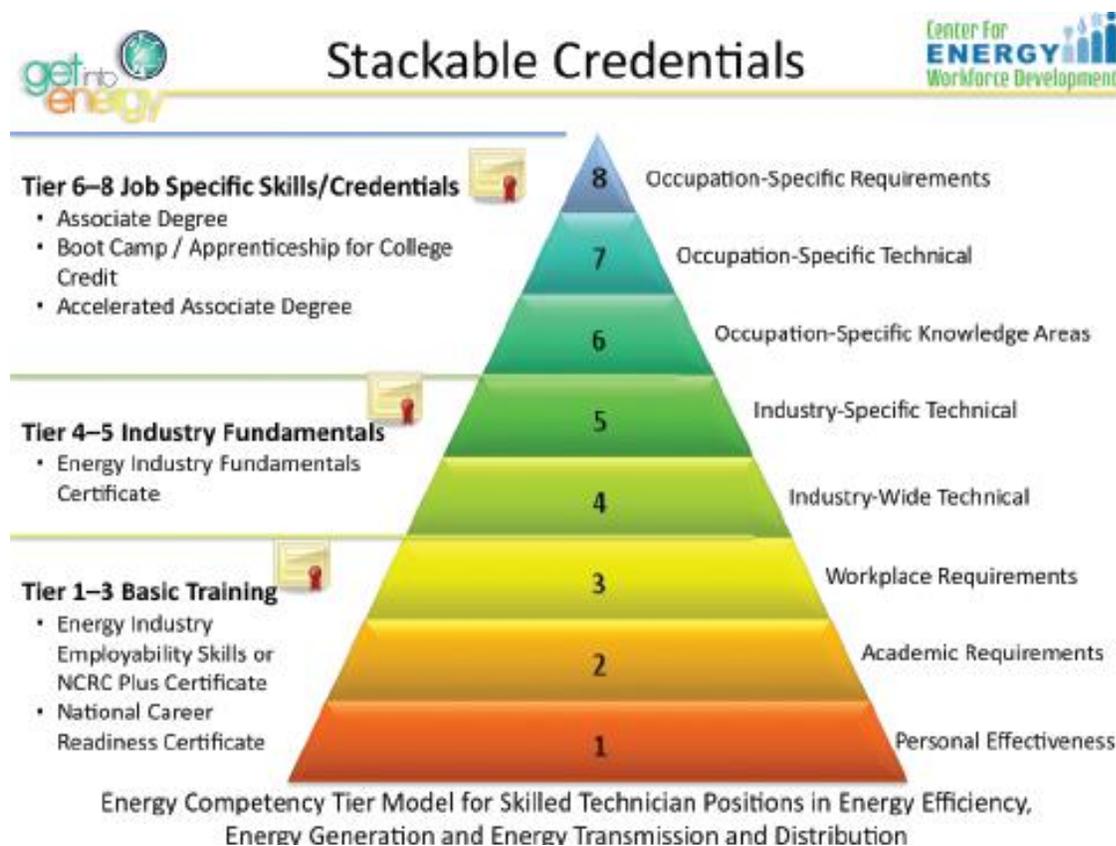
¹ CEWD, State of the Energy Workforce, Skilled Utility Technicians and Engineers, 2014, p. 38

² Ibid, p. 54

Total	36%	76,500	14%	27,900
Totals exclude Nuclear				

Approach

“CEWD’s mission is to build the alliances, processes and tools to develop tomorrow’s energy workforce. That includes identifying existing and new credentials to ensure that the future workforce is prepared for critical occupations in the industry,” says Ann Randazzo, Executive Director, CEWD. “From our perspective, critical occupations are those that keep the lights on and the energy flowing. Using ETA’s Energy Competency Model as a conceptual framework and informed by focus groups with energy industry subject matter experts across the country, CEWD has identified a series of credentials for individuals at various points in an energy industry career pathway.”



Basic Training: Tiers 1-3

National Career Readiness Certificate: For basic skills training, CEWD suggests the WorkKeys System, developed by ACT, which assesses academic work readiness skills, specifically reading, locating information and mathematics.

National Career Readiness Certificate (NCRC) Plus: Most recently, the new NCRC Plus certificate, also developed by ACT, combines measures of cognitive skills with measures of

work-related behaviors (soft skills) such as work discipline, teamwork, customer service orientation and managerial potential.³

Energy Industry Employability Skills Certificate: This credential, for young adults ages 16-26, combines SkillsUSA’s standard employability skills assessment with questions from its engineering and technology assessment. The assessments were created in partnerships with industry, education and policy leaders to ensure that employers recognize the assessments, help instructors validate their programs, and provide career-seekers with proof of what they can do.

Industry-Wide and Industry-Specific Technical Competencies: Tiers 4-5

Energy Industry Fundamentals (EIF) Certificate: This CEWD credential provides a broad understanding of the electric and natural gas utility industry and the energy generation transmission, distribution infrastructure which forms the backbone for the industry. The course includes business models; regulations; types of energy and their conversion to useable energy such as electric power; how generated power is transmitted and distributed to the point of use; emerging technologies; and the connection to careers in the energy industry.⁴ “We currently have over 35 secondary schools and community colleges approved to teach the EIF curriculum, with over 400 students enrolled,” says Ms. Randazzo.

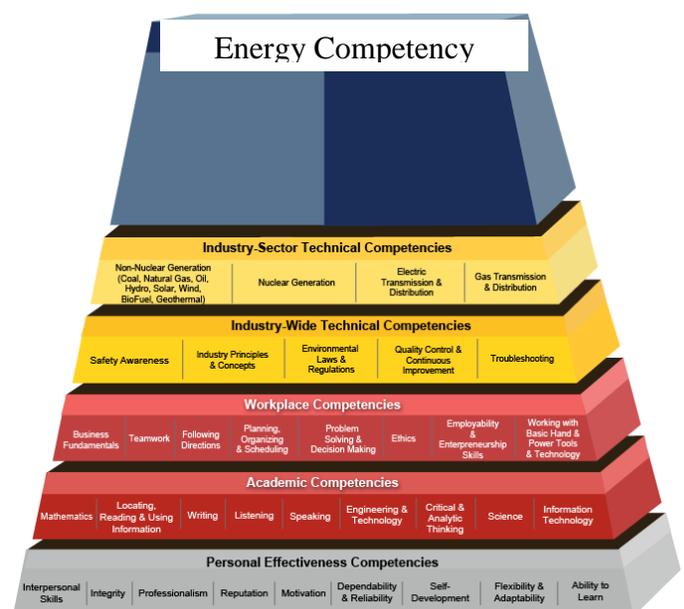
Occupation-Specific Competencies: Tiers 6-8

These credentials are for energy-related training programs that cover a variety of occupational areas that are the high-priority technical positions needed in the energy industry, including lineworkers, plant operators, natural gas technicians; and generation, transmission and distribution technicians. Upon reaching specific points in these programs, individuals will earn college-level certificates and degrees, including credit for apprenticeships.⁵

Core Competencies

“With the constant changes in energy job requirements and the ever changing demand for those jobs, teaching a common set of competencies as a foundation for many technical ‘majors’ is critical to sustaining community college programs and providing just-in-time skilled labor to the industry” says Ms. Randazzo.

“The Energy Competency Model provides the basis for everything we do. Our community colleges conduct a gap analysis to map their energy-related curricula to ETA’s competencies and earn a CEWD endorsement stamp for Core



³ Ibid, p.38

⁴ Ibid, p.39

⁵ Ibid, p.40

Technical Competencies. The model allows us and our partner educational institutions to identify what common skills and competencies are needed for energy-related occupations. In some programs, the student can earn a core technical competencies credential and then specialize from that base.”

Next Steps

“We don’t know how energy-related jobs will change in the next few years,” says Ms. Randazzo. “We’re trying to hit a target that is continuing to move.” The constant changes in technology, such as the smart grid, have had a major impact on energy-related occupations. System operators used to work from maps and diagrams, and now everything is run from massive systems, analyzing data and communicating with field workers on-line. Consequently, educational needs for these occupations will change as the associated technology evolves. Almost all of these occupations will require some level of postsecondary education. Equipping today’s students with a common base of credentialed competencies will enable them to gain skills that are transportable to multiple career pathways.”

Related Links

Center for Energy Workforce Development

<http://www.cewd.org/>

State of the Energy Workforce: Skilled Utility Technicians and Engineers

http://www.cewd.org/mem_resources/CEWDstateoftheindustry.pdf

Gaps in the Energy Workforce Pipeline

<http://www.cewd.org/Documents/2013CEWDSurveyExecutiveSummary.pdf>