



Mobilizing a World-Class Energy Workforce

America currently lacks an energy workforce of sufficient size and capabilities to meet the needs of a sustainable, secure energy system.¹ With increasing demand come abundant job opportunities in both traditional and emerging energy industries. Unfortunately, U.S. workers are neither aware nor sufficiently prepared to take them. Moreover, with an aging population and the retirement of the baby boomers well under way, there is an inadequate pipeline of replacement workers, technicians and managers to succeed them.

Bridge the Skills Gap and Build the Talent

The Council Recommends that:

- The U.S. Government offer full scholarships to U.S. graduates who commit to a minimum period of service in an energy-related career in the governmental, academic or non-profit sectors.
- Congress establish a *CompetePass* program that will allow eligible participants to redeem the passes at U.S. Department of Labor (DOL) one-stop training centers.
- The U.S. Government grant green cards to foreign students receiving undergraduate and advanced degrees in scientific and engineering disciplines from U.S. institutions.

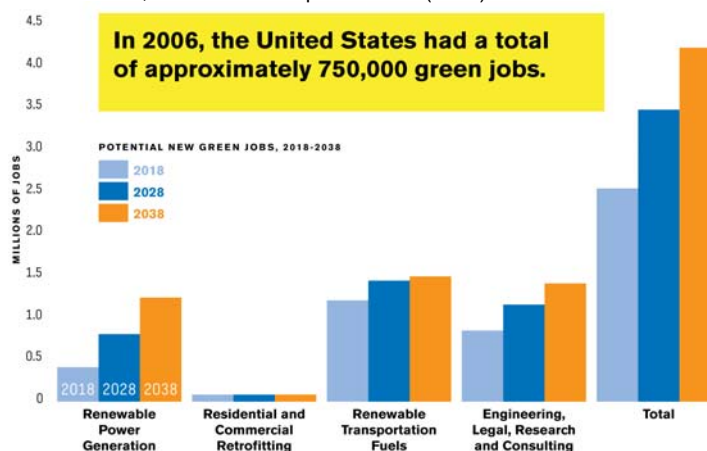
The United States stands to lose half of its electric power industry workforce within the next five to ten years due to retirement. America's oil and gas workforce averages 50 years in age; half are likely to retire soon. Workers in these conventional energy sector jobs, from power plant operators to transmission line and pipeline workers, are retiring at a much faster rate than they are being replaced. The introduction of any new energy technologies will not compensate for this workforce shortage. For example, in the nuclear industry, the fact that there has been no new construction of a nuclear facility in the United States in over 30 years has led to the atrophy of skills, the loss of technicians, the dearth of American students in nuclear engineering and a national security risk for the primarily nuclear-powered U.S. Navy.²

The development, installation and maintenance of new technologies require skills at all levels of educational training. Many of these jobs, such as building new power plants, cannot be exported and will remain in the United States. So-called "green collar" jobs could fill this gap over time and provide for significant domestic employment growth, but capitalizing on this opportunity will require government being proactive in developing programs to provide the necessary skills. Government should provide a 21st century education to match the 21st century job opportunities, requirements and needs.

There is growing global competition for scientific and engineering talent today, and the U.S. pipeline of students is slowing.³ The private sector, where the overwhelming majority of careers will be, knows best the current opportunities that are not being met. Executives cite the lack of scientific, engineering and skilled talent as

The Number of New Green Jobs in the United States May Reach 2.5 Million by 2018

Source: *Drive*, Council on Competitiveness (2009)



Note: In 2006, there were an estimated 127,000 and 419,000 green jobs respectively in the areas of Renewable Power Generation and Engineering, Legal, Research and Consulting. Graph represents analysis of data from the U.S. Conference of Mayors.

among the most serious challenges facing their businesses today.⁴ They know what skills will be required and can assist in developing the workforce of the future by working closely with educational institutions as well as within their own organizations.

Opportunities for all energy portfolio and service jobs must be synchronized with current and future workforce needs, from skilled tradesmen to advanced scientific researchers. There is an enormous opportunity and need for universities, national laboratories, energy companies, community colleges, state school systems and the federal government to join forces and develop the energy workforce of tomorrow, while investing in the energy workforce of today.

In Drive: A Comprehensive Roadmap to Achieve Energy Security, Sustainability and Competitiveness (September 2009) and Prioritize: A 100-Day Energy Action Plan for the 44th President of the United States (September 2008), the Council detailed actions to be taken by the federal government in six critical “pillars” as necessary for true breakthroughs in U.S. energy production and use to be achieved. Below are additional recommendations from Pillar 6: Mobilizing a World-Class Energy Workforce.

Additional Recommendation:

- Congress allocate 20 percent of annual revenue from carbon pricing to fund state and regional workforce training initiatives in clean technologies and related middle skills.
- The U.S. Department of Energy establish a permanent early career research program to support top emerging energy scientists and engineers at U.S. universities and national laboratories.
- The U.S. Government, industry and education coalitions cultivate youth interest in clean energy and environmentally-sound industry through projects, energy education and career counseling.
- The U.S. Government provide tax incentives to U.S. companies offering training to new clean energy professionals.
- The U.S. Government bridge funding gaps for community colleges to maximize their potential to create pathways for rewarding jobs and higher pay.
- The U.S. Government fund job and career training programs that position state entities as the galvanizing force behind local coalitions.
- DOL create a \$300 million “Clean Energy Workforce Readiness Program” to foster partnerships with industry, educational institutions, workforce organizations and the military.
- Congress require federal agencies to commit one percent of R&D budgets to competitive, portable undergraduate and graduate fellowships in energy-related disciplines for U.S. students.
- DOL access, classify and widely publicize the demand-driven needs for energy-related occupations and align government resources to support skills training in energy fields.

For More Information: Visit our website at Compete.org to find the full reports or contact Susan Rochford, Senior Vice President, at 202 969 3384 or SRochford@compete.org.

¹ E&E News, “Industry can’t meet demand for green construction,” E&E News, 11 November 2008.

² U.S. Department of Labor, *Identifying and Addressing Workforce Challenges in America’s Energy Industry*, Washington, D.C.: U.S. Department of Labor. March 2007. Coy, P., “Help Wanted: Why That Sign’s Bad,” New York, NY: BusinessWeek, 30 April 2009.

³ Andrew, J. P., DeRocco, E. S., Taylor, A., *The Innovation Imperative in Manufacturing: How the United States Can Restore Its Edge*, Boston Consulting Group. March 2009. Wadhwa, V., Saxenian, A., Freeman, R. B., et al., *Losing the World’s Best and Brightest: America’s New Immigrant Entrepreneurs*, Part V, March 2009.

⁴ Ibid.