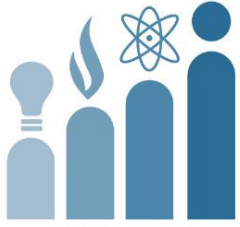




**CEWD**   
**CENTER FOR ENERGY WORKFORCE DEVELOPMENT**

# Midwest Region Meeting

June 19-20, 2019

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# 2019 Midwest Military Workshop

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## AGENDA

June 19, 2019

Xcel Energy, 401 Nicollet Mall 2<sup>nd</sup> Floor Bays 4 & 5, Minneapolis, MN 55401

Time

Topic

1:00 PM – 1:15 PM

**Welcome, Introductions, and Overview**

Ann Randazzo, Executive Director, CEWD

1:15 PM – 3:00 PM

**Military Recruiting, Hiring and Retention Assessment, Gap Identification, and Best Practices**

Beth Britt, Consultant, CEWD

3:00 PM – 3:15 PM

**Break**

3:15 PM – 4:15 PM

**Veterans in Energy**

Jon Smith, President Mobile Pipeline, Hexagon Lincoln LLC

Iliana Rentz, Emergency Preparedness Manager, FPL

4:15 PM – 5:15 PM

**Closing the Gaps and Action Plan Completion**

Beth Britt, Consultant, CEWD

5:15 PM – 5:30 PM

**Closing Remarks**

Ann Randazzo, Executive Director, CEWD

5:30 PM

**Networking Reception**

The Local

931 Nicollet Mall

Minneapolis, MN 55402

**AGENDA**

**June 20, 2019**                      **Xcel Energy, 401 Nicollet Mall 2<sup>nd</sup> Floor Bays 4 & 5, Minneapolis, MN 55401**

<b>Time</b>	<b>Topic</b>
<b>8:00 AM – 8:30 AM</b>	<b>Breakfast</b>
<b>8:30 AM – 8:45 AM</b>	<b>Welcome</b> MJ Horner, Sr. Director, Talent Strategy and Transformation, Xcel Energy
<b>8:45 AM – 9:45 AM</b>	<b>Introductions, Agenda Review, CEWD Update</b> Ann Randazzo, Executive Director, CEWD
<b>9:45 AM – 10:00 AM</b>	<b>Break</b>
<b>10:00 AM – 10:45 AM</b>	<b>Region and Consortia Updates</b> Beth Britt, Consultant, CEWD
<b>10:45 AM – 11:30 AM</b>	<b>Legacy I3 Initiative Update with Xcel Employees</b>
<b>11:30 AM – 11:45 AM</b>	<b>Overview of MEC Energy Trailer</b>
<b>11:45 AM – 12:30 PM</b>	<b>Lunch (MEC Energy Trailer Open)</b>
<b>12:30 PM – 2:45 PM</b>	<b>The CEWD Workforce Development Process – Strategies, What Matters Most, and Measuring Progress</b>
	<b>Building the Talent Pipeline</b> We Energies – Youth Apprenticeship Program
	<b>Recruiting / Hiring</b> Consumers Energy – Tracking Energy Industry Fundamental Students
	<b>Employee Development / Retention</b> Northwestern Energy – Knowledge Capture Interview Form and Discussion

**2:45 PM – 3:00 PM**

**Break**

**3:00 PM – 3:45PM**

**Diversity and Inclusion – Applying the CEWD Process**  
Ann Randazzo, Executive Director, CEWD

**3:45 PM – 4:00 PM**

**Summary of the Day and Closing Remarks / Adjourn**  
Ann Randazzo, Executive Director, CEWD



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# TAB: CEWD Update

**Revised *Energy Industry Game Changers*:** The revised Energy Industry Game Changers show significant differences from the last edition in 2016. Both the External and Internal Game Changers indicate a shift to an industry that is more rapidly transforming, with technology playing an increasingly important role. The energy workforce is also changing with a younger and more diverse workforce that is increasingly digitally literate.

**Revised *State of the Energy Workforce*:** The revised version of the State of the Energy Workforce is comprehensive guide touches on all key areas of focus for CEWD--Workforce Planning, Career Awareness, Education, and Structure & Support--and includes a wealth of member best practices.

**Revamped *Troops to Energy Jobs* web site:** Check out the new look and feel of the Troops to Energy Jobs web site! It has an updated with a more modern look, making it more visually appealing and easier for users to view on their cell phones.

**New *Troops to Energy Jobs* Partnerships and Alliances:** CEWD has formed several new alliances.

- **PsychArmor:** A national nonprofit that provides FREE online education and support to all Americans who work with, live with, or care for military service members, veterans, and their families.
- **Credits2Careers:** An academic and career portal for prospective military and veteran students. The portal translates the Joint Service Transcript/military experience and training into college credits.
- **Academy Women:** This organization offers state-of-the-art online mentoring, networking with peers and community leaders, and professional development opportunities to active duty and veteran women, transitioning military veterans, military spouses and cadet and midshipmen women.

**Diversity and Inclusion National Template:** CEWD has released a Diversity & Inclusion National Template. This interactive site is based on the *Making the Connection to a Diverse, Qualified Workforce* Assessment Tool and Playbook and links to a variety of tools, templates and resources.

**Revised *Get Into Energy Test Prep Workshop*:** The Get Into Energy Test Prep Workshop is a structured program that provides candidates the opportunity to not only learn more about pre-employment testing, but to experience it first-hand. The workshop has been revised in 2019 to incorporate the use of calculators, as is now allowed in EEI employment testing situations.

**"I Got Into Energy" Campaign:** The "I Got Into Energy" Campaign is a fun way to reinforce CEWD's "Get Into Energy" brand, which is designed to appeal to potential jobseekers and help them explore what it means to work in the energy industry. This campaign started during 2018 Careers in Energy Week but has been expanded to reach a variety of audiences throughout the year.

### Workforce Planning – *Identify critical workforce needs and measure the success of workforce development initiatives.*

- Execute the 2019 Gaps in the Energy Workforce survey and summarize the findings at the national and state level.
- Facilitate task forces for the Workforce Planning Council to explore how member companies manage a contingent workforce, benchmark and provide analysis of industry diversity and non-retirement attrition, and to identify and share best practices in predictive analytics.
- Work with CEWD members to identify solid methods/strategies to improve retention and publish applicable tools, resources and best practices.
- Communicate the Measuring Performance model and convene a task force led by the Executive Council to pilot the measures.
- Partner with associations to adapt Game Changers and workforce findings by type of company.

### Career Awareness – *Build awareness of high skilled positions in the energy industry.*

- Expand the “I Got into Energy” campaign to include additional demographics and integrate into the Get Into Energy web resources.
- Conduct training webinars on Troops to Energy Jobs resources for companies and veterans and increase the number of Troops to Energy Jobs Employers.
- Update Troops to Energy Jobs website content and resources to improve job search capability for veterans.
- Analyze the current state of energy career awareness with state consortia and recommend specific initiatives to close gaps.

### Workforce Development / Education – *Implement short and long-term solutions to build a pipeline of skilled workers.*


- Increase the use of Get Into Energy Career Pathways credentials and resources by working with member companies to recognize GIE credentials in the recruiting process.
- Repackage EIF modules for use with an expanded audience, such as orientation for new company employees or bootcamps for transitioning workers.
- Identify critical education and upskilling solutions to accelerate learning for the internal energy talent pipeline, including convening for Technical Training organizations.
- Conduct Strategic Linkages webinar series on successful workforce initiatives and solutions for each stage of the GIE pathway.
- Provide support and collect data on results for member implementation of CEWD education modules including EIF, GIE Test Prep, bootcamps and secondary curriculum.
- Provide support for National Energy Education Network (NEEN) members, identify and share examples of successful practices.

### Member Value and Support – *Support the needs of CEWD members.*

- Communicate solutions available to expand and improve D & I initiatives through the CEWD Diversity and Inclusion National Template, assessment and playbook.
- Develop a comprehensive communication plan and implement additional communication pieces that can be used by members and associations to increase understanding of CEWD and successful workforce initiatives.
- Develop and implement a guided assessment and planning tool to assist members with focused implementation of CEWD's tools and resources.
- Facilitate workforce policy task force with associations and member companies to develop a national workforce policy platform.
- Provide support for the creation and sustaining of State Energy Workforce Consortia through state strategic planning and implementation of workforce initiatives.
- Provide support for contractor members and promote solutions and partnerships for their unique workforce issues.
- Provide consultation and support to members to support their workforce development implementation efforts and increase participation among companies of all sizes and types.
- Conduct and expand member forums including the CEWD Communities of Practice, the 2019 Annual Summit, National Forum, NEEN Convenings, and Regional Meetings.
- Create mutually beneficial alliances with organizations that support and advance CEWD initiatives.

# 2018 Accomplishments





## ***Mission: Build the alliances, processes, and tools to develop tomorrow's energy workforce.***

The Center for Energy Workforce Development (CEWD) is a national collaborative organization that brings together the best from the energy industry, education, and government to plan and execute strategic workforce development initiatives that balance the supply and demand for future energy employees. CEWD delivers value to its membership by providing:

- Strategic Workforce Planning for the Energy Industry at the National, State, and Company level.
- Common workforce solutions that can be tailored, scaled, and implemented locally.
- National, state, and individual networks that can be mobilized for strategic implementation of workforce solutions.

Just as the energy industry has changed in the past decade, CEWD has transformed as well, from an initial targeted focus on replacing an aging workforce, to a much broader focus on developing the talent pipeline; recruiting and hiring; and retaining a diverse, qualified workforce for the future. In 2018, CEWD launched a major initiative to assess and measure progress in each of these areas.

While continuing to provide planning and implementation support for members across the country, in 2018 CEWD also focused on answering some critical questions for the future. How is the transformational change that is enveloping the industry impacting our current and future workforce? And, are we making progress in building and keeping the talent we need to meet the challenges? As part of this analysis, CEWD also assessed the impact of these changes on our own operations and strategic plan. The result of this research and analysis is documented in the [2018 National Strategic Workforce Plan and Game Changers](#)—an updated look at both industry trends and the changing nature of work and the workforce revealed some critical workforce impacts for the energy industry.

Additional highlights from 2018 include:

- Publication of the [2018 State of the Energy Industry](#)—a comprehensive guide to the work of CEWD and the industry that includes research, processes, and solutions that work, and examples of companies and consortia that are implementing them.
- Publication of a [Business case](#) on CEWD developed by the **Harvard Business School** and taught for the first time in February 2018. The case took a hard look at our industry efforts and the unique network of employers, educators, and supporters that has been created through CEWD.
- CEWD conducted a survey titled [What Matters Most](#) with its members to determine what issues they were most concerned with today and in five years. The results of the survey informed the agenda and focus of the Annual Summit and National Forum, as well as the 2019 CEWD Goals.
- Creation of new tools, resources, and best practices for [Knowledge Transfer and Retention](#).
- Significant **Strategic Workforce Planning** support by CEWD staff by meeting with individuals, member companies, and State Energy Workforce Consortia to identify gaps and opportunities in their workforce efforts and to provide targeted solutions and resources.
- Development of a new [Workforce Development Assessment Tool](#) to help companies quickly gauge readiness of the company as a whole as well as gaps and opportunities to strengthen their practices and processes.
- An online [Diversity and Inclusion National Template](#) to supplement our comprehensive set of tools, resources, and best practices for improving workforce diversity and inclusion.

- Significant updates to the [CEWD](#), [Troops to Energy Jobs](#), and [Get Into Energy](#) websites designed to make them easier to use and to access resources. In addition, a new website, [Get Into Energy / Get Into STEM](#), was created to focus specifically on youth. All together, the websites attracted almost 144,000 visitors in 2018.
- **Increased communication** and support from CEWD to individual companies, educators, and consortia through one-on-one contact, face-to-face meetings, webinars, and communities of practice to focus on the issues that matter most to our members.

CEWD's Strategic Plan, which drove the organization's 2018 accomplishments, is organized in four strategic pillars: Workforce Planning, Career Awareness, Workforce Development/Education, and Member Value and Support. More detailed information on accomplishments in each of these areas, as well as those mentioned above, follows in this report.

## **Workforce Planning**

### ***Identify critical workforce needs and measure the success of workforce development initiatives.***

Strategic Workforce Planning has become more critical each year as the transformation of the industry—and specifically the Industry Game Changers—impact the timing, skills, and number of jobs that are needed in the future.

CEWD's Strategic Workforce Planning efforts are guided by the Workforce Planning Council that includes a cross-section of member companies. The Council meets quarterly to review progress and provide advice on the implementation of CEWD Strategic Workforce Planning resources. As a subset of that Council, the Workforce Analytics Team meets frequently to share best practices and benchmark initiatives within the team. In 2018, the Analytics team focused their discussions on tool and process benchmarking across the team.

In 2018, CEWD applied the strategic workforce planning process at the national level and produced the 2018 Game Changers: National Strategic Workforce Plan. This biennial analysis takes a look at the changes in the industry that represent the potential for significant shifts in size, skills, and knowledge requirements of the current and future energy workforce. All of these changes can impact a company's ability to create and maintain a talent pipeline of qualified and diverse workers and to deliver on the company's business plan. The CEWD 2018 Game Changers show significant differences from the last edition in 2016 and the document reflects changes in strategy for all energy workforce development stakeholders including CEWD. The changes are outlined in the document.

**Contractor Demand Projects** – CEWD worked with its contractor members and other contractors identified through Distribution Contractors Association to define and attempt to quantify contractor demand for gas and electric work at the national level by collecting member data, comparing it to national data, and creating an algorithm to calculate demand, much like CEWD can do for its utility members. The projects were successful in identifying and reaching agreement on the key jobs and worker requirements in both gas and electric. Quantifying the required numbers of workers proved more challenging because there is very little data available from the Bureau of Labor Statistics to compare against the data collected by CEWD. As a result, CEWD will work with its contractor members in 2019 to develop a Contractor Demand Guide that can be used at the state level by State Energy Workforce Consortia to quantify and plan for contractor demand.

**Measuring Progress** – In 2018, the CEWD Board of Directors commissioned a task force to look at the entire workforce development process and review how companies can measure progress along the pathway. This task force was made up of Executive Council members who developed a broader view of the process, an assessment tool, and metrics for each area of emphasis. This graphic shows the overall strategic view for energy workforce development. The process and metrics were rolled out to the membership at the Annual Summit. The task force will continue in 2019 with a group of companies that will test and finalize the metrics.



**Gaps in the Energy Workforce Survey** – The Workforce Planning Council conducted a review of the 2017 Gaps in the Energy Workforce Survey results to determine if the data being requested met their needs for workforce planning. There was discussion about the need for additional data on the demographic breakdown of the workforce. They also identified the need to better understand employees who were leaving the company with less than five years of service. As a result, additional questions have been added to the 2019 Gaps in the Energy Workforce Survey data entry sheet to capture age, race, and gender for those employees who leave the company with less than five years of service and between 6 and 10 years of service. Race and gender information had been collected only at the Total Company and Total Nuclear Generation levels in the past. In 2019, that has been expanded to all business areas and job categories.

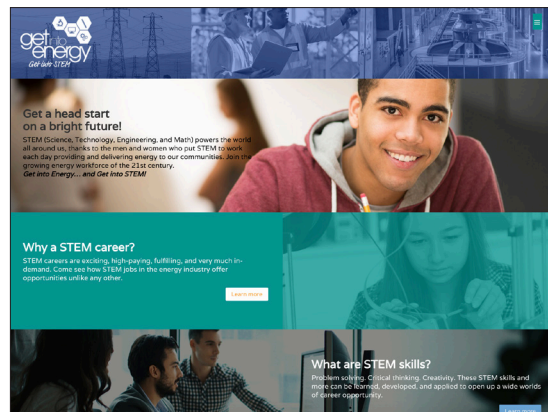
## Career Awareness

*Build awareness of the need for a diverse, skilled energy workforce.*

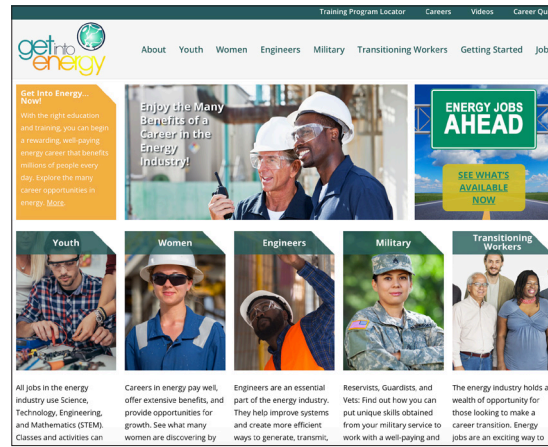
CEWD and its members engaged in a wide variety of career awareness activities in 2018. Career awareness activities are aimed at five key demographics: youth, low-income young adults, women, veterans, and transitioning workers. The overall intent of these activities is to make it easier for students and jobseekers to find us, understand our jobs, and understand what education pathways will lead to an energy job.

CEWD has developed energy career websites targeted to key demographic populations.

**Get Into Energy:** CEWD’s national website, [getintoenergy.com](http://getintoenergy.com), provides resources for each key demographic to understand the pathways for critical jobs, where to find training, and a jobs site that lists all jobs currently posted by CEWD members. The site attracted almost 41,000 visitors in 2018. The Get Into Energy website has been redesigned, and now includes new website specifically focused on middle and high school youth. Get Into Energy / Get Into STEM was launched at [stem.getintoenergy.com](http://stem.getintoenergy.com). The website positions all energy careers as STEM careers and has a teacher’s section as well as pages with energy and STEM-related competitions, contests, and scholarships.



**Get Into Energy Jobs:** Students and jobseekers can access real-time job postings from CEWD members on the Get Into Energy Jobs site, [getintoenergy.jobs](http://getintoenergy.jobs). All jobs from member companies are posted nightly and can be filtered based on location, job title, or key words. In 2018, the site had almost 13,000 visits, and a little over 6% of visitors clicked through to CEWD member company job sites.



**Troops to Energy Jobs:** The companion job posting site for Troops to Energy Jobs, [troopstoenergy.jobs](http://troopstoenergy.jobs), had an additional 18,000 visits, with 8% of visitors clicking through to CEWD member company job sites. Veterans can filter jobs through a unique-to-CEWD military occupation code translator that ties military jobs more specifically to energy jobs.

**Troops to Energy Jobs Registration:** The Troops to Energy Jobs registration site, [troopstoenergyjobs.com/registration](http://troopstoenergyjobs.com/registration), allows veterans to enter basic information about themselves (like military occupation, field of expertise, resume, geographical area they'd like to work in) and see information about companies located in their region. CEWD member companies can enter information about their recruiting staff so that veterans have a point of contact. There are over 2,400 veterans and 64 CEWD member holding companies currently registered on the site.

At least 16 states celebrated **Careers in Energy Week** with activities such as state proclamations, visits to local schools, job shadowing days, features on local newscasts, career fairs, and social media. CEWD provided resources for members to use, including posters and brochures, along with social media, as well as an interactive map on the CEWD site to keep up with all the activities: <https://cewd.org/about/state-consortia>.



Working with CEWD's Association members, CEWD developed an ["I Got Into Energy" Campaign](#) to provide members with a new approach for promoting jobs in the energy industry during Careers in Energy Week. The "I Got Into Energy" Campaign was designed to highlight actual energy industry employees telling their story to potential jobseekers about why they were attracted to the industry or their company and what they enjoy

about their jobs. CEWD members across the country used the Campaign to highlight their employees through Twitter, LinkedIn, Facebook, and their own websites. For 2019, CEWD has revamped the materials for use in support of other national energy campaigns.



## Workforce Development/Education

### *Implement short- and long-term education solutions to build a pipeline of skilled workers.*

Since its beginning, CEWD has focused on developing education solutions—from competency models and career pathways to curriculum and credentials—that prepare students for jobs in the industry. These focused solutions are being implemented through partnerships between educators and member companies across the country. The partnerships span the student lifecycle from initial career interest through graduation and employment and are a critical element in communicating to students and jobseekers the competencies and credentials that are required, preferred, and recognized by employers and are being used in hiring decisions.



Over the past several years, CEWD has worked to create the **National Energy Education Network (NEEN)**, a national consortium of utilities and their education partners. Members of NEEN are educational institutions that have active partnerships with CEWD member companies, have relevant programs of study for our four critical job categories (Lineworkers, Technicians, Operators, and Engineers), and are producing quality candidates who are being hired into industry jobs. These partnerships and programs provide the baseline for documenting what works, sharing curriculum and best practices, and identifying the potential pool (supply) of candidates from high schools, technical and community colleges, and universities. NEEN partnerships include more than 200 educational institutions representing approximately 400 energy programs. While CEWD redoubled its effort this year to update the database and keep it current, there is still a significant need to add accurate supply information and edit pertinent program information.

CEWD provided significant support to members implementing the **Get Into Energy Career Pathways Model, Curriculum, and Credentials**:

- There are now 71 active [Energy Industry Fundamentals \(EIF\)](#) Approved Course Providers. From inception to date, 3,745 students have taken the assessment and 2,707 credentials have been awarded. Modules 1–5 were comprehensively updated, utilizing subject matter experts from our Approved Course Providers. Updates included all charts, graphs, and new and emerging technologies. Updates were made to the Instructor and Student Guides as well.
- The [Get Into Energy Test Prep Workshop](#) was used in a number of settings in partnership with CEWD members during 2018. CEWD members in partnership with education or community partners can implement the workshop at the end of Lineworker Bootcamps, with students graduating with associate degrees, and with community-based organizations.
- CEWD received a grant from the National Network of Business and Industry Associations (NNBIA) to develop an industry-recognized credential for youth who complete the Legacy I<sup>3</sup> energy program called the **CEWD Legacy I<sup>3</sup> Energy Industry Credential**. CEWD wants to ensure that Legacy I<sup>3</sup> students are not only getting the same training to prepare for high-growth industry careers, but that they are recognized by energy companies for their accomplishments and are considered “priority” in the hiring process. The CEWD Legacy I<sup>3</sup> Energy Industry Credential has three components: (1) Common Employability Skills, aligned to tiers 1–3 of the Energy Industry Competency Model; (2) The Energy Industry Fundamentals Certificate; and (3) the OSHA-10 Certification. The new credential will be piloted in 2019 with seniors in high school.

CEWD worked with a team of Executive Council members to develop a new **Measuring Progress** framework that focuses on workforce development strategies. Important to the measurement framework is the ability to assess progress across all aspects of workforce development. To assist members in assessing their progress, CEWD developed an assessment tool aligned with the full workforce development continuum, from building the pipeline to retaining the talent. The [Workforce Development Assessment Tool](#) for Employers helps companies quickly gauge readiness of the company as a whole as well as gaps and opportunities to strengthen their practices and processes. The assessment tool was rolled out at the Annual Summit and in 2019 will be made available online with links to applicable tools and resources.

## ***Member Value and Support***

### ***Support the needs of CEWD members.***

CEWD continues to provide member communication through monthly newsletters highlighting company and national best practices and CEWD resources; social media channels; webinars; and the CEWD websites, including Get Into Energy, Troops to Energy Jobs, and the CEWD Curriculum site. In addition, CEWD represented the industry with multiple speaking engagements at national and state events.

CEWD also hosted national and regional meetings for members and their partners to meet face-to-face to share best practices and hear from experts on the most effective ways to build the energy workforce. CEWD was able to reach hundreds of interested members during 2018 through four regional meetings, the National Forum for State Energy Workforce Consortia leadership, and the CEWD Annual Summit.


Over 150 energy workforce practitioners attended the 13th CEWD Annual Summit to discuss ways that energy companies can improve their workforce development initiatives. A summary of the Summit can be accessed at <http://www.cewd.org/documents/2018SummitSummary.pdf>. The National Forum summary is available at <http://www.cewd.org/documents/2018NationalForumSummary.pdf>.

Information on upcoming CEWD meetings and events can be found on the website at [www.cewd.org/events](http://www.cewd.org/events).

CEWD grew several existing Communities of Practice and started some new ones in 2018:

**KT&R Community:** The Knowledge Transfer and Retention (KT&R) Community provides CEWD members a forum for sharing process and procedure information that might improve their own or others' KT&R programs. For most of the companies involved, the main issue isn't clear processes, procedures, or expectations—the issue is successful implementation and measurement of success. The Community met monthly with members and finalized the development of a wizard-style reference page which was placed on the [Essentials of Workforce Planning wizard](#) on the CEWD website. That reference page contains process steps, tools, resources, and best practices in use by these Community members. The members also collaborated on three best practices over the summer, which are on the KT&R wizard. During the CEWD Summit breakout session, the Community discussed starting a “technical training” task force to strengthen internal training programs and processes.

**Diversity & Inclusion Community:** In 2018, the Diversity & Inclusion Community provided input into revisions to CEWD's Making the Connection to a Diverse, Qualified Pipeline Assessment Tool and Playbook. They also participated in quarterly calls and had robust discussions around topics such as leadership, Employee Resource Groups (ERGs), and Diversity and Inclusion (D&I) indexes.



**Troops to Energy Jobs Community:** Each quarter, interested member company representatives meet through teleconference to discuss current practices and events in military recruiting, training, and retention. Fifty-three member companies have officially committed to the Troops to Energy Jobs objectives.

**Energy Industry Fundamentals (EIF) Community:** EIF Approved Course Providers and utility sponsor members participate in the EIF Community of Practice quarterly calls to discuss best practices and innovative ways to deliver EIF. Members have begun to post videos showcasing their students' accomplishments.

**High School Community:** In 2018, the High School Community provided support and idea-sharing on ways to build awareness around energy careers, as well as how to implement education efforts such as energy academies and adding a 17th career cluster. The group has quarterly conference calls and shares resources.

**Contractors Community:** The Contractors Community of Practice is intended to help CEWD contractor members identify workforce issues unique to the contractor environment and ensure CEWD resources and tools are directed to addressing them. In 2018, two task teams worked within the auspices of the Contractors Community to identify critical gas and electric jobs and better understand approaches for quantifying demand.

For more information or to join a CEWD community of practice, members can email [staff@cewd.org](mailto:staff@cewd.org).


CEWD hosted a number of member webinars in 2018, including:

- A member webinar series on Building a Diverse, Qualified Talent Pipeline. Topics included Gaps in the Energy Workforce Survey Results; Building a Diverse, Qualified Pipeline Through State Energy Workforce Consortia; Focus on Diversity; Focus on Quality; and Making the Connection to a Diverse, Qualified Workforce through Troops to Energy Jobs.
- Webinars for APPA members focused on the CEWD Survey Results and the Making a Connection to a Diverse, Qualified Pipeline, providing them an opportunity to learn about some of CEWD's key member benefits and tools that are publicly available to help with their workforce development efforts.
- A webinar for CEWD members on the new I Got Into Energy toolkit, which uses social media and existing employees to promote energy careers. The timing of the toolkit rollout was intended to support Careers in Energy Week campaigns but can be used at any time. Toolkit materials are posted on the CEWD website.
- Get Into Energy Registration site webinars with member companies and educators.

CEWD made great strides during 2018 in providing support to existing and new State Energy Workforce Consortia. These consortia are the boots on the ground for implementing many of the best practices that are improving the return on workforce efforts. CEWD provides support to start, maintain, or reenergize consortia work. Just a few of the state consortia contributions in 2018 are highlighted below, but a [full list of Accomplishments](#) can be found on the CEWD website.



- The **Virginia** Energy Workforce Consortium (VEWC) is partnering with the Virginia Chamber of Commerce to conduct a “Get Into Energy” Innovation Challenge with six high schools offering energy education and five energy employers. The challenge will kick off in January 2019 and will provide students with authentic experiences through solving industry problems, teamwork, working with industry mentors, and building awareness about energy careers. Students will work on a problem statement based on the Virginia Grid Transformation and Security Act of 2018 and identify innovative, renewable energy, or sustainability solutions to help create Virginia’s “self-healing” energy grid.
- The **Missouri** Energy Workforce Consortium is piloting a new approach to executive sponsorship by having an executive sponsorship team to support the consortium. The team comprises senior executives from the member companies, who met in September to review the progress of the consortium to date. The next step for the MEWC is an industry/education partnership summit with key schools in the state and their phase II planning session, which will result in strategic actions the consortium members will focus on over the winter.
- The **Wisconsin** Energy Workforce Consortium finalized its formation of a 501(c)(3) nonprofit structure during 2018 and has begun collecting dues and has identified an organization in Wisconsin to provide project management support to the consortium. The consortium conducted a number of Careers in Energy Week events throughout Wisconsin.
- The **Michigan** Energy Workforce Development Consortium (MEWDC) made great strides during 2018 in building out its talent pipelines at the high school and community college levels, with six participating high school programs that offer EIF, and five community college programs. Three additional high school programs are planned in 2019. For Careers in Energy Week, MEWDC members produced several videos using the “I Got Into Energy” career awareness concept and sponsored a Social Media Hashtag Contest for students ages 14–18. In December, MEWDC celebrated its 10th Anniversary.
- The **Nebraska** consortium celebrated its 5th annual Careers in Energy Week October 15–17 with a governor’s proclamation and three days of planned outreach activity. Day 1 was focused on teachers, counselors, and advisors; Day 2 focused on middle and high school girls, with 75 participants; and Day 3 focused on middle and high school boys, also with 75 participants. Activities occurred at three Nebraska locations, with participation by all NEWC industry members in Omaha.
- The **Louisiana** Energy Workforce Consortium (LEWC) launched its lineworker certificate program in two community colleges and has graduated three cohorts to date. The hiring rate for those three cohorts is over 80% (100% graduation). LEWC’s focus late in the year was to work with two additional colleges to start up programs.
- The **Carolinas** Energy Workforce Consortium (CEWC) has finalized foundational curriculum for community and technical college lineworker programs. The curriculum totals 350 hours of foundational skills. CEWC has been working and will continue to lead the process to finalize a NCWorks Certified Career Pathway for lineworkers in Southwestern and Western NC by February 2019.
- The **Georgia** Energy and Industrial Construction Consortium (GEICC) hosted its 8th annual golf tournament with 174 golfers in attendance. Funds raised support the GEICC pathway support programs, scholarships, and GEICC activities like the Career Expo Skills USA conference. Lt. Governor Casey Cagle attended the tournament opening ceremony and served as the honorary chair. Net revenue was \$30,000, double the revenue of previous years.

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- The **Florida** Energy Workforce Consortium (FEWC) has focused 2018 on strengthening the connections between industry and education. FEWC is currently creating a document that will lay out an inventory of energy education programs and the corresponding industry partner to be able to connect CEWD's demand data to the state's actual pipeline development. Another aspect of building this relationship is through encouraging the donation of industry equipment to state colleges and trade schools. The best example of this is NextEra's donation to Fort Myers Technical College of a Frame 7F Gas Turbine that will make FMTC's program one of the best in the nation.

In 2018, CEWD continued to provide implementation support to State Energy Workforce Consortia through its regional consultant model. Consultants Rosa Schmidt in the Northeast, MidAtlantic, and Southeast Regions; Beth Britt in the Midwest Region; and Ray Kelly in the Northwest, West, and South Regions collectively provided direct support to their state consortia more than 280 times through face-to-face meetings, teleconferences, and webinars. Additionally, they organized several significant cross-regional benchmarking efforts to accelerate consortium efforts and provided consulting support to individual CEWD member companies. These three consultants joined CEWD following successful careers in major energy companies and have organized and led State Energy Workforce Consortia during their previous careers.

### *Focus for 2019*

As CEWD continues to work with its members and their partners to develop industry solutions for regional implementation, following are a few highlighted areas of focus for 2019:

- 2019 Gaps in the Energy workforce survey
- Tools, resources, and best practices to improve retention in critical key jobs
- Expansion of the "I Got Into Energy" Campaign to include additional demographics
- Update the Troops to Energy Jobs website content and resources to improve job searches for veterans
- Completion of the online National Template for Diversity and Inclusion
- Critical education and upskilling solutions to accelerate learning for the internal energy talent pipeline
- Support for State Energy Workforce Consortia in development and implementation of state strategic workforce plans

For a complete list of CEWD's 2019 goals, visit <https://cewd.org/about/strategies-initiatives/>.

CEWD initiatives are funded primarily through generous contributions from our Electric and Natural Gas Utility members, contractor members, the major trade associations (EEI, NEI, AGA, NRECA, APPA, and DCA), and through substantial in kind contributions for back office support from EEI.

## *Ten quick ways to get more from your CEWD Membership*

### **Workforce Planning**

1. Use the [assessment](#) in the Strategic Workforce Planning Wizard to assess the health of your company's Workforce Planning process.

### **Career Awareness**

2. Verify that your company jobs are posted on the CEWD jobs sites, <https://getintoenergy.jobs/> and <https://troopstoenergy.jobs/>.
3. Make sure that your company is registered on the Troops to Energy Jobs [Registration site](#) and the Get Into Energy [Registration site](#).
4. Add the link to Get Into Energy on your company website: <http://getintoenergy.com/about/badge/>.

### **Education**

5. Verify that your education partners are registered in NEEN. If not, nominate them [using the link](#) on the CEWD homepage.
6. Include the link for the [Get Into Energy Test Prep](#) self-study on your company recruiting page.
7. Hold a meeting or webinar to educate others in your company on the [resources](#) available through CEWD.

### **Structure and Support**

8. Join a [State Energy Workforce Consortium](#).
9. Attend a [CEWD regional meeting](#) and the [Annual Summit](#).
10. Join a [CEWD Community of Practice](#).

Formed in March 2006, the Center for Energy Workforce Development (CEWD) is a non-profit consortium of electric, natural gas, and nuclear utilities, contractors and their associations—Edison Electric Institute, American Gas Association, American Public Power Association, Nuclear Energy Institute, National Rural Electric Cooperative Association, and Distribution Contractors Association.

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[www.cewd.org](http://www.cewd.org) [www.getintoenergy.com](http://www.getintoenergy.com) [www.troopstoenergyjobs.com](http://www.troopstoenergyjobs.com)

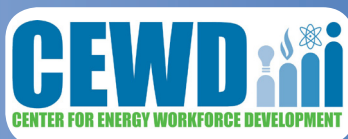


Center for Energy Workforce Development (CEWD)



@GetIntoEnergy

For information, please contact us at [staff@cewd.org](mailto:staff@cewd.org).



January 2019

Event	Date	Host/Location
<b>2019 Gaps in the Energy Workforce Survey Webinar</b>	January 23	Webinar
<b>Workforce Planning Council</b>	February 7	Conference Call
<b>2019 Gaps in the Energy Workforce Survey Webinar</b>	February 13	Webinar
<b>2019 Gaps in the Energy Workforce Survey Webinar</b>	March 5	Webinar
<b>Troops Quarterly Call</b>	March 7	Conference Call
<b>Board of Directors and Strategic Planning Meeting with Executive Council</b>	March 11	Washington, DC
<b>Executive Council Meeting</b>	March 19	Conference Call
<b>State Consortia Quarterly Call</b>	March 26	Conference Call
<b>2019 Gaps in the Energy Workforce Survey Webinar</b>	March 27	Webinar
<b>West/Northwest Regional Meeting</b> (CA, NV, AZ, NM, UT, CO, WA, OR, MT, ID, WY )	April 9-10	Tucson, AZ Host: TEP
<b>Workforce Planning Council Meeting</b>	May 7	Conference Call
<b>South/Southeast Regional Meeting</b> (TN, NC, SC, GA, AL, MS, OK, FL, TX, AR, LA)	May 14-15	Juno Beach, FL Host: NextEra/FPL
<b>Troops Quarterly Call</b>	June 4	Conference Call
<b>Executive Council Meeting</b>	June 6	Conference Call
<b>Midwest Regional Meeting</b> (KY, OH, MI, IN, IL, WI, MN, IA, MO, KS, NE, ND, SD)	June 19-20	Minneapolis, MN Host: Xcel Energy
<b>State Consortia Quarterly Call</b>	June 25	Conference Call
<b>MidAtlantic/Northeast Regional Meeting</b> (ME, VT, NH, MA, CT, RI, NJ, NY, PA, DE, MD, WV, VA)	July 10-11	Washington, DC Host: EEI
<b>Board of Directors Meeting</b>	July 19	Conference Call
<b>Workforce Planning Council</b>	August 1	Conference Call
<b>Executive Council Meeting</b>	September 12	Conference Call
<b>State Consortia Quarterly Call</b>	September 17	Conference Call
<b>Troops Quarterly Call</b>	September 26	Conference Call
<b>Veterans in Energy</b>	September 11-13	Washington, DC
<b>Board of Directors Meeting</b>	October 15	Conference Call
<b>Workforce Planning Council</b>	November 12	Arlington, VA
<b>Executive Council Meeting</b>	November 12	Arlington, VA
<b>National Forum</b> (All state consortia)	November 12	Arlington, VA
<b>CEWD Annual Summit</b>	November 12-14	Arlington, VA
<b>Troops Quarterly Call</b>	December 3	Conference Call
<b>Executive Council Meeting</b>	December 5	Conference Call
<b>State Consortia Quarterly Call</b>	December 10	Conference Call
<b>Board of Directors Meeting</b>	December 12	Conference Call

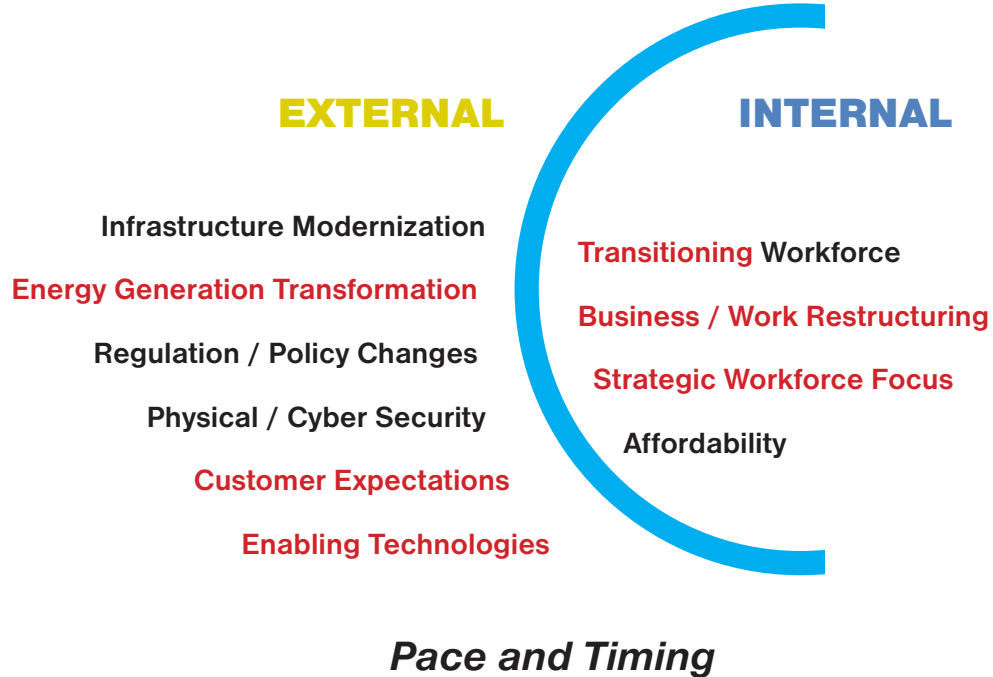


# CEWD

## 2018 Game Changers

National Strategic Workforce Plan

# Energy Industry Game Changers with Implications for Workforce



## ***Game Changer Summary***

Industry Game Changers have been part of CEWD's lexicon for many years and represent the potential for significant shifts in size, skills, and knowledge requirements of the current and future energy workforce. All of these changes can impact a company's ability to create and maintain a talent pipeline of qualified and diverse workers and to deliver on the company's business plan. Companies that are in the midst of infrastructure changes, building or closing plants, or implementing new technologies may have pressing current workforce needs. Others may be planning changes that will not be fully implemented for 5 to 10 years but will have tremendous impact on skill requirements. At a company level, addressing the workforce impact of these Game Changers in many cases means changing the work before changing the workforce.

The CEWD 2018 Game Changers show significant differences from the last edition in 2016. The changes are noted in red above. Both the External and Internal Game Changers indicate a shift to an industry that is more rapidly transforming, with technology playing an increasingly important role. The energy workforce is also changing with a younger and more diverse workforce that is increasingly digitally literate. This transitioning workforce, along with advances in education technology, can position the industry to meet the challenges of the future.

The continued move to a more digitized electric and natural gas infrastructure is at the heart of this change. With more smart technology installed, system and customer data are being produced at a rate never before seen. Coupled with Enabling Technologies such as artificial intelligence, machine learning, and robotics, companies are developing the capability and capacity to anticipate and meet energy customers' growing expectations and needs. This interconnectivity also means energy companies must be more vigilant than ever to cyber threats and attacks.

## Workforce Impact Summary

Just as energy companies are balancing the mix of generation and delivery of energy between centralized and distributed resources, today's energy workforce is beginning to mirror that same trend. The centralized workforce is decreasing, but the decentralized workforce appears to be growing. In the last decade, the overall number of employees in Electric and Natural Gas Utilities has declined, with the largest contributor to the overall job decline in support and corporate jobs. Key Jobs that include Lineworkers, Technicians, Plant/Field Operators, and Engineers have remained steady. However, the overall size of the energy industry is growing as contractors and suppliers that provide supplemental labor, specialized expertise, renewable and distributed generation, energy efficiency, and new technology grow to support the energy industry's emerging needs.

Because the pace and timing of change varies with companies, geography, and regulation, the industry must continue to develop a workforce with skills for traditional energy production and delivery as well as developing capabilities for the future. While the focus in the past has been more on the size of the workforce, this analysis points to a growing concern with skill gaps for both the incoming and the incumbent industry workforce.

Both new and incumbent employees must have strong foundational skills that range from academic skills like Science, Technology, Engineering, and Math (STEM) to employability and technical skills, so the impacts on internal technical training organizations must also be factored in. Competencies like problem solving, critical thinking, teamwork, collaboration, and the ability to learn are equally as important as technical skills in addressing the workforce needs.

***“Competencies like problem solving, critical thinking, teamwork, collaboration, and the ability to learn are equally as important as technical skills in addressing the workforce needs.”***

With the growth and speed of changes in technology, the energy industry workforce must be able to adapt and learn new skills by building on a strong foundational knowledge. Incumbent workers in jobs that are changing have an increased need for up-skilling as their work changes. Education must adapt at the same pace, with both external and internal training that maps to critical competencies and the use of technology to speed up knowledge transfer and new learning.

The 2018 CEWD Strategic Workforce Plan takes a notably broader view of impacted jobs, beyond the critical job categories of Lineworkers, Plant/Field Operators, Technicians, and Engineers explored in past Workforce Plans. In calling attention to the segments of the workforce that support and/or transition into key jobs and the growing reliance on the utility's contingent workforce, we note in this summary the impact the Game Changers have on those jobs as well.

While the impact analysis suggests significant impacts to both size and skills for engineers, support workers, and contractors, the underlying impact of the *nature* of today's workforce—younger, transitory, more tech savvy, less likely to build a career with one company—is significant for all job categories.

### ***What are the potential implications for CEWD and its members?***

First, the way we have traditionally defined the workforce in the center of CEWD's bullseye is changing and will no doubt continue to change. Our target for workforce development efforts is growing beyond Lineworkers, Technicians, Plant/Field Operators, and Engineers. When we look at the need for Lineworkers nationally, we can no longer ignore that a significant percentage of the crew stringing line isn't employed by the utilities. When we think about who is actually digging the trench to lay a mile of pipe, we realize there are support workers who must be accounted for. The more accurately we can define the demand for the jobs that drive our industry, the better able we are to build an adequate supply of qualified, diverse talent for our industry.

Second, competencies are key. Workforce agility, mobility, and promotion are dependent on first mastering foundational competencies, whether they focus on employability, workplace requirements, or technical requirements. The work CEWD has done and continues to champion on building and measuring the effectiveness of workforce competencies has never been more important in today's energy workplace. Equally important is our members' recognition of those competencies in the hiring process.

Third, the interconnections between skill requirements across the key jobs, support services, and contractors shouldn't be ignored. Education, on-the-job training, and knowledge transfer are all creating a more fluid workforce, which offers greater flexibility to companies and potentially higher rewards to those who can adapt or change quickly to meet their company's needs.

Fourth, companies must either build—or ensure they have—capacity to retrain their workers and transfer knowledge. Equally important, employees who have a thirst for learning and are willing to be proactive in their learning and growth will be the winners in the race. In today's workforce, there is no room for complacency.

Finally, technology is king. The use of technology—and the changes to technology—have progressed beyond evolutionary and border on revolutionary. Even as the technology needed to do these critical jobs is changing at light speed, the industry must think about on-the-job training, just-in-time training, and knowledge transfer as necessities that can be delivered with technology.

### Workforce Impact Analysis Methodology

It's helpful to view the workforce risks and implications of Game Changers through an “impact” lens of size and skills:

- Is the **size** of the workforce likely to increase, decrease, or stay the same?
- Are the current **skills** required for the job adequate or will new skills be needed? And, if new skills are needed, will they be provided by the company or by an education provider?



CEWD has attempted to gauge which job categories are potentially most at risk for impact at a national level. While CEWD has historically defined Key Jobs narrowly, this assessment focuses attention on a broader definition of jobs, including support services that may be impacted, and the impact to the industry contractor workforce. Examples of support services jobs include Human Resources, Customer Service, Information Technology, Operations Support, and Supply Chain. Industry contractors include those involved in construction and maintenance of electric and natural gas infrastructure and generation.

It's important to note that some Game Changers (Regulation / Policy Changes, Business / Work Restructuring, Strategic Workforce Focus, and Affordability) can't be assessed at a national level because the impact is driven by individual company strategy, so risk assessments for those areas are not included.

For those areas where national implications can be inferred, the following paragraphs summarize the combination of size and skills impacts and provide a guide for focusing on job categories at the national level. The color coding is not intended to imply direction of impact (e.g. greater, lesser, more, fewer) but the potential for impact, which should be subject to greater analysis. Green indicates that based on what we know today, the impact appears to be low. Red indicates that there appears to be potential for high impact compared to the current state and that greater analysis needs to be done to define the type and degree of impact for these particular jobs in relationship to this Game Changer.

# Energy Industry Game Changers

## with Implications for Workforce

### External Game Changers

#### Infrastructure Modernization

The modernization of the electric and natural gas infrastructure is paving the way for two-way energy flow, interconnected devices and technologies, and access to data that is transforming the industry. The structure and operation of distribution systems is changing as smarter infrastructure is built and new distributed generation technologies, including microgrids, are deployed and integrated into the electric grid. Investing in a safe and reliable power grid is critical to the deployment of new technologies and maximizing the use of renewable energy.

With these new technologies comes the growth in customer expectations, and the need for individualized customer solutions to meet the needs of this new generation of customers. The smart meter is at the center of technologies that will provide access to data to enable decisions on what assets to build and when, anticipate customer needs, and manage the supply of energy from traditional and new sources.

The growing demand for natural gas driven by low gas prices is outpacing the interstate transportation and distribution systems across the country. Safety and reliability are paramount for the natural gas industry, and an aging infrastructure is drawing attention to the need to modernize the existing infrastructure and build new infrastructure to deliver natural gas.

#### Workforce Impact

Infrastructure modernization impacts both the size and skills of the workforce. New digital technology in particular is impacting workforce size as a smarter grid requires a greater number to research, design, build, and protect the new technologies. Entirely new organizations are being created to handle this work. Both new and incumbent employees will need new skills and competencies to support interconnected devices and the two-way flow of electricity including telecommunications, networking, and distributed energy integration. These changes may drive the need to upskill segments of the incumbent transmission and distribution workforce, which could potentially impact existing technical training organizations. New technologies in training, like simulations and augmented and virtual reality, will support the need for continuous learning.

Infrastructure Modernization also has significant impact on workforce skills, not only for industry members but for their contractor partners. In particular, for natural gas transmission and distribution, building and repairing gas pipelines has caused a significant increase in the need for natural gas distribution contractor resources. Contractors struggle to attract enough welders, fusers, heavy equipment operators, and other workers to meet the needs of the utilities. Using contractors also impacts internal hiring needs of the utilities because utility employees manage the contracted projects.

Engineers have a significant role to play in modernizing our energy infrastructure. The need for degreed engineers to design new infrastructure is only expected to grow, and the skill requirements are changing. The need also precedes other jobs as engineers are needed to design the work before it can be built. In addition, the results of the CEWD Gaps in the Energy Workforce Pipeline Survey show a significant decrease in the number of mid-career engineers, which may reflect a knowledge loss risk as older engineers retire, and new engineers enter the workforce.

Job Category	Lineworker	T&D Technician	Generation Technician	Plant/Field Operator	Engineer	Support Services	Contractor
Size Impact	Green	Green	Green	Green	Red	Red	Red
Skills Impact	Red	Red	Green	Green	Red	Red	Yellow

## Energy Generation Transformation

Over the past decade, the shift to cleaner sources of energy generation has dramatically changed the energy industry landscape. Advancements in renewable energy, energy efficiency, and energy storage, coupled with the implementation of smart technologies, are driving this transformation of energy generation. Customer expectations for cleaner energy sources and the ability to connect customer sited generation from remote renewable sources, both large and small, have changed the game for energy companies.

Utilities are making significant investments to transition to a cleaner energy mix by expanding the use of gas, hydro, and renewable generation sources, and by improving energy efficiency. This move to reduce the use of carbon-based fuels is driving new construction, coal plant retirements and retrofits, and reinforces the industry's commitment to provide safe, reliable, clean, and affordable energy.

While regional differences still exist, this national shift to a more distributed and decentralized energy generation model has had similar impacts on the workforce. Positions that were once exclusively inside traditional utilities may now be part of a customer workforce or part of the utilities' new supply chain (no longer only materials or labor but generation and services as well).

### Workforce Impact

Engineers, Generation Technicians, and Plant/Field Operators are most impacted by the Energy Generation Transformation. As older plants close, and new generation facilities are built, skill requirements, workforce size, and geography must all be considered for degree of impact.

Construction of new generation will have impacts for Engineers and Contractors, as well as for Generation Technicians and Plant/Field Operators to operate and maintain the new plants. Distributed generation will also have some impact on transmission and distribution for new distribution assets to aggregate the energy.

The industry has seen a significant number of plant closings to date, and more closings of both coal and nuclear plants are planned. CEWD's survey data has shown that generation employees in particular have not retired at the same rate as other job categories. Companies are now reporting an uptick in retirements as plants close, meaning fewer employees that are displaced. Incumbent employees are being retrained and redeployed, although there may not be a direct deployment of workers to other types of generation.

The closure of nuclear power plants and the uncertainty of future closures is having an impact on the size of both the utility and contractor workforces. As skilled nuclear workers from plants that have closed move to positions at other plants, there is a cascading effect on talent pipeline initiatives.

Job Category	Lineworker	T&D Technician	Generation Technician	Plant/Field Operator	Engineer	Support Services	Contractor
Size Impact	Green	Green	Yellow	Yellow	Red	Red	Red
Skills Impact	Yellow	Yellow	Red	Red	Red	Red	Yellow

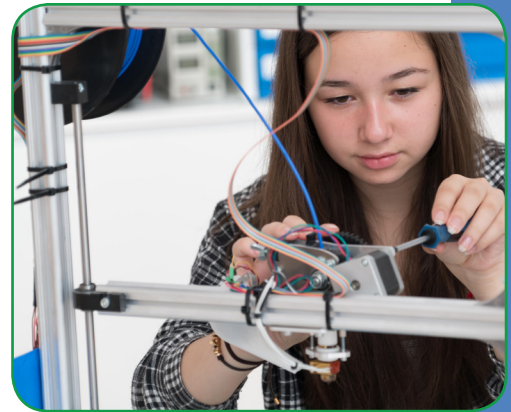
## Regulation / Policy Changes

Federal and state regulatory mandates continue to influence energy companies' priorities and the workforce plans that support them. In this century alone, federal energy policy has seen significant shifts with presidential administrations. Mandates to reduce fossil fuel emissions and increase renewable energy sources have driven workforce reductions and development of extensive retraining and severance programs as fossil plants have been shuttered. Similarly, decommissioning of nuclear plants presents workforce challenges for engineering and technician specialties. But the impacts are localized as individual companies develop their own strategies to address these shifts in policy.

At the national level, administrative action to drive change in workforce policy appears to be gaining momentum. In 2018, the administration issued a report on national apprenticeship expansion and created the National Council for the American Worker, which is intended to ensure that American students and workers have access to affordable, relevant, and innovative education and job training. Additionally, in 2018 the administration reauthorized the Carl D. Perkins Career and Technical Education Act of 2006 through fiscal year 2023 under a new title, *Strengthening Career and Technical Education for the 21<sup>st</sup> Century Act (Perkins V)*.

The Perkins Act is particularly important in aiding states' abilities to support low-income students from 8<sup>th</sup> grade through postsecondary education, in part through better alignment with other state programs, including the Workforce Innovation and Opportunity Act (WIOA) and Every Student Succeeds Act (ESSA).

While the implications for energy companies of these federally driven efforts aren't fully known at this point, other workforce policy issues are becoming part of the state-level workforce conversation for electric and natural gas utilities and their contractors.



**Career Pathways:** Although energy is not a national career cluster, some states have moved to create their own 17<sup>th</sup> career cluster in energy. In some states without a 17<sup>th</sup> career cluster, companies and their education partners are working with state leaders to implement energy career pathways. In those states, students in K–12 and postsecondary education, as well as individuals re-entering the workforce, are finding greater job-specific training opportunities with more direct entry options into electric and gas jobs.

**Sector Partnerships:** Sector partnerships, which convene multiple employers with education, training, labor, and community-based organizations to address the local skill needs of a particular industry, are a proven strategy for helping workers prepare for jobs and helping employers find skilled workers. The number of states with sector partnership policies has increased as states implement WIOA, which requires sector partnerships as a local workforce activity, and requires states to support those local efforts.

**Employment of individuals with criminal records:** According to a recent report by the Council of State Governments, an estimated 70 million people in America have a criminal record. Understanding and addressing these challenges requires the collaboration of employers, workforce development officials, and policy makers at every level of government. While a focus has emerged in many states to protect individuals with criminal records from discriminatory hiring practices, it's unclear whether the industry will take a proactive stance toward hiring individuals with criminal records, given federal security requirements and other regulatory issues.



**Employment of veterans:** According to a 2018 report by the Bureau of Labor Statistics, the unemployment rate for veterans who served on active duty in the U.S. Armed Forces at any time since September 2001 had edged down to 4.5 percent in 2017. Veterans remain a much sought-after demographic for the energy industry because military skills often align well to the requirements of our critical jobs. Increasing competition for qualified veterans across multiple industries is driving better state-level workforce planning and heightened outreach to veteran organizations, bases, and individual veterans.

**Employment of individuals with disabilities:** CEWD is seeing examples at the company level of successful recruiting and hiring of individuals with disabilities. One of the most important steps is to address the barriers to employment and recognize, first, the capabilities and qualifications the person brings to the organization, rather than the disability. Much work is underway at the state level to develop new ways to attract and engage this important population.

The impacts and timing of these more local policy issues will vary by state and sector, but each bear watching for workforce implications. Strategic workforce planning can significantly mitigate the financial, knowledge, safety, and timing risks of this and other less predictable Game Changers.

## Physical / Cyber Security

Securing the nation’s energy infrastructure has grown increasingly more complex and critical as physical attacks and cyberattacks have increased globally. The increasing use of intelligent systems and infrastructure has subjected the industry to complex cybersecurity risks. Interconnected devices increase responsiveness, efficiency, performance, and energy management but also increase cyberattack risk.

While it’s unlikely that a large number of physical security and cybersecurity jobs are going to be created by the industry, the issue is less about numbers and more about the need for a unique blend of security knowledge and industry-specific expertise. The numbers are small but critical, and include jobs such as Cyber Security Engineers, Analysts, Architects, and Threat Analysts.

Cybersecurity competencies are becoming embedded in jobs from the bottom to the top of the organization. All employees should have some form of IT cybersecurity training, and the level of training on cyber system capabilities increases in positions associated with the generation, transmission, and distribution of energy. This layering of knowledge in every job is much like the layering of cyber defenses in electric and natural gas energy systems and structures.

### Workforce Impact

Companies may upgrade the skills of some jobs to protect infrastructure or engage external resources. However, the external resources are more likely to be skilled consultants who are focused primarily on security than core utility contractors. Companies are segmenting Information Technology (IT) and Operational Technology (OT) since OT requires different skill sets. Industrial Control Systems, including supervisory control and data acquisition (SCADA) systems, are at the heart of infrastructure modernization and will require increasingly energy-specific skills to keep both the electric and gas infrastructure safe.

Energy companies are also making organization changes that reflect this heightened focus on cybersecurity and physical security by combining organizations.

The impact of physical security and cybersecurity needs is expected to be highest for Engineers and positions in System Operations and Information Technology.

Job Category	Lineworker	T&D Technician	Generation Technician	Plant/Field Operator	Engineer	Support Services	Contractor
Size Impact	Green	Green	Green	Green	Red	Red	Yellow
Skills Impact	Yellow	Yellow	Yellow	Yellow	Red	Red	Red

## Customer Expectations

The expectations of energy consumers are changing at the speed of technology. As two-way communication between homes, businesses, and energy systems become the norm, customers and their needs are playing a greater role in the design and implementation of everything, from new ways to generate and distribute energy to the way we interact, communicate, and manage the business. The modernization of the electric grid and natural gas infrastructure and implementation of smart metering have led the way to new possibilities for energy companies to bring energy solutions that meet the growing demands of customers who expect access to new services, energy choices, and the ability to manage energy use.

A better definition for customers might be “prosumers,” a term used to describe a prospective consumer who is involved in the design, manufacture, or development of a product or service. The customer experience must play a key role as the customer is inserted earlier and earlier into energy processes and decisions. Putting customer needs at the center before, during, and after decisions, or becoming customer-centric, has become a business imperative for energy companies to stay viable in today’s changing world.

Not all customers are the same and their needs reflect that, so the need for a diverse workforce is felt here as well. It takes a diversity of experience, background, and demographics to anticipate and understand the diverse needs of today’s customers.

## Workforce Impact

The workforce impact is expected to be felt most in engineering and the management of distributed energy resources, system planning, information technology, marketing, and customer support organizations. For all who engage with customers, there will be a need to increase their understanding of industry energy system fundamentals and the use of advanced technologies.

As an example, the role of the traditional customer service organization moves from transactions and response to customer inquiries, to energy advice and education as customers take on more responsibility for managing their own energy use and have access to the data and apps that help them do it. Artificial intelligence, robotics process automation, and the use of chatbots will help to change the work flow for customer service representatives (CSRs) and will increase the need for analytical skills that can’t be programmed. This will, in turn, increase the need for foundational skills like problem solving, critical thinking, and interpersonal communications as routine tasks become automated and more crucial, customer-focused tasks remain.

The workforce impact on Engineers and information technology would appear to mirror the changes reflected with Infrastructure Modernization and Enabling Technologies. The impact on external resources is more likely to be for companies providing skilled consultants (data analysis, data mining, predictive analytics) than for core utility contractors. With customer-facing technology evolving at such a rapid pace, the workforce impact is predicted to be high but specific implications are yet to be seen.

Job Category	Lineworker	T&D Technician	Generation Technician	Plant/Field Operator	Engineer	Support Services	Contractor
Size Impact	Green	Green	Green	Green	Red	Red	Yellow
Skills Impact	Yellow	Yellow	Yellow	Yellow	Red	Red	Red

## Enabling Technologies

For workforce planning purposes, CEWD defines Enabling Technologies as those that significantly change work flow or processes. Technology is changing at an exponential rate but for some technologies, like upgrades in computer systems and communication devices, the impact is felt as productivity improvements or efficiencies and not as a significant impact on our work and jobs. The speed of technology adoption is driven by leadership and some companies are moving much more aggressively than others.

Enabling technologies can include hardware and equipment, like robots and drones, or software, like artificial intelligence and machine learning, chatbots, robotic process automation (RPA), and blockchain. The challenge is connecting the information gleaned from sources like smart meters, smart sensors, drones, and the connection of distributed energy resources to intelligence that can be used by both equipment and humans in meeting business and customer needs, multiplying the overall impact.

Efficiency and safety are two of the greatest advantages from using drones, and both electric and gas transmission and distribution are seeing benefits. On the electric side, drones are already being used to inspect power lines and substations, shortening outage times and limiting hazardous exposure for Lineworkers, Technicians, and Engineers. On the gas side, drones can be equipped with sophisticated methane sensors to detect gas leaks. Aerial photography by drones can also aid in technical training by providing views of plants, substations, and other equipment not previously available. Drones will become another “tool in the toolbox,” reminiscent of adding tablets for planners, technicians, and lineworkers.

Artificial intelligence (AI) and machine learning are the two technologies being used to leverage information coming out of microgrids and distributed generation. Many see AI as an essential component of grid modernization and management moving forward and will significantly enhance the ability to predict outages and to safeguard the grid, ultimately making all the work like this more efficient and workers more effective.

Chatbots and RPA are being used in support services like Human Resources and Customer Service to automate repetitive transactions. Automating the simpler, repetitive tasks frees employees to solve more difficult tasks, which may require additional training.

## Workforce Impact

For software and devices, the impact is less about workforce reductions and more about workforce reskilling and upskilling. Additionally, the lifespan of new technology is getting shorter and shorter and will require continuous learning capabilities and strong knowledge capture and transfer processes. The workforce impact is primarily on support services including Finance, Information Technology, and Operations Technology, particularly in Demand Management, Infrastructure Management, and Renewable Management. And, again, the external resources are more likely to come from specialized IT consulting firms and supplemental contractors than from core utility contractors.

Higher level technical skill requirements will change based on the technology employed, but foundational competencies like critical thinking, problem solving, and the ability to learn become more important as the implementation increases. Overall, the jobs that appear to be most affected by enabling technologies like robots, chatbots, and drones are in customer service, corporate support services, system operations, and technicians (lineworker, other T&D). These advances in technology will favor workers who are tech-savvy, willing and able to learn new systems, and comfortable with the demands of data management. The younger generation is at a distinct advantage as they have never really known a world without technology.

Job Category	Lineworker	T&D Technician	Generation Technician	Plant/Field Operator	Engineer	Support Services	Contractor
Size Impact	Green	Green	Green	Green	Red	Red	Green
Skills Impact	Yellow	Red	Yellow	Yellow	Red	Red	Yellow

## Internal Game Changers

### Transitioning Workforce

The Electric and Natural Gas Utility industry workforce has changed significantly over the last decade but is benefiting from more than a decade of workforce initiatives to develop and hire workers into critical jobs. As industry hiring has increased and retirements have begun to stabilize, a younger and more diverse workforce is facing the need for a higher level of skills than ever before. This transformation will drive strategic change in everything from education to recruiting, hiring, and retention.

Although retirements have been a major Game Changer for the energy workforce in the past, CEWD's 2017 Gaps in the Energy Workforce Survey shows about 12% of the workforce is ready to retire at any point and overall retirements are forecast at a little over 2% a year for the next 10 years. That is below the percentage of employees who will leave for other reasons and validates the trend toward "normal" retirement rates for the industry.

***“Millennials make up almost 30% of the overall utility workforce and 40% of the engineering and lineworker positions.”***

Millennials make up almost 30% of the overall utility workforce and 40% of the engineering and lineworker positions. A key change believed to be driven by this younger workforce is the increase in non-retirement attrition, particularly among those with fewer than five years of service. Studies of millennials in the workplace indicate they are less hesitant to change jobs than their older counterparts. In an industry where it takes years to become fully competent in highly skilled jobs, and in a country where the current unemployment rate is below

4%, companies must rethink their employment value propositions in order to attract and retain new employees and effectively transfer the knowledge of those who leave. Coupled with employee retention efforts, companies will need to use both policy and technology solutions to capture and provide access to critical knowledge when needed.

The energy workforce is also becoming increasingly diverse. Veterans make up about 11% of survey respondents' current workforce, which is an increase from 8% in 2014, the first year CEWD surveyed participants on veterans. Similarly, minorities have increased from 22 to 26% of the workforce, reflecting an increased focus on diversity and inclusion efforts. However, the percentage of women in the utility workforce has shown only a slight increase from previous surveys and, at 24%, reflects half of the national percentage of women in the U.S. workforce.

### Workforce Impact

CEWD's 2017 Gaps in the Energy Workforce Survey shows the overall size of the utilities workforce has decreased since the last survey, with the number of key jobs remaining fairly stable. The decreases can be accounted for in corporate support and other types of jobs. When viewing the energy workforce as a whole, however, there are indications that the utility contractor workforce is growing. The contractors who supply supplemental labor for the industry are an integral part of the energy workforce, particularly for key jobs. More work must be done to fully quantify the impact of the contractor workforce on the demand for key jobs.

The potential loss of knowledge through attrition, as well as the need for retraining, upskilling, and continuous learning, impacts all jobs categories. Internal training and technical training organizations will need to expand the use of technology to train employees on subjects from cybersecurity to automation and developing customer solutions.

Job Category	Lineworker	T&D Technician	Generation Technician	Plant/Field Operator	Engineer	Support Services	Contractor
Size Impact							
Skills Impact							

## Business / Work Restructuring

Mergers among energy companies and acquisitions of businesses that complement or broaden an energy company's portfolio continue to drive significant changes internally. If the merger or acquisition includes expansion of geographic service territory, workforce impacts may be larger for corporate functions than for Key Jobs.

As technology is implemented, work process, organization design, as well as work policies and practices must be analyzed as well. These changes will have an impact not only on Key Jobs but on support workers as well.

## Strategic Workforce Focus

Strategic business decisions may have profound changes on a company's workforce size, demographic makeup, skill sets, and knowledge requirements. Those decisions can encompass a focus on increased diversity, veteran hiring, insourcing previously outsourced talent, centralizing, de-centralizing, combining organization functions, or improving efficiency.

At the national level, the industry's commitment to train, hire, and retain military veterans (Troops to Energy Jobs) is having a real impact on company practices. In addition, the national industry focus on improving diversity and inclusion is driving education and workforce decisions.

Some Strategic Workforce decisions, like outsourcing or insourcing a particular job category, may have an impact on the size and the source of the workforce. But more than likely, they will impact the demographics or distribution of the workforce (for example, awarding work previously done internally to a supplemental labor contractor or hiring military veterans rather than community college graduates).



## Affordability

Balancing workforce needs with reductions in labor budgets is a critical issue for companies as both internal and external cost pressures continue in the industry. External drivers, like those already mentioned, drive company priorities and, subsequently, budgets. Each company must determine what it can afford in the way of workforce strategy. The issue of affordability is apparent when companies make "build, buy, or borrow" decisions and, more recently, technology solution decisions in addressing workforce needs.

Affordability goes hand-in-hand with Strategic Workforce Focus as energy companies find ways to perform work more efficiently. As an example, individual municipal utilities may not have the resources to hire full-time talent in some areas, so groups of public power utilities have formed Joint Action Agencies to share workers between companies, or to provide specialized services. The agencies function less like contractors and more like centralized corporate services departments in larger energy companies.

# Energy Industry Workforce Impact

Job Category	Lineworker	T&D Technician	Generation Technician	Plant/Field Operator	Engineer	Support Services	Contractor
<b>Infrastructure Modernization</b>							
Size Impact							
Skills Impact							
<b>Energy Generation Transformation</b>							
Size Impact							
Skills Impact							
<b>Physical / Cyber Security</b>							
Size Impact							
Skills Impact							
<b>Customer Expectations</b>							
Size Impact							
Skills Impact							
<b>Enabling Technology</b>							
Size Impact							
Skills Impact							
<b>Transitioning Workforce</b>							
Size Impact							
Skills Impact							

## The Industry Response

Over the past 12 years, the Electric and Natural Gas Utility Industry has been actively engaged in the development of critical talent pipelines to address the transforming demographics and business needs of the industry. In 2006, the industry united to form the Center for Energy Workforce Development (CEWD), whose members now include all five major utility trade associations (Edison Electric Institute, American Gas Association, Nuclear Energy Institute, National Rural Electric Cooperative Association, and American Public Power Association) and the Distribution Contractors Association; most of the electric and natural gas utilities across the country; supplemental labor contractors; unions (IBEW and UWUA); and partners in the effort, including educational institutions and government entities.

Up to this point, the industry has focused on four key talent pipelines—Lineworkers, Technicians, Plant/Field Operators, and Engineers—and has built partnerships at the local, state, and national level to implement these pipelines. Each of these talent pipelines has different educational requirements but are built on a common process. The process starts with the definition of talent needs, including workforce demand and competencies, and then moves to career awareness and navigation, defined educational pathways and supply channels, and the development of partnerships for each step. Most recently, with the focus on supplemental labor contractors, CEWD has begun to adapt these processes to meet the needs of energy contractors.

A sustainable talent pipeline must be flexible to workforce demands, adaptable to changing skill needs, and nimble enough to reflect the pace of business change regardless of location, demographics, or policy. The key to building these sustainable pipelines is partnership, and the partnerships must include energy companies, educators, government entities, unions, contractors, and policy makers. Through CEWD, the industry has built State Energy Workforce Consortia across the country to identify the specific needs within their state and region, partner with educational providers from elementary to university levels, and to develop diverse, qualified talent pools that meet the needs of utilities across the state.

In addition, CEWD has built an arsenal of tools, templates, and processes to enable member companies and state consortia to save time and money in the development, implementation, and sustainment of talent pipelines. The CEWD national network of employers, educators, and alliances learn from each other and from the best practices in the industry. Some of the resources available include:

- A Strategic Workforce Planning Process to define needs and to balance supply and demand requirements.
- Get Into Energy: A common career awareness brand and campaign that covers five specific demographics—youth, engineers, military, women, and transitioning workers—and career pathways models that define the path from awareness to employment.
- Troops to Energy Jobs: A roadmap for military veterans and a national template for attracting, hiring, and retaining veterans in the energy industry.
- Competency models that define skills, knowledge, and abilities for each of the talent pipelines, curriculum, and the National Energy Education Network of partnered educational institutions.
- Diversity and Inclusion resources that include a playbook on implementation strategies, assessments, and best practices.
- Staff and consultant support for individual company and consortia workforce development efforts.
- Web resources, convenings, communication channels, research and data, and communities of practice.

***“A sustainable talent pipeline must be flexible to workforce demands, adaptable to changing skill needs, and nimble enough to reflect the pace of business change regardless of location, demographics, or policy.”***

## *We All Have a Role: Companies, Educators, Associations, and CEWD*

### **What Companies Can Do:**

- Make it easier for students and jobseekers to find us, understand our jobs, and learn what education pathways in your region will lead to an energy job.
- Signal to students, jobseekers, and educators which credentials are required, preferred, and recognized by employers in your state, and are being used in hiring decisions.
- Develop partnerships with other employers and educators to engage students from interest through employment.



- Organize and educate within your company to communicate strategies, initiatives, policies, and funding and align company personnel, systems, policies, and practices to support the needs of diverse, qualified applicants.
- Provide data on the timing and demand for jobs in your company and feedback to educators and pipeline organizations on the quality of hires from their organizations.

### **What Educators Can Do:**

- Conduct bootcamps at every stage of the pathway for concentrated skill development.
- Accelerate the time it takes a student to earn his/her credential by recognizing prior training.
- Focus on the common denominator, by organizing programs of study around core essentials first and then technical competencies.
- Bundle curriculum with transferable certificates and stackable credentials that integrate industry-recognized credentials into energy programs of study.
- Provide industry partners with supply data on students in the pipeline.

### **What State Energy Workforce Consortia Can Do:**

- Develop and maintain a state energy workforce plan to steer industry-led workforce efforts.
- Build state awareness of the need for a skilled energy workforce and awareness of energy careers among targeted populations.
- Implement core curriculum across schools to enable easier transfer of credits and faster graduation of students with needed skills.
- Focus on shared initiatives and education solutions that meet the common needs of consortia members rather than individual companies. Examples include boot camps, career awareness, and data collection.
- Assess the impact of energy workforce needs on the state's workforce and education policy and communicate to consortium members and partners.
- Create mutually beneficial alliances with organizations that support and advance the consortium's initiatives.
- Maintain the consortium as a self-sustaining operating structure that includes governance, management, and financial processes.



### **What CEWD Member Associations Can Do:**

- **Convene:** Use member convenings to engage associated organizations and ensure there is alignment, integration, and a shared understanding of industry workforce issues and what is needed to address them.
- **Advocate:** Be advocates for industry workforce efforts and policy issues at both the company and the national government level.
- **Communicate:** Ensure a vocal presence in the Nation's Capital for energy industry workforce issues; share workforce successes within the industry; create integrated teams of legislative and communications representatives.
- **Provide heightened focus on employee processes and systems that are most critical to workforce development and knowledge transfer, including human resources policy, compensation and benefits practices, and succession planning.**

### **What CEWD Will Continue to Do:**

Build the alliances, processes, and tools to:

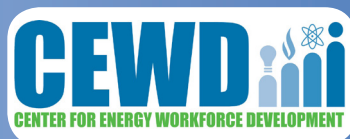
- Ensure companies and state energy workforce consortia are equipped to develop sustainable workforce plans that balance the supply and demand for a qualified and diverse energy workforce.
- Create awareness among students, parents, educators, and non-traditional workers of the critical need for a skilled energy workforce and the opportunities for education that can lead to entry-level employment.
- Implement clearly defined education solutions that link industry-recognized competencies and credentials to employment opportunities and advancement in the energy industry.
- Organize the energy industry workforce development efforts to maximize the effectiveness of national, state, and individual company initiatives.

Formed in March 2006, the Center for Energy Workforce Development (CEWD) is a non-profit consortium of electric, natural gas, and nuclear utilities, contractors and their associations—Edison Electric Institute, American Gas Association, American Public Power Association, Nuclear Energy Institute, National Rural Electric Cooperative Association, and Distribution Contractors Association.

701 Pennsylvania Ave., NW, Washington, DC 20004-2696 • 202-638-5802

[www.cewd.org](http://www.cewd.org) [www.getintoenergy.com](http://www.getintoenergy.com)

For information, please contact us at [staff@cewd.org](mailto:staff@cewd.org).



October 2018

The Center for Energy Workforce Development (CEWD) will be conducting its biennial Gaps in the Energy Workforce Survey in 2019. This survey was originally started in 2007 to address the concern about high retirement potential in the energy industry, specifically looking at which types of jobs were at highest risk. With each iteration, the survey has been modified and improved to collect data on emerging trends in the employee population and to measure progress across lines of business and geography. The survey data have been used as the foundation for national strategic workforce planning since 2007.

This survey provides the single most valid and reliable source of workforce data for the Electric and Natural Gas utility industry. Respondents to the survey historically represent more than 70% of the industry employee population. Coupled with data from the US Census and labor data from the Bureau of Labor Statistics, our analysis captures attrition, hires, demographics regarding veterans and race/gender splits and age/years of service of the workforce. Why is this important? Because it is the only source of data on energy jobs at the national and state level that is backed up with actual input from the companies who employ the workers.

While the results from the survey are used by individual companies and State Energy Workforce Consortia to identify supply and demand gaps for the workforce, the primary purpose of the survey is to anticipate national trends in the energy workforce and to identify national priorities for workforce development. The data from the participating companies are used to project replacements necessary in the key jobs and are an often quoted source of data for federal and state government agencies and national, state and local press. The results are frequently referenced in national education grant applications.

### Current Status:

- Communications regarding the start of the survey has been sent to CEWD, EEI, AGA and APPA member companies, a total of 174 companies. NRECA responds for all rural electric cooperatives but individual CEWD members, i.e., Sunflower, received a letter. If those coops provide data, they are not included in the national results but are used to prepare individual scorecards.
- The collection of data runs from January through May 1, 2019 with reporting of results for the Nuclear workforce in July 2019 and the non-nuclear workforce at the CEWD Annual Summit in November.
- 74 of the 174 companies have received a package containing all of the survey materials; data entry sheet, job definitions document, instructions for completing the data entry sheet and the schedule.
- Of the 76 companies, 50 are investor-owned companies (6 of which are gas-only companies), 23 are public power utilities and 3 are electric cooperatives. Three new public power companies are participating for the first time.
- Five companies that participated in 2017 have elected not to participate this year.
- Six companies have submitted their survey responses.
- CEWD consultants are reaching out to companies that have not yet indicated they will be participating to encourage them to do so.
- Four webinars are being conducted to walk through the changes in the data entry sheet from the 2017 survey. Contacts from all 173 companies received an invitation to register for any one of the webinars.
  - The dates are all from 1:00 to 2:30 pm ET:
    - Wednesday, January 23
    - Wednesday, February 13
    - Tuesday, March 5
    - Wednesday, March 27
- Schedule for the survey is:

<b>DATE</b>	<b>ACTIVITY</b>
January – April, 2019	Complete the survey
May – June, 2019	Clean up data and prepare nuclear results
July, 2019	Provide nuclear results to NEI and Chief Nuclear Officers
July – August, 2019	Prepare retirement and replacement forecasts used to create the Demand Reports
September – October, 2019	Finalize survey results
November, 2019	Present survey results at CEWD Annual Summit
December, 2019	Prepare individual company scorecards and Executive Summary

All Electric and Natural Gas Utilities are invited to participate in the survey. For more information on the survey, contact Dana Berkheimer at [dana@cewd.org](mailto:dana@cewd.org). For information on the webinars, contact [staff@cewd.org](mailto:staff@cewd.org).

# CEWD at a Glance

## We Are CEWD

- A nonprofit alliance of more than **100** energy companies plus energy associations, contractors, labor, and educators
- Geared to support **FIVE** demographics:
  - Youth
  - Veterans
  - Women
  - Low-Income Young Adults
  - Transitioning Workers
- Focused solely on helping our members build a **diverse, qualified** pipeline of skilled workers



## Our Mission

Build the alliances, processes, and tools to develop tomorrow's energy workforce



## Our Goals

- **Identify** critical workforce needs and **measure** the success of workforce development solutions
- **Build** awareness of high skilled, well-paying jobs in the energy industry
- **Partner** with members to implement education solutions to build a pipeline of skilled workers
- **Serve** our members and **share** best practices



## Industry Solutions— Regional Implementation

## Where to Learn More

[www.cewd.org](http://www.cewd.org)  
[www.troopstoenergyjobs.com](http://www.troopstoenergyjobs.com)  
[www.getintoenergy.com](http://www.getintoenergy.com)



## Our National Impact

- Members in more than **30 STATES** engaged in State Energy Workforce Consortia
- More than **400,000** energy employees represented through CEWD membership
- More than **2,100** Energy Industry Fundamentals certificates earned by students
- More than **400 ENERGY PROGRAMS** registered in the National Energy Education Network



## Some of Our Accomplishments

- ✓ Defined the demand for critical jobs at the national and state level
- ✓ Defined the knowledge, skills, and abilities needed for today and in the future
- ✓ Identified and engaged national energy education programs that benefit the industry
- ✓ Developed in-depth national templates to engage, hire, and support veterans and women
- ✓ Built a national brand to engage future workers through [GetIntoEnergy.com](http://GetIntoEnergy.com) and [TroopsToEnergyJobs.com](http://TroopsToEnergyJobs.com)

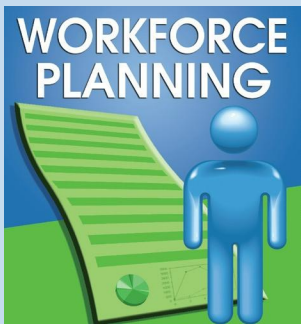


## Our Path Forward

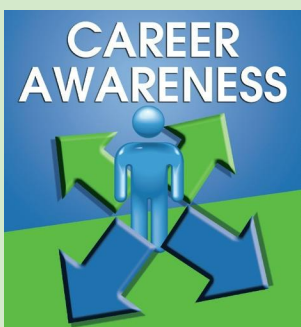
- Continue to help our members develop a diverse, qualified workforce
- Address the impacts of technology, national security, and other game changers on energy jobs and skills
- Support the growth and sustainability of State Energy Workforce Consortia
- Improve energy education outcomes through the National Energy Education Network
- Continue to grow our capacity as the industry's most comprehensive resource for energy workforce solutions

**INNOVATIONS  
AHEAD**

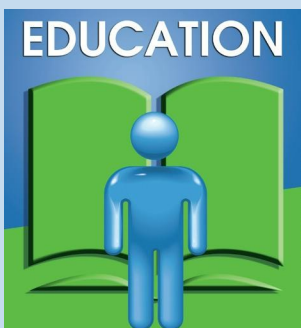




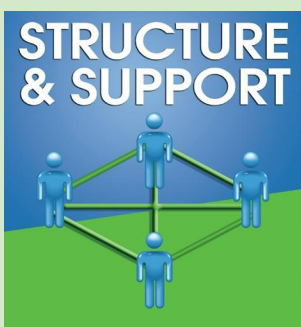
- 1 Use the assessment in the Strategic Workforce Planning Wizard to assess the health of your company's Workforce Planning process: <http://cewd.org/documents/wizard/documents/Q1-WorkforcePlanningAssessmentTool.docx>.



- 2 Verify that your company's jobs are posted on CEWD's jobs sites, <https://getintoenergy.jobs> and <https://troopstoenergy.jobs>
- 3 Make sure that your company is registered on the Troops to Energy Jobs Registration site at <http://www.troopstoenergyjobs.com/registration> and the Get Into Energy NEEN Registration site at <http://getintoenergy.com/registration>
- 4 Add the link to Get Into Energy on your company website: <http://getintoenergy.com/about/badge>

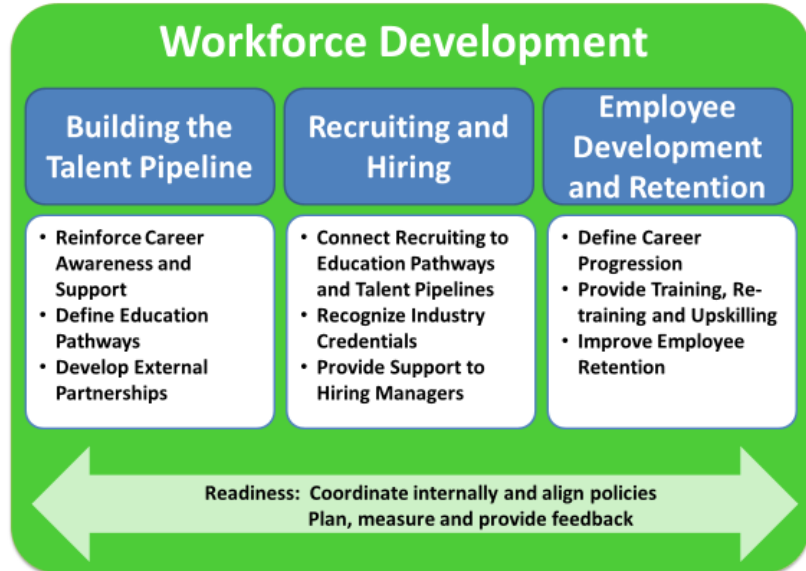


- 5 Verify that your education partners are registered in NEEN (National Energy Education Network). If not, nominate them using the link on the CEWD homepage: <http://cewd.org/neen-educators>
- 6 Include the link for the Get Into Energy Test Prep self-study on your company recruiting page: <http://getintoenergy.com/test-prep>
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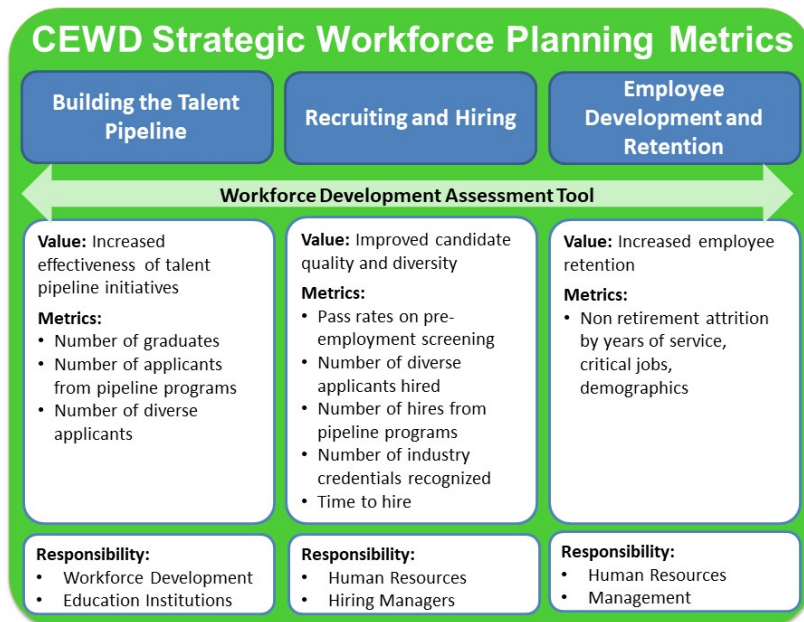


- 8 Join a State Energy Workforce Consortium: <http://cewd.org/about/state-consortia>
- 9 Attend a CEWD regional meeting and the Annual Summit: <https://cewd.org/events>
- 10 Join a CEWD Community of Practice: <https://cewd.org/communities-of-practice>

In November 2018, several CEWD member companies agreed to participate in a pilot designed by the Executive Council Measuring Progress Task Force. The purpose of the pilot is to test a workforce development framework that expands from building the talent pipeline through retention. The chart to the right shows the strategies that companies should implement as part of a comprehensive workforce development effort. The chart below it indicates the intended value a company should achieve by tracking progress in the applicable metrics and adjusting its strategies accordingly. One change from the original graphic is that metrics for Recruiting and Hiring have been adjusted to numbers rather than percentages.



Companies participating in the pilot are Alliant Energy, Consumers Energy, Pacific Gas and Electric, Southern Company, and Washington Gas.



Representatives of the pilot companies participated in a February 14 conference call to discuss the demographics they want to focus on during the pilot and to determine how the group will report progress and measure results. A sample of the demographics that may be part of the pilot includes: NUCP program graduates, line technicians, gas technicians and first line supervisors.


The pilot members agreed to participate in quarterly calls to share progress with each other. The length of the pilot will be for one calendar year, after which CEWD will collect and document learning from the pilot companies and best practices that can be implemented with other CEWD members.



**CEWD**  
CENTER FOR ENERGY WORKFORCE DEVELOPMENT  
Industry Solutions—Regional Implementation

**Midwest Region Meeting  
Hosted by Xcel Energy  
June 19-20, 2019**

**Welcome**



2

# 2019 CEWD Region Meeting

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- Introductions
- Agenda Review
- Plans for the day

# CEWD CENTER FOR ENERGY WORKFORCE DEVELOPMENT



Energy  
Industry  
Fundamentals

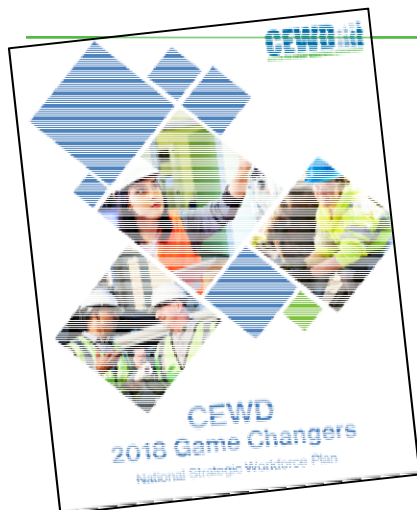


National Energy  
Education Network

get into  
energy

**TROOPS**  
ENERGY JOBS  
Training, Retention & Energy Employment

# National Strategic Workforce Plan




## Energy Industry Game Changers with Implications for Workforce



# Game Changers – Workforce Risk

Job Category	Lineworker	T&D Technician	Generation Technician	Plant/Field Operator	Engineer	Support Services	Contractor
<b>Infrastructure Modernization</b>							
Size Impact	Green	Green	Green	Green	Red	Red	Red
Skills Impact	Red	Red	Red	Red	Red	Red	Yellow
<b>Energy Generation Transformation</b>							
Size Impact	Green	Green	Yellow	Yellow	Red	Red	Red
Skills Impact	Green	Yellow	Red	Red	Red	Red	Yellow
<b>Physical / Cyber Security</b>							
Size Impact	Green	Green	Green	Green	Red	Red	Yellow
Skills Impact	Yellow	Yellow	Yellow	Yellow	Red	Red	Red
<b>Customer Expectations</b>							
Size Impact	Green	Green	Green	Green	Red	Red	Yellow
Skills Impact	Yellow	Yellow	Yellow	Yellow	Red	Red	Red
<b>Enabling Technology</b>							
Size Impact	Green	Green	Green	Green	Red	Red	Green
Skills Impact	Yellow	Red	Yellow	Yellow	Red	Red	Yellow
<b>Transitioning Workforce</b>							
Size Impact	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
Skills Impact	Red	Red	Red	Red	Red	Red	Red

# Game Changers – Workforce Risk



Job Category	Lineworker	T&D Technician	Generation Technician	Plant/Field Operator	Engineer	Support Services	Contractor
<b>Infrastructure Modernization</b>							
Size Impact	Green	Green	Green	Green	Red	Red	Red
Skills Impact	Red	Red	Green	Green	Red	Red	Yellow
<b>Energy Generation Transformation</b>							
Size Impact	Green	Green	Yellow	Yellow	Red	Red	Red
Skills Impact	Green	Yellow	Red	Red	Red	Red	Yellow
<b>Physical / Cyber Security</b>							
Size Impact	Green	Green	Green	Green	Red	Red	Yellow
Skills Impact	Yellow	Yellow	Yellow	Yellow	Red	Red	Red
<b>Customer Expectations</b>							
Size Impact	Green	Green	Green	Green	Red	Red	Yellow
Skills Impact	Yellow	Yellow	Yellow	Yellow	Red	Red	Red
<b>Enabling Technology</b>							
Size Impact	Green	Green	Green	Green	Red	Red	Green
Skills Impact	Yellow	Red	Yellow	Yellow	Red	Red	Yellow
<b>Transitioning Workforce</b>							
Size Impact	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
Skills Impact	Red	Red	Red	Red	Red	Red	Red

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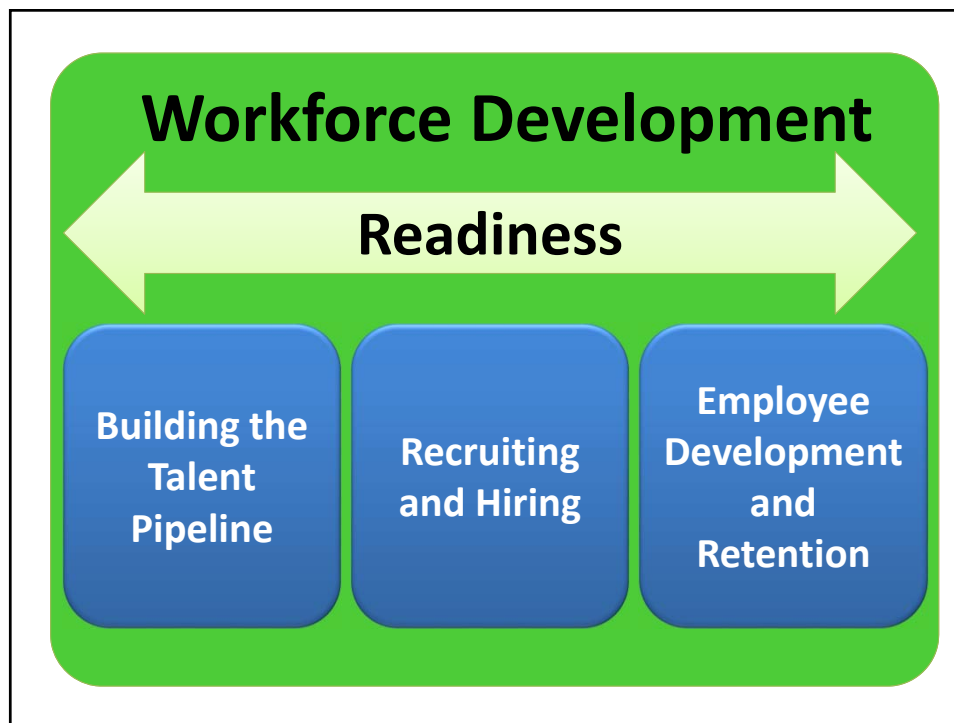
## What Matters Most for Today and the Future

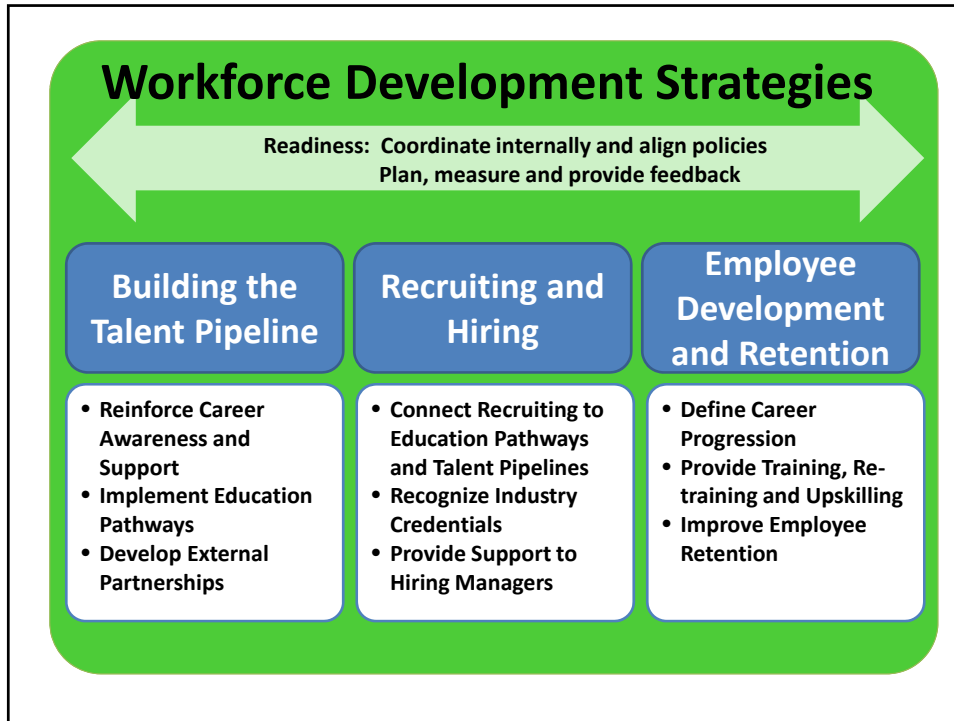


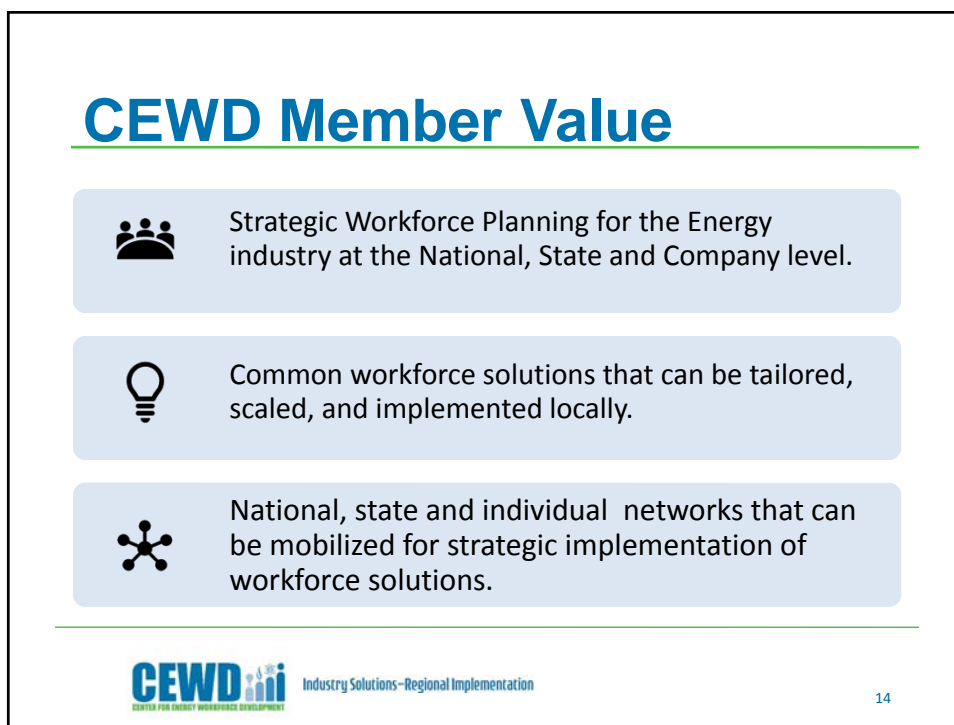
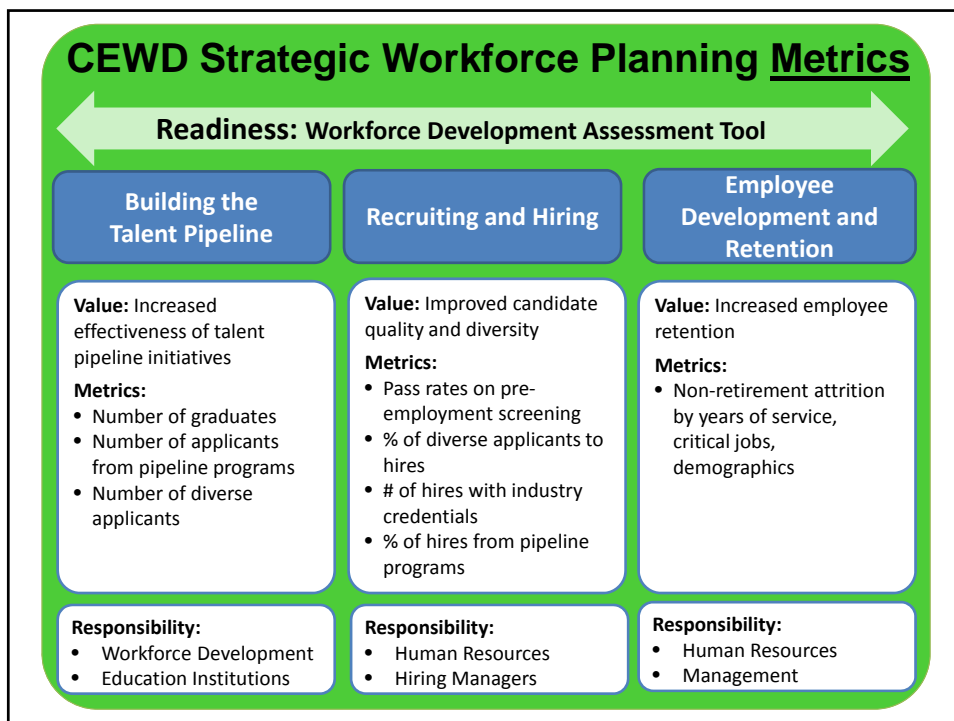
8

## Measuring Progress Task Force

- March 2018 – Board convened task force to determine how the industry can measure progress on workforce initiatives
- November 2018 – results presented and pilot companies were named
- March 2020 – completion of pilots and roll out to membership







## Ten Quick Ways to get more from your CEWD Membership



1. Use the assessment in the Strategic Workforce Planning Wizard to assess the health of your company's Workforce Planning process:  
<http://cewd.org/documents/wizard/documents/Q1-WorkforcePlanningAssessmentTool.docx>

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## Ten Quick Ways to get more from your CEWD Membership



2. Verify that your company's jobs are posted on CEWD's jobs sites, <https://getintoenergy.jobs> and <https://troopstoenergy.jobs>
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## Ten Quick Ways to get more from your CEWD Membership



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## Ten Quick Ways to get more from your CEWD Membership



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9. Attend a CEWD regional meeting and the Annual Summit: <https://cewd.org/events>
10. Join a CEWD Community of Practice: <https://cewd.org/communities-of-practice>

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And a few things that take  
a little longer....

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Links to Related Social Media  
Posts: <https://cewd.org/careers-week-social-media/>



## Careers in Energy Week



**IEEE PES Scholar+**  
@ieeepescholars

PES Scholar Alumni, Ami works at @nationalgridus as an Associate Engineer. She wanted to be challenged, solve problems and make an impact in the world so she decided to get involved in the Power & Energy industry. #CareersInEnergyWeek

2:34 PM · Oct 19, 2018

See IEEE PES Scholar+'s other Tweets



**BGE**  
@MyBGE

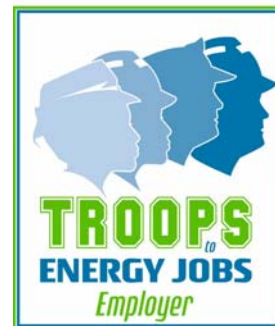
During #CareersInEnergyWeek, participants who work in the energy field share their why #IGotIntoEnergy. BGE is joining in on the fun! Check out the video to hear Khary Clark, Electrical Operations Manager at BGE talk about his prosperous career in energy.

1:26 PM · Oct 19, 2018

See BGE's other Tweets

## Troops to Energy Jobs

- New alliances
- New resources
- Registered veterans and companies
- Troops to Energy Jobs Employers



# Diversity & Inclusion

- Webinar Series
- New alliances - CSMLearn
- New resources
- Integration with EEI's Diversity and Inclusion initiative
- D & I National Template



## Get Into Energy



## Get Into Energy / Get Into STEM



## CEWD



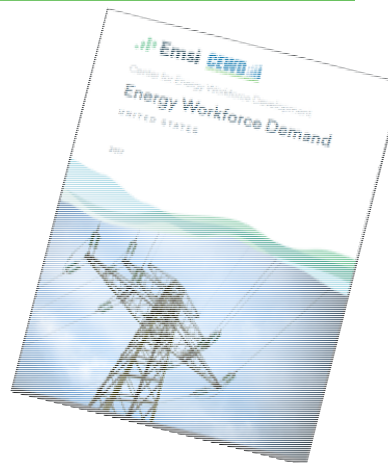
## Troops to Energy Jobs



# Website Updates

## Gaps in the Energy Workforce Survey Resources Changes for 2019

- Non-retirement attrition by demographic breakdown
- Race and gender data at the business unit and job category for Total Headcount and Total Hires
- Data for employees in “all Other” categories.



## Gaps in the Energy Workforce Survey 2019 Schedule

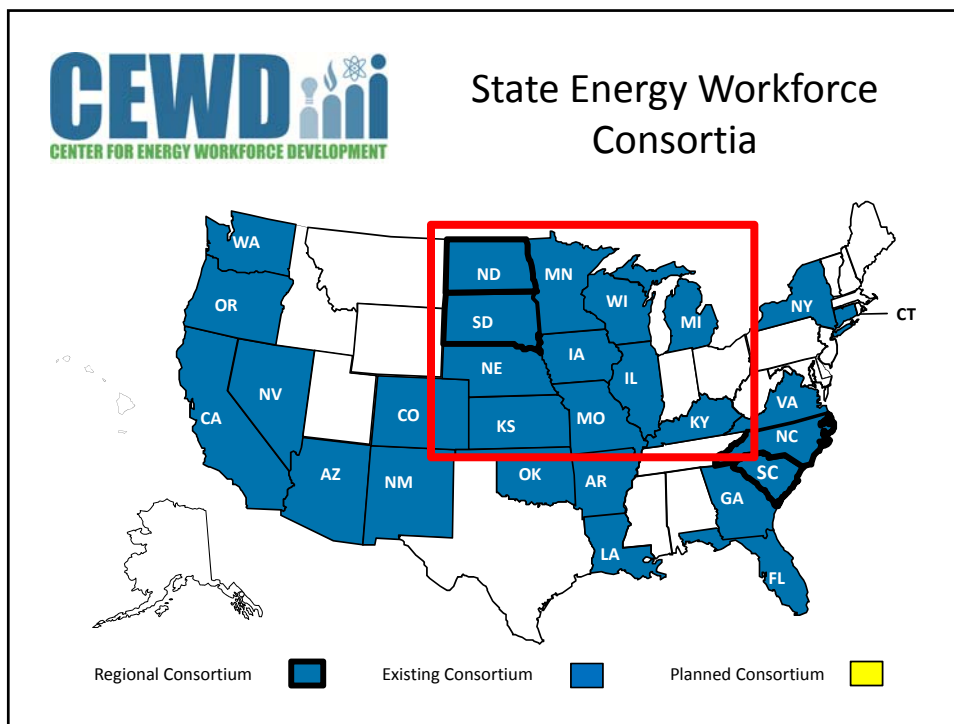
Dates	Activities
December, 2018 – January, 2019	Verify Company Contacts; Mail out survey materials
January, 2019 – April, 2019	Conduct Survey
May, 2019	Data clean up; Prepare nuclear results/slides
June, 2019	Review nuclear results with CNO's
July, 2019 – October, 2019	Analyze survey results; Prepare replacement forecasts; Prepare Demand Reports
November, 2019	Present 2019 Survey results at CEWD Annual Summit
December, 2019	Prepare Survey Executive Summary; Prepare individual company scorecards

# Break



## Region and Consortia Updates

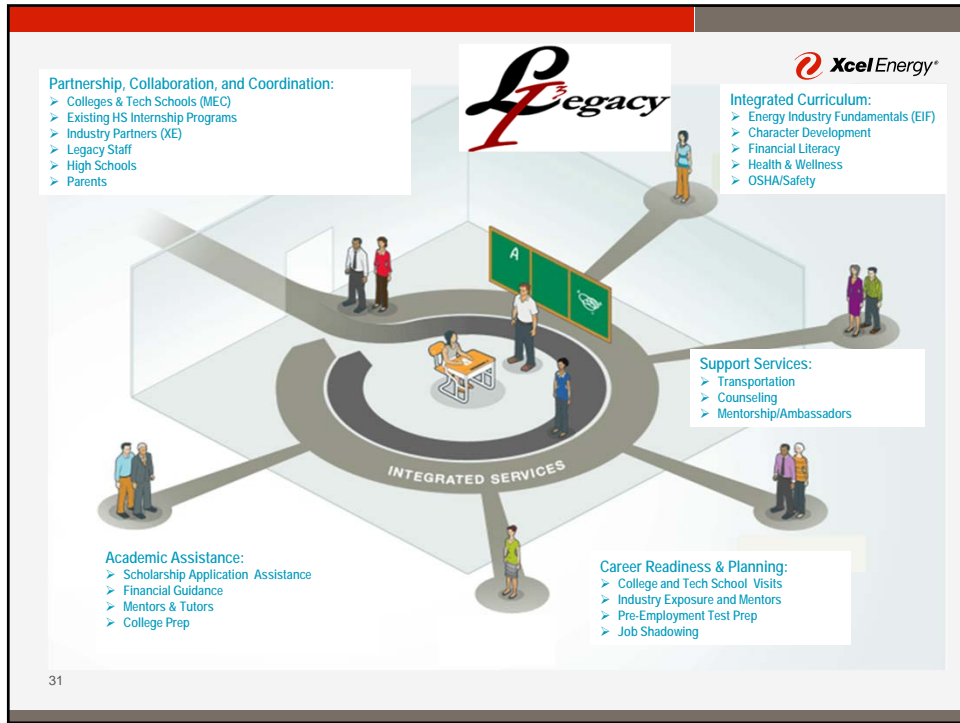
- Gaps
- Successes
- Workforce Trends



## Legacy Program

November 2018

A group of approximately 20 diverse individuals, including students and professionals, are posed for a group photo in an industrial or office setting. They are dressed in casual to business-casual attire.



**Legacy**

**Xcel Energy**

**get into energy MINNESOTA**

2015	2016	2017	2018	2019
<ul style="list-style-type: none"> <li>• Benchmarking trip to APS</li> <li>• XE, MEC, Mpls and St. Paul Public Schools</li> </ul>	<ul style="list-style-type: none"> <li>• Summer pilot</li> <li>• First fall cohort at 4 schools</li> <li>• Energy Ambassador program established</li> </ul>	<ul style="list-style-type: none"> <li>• First interns hired</li> <li>• First cohort to enter Lineworker program</li> <li>• Technical College Engagement</li> <li>• First cohort dropped out of Lineworker program</li> </ul>	<ul style="list-style-type: none"> <li>• Second cohort to enter Lineworker program</li> <li>• More interns hired</li> </ul>	<ul style="list-style-type: none"> <li>• Second cohort to graduate from lineworker program</li> <li>• 3 FTEs</li> <li>• 5 Interns</li> <li>• 3 Contractors</li> </ul>

## Student Stories



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Outreach to K12

## Energy Education for Educators

Four two day workshops held at partner college sites

Heavy focus on evolving industry  
Numerous teaching resources  
Instructional lessons and kits

Tours of industry sites  
Overview of college programs

**2019 E3 Workshops:**  
**Energy Education for Educators**  
Four Opportunities to Attend!

**June 10-11**  
Met Center  
Marshall, MN

**June 12-13**  
In partnership with the Minnesota State Advanced Manufacturing Center of Excellence  
Bemidji State University  
Bemidji, MN

8:30 AM - 4:30 PM  
both days  
at each site.

**June 17-18**  
St. Cloud Technical & Community College  
St. Cloud, MN

**June 19-20**  
In partnership with the Minnesota State Transportation Center of Excellence  
Dakota County Technical and Community College Rosemount, MN

**High School Agriculture, Mathematics, Science, and Technology Education Teachers are encouraged to register for and attend one or more of the Workshops\*.**




[www.getintoenergy.com](http://www.getintoenergy.com)

*Teachers attending E3 will receive for their schools:*  
Classroom Presentations, Curriculum & Lab Kits  
**Also included in the Workshop:**  
Industry tours  
Lunch and snacks both days  
One night's stay at a nearby hotel  
**An opportunity to book the Energy Trailer for your school during the 2019-2020 school year**

**Past Presentations Have Included:**  
Anatomy, Digestion, Biobank, Biomass, Energy, Crops, Hydropower, Nuclear Power Generation, Power Transmission, Solar, Wind, and an introduction to the Energy Trailer.

\*See page two for the topics & tours at each site.  
For additional information, contact  
Rose Pater at [rose.pater@msmnet.edu](mailto:rose.pater@msmnet.edu) or  
Bruce Peterson at [bruce.peterson@msmnet.edu](mailto:bruce.peterson@msmnet.edu)



- Energy Science Trailers

- Each has an eight panel solar array with inverter, battery storage, etc.
- Each trailer is equipped with Solar Pathfinders, SolarLab 1.0, Hydro lab kit, wind lab kits, Kid Wind towers, Kill-A-Watt meters, and Energy Science labs.
- Available to attendees of E3 to have at school for one or two weeks.
- Many STEM and Science Fairs
- Many Career Fairs (mostly regional ...)

# Energy in your classrooms

- One or two days at a school
- Lessons on Solar, Energy Efficiency
- Adding Wind, Hydro and Energy Industry evolution for the coming year
- Teacher provided by Center for these events

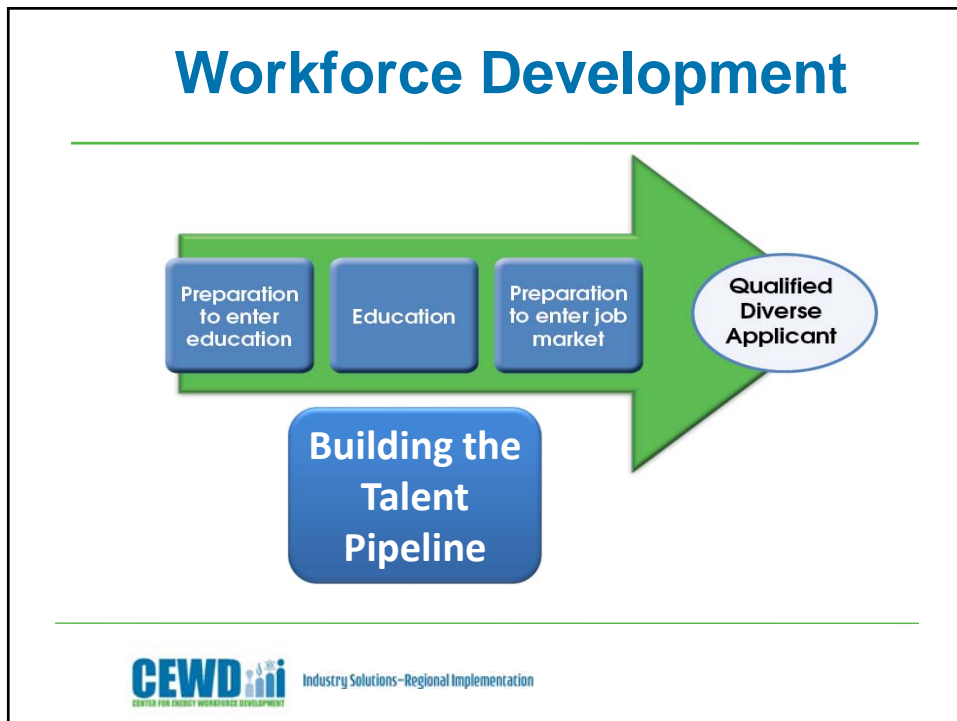
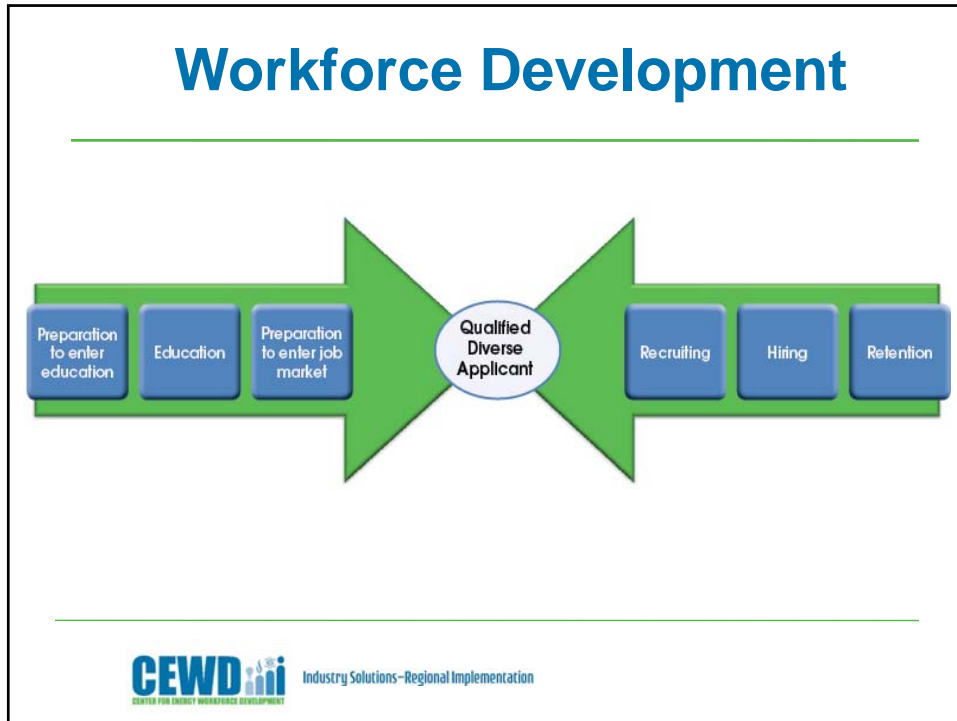


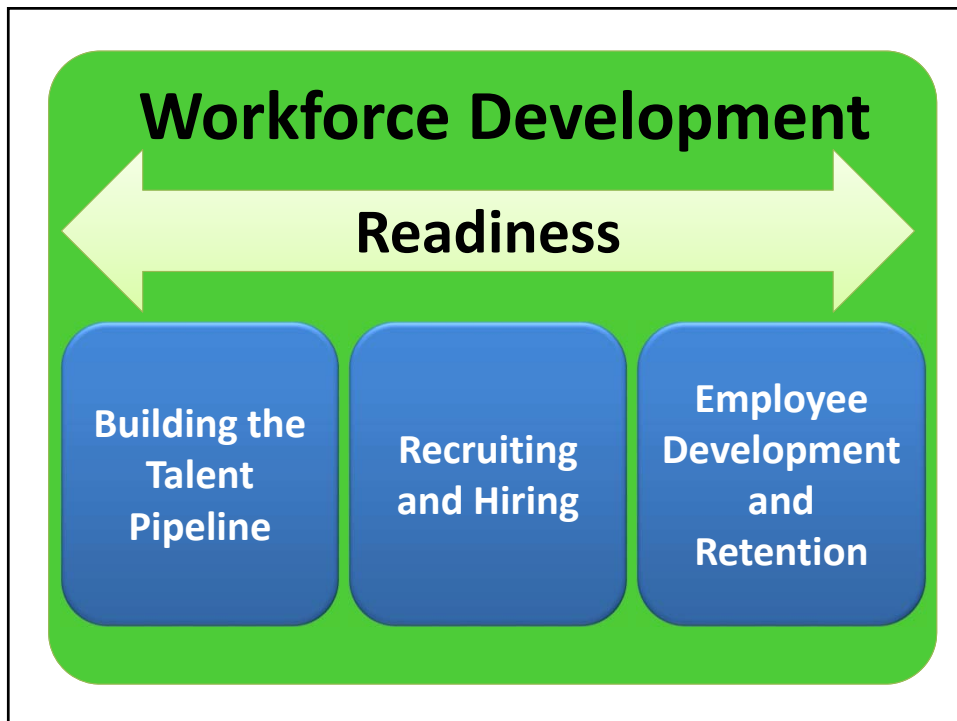
# Lunch

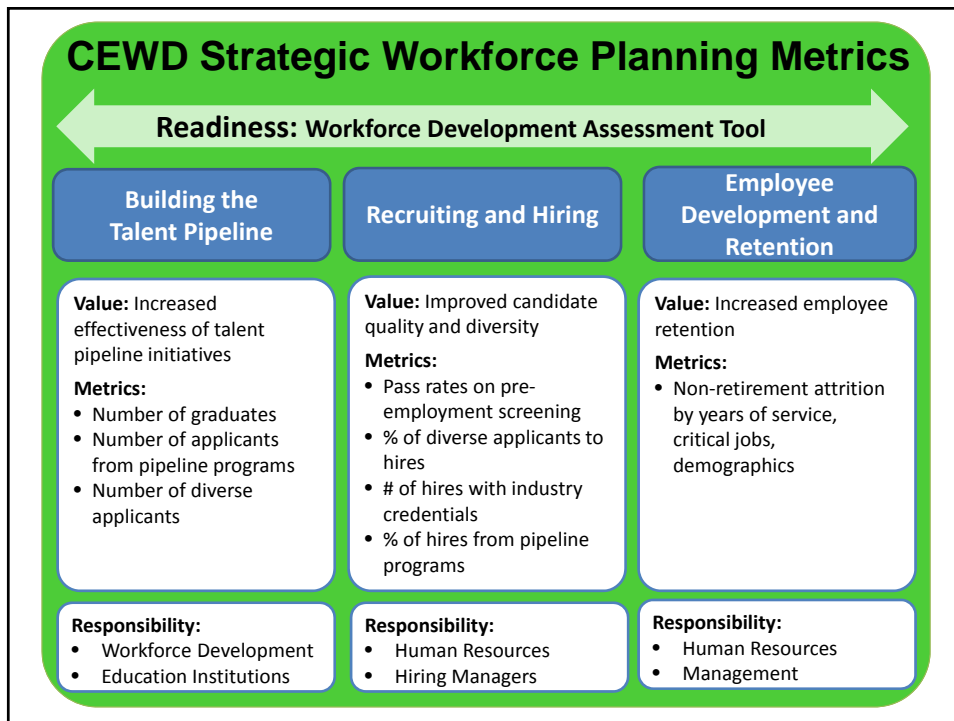
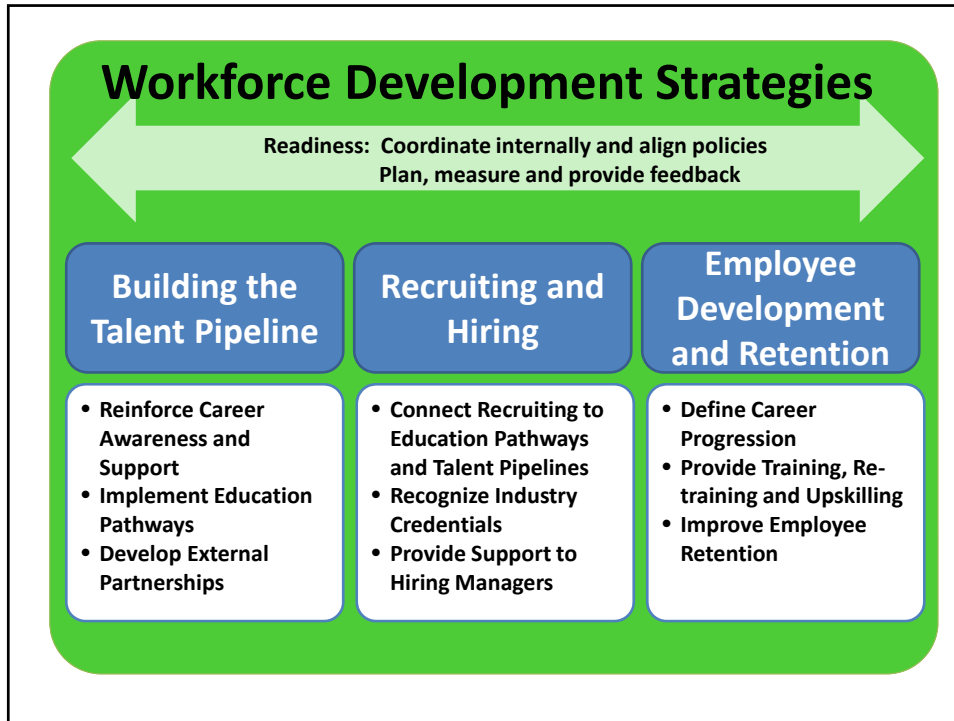


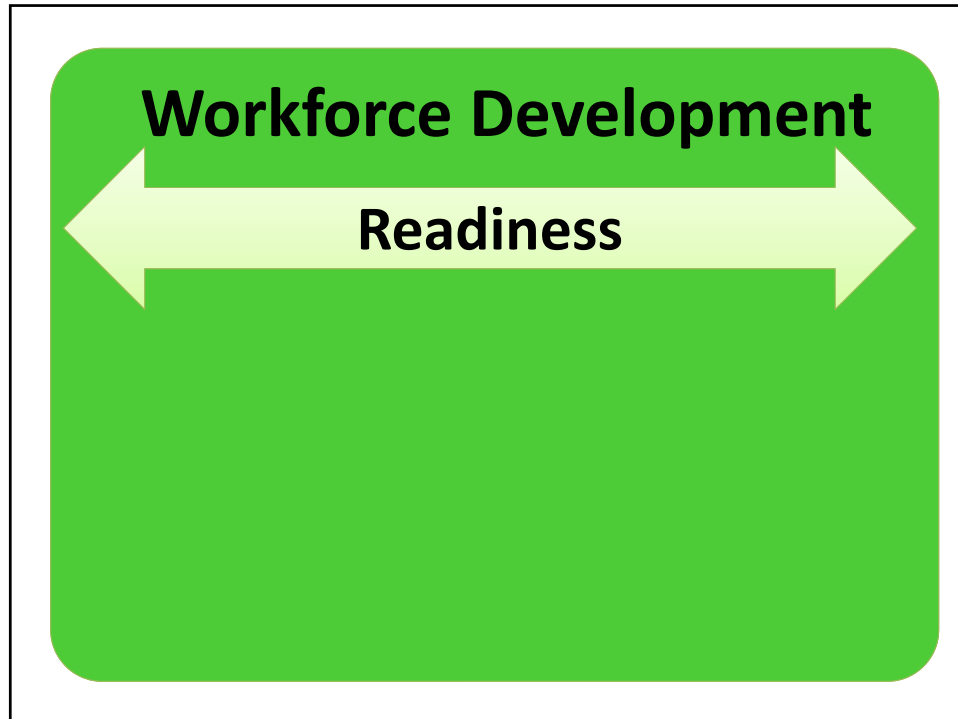
# CEWD Workforce Development Process











## Readiness

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- Strategies:**
- Plan, measure and provide feedback
  - Coordinate internally and align policies

- Measured by:**
- Process Assessment

- Responsibility:**
- Human Resources
  - Workforce Development
  - Hiring Managers
  - Management
  - Support Organizations
-

## What do we know?

### Size of the workforce

#### South Region

	2017 Jobs
Arkansas	6,874
Louisiana	6,872
Oklahoma	11,201
Texas	44,988
Total	69,935

#### Southeast Region

	2017 Jobs
Alabama	13,545
Florida	19,609
Georgia	18,829
Kentucky	6,101
Mississippi	6,404
North Carolina	13,433
South Carolina	11,650
Tennessee	2,919
Total	92,490

Source: CEWD 2017 Gaps in the Energy Workforce Survey



Industry Solutions-Regional Implementation

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## What do we know?

### Size of the Midwest Region workforce

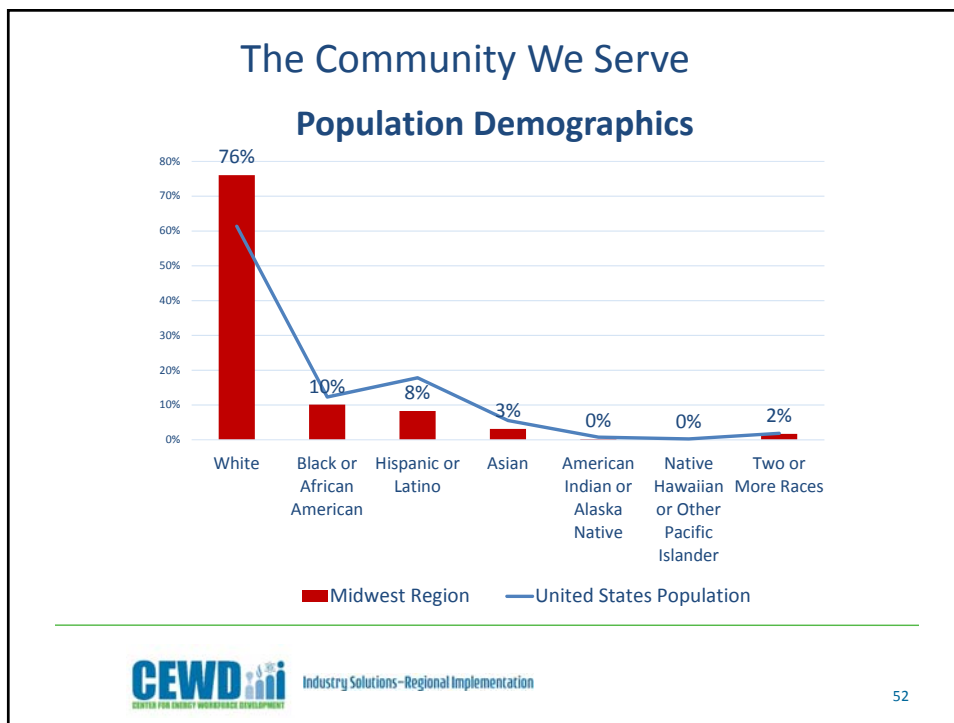
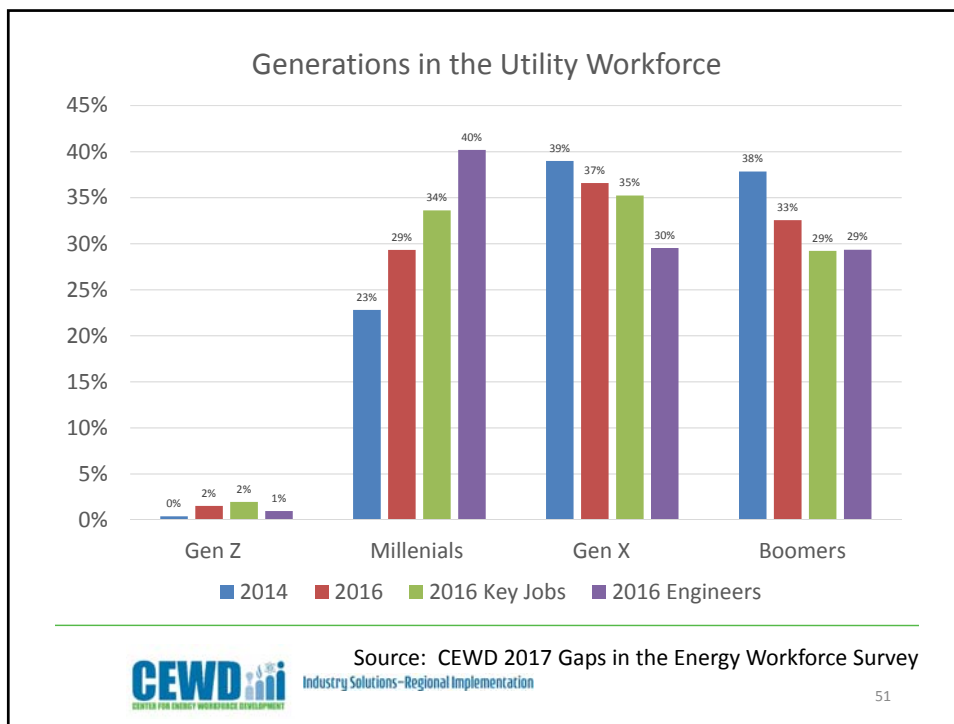
	2017 Jobs
Illinois	23,567
Indiana	12,661
Iowa	5,907
Kansas	6,101
Kentucky	6,101
Michigan	19,684
Minnesota	12,653
Missouri	10,419
Nebraska	940
North Dakota	3,703
Ohio	18,265
South Dakota	1,752
Wisconsin	9,413
Total	131,167

Source: CEWD 2017 Gaps in the Energy Workforce Survey



Industry Solutions-Regional Implementation

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## Readiness

- What are the Game Changers for this Region? For your state?
- How have you aligned your HR and Company Policies with your strategic workforce priorities?
- How do you coordinate workforce priorities across the organization?
- What metrics do you use for each stage of Workforce Development?



Industry Solutions-Regional Implementation

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## CEWD Resources for Readiness

- 
- Strategic Workforce Planning Process
  - Gaps in the Energy Workforce Survey and Demand Planning
  - New - Contractor Demand Resource Guide
  - Critical Job Assessment Tool
  - Measuring Progress Assessments and tools

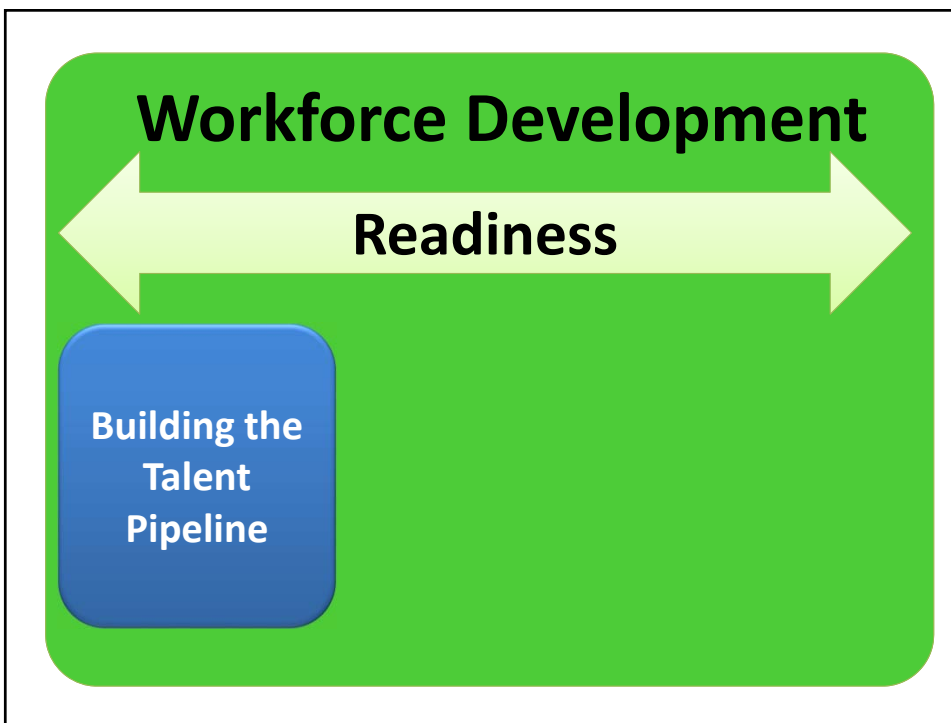
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# CEWD Tools and Resources

The collage features three main documents:

- Essential Elements of Strategic Workforce Planning:** A document with a circular diagram showing four key areas: **Strategic Alignment**, **Workforce Analysis**, **Workforce Planning**, and **Workforce Development**. It includes text explaining the importance of workforce planning in a competitive market.
- Workforce Planning Assessment Tool:** A checklist-style tool with a table at the top for tracking scores. The table has columns for 'No Action', 'Little Action', 'Some Action', 'Good Action', and 'Very Good Action'. Below the table are 15 numbered questions assessing organizational readiness, such as 'Does the organization have a business plan...' and 'Does the organization have a dashboard on program results?'
- Workforce Development:** A document with a green header and a table detailing various workforce development programs and their goals.

At the bottom left is the **CEWD** logo (Center for Energy Workforce Development) and the text **Industry Solutions-Regional Implementation**. At the bottom right is the page number **55**.



## Building the Talent Pipeline

- Strategies:**
- Provide targeted Career Awareness and Support
  - Implement Education Pathways
  - Develop External Partnerships

- Measured by:**
- Number of graduates
  - Number of applicants from pipeline programs
  - Number of diverse applicants

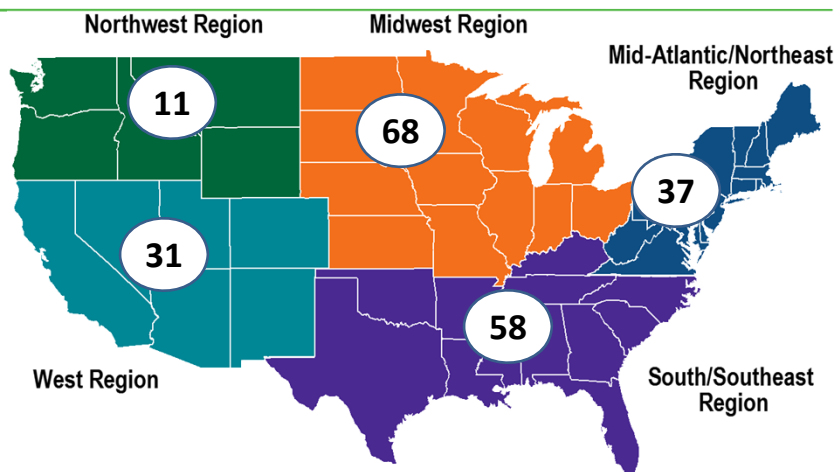
- Responsibility:**
- Workforce Development
  - Education Partners



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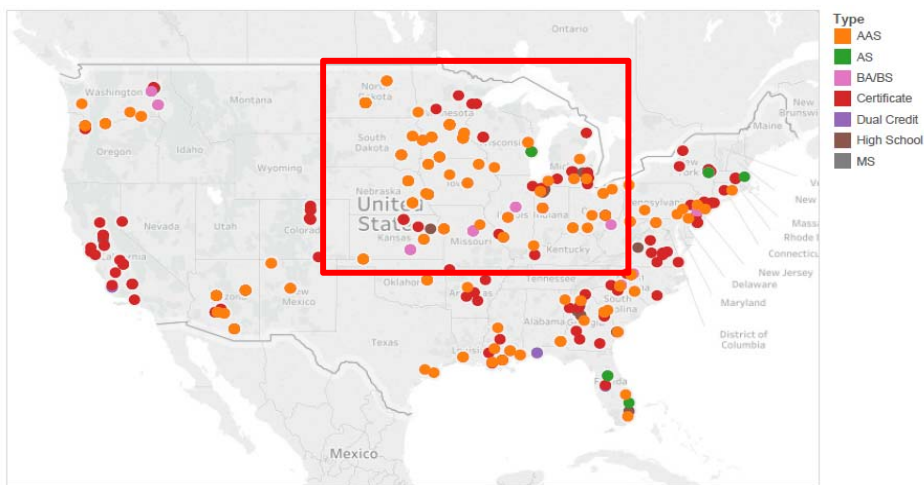
57

## Where are the NEEN Schools?



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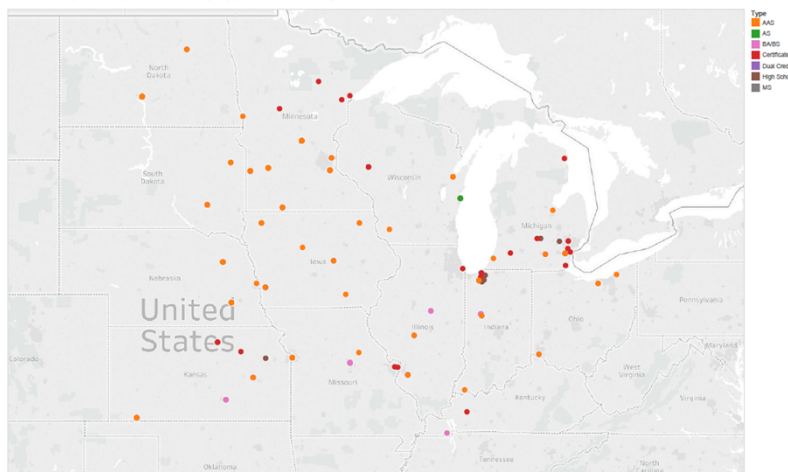
## National Energy Education Network



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## National Energy Education Network Midwest Regions

NEEN Map-Worthy Educators; by Type; Midwest Region

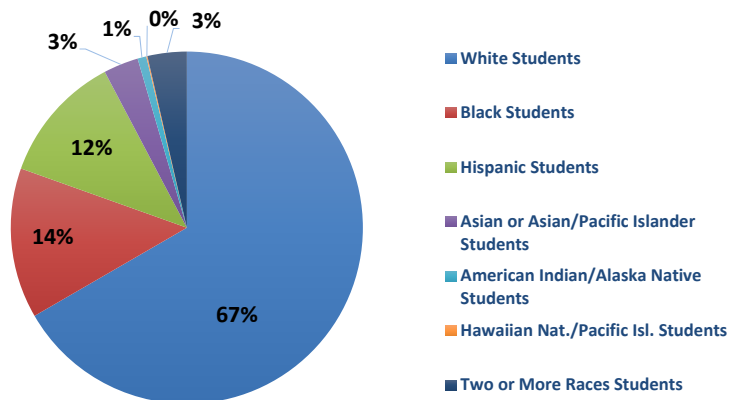


Map based on Longitude (generated) and Latitude (generated). Color shows details about Type. Details are shown for mapping zip code, Education Institution and Program. The data is filtered on Category, Format, Region and GE\_map. The Category filter keeps 9 of 9 members. The Format filter keeps Null, Blended, Instructor Led and Online. The Region filter keeps Midwest. The GE\_map filter keeps 1.

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# Student Pipeline

## Midwest Region K-12 Student Population



Data from National Center for Education Statistics - <http://nces.ed.gov/ccd/elsi/>

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# Typical Community College Student

## GENDER<sup>2</sup>



## DEMOGRAPHICS OF STUDENTS ENROLLED FOR CREDIT<sup>2</sup>

HISPANIC.....	24%
BLACK .....	13%
WHITE.....	47%
ASIAN/PACIFIC ISLANDER.....	6%
NATIVE AMERICAN ....	1%
2 OR MORE RACES.....	3%
OTHER/UNKNOWN....	4%
NONRESIDENT ALIEN.....	2%

From AACC Fast Facts, February 2018

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## Building the Talent Pipeline

- What career awareness initiatives is your company engaged in?
- What demographics do you target?
- What skill building and work based learning opportunities does your company provide?
- How does your company communicate energy education pathways?
- Is there a sufficient supply in your state for critical jobs?
- Do you know the supply from NEEN schools?



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## CEWD Resources for Building the Talent Pool



ABOUT US ▾ NEWS ▾ EVENTS ▾ JOIN ▾ MEMBERS ONLY ▾

CAREER AWARENESS ▾ EDUCATION ▾ WORKFORCE PLANNING ▾ STRUCTURE AND SUPPORT ▾ NATIONAL TEMPLATES ▾ GETTING STARTED ▾

- Career Awareness resources
- Curriculum
- NEEN
- State Energy Workforce Consortia
- Registration sites
- GIE Pathway Model
- Communities of Practice

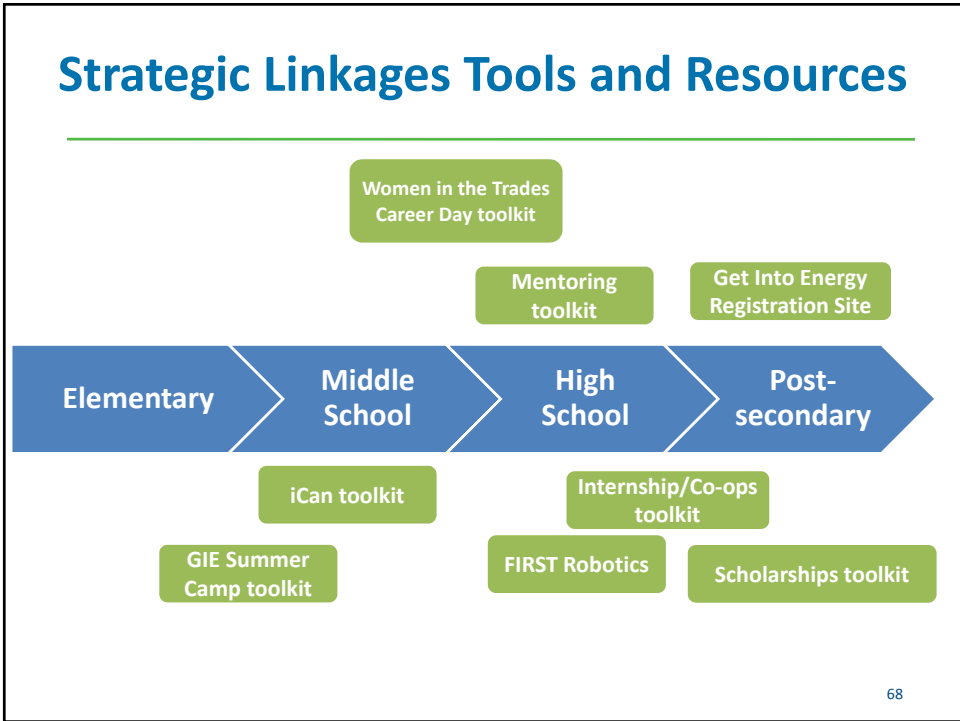
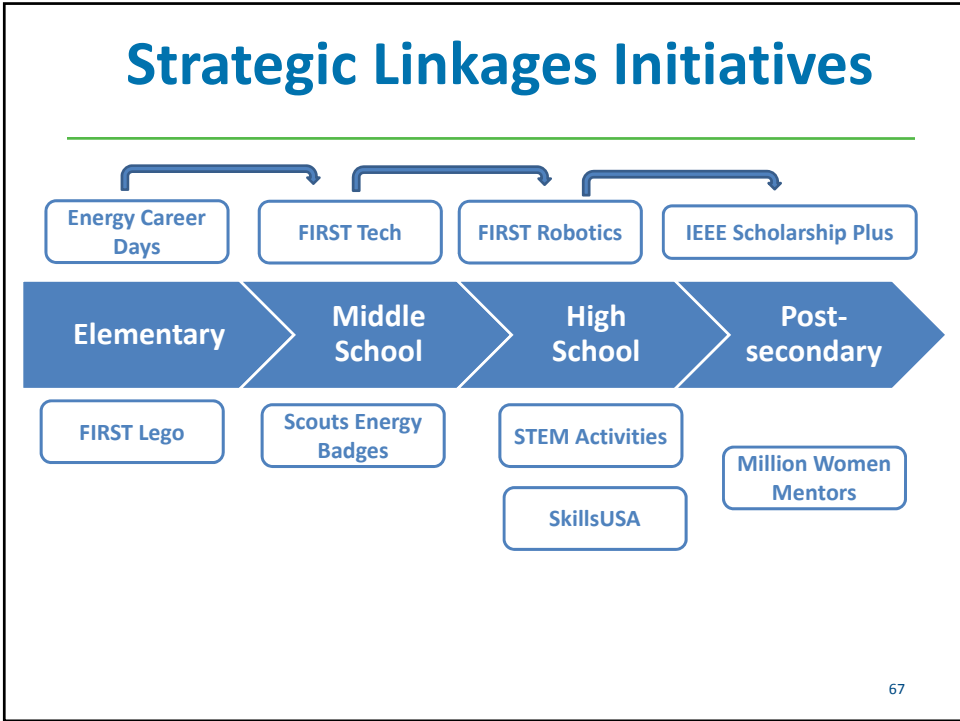
64

# Strategic Linkages




# Career Awareness







# CEWD Curriculum




Fundamentals of Energy




CEWD  
ENERGY INDUSTRY CREDENTIAL



NATURAL GAS BOOT CAMP



Trouble to Energy Jobs  
WORK READY BOOTCAMP



WISE Pathways  
Women in Sustainable Employment

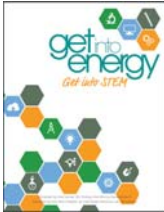
In partnership with NEF

Elementary


Middle School

High School


Post-secondary




get into energy  
Get into STEM



Energy Career Academy



get into energy  
Test Prep Workshop



Energy Industry Fundamentals  
CERTIFICATE


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# Coming soon

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## Get Into Energy – Get Into STEM Registration Site

Designed to connect members with students who are participating in company sponsored initiatives.



get into energy  
Get into STEM

---



CEWD  
CENTER FOR ENERGY WORKFORCE DEVELOPMENT

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# We Energies Work Based Learning Programs

March 18, 2019



## Scope of concern

- Specific Occupations
  - Electric Operations
    - Troubleshooters
    - Line Mechanics
    - Designers
  - Gas Operations
    - Distribution Worker
    - Service Fitter
- Area of Concern
  - Greater Milwaukee Area



## The Issue

- Inability to retain experienced/qualified employees in the Milwaukee Area
  - Delayed Emergency/Customer Response
    - Volume per responder
    - Less fully qualified responders – additional responders
  - Increased cost of doing business
    - Employee training ground under less than ideal situations
  - More safety related incidents
    - Personal safety
    - “Unique” driving environment (Volume, “technique”, etc.)
    - Theft
  - Employee frustration/dissatisfaction
    - Acknowledge situation – it is different
    - Attrition



## Why are people leaving/won't come “I can go outside the city and make the same money!”

- High volume/Workload
  - 24/7 response - hazards
  - Complex “city” systems
  - High density facilities – congestion
  - Challenging access due to neighborhood density
  - City prosperity/revitalization
- Customer Expectations
  - Network/Influence
- Lack of fully trained staff
  - High turnover – entry positions
- City Experience
  - Witness drug deals/shootings/robberies/fights/etc.
  - Exposed to homes in disarray/unsafe/unsanitary
- Customer Harassment
  - Swearing and disrespect
  - Accosted by teens
- Personal safety
  - Theft of tools/equipment/personal items
  - High crime (violent/theft) neighborhoods
    - Frequent gunfire



## Recruiting

- External Recruiting Issues – Line Mechanics
  - Recruitment within the City of Milwaukee
  - “City kids” not exposed to the work, tools or machinery
  - Driver licenses and company testing is the biggest hurdle for “City” recruit
  - Approximately 85% of hires come from outside Milwaukee County
  - Closest Line School is located in Mequon, WI
    - Up to a 1.5 hour bus trip from the city



## Work Based Learning Programs

In partnership with MPS, MATC & IBEW L2150

- Design Youth Apprenticeship
  - Preparing students for the opportunity to become a designer for the gas and electric distribution system
    - The Designer occupation includes a four year apprenticeship at We Energies
      - Requires 2 year Associate Degree
      - Represented by IBEW L2150
- Field Worker Internship
  - Primarily preparing students to become Line Mechanics at We Energies
    - Also provides exposure to other occupations including:
      - Milwaukee Underground Cable Splicer
      - Equipment Operator
      - Gas Distribution Worker



## Design Youth Apprenticeship

### Requirements

- Wisconsin DWD STEM Youth Apprenticeship
  - Core skills, safety and specific pathway (Civil Engineering)
  - Minimum of 900 hours of work-based learning
  - Work all summer & up to 15 hours per week during their senior year in high school
- Must be available for the 2 week orientation at the beginning of summer



## Design Youth Apprenticeship

### Student recruitment

- Open house during Careers in Energy Week
- “Meet & Greet” in February
  - Career & Technical Education (CTE) month
    - Hosted the kick off with MPS/DPI/DWD/MATC
      - Superintendent Dr. Posley, MPS,
      - Superintendent Carolyn Stanford Taylor, DPI
      - Secretary Caleb Frostman DWD
      - President Dr. Vicki Martin MATC
      - Lt. Governor Barnes
  - Learn about We Energies, Design Occupation, Design Youth Apprenticeship
    - Shadow Designers/Design Youth Apprentices
    - Speed interviews



## Design Youth Apprenticeship

### Student recruitment (cont.)

- Formal Interviews
- Selection
  - Youth Apprenticeship Application
  - Interview results
  - Academics (classes/grades)
  - Attendance
  - Teacher recommendations
- Currently in the selection process for this year's class
  - Hiring 3 – 4 students



## Design Youth Apprenticeship

### Last Year's Class

- 7 of 8 still remain in the program
- Through our partnership with MATC
  - Currently enrolled at MATC in an English course
  - On track to receive an additional 6 – 9 college credits for prior learning through their We Energies classes and work
- After summer employment
  - Will apply for “Pre Designer” position created with support from IBEW L2150
    - Four years to acquire the needed credits to qualify for Designer (Apprentice) position
    - Will be slotted into the Apprenticeship



## Field Worker Internship

No correlated pathway in the DWD Youth Apprenticeship

### Recruitment

- Speak at School Assembly
- Hold a Demonstration Day at the training center
  - Six hands-on stations
- Conduct Interviews

### Selection

- Interview results
- Academics (classes/grades)
- Attendance
- Teacher recommendations



## Field Worker Internship

16 students in the program

- Hold 5 one day familiarization classes during school year
  - During junior year
    - Safety/Work Rules
    - Employment expectations
    - Basic Electricity including materials
    - Milwaukee Judge – Drug/Alcohol/Driver's License
    - Basic Line Mechanic/URD activities
  - During senior year
    - Focus on *Cableman's Handbook* & Line skills (climbing, etc.)
- Students get 10 additional days of training prior to working with a crew



## Field Worker Internship

### Current State

- New class of 10 juniors and 5 returning seniors started training in January
- Started with 16 students last year
  - 2 students dropped out before the end of the school year
  - 2 were released from the program over the summer
  - 3 were not asked to return after summer employment
  - 2 declined to return as they will be going to college
  - 2 declined to return due to the type of work
- At the end of their Senior year summer employment
  - Test and hire as Line Mechanic Apprentice
  - Sponsor student into a Line School
  - Hire into the another workgroup
  - End relationship



## Work Based Learning Programs

### Common to both programs

- Continuing support from MPS administration and coordinators
- Required parent involvement
  - Introductory Parent meeting – signed agreement
  - Throughout the program, a parent will be invited in to address an issue (typically related to home life)
- Mentor Program
  - Design students – related to work they are doing
  - Field students – more focused on life mentoring



**Questions?**



**Workforce Development**

**Readiness**

**Building the  
Talent  
Pipeline**

**Recruiting  
and Hiring**

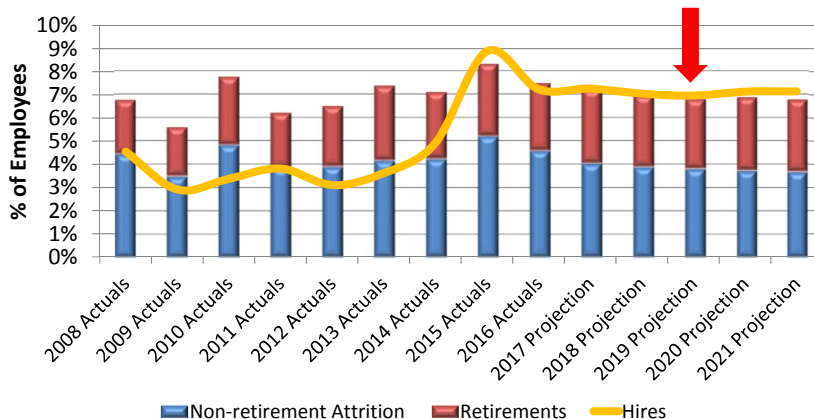
## Recruiting and Hiring

- Strategies:**
- Connect Recruiting to Education Pathways and Talent Pipelines
  - Recognize Industry Credentials
  - Provide Support to Hiring Managers

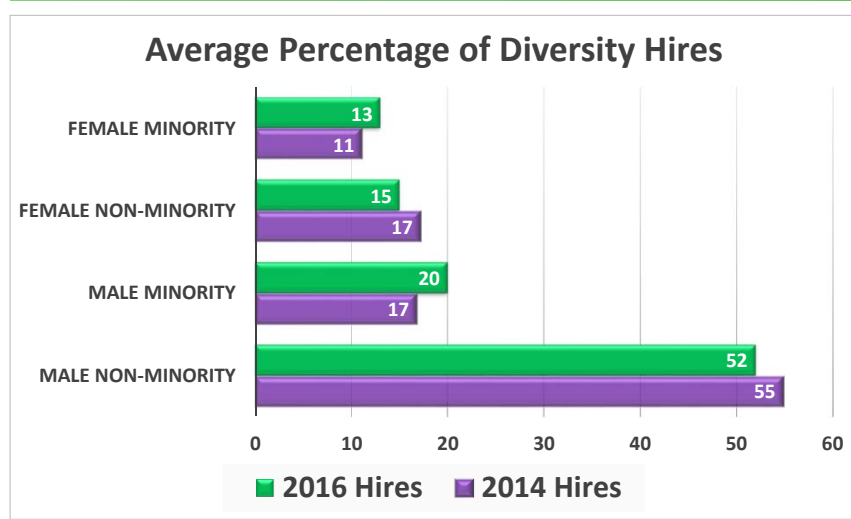
- Measured by:**
- Pass rates on pre-employment screening
  - Percent of diverse applicants to hires
  - Number of hires with industry credentials
  - Percent of hires from pipeline programs

- Responsibility:**
- Human Resources
  - Hiring Managers

## Total Attrition vs Total Hires Total Company

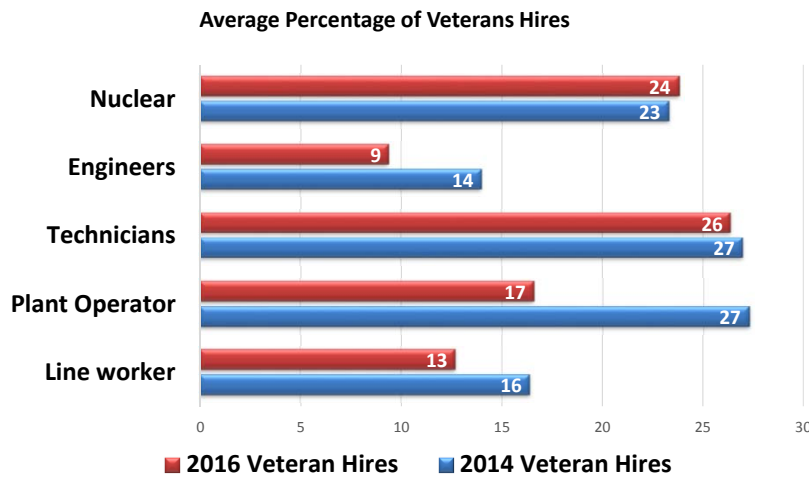


## Diversity Hires (Respondents Only)



Preliminary – Not for Distribution

## Investor Owned Utility Veteran Hires (Respondents Only)



Preliminary – Not for Distribution

## Recruiting and Hiring

- How do you connect your recruiters to talent pipeline efforts and to workforce priorities?
- What is the role of Workforce Development in recruiting?
- Are your pipelines providing adequate diversity?
- What credentials do you recognize from pipeline initiatives?
- How are your hiring managers engaged in workforce development?
- How do your ERGs support recruiting and hiring efforts?



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## CEWD Resources for Recruiting and Hiring



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CAREER AWARENESS ▾ EDUCATION ▾ WORKFORCE PLANNING ▾ STRUCTURE AND SUPPORT ▾ NATIONAL TEMPLATES ▾ GETTING STARTED ▾

- Job posting sites for GIE and Troops
- Troops to Energy Jobs Veteran Data Base
- GIE NEEN Registration Site
- GIE Test Prep
- Veteran Resources for Hiring Managers
- D & I National Template and Resources

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## GIE Test Prep

- Approximately 20-25 hours in length (dependent on which pre-employment test is the focus).
- Completed 2-3 weeks in advance of the testing date.
- Utilizes print-ready instructor and student guides, saving companies time and money.
- Modular: Can be taught bootcamp-style or over a longer period of time.
- Can help increase candidate pass rates, when candidates are screened, and the program is implemented according to best practices.
- Great to use with education partners, such as community colleges that offer energy degree programs, certificates or bootcamps or community-based organizations that are preparing transitioning adults for energy careers.



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MEWDC  
get into  
energy  
MICHIGAN  
MICHIGAN ENERGY WORKFORCE  
DEVELOPMENT CONSORTIUM



**Consumers Energy**  
Count on Us®

## Industry and Education- What's New?

**Amber Fogarty, Energy Talent Pipeline Specialist**

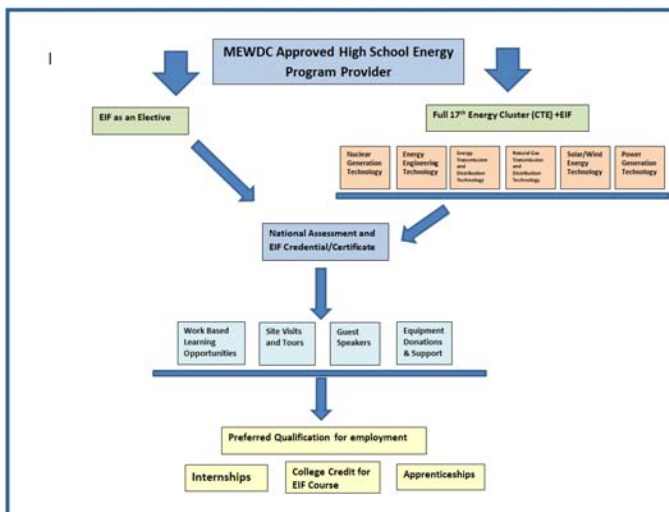






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# Energy Industry Fundamentals



# Partnering Schools



- Oakland County CTE (x2)
- Hartland HS
- Holt HS (P4A)
- Boyne City HS
- Jackson Northwest HS
- St. Clair RESA (Fall 2019)
- Jackson College
- MIAT
- Lansing Community College
- Alpena Community College
- Henry Ford Community College



## Tracking the Results



- EIF Completers- HS and CC
- LCC/ACC Lineworker Programs
- Where do they go next?
- How many are hired?
- If hired, in what role?



## Workforce Development

Readiness

Building the  
Talent  
Pipeline

Recruiting  
and Hiring

Employee  
Development  
and  
Retention

## Employee Development and Retention

- Strategies:**
- Define Career Progression
  - Provide Training, Re-training and Upskilling
  - Improve Employee Retention

- Measured by:**
- Non-retirement attrition by years of service, critical jobs, demographics

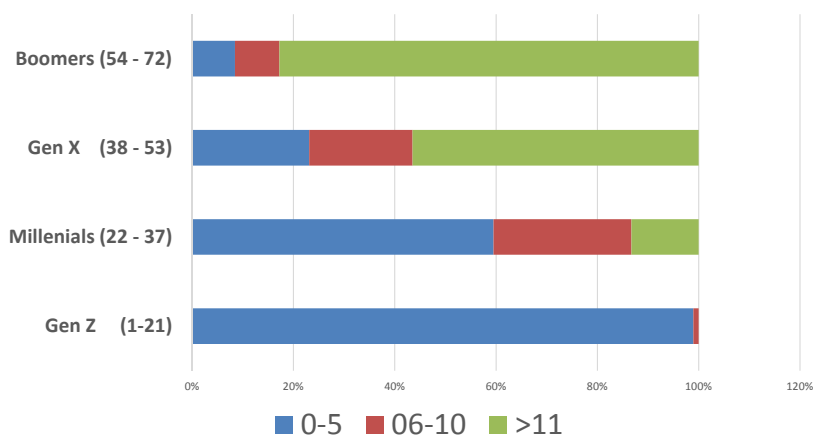
- Responsibility:**
- Human Resources
  - Management



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## Generations in the 2016 Utility Workforce by Years of Service




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## CEWD Resources for Employee Development and Retention




- Career Roadmaps
- Technical Training convening and community of practice
- Employee Resource Group toolkit
- Knowledge Transfer and Retention process and wizard
- Employee Retention guide
- Communities of Practice

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## KT&R Wizard

- Step by step process
- Tools, Resources, and Best Practices for each section
- Found in Strategic Workforce Planning template (Quadrant 3, step 8)



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## Who We Are – Part I

### Who we are

673,200 Customers

- 403,600 electric
- 269,600 natural gas

Total owned generation

- MT – 412 MW – regulated (includes 150 MW (regulation services))
- SD – 376 MW (baseload) – regulated

Approximately 123,000 square miles of service territory in Montana, South Dakota and Nebraska

**NorthWestern Energy**  
Delivering a Bright Future




## Drivers of Knowledge Transfer

**NorthWestern Energy**  
Delivering a Bright Future

Toolkit Components	Socialization Process
Master Process Description	Posted in Mangers Toolbox
Retirement Planning Discussion	Announcement to All Supervisors
Interview Guide	HRG Meetings with Client Groups
Transfer Plan Document	Periodic Reminders to HRGs + Client Groups



# Break

10  
8

# Diversity and Inclusion National Template

**Assess Your Company's DBI Approach**  
Use CEWD's Diversity & Inclusion Assessment Tool to see how your company compares!

**Diversity & Inclusion Readiness**  
What are the critical elements for change that will drive DBI success?

**Where's the Problem Occurring in Connecting to a Diverse, Qualified Workforce?**  
Find out where your company's gap(s) might be.

**What Can We Do About It?**  
See how to address your company's gap(s) and strategically link workforce development strategies.



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<https://cewd.org/diversity-inclusion-national-template/>

10  
9

## Where are you now?

**Diversity and Inclusion Assessment Tool**

**Diversity and Inclusion Assessment Tool**  
Fill out the interactive tool below or download a printable PDF version.

**Things:**  
 No Effect  
 Little Effect  
 Some Effect  
 Great Effect  
 Very Great Effect

**Where are we now?**  
 No company has a clear approach for diversity and inclusion with clear strategies.  
 All diversity and inclusion strategies are implemented.  
 No company has a clearly defined set of roles.  
 All diversity and inclusion strategies are implemented.




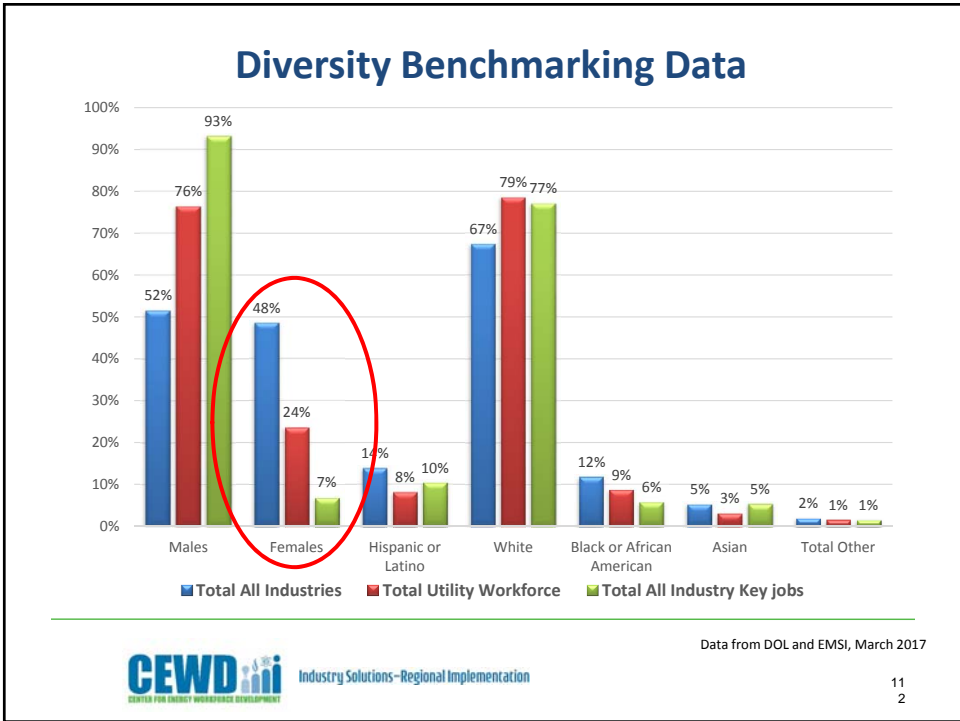
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## Readiness Critical Elements for Change

- **Leadership** to articulate the vision for diversity and inclusion, and to reinforce at every level of the organization.
- **Communication** to clearly convey the vision, gaps, plan and accountability.
- **Data Driven Management** to measure, provide feedback and reward progress in diversity efforts.

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## Readiness – Measuring Progress

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Example for female engineers:

- How many female engineers do you currently employ?
  - What's the percentage of the total engineering population?
  - What is your goal for increasing female engineers in your company?
- 



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## Diversity and Inclusion

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How many female engineers  
would you have to hire to  
increase your overall  
population by 1%?

---



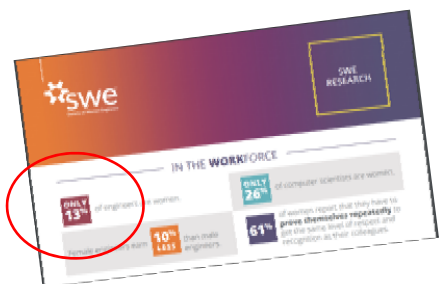
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### How many female engineers do you have now?

	Total	Male	Female	% Male	% Female
2016 Engineers	39,547	34,406	5,141	87%	13%



We don't know our percentage of female engineers so we are using the percentage from SWE.

### How many female engineers did you hire?

	Total	Male	Female	% Male	% Female
2016 Engineers	39,547	34,406	5,141	87%	13%
2017 Hires	2,847	2,050	797	72%	28%

Remember the 28% Female hires from the Recruiting and Hiring section?

We don't know if that's the percentage for Engineers, but are using it because we don't have the detail for engineering.

## What is the change?

	Total	Male	Female	% Male	% Female
2016 Engineers	39,547	34,406	5,141	87%	13%
2017 Hires	2,847	2,050	797	72%	28%
Change	42,394	36,456	5,938	86%	14%

If there is no attrition, then the population increases by 1%



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11  
7

## Step 3: How many female engineers left?

	Total	Male	Female	% Male	% Female
2016 Engineers	39,547	34,406	5,141	87%	13%
2017 Hires	2,847	2,050	797	72%	28%
Non-retirement attrition	1,962	1,707	255	87%	13%
Retirement attrition	1,091	950	142	87%	13%
2017 Estimate	39,341	33,800	5,541	86%	14%

Because we don't know, assume same levels for male / female

- 4.9% for non-retirement
- 2.7% for retirement attrition

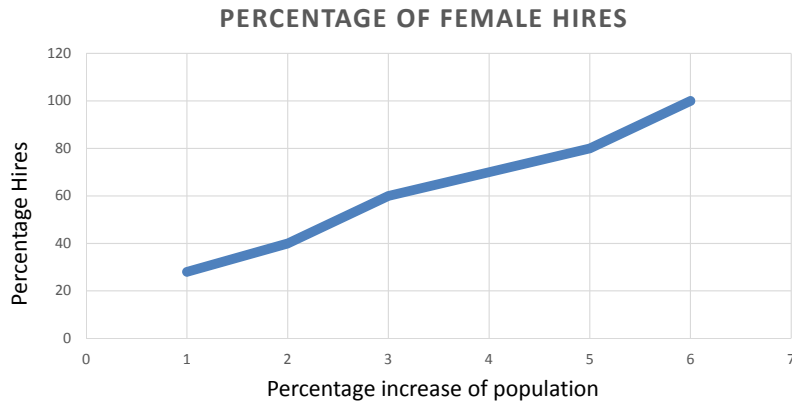
From 2017 Gaps Survey



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11  
8

## What if all engineer hires were female?



**Assuming men and women leave engineering at the same rate.**



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## What is the actual rate of attrition?

### SWE Research

Only 30% of women who earn bachelor's degrees in engineering are still working in engineering 20 years later.

What is the rate at your company?

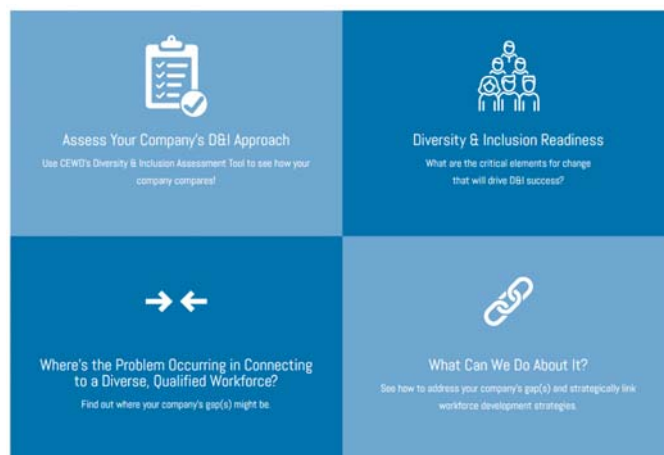
Why do they leave?



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## Diversity and Inclusion National Template



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<https://cewd.org/diversity-inclusion-national-template/>

12  
1



### Closing Gap 1 Building the Talent Pool

Strategies to  
build diversity into every  
step of the energy  
education pathway

- ✓ Start Early
- ✓ Keep up the Momentum
- ✓ Support in Post-secondary
- ✓ Stay Connected





## Closing Gap 2

### Strategies to Align Talent Acquisition and Sources

- ✓ Embed analytics
- ✓ Set Expectations
- ✓ Source Strategically
- ✓ Increase hires



## Closing Gap 3

### Strategies to Retain Diverse Talent

- ✓ Give leadership a voice
- ✓ Create environment
- ✓ Ensure progression
- ✓ Analyze retention



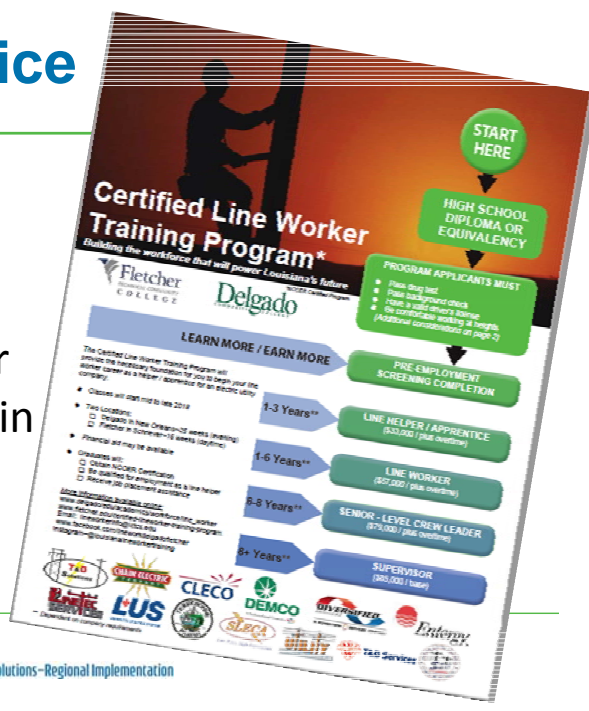
## Making Progress on Diversity and Inclusion

- ✓ Treat Diversity and Inclusion as a **strategic imperative** with Leadership, Communication, and Data Driven Management supports in place
- ✓ **Identify gaps** in the production cycle for building and keeping a diverse workforce.
- ✓ Implement initiatives that are **strategically linked** to workforce development efforts.
- ✓ **Track progress** and continually improve results with data and feedback in every step of the process.



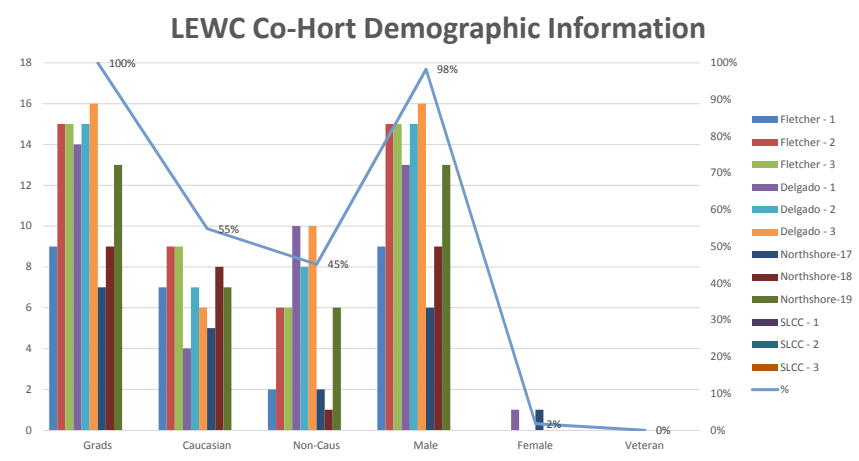
## Best Practice

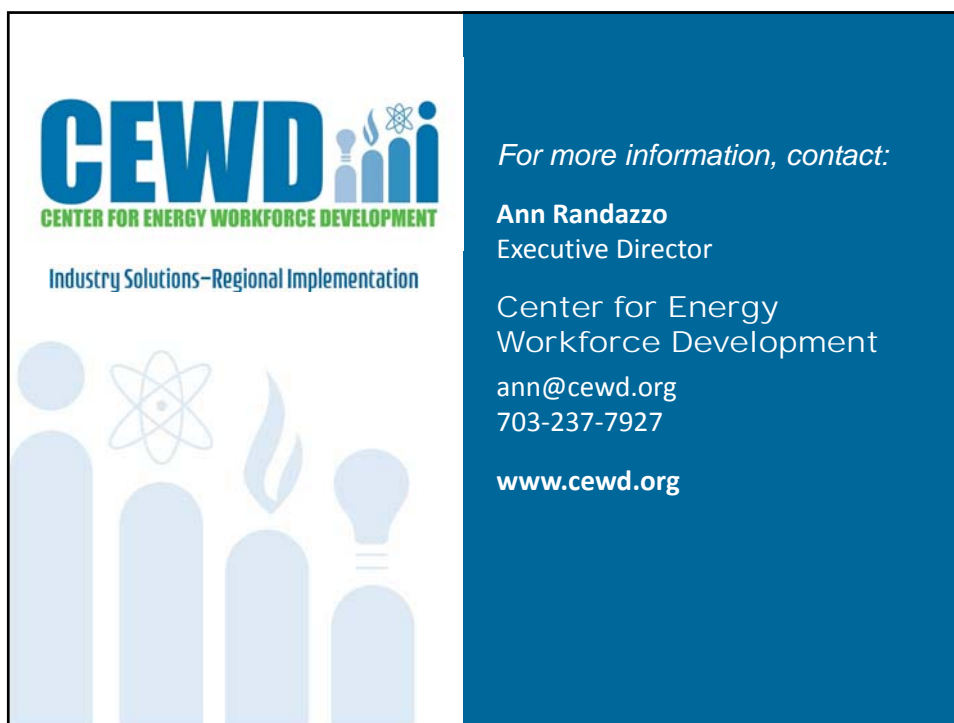
Building an Energy Education Pathway for Lineworkers in Louisiana





## What does making progress look like?





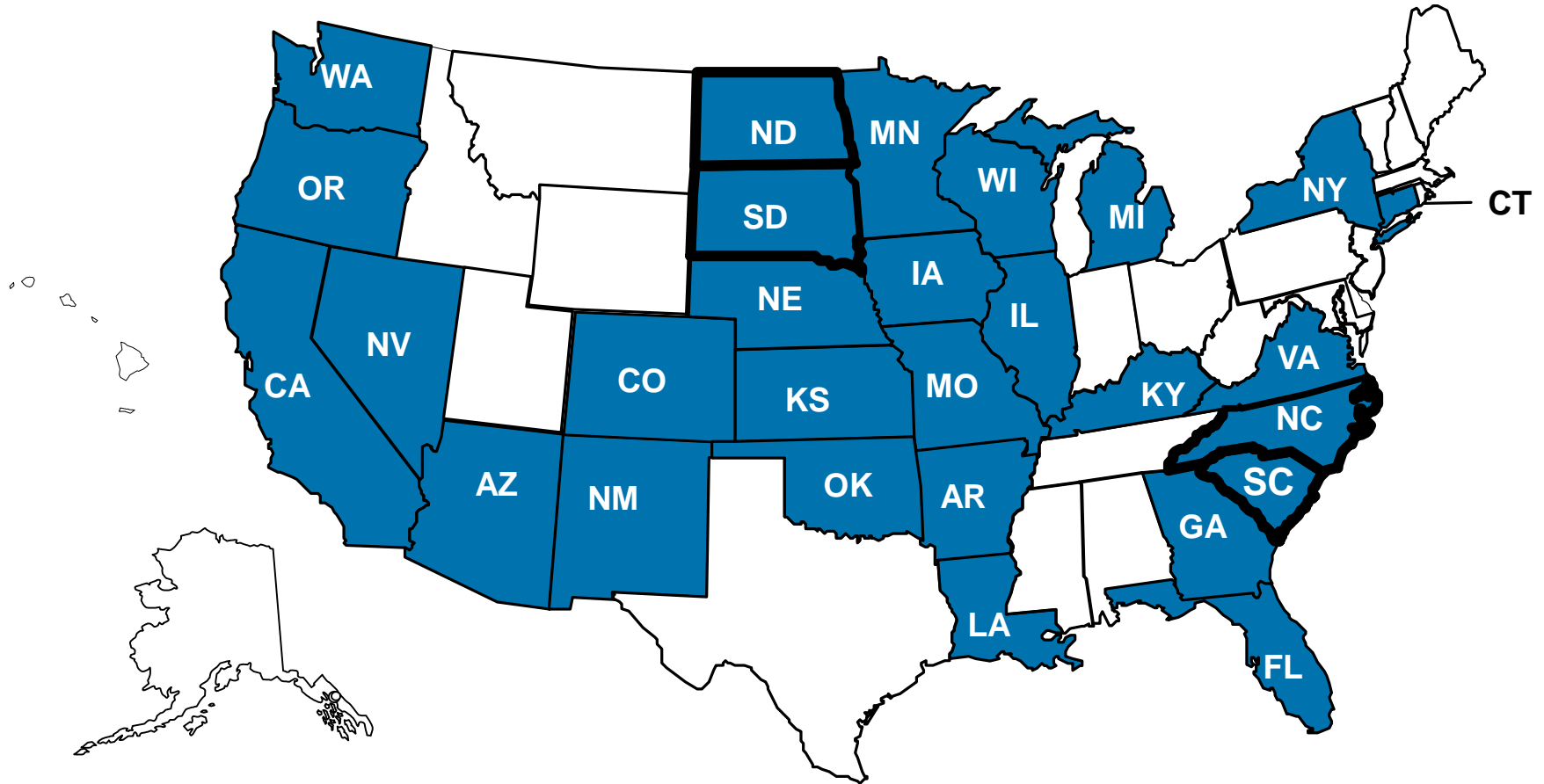
**CEWD**  
CENTER FOR ENERGY WORKFORCE DEVELOPMENT  
Industry Solutions—Regional Implementation

*For more information, contact:*  
**Ann Randazzo**  
Executive Director  
Center for Energy  
Workforce Development  
ann@cewd.org  
703-237-7927  
[www.cewd.org](http://www.cewd.org)

The image shows a business card for the Center for Energy Workforce Development (CEWD). The left side of the card is white and features the CEWD logo, which includes the acronym 'CEWD' in large blue letters, the full name 'CENTER FOR ENERGY WORKFORCE DEVELOPMENT' in smaller green letters below it, and the tagline 'Industry Solutions—Regional Implementation' in blue. Below the text are four stylized icons: a person, an atom, a flame, and a lightbulb. The right side of the card is a solid blue background with white text providing contact information for Ann Randazzo, Executive Director. The contact details include the center's name, email address (ann@cewd.org), phone number (703-237-7927), and website (www.cewd.org).

# **TAB: Region and Consortia Updates**

# State Energy Workforce Consortia



Regional Consortium



Existing Consortium



Planned Consortium



## **State Energy and Education Assessment: Illinois**

### **State Energy Workforce Consortium Contact**

Mary Zitek  
Association of Illinois Electric Cooperatives  
[mzitek@aiec.coop](mailto:mzitek@aiec.coop)

Kevin Gadzala  
Nicor/Southern Company  
[kgadzala@southernco.com](mailto:kgadzala@southernco.com)

[consortia.getintoenergy.com/illinois](http://consortia.getintoenergy.com/illinois)

### **State Cooperative Association**

Association of Illinois Electric Cooperatives  
<http://www.aiec.coop>

### **State Public Power Association**

None

### **Fuel Mix**

Coal: 37.7%  
Nuclear: 50.9%  
Natural Gas: 5.1%  
Hydro and Other Renewables: 6%  
Other: 0.3%

### **State of Illinois Workforce Development**

<https://www.illinois.gov/employment/Pages/WorkforceDevelopment.aspx>

### **State Department of Education**

<http://www.isbe.state.il.us/>

### **State Career & Technical Education**

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

### **Career Clusters**

Illinois has adopted the nationally recognized Career Clusters® model, mapped to its five career areas of health sciences technology; business, marketing and computer education; technology and engineering education; agricultural education; and family and consumer sciences.

### **National Energy Education Network (NEEN) Institutions**

<http://www.getintoenergy.com/googleapp/>

## **State Energy and Education Assessment: Indiana**

### **State Energy Workforce Consortium Contacts**

The consortium is not active at this time.

### **State Cooperative Association**

Indiana Statewide Association of Rural Electric Coops

<http://www.indremcs.org>

### **State Public Power Association**

None

### **Fuel Mix**

Coal: 77.5%

Nuclear: 0%

Natural Gas: 15.5%

Hydro and Other Renewables: 5.4%

Other: 1.6%

### **Indiana Department of Workforce Development**

<https://secure.in.gov/dwd/>

### **State Department of Education**

<http://www.doe.in.gov/>

### **State Career & Technical Education**

<http://www.doe.in.gov/cte>

### **Career Clusters**

Indiana has modified the nationally recognized Career Clusters® model into 11 clusters: agriculture; architecture and construction; arts, A/V technology and communication; business and marketing; education and training; health science; hospitality and human services; IT; manufacturing; public safety; and transportation.

### **National Energy Education Network (NEEN) Institutions**

<http://www.getintoenergy.com/googleapp/>

## State Energy and Education Assessment: Iowa

### State Energy Workforce Consortium Contacts

Ryan Klumpers  
Mid-American  
[RSKlumpers@midamerican.com](mailto:RSKlumpers@midamerican.com)

### State Cooperative Association

The Iowa Association of Electric Cooperatives  
<http://www.iowarec.org/>

### State Public Power Association

Iowa Association of Municipal Utilities  
[www.iamu.org](http://www.iamu.org)

### Fuel Mix

Coal: 51.6%  
Nuclear: 9.5%  
Natural Gas: 4.2%  
Hydro and Other Renewables: 34.3%  
Other: 0.4%

### Iowa Workforce Development

<https://www.iowaworkforcedevelopment.gov/>

### State Department of Education

<https://www.educateiowa.gov/>

### State Career & Technical Education

<https://www.educateiowa.gov/adult-career-and-community-college/career-and-technical-education>

### Career Clusters

The state Department of Education has recommended that Iowa schools and districts organize programs under the nationally recognized Career Clusters® model. Iowa CTE also organizes programs under five service areas: agricultural education, business and marketing education, family and consumer sciences education, health science education and industrial technology.

### National Energy Education Network (NEEN) Institutions

<http://www.getintoenergy.com/googleapp/>

## State Energy & Education Assessment: Kansas

### State Energy Workforce Consortium Contact

Monakisha Jones  
Kansas City Power & Light Co  
[Monakisha.Jones@kcpl.com](mailto:Monakisha.Jones@kcpl.com)

Cassie Bailey  
Wolf Creek Generating Station  
[cahaas@WCNOC.com](mailto:cahaas@WCNOC.com)

**State Cooperative Association**  
Kansas Electric Co-ops Incorporated  
<http://www.kec.org>

**State Public Power Association**  
Kansas Municipal Utilities  
<http://www.kmunet.org/>

**Fuel Mix:**  
Coal: 53.8%  
Nuclear: 18.9%  
Natural Gas: 3%  
Hydro and Other Renewables: 24%  
Other: 0.3%

**KANSASWORKS**  
<https://www.kansasworks.com/ada/>

**State Department of Education**  
<http://www.ksde.org/>

**State Career & Technical Education**  
<http://crk.ksde.org/>

**Career Clusters**  
Kansas has adopted the nationally recognized Career Clusters® model, organized within six career fields: environmental and agricultural systems; arts, communication and information; industrial, manufacturing and engineering systems; health science; human resources and services; and business, marketing and management. Kansas has developed 31 pathways within these clusters.

**National Energy Education Network (NEEN) Institutions**  
<http://www.getintoenergy.com/googleapp/>

## State Energy and Education Assessment: Kentucky

### State Energy Workforce Consortium Contacts

Lynn Ingmire  
Kentucky Association of Electric Cooperatives  
[lingmire@kaec.org](mailto:lingmire@kaec.org)

Bernadette Toebbe  
Duke Energy  
[Bernadette.toebbe@duke-energy.com](mailto:Bernadette.toebbe@duke-energy.com)

**Statewide Cooperative Association**  
Kentucky Association of Electric Co-ops  
<http://www.kaec.org>

**State Public Power Association**  
Kentucky Municipal Utilities Association  
<http://www.kymua.org/#kmuakentucky>

#### **Fuel Mix:**

Coal: 87.4%  
Nuclear: 0%  
Natural Gas: 6.9%  
Hydro and Other Renewables: 4.3%  
Other: 1.4%

**Kentucky Workforce Investment Board**  
<http://workforce.ky.gov/>

**State Department of Education**  
<http://www.kde.state.ky.us/>

**State Career & Technical Education**  
<http://education.ky.gov/CTE/Pages/default.aspx>

#### **Career Clusters**

The Kentucky Department of Education has adopted the national 16 Career Clusters® model and has multiple career pathways that align to these clusters.

**National Energy Education Network (NEEN) Institutions**  
<http://www.getintoenergy.com/googleapp/>

## State Energy & Education Assessment: Michigan

### State Energy Workforce Consortium Contacts

Tracy DiSanto  
DTE Energy Co  
[disantos@dteenergy.com](mailto:disantos@dteenergy.com)

Sharon Miller  
Consumers Energy  
[sharon.miller@cmsenergy.com](mailto:sharon.miller@cmsenergy.com)

[consortia.getintoenergy.com/michigan](http://consortia.getintoenergy.com/michigan)

### State Cooperative Association

Michigan Country Lines  
<http://www.countrylines.com>

### State Public Power Association

Michigan Public Power Authority  
<http://www.mpower.org/>

### Fuel Mix:

Coal: 47%  
Nuclear: 26.1%  
Natural Gas: 17.7%  
Hydro and Other Renewables: 7%  
Other: 2.1%

### State Department of Education

<http://www.michigan.gov/mde>

### Michigan Career, Education & Workforce Programs

<http://www.michigan.gov/mdcd>

### State Career & Technical Education

[http://www.michigan.gov/mde/0,1607,7-140-6530\\_2629---,00.html](http://www.michigan.gov/mde/0,1607,7-140-6530_2629---,00.html)

### Career Clusters

Michigan has adopted the nationally recognized Career Clusters® model. The Cluster Foundation Knowledge and Skills are used within each CTE instructional program to provide students with a strong and comprehensive experience within each Cluster. In 2016, a 17<sup>th</sup> career cluster in Energy was approved.

### National Energy Education Network (NEEN) Institutions

<http://www.getintoenergy.com/googleapp/>

## State Energy and Education Assessment: Minnesota

### State Energy Workforce Consortium Contact

Kyle Ault  
ALLETE  
[kault@allete.com](mailto:kault@allete.com)

Tom Cascalenda  
Xcel Energy  
[Thomas.j.cascalenda@xcelenergy.com](mailto:Thomas.j.cascalenda@xcelenergy.com)

Bruce Peterson  
Minnesota West  
[Bruce.Peterson@mnwest.edu](mailto:Bruce.Peterson@mnwest.edu)

Pete Wasberg  
Otter Tail Power Company  
[pwasberg@otpc.com](mailto:pwasberg@otpc.com)

[consortia.getintoenergy.com/minnesota](http://consortia.getintoenergy.com/minnesota)

**Statewide Cooperative Association**  
Minnesota Electric Cooperative Association  
<http://www.mrea.org/>

**State Public Power Association**  
None

**Fuel Mix**  
Coal: 43.4%  
Nuclear: 21.2%  
Natural Gas: 12.8%  
Hydro and Other Renewables: 20.3%  
Other: 2.3%

**Minnesotaworks.net**  
<https://minnesotaworks.net/>

**State Department of Education**  
<http://education.state.mn.us/mde/index.html>

**State Career & Technical Education**  
<http://education.state.mn.us/MDE/SchSup/CareerEdAdmin/index.html>

**Career Clusters**

Minnesota's Department of Education uses The National Career Clusters® Framework with modifications based on state workforce requirements. Minnesota's secondary CTE programming is organized into six CTE areas:

- Agriculture, Food and Natural Resources
- Business and Marketing
- Family and Consumer Sciences
- Service Occupations
- Health Occupations
- Trade/Technical Occupations

**National Energy Education Network (NEEN) Institutions**

<http://www.getintoenergy.com/googleapp/>

## State Energy and Education Assessment: Missouri

### State Energy Workforce Consortium Contact

Kimberly Erskine

Ameren

[KErskine@ameren.com](mailto:KErskine@ameren.com)

Nya Grimes

Ameren

[CGrimes2@ameren.com](mailto:CGrimes2@ameren.com)

Stephanie Metzler

InfraSource

[Stephanie.Metzler@infrasourceinc.com](mailto:Stephanie.Metzler@infrasourceinc.com)

[missourienergyworkforce.org](http://missourienergyworkforce.org)

### State Cooperative Association

Association of Missouri Co-ops

<http://www.amec.org>

### State Public Power Association

None

### Fuel Mix:

Coal: 78.3%

Nuclear: 12.5%

Natural Gas: 5.5%

Hydro and Other Renewables: 3.4%

Other: 0.2%

### Training and Employment Administrators of Missouri

<https://www.missouriworkforce.net/>

### State Department of Education

<http://dese.mo.gov/>

### State Career & Technical Education

<https://careertech.org/Missouri>

### Career Clusters

Missouri has adopted the nationally recognized Career Clusters® model, aligned with six career paths: arts and communications (creative path); business, management and technology (business path); health services (health path); industrial and engineering technology (building and fixing path); human services (helping path); and natural resources/agriculture (nature path).

### National Energy Education Network (NEEN) Institutions

<http://www.getintoenergy.com/googleapp/>

## State Energy and Education Assessment: Nebraska

### State Energy Workforce Consortium Contacts

Melissa Palmer  
Lincoln Electric Systems  
[mpalmer@les.com](mailto:mpalmer@les.com)

Nicole West  
Black Hills Energy  
[Nicole.West@blackhillscorp.com](mailto:Nicole.West@blackhillscorp.com)

Kelley McKay  
Lincoln Electric Systems  
[KMckay@les.com](mailto:KMckay@les.com)

**State Cooperative Association**  
Nebraska Rural Electric Association  
<http://nrea.org/>

**State Public Power Association**  
<http://www.nepower.org/>

**Fuel Mix**  
Coal: 61%  
Nuclear: 26.5%  
Natural Gas: 1.2%  
Hydro and Other Renewables: 11%  
Other: 0.2%

**Nebraska Workforce Development**  
<http://dol.nebraska.gov/>

**State Department of Education**  
<https://www.education.ne.gov/>

**Nebraska Career Education**  
<http://ctenebraska.com/>

### Career Clusters

Nebraska has adopted the nationally recognized Career Clusters® model, arranged into six career fields: agriculture, food and natural resources; business, marketing and management; communication and information systems; health sciences; human sciences and education; and skilled and technical sciences.

**National Energy Education Network (NEEN) Institutions**  
<http://www.getintoenergy.com/googleapp/>

## State Energy and Education Assessment: North Dakota

### State Energy Consortium Contacts

Dakotas Consortium

Heather Burns  
NorthWestern Energy  
[heather.burns@northwestern.com](mailto:heather.burns@northwestern.com)

Jeff Endrizzi  
Otter Tail Power Company  
[jendrizzi@otpc.com](mailto:jendrizzi@otpc.com)

Doug Greenway  
Mitchell Tech Institute  
[doug.greenway@mitchelltech.edu](mailto:doug.greenway@mitchelltech.edu)

### State Cooperative Association

North Dakota Association of Rural Electric Cooperatives  
<http://www.ndarec.com/>

### State Public Power Association

None

### Fuel Mix

Coal: 75.5%  
Nuclear: 0%  
Natural Gas: 1%  
Hydro and Other Renewables: 23.5%  
Other: 0.1%

### North Dakota Workforce Development

<http://www.workforce.nd.gov/>

### State Department of Education

<https://www.nd.gov/dpi>

### State Career & Technical Education

[http://www.careertech.org/state\\_profile/show/  
North\\_Dakota](http://www.careertech.org/state_profile/show/North_Dakota)

### Career Clusters

North Dakota has adopted the nationally recognized Career Clusters® model and Career Cluster Plans of Study.

### National Energy Education Network (NEEN) Institutions

<http://www.getintoenergy.com/googleapp/>

## **State Energy & Education Assessment: Ohio**

### **State Energy Workforce Consortium Contact**

The consortium isn't active at this time.

### **State Cooperative Association**

Ohio's Electric Cooperatives

<http://www.buckeyepower.com>

### **State Public Power Association**

None

### **Fuel Mix**

Coal: 59.1%

Nuclear: 14.4%

Natural Gas: 23.2%

Hydro and Other Renewables: 1.9%

Other: 1.5%

### **Office of Workforce Development Ohio**

<http://jfs.ohio.gov/owd/>

### **State Department of Education**

<http://www.ode.state.oh.us/>

### **State Career & Technical Education**

<http://education.ohio.gov/Topics/Career-Tech>

### **Career Clusters**

All 16 career clusters are integrated into CTE, except using different names.

### **National Energy Education Network (NEEN) Institutions**

<http://www.getintoenergy.com/googleapp/>

## **State Energy and Education Assessment: South Dakota**

### **State Energy Workforce Consortium Contact**

Part of the Dakotas Consortium

Heather Burns  
NorthWestern Energy  
[heather.burns@northwestern.com](mailto:heather.burns@northwestern.com)

Jeff Endrizzi  
Otter Tail Power Company  
[jendrizzi@otpc.com](mailto:jendrizzi@otpc.com)

Doug Greenway  
Mitchell Tech Institute  
[doug.greenway@mitchelltech.edu](mailto:doug.greenway@mitchelltech.edu)

### **State Cooperative Association**

South Dakota REA  
<http://www.sdrea.coop>

### **State Public Power Association**

None

### **Fuel Mix**

Coal: 15.4%  
Nuclear: 0%  
Natural Gas: 9.1%  
Hydro and Other Renewables: 75.3%  
Other: 0.2%

### **South Dakota Workforce Training & Education**

<http://dlr.sd.gov/>

### **State Department of Education**

<http://doe.sd.gov/>

### **State Career & Technical Education**

[http://www.careertech.org/state\\_profile/show/  
South\\_Dakota](http://www.careertech.org/state_profile/show/South_Dakota)

### **Career Clusters**

In South Dakota, the nationally recognized Career Clusters® model is being used as a tool for organizing CTE programs, an aid in developing Programs of Study, a basis for the personal learning plan and one of the foundations of the content standards for all CTE programs.

### **National Energy Education Network (NEEN) Institutions**

<http://www.getintoenergy.com/googleapp/>

## **State Energy & Education Assessment: Wisconsin**

### **State Energy Workforce Consortium Contacts**

Ron Graber  
Alliant Energy  
[rongraber@alliantenergy.com](mailto:rongraber@alliantenergy.com)

BJ Rauckman  
Xcel Energy  
[William.J.Rauckman@xcelenergy.com](mailto:William.J.Rauckman@xcelenergy.com)

[consortia.getintoenergy.com/wisconsin](http://consortia.getintoenergy.com/wisconsin)

### **State Cooperative Association**

Wisconsin Electric Cooperative Association  
<http://www.weca.coop>

### **State Public Power Association**

None

### **Fuel Mix**

Coal: 55.5%  
Nuclear: 15.2%  
Natural Gas: 20.1%  
Hydro and Other Renewables: 7.4%  
Other: 1.8%

### **State of Wisconsin Department of Workforce Development**

<http://dwd.wisconsin.gov/>

### **Wisconsin Department of Public Instruction**

<http://dpi.wi.gov/>

### **State Career & Technical Education**

<http://dpi.wi.gov/cte>

### **Career Clusters**

Wisconsin has integrated the 16<sup>th</sup> Career Clusters into its education system and has built out pathways in all clusters. Career clusters begin in a high school, a Cooperative Educational Service Agency (CESA), a technical college, or a community-based organization.

### **National Energy Education Network (NEEN) Institutions**

<http://www.getintoenergy.com/googleapp/>

### Midwest Region

**Illinois:** Key 2018 activities for the IEWC included volunteering for the Illinois FIRST Tech Challenge competitions and broadening the involvement of IEWC members in the CONSTRUCT Program begun by ComEd. The IEWC made a commitment to increase their involvement in the FIRST Tech Challenge for the 2018–2019 school year. Nicor Gas awarded a \$5,000 sponsorship and, in addition to aligning with the state tournament, the IEWC is going to align volunteers with two regional competitions. The consortium welcomed its first contractor member, INTREN, and reached out to additional contractors about participating. The IEWC invited the Chicago Learning Exchange to present on an initiative with Dawson Technical Institute to pilot an energy careers program for teens that focuses on overhead line work. The consortium repeated its successful classroom grant drawing as part of Careers in Energy Week and received a governor’s proclamation to kick off a week-long series of events.

**Indiana:** The Indiana consortium didn’t meet in 2018. Duke Energy has hired a new workforce development lead in Plainfield, IN, to focus on building talent development solutions and partnerships in the company’s Midwest region—Indiana, Kentucky, and Ohio. Duke’s plan is to work with other industry leaders to reconvene the Indiana Energy Workforce Consortium in 2019 and increase its visibility in Ohio and Kentucky as well.

**Iowa:** The IEWC focused on project work during regularly scheduled meetings during 2018, including developing a consortium website, implementing an energy awareness day as a part of 2018 Careers in Energy Week, and planning for an energy careers camp in 2019. The Energy Awareness Day was successfully held on October 19 at Iowa Association of Municipal Utilities in Ankeny. The consortium is meeting in December 2018 to review its progress against its strategic plan and discuss its strategic priorities for 2019.

**Kansas:** The KEWC met regularly during 2018 and recognized Careers in Energy Week with a signed proclamation by Kansas Governor Jeff Colyer. Members of the consortium were joined by STEM students from Topeka Public Schools, USD-501, which is a member of NEEN, for the governor’s signing. The merger between Kansas City Power and Light and Westar Energy was also completed in 2018, with the formation of a new company, Evergy. Accountability for leading the consortium has shifted inside the newly merged company, and the group is preparing to review the consortium charter and strategy in early 2019.

**Michigan:** The MEWDC made great strides during 2018 in building out its talent pipelines at the high school and community college levels, with six participating high school programs that offer EIF, and five community college programs. Three additional high school programs are planned in 2019. For Careers in Energy Week, the MEWDC produced two videos using the “I Got Into Energy” career awareness concept and sponsored a Social Media Hashtag Contest for students ages 14–18. In December, the MEWDC will celebrate its 10<sup>th</sup> Anniversary.

**Minnesota:** The MEC met regularly during 2018 and reviewed its original 2013 strategic workforce plan to lay the groundwork for updates and revisions during 2019. In keeping with its practice of observing Careers in Energy “Month” in October, the MEC hosted events across the state, employing

its Energy Science Trailer. Companies and education members of the consortium participated in the production of a 20-minute documentary on Solar and Wind Energy in Minnesota, called *The Power of Minnesota*.

**Missouri:** Missouri's energy industry members, led by Ameren, convened in three separate meetings during 2018 as they worked to reenergize the Missouri Energy Workforce Consortium. Executives of the founding companies met to formalize their role as an Executive Sponsorship Team and education partners met with industry to conduct an Industry/Education partnership summit. The MEWC has developed its strategic areas of focus and will work in first quarter 2019 to finalize its strategic plan. The MEWC was also successful in having a governor's proclamation signed in recognition of Careers in Energy Week.

**Nebraska:** The Nebraska consortium celebrated its 5<sup>th</sup> annual Careers in Energy Week October 15–17 with a governor's proclamation and three days of planned outreach activity. Day 1 was focused on teachers, counselors, and advisors; Day 2 focused on middle and high school girls, with 75 participants; and Day 3 focused on middle and high school boys, also with 75 participants. Activities occurred at three Nebraska locations, with participation by all NEWC industry members in Omaha.

**North Dakota/South Dakota:** To maintain its momentum year-round—and especially in the winter months when travel is difficult—the DEWC adopted monthly calls, with one annual face-to-face meeting, for all of its membership in 2018. The practice has worked well and resulted in development of a consortium website and states-wide recognition of Careers in Energy Week with governors' proclamations from both states and a number of awareness-building activities at the DEWC NEEN member campuses and company facilities. The DEWC made a concerted effort to broaden its membership base in 2018 and welcomed a number of new members, including contractors.

**Wisconsin:** The WEWC finalized its formation of a 501(c)(3) nonprofit structure during 2018 and has identified an organization in Wisconsin to provide project management support to the consortium. The consortium conducted a number of Careers in Energy Week events throughout Wisconsin.

**TAB:**

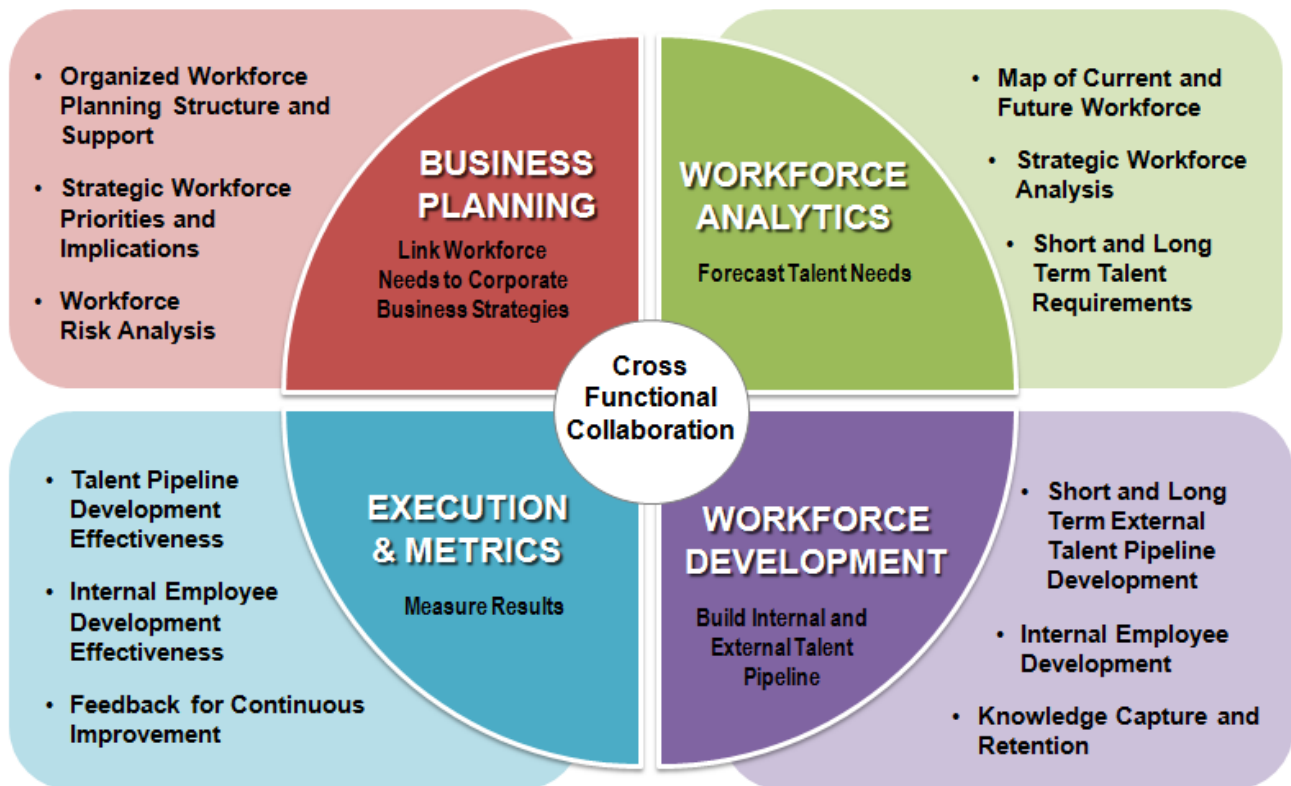
**Workforce Development: Readiness**

Workforce planning is a critical component of strategic planning, both at the corporate and business unit level. Having the right number of employees with the right skills when they are needed is a key component to the viability and profitability of a corporation. This document summarizes the four essential elements of strategic workforce planning and the steps to be taken in each phase. The process can be used to develop a comprehensive workforce plan for a corporation, to develop a state workforce plan for a State Energy Workforce consortium, or to create a plan for a specific strategic initiative like increasing diversity or military veterans in the workforce.

Strategic Workforce Planning should be done with a cross-functional team that includes individuals currently involved in workforce planning, human resources, technical training, recruitment and executives from Operations, Human Resources, Finance and Communications. The overall result of these efforts should be a clear understanding of what the company will need to do to create a skilled workforce to meet the current and future organizational demands.

The Strategic Workforce Planning Wizard, available to members on the CEWD website, provides resources and tools to help with the analysis, documentation and communication of workforce requirements as well as details for each step in the process. CEWD has also developed the Get Into Energy Career Pathway model that provides a framework for developing a qualified and diverse talent supply pipeline for skilled utility technicians.

## Essential Elements of Workforce Planning



# Quadrant 1: Business Planning

## *Link Workforce Needs to Corporate Business Strategies*

There are influences at the national, state and corporate level that can have significant implications for the size, skills and timing of workforce needs. Understanding these “game changers” along with the readiness of the company to address these strategic workforce priorities is the critical first step in developing a strategic workforce plan.

The Business Planning phase is designed to answer the following questions:

- Does your company have the people, processes and support in place to implement Strategic Workforce Planning?
- What are the internal and external game changers affecting our business?
- What are the workforce requirements to address current and future business strategies?
- What new skills will be required?
- What are the critical jobs that need to be analyzed?
- What are the risks?

### **Outcomes:**

- Organized workforce planning effort including gaps, priorities and responsibilities.
- Impact of Game Changers, strategic considerations and priorities on talent requirements
- Workforce Risk Analysis

**Who needs to be involved?** Human Resources, Senior Leaders from Operations, Finance, Philanthropy, Communication, Community and/ or Economic Development, External Affairs

### **Company Actions**

1. Create corporate workforce planning structure and organize efforts.
2. Conduct a readiness assessment of the organization capability to prepare a short and long term workforce plan.
3. Understand the Corporate Business Strategy and the impact of Strategic Game Changers that will affect the business unit and impact the workforce.
4. Determine the short and long term workforce implications of strategic direction and priorities.
5. Compile report of findings.

### **Deliverables / Products**

- Business Strategic Priorities
- Game Changers / Implications
- Critical Jobs / Impacts
- Workforce Readiness Gaps (for Action)
- Workforce Planning organization, processes, procedures
- Workforce Risk Assessment
- Strategic Workforce Plan Outline



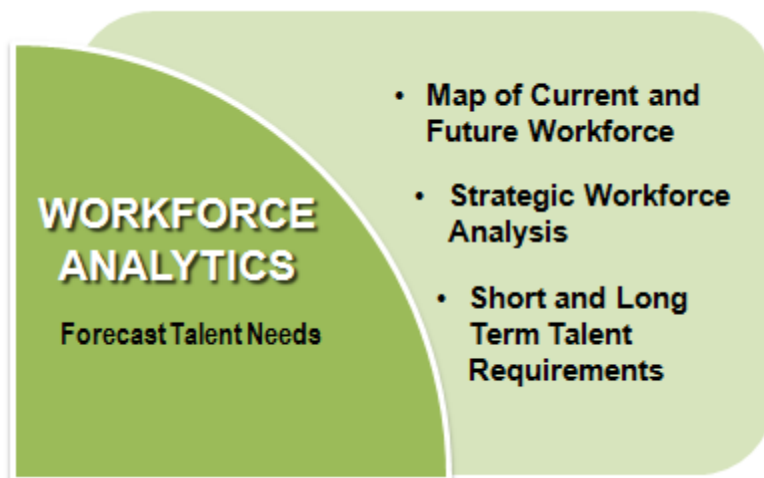
# Quadrant 2: Workforce Analytics

## *Forecast Talent Needs*

The level of detail in this phase depends on the size of the organization and the resources available, but all companies need to have sufficient data to make informed decisions on who, what, when, where and how many employees will be needed to implement the corporate strategic plan.

The Workforce Analytics phase is designed to answer the following questions:

- What are the critical workforce trends?
- What is the turnover in each critical job family and why?
- Where will new employees and new skills come from?
- Is the organization prepared to fill workforce requirements?



### **Outcomes**

- Map of current and future workforce
- Strategic Workforce Analysis
- Short and long term talent requirements

**Who needs to be involved?** Workforce Development Council, HR personnel responsible for development of analytics, responsible for HRIS, and for reporting

### **Company Actions**

1. Convene the workforce planning advisory structure and review and seek guidance on the output from Quadrant 1.
2. Develop data and reporting requirements
3. Using a staffing level forecast model, project staffing levels by job and by organization. Consider scenario planning to develop a range of requirements.
4. Conduct knowledge risk assessment including skills of current employees who might require re-training.
5. Conduct a high level assessment of need based on lead time, forecasted demand and strategic
6. Identify potential short and long term workforce gaps using HR strategy and identified workforce priorities.
7. Prepare a five year talent requirement plan.
8. Review with the workforce planning advisory structure and Senior Management.

### **Deliverables / Products**

- Dashboard and Report designs
- Job Family Feeder Analysis
- Five Year Projected Staffing Levels for critical Jobs (Hiring Plan)
- Knowledge Risk Assessment
- Supply Assessment
- Contractor Demand analysis
- Demographic breakdown
- Talent Requirement Plan

# Quadrant 3: Workforce Development

## *Build Internal and External Talent Pipeline*

The data and analysis from Workforce Analytics drives the development of action plans for Workforce Development. This phase balances the demand requirements expected due to attrition and growth with both internal (succession planning and employee development) with external (community colleges, outreach programs and secondary schools, military) sources.

The Workforce Development phase is designed to answer the following questions:

- Are career pathways and required credentials clearly defined and communicated?
- What is the current supply of potential candidates within the state or region that can be tapped?
- What are available sources of candidates?
- Are new programs required at local schools to address demand and potential new skills?
- What actions will the company take to create the desired talent pipeline?



### **Outcomes**

- Short and long term external Talent Pipeline Plan and Implementation
- Internal Employee Development Plan and Implementation
- Knowledge Capture and Retention strategy

**Who needs to be involved?** Technical Training, workforce development, community development, recruiting, philanthropy, communication, operations hiring managers

### **Company Actions**

1. Analyze workforce supply and demand by job category.
2. Define career pathways and credential requirements for critical jobs.
3. If required, develop and implement strategies for contracting and /or outsourcing.
4. Identify educational institution partners.
5. Develop and implement a recruiting plan for talent needed within current year.
6. Develop and implement an external talent pipeline strategy that includes short and long term action plans for Career Awareness, Education and Career Readiness.
7. Build an internal pipeline of candidates.
8. Develop and implement a process for capturing the knowledge from those in knowledge critical positions or employees eligible to retire.

### **Deliverables / Products**

- Career Pathways documentation for critical jobs
- Credentials / Assessments defined for hiring
- Current Recruiting Plan
- National Energy Education Network List
- Workforce Pipeline Management template (Arizona)
- Knowledge Transfer and Retention Program Documentation

# Quadrant 4: Execution & Metrics

## Measure Results

Continuous monitoring of progress toward short and long term goals ensures that plans are accomplished and provides a foundation for continuous improvement in the recruitment, hiring, and retention of candidates. CEWD has defined the value proposition and metrics for each stakeholder in the workforce development process along with suggested metrics that can be used to evaluate individual pipeline initiatives.

The Execution & Metrics phase is designed to answer the following questions:

- How accurate is the forecasting process when measured against actual hires and attrition?
- How well are the pipeline organizations working in terms of quantity, quality and diversity of candidates?
- Are there enough candidates being sourced from pipeline programs and other strategic initiatives?
- Are the company's workforce development processes yielding the desired results?

### Outcomes

- Metrics to evaluate effectiveness of workforce development efforts (Process Metrics)
- Metrics to evaluate effectiveness of internal employee development initiatives. (Output Metrics)

**Who needs to be involved?** Workforce Development Council, HRIS team, Recruiting, Education partners, Human Resources

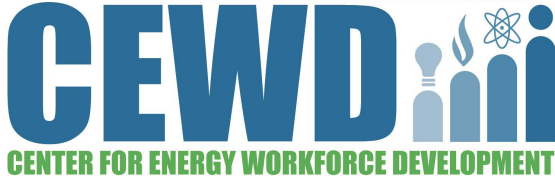
### Company Actions

1. Reach agreement on the value statements and metrics for evaluating workforce development efforts.
2. Define the process and responsibility for collecting the data.
3. Develop report, scorecard, or dashboard formats, audience and timing of progress reporting.
4. Compile data and prepare report or dashboard.
5. Solicit feedback and make changes to improve the process.

### Deliverables / Products

- Value Metrics and reporting
- Success Measures and reporting
- Process Measures / Output Measures





#### **About CEWD**

The Center for Energy Workforce Development (CEWD) is a nonprofit consortium of electric, natural gas, and nuclear utilities; their associations—the Edison Electric Institute (EEI), American Gas Association (AGA), American Public Power Association (APPA), Nuclear Energy Institute (NEI), and National Rural Electric Cooperative Association (NRECA); and their unions—the International Brotherhood of Electrical Workers (IBEW) and the Utility Workers Union of America, AFL-CIO (UWUA).



CEWD was formed to help utilities work together to develop solutions to the coming workforce shortage in the utility industry. It is the first partnership among utilities, their associations, contractors, and unions to focus on the need to build a skilled workforce pipeline that will meet future energy needs.

To learn more about CEWD, please visit [www.cewd.org](http://www.cewd.org) or [www.getintoenergy.com](http://www.getintoenergy.com).

No Extent	Little Extent	Some Extent	Great Extent	Very Great Extent
0	1	2	3	4

- 1. Does the organization have a business plan, or leadership model, and is workforce planning part of that document?
- 2. Is your workforce planning integrated with business operations/finance organization?
- 3. Does the organization strategic focus support continuous workforce planning? Is it in a procedure?
- 4. Are the roles for formulating and implementing workforce planning in the organization clearly understood?

**BUSINESS PLANNING**  
Link Workforce Needs to Corporate Business Strategies

- Organized Workforce Planning Structure and Support
- Strategic Workforce Priorities and Implications
- Workforce Risk Analysis

- 1. Does the organization have a dashboard or information that focuses on projected attrition by organization and/or critical jobs?
- 2. Does your organization have a 5 year hiring plan?
- 3. Are the projected staffing needs instilled in the line organization? Does the line own the data?
- 4. Has the organization implemented a comprehensive knowledge risk assessment process and is it linked with their workforce planning analytics?

**WORKFORCE ANALYTICS**  
Forecast Talent Needs

- Map of Current and Future Workforce
- Strategic Workforce Analysis
- Short and Long Term Talent Requirements

- 1. Does your organization have a well defined and implemented pipeline program?
- 2. Does your organization have a succession planning program for key leaders and is it used to fill future talent needs?
- 3. Does your organization have programs to develop new talent in a timely manner?
- 4. Does your organization have a robust knowledge transfer program in place?

**WORKFORCE DEVELOPMENT**  
Build Internal and External Talent Pipeline

- Short and Long Term External Talent Pipeline Development
- Internal Employee Development
- Knowledge Capture and Retention

- 1. Does the organization have KPI's that measure overall program results?
- 2. Are actions taken to check and adjust program results arising from the KPI's?
- 3. Are the KPI's regularly shared within the line organization?
- 4. Does your organization measure employee performance through a systematic process? Are actions taken based on poor performance?

**EXECUTION & METRICS**  
Measure Results

- Talent Pipeline Development Effectiveness
- Internal Employee Development Effectiveness
- Feedback for Continuous Improvement

**Summarize your Assessment below:**

Quadrant 1 Score

Quadrant 2 Score

Quadrant 3 Score

Quadrant 4 Score

---

Grand Total Score

**How does your Company Compare?**

Score	Results	Comments
0 to 33	Program not effective or in place	Develop recovery plan
34 to 43	Program is in the beginning stages of development	Review program actions and check to ensure initiatives are meeting future needs
44 to 53	Program is maturing and meets a majority of objectives	Continue to check and adjust as needed
54 to 64	Program is fully matured and is meeting most if not all WFP objectives	Continue to benchmark and share lessons learned with the industry

**TAB:**

**Workforce Development: Building the  
Talent Pipeline**

Make connections by:

- Targeting a specific population that is underrepresented in your workforce
- Reaching back to at least middle school
- Connecting strategies from one stage to another
- Seeing your target population all the way through
- If you don't have a lot of resources, start small. It's the connecting that matters! ANY idea below can be used for a specific target audience.

### Reaching Back (Middle School)

#### ***Quick easy ways to reach your target population***

- Get the word out about the [Get Into Energy](#) website!
- Talk to the community development and energy efficiency teams to find out what they are doing with students at local schools. See how you can get involved and talk about energy careers at those events.
- Donate [Get Into Energy spiral notebooks](#) to local middle schools.
- Do STEM lesson from the [Get Into Energy, Get Into STEM booklet](#). Then, talk STEM careers in the energy industry.
- [Volunteer](#) at a local FIRST® event.

#### ***Require some resources***

- Help a local Scout troop [develop and earn badges](#) in Electricity, Energy, Engineering, or Nuclear Science.
- Host Careers in Energy Week activities at the company or through the consortia (for ideas, go to <http://www.cewd.org/state-consortia/>).
- Host a [STEM Reading is Power!](#) Program.
- Mentor a FIRST® team.
- Join an existing FIRST® team.

#### ***Require additional resources***

- Host a [Women in the Trades Girls Career Day](#) (can be customized to other underrepresented groups)
- Start a new FIRST® team.
- Become a FIRST® team sponsor.
- Start a girls [iCAN Engineering Awareness Program](#) in local middle schools.

#### ***Longer-term pipeline building***

- Sponsor a [middle school career academy](#) using the CEWD/NEF middle school curriculum.

## Keeping the Momentum Going (High School)

### *Quick, easy ways to reach your target audience*

- Get the word out about the [Get Into Energy](#) website!
- Have employees go out to the schools to talk about their careers and distribute [Career Pathways sheets](#).
- Distribute Careers in Energy posters to local schools, available on [ShopCEWD](#). Plan and deliver hands-on activities during the annual Careers in Energy Week. [Host a Career Fair](#).
- Do an energy lesson at a high school using one of [NEF's lesson plans or kits](#). Then, talk about the energy industry, entry requirements, salaries and benefits, and the importance of background checks.

### *Require some resources*

- [Mentor](#) high school youth.
- Host a [Get Into Energy Summer Camp](#). Mentor a [FIRST®](#) team.
- Join an existing [FIRST®](#) team.
- Offer high school students summer [internships](#).
- Start a new [FIRST®](#) team.
- Become a [FIRST®](#) team sponsor.
- Sponsor a [mentoring program](#).
- Become a [SkillsUSA Career Expo](#) partner.
- Start a [scholarship program](#) for high school seniors going into the energy industry.

### *Longer-term pipeline building*

- Sponsor/start a local [energy career academy](#)

## Supporting Diverse Candidates Through Post-Secondary Education

### *Require some resources*

- Contribute to [IEE's Scholarship Plus](#) initiative.
- Attend college career fairs.
- Mentor a college student.
- Donate equipment to college labs.
- Host a [Get Into Energy Test Prep Workshop](#) for students.

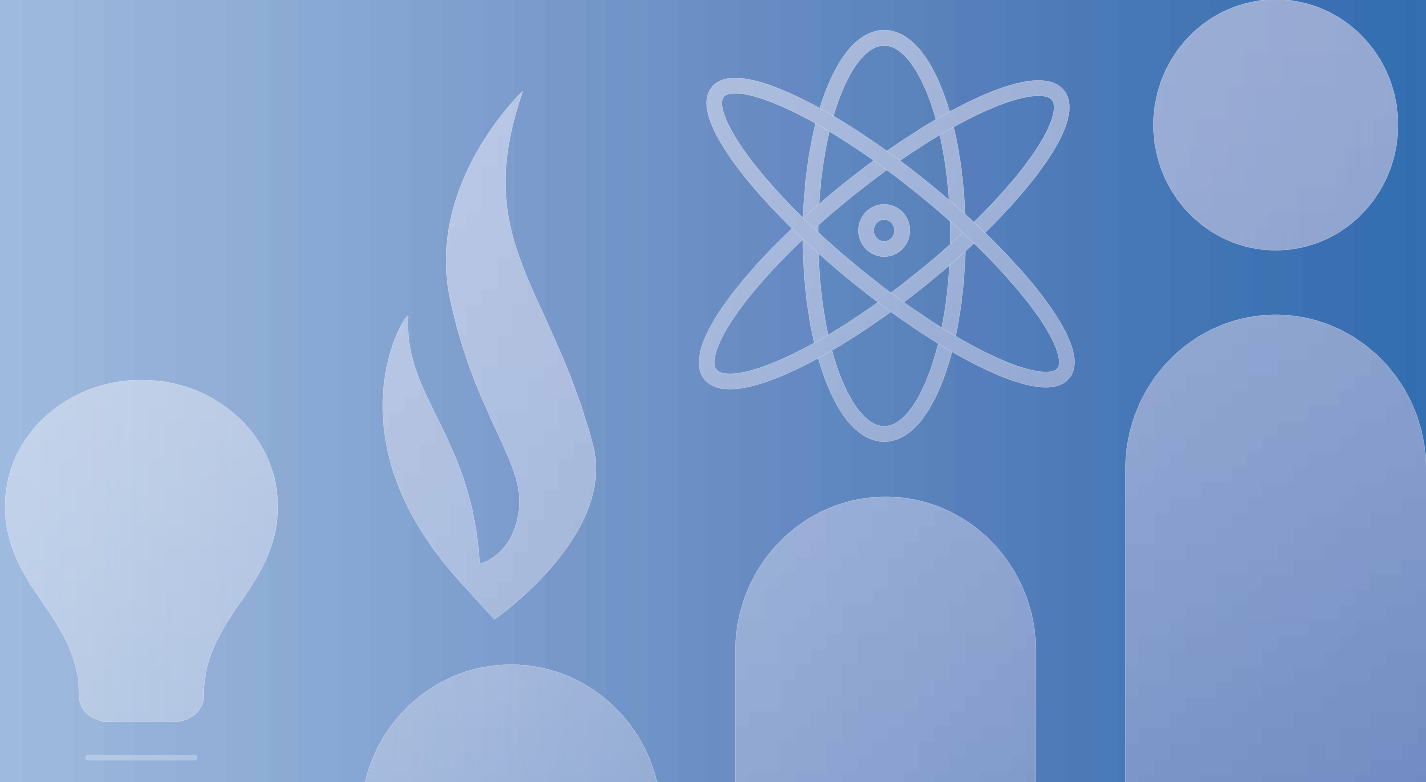
### *Require additional resources*

- Provide [internship and co-op](#) opportunities to college students.
- Start a company [scholarship program](#).

## Keeping Them Once They Are Through the Door

### *Require some resources*

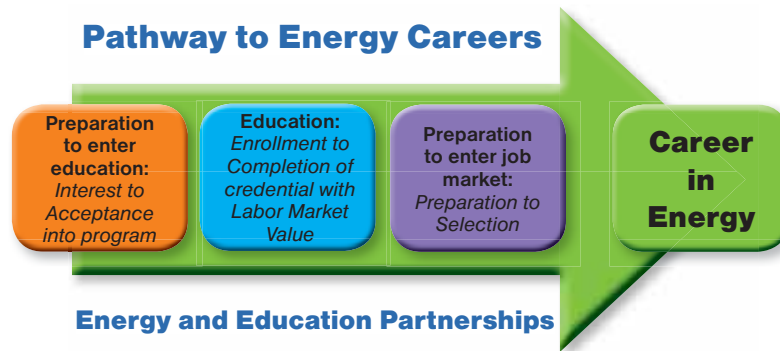
- Create the structure and processes for employees to form [Affinity or Employee Resource Groups](#).
- Offer a [workplace mentoring](#) program



# Get Into Energy Career Pathways for Skilled Energy Technicians

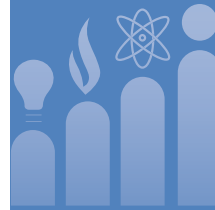
# Get Into Energy Career Pathways for Skilled Energy Technicians

The Center for Energy Workforce Development (CEWD) has developed the *Get Into Energy (GIE) Career Pathways Model*, a roadmap for entry into skilled energy technician positions in the Electric and Natural Gas Utility Industry. These positions include Lineworkers, Generation Technicians, Transmission and Distribution (T&D) Technicians, and Plant/Field Operators. Details on each of the jobs, along with resources for implementing the pathways models, can be found on the CEWD website, [www.cewd.org](http://www.cewd.org). Successful implementation is dependent on partnerships between energy companies, educators, and other training providers to ensure that youth, military, and transitioning adults can successfully enter energy careers.



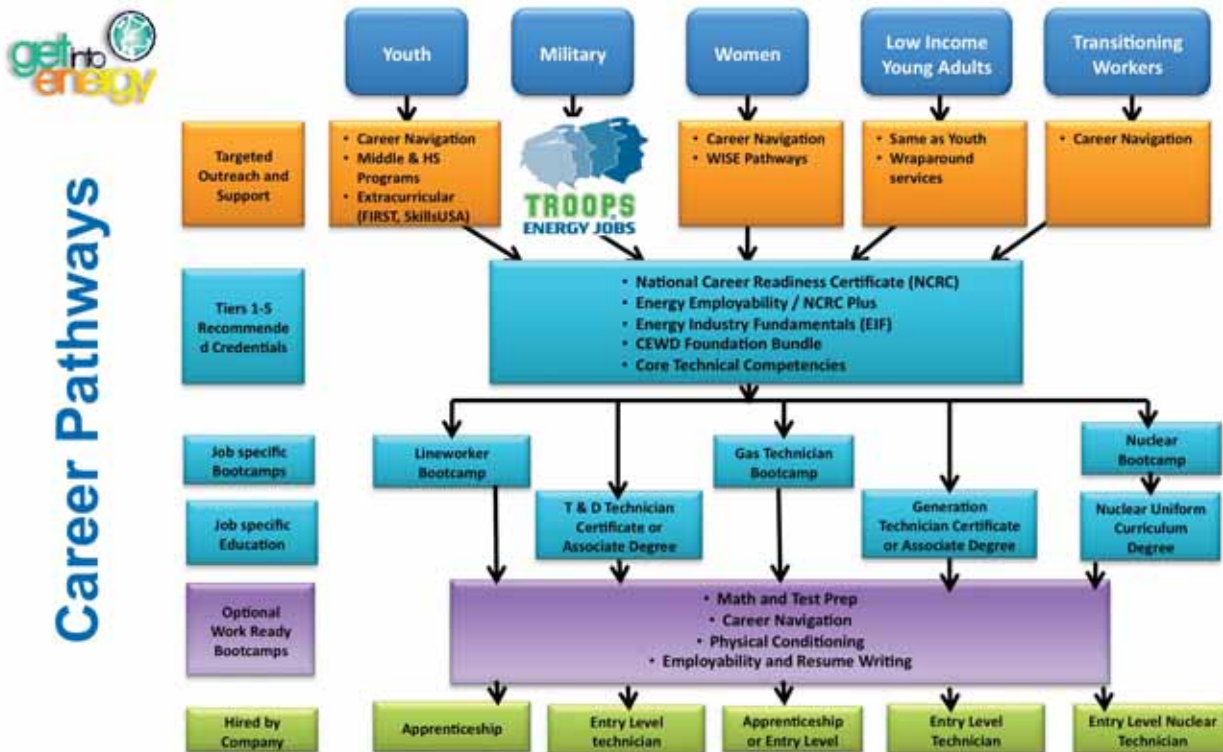
In general, the GIE Career Pathways Model has three key phases:

- **Preparation to enter education:** Preparing for and selecting the right education pathway is critical for those aspiring to a career in the energy industry. This phase covers steps involved in understanding energy careers, selecting and preparing for the appropriate education pathway, and ends with acceptance into a program of study for a specific job category. Resources for career awareness and career navigation range from the Get Into Energy website and career navigation materials to the Troops to Energy Jobs website created specifically for transitioning military and military veterans.
- **Education:** Steps in this phase start with enrollment in an appropriate program of study, to completion of defined credential(s) with labor market value. CEWD has defined specific education pathways and the competencies and credentials that will prepare potential applicants for success in energy careers.
- **Preparation to enter job market:** Upon completion of an energy pathway, candidates move into preparing to enter the job market. This phase may include research into a specific company's application requirements and preparation for pre-employment testing and screening. There are a number of best practices being used in the energy industry to help make this transition successful. These include providing support for pre-employment testing with CEWD's Get Into Energy Math & Test Prep Workshop, using the Troops to Energy Jobs Roadmap for Veterans, or participating in a pre-employment preparation program like Women in Sustainable Employment (WISE) Pathway.



CEWD has focused on five key demographics: Youth, Military, Women, Low Income Young Adults, and Transitioning Adults. For each of these demographic groups, the pathway may look different based on a potential employee’s experience and skills. For example, adults may already have the appropriate educational credential and need to focus their efforts on career navigation and preparation for pre-employment screening. Youth will need to navigate the entire education pathway to gain the competencies and skills to enter an entry-level position. CEWD has created resources to support the specific needs of each demographic. Resources, roadmaps to specific jobs, and a real-time job posting website can be found on the Get Into Energy Website at [www.getintoenergy.com](http://www.getintoenergy.com) and the Troops to Energy Jobs website at [www.troopstoenergyjobs.com](http://www.troopstoenergyjobs.com).

The GIE Career Pathways Model starts with targeted career awareness and support and ends with a candidate being hired into a specific job.



### Targeted Outreach and Support

The journey on an energy career pathway needs to start with awareness of energy careers. This includes learning about the industry, whether this is through the Get Into Energy website, through an outreach event from a local energy company, or through career fairs focused on a particular demographic like the military. Once an individual begins the journey through an energy pathway, we know that support makes the difference in whether or not they stay on the pathway. Through CEWD’s experience and the extensive research in workforce development, students and other potential candidates need help “navigating” career pathways, which may include utilizing navigational tools such as mentoring or career coaching.



## Tiers 1–5 Recommended Credentials

CEWD, in partnership with the U.S. Department of Labor, has developed an Energy Competency Model (full graphic of the model can be found on page 4) that defines basic competencies, industry fundamentals, industry technical competencies, and job-specific competencies in eight separate tiers. Tiers 1–4 define the common competencies required for any position in an electric and natural gas utility. Tier 5 identifies competencies that are unique to positions in four industry functions: Nuclear Generation, Non-Nuclear Generation (coal, natural gas, oil, hydro, solar, wind, biofuel, or geothermal), Electric T&D, and Gas T&D. The remaining tiers describe occupational-specific competencies.

Potential candidates on an energy career pathway start off earning the same credentials, such as the Energy Employability Skills Certificate and/or the National Career Readiness Plus Certificate, that align personal, academic, and workplace requirements (Tiers 1–3), then the Energy Industry Fundamentals Certificate (Tiers 4–5), which provides a foundation of knowledge about the energy industry and its functions. When Energy Industry Fundamentals is combined with other Tiers 1–5 credentials along with technical math and a career and personal development course, this is called the CEWD Foundation Bundle. Potential candidates who earn a set of core skills more technical in nature, which span Tiers 1–5, can also earn a Core Technical Competencies Certificate. A graphic of these stackable credentials is included on page 4.

## Job-Specific Bootcamps and Education

Once these are complete, potential candidates move into the pathway based on their skills and interests, aligning to positions such as Lineworker, Technician (Gas, Generation, or T&D), or a nuclear-specific career, all of which require some type of postsecondary education. Some institutions also offer short-term bootcamps for accelerated skill development.

## Optional Work-Ready Bootcamps

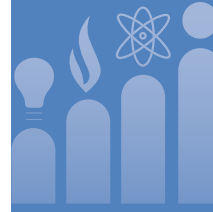
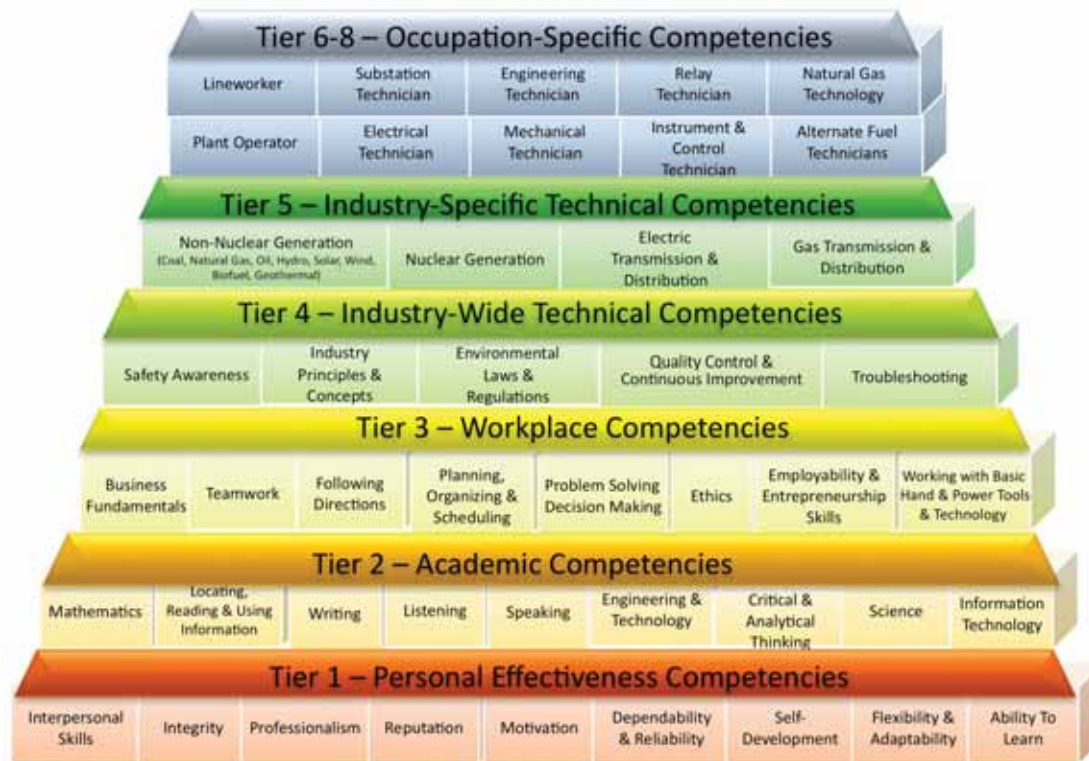
Before applying for a position, candidates may choose to enroll in some type of Work-Ready Bootcamp. As with job-specific bootcamps, they are short-term in nature. However, Work-Ready Bootcamps enable individuals to brush up on general, work-ready skills, such as preparing for pre-employment testing, resume writing, interviewing, and navigating one's career. In addition, there are Work-Ready Bootcamps that can provide physical conditioning for those careers more physical nature, such as Lineworker.

## Hiring by Company

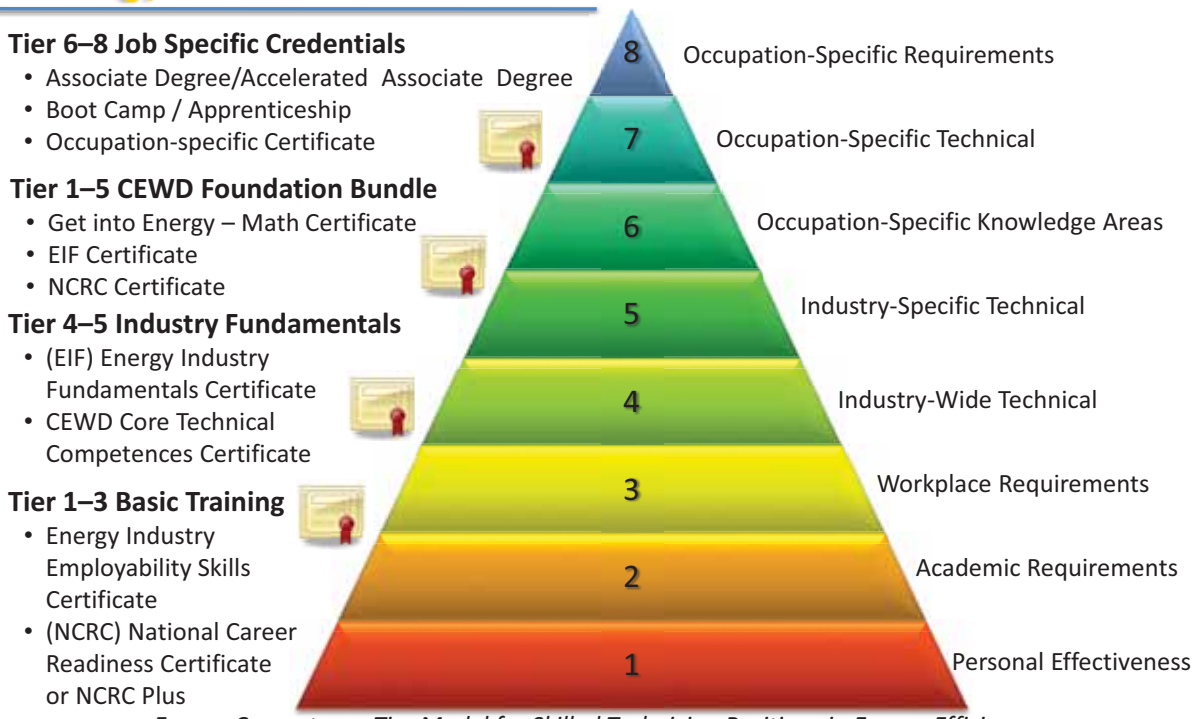
Depending on the occupation, individuals may be hired as an apprentice (Lineworker or Gas Technician) or as an entry-level employee (Generation, T&D, or Nuclear).

Careers in energy offer viable employment with competitive wages, comprehensive benefits, career advancement opportunities, and the ability to work for a company that values its connection with the community. The ultimate goal of the GIE Career Pathways Model is skilled, dedicated employees who stay in the industry and see their career pathway as just the beginning of a larger journey where they can grow with many opportunities.

# CEWD Energy Competency Model: Generation, Transmission & Distribution



## Stackable Credentials



*Energy Competency Tier Model for Skilled Technician Positions in Energy Efficiency, Energy Generation and Energy Transmission and Distribution*

For more information on the GIE Career Pathways Model, stackable credentials, competency models, educational resources, and information on the National Energy Education Network, visit [www.cewd.org](http://www.cewd.org).

*Formed in March 2006, the Center for Energy Workforce Development (CEWD) is a non-profit consortium of electric, natural gas, and nuclear utilities and their associations—Edison Electric Institute, American Gas Association, Nuclear Energy Institute, National Rural Electric Cooperative Association, and American Public Power Association. CEWD was formed to help utilities work together to develop solutions to the coming workforce shortage in the utility industry. It is the first partnership between utilities, their associations, contractors, and unions to focus on the need to build a skilled workforce pipeline that will meet future industry needs.*

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[www.cewd.org](http://www.cewd.org) [www.getintoenergy.com](http://www.getintoenergy.com)

For information, please contact us at [staff@cewd.org](mailto:staff@cewd.org).



# Common Employability Skills for the Energy Industry



# OVERVIEW

In a recent CEWD poll of its member companies, nearly 83% of the respondents replied that high school and community college graduates are not prepared for energy careers. The lack of preparation falls into two main categories: employability and technical skills.

There is significant consensus on where potential employees can gain technical skills, including short-term bootcamps, certificate programs, company technical training, or formal education. On the employability front, however, it's a different story. Many believe these skills are not "teachable" but rather gained through experience and work history. It doesn't seem to make sense that the same skills that keep applicants from gaining a job are primarily learned on the job.

The National Network of Business and Industry Associations (NNBIA) has created a Common Employability Skills (CES) Framework that establishes a vivid, unifying description of the requisite Applied Knowledge along with Personal, People, and Workplace Skills needed to gain employment. CEWD is a sponsor of the CES, along with other leading industries, including Manufacturing, Retail, IT, and Transportation. These skills directly align to the Energy Industry Competency Model. There are a few industry-specific areas, such as engineering and technology, hand and power tools, and some more advanced math concepts, which are part of the CEWD version of the Model.

# CES AT A GLANCE

## PERSONAL SKILLS

- Integrity
- Initiative
- Dependability & Reliability
- Adaptability/Flexibility
- Professionalism

### **Energy Specific Skills**

- Reputation
- Ability to Learn
- Self-Development

## PEOPLE SKILLS

- Teamwork
- Communication
- Respect

## APPLIED KNOWLEDGE

- Reading
- Writing
- Mathematics
- Science
- Information Technology
- Critical Thinking

### **Energy Specific Skills**

- Engineering

## WORKPLACE SKILLS

- Planning/Organizing/Scheduling
- Problem Solving
- Decision Making
- Business Fundamentals
- Customer Focus
- Working with Tools & Technology

### **Energy Specific Skills**

- Ethics
- Following Directions

# PERSONAL AND PEOPLE SKILLS

## CES Personal Skills

### INTEGRITY:

Treating others with honesty, fairness, and respect

- Demonstrate respect for company's time and property
- Accept responsibility for one's decisions and actions
- *Report unethical behavior demonstrated by others*

### INITIATIVE:

Demonstrating a willingness to work and seek out new work challenges

- Take initiative in seeking out new responsibilities and work challenges, increasing the variety and scope of one's job
- Pursue work with energy, drive, and effort to accomplish tasks
- Establish and maintain personally challenging, but realistic, work goals
- Strive to exceed standards and expectations

### DEPENDABILITY & RELIABILITY:

Displaying responsible behaviors at work

- Behave consistently, predictably, and reliably
- Fulfill obligations, complete assignments, and meet deadlines
- Follow written and verbal directions
- Comply with organization's rules, policies, and procedures
- Demonstrate regular and punctual attendance
- *Do not attend to personal business while on the job*
- *Ensure the job is done safely, accurately, and completely*

### ADAPTABILITY/FLEXIBILITY:

Displaying the capability to adapt to new, different, or changing requirements

- Be open to learning and considering new ways of doing things
- Actively seek out and carefully consider the merits of new approaches to work
- Embrace new approaches when appropriate and discard approaches that are no longer working
- Effectively change plans, goals, actions, or priorities to deal with changing situations
- *Identify logical stopping points in work*
- *Quickly learn new assignments and refocus attention*

*Note: Items in italics are energy-specific.*

## PROFESSIONALISM:

Maintaining a professional demeanor at work

- Demonstrate self-control by maintaining composure and keeping emotions in check, even in difficult situations
- Maintain a professional appearance by dressing appropriately for the job and maintaining personal hygiene
- Use professional language when speaking with supervisors, coworkers, and customers
- Maintain a positive attitude
- Take ownership of one's work

## REPUTATION:

*Maintaining a high degree of personal ethics and behavior*

- *Is free from substance abuse*
- *Demonstrate financial responsibility*
- *Maintain an acceptable grade point average if in school*
- *Has not embarrassed oneself through Internet postings*
- *Maintain a good driving record*

## ABILITY TO LEARN:

*Incorporating classroom and on-the-job training into work performance*

- *Understand and use material taught in the classroom and on-the-job training in work situations*
- *Apply information provided in training to work tasks*
- *Demonstrate and show willingness to learn new assignments, procedures, and technologies*

## SELF-DEVELOPMENT:

*Demonstrating a commitment to self-development and improvement*

- *Identify goals and career interests*
- *Seek opportunities to learn new skills and tasks and to refine current skills*
- *Develop personal career plan that includes goals, objectives, and strategies*
- *Identify industry credentialing requirements*
- *Maintain career portfolio to document knowledge, skills, and experience*
- *Evaluate and compare employment opportunities that match career goals*
- *Identify and exhibit traits for retaining employment*
- *Identify opportunities and research requirements for career advancement*
- *Research the benefits of ongoing personal development*

## CES People Skills

### TEAMWORK:

Demonstrating the ability to work effectively with others

- Establish a high degree of trust and credibility with others
- Interact professionally and respectfully with supervisors and coworkers
- Develop constructive working relationships and maintain them over time
- Use appropriate strategies and solutions for dealing with conflicts and differences to maintain a smooth workflow

### COMMUNICATION:

Maintaining open lines of communication with others

- Demonstrate sensitivity and empathy
- Listen to and consider others' viewpoints
- Recognize and interpret the verbal and nonverbal behavior of others
- Speak clearly, in precise language, and in a logical, organized, and coherent manner

### RESPECT:

Working effectively with those who have diverse backgrounds

- Demonstrate sensitivity and respect for the opinions, perspectives, customs, and individual differences of others
- Be flexible and open-minded when dealing with a wide range of people
- Value diversity of approaches and ideas

Formed in March 2006, the Center for Energy Workforce Development (CEWD) is a non-profit consortium of electric, natural gas, and nuclear utilities and their associations—Edison Electric Institute, American Gas Association, American Public Power Association, Nuclear Energy Institute, and National Rural Electric Cooperative Association.



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<p><b>Overview</b></p>	<p>The purpose of the “I Got Into Energy” Campaign is to provide CEWD members with an innovative way to promote jobs in the energy industry. The “I Got Into Energy” Campaign plays off of and reinforces CEWD’s “Get Into Energy” brand, which is designed to appeal to potential job seekers and help them explore what it means to work in the energy industry. CEWD encourages members to use the campaign at any time to promote energy-related events and celebrations.</p> <p>“I Got Into Energy” is designed to highlight actual energy industry employees who are telling their story to potential job seekers about why they were attracted to the industry or their company and what they enjoy about their jobs.</p> <p>“I Got Into Energy” also is designed to leverage the popularity of social media platforms and cell phone or iPad technology by capturing and sharing short recordings of employees in their job settings sharing their messages. The recordings can then be approved within the company and shared on Twitter, Facebook, LinkedIn and other social media platforms where they can be “re-shared” and “retweeted” by other CEWD members, CEWD itself and CEWD’s member associations (EEI, AGA, NRECA, APPA, NEI and DCA), thereby giving the “I Got into Energy” messages broad reach at very little cost to the company.</p> <p>CEWD and its associations partnered to develop common themes about the energy industry that apply equally, regardless of the type of organization (IOU, Public Power, etc.) or the type of fuel used to produce the energy (gas, nuclear, etc.). The common themes form the foundation of sample messages included in the toolkit that can be used by CEWD members who want to participate in the “I Got Into Energy” Campaign.</p>
<p><b>Purpose of “I Got Into Energy” Campaign</b></p>	<p>To provide an innovative approach to promoting jobs in the energy industry:</p> <ul style="list-style-type: none"> <li>• Exemplifies CEWD’s mission to provide industry solutions for regional implementation</li> <li>• Builds awareness of energy careers supporting a variety of fuel types among CEWD’s target demographics</li> <li>• Utilizes Common Content Themes identified by CEWD and its Association members and approved for use in promoting the overall energy industry</li> </ul>

<b>Potential benefits for Industry</b>	<ul style="list-style-type: none"> <li>• Use of social media to appeal to job seekers</li> <li>• Authenticity in recognition of actual employees in actual job settings</li> <li>• Recognition for high demand jobs in the industry</li> <li>• Minimal cost, time and oversight burden through the use of cell phone recordings</li> </ul>
<b>Potential benefits for CEWD Member Associations</b>	<ul style="list-style-type: none"> <li>• Promotion of Common Content Themes developed jointly by the Associations</li> <li>• Ability to retweet, repost, share industry messages to promote a specific Association</li> <li>• Greater visibility for workforce development goals and career campaigns/tools</li> </ul>
<b>Equipment Required</b>	<ul style="list-style-type: none"> <li>• Company owned or leased technology (cell phone, iPad) with ample storage capacity to record the employee messages</li> <li>• PPE, appropriate for the situation, for employees being recorded</li> </ul>
<b>Pre-work Required</b>	<ul style="list-style-type: none"> <li>• Thoroughly read the Toolkit.</li> <li>• Vet the idea and gain approvals within your company.</li> <li>• Use the Implementation Checklist as a planning guide.</li> <li>• Identify a “lead” or a “team” that will work with employees to plan and conduct the recordings.</li> </ul>
<b>Potential Costs to CEWD Members</b>	<ul style="list-style-type: none"> <li>• Employees’ time to make the recording</li> <li>• Time on part of communications and HR team members to plan the campaign, identify employees for recording, attend the recording session, vet the recording and share on social media</li> </ul>
<b>Lead time needed for planning?</b>	4 Weeks
<b>CEWD Membership Dollars in Action</b>	Support materials provided in the “I Got Into Energy” Campaign Toolkit include: <ul style="list-style-type: none"> <li>• General Guidelines</li> <li>• Implementation Checklist</li> <li>• List of possible stakeholders within your company to engage in approvals of the Campaign</li> <li>• Sample appearance release for employees who are recorded</li> <li>• Themes, sample scripts and sample social media messaging</li> <li>• Contact list for informing CEWD, Associations and State Consortia</li> </ul>

# AACT FAST FACTS 2019



## NUMBER & TYPE OF COLLEGES (2019)<sup>1</sup>

Public 941 Tribal 35 Independent 75

**TOTAL 1,051**

## HEADCOUNT ENROLLMENT (FALL 2017)<sup>2</sup>

Estimated change  
Fall 2017 - Fall 2018: -3.2% <sup>(4)</sup>

### CREDIT

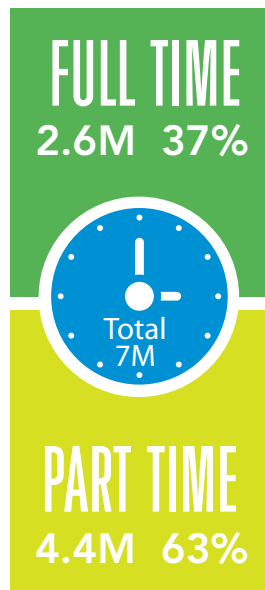
**58%**   
7.0M

### NON CREDIT<sup>(3)</sup>

**42%**   
5.0M

TOTAL: 12M

## CREDIT BY ATTENDANCE<sup>2</sup>



## GENDER<sup>2</sup>



## DEMOGRAPHICS OF STUDENTS ENROLLED FOR CREDIT<sup>2</sup>

HISPANIC.....25%

BLACK .....13%

WHITE.....46%

ASIAN/PACIFIC ISLANDER.....6%

NATIVE AMERICAN ....1%

2 OR MORE RACES.....3%

OTHER/UNKNOWN....4%

NONRESIDENT ALIEN.....2%

## AGE<sup>5</sup>

**AVERAGE: 28**  
**MEDIAN: 24**

**54%**  
<22

**38%**  
22-39

**9%**  
40+



## A BETTER MEASURE OF SUCCESS

Fall 2010 Cohort

VFA metrics are a better measure of community college student success than traditional IPEDS metrics.



### VFA measures:

- All entering students
- 6 years to complete
- 9 separate outcomes

### Traditional IPEDS measures:

- First time, Full time
- 3 years to complete
- Only graduates

## OTHER SIGNIFICANT DEMOGRAPHICS<sup>5</sup>

First generation to attend college .....29%

Single parents.....15%

Non-U.S. citizens .....9%

Veterans .....5%

Students with disabilities..12%

Students with prior bachelor's degree.....8%

## AVERAGE ANNUAL TUITION AND FEES (2017-2018)<sup>7</sup>



**\$3,660**

Community Colleges  
(public, in district)

**\$10,230**

4-Year Colleges  
(public, in state)



**PUBLIC COMMUNITY COLLEGES WITH ON-CAMPUS HOUSING<sup>10</sup>**



**MEDIAN EARNING OF FULL-TIME EMPLOYEES BY EDUCATIONAL ATTAINMENT<sup>11</sup>**

Less than High School Diploma

**\$26,200**

High School

**\$36,000**

Associate Degree

**\$42,600**

Bachelor's Degree

**\$60,100**

## REPRESENTATION OF COMMUNITY COLLEGE STUDENTS AMONG UNDERGRADUATES (FALL 2017)<sup>2</sup>

**41%**

All U.S. undergraduates

**40%**

First-time freshmen

**56%**

Native Americans

**52%**

Hispanics

**42%**

Blacks

**39%**

Asian/Pacific Islanders

## % OF FEDERAL AID RECEIVED BY COMMUNITY COLLEGE (2016-2017)<sup>6</sup>

**34%**

Pell Grants

**18%**

Federal Work-Study

**24%**

Federal Supplemental Educational Opportunity Grants (FSEOG)

**13%**

Subsidized Federal Loans

**6%**

Unsubsidized Federal Loans



## COMMUNITY COLLEGE REVENUES BY SOURCE (2016-17)<sup>9</sup>

Tuition **\$16,919,744,855** 27.8%

Federal **\$6,890,649,604** 11.3%

State **\$19,962,607,648** 32.8%

Local **\$12,143,496,648** 19.9%

Other **\$5,032,734,883** 8.3%

Total **\$60,949,233,638** 100%

## STUDENT FINANCIAL AID (2016-2017)<sup>5</sup>

% OF STUDENTS RECEIVING:

**59%**

Any aid

**34%**

Federal grants

**15%**

Federal loans

**22%**

State aid

**7%**

Institutional aid

## EMPLOYMENT STATUS (2015-16)

**62%** OF ALL FULL-TIME STUDENTS AT COMMUNITY COLLEGES WORK (21% full-time, 41% part-time)

**72%** OF ALL PART-TIME STUDENTS AT COMMUNITY COLLEGES WORK (38% full-time, 34% part-time)



**% OF STUDENTS APPLYING (2015-2016)<sup>5</sup>**

Any aid 73%  
Federal aid 62%

### SOURCE:

<sup>1</sup>AACC membership database, January 2019. Represents regionally accredited primarily associate degree granting colleges.

<sup>2</sup>NCES (2018). IPEDS Fall 2017 Enrollment Survey [AACC analysis].

<sup>3</sup>AACC membership database, 2018 [AACC analysis].

<sup>4</sup>NSC (2018). Estimates provided on NSC (2018) Term Enrollment Estimates Fall 2018.

<sup>5</sup>NCES (2018). 2015-16 National Postsecondary Student Aid Study (NPSAS:16) [AACC analysis].

<sup>6</sup>College Board. (2018). Trends in Student Aid: 2018.

<sup>7</sup>College Board. (2018). Trends in College Pricing: 2018.

<sup>8</sup>NCES (2018). IPEDS 2017 Completion Survey [AACC analysis].

<sup>9</sup>NCES (2018). IPEDS 2016-17 Finance Survey Files [AACC analysis].

<sup>10</sup>NCES. (2018). IPEDS 2017 Institutional Characteristics Survey File [AACC analysis].

<sup>11</sup>Bureau of Labor Statistics (2018). Career Outlook: More Education: Lower Unemployment, Higher Earning.



One Dupont Circle, NW, Suite 700  
Washington, DC 20036  
www.aacc.nche.edu

**TAB:**

**Workforce Development: Recruiting  
and Hiring**



# CEWD's Get Into Energy Test Prep Workshop

Available to Joint EEI/CEWD Members!

Developed by the Center for Energy Workforce Development (CEWD), the Get Into Energy (GIE) Test Prep Workshop is a structured instructor-led program that provides candidates the opportunity to not only learn more about pre-employment testing for the energy industry, but to experience it firsthand. Candidates are exposed to the types of problems they will encounter in real-life testing situations, including being timed while taking practice tests. They also learn strategies for solving the types of questions they will encounter on the EEI CAST, MASS and POSS tests.

The workshop is best suited for candidates who have already been screened and either have work experience similar to the positions for which they may qualify through the CAST, MASS and POSS tests or have recently been through some type of education or training experience to prepare them for these positions. It should be offered to individuals who have gone through the company qualifying process and are ready to take the pre-employment test.

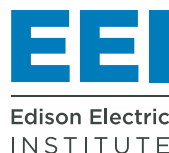
## About the Get Into Energy Test Prep Workshop

- Approximately 20-25 hours in length (dependent on which pre-employment test is the focus).
- Completed 2-3 weeks in advance of the testing date.

- Utilizes print-ready instructor and student guides, saving companies time and money.
- Modular: Can be taught bootcamp-style or over a longer period of time.
- Can help increase candidate pass rates, when candidates are screened, and the program is implemented according to best practices.
- Great to use with education partners, such as community colleges that offer energy degree programs, certificates or bootcamps or community-based organizations that are preparing transitioning adults for energy careers.
- Materials are free to EEI members whose companies are also members of CEWD!

*For maximum impact of the workshop, it is important that the GIE Test Prep Workshop facilitators utilize the lesson plans as they are written. For this reason, CEWD requires that any members who plan to use the workshop materials participate in a 30-minute virtual orientation. After completion of the orientation, CEWD provides members with a full instructor guide, student guide, and a take-home practice booklet designed for candidates to keep preparing until the testing date. CEWD requires that organizations that use the GIE Test Prep program report back on the results—percentage of individuals who passed the pre-employment test vs. percentage that did not.*

For more information on the Get Into Energy Test Prep Workshop and/or to schedule an orientation session, contact CEWD Education Consultant Valerie Taylor at [valerie@cewd.org](mailto:valerie@cewd.org).



**COMING SOON!**

## **Get Into Energy/ Get Into STEM Student Registration Site Overview**

The creation of a diverse, qualified workforce requires focus in every phase of the talent pipeline to ensure diversity and quality of those coming in, and retention of those already employed. It's about making the connection between internal and external efforts to achieve the full impact of all initiatives and strategically linking all initiatives to diversity objectives. CEWD members are seeing results all along this energy education pathway by making strategic linkages and thinking about the process in phases:



- Starting Early by specifically engaging diverse populations in elementary and middle school initiatives.
- Keeping Up the Momentum with diverse populations in high school by building energy competencies that lead to postsecondary success and a career.
- Providing Support in Postsecondary with career navigation, scholarships, mentoring, and internships.
- Retaining Diverse Talent, in part by creating an environment that supports, promotes, and rewards diversity.

As many of CEWD's members have noted over the years, it is important to start career awareness efforts early beginning in middle school and keeping up the momentum through high school. The Get Into Energy/ Get Into STEM Student Registration Site will provide CEWD members with a process to gather student information in an easy way, and to stay connected to students interested in energy careers through their high school years and even through their postsecondary education. The system will provide students/ parents with a tool and system where they can maintain and update their personal information easily throughout their education. Employers will be able to download student information on an ongoing basis and stay connected with the students in a proactive way, either by email or text messaging even after they go off to college. The system will also allow the employers to search for students by school, program, and date of graduation.

Continuous communication with students who show a special interest in STEM / energy-oriented jobs is important to keep them connected with the energy industry and specific energy companies. The system has been tailored to meet the requirements of COPPA for students under the age of 13.

**TAB:**

**Workforce Development: Employee  
Development and Retention**

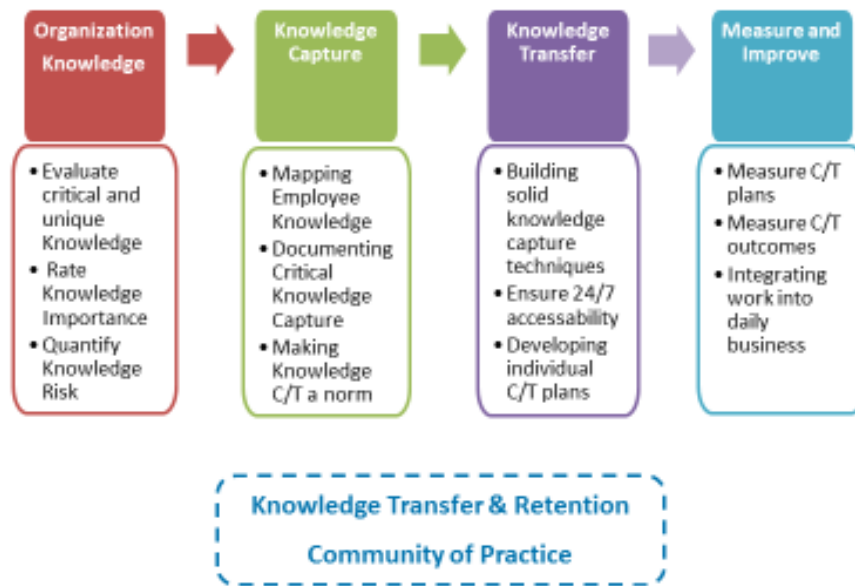
Organizational knowledge capture, transfer and retention is a growing concern for leaders across CEWD member companies. Identifying what knowledge is critical and unique across the business and how the organization ensures it does not leave the organization should be a business planning success factor. More companies are spending time and resources now, looking for methods to retain business critical knowledge.

There is also a lot to be said for companies to include Knowledge Transfer & Retention (KT&R) strategies into a broader Knowledge Management (KM) strategy. KM strategies typically increase focus on knowledge management across an entire company/enterprise and not just one segment/department/operation of the company/enterprise. This approach would reduce the “one and done” perception often seen for “operations oriented” KT&R programs. Knowledge retention success could improve with a more holistic approach.

We believe there are four process segments to capture, transfer and thereby retain business critical knowledge: Organization Knowledge, Knowledge Capture, Knowledge Transfer, and Measure / Improve, leading to “retaining organization capability”. This document will identify the steps an organization can take in each segment and provides the resources, tools, and shares best practices to help with the analysis, documentation and communications of knowledge management requirements. While most companies will have various elements in place, it is important that each segment is considered.

What we often hear is that knowledge capture and retention strategies do not work. To help improve potential success, cross-functional teams that include operational leaders is critical. Human Resources can own the process but organization entities that have business critical knowledge must own the data and capture / transfer methods.

## Process Steps for Effective Knowledge Transfer and Retention



## Process Block 1: Organization Knowledge

The Organization Knowledge process segment is designed to answer the following questions:

- What knowledge is critical or unique in your organization?
- Who has that knowledge now?
- How urgent do your actions need to be?
- What are the knowledge loss risks?

Understanding the knowledge contained within an organization is usually the responsibility of the employees and leaders closest to the work activity. This can span activities from maintenance and operating activities and techniques to work processes in operations or finance or legal organizations. It's important to identify what tasks and activities will be costly to the organization if the employee(s) doing them today are no longer in place.

At the end of this segment, you should have a clear understanding of what knowledge is critical and unique at your company (both activity and process) and how will you ensure it remains at your company.

### Outcomes:

- Clear definitions of what critical and unique knowledge is;
- Importance ratings for both critical and unique knowledge;
- Knowledge transfer priorities that drive potential action of the organization;
- Workforce Knowledge Loss Risk Analysis

**Who needs to be involved?** Employees, Supervisors, Managers, organization leadership

### Company Actions

1. Create a critical knowledge inventory for your team of employees.
  - a. Create a list of critical knowledge and activities performed by team members. Critical knowledge or activities might be "mission critical" meaning they could impact safety, reliability, or financial controls.
  - b. Rate the list of critical knowledge and activities from low importance to high importance (follow tool attached, knowledge inventory tab). This information will be used later when you rate the potential impact of that knowledge loss.
2. Create a unique knowledge inventory for your team of employees.
  - a. Review the critical knowledge list and identify if the knowledge is held by more than one person, undocumented, documented and widely available, etc. Follow the attached tool (knowledge inventory tab) to catalog your information.
3. Consider whether the knowledge being inventoried is Tacit (implicit) or Explicit.
  - a. Tacit (implicit) knowledge is the unspoken, ingrained understanding people use to make decisions. This type of knowledge allows people to act almost without thinking and to make judgments based on experience rather than facts. This knowledge can be more difficult to capture.
  - b. Explicit knowledge, on the other hand, is publicly available and publicly defined knowledge.
  - c. Use this categorization to help identify capture methods further on in the process.
4. Rate the potential for loss of your critical, unique knowledge.
  - a. Using the importance scales for the critical and unique knowledge (in the attached tool, knowledge inventory tab), record the ratings for the knowledge, activities and processes in your team.
  - b. The result of this exercise will be a list of items that should be captured and retained for transfer to other employees.

5. Compile individual reports/action forms, highlighting knowledge capture requirements.

### **Deliverables / Products**

- Critical business knowledge inventory
- Ranked order of knowledge capture requirements

### **Tools**

1. Critical Knowledge Inventory form (Template)
2. Unique Knowledge Inventory form (Template)
3. Knowledge Importance Rating form (Template)
4. SMUD Knowledge Capture Interview Guide
5. SMUD Knowledge Capture Toolkit
6. KT&R Terminology Definitions
7. JEA – Employee Questionnaire
8. PVNGS – Knowledge Assessment Questionnaire

### **Resources**

1. Knowledge Management Transfer Strategies (Descriptions/Examples)
2. UIC Knowledge Loss Risk Assessment
3. PFI – Knowledge Management Framework
4. PVNGS – KT&R Administrative Procedure
5. INPO – KT Guidance\_2006

### **Best Practices**

1. Knowledge Transfer toolkit – The Learning Café
2. GBN Knowledge Transfer Guide
3. VDOT Knowledge Management Toolkit
4. Department of General Services (DGS) Knowledge Transfer Management Toolkit
5. Knowledge Transfer toolkit\_Best Practice\_Keith DeLaRue
6. Succession Planning-Knowledge Transfer Guide; New Brunswick, Canada

## Process Block 2: Knowledge Capture

The Knowledge Capture process segment is designed to answer the following questions:

- Who has the critical/unique knowledge?
- How do you stop the loss of critical or unique knowledge?

In the Knowledge Capture segment, an organization documents who has the knowledge defined in process block 1 and makes decisions related to how quickly the knowledge needs to be captured. The team defined in process block 1 determines the number of employees with the critical knowledge, the expected attrition for those employees, and the urgency for those employees to document their knowledge. Additionally, the team needs to identify who the knowledge needs to be transferred to.

The level of urgency in this phase depends on the size of the organization, the estimated attrition, and the resources available. The biggest fear across the industry is the increasing retirement rate and the increase in other-than-retirement attrition. The team will need to be open to discussing their potential turnover and the timing of the capture activities.

### Outcomes

- Alignment of employees holding critical knowledge with exit timing;
- Documents that begin to assemble a knowledge transfer plan;

**Who needs to be involved?** Employees, Supervisors, Managers, organization leadership

### Company Actions

1. Using the knowledge inventory started in process block 1, identify the employees that hold the knowledge listed. Use the attached tool, employee inventory tab.
2. Using the Workforce Knowledge Loss Risk Analysis tool found on the CEWD Workforce Planning Wizard (Q2) as a guide, identify the urgency required for transfer activities. Document your analysis on the employee inventory tab.

### Deliverables / Products

- Employee level Knowledge Loss list, with risk and priority assigned

### Tools

1. Employee Knowledge Inventory form (Template)
2. SMUD\_Job Shadowing tool
3. SMUD\_After Action Review tool
4. SMUD\_Storytelling tool

### Resources Available

1. PFI Knowledge Transfer Framework

### Best Practices

1. Southern Nuclear Knowledge Transfer & Retention Corporate Guidelines
2. Entergy Knowledge Risk Assessment Guide
3. SMUD Knowledge Capture Toolkit

## Process Block 3: Knowledge Transfer

The Knowledge Transfer process segment is designed to answer the following questions:

- How can we use technology to capture the knowledge our organization has?
- What method will be used to capture the knowledge?
- Where will the knowledge / information be stored to provide transfer capability?

“Knowledge Transfer” is the process of extracting and transferring tacit knowledge and/or facilitating learning of explicit knowledge. The knowledge must both be learned and usable in a relevant context; and if both conditions do not exist, the knowledge will not be transferred. While the foundation of this process is identifying what, who and when, how the knowledge is captured and where it is stored to be used later is equally important.

There are many, many methods to capture knowledge and store it in a way that others can learn from. Providing these resources 24X7 to employees can also enhance safe operating practices by allowing for better pre-job planning of infrequently performed work tasks. Some of those methods are captured in the documents attached.

### Outcomes

- Build solid knowledge capture technics;
- Designate storage locations and formats (for 24 hour access);
- Develop deliberate, employee specific action plans;

**Who needs to be involved?** Employees, Supervisors, Managers, organization leadership, Technical Training, IT

### Company Actions

1. Identify appropriate methods for your company to gather, manage and store knowledge related information and data. A starter list of methods in use is listed in the “tools” link.
2. Using the attached excel tool, on the employee action plan tab, identify an appropriate method of capture for the employee and the knowledge being collected.
3. Ensure all information captured is useful and valid. Review and verify procedural information, review and test process activities (have new employees test procedures), and capture helpful notes, pictures and comments within your documents.
4. Assign an appropriate due date for the action item.

### Deliverables / Products

- Written knowledge capture/transfer methodology
- Employee level knowledge transfer plan

### Tools

1. Employee Action Plan form (Template)
2. KT&R Methods Reference Guide

### Resources

1. Role Transition Tool – Multnomah County OR
2. Communities of Practice Article / Guide

### Best Practices

1. CEWD newsletter stories
2. List internet search documents
3. Knowledge Transfer Toolkit; Keith DeLaRue

## Process Block 4: Measure and Improve

The Measure and Improve process segment is designed to answer the following questions:

- How well are the plans within our organizations working to retain knowledge?
- Do we have the right knowledge capture methods available to the organization?
- Is knowledge transfer more integrated into the daily work activity (culture statement)?

The Measure and Improve process segment will provide information focused on measuring process step activity, creating a “scorecard” type methodology to track process adherence, and developing ways to identify and track “saves and failures” of operating systems do to “knowledge loss”.

### Outcomes

- KT&R process Scorecard
- Production Save/Failure Scorecard
- Process Improvement opportunities

**Who needs to be involved?** Employees, Supervisors, Managers, organization leadership

### Company Actions

1. From the organizational review work accomplished in process block 2 and 3, develop a list, by organization of the employees requiring action plans for knowledge transfer. Create a scorecard that will monitor the steps required to create knowledge transfer.
2. Roll up the individual organization scorecards to a site/department/company level scorecard. This action will be site or company specific.
3. Develop a way to capture “Saves / Failures” that could be attributed to knowledge transfer / loss. Monitor production activities identified in the risk analysis in process block 1. Document those Saves/Failures and post a scorecard as needed to measure the impact or KT&R.
4. Periodically, review the posted scorecards and discuss gaps seen in the data. Conduct problem solving sessions to identify opportunities to improve and take action to make improvements.

### Deliverables / Products

- Process Activity Scorecards
- Saves/Failures scorecards and ROI
- Continuous Improvement Information

### Tools

1. (Future)


### Resources

1. NEI Mitigation Strategies for Retaining Employees

### Best Practices

1. (Future)

**TAB:**  
**Troops to Energy Jobs**



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# Troops to Energy Jobs Workshop

## TEJ Workshop Agenda

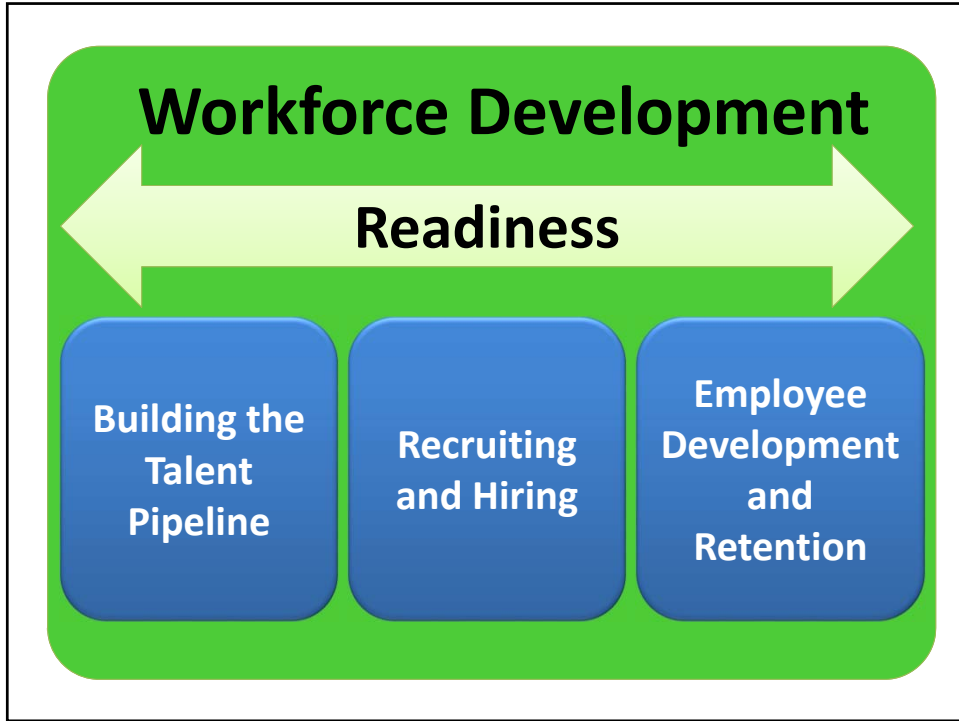


- Overview
- TEJ Assessment
- Company Readiness
- Building Talent Pipeline
- Internal Alignment
- Retention of Veteran Talent
- Closing the Gaps/ Action Planning

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# TEJ Recruitment, Hiring and Retention Assessment



# TEJ National Template - Implementation Wizard



CEWD Members Implementation Wizard



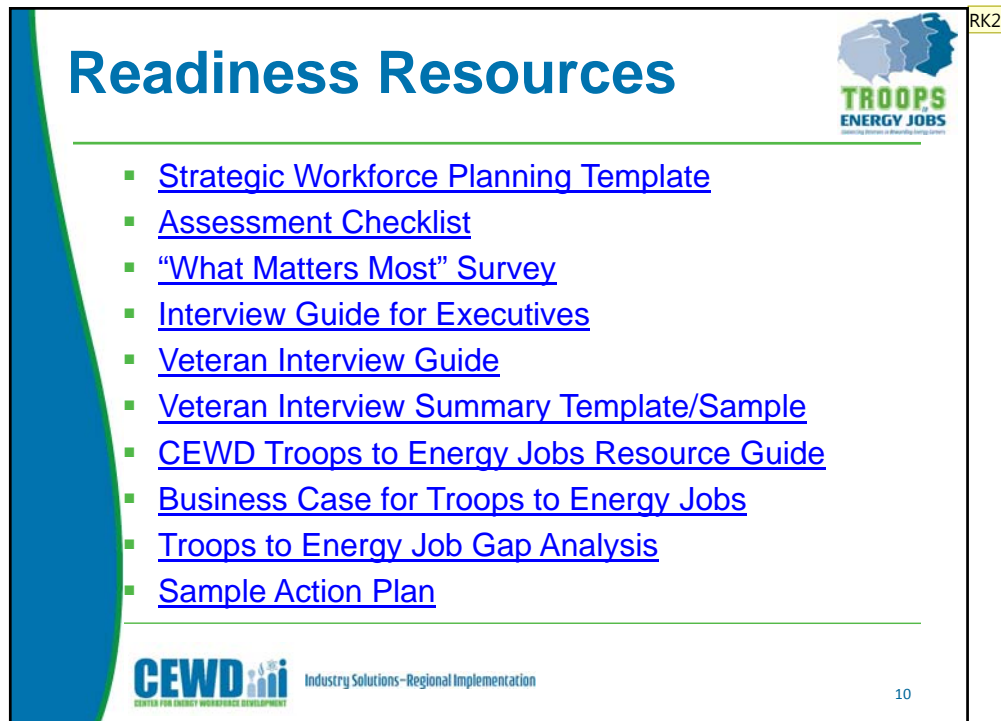
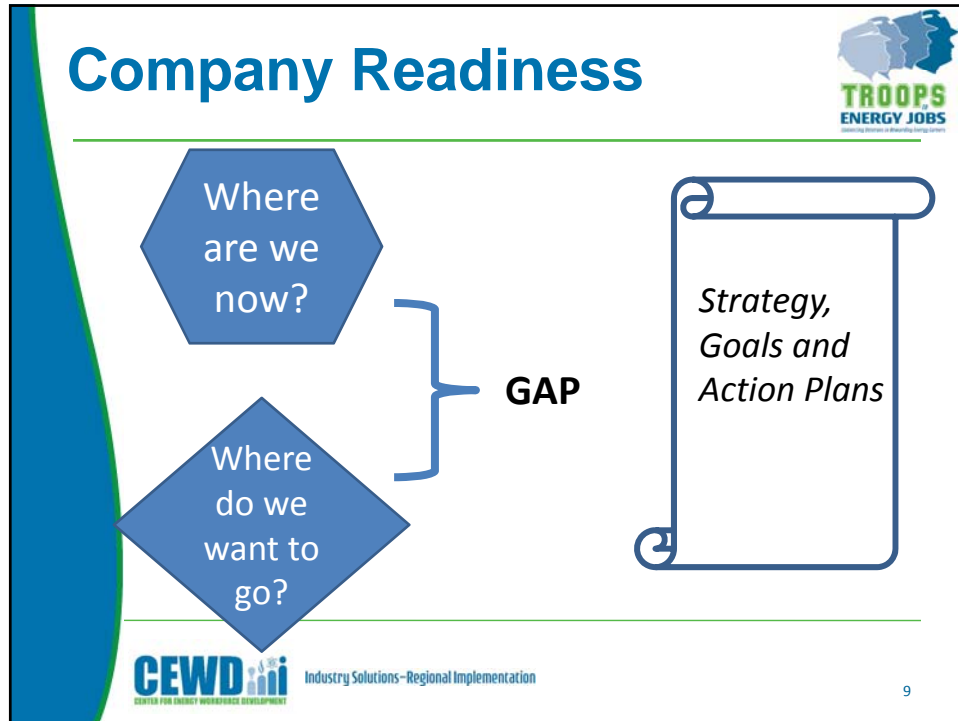
- ▶ Intro
- ▶ Prepare
- ▶ Build
- ▶ Implement
- ▶ Measure

## Troops


### Troops to Energy Jobs

The Troops to Energy Jobs Initiative ([www.troopstoenergyjobs.com](http://www.troopstoenergyjobs.com)) is designed to establish and maintain outreach to groups and companies across the country to assist in recruiting qualified veterans. By creating a roadmap, companies participating in Troops to Energy Jobs are helping to ease the transition for servicemen and women into both a civilian life and a civilian career. In utility terms, this initiative streamlines the process of moving from the front line to the utility workforce.

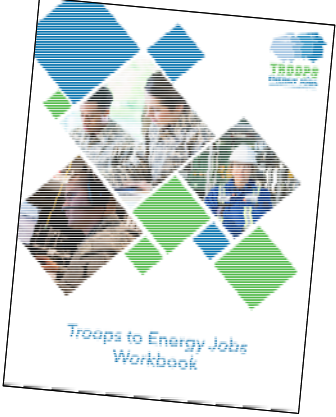
*For Troops to Energy Jobs to be successful, companies must have partnerships, infrastructure,*



# TEJ Workbook

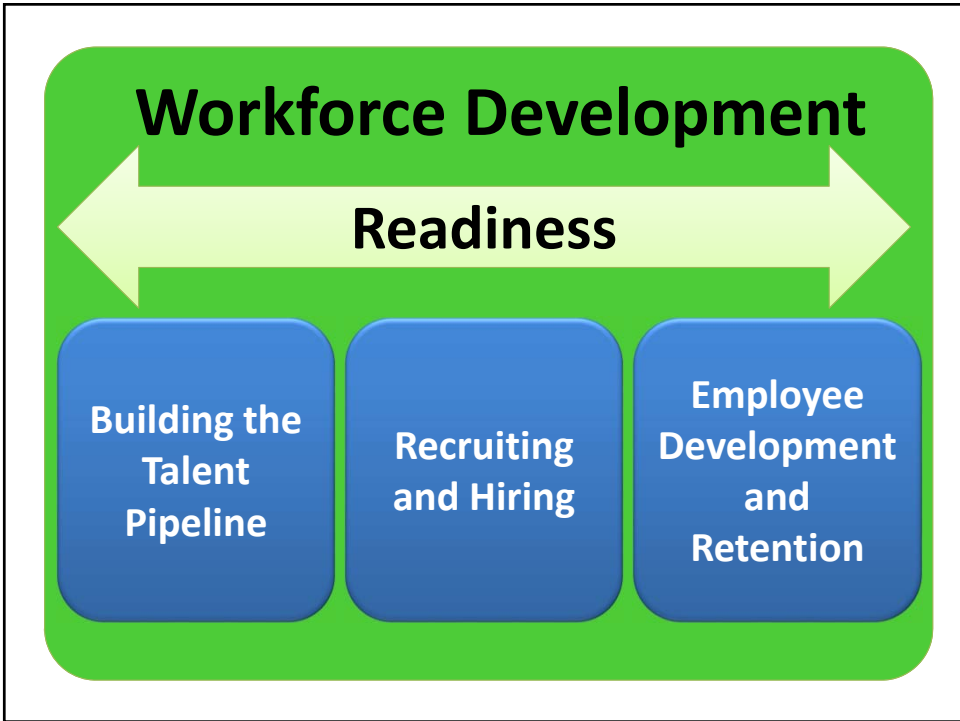


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## Support and Resources Needed



- Executive Champion
- Funding
- Communication Support
  - Internal and External focused
- Policies and Practices aligned to support veteran hires



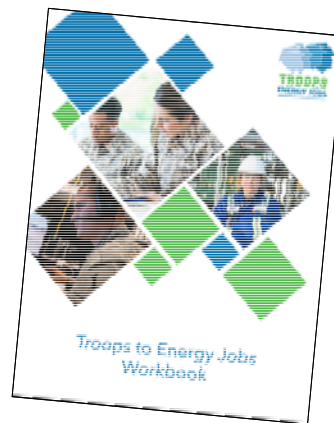
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## TEJ Workbook

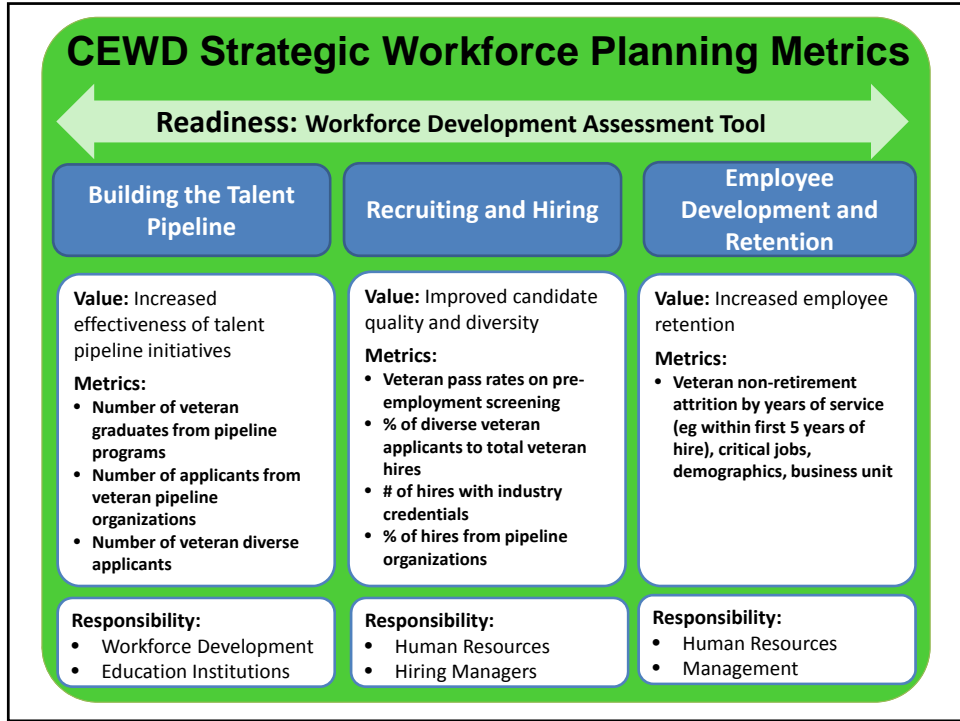


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## Building the Talent Pipeline

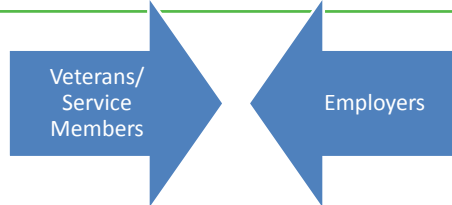


- [National Template](#)
- [Psych Armor Education Videos](#)
- [SkillBridge Program Overview and SkillBridge Checklist](#) RK1
- [Troops to Energy Jobs Veterans Database Summary](#)

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## Veteran Database

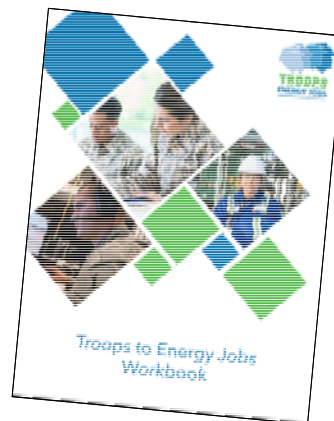


- Over 2500 veterans registered
- 53 companies registered on the database
  - Ability to search by desired work location, by MOS, or by skill

## TEJ Workbook



- Complete Page 5



## How easy it for veterans to find your company







Alabama  
Alabama Power Co. (Southern Company) <http://alabamapower.com/veterans.php>  
Pike Corp. <http://pike.com/kuarsa>  
Premier Power <http://premierpower.com/our-team/>

Arizona  
Arizona Public Service Company (APS) <http://aps.com>









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## Help Veterans Find Your Jobs



- TEJ Roadmap
  - [Job Postings](#)
- [TEJ Commitment](#) / TEJ Employer Badge
- Military Webpage on [TEJ Roadmap](#)
- Education partners listed on [GIE Training Program Locator](#)
- [Troops to Energy Job Logo and Link](#)
- [MOS Translator](#)
- [TEJ Virtual Coach](#)



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## Attracting Veterans Resources



- [Troops to Energy Jobs Flyer](#)
- [Troops to Energy Jobs Business Card](#)
- [Troops to Energy Jobs Work Ready Bootcamp Curriculum and Guide](#)
- [Resume Writing Presentation](#)
- [Interviewing and Networking Presentation](#)
- [Credits2Careers](#)



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It's Time For A Break



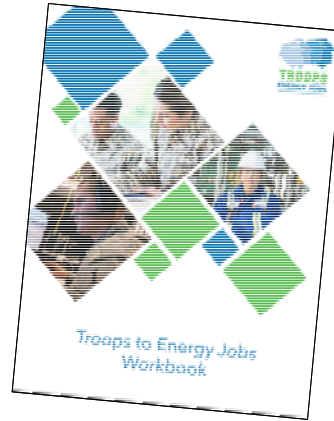
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## TEJ Workbook



- Complete Page 6



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## Veteran Retention



- [Veterans Mentoring Program Toolkit](#)
- [Veterans Human Resources Policies and Promising Practices Guide](#)
- [Checklist for review of HR Policies](#)
- [Links to Guides on Federal Laws](#)
- [Psych Armor Videos](#)
- [Using ERGs to Increase Diversity](#)
- [New Employee Orientation Process for Veterans](#)
- ["I Got into Energy" Social Media Campaign](#)
- [Veterans in Energy](#)



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# Veterans in Energy



**Veterans  
in Energy**

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2019 Status Update – April 2019

[veteransinenergy.org](http://veteransinenergy.org)

## VIE History

Purpose: ...designed to be a central platform for energy companies to learn and share “best practices” for recruiting, retaining and supporting veteran employees...for the individual veteran energy professional, Veterans in Energy will provide opportunities for outreach, networking and mentoring, recognizing the unique bond of military service and rewarding leadership with opportunities to advance in an energy career...

Founding companies:

- Berkshire Hathaway Energy,
- Arizona Public Service Company,
- ConEd,
- Southern Company,
- Dominion Energy,
- Tennessee Valley Authority,
- National Rural Electric Cooperative,
- The Edison Electric Institute and
- Nuclear Energy Institute

- Utility Industry Workforce Initiative (UIWI), a public-private partnership, initiated by Energy Secretary Ernest Moniz in June 2015.
- Identifies actions the energy industry can take to better facilitate the recruitment, training and retention of exiting service members, veterans and military spouses



## VIE Status

National Events:

- |                       |  |
|-----------------------|--|
| October 13&14, 2016   | Inaugural Forum – National Leadership Summit               |
| October 15 &16, 2017  | Sustainability Forum – to gauge country-wide participation |
| October 4&5, 2018     | Stand it up Forum – to build the framework                 |
| September 12-13, 2019 | Take Wing Forum – Expansion of national message            |

2019 Regional Events  
*(in conjunction with CEWD)*

- West/Northwest – April 9-10 Tucson,
- South/Southeast – May 14-15 Juno Beach, FL
- Midwest/Plains – June 19-20 Minneapolis, MN
- Mid-Atlantic/Northeast – July 10-11 Washington DC



# VIE Leadership

## Board of Directors

President, Jon A. Smith (Hexagon Group)	Communications Committee, Jim Spiers (NRECA)
Vice President, Cassandra Wheeler (Southern Co.)	Treasurer, Kelcey Brown (PacifiCorp)
Past President, Hal Pittman (APS)	At Large, LaVonne Rose (EEI)
Professional Development Committee, Iliana Rentz (NextEra)	At Large, Steve Vaughn (NEI)
ERG Committee, John Broschak (Consumers Energy)	At Large, Mike Monfalcone (Dominion Energy)

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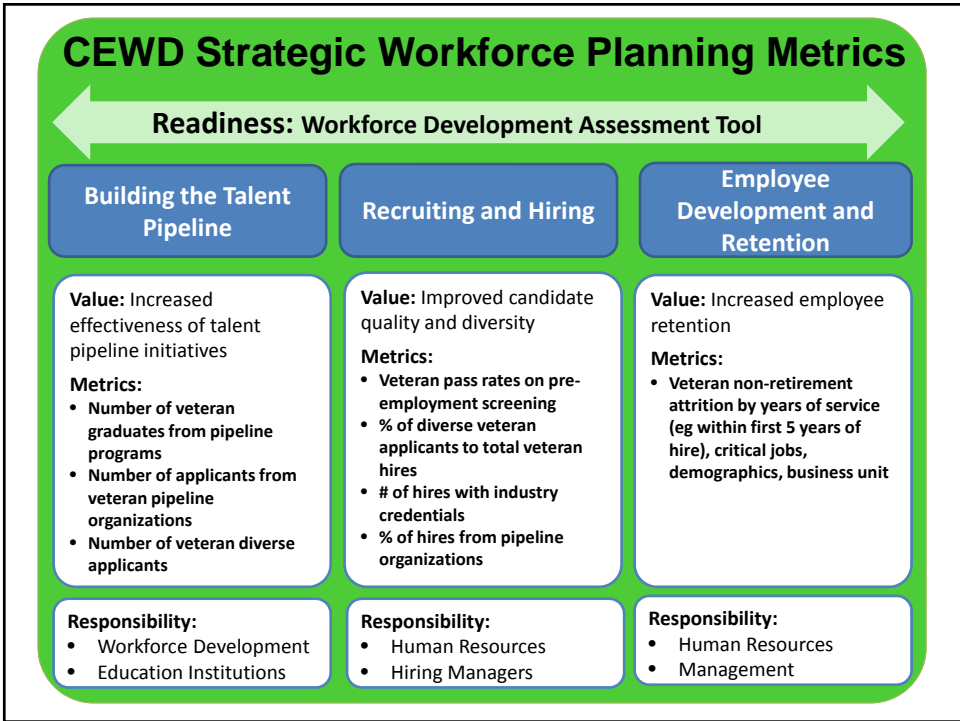
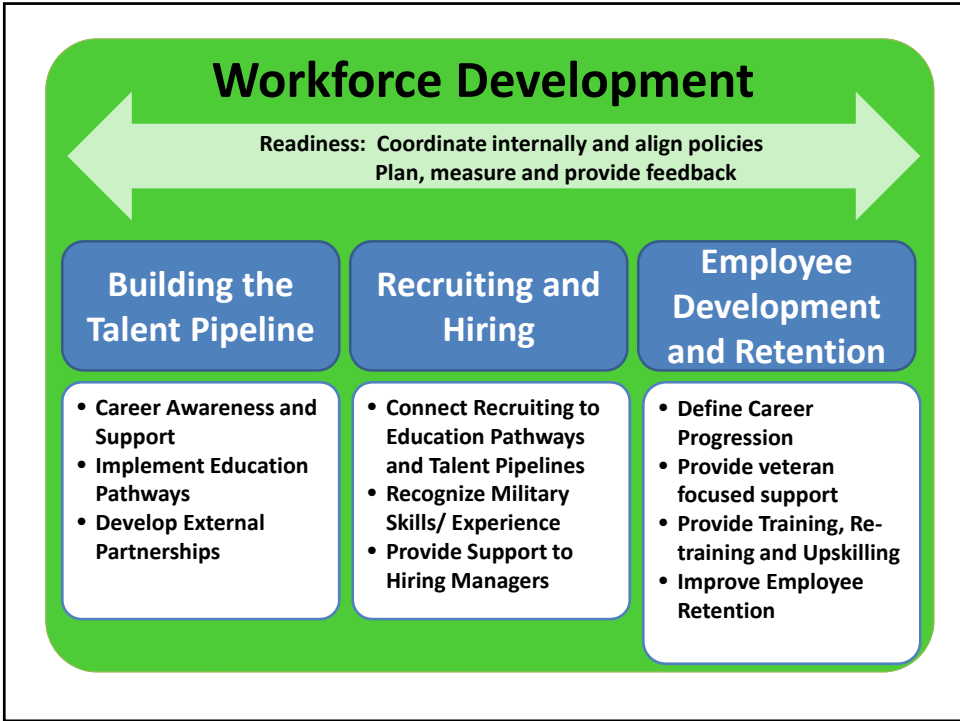
## By The Numbers

325+ members	34 Committee Volunteers
53+ Energy Companies Participating	15+ Sponsors
180 participants at 2018 Forum	165 participants at 2017 Forum
Incorporated 2018 in Washington DC	501(C)(3) not-for-profit filed with IRS



# VIE In Pictures

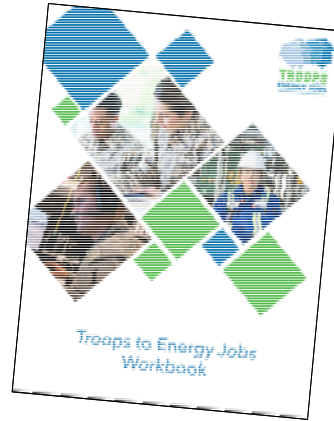




## TEJ Workbook



- Complete  
Page 9 and 10



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## TEJ Workshop



- What did you learn?
- What was most helpful?
- If you have further questions or need assistance, reach out to your CEWD Consultant
  - Beth Britt, Midwest
  - Ray Kelly, Northwest, West, South
  - Rosa Schmidt, MidAtlantic, Northeast, and Southeast



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## Five Quick Things That Support a Military Recruitment Strategy

Whether a company is interested in enhancing current efforts or building a military initiative from scratch, there are at least five quick things the company can do to help ease the transition for servicemen and women into both a civilian life and a civilian career. These also make it easier for veterans to find your jobs, and know that you are a company that is committed to and supports veterans.

### 1. **Sign the Troops to Energy Jobs (TEJ) Commitment**

The TEJ Commitment demonstrates a company's support and commitment to the Troops to Energy Jobs initiative and its engagement in one or more of the following objectives:

- Make it easier for veterans to find your jobs and to translate their skills and training.
- Accelerate the time it takes veterans to earn required credentials or degrees.
- Provide full value for military training and experience when hiring.
- Create a military-friendly environment within the company.
- Increase the number of veterans who are recruited, hired, and retained.

Please [click here](#) to view and complete the commitment form.

### 2. **Add the TEJ Employer Badge to your website as well as all veteran-related material**

A key step in making it easier for veterans to find your jobs and translate their skills and training is providing veterans easy access to the Troops to Energy Jobs website and roadmap. CEWD has created a badge you can post on your military recruiting or career site that not only takes veterans directly to the Troops to Energy Jobs site, but enables us to track veteran activity from your site. Once you have signed the commitment form, the Troops to Energy Jobs Employer Badge will be added next to your company name on the TEJ Roadmap. [Go to the Build section of the Troops Wizard](#) and click on "Step 2" to see an example of how the badge can be used on a company site.



### 3. **Register on the TEJ Veterans Database**

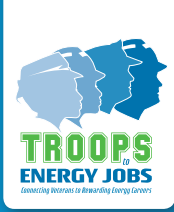
The Veterans Database helps connect veteran jobseekers with employers who are interested in hiring veterans. The current database contains over 2,400 veterans who are seeking employment in the energy industry. Registered companies are able to search for veterans looking for jobs within their states or by MOS code. The database enables recruiters to reach out proactively to veterans to alert them to job openings, career fairs, testing opportunities, or just to inform them of veteran-related activities. [Click here to register on the database.](#)

### 4. **Join the TEJ Community of Practice**

CEWD holds quarterly Troops to Energy Jobs Community of Practice calls. The Community of Practice includes military recruiters, military outreach specialists, and those responsible for implementing the veteran strategy within their company. Ensure that the proper company representative(s) is added to the meeting notice by sending an email to [rosa@cewd.org](mailto:rosa@cewd.org).

### 5. **Ensure your open jobs are posted on the TEJ Job Posting Site**

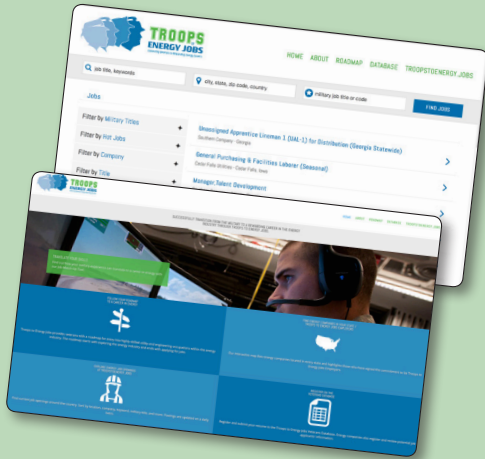
CEWD has created a one-stop job search site for veterans where all member companies' open positions are posted. DirectEmployers scrapes CEWD member company sites each night for job postings, and adds them to our posting site. Veterans can click and view job descriptions as well as be taken to the company site to apply for these jobs. Any changes to applicant tracking systems may affect the scraping process. Therefore, please check the site at <http://troopstoenergy.jobs> to ensure your open positions are posted. If there is a problem, please send an email to [rosa@cewd.org](mailto:rosa@cewd.org).



# Update

February 2019

54 industry members have made the commitment to Troops to Energy Jobs. Help us increase that number in 2019. To become a Troops to Energy Jobs Employer, please fill out the commitment form at <https://www.surveymonkey.com/r/TroopsCommitment>



## Take a look at the changes in our Troops to Energy Jobs Website

- Updated with a more modern look, making it more visually appealing and easier for users to view on their cell phones.
- Veterans Database has over 2,500 veterans registered, as well as 54 member companies. CEWD will contact each of the registered veterans in 2019 to determine who is still interested in an energy career or who may already be employed.
- Ability to search for job openings within a certain mile radius of a veteran's home city, making it easier for veterans to find jobs. Previously, veterans had to search by state.

## New and updated member resources / National Template



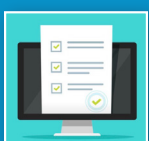
- Established a TEJ Taskforce of CEWD Member Military Recruiters to review the TEJ website as well as the TEJ National Template and provide input from both a veteran and industry member perspective.



- Recognition banner on CEWD homepage for member companies who received the GI Jobs Military Friendly Companies and HIRE Vets Medallion Awards.



- Working with **Veterans in Energy** to incorporate them into our 4 Region Meetings this year, to create more awareness of their organization across our member base. Region Meetings will consist of a full-day CEWD update and a half-day workshop focused on military recruiting, hiring, and retention. The goal is to have our members better understand all the resources and tools available to them, as well as have them work through some of their goals/gaps and walk out with a plan.



- Conducted a "What Matters Most" Survey of our members. We received 37 responses and will use this data in our workshops.

## Partnerships / Alliances:



- We partnered with **PsychArmor**, a national nonprofit that provides FREE online education and support to all Americans who work with, live with, or care for military service members, veterans, and their families. Links to videos that supplement and support the actions/steps identified in our National Template have been added to the CEWD site. Troops to Energy Jobs has been added to PsychArmor's partner page.



- We partnered with **Credits2Careers**, an academic and career portal for prospective military and veteran students. The portal translates the Joint Service Transcript/ military experience and training into college credits. We have added their link and website information on our TEJ Roadmap. Credits2Careers has added Troops to Energy Jobs to their website. They are also reviewing our MOS translator to ensure they have captured all the MOS codes in their database that may be aligned to our jobs.



- **Academy Women** will be holding a Career Coaching Workshop for transitioning women military officers, veterans, and senior enlisted women in April. Information about Troops to Energy Jobs will be added to the program booklet.



# Troops to Energy Jobs Veterans Database

The Troops to Energy Jobs Veterans Database is designed to help veterans get connected to employers interested in hiring veterans. Using a brief form, veterans register their basic personal information, including their MOS code and military experience, as well as upload a resume into the veteran's database. The database allows registered veterans to connect directly with registered employers.

CEWD member companies can also register on the database by completing a short registration form. Once this is done, employers can search the database for registered veterans with a specific skill set, MOS code, or a veteran who may be interested in a job in their service territory. The employer will also be able to upload veteran resumes for review, allowing them to reach out the job seeker regarding job opportunities that become available. Registered veterans can view a list of recruitment contact information for registered employers and reach out directly to the company with questions they may have.

The site is only available to CEWD member companies. The database is part of the Troops to Energy Jobs website designed to help veterans make a successful transition to a rewarding career in the energy industry and to help companies implement their own initiatives to smooth the way for veterans entering energy jobs. This website guides veterans in a step by step process to transfer their military training to a new energy job, identifying any additional education and credentials they may need, and supporting them in their job search by utilizing an interactive Troops to Energy Jobs Roadmap.

The roadmap includes a listing of all CEWD member company jobs available across the United States in one location. Veterans can sort the jobs by city, state, or job classification. All energy jobs are scraped from member sites and posted on the database every night.

The screenshot shows the website's navigation bar with links for Home, Roadmap, and Registration. Below the navigation bar are links for Veterans and Employer Companies. The main heading is "Veterans Registration". A welcome message states: "Welcome to the Troops to Energy Jobs Veterans Database. Using the brief form below, veterans may register their basic information and submit a resume for employer companies in the energy industry to review. As relevant job openings in your location become available, employers will be able to notify you about these opportunities. You can also view a list of recruitment contact information from participating employers." It also mentions a link to the Heroes website and the Troops to Energy Jobs Virtual Coach, and notes sponsorship by American Electric Power. A call to action says "Register below to get started!" and a link to view recruitment contact information is provided.

**Register**  
Submit your information to the Veterans Database.

First Name

Last Name

Cell Phone Number

**Sign in**  
Already registered? Sign in here to update your information.

Email

Password

[Forgot your password?](#)

Ratings 0 – No Extent    1 – Little Extent    2 – Some Extent    3 – Great Extent    4 – Very Great Extent

## Military Recruitment Readiness

Rating	
	1. My company has a clear vision for military recruitment with short- and long-term strategies.
	2. My company's communication strategy reinforces our support for military recruitment/retention.
	3. My company has a military recruitment/retention dashboard with defined metrics.
	4. My company has audited our policies and procedures for impact on veterans.
	5. My company has executive support for military recruitment goals.
	<b>TOTAL</b>

## Building Military Talent Pipeline

Rating	
	1. My company engages with veteran pipeline organizations to build awareness of energy careers.
	2. My company's veteran pipeline partners clearly understand our requirements for each critical job.
	3. Hiring managers for critical jobs in my company partner to visit pipeline programs to discuss job requirements.
	4. My company recognizes and provides credit for military experience and training when hiring.
	5. My company measures effectiveness of our sponsored veteran pipeline programs.
	<b>TOTAL</b>

## Military Recruiting and Hiring

Rating	
	1. Company Recruiters are connected to our sponsored veteran pipeline programs.
	2. My company's applicant tracking system identifies candidates from partnered and preferred pipeline sources/ programs.
	3. Company Recruiters are held accountable for creating a candidate pool that include veterans.
	4. Hiring managers understand their role and are held accountable for hiring veterans.
	5. My company's applicant tracking system provides data on veteran hiring.
	<b>TOTAL</b>

Ratings 0 – No Extent    1 – Little Extent    2 – Some Extent    3 – Great Extent    4 – Very Great Extent

## Engaging and Retaining Veteran Talent (Employee Development and Retention)

Rating	
	1. My company has a specific onboarding process for veterans, which may include a mentor or buddy program.
	2. Veteran Employee Resource Group is visibly championed by senior management and provide input into company veteran strategy.
	3. Veterans understand the progression/career path for their jobs.
	4. My company collects, analyzes, and acts on stay and/or exit interview data, and monitors retention data related to veterans.
	5. Company veteran employees and veteran employee resource group members volunteer and support company sponsored veteran recruitment, hiring, and retention initiatives.
	<b>TOTAL</b>

### Summarize your assessment below:

Military Recruitment Readiness

Building Military Talent Pipeline

Military Recruiting and Hiring

Engaging and Retaining Veteran Talent

---

Grand Total Score

### How does your company compare?

Score	Results
0 – 25	Program not effective or in place
26 – 44	Significant gaps exist
45 – 59	Program is maturing and meets majority of objectives
60 - 80	Program is fully matured

## **Military Recruitment Readiness**

[Strategic Workforce Planning Template](#)

[Assessment Checklist for Military Outreach, Recruiting, and Retention Practices](#)

[Interview Guide for Executives](#)

[Veteran Interview Guide](#)

[Veteran Interview Summary Template/Sample](#)

[CEWD Troops to Energy Jobs Resource Guide](#)

[Business Case for Troops to Energy Jobs](#)

## **Building Military Talent Pipeline**

[National Template](#)

[Job Match-Up finder for Veterans](#)

[Troops to Energy Jobs Flyer](#)

[Troops to Energy Jobs Business Card](#)

[CEWD Troops to Energy Jobs Resource Guide](#)

[SkillBridge Program Overview and the SkillBridge Checklist](#)

## **Military Recruiting and Hiring**

[Veteran Hire Tracking Dashboard](#)

[Troops to Energy Jobs Veterans Database Summary](#)

## **Engaging and Retaining Veteran Talent**

[Veterans Human Resources Policies and Promising Practices Guide](#)

[Checklist for review of HR Policies](#)

[Veterans Human Resources Policies and Promising Practices Guide](#)

[Links to Guides on Federal Laws](#)

[Using ERGs to Increase Diversity](#)

[New Employee Orientation Process for Veterans](#)

[Veterans in Energy](#)

[“I Got into Energy” Social Media Campaign](#)



# Troops to Energy Jobs Workbook



# What Is the Problem You Are Trying to Solve? What Are Your Objectives Around Veteran Recruiting, Hiring, and Retention?

Do you have a clear vision for military recruitment with short term strategies? \_\_\_Yes \_\_\_No

Select  
Target Jobs

### Professional

- Engineer
- IT
- Other

### Technical

- Technician
- Lineworker
- Other

Describe the  
Challenges  
You Face

### There are:

- enough
- not enough
- don't know

**veterans in the talent pipeline  
for target jobs.**

### There are:

- enough
- not enough
- don't know

**veterans applying for our  
target jobs.**

### There are:

- enough
- not enough
- don't know

**veterans being hired into our  
target jobs.**

### There are:

- enough
- not enough
- don't know

**veterans being retained in  
target jobs.**

## State the Problem

*Examples:*

There are veterans in the talent pipeline for engineering jobs, but they are not applying for jobs at my company.

Or

I don't know if there are veterans in the talent pipeline, or if they are applying for jobs, but they are not being hired.

Or

We do have enough veterans in the talent pipeline, but they are not being hired into our target jobs.

Notes/State the Problem

## Internal Support and Resources

**What is your current level of support and resources?**

### **Executive Support for this initiative is:**

- Strong – there are identified champions and an understanding of the needs and requirements
- Okay – there are pockets of support
- Weak – there is limited executive support
- I don't know

### **My company's veteran communication strategy:**

- Includes web and social media presence that support key messages for veterans positions
- Includes visuals of veterans in all positions
- Includes communications to educate internal stakeholders
- I don't know if there is one

### **The funding for this initiative is:**

- Sufficient
- Limited
- Dependent on \_\_\_\_\_
- I don't know

### **My company's personnel systems, policies, and practices are aligned to support the recruiting and retention of veterans.**

- HR policies and procedures support the needs of veterans
- We have a recruiter dedicated to veteran hiring
- We have a separate onboarding process for veterans
- We track veteran hiring - number of veteran applicants as well as hires
- I don't know

**Notes/Gaps**

## Partnerships and Collaboration



### Current Partners

#### Partnerships:

- We have identified education partners and have established relationships
- We have identified community partners and have established relationships
- We have identified veteran recruiting sources/veteran pipeline organizations
- We measure the effectiveness of our partnerships in providing qualified veteran applicants

#### Internal company partnership:

- We have identified a cross-functional team to support this initiative
- Operations has partnered on this initiative
- Hiring managers are engaged and understand/support the company's goal to hire more veterans

#### Name the specific organizations who currently help you implement your veteran initiative:

- Veteran Services Organizations
- Transition Assistance Offices
- Workforce System – LVER/DVOPs
- SkillBridge Program
- Veterans Database
- Others:

These partners are listed on our Affirmative Action Plans. \_\_\_Yes \_\_\_No

We measure the ROI for our key partnerships. \_\_\_Yes \_\_\_No

**Notes/Gaps**



## Attracting Veterans/Military to Your Company

How easy is it for veterans to find your jobs and translate their skills and training to your jobs?

- We have a webpage focused specifically for veterans.
- We have the Troops to Energy Jobs logo and link on our webpage.
- We have signed the CEWD Commitment and added the Troops to Energy Jobs Employer Badge to our website and our military marketing materials.
- We have the CEWD MOS translator on our military webpage.
- We partner with military-friendly education institutions who provide credit for military training and experience.
- Our education partners are listed on the GIE Training Program Locator on the Troops to Energy Jobs Roadmap.
- We collaborate with Veteran Services Organizations at education institutions to create awareness of our jobs.
- We provide credit for military training and experience during the hiring process.
- We bring veteran employees with us to career fairs or other events to recruit veterans.
- Our recruiters and hiring managers know about and support our veteran pipeline programs.
- Our hiring managers partner to visit pipeline programs/events to discuss job requirements.
- Our veteran pipeline partners clearly understand the job requirements for our target jobs.
- Our job postings encourage veteran candidates to apply for company jobs.
- We post jobs on veteran-related websites and social media.
- I don't know.

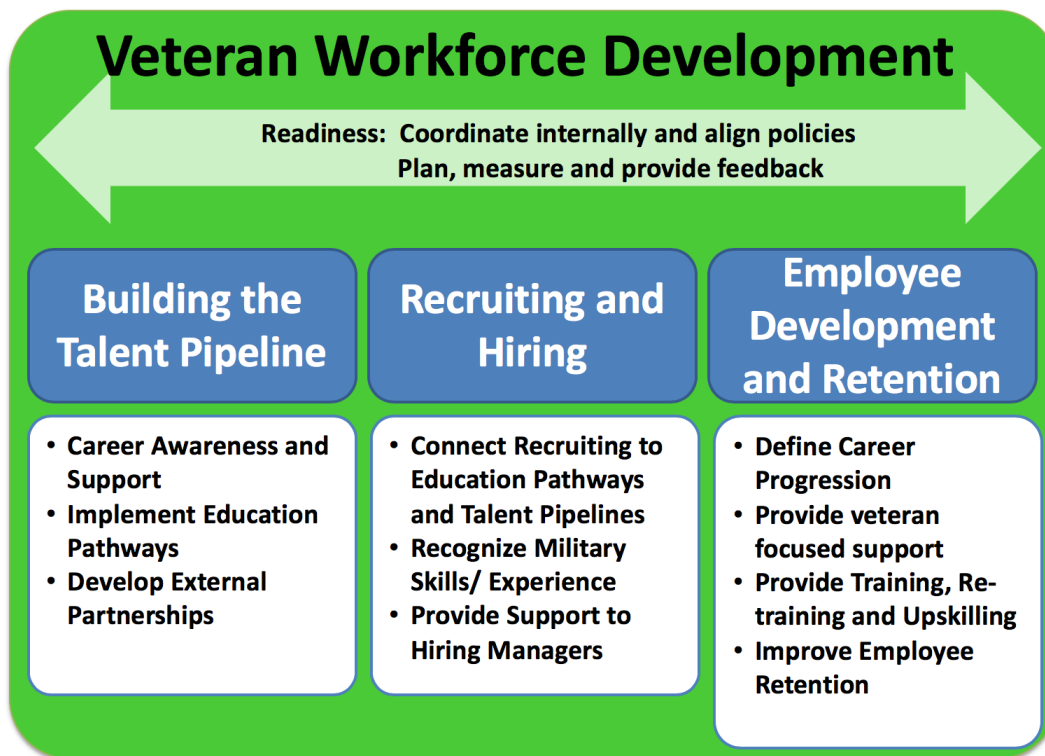
### Notes/Gaps



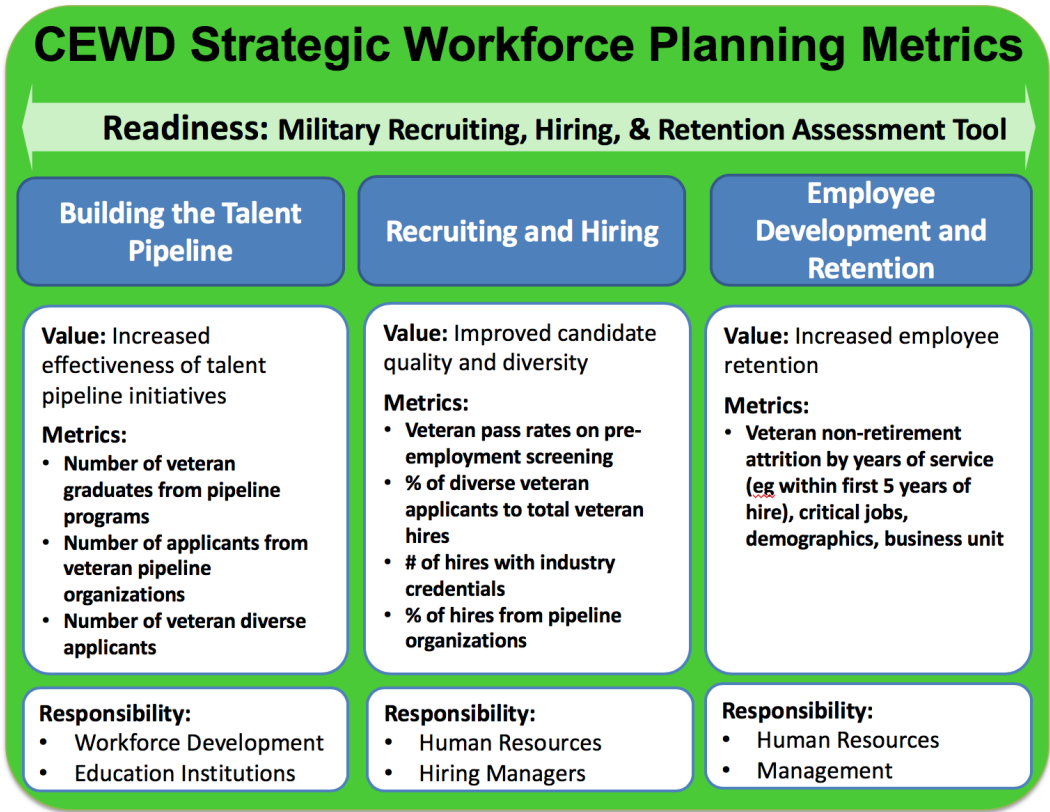
Are company personnel, systems, and practices aligned to support the needs of veteran employees?

- Our Applicant Tracking System identifies candidates from partnered pipeline sources/programs.
- We have a veteran-focused onboarding process.
- We have an established buddy/mentoring program for veterans.
- We have established veteran resource groups.
- Our veteran resource groups are actively engaged in our veteran recruiting, hiring, and retention strategies.
- Our policies and practices support veterans.
- Our Employee Assistance Programs have been expanded to focus on veterans' needs and these programs have been communicated to our veteran employees.
- We train current managers and supervisors on understanding the military culture, as well as the skills/experience they bring to the company.
- Our hiring managers and supervisors understand our military hiring strategy and their role in recruiting and hiring veterans.
- There is visible ongoing support through special observation and programs to honor our veterans.
- Our veteran resource group participates in Veterans in Energy.
- There is limited internal structure to support veterans once hired.
- I don't know.

### Notes/Gaps



**Notes/Gaps**



**Notes/Gaps**



## Closing the Gap

How will you close the gap?

**Plan: Objective/Problem you are trying to solve**

**Plan: Goal/Measure**

**Plan: Key Stakeholders/Internal Support Needed**

**Plan: Statement of Scope**

## Closing the Gap



How will you close the gap?

**Plan: Who will need to be involved?**

**Plan: Actions with Timing**

- Action 1:
  
- Action 2:
  
- Action 3:

Formed in March 2006, the Center for Energy Workforce Development (CEWD) is a non-profit consortium of electric, natural gas, and nuclear utilities, contractors and their associations—Edison Electric Institute, American Gas Association, American Public Power Association, Nuclear Energy Institute, National Rural Electric Cooperative Association, and Distribution Contractors Association.

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[www.cewd.org](http://www.cewd.org) [www.getintoenergy.com](http://www.getintoenergy.com) [www.troopstoenergyjobs.com](http://www.troopstoenergyjobs.com)

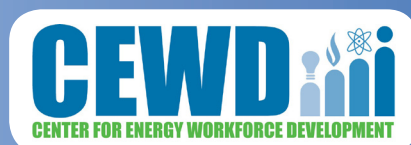


Center for Energy Workforce Development (CEWD)



@GetIntoEnergy

For information, please contact us at [staff@cewd.org](mailto:staff@cewd.org).



March 2019

For Veterans, By Veterans



Veterans  
in Energy

## Our Mission

Veterans in Energy is national employee resource group that provides transition, retention and professional development support to military veterans working in energy. Veterans in Energy will provide opportunities for outreach, networking and mentoring to support the needs of the growing population of veterans who have chosen energy careers



## JOIN US!

Third Annual Veterans in Energy Forum  
September 11: Welcome Reception  
September 12-13: Forum  
Hilton Washington D.C. National Mall

We hope that you and representatives from your company can join us for this annual forum to discuss integration of veterans into our energy workforce!

- Nationally Renowned Speakers
- Industry Relevant Panels
- Networking Opportunities

For more information on the forum or for sponsorship opportunities, please visit our website.

Transition • Retention • Professional Development

[www.veteransinenergy.org](http://www.veteransinenergy.org)

**TAB:  
NEEN**



## A Primer on Requirements for Membership in the National Energy Education Network

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To determine whether your education program meets the requirements for membership in NEEN, go to: [http://www.cewd.org/education\\_members/](http://www.cewd.org/education_members/) to initiate a sponsorship application.

Education institutions will be prompted to select one of three program categories on the sponsorship application.

- Established program(s) with graduates
- Programs in progress – no graduates
- Interested in starting a program or partnering

### **Established program(s) with graduates**

If you have an education program that CEWD employer(s) are (or could potentially) recruit from, select this option on the application.

### **Programs in progress – no graduates**

If you have a program that has been developed with / for CEWD employer(s) but it has not graduated any students (but they're in progress), select this option on the application.

### **Interested in starting a program or partnering**

If you have an interest in connecting with a CEWD employer to begin implementing an education program, with the purpose of developing graduates for a CEWD employer to recruit, select this option on the application.

To maintain a working relationship within NEEN, education solutions must be scalable and valued by CEWD employer members.

### **Assessing Scalability\*\***

A step in the NEEN process is assignment by CEWD of a scalability level of the program(s) being sponsored. The assessment is informed by data provided by member employers as well as CEWD's working knowledge of the pipeline program. The Scalability levels are listed below.

- ✓ Level 3 is “the structured startup” phase
- ✓ Level 2 is “the pathway in progress” phase
- ✓ Level 1, the most mature, is “best in class” phase

The Scalability assessment allows for greater objectivity in communications about the program or partnership capability and more consistency in referencing a program as a “best practice.” The moniker “best practice” is particularly important to employers and



## A Primer on Requirements for Membership in the National Energy Education Network

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educators with less mature programs that need to be strengthened. Other benefits include the opportunity for more robust benchmarking discussions among employers, educators, and workforce investment supporters as well as the cachet of being recognized as “a center of excellence”.

The scalable levels are defined here...

- **Scalable Level 3** – a program that is just beginning; **Structured Start up**
  - Employer begins defining knowledge requirements and
  - Curriculum is in development with intent to deploy and
  - Metrics are discussed, demand understood, but measurement not in place...
- **Scalable Level 2** – an established WFD solution; **Pathway in Progress**
  - Level 1 and
  - Advisory Board in place (following our advisory board template?) and
  - Metrics established but measurement is not yet meaningful (just getting to use the new data)...
  - Employer(s) are hiring from the program...
- **Scalable Level 1** – the most mature scaled WFD partnership, measuring success; **Best in Class**
  - Level 2 PLUS WFP type diligence with the data and discussion designed to balance supply and demand and
  - EIF, Common Technical Core, etc. are in the curriculum and
- **Sponsored Level** –Educators specifically requested by a Member Company as “Sponsored” will be noted on the google map if there is data pertaining to programs the employer is hiring from (in section 2 of the form). The educator is not noted on the map if their sponsorship is just for member access.

\*\*Scalability - A characteristic of a system, model or function that describes its capability to cope and perform under an increased or expanding workload. In the CEWD context, the ability to expand the capability of a workforce development solution or to replicate a solution in another institution, increasing the knowledge, skills, and capabilities of a specific candidate pool.

## Get Into Energy NEEN Registration Site Overview


The Get Into Energy NEEN Registration Site is designed to help job seekers get connected to companies offering exciting careers in the energy industry. Using a brief form, job seekers register by entering their basic personal information, as well as uploading a resume into the job seekers' database. The site also allows job seekers to connect directly with employers.

Energy employers can register their company on the database and view the information entered by the job seeker. They will have the capability to search the database for job seekers with a specific degree or skill set, and then reach out to the job seeker regarding job opportunities that become available at their locations. In addition, job seekers can view a list of recruitment contact information from participating employers, and reach out directly to the company with questions they may have.

The site also provides job seekers with a listing of all energy job openings across the United States in one location. Job seekers can sort the jobs by city, state, or job classification. All energy job openings are updated and posted on the site every night.

Currently the site is only available to National Energy Education Network (NEEN) members, as well as Center for Energy Workforce Development member companies. For access to the site, please send an email to [staff@cewd.org](mailto:staff@cewd.org).

### STUDENT



**Register**  
Submit your information to the Job Seekers Database.  
[Click here for Tips on Registering](#)

College (required to proceed)  
Select college

Program Title

Certificate/Degree

First Name

Last Name

Cell Phone Number

Date of Graduation or Certificate of Completion

Email

Verify Email


Password

Relevant Skills

Upload your resume (optional)  
 [View the choices](#)

Only MS Word and PDF documents may be submitted.


---



**Desired Location of Employment**

City

State

I'm not a robot 

### EMPLOYER



**Personal Info**  
Submit your information to the Employer Database.

\*Company Name:

\*Name of Contact Person:

\*E-mail Address:

\*Verify E-mail Address:

\*Password:

---



**Area(s) of Operation**

State

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**Recruitment Info**

Check this box to list your company's recruitment information for job seekers to view. The information entered below will be publicly visible.

Name of Recruitment Contact Person:

Recruitment E-mail Address:

Recruitment Website:



# CEWD NEEN Member Programs

## Midwest Region - 2019

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Alpena Community College</b> <b>Michigan</b> <i>Consumers Energy</i>	Utility Technology Certificate				
<b>Bismarck State College</b> <b>North Dakota</b> <i>Exelon; Great River Energy</i>	Electric Power Technology (online) Certificate/AAS Lineworker Certificate/AAS	Electric Power Technology (online) Certificate/AAS Electrical Transmission Systems Technology (online) Certificate/AAS	Power Plant Technology Certificate/AAS	Energy Services and Renewable Technician Certificate/AAS Power Plant Technology Certificate/AAS Process Plant Technology Certificate/AAS	BAS in Energy Management BA/BS Nuclear Power Technology Certificate/AAS Instrument and Controls Certificate/AAS Water/Waste Water Technology Certificate/AAS Petroleum Production Technology Certificate/AAS

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Century College</b> <b>Minnesota</b> <i>Xcel Energy</i>			Solar and Renewable Energy Certificate/AAS	Solar and Renewable Energy Certificate/AAS	Solar and Renewable Energy Certificate/AAS
<b>Chippewa Valley Technical College</b> <b>Wisconsin</b> <i>Alliant</i>	Electric Lineworker Apprenticeship Certificate	Electrical Power Distribution Certificate			Gas Utility Construction & Service Certificate
<b>Cincinnati State Technical and Community College</b> <b>Ohio</b> <i>Duke Energy</i>					Welding Technology Certificate/AAS
<b>City Colleges of Chicago</b> <b>Illinois</b> <i>Exelon</i>	Overhead Electric Line Worker Certificate				
<b>Cloud County Community College</b> <b>Kansas</b> <i>Kansas City Power and Light</i>		Sub Station Technician Certificate			Wind Energy Technician Certificate Wind Turbine Blade Repair Certificate

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Dakota County Community College</b> <b>Minnesota</b> <i>Xcel Energy</i>	Electrical Lineworker AAS		Energy Technical Specialist-Nuclear AAS Industry and Energy Plant Maintenance Certificate	Energy Technical Specialist-Nuclear AAS Industry and Energy Plant Maintenance Certificate NUCP	Electrical Construction & Maintenance Technology AAS Welding Technology Certificate
<b>Delta College</b> <b>Michigan</b> <i>NextEra Energy</i>					Wind Turbine Technician AAS
<b>Flint Hills Technical College</b> <b>Kansas</b> <i>Kansas City Power and Light</i>			Power Plant Technology Nuclear Certificate/AAS	Power Plant Technology Nuclear Certificate/AAS	Energy Industry Fundamentals Certificate
<b>Fond du lac Tribal &amp; Community College</b> <b>Minnesota</b> <i>ALLETE</i>	Electric Utility Technology Certificate				
<b>Henry Ford Community College</b> <b>Michigan</b> <i>DTE Energy</i>					Energy Industry Fundamentals Certificate
<b>Indian Hills Community College</b> <b>Iowa</b> <i>Central Iowa Power Cooperative</i>		Electrical & Renewable Energy Technology AAS	Electrical & Renewable Energy Technology AAS	Electrical & Renewable Energy Technology AAS	

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Iowa Central Community College</b> <b>Iowa</b> <i>Alliant Energy</i>		Biofuels/Electronic Technology AAS		Biofuels/Electronic Technology AAS	
<b>Iowa Western Community College</b> <b>Iowa</b> <i>Black Hills Energy</i>				Sustainable Energy Certificate/AAS/Duel Credit	Sustainable Energy Certificate/AAS/Duel Credit
<b>Itasca Community College</b> <b>Minnesota</b> <i>ALLETE</i>	Power Generation Program Certificate				
<b>Ivy Tech Community College (Central Indiana, East Central, Lafayette, Northeast, Southern Indiana, Southwest)</b> <b>Indiana</b> <i>NIPSCO</i>	Energy Technology Certificate/AAS	Energy Technology Certificate/AAS	Energy Technology Certificate/AAS	Energy Technology Certificate/AAS Industrial Technology AAS	Energy Technology Certificate/AAS (Gas Tech) Industrial Technology AAS
<b>Jackson College</b> <b>Michigan</b> <i>Consumers Energy</i>					Energy Management AAS/BA/BS Energy Industry Fundamentals Certificate
<b>Kalamazoo Valley Community College</b> <b>Michigan</b> <i>NextEra Energy</i>					Wind Turbine Technician Certificate

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Lake Area Technical Institute</b> <b>South Dakota</b> <i>Otter Tail Power</i>		Energy Technology AAS Energy Operations AAS	Energy Operations AAS	Energy Technology AAS Energy Operations AAS	Energy Technology AAS
<b>Lake Michigan Community College</b> <b>Michigan</b> <i>Entergy</i>				Energy Production AAS NUCP	
<b>Lake Region State College</b> <b>North Dakota</b> <i>NextEra Energy</i>					Wind Energy Technician Certificate
<b>Lake Superior College</b> <b>Minnesota</b> <i>ALLETE</i>	Electronics Technology Certificate				
<b>Lakeland Community College</b> <b>Ohio</b> <i>FirstEnergy Corp</i>				Nuclear Engineering Technology AAS	
<b>Lakeshore Technical College</b> <b>Wisconsin</b> <i>Dominion</i>					Nuclear Technology Program; Radiation Protection/Health Physics Certificate/AS
<b>Lansing Community College</b> <b>Michigan</b> <i>Consumers Energy</i>	Electrical Utility Lineworker Certificate				

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Lorain County Community College</b> <b>Ohio</b> <i>FirstEnergy Corp</i>	Electrical Power Utility Technology / Overhead Line Technology AAS	Electrical Power Utility Technology / Overhead Line Technology AAS Electrical Power Utility Technology / Sub-Station AAS			
<b>Lincoln Land Community College</b> <b>Illinois</b> <i>Association of Illinois Electric Co-Ops</i>	Electric Distribution Lineman Maintenance Certificate/AAS				
<b>Madisonville Community College</b> <b>Kentucky</b> <i>TVA</i>					Energy Industry Fundamentals Certificate
<b>Manhattan Area Technical College</b> <b>Kansas</b> <i>Kansas City Power and Light</i>	Electrical Power & Distribution Certificate				
<b>Marshalltown Community College</b> <b>Iowa</b> <i>Black Hills Energy</i>	Utility Technician Certificate/AAS				Utility Technician – Gas Technician Certificate/AAS

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Metropolitan Community College Nebraska</b> <i>Omaha Public Power District</i>			Nuclear Power Plant Operator Non-Licensed Operator AAS		
<b>Metropolitan Community College – BTC Missouri</b> <i>Kansas City Power and Light</i>	Lineman Program Certificate/AAS	Instrumentation and Process Controls Certificate/AAS		Instrumentation and Process Controls Certificate/AAS	
<b>MIAT College of Technology Michigan</b> <i>DTE Energy</i>				Energy Technician AAS Energy and Industrial Technician Certificate	Wind Power Technician Certificate
<b>Minnesota State Community &amp; Technical College Minnesota</b> <i>ALLETE</i>	Electric Lineworker Technology Certificate				
<b>Minnesota State Energy Center of Excellence Minnesota</b> <i>Xcel Energy</i>	Energy Technical Specialist Certificate/AAS	Energy Technical Specialist Certificate/AAS	Energy Technical Specialist Certificate/AAS	Energy Technical Specialist Certificate/AAS	Energy Technical Specialist (Gas Technician) Certificate/AAS
<b>Minnesota West Community &amp; Technical College (Canby, Granite Falls, Jackson) Minnesota</b> <i>Xcel Energy</i>	Powerline Technology Certificate/AAS	Electric Utility Substation Technology Certificate/AAS	Biofuels Technology Certificate/AAS Energy Technical Specialist AAS	Electrician Certificate/AAS Energy Technical Specialist AAS	Wind Energy Technology Certificate/AAS

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Mitchell Technical Institute</b> <b>South Dakota</b> <i>Black Hills Energy / Wyoming Rural Electric Association / Xcel Energy</i>	Electrical Utilities and Substation Technology AAS Powerline Construction and Maintenance Certificate	Electrical Utilities and Substation Technology AAS			Natural Gas Technology Certificate
<b>Monroe Community College</b> <b>Michigan</b> <i>DTE Energy / FirstEnergy Corp</i>			Nuclear Engineering Technology AAS NUCP	Nuclear Engineering Technology AAS NUCP	
<b>North Dakota State College of Science</b> <b>North Dakota</b> <i>Otter Tail Power</i>		Electrical Technology AAS		Electrical Technology AAS	
<b>Northeast Community College</b> <b>Nebraska</b> <i>Black Hills Energy</i>	Utility Lineman AAS			Wind Energy Generation Operations Certificate/AAS	Heating, Ventilation, and Air Conditioning Technology AAS Welding Certificate
<b>Northeast Iowa Community College</b> <b>Iowa</b> <i>Black Hills Energy</i>					Gas Utility Construction and Service AAS Wind Turbine Repair Technician AAS

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Northeast Wisconsin Technical College</b> <b>Wisconsin</b> <i>Wisconsin Public Service</i>	Electrical Power Distribution AAS	Utilities Engineering Technology AAS		Utilities Engineering Technology AAS	Gas Utility and Construction Services AAS
<b>Northwest Iowa Community College</b> <b>Iowa</b> <i>Berkshire Hathaway Energy (MidAmerican Energy)</i>	Powerline Construction Certificate/AAS			Electrical Technology AAS	
<b>Schoolcraft Community College</b> <b>Michigan</b> <i>DTE Energy</i>					Misc. Boot Camps
<b>Seward County Community College/Area Technical School</b> <b>Kansas</b> <i>Black Hills Energy</i>					Natural Gas Compression Technology Certificate/AAS Corrosion Technology Certificate/AAS
<b>Southeast Community College</b> <b>Nebraska</b> <i>Nebraska Public Power District / Black Hills Energy</i>	Electrical & Electromechanical Technology AAS	Electrical & Electromechanical Technology AAS Electronic Systems Technology Certificate/AAS	Electrical & Electromechanical Technology AAS Energy Generation Operations AAS	Electrical & Electromechanical Technology AAS Energy Generation Operations AAS NUCP	Heating, Air Conditioning, and Ventilation Technology AAS

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Southern State Community College</b> <b>Ohio</b> <i>Dayton Power and Light</i>					Electro-Mechanical Engineering Technology (Engineers) AAS
<b>Southwest Illinois College</b> <b>Missouri</b> <i>Ameren</i>				Electrical and Electronic Technology Certificate/AAS/Duel Credit	
<b>Southwest Wisconsin Technical College</b> <b>Wisconsin</b> <i>Alliant Energy</i>	Electrical Power Distribution AAS	Electrical Power Distribution AAS			
<b>St. Cloud Technical College</b> <b>Minnesota</b> <i>Xcel Energy</i>			Energy Technical Specialist AAS (w/Nuclear) Water Environment Technologies Certificate/AAS Instrumentation and Process Control Certificate/AAS	Energy Technical Specialist AAS (w/Nuclear) NUCP	Electrical Construction Technology Certificate/AAS Plumbing Certificate/AAS Welding / Fabrication Certificate

Community Colleges	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>St. Louis Community College (Florissant Valley)</b> Missouri <i>Ameren</i>	Pre-Apprentice Lineworker Certificate				
<b>State Technical College of Missouri</b> Missouri <i>Ameren</i>				Nuclear Technology AAS NUCP	

High Schools	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>AK Smith Career Center</b> Indiana <i>NIPSCO</i>					Energy Industry Fundamentals Certificate/Duel Credit
<b>Hartland High School</b> Michigan <i>DTE Energy</i>	Energy Program High School Certificate				
<b>Holt High School</b> Michigan <i>DTE Energy</i>					Energy Industry Fundamentals Certificate
<b>La Porte Community Schools</b> Indiana <i>NIPSCO</i>					Energy Industry Fundamentals Certificate

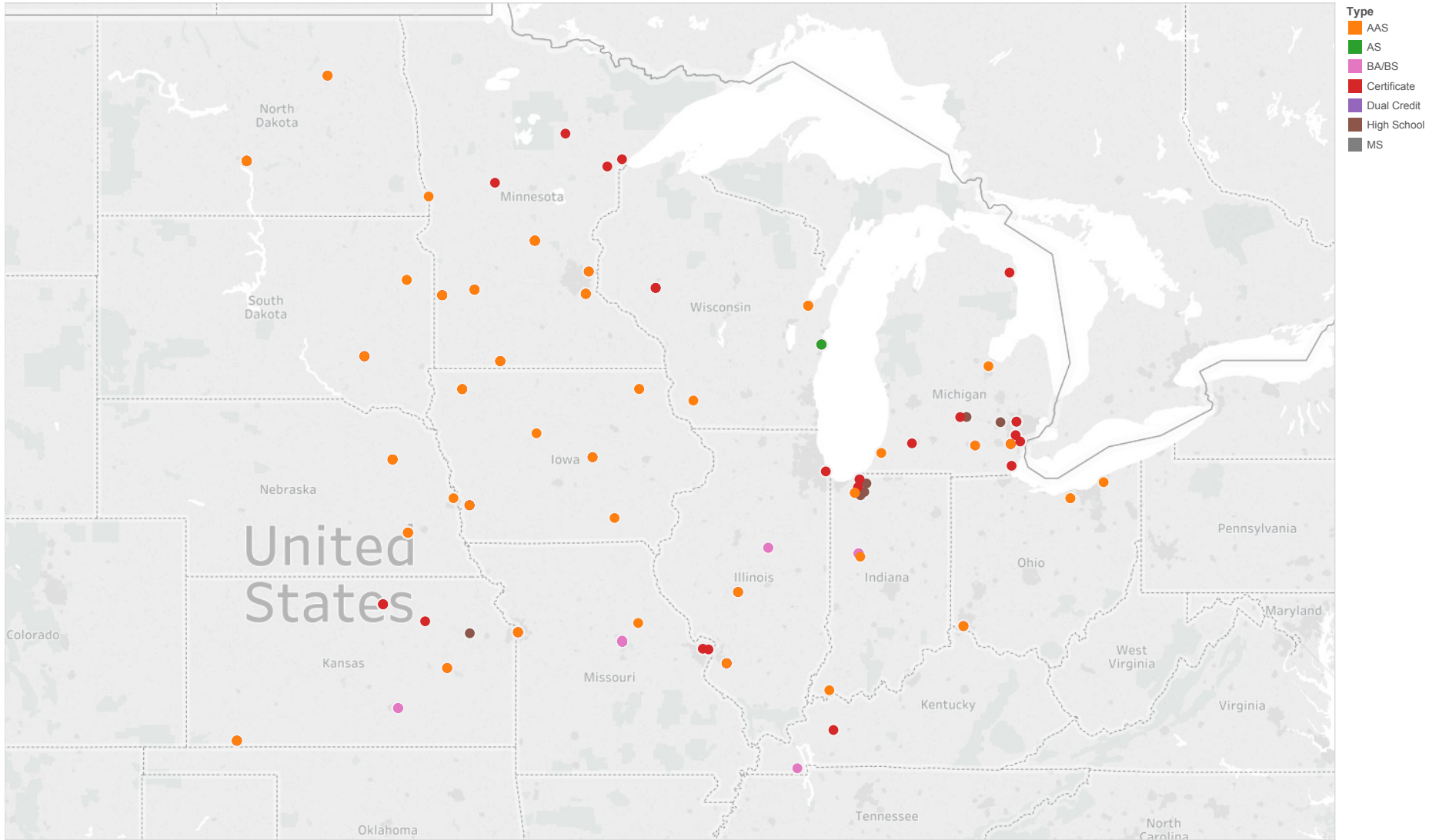
High Schools	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Michigan City High School</b> <b>Indiana</b> <i>NIPSCO</i>					Energy Industry Fundamentals Certificate
<b>Oakland Schools</b> <b>Michigan</b> <i>Consumers Energy</i>					Energy Industry Fundamentals and Lineworker CIP Certificate
<b>South Central Community Schools</b> <b>Indiana</b> <i>NIPSCO</i>					Energy Industry Fundamentals Certificate
<b>Topeka Public Schools</b> <b>Kansas</b> <i>KCP&amp;L</i>					Energy Career Academy Certificate
<b>Tri Township Consolidated School Corp-Lacrosse High School</b> <b>Indiana</b> <i>NIPSCO</i>					Energy Industry Fundamentals Certificate
<b>Westville High School</b> <b>Indiana</b> <i>NIPSCO</i>					Energy Industry Fundamentals Certificate

Universities	Lineworker <sup>1</sup>	T&D Technician <sup>2</sup>	Power Plant Operators <sup>3</sup>	Generation Technician <sup>4</sup>	Other / Program Title
<b>Illinois State University</b> <b>Illinois</b> <i>Ameren</i>					Engineering Technology BS Renewable Energy BS
<b>Murray State University</b> <b>Kentucky</b> <i>TVA</i>	Electromechanical Engineering Technology BA/BS	Electromechanical Engineering Technology BA/BS	Electromechanical Engineering Technology BA/BS	Electromechanical Engineering Technology BA/BS	
<b>Purdue University</b> <b>Indiana</b> <i>Duke Energy</i>					Chemical, Civil, Electrical, Mechanical, Nuclear Engineering BS
<b>University of Missouri School of Engineering</b> <b>Missouri</b> <i>Ameren</i>					Chemical, Civil/Environmental, Electrical, Mechanical, Nuclear BS/BA
<b>Wichita State University</b> <b>Kansas</b> <i>Westar Energy</i>					Engineering Technology, Electrical, Mechanical Engineering BS

Footnotes:

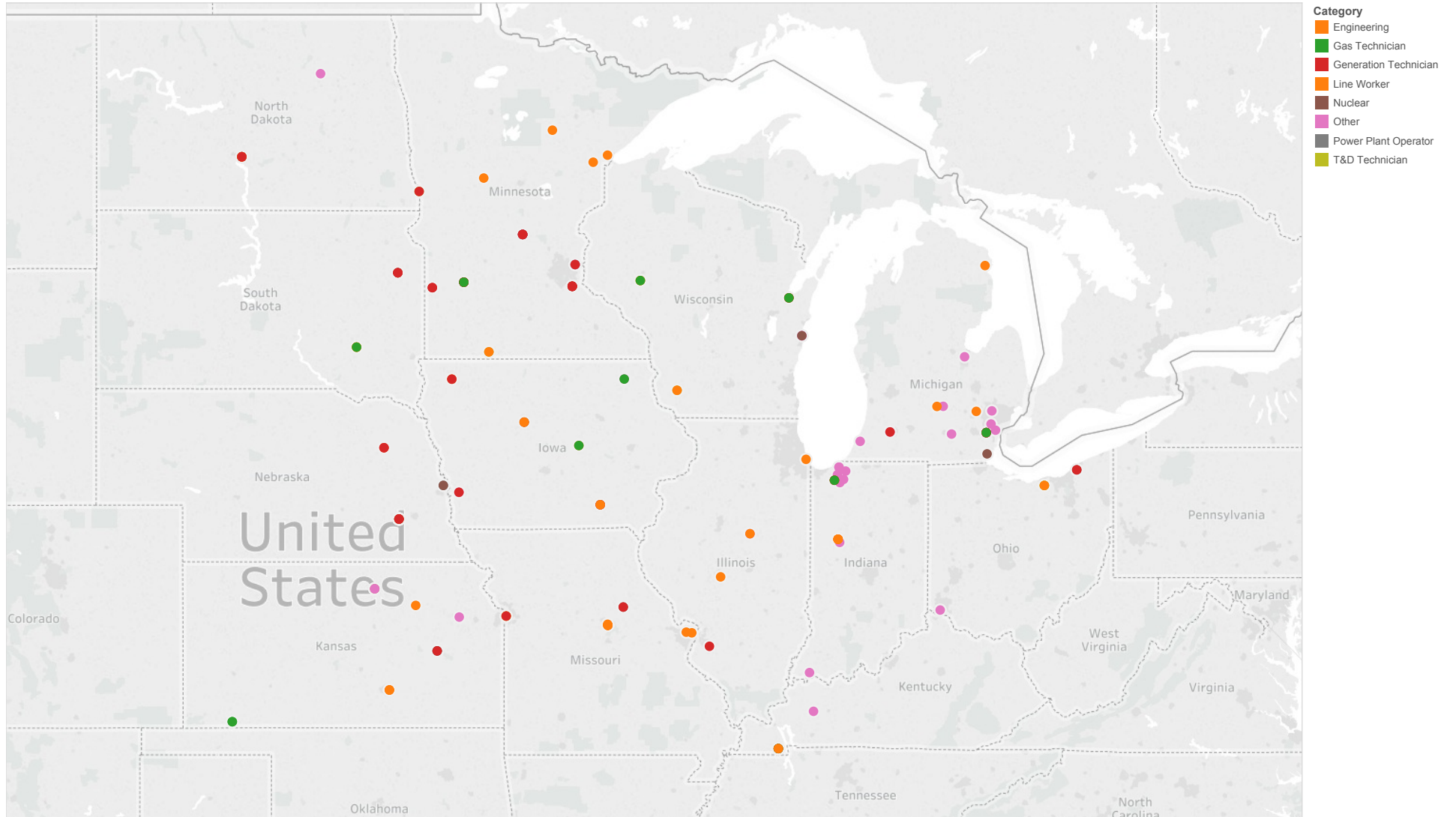
1. Line Workers - This job category is responsible for the installation and repair of overhead and underground distribution and transmission lines, poles, transformers and other equipment. Titles include line worker, line installer, lineman, linewoman, underground mechanic, underground specialist, towerman, towerwoman.
2. T&D Technicians - This job category includes the installation, repair and maintenance of both electrical and mechanical equipment. This includes inspecting, testing electrical equipment in substations and switching stations. Titles would include substation mechanic, relay technician, electrician, metering technicians (not meter readers).
3. Plant/Field Operators - This job category is responsible for the maintenance and operation of all primary and auxiliary equipment required to generate electricity or meet gas customer's demands. Titles would include power plant operator, technical operator, and mechanical operator.
4. Generation Technicians - This job category is responsible for the construction, assembly, maintenance and repair of steam boilers and boiler house auxiliaries. Titles could include boilermakers, mechanics, welders. This should also include Instrument and Control technicians.

# NEEN Map-Worthy Educators; by Type; Midwest Region



Map based on Longitude (generated) and Latitude (generated). Color shows details about Type. Details are shown for mapping zip code, Education Institution1 and Program1. The data is filtered on Category, Format, Region and GIE\_map. The Category filter keeps 9 of 9 members. The Format filter keeps Null, Blended, Instructor Led and Online. The Region filter keeps Midwest. The GIE\_map filter keeps 1.

# NEEN Map-Worthy Educators; by Category; Midwest Region



Map based on Longitude (generated) and Latitude (generated). Color shows details about Category. Details are shown for mapping zip code, Education Institution1 and Program1. The data is filtered on Format, Region, Type, GIE\_map and State. The Format filter keeps Null, Blended, Instructor Led and Online. The Region filter keeps Midwest. The Type filter keeps 8 of 8 members. The GIE\_map filter keeps 1. The State filter keeps 40 of 40 members. The view is filtered on Category, which excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, IA, IHCC-Electrical & Renewable Energy Technology	Central Iowa Power Cooperative	Electrical & Renewable Energy Technology	Engineering	Instructor Led	AAS
			Generation Technician	Instructor Led	AAS
			Other	Instructor Led	AAS
			Power Plant Operator	Instructor Led	AAS
			T&D Technician	Instructor Led	AAS
Midwest, IA, Iowa Central Community College	Alliant Energy Corp	Biofuels/Electronic technology	Engineering	Instructor Led	AAS
			Generation Technician	Instructor Led	AAS
			T&D Technician	Instructor Led	AAS
Midwest, IA, Iowa Western Community College	Black Hills Corp	Sustainable Energy	Generation Technician	Blended	AAS
					Certificate
					Dual Credit
			Other	Blended	AAS
					Certificate
		Dual Credit			
Midwest, IA, Marshalltown Community College	Black Hills Corp	Utility Technician	Gas Technician	Instructor Led	AAS
					Certificate
			Line Worker	Instructor Led	AAS

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, IA, Marshalltown Community College	Black Hills Corp	Utility Technician	Line Worker	Instructor Led	Certificate
Midwest, IA, Northeast Iowa Community College	Black Hills Corp	Gas Utility Construction and Service	Gas Technician	Instructor Led	AAS
		Wind Turbine Repair Technician	Other	Instructor Led	AAS
Midwest, IA, Northwest Iowa Community College	Berkshire Hathaway Energy	Electrical Technology	Generation Technician	Instructor Led	AAS
		Powerline	Line Worker	Instructor Led	AAS Certificate
..wson Technical Institute: Kennedy-King College; City Colleges of Chicago	Exelon Corp	Overhead Electric Line Worker Program (OELW)	Line Worker	Instructor Led	Certificate
Midwest, IL, Illinois State University	Ameren Corp	Engineering Technology	Engineering	Instructor Led	BA/BS
		Renewable Energy	Other	Instructor Led	BA/BS
Midwest, IL, Lincoln Land Community College	Association of Illinois Electric Cooperatives	Electric Distribution Lineman Maintenance	Line Worker	Instructor Led	AAS
					Certificate
Midwest, IL, Southwest Illinois College	Ameren Corp	Electrical and Electronic Technology	Generation Technician	Instructor Led	AAS
					Certificate
					Dual Credit
Midwest, IN, AK Smith Career Center	Northern Indiana Public Service Co	Energy Industry Fundamentals	Other	Instructor Led	Certificate
					Dual Credit
Midwest, IN, Ivy Tech Community College	Northern Indiana Public Service Co	Energy Technology	Gas Technician	Blended	AAS

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, IN, Ivy Tech Community College	Northern Indiana Public Service Co	Energy Technology	Gas Technician	Blended	Certificate
				Instructor Led	AAS
					Certificate
			Generation Technician	Online	AAS
					Certificate
				Blended	AAS
			Line Worker		Certificate
				Instructor Led	AAS
					Certificate
			Line Worker	Blended	AAS
					Certificate
				Instructor Led	AAS
Line Worker		Certificate			
	Online	AAS			
		Certificate			

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, IN, Ivy Tech Community College	Northern Indiana Public Service Co	Energy Technology	Power Plant Operator	Blended	AAS
					Certificate
				Instructor Led	AAS
					Certificate
				Online	AAS
					Certificate
			T&D Technician	Blended	AAS
					Certificate
				Instructor Led	AAS
					Certificate
				Online	AAS
					Certificate
	Vectren Corp	Industrial Technology	Other	Instructor Led	AAS
Midwest, IN, Ivy Tech Community College Lafayette	Vectren Corp	Industrial Technology	Other	Instructor Led	AAS
Midwest, IN, Ivy Tech Community College Southwest	Vectren Corp	Industrial Technology	Other	Instructor Led	AAS
Midwest, IN, La Porte Community Schools	Northern Indiana Public Service Co	Energy Industry Fundamentals	Other	Instructor Led	High School
Midwest, IN, Michigan City High School	Northern Indiana Public Service Co	Energy Industry Fundamentals	Other	Instructor Led	High School

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, IN, Purdue University	Duke Energy Corp	Chemical Engineering	Engineering	Instructor Led	BA/BS
		Civil Engineering	Engineering	Instructor Led	BA/BS
		Electrical Engineering	Engineering	Instructor Led	BA/BS
		Mechanical Engineering	Engineering	Instructor Led	BA/BS
		Nuclear Engineering	Engineering	Instructor Led	BA/BS
Midwest, IN, South Central Community Schools	Northern Indiana Public Service Co	Energy Industry Fundamentals	Other	Instructor Led	High School
Midwest, IN, Tri Township Consolidated School Corp - Lacross High School	Northern Indiana Public Service Co	Energy Industry Fundamentals	Other	Instructor Led	High School
Midwest, IN, Westville High School	Northern Indiana Public Service Co	Energy Industry Fundamentals	Other	Instructor Led	Certificate
Midwest, KS, Cloud County Comm. College	KCP&L	Substation Technician	T&D Technician	Blended	Certificate
		Wind Energy Technician	Other	Blended	Certificate
		Wind Turbine Blade Repair	Other	Blended	Certificate
Midwest, KS, Flint Hills Technical College	KCP&L	Power Plant Technology	Generation Technician	Instructor Led	AAS
					Certificate
				Online	AAS
				Certificate	
		Nuclear	Instructor Led	AAS	
Certificate					

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, KS, Flint Hills Technical College	KCP&L	Power Plant Technology	Nuclear	Online	AAS
					Certificate
				Power Plant Operator	Instructor Led
			Certificate		
			Online		AAS
			Certificate		
Midwest, KS, Manhattan Area Technical College	KCP&L	Electric Power & Distribution	Line Worker	Instructor Led	Certificate
Midwest, KS, Seward County Community College/Area Technical School	Black Hills Corp	Corrosion Technology	Gas Technician	Instructor Led	AAS
					Certificate
		Natural Gas Compression Technology	Gas Technician	Instructor Led	AAS
					Certificate
Midwest, KS, Topeka Public Schools USD 501	KCP&L	Energy Career Academy	Other	Instructor Led	High School
Midwest, KS, Wichita State University	Westar Energy	Electrical Engineering	Engineering	Instructor Led	BA/BS
		Engineering Technology	Engineering	Instructor Led	BA/BS
		Mechanical Engineering	Engineering	Instructor Led	BA/BS
Midwest, KY, Madisonville Community College	Tennessee Valley Authority	Energy Industry Fundamentals	Other	Instructor Led	Certificate
Midwest, KY, Murray State University	Tennessee Valley Authority	Electromechanical Engineering Technology	Engineering	Blended	BA/BS

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, KY, Murray State University	Tennessee Valley Authority	Electromechanical Engineering Technology	Engineering	Instructor Led	BA/BS
				Online	BA/BS
				Gas Technician	Blended
			Gas Technician	Instructor Led	BA/BS
				Online	BA/BS
				Generation Technician	Blended
			Generation Technician	Instructor Led	BA/BS
				Online	BA/BS
				Line Worker	Blended
			Line Worker	Instructor Led	BA/BS
				Online	BA/BS
				Power Plant Operator	Blended
			Power Plant Operator	Instructor Led	BA/BS
				Online	BA/BS
				T&D Technician	Blended
			T&D Technician	Instructor Led	BA/BS
				Online	BA/BS

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, MI, Alpena Community College	Consumers Energy	Utility Technology	Line Worker	Instructor Led	Certificate
Midwest, MI, Delta College	NextEra Energy Inc	Alternative Energy/Wind Turbine Technology	Other	Blended	AAS
				Instructor Led	AAS
Midwest, MI, Hartland High School	DTE Energy Co	Energy Program	Line Worker	Blended	High School
Midwest, MI, Henry Ford Community College	DTE Energy Co	Energy Industrial Fundamentals	Other	Blended	Certificate
				Instructor Led	Certificate
Midwest, MI, Holt High School	Consumers Energy	Energy Industry Fundamentals	Other	Instructor Led	High School
Midwest, MI, Jackson College	Consumers Energy	Energy Management	Other	Instructor Led	AAS
					BA/BS
Midwest, MI, Kalamazoo Valley Community College - Groves Campus	NextEra Energy Inc	Wind Turbine Technician Academy	Generation Technician	Instructor Led	Certificate
			Other	Instructor Led	Certificate
Midwest, MI, Lake Michigan Community College	Energy Corp	Energy Production - 2 yr Associates Degree	Other	Instructor Led	AAS
Midwest, MI, Lansing Community College	Consumers Energy	Electrical Utility Lineworker	Line Worker	Blended	Certificate
Midwest, MI, MIAT College of Technology	DTE Energy Co	Energy and Industrial Technician	Generation Technician	Instructor Led	Certificate
			Other	Instructor Led	Certificate
			Power Plant Operator	Instructor Led	Certificate
			T&D Technician	Instructor Led	Certificate

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, MI, MIAT College of Technology	DTE Energy Co	Energy Technology	Gas Technician	Instructor Led	AAS
			Generation Technician	Instructor Led	AAS
			Other	Instructor Led	AAS
			Power Plant Operator	Instructor Led	AAS
			T&D Technician	Instructor Led	AAS
		Wind Power Technician	Generation Technician	Instructor Led	Certificate
		Other	Instructor Led	Certificate	
Midwest, MI, Monroe Community College	DTE Energy Co	Nuclear Engineering Technology	Nuclear	Instructor Led	Certificate
	FirstEnergy Corp	Nuclear Engineering Technology	Nuclear	Instructor Led	Certificate
Midwest, MI, Oakland Schools	Consumers Energy	Energy Industry Fundamentals and Lineworker CIP	Other	Blended	Certificate
					High School
Midwest, MI, Schoolcraft Community College	DTE Energy Co	EIF; soft skills; Boot Camps	Other	Instructor Led	Certificate
Midwest, MN, Century College	Xcel Energy Inc	Solar and Renewable Energy / Energy Technical Specialist	Generation Technician	Blended	AAS
					Certificate
				Instructor Led	AAS
					Certificate
			Other	Blended	AAS

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type	
Midwest, MN, Century College	Xcel Energy Inc	Solar and Renewable Energy / Energy Technical Specialist	Other	Blended	Certificate	
				Instructor Led	AAS	
					Certificate	
				Power Plant Operator	AAS	
				Certificate		
			Instructor Led	AAS		
				Certificate		
Midwest, MN, Dakota County Technical College	Xcel Energy Inc	Electrical Construction & Maintenance Technology	Other	Instructor Led	AAS	
		Electrical Lineworker	Line Worker	Instructor Led	AAS	
		Energy Technical Specialist	Generation Technician	Blended	AAS	
				Instructor Led	AAS	
		Power Plant Operator		Blended	AAS	
				Instructor Led	AAS	
		Energy Technical Specialist-Nuclear	Generation Technician	Blended	AAS	
				Instructor Led	AAS	
				Nuclear	Blended	AAS
					Instructor Led	AAS

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type		
Midwest, MN, Dakota County Technical College	Xcel Energy Inc	Energy Technical Specialist-Nuclear	Power Plant Operator	Blended	AAS		
				Instructor Led	AAS		
		Industry and Energy Plant Maintenance	Generation Technician	Blended	Certificate		
				Instructor Led	Certificate		
			Power Plant Operator	Blended	Certificate		
				Instructor Led	Certificate		
		Welding Technology	Other	Blended	Certificate		
				Instructor Led	Certificate		
		Midwest, MN, Fond du lac Tribal & Community College	ALLETE	Electric Utility Technology	Line Worker	Instructor Led	Certificate
		Midwest, MN, Itasca Community College	ALLETE	Power Generation Program	Line Worker	Instructor Led	Certificate
Midwest, MN, Lake Superior College	ALLETE	Electronics Technology	Line Worker	Instructor Led	Certificate		
Midwest, MN, Minnesota State Community & Technical College	ALLETE	Electrical Lineworker Technology	Line Worker	Instructor Led	Certificate		
Midwest, MN, Minnesota State Energy Center of Excellence	Xcel Energy Inc	Energy Technical Specialist	Gas Technician	Blended	AAS		
					Certificate		
				Instructor Led	AAS		
					Certificate		
				Online	AAS		

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type	
Midwest, MN, Minnesota State Energy Center of Excellence	Xcel Energy Inc	Energy Technical Specialist	Gas Technician	Online	Certificate	
			Generation Technician	Blended	AAS Certificate	
					Instructor Led	AAS Certificate
					Online	AAS Certificate
			Line Worker	Blended	AAS Certificate	
					Instructor Led	AAS Certificate
					Online	AAS Certificate
			Nuclear	Blended	AAS Certificate	
					Instructor Led	AAS Certificate

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type			
Midwest, MN, Minnesota State Energy Center of Excellence	Xcel Energy Inc	Energy Technical Specialist	Nuclear	Online	AAS Certificate			
				Power Plant Operator	Blended	AAS Certificate		
				Instructor Led	AAS Certificate			
			Online	AAS Certificate				
			T&D Technician	Blended	AAS Certificate			
				Instructor Led	AAS Certificate			
				Online	AAS Certificate			
			Midwest, MN, Minnesota West Community & Technical College Canby	Xcel Energy Inc	Electrician	Generation Technician	Instructor Led	AAS Certificate
							Wind Energy Technology	Generation Technician

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type		
Midwest, MN, Minnesota West Community & Technical College Canby	Xcel Energy Inc	Wind Energy Technology	Generation Technician	Instructor Led	Certificate		
Midwest, MN, Minnesota West Community & Technical College Granite Falls	Xcel Energy Inc	Biofuels Technology	Power Plant Operator	Blended	AAS Certificate		
				Instructor Led	AAS Certificate		
				Energy Technical Specialist	Generation Technician	Blended	AAS
						Instructor Led	AAS
						Online	AAS
					Power Plant Operator	Blended	AAS
						Instructor Led	AAS
						Online	AAS
		Midwest, MN, Minnesota West Community & Technical College Jackson	Xcel Energy Inc	Electric Utility Substation Technology	T&D Technician	Instructor Led	AAS Certificate
Powerline Technology	Line Worker			Instructor Led	AAS Certificate		
Midwest, MN, St. Cloud Technical College	Xcel Energy Inc	Electrical Construction Technology	Other	Instructor Led	AAS Certificate		

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type	
Midwest, MN, St. Cloud Technical College	Xcel Energy Inc	Energy Technical Specialist	Generation Technician	Blended	AAS	
				Instructor Led	AAS	
				Online	AAS	
			Power Plant Operator	Blended	AAS	
				Instructor Led	AAS	
				Online	AAS	
			Energy Technical Specialist - Nuclear	Generation Technician	Blended	AAS
					Instructor Led	AAS
					Online	AAS
		Nuclear		Blended	AAS	
				Instructor Led	AAS	
				Online	AAS	
		Power Plant Operator	Blended	AAS		
			Instructor Led	AAS		
			Online	AAS		
Instrumentation and Process Control	Power Plant Operator	Instructor Led	AAS	Certificate		

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, MN, St. Cloud Technical College	Xcel Energy Inc	Plumbing	Other	Instructor Led	AAS
					Certificate
		Water Environment Technologies	Power Plant Operator	Blended	AAS
					Certificate
		Instructor Led	AAS		
			Certificate		
		Welding/Fabrication	Other	Instructor Led	Certificate
Midwest, MO, Metropolitan Community College - BCT	KCP&L	Instrumentation and Process Control	Generation Technician	Instructor Led	AAS
					Certificate
			T&D Technician	Instructor Led	AAS
					Certificate
	Lineman Program	Line Worker	Blended	AAS	
				Certificate	
				Instructor Led	AAS
					Certificate
Midwest, MO, St. Louis CC-Florissant Valley	Ameren Corp	Pre-Apprentice	Line Worker	Instructor Led	Certificate
Midwest, MO, St. Louis Community College	Ameren Corp	Ameren Lineman Pre-Apprentice Program	Line Worker	Instructor Led	Certificate

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type			
Midwest, MO, State Technical College of Missouri	Ameren Corp	Nuclear Technology	Generation Technician	Instructor Led	AAS			
			Nuclear	Instructor Led	AAS			
Midwest, MO, University of Missouri Chemical Engineering Department	Ameren Corp	BS Chemical Engineering	Engineering	Instructor Led	BA/BS			
Midwest, MO, University of Missouri Civil and Environmental Engineering Department	Ameren Corp	BS Civil and Environmental Engineering	Engineering	Instructor Led	BA/BS			
Midwest, MO, University of Missouri Electrical Engineering Department	Ameren Corp	BS Electrical Engineering	Engineering	Instructor Led	BA/BS			
Midwest, MO, University of Missouri Mechanical Engineering	Ameren Corp	BS Mechanical Engineering	Engineering	Instructor Led	BA/BS			
Midwest, MO, University of Missouri Nuclear Engineering	Ameren Corp	BS Nuclear Engineering	Engineering	Instructor Led	MS			
Midwest, ND, Bismarck State College	Exelon Corp	Nuclear Power Technology	Nuclear	Online	AAS			
					Certificate			
	Great River Energy	BAS in Energy Management	Other	Online	BA/BS			
					Electric Power Technology (ELPW)	Line Worker	Online	AAS
								Certificate
					T&D Technician	Online	AAS	
							Certificate	
Electrical Transmission Systems Technology	T&D Technician	Online	AAS					
Certificate								
Energy Services and Renewable Technician	Generation Technician	Instructor Led	AAS					

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type		
Midwest, ND, Bismarck State College	Great River Energy	Energy Services and Renewable Technician	Generation Technician	Instructor Led	Certificate		
				Online	AAS		
					Certificate		
				Instrumentation & Control	Other	Blended	AAS
							Certificate
						Instructor Led	AAS
							Certificate
						Online	AAS
							Certificate
				Lineworker	Line Worker	Instructor Led	AAS
							Certificate
				Petroleum Production Technology	Other	Blended	AAS
							Certificate
				Instructor Led	AAS		
					Certificate		
				Online	AAS		
					Certificate		

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type	
Midwest, ND, Bismarck State College	Great River Energy	Power Plant Technology	Power Plant Operator	Instructor Led	AAS Certificate	
				Online	AAS Certificate	
		Process Plant Technology	Other	Instructor Led	AAS Certificate	
				Online	AAS Certificate	
		Water & Wastewater Technology	Other	Blended	AAS Certificate	
				Instructor Led	AAS Certificate	
	Online	AAS Certificate				
	Midwest, ND, Lake Region State College	NextEra Energy Inc	Wind Energy Technician Program	Other	Instructor Led	AAS Certificate
					Online	AAS Certificate
	Midwest, ND, ND State College of Science	Otter Tail Power Co	Electrical Technology	Generation Technician	Instructor Led	AAS

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, ND, ND State College of Science	Otter Tail Power Co	Electrical Technology	T&D Technician	Instructor Led	AAS
Midwest, NE, Metropolitan Community College	Omaha Public Power District	Nuclear Power Plant Non-Licensed Operator	Nuclear	Instructor Led	AAS
			Power Plant Operator	Instructor Led	AAS
Midwest, NE, Northeast Community College	Black Hills Corp	Heating, Ventilation, and Air Conditioning Technology	Other	Instructor Led	AAS
		Utility Lineman	Line Worker	Instructor Led	AAS
		Welding	Other	Instructor Led	Certificate
		Wind Energy Generation Operations	Generation Technician	Instructor Led	AAS Certificate
Midwest, NE, Southeast Community College	Black Hills Corp	Energy Generation Operations	Generation Technician	Blended	AAS
			Power Plant Operator	Blended	AAS
		Heating, Air Conditioning, and Ventilation Technology	Other	Blended	AAS
	Nebraska Public Power District	Electrical & Electromechanical Technology	Generation Technician	Instructor Led	AAS
			Line Worker	Instructor Led	AAS
			Power Plant Operator	Instructor Led	AAS
			T&D Technician	Instructor Led	AAS
	Electronic Systems Techology	T&D Technician	T&D Technician	Blended	AAS Certificate

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, NE, Southeast Community College	Nebraska Public Power District	Energy Generation Operations	Generation Technician	Blended	AAS
			Power Plant Operator	Blended	AAS
Midwest, OH, Cincinnati State Technical and Community College	Duke Energy Corp	Welding Technology	Other	Instructor Led	AAS
					Certificate
Midwest, OH, Lakeland Community College	FirstEnergy Corp	Nuclear Engineering Technology	Generation Technician	Instructor Led	AAS
			Nuclear	Instructor Led	AAS
Midwest, OH, Lorain County Community College	FirstEnergy Corp	Electric Power Utility Technology - Overhead Line Technology	Line Worker	Instructor Led	AAS
			T&D Technician	Instructor Led	AAS
		Electric Power Utility Technology - Substation Te..	T&D Technician	Instructor Led	AAS
Midwest, SD, Lake Area Technical Institute	Otter Tail Power Co	Energy Operations	Generation Technician	Instructor Led	AAS
			Power Plant Operator	Instructor Led	AAS
			T&D Technician	Instructor Led	AAS
		Energy Technology	Generation Technician	Instructor Led	AAS
			Other	Instructor Led	AAS
			T&D Technician	Instructor Led	AAS
Midwest, SD, Mitchell Technical Institute	Black Hills Corp	Electrical Utilities & Substation Technology	Line Worker	Instructor Led	AAS
			T&D Technician	Instructor Led	AAS

The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type
Midwest, SD, Mitchell Technical Institute	Black Hills Corp	Powerline Construction & Maintenance	Line Worker	Instructor Led	Certificate
	Wyoming Rural Electric Association	Electrical Utilities & Substation Technology	Line Worker	Instructor Led	AAS
			T&D Technician	Instructor Led	AAS
		Powerline Construction & Maintenance	Line Worker	Instructor Led	Certificate
	Xcel Energy Inc	Natural Gas Technology	Gas Technician	Instructor Led	Certificate
Midwest, WI, Chippewa Valley Technical College	Alliant Energy Corp	Gas Utility Construction & Service Technical Diploma	Gas Technician	Instructor Led	Certificate
	Wisconsin Electric Cooperative Association	Electric Line Worker Apprenticeship	Line Worker	Instructor Led	Certificate
		Electrical Power Distribution Technical Diploma	T&D Technician	Instructor Led	Certificate
Midwest, WI, Lakeshore Technical College	Dominion	Nuclear Technology Program; Radiation Protection/Health Physics	Nuclear	Blended	AS
					Certificate
				Instructor Led	AS
					Certificate
				Online	AS
					Certificate
				Other	AS
	Certificate				
	Instructor Led	AS			

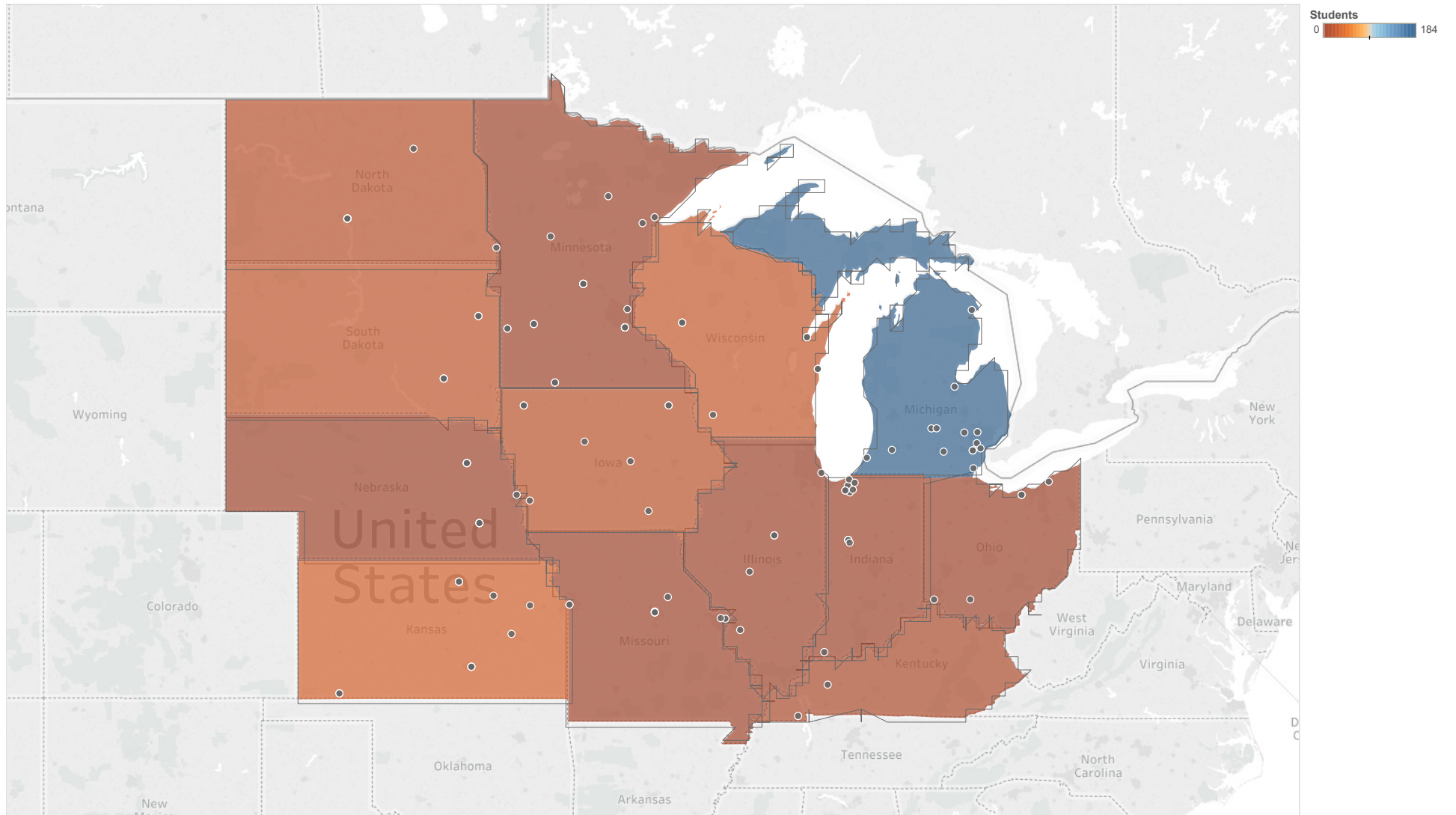
The view is broken down by Region, State, Education Institution1, Company Sponsor, Program (Program Type), Category, Format and Type. The data is filtered on GIE\_map, which keeps 1. The view is filtered on Region, State and Category. The Region filter keeps Midwest. The State filter keeps 40 of 40 members. The Category filter excludes Null.

## Midwest Region Program Details

Education Institution1	Company Spon..	Program (Program Type)	Category	Format	Type		
Midwest, WI, Lakeshore Technical College	Dominion	Nuclear Technology Program; Radiation Protection/Health Physics	Other	Instructor Led	Certificate		
				Online	AS Certificate		
		Radiation Protection / Health Physics	Other	Blended	AS Certificate		
				Instructor Led	AS Certificate		
		Online				AS Certificate	
						AS Certificate	
Midwest, WI, Northeast Wisconsin Technical College	Wisconsin Public Service	Electrical Power Distribution	Line Worker	Instructor Led	AAS		
				Gas Utility and Construction Service	Gas Technician	Instructor Led	AAS
					Other	Instructor Led	AAS
		Utilities Engineering Technology	Generation Technician	Instructor Led	AAS		
			T&D Technician	Instructor Led	AAS		
Midwest, WI, Southwest Wisconsin Technical College	Alliant Energy Corp	Electrical Power Distribution	Line Worker	Instructor Led	AAS		
				T&D Technician	Instructor Led	AAS	

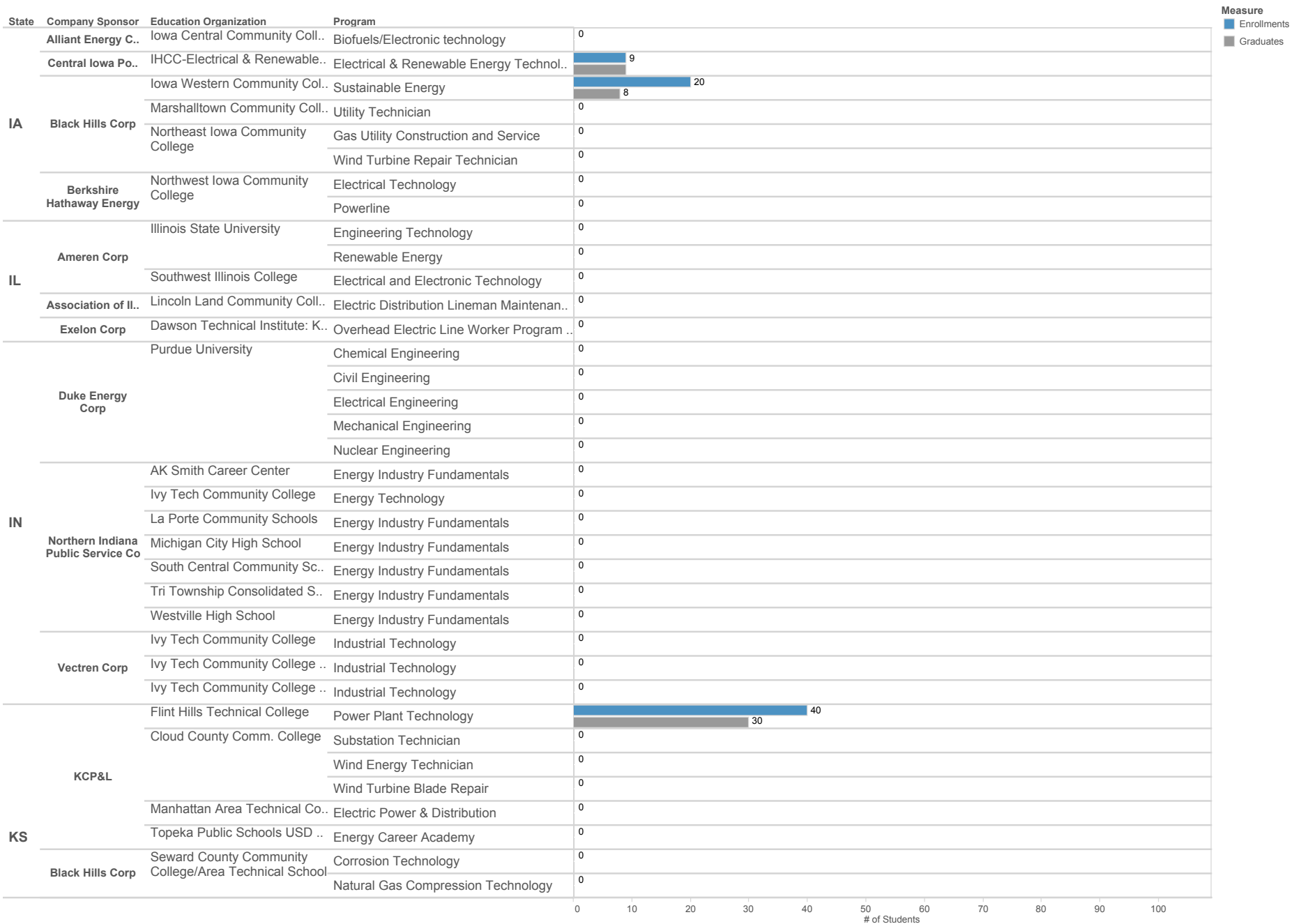
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## 2018/2019 NEEN Information on Enrollment / Graduation; Midwest Region



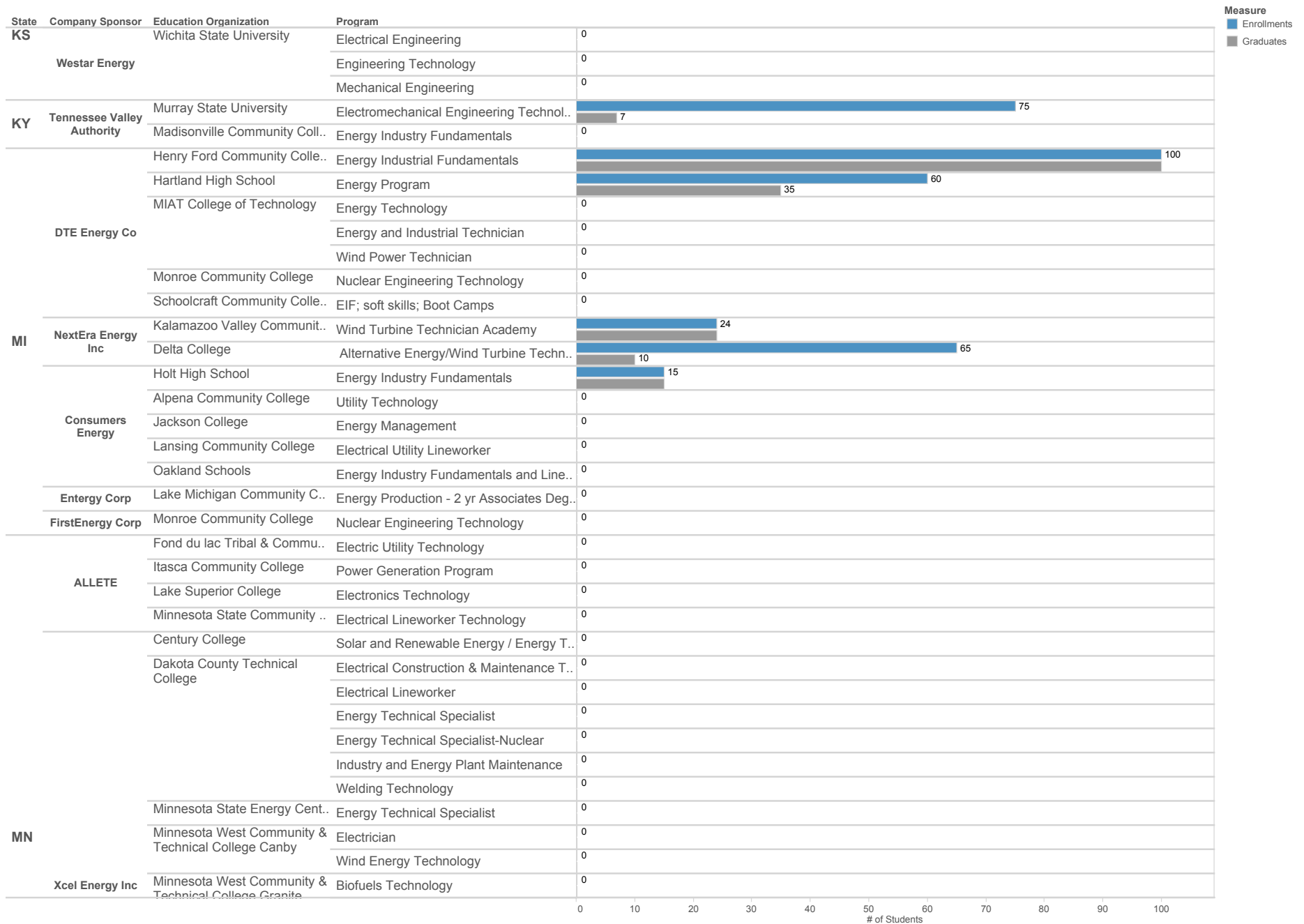
Map based on Longitude (generated) and Latitude (generated) and Latitude (generated). For pane Latitude (generated): Color shows Enrollment or Graduate View. Details are shown for State. For pane Latitude (generated) (2): Details are shown for mapping zip code and Program. The data is filtered on GIE map, Region, Key Role, Education Organization Type, Company Sponsor, Action (Company Sponsor,Education Organization,Program,State), Action (Company Sponsor,Education Organization,Program,Sponsoring Partner,State), Job Category and Education Organization. The GIE map filter keeps Yes. The Region filter keeps Midwest. The Key Role filter keeps multiple members. The Education Organization Type filter keeps 6 of 6 members. The Company Sponsor filter keeps 65 of 65 members. The Action (Company Sponsor,Education Organization,Program,State) filter keeps 461 members. The Action (Company Sponsor,Education Organization,Program,Sponsoring Partner,State) filter keeps 461 members. The Job Category filter keeps 9 of 9 members. The Education Organization filter keeps 303 of 303 members. The view is filtered on State and Company Sponsor as an attribute. The State filter keeps 42 of 42 members. The Company Sponsor as an attribute filter keeps no members.

# 2018/2019 NEEN Information on Enrollment / Graduation; Midwest Region



Enrollments and Graduates for each Program broken down by State, Company Sponsor and Education Organization. Color shows details about Enrollments and Graduates. The data is filtered on GIE map, Region, Education Organization Type, Key Role, Is Line Worker and Job Category. The GIE map filter keeps Yes. The Region filter keeps Midwest. The Education Organization Type filter keeps 6 of 6 members. The Key Role filter keeps multiple members. The Is Line Worker filter keeps Null, 0 and 1. The Job Category filter keeps 9 of 9 members. The view is filtered on Company Sponsor, Program, State and Education Organization. The Company Sponsor filter keeps 65 of 65 members. The Program filter keeps 307 of 307 members. The State filter keeps 42 of 42 members. The Education Organization filter keeps 303 of 303 members.

# 2018/2019 NEEN Information on Enrollment / Graduation; Midwest Region



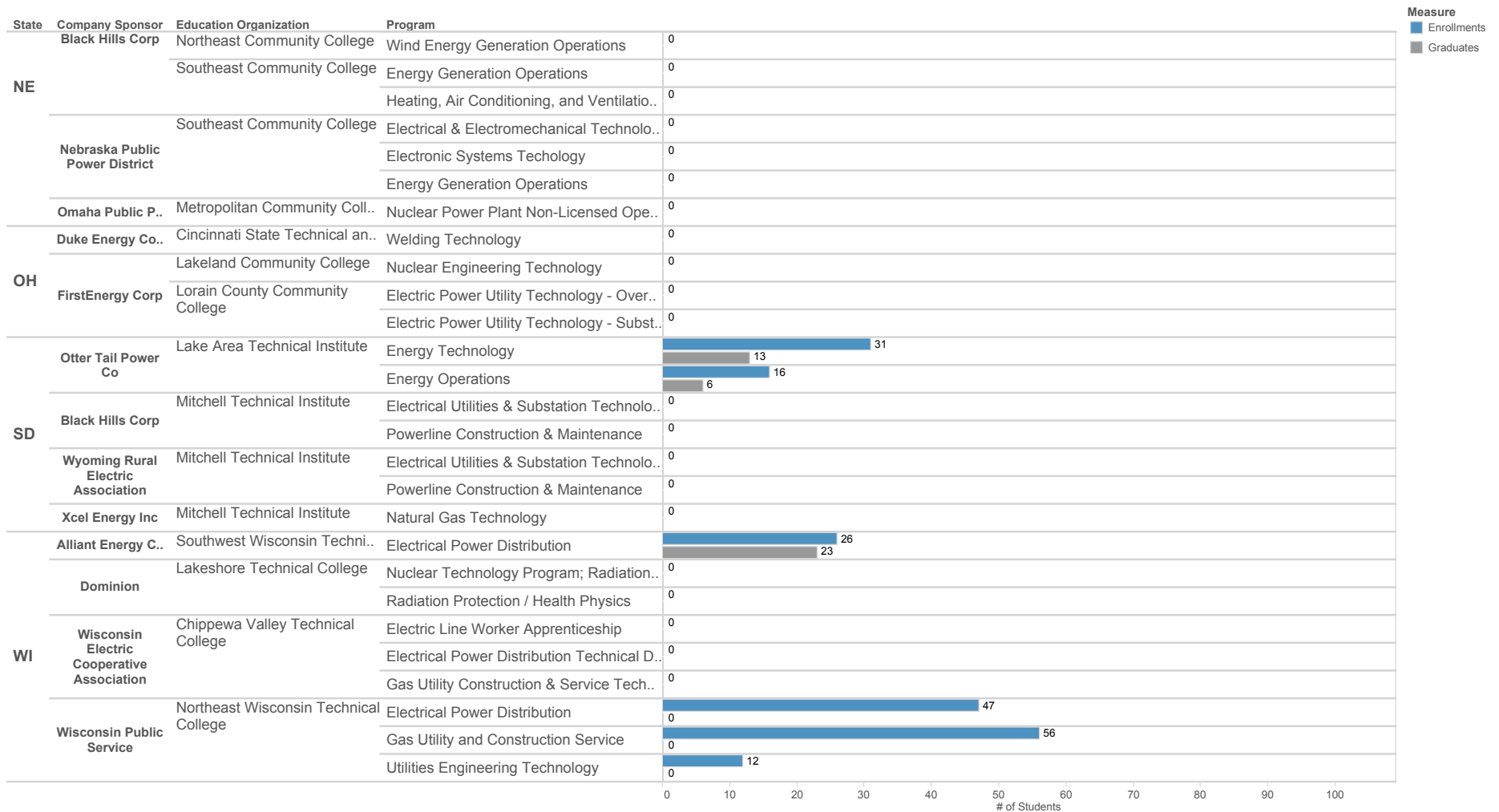
Enrollments and Graduates for each Program broken down by State, Company Sponsor and Education Organization. Color shows details about Enrollments and Graduates. The data is filtered on GIE map, Region, Education Organization Type, Key Role, Is Line Worker and Job Category. The GIE map filter keeps Yes. The Region filter keeps Midwest. The Education Organization Type filter keeps 6 of 6 members. The Key Role filter keeps multiple members. The Is Line Worker filter keeps Null, 0 and 1. The Job Category filter keeps 9 of 9 members. The view is filtered on Company Sponsor, Program, State and Education Organization. The Company Sponsor filter keeps 65 of 65 members. The Program filter keeps 307 of 307 members. The State filter keeps 42 of 42 members. The Education Organization filter keeps 303 of 303 members.

# 2018/2019 NEEN Information on Enrollment / Graduation; Midwest Region

State	Company Sponsor	Education Organization	Program	Enrollments	Graduates	
MN	Xcel Energy Inc	Technical College Granite Falls	Energy Technical Specialist	0	0	
		Minnesota West Community & Technical College Jackson	Electric Utility Substation Technology	0	0	
			Powerline Technology	0	0	
		St. Cloud Technical College	Electrical Construction Technology	0	0	
			Energy Technical Specialist	0	0	
			Energy Technical Specialist - Nuclear	0	0	
			Instrumentation and Process Control	0	0	
			Plumbing	0	0	
			Water Environment Technologies	0	0	
			Welding/Fabrication	0	0	
KCP&L	Metropolitan Community College - BCT		Instrumentation and Process Control	0	0	
		Lineman Program	0	0		
MO	Ameren Corp	St. Louis CC-Florissant Valley	Pre-Apprentice	0	0	
		St. Louis Community College	Ameren Lineman Pre-Apprentice Progra..	0	0	
		State Technical College of Mi..	Nuclear Technology	0	0	
		University of Missouri Chemic..	BS Chemical Engineering	0	0	
		University of Missouri Civil an..	BS Civil and Environmental Engineering	0	0	
		University of Missouri Electric..	BS Electrical Engineering	0	0	
		University of Missouri Mecha..	BS Mechanical Engineering	0	0	
		University of Missouri Nuclear..	BS Nuclear Engineering	0	0	
ND	NextEra Energy ..	Lake Region State College	Wind Energy Technician Program	20	15	
	Otter Tail Power..	ND State College of Science	Electrical Technology	0	0	
	Exelon Corp	Bismarck State College	Nuclear Power Technology	0	0	
			Power Plant Technology	0	0	
			BAS in Energy Management	0	0	
			Electric Power Technology (ELPW)	0	0	
			Electrical Transmission Systems Techno..	0	0	
			Energy Services and Renewable Techni..	0	0	
			Instrumentation & Control	0	0	
			Lineworker	0	0	
Great River Energy	Northeast Community College	Petroleum Production Technology	0	0		
		Process Plant Technology	0	0		
		Water & Wastewater Technology	0	0		
		Heating, Ventilation, and Air Conditionin..	0	0		
		Utility Lineman	0	0		
		NE	Black Hills Corp	Welding	0	0

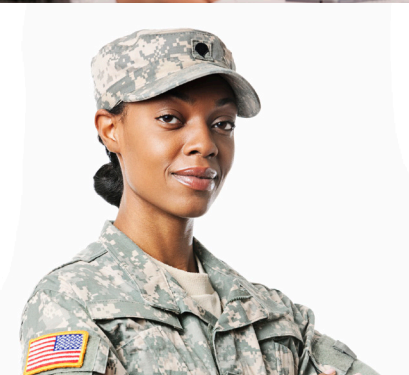
Enrollments and Graduates for each Program broken down by State, Company Sponsor and Education Organization. Color shows details about Enrollments and Graduates. The data is filtered on GIE map, Region, Education Organization Type, Key Role, Is Line Worker and Job Category. The GIE map filter keeps Yes. The Region filter keeps Midwest. The Education Organization Type filter keeps 6 of 6 members. The Key Role filter keeps multiple members. The Is Line Worker filter keeps Null, 0 and 1. The Job Category filter keeps 9 of 9 members. The view is filtered on Company Sponsor, Program, State and Education Organization. The Company Sponsor filter keeps 65 of 65 members. The Program filter keeps 307 of 307 members. The State filter keeps 42 of 42 members. The Education Organization filter keeps 303 of 303 members.

# 2018/2019 NEEN Information on Enrollment / Graduation; Midwest Region



Enrollments and Graduates for each Program broken down by State, Company Sponsor and Education Organization. Color shows details about Enrollments and Graduates. The data is filtered on GIE map, Region, Education Organization Type, Key Role, Is Line Worker and Job Category. The GIE map filter keeps Yes. The Region filter keeps Midwest. The Education Organization Type filter keeps 6 of 6 members. The Key Role filter keeps multiple members. The Is Line Worker filter keeps Null, 0 and 1. The Job Category filter keeps 9 of 9 members. The view is filtered on Company Sponsor, Program, State and Education Organization. The Company Sponsor filter keeps 65 of 65 members. The Program filter keeps 307 of 307 members. The State filter keeps 42 of 42 members. The Education Organization filter keeps 303 of 303 members.

**TAB:**  
**Diversity & Inclusion**



# CEWD

CENTER FOR ENERGY WORKFORCE DEVELOPMENT



# Building a Pipeline of Women & Girls

Workshop Guide

# What Is the Problem You Are Trying to Solve?

Select target jobs to focus on

## Professional

- Engineer
- IT
- Other

## Non-Traditional

- Technician
- Lineworker
- Other

Describe the challenge

There are

- Enough
- Not enough
- Don't know

**girls and women in the talent pipeline for target jobs**

There are

- Enough
- Not enough
- Don't know

**women applying for the target jobs**

There are

- Enough
- Not enough
- Don't know

**women being hired in the target jobs**

There are

- Enough
- Not enough
- Don't know

**women being retained in the target jobs**

Notes

## Worksheet: State the Problem

For example:

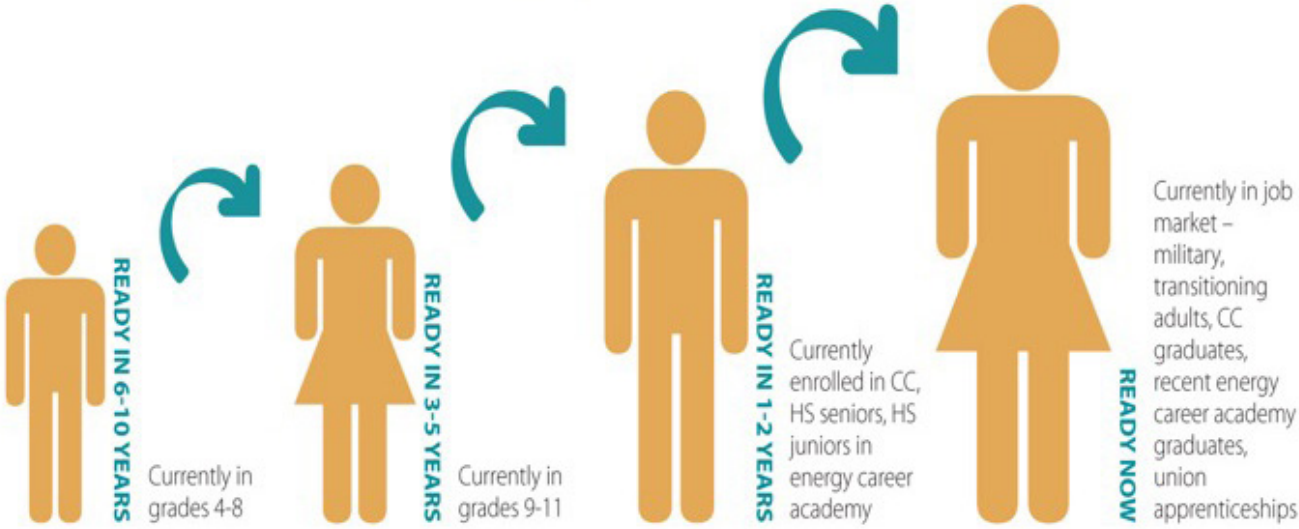
*There are women and girls in the talent pipeline for engineering jobs, but they are not applying for jobs at my company.*

Or,

*I don't know if there are women and girls in the talent pipeline, or if they are applying for jobs, but they are not being hired.*

**Notes**

# Balancing Supply and Demand for Energy Technicians



**Notes**

# Identify the Target Demographic

Select target demographic to focus on

**My need is current, so my focus is on**

- Girls and women who have graduated from the appropriate education pathway
- Women who are exiting the military or women veterans
- Transitioning women

**My need is in 1-2 years, so my focus is on**

- Girls and women at the end of their education pathway
- Women who are currently enlisted in the military or women veterans in an education pathway
- Transitioning women

**My need is in 3-5 years, so my focus is on**

- Girls and women currently in a postsecondary pathway
- Girls in high school (for technician positions)

**My need is in 6-10 years, so my focus is on**

- Girls in high school (for professional positions)
- Girls in middle school (for non-traditional positions)

- I do not know what the demand is for the jobs I am focusing on

Notes

# Worksheet: Define the Demographic You Will Work With

For example:

*Because I am targeting engineering positions and my need is in 6-10 years, I will focus my efforts on girls in high school.*

Or,

*Because I am targeting technician positions and my need is in 1-2 years, I will focus my efforts on women currently in the military, women veterans in an education pathway, or women transitioning from other careers or companies.*

Or,

*I need to better understand the demand and current pipeline for engineering positions in order to define a specific demographic.*

## Notes

# Identify Internal Support and Resources

Current support and resources

## Executive support for this initiative is

- Strong – there are identified champions and an understanding of the needs and requirements
- Okay – there are pockets of support
- Weak – there is limited executive support
- I don't know

## My company's communication strategy

- Includes web and social media presence that support key messages for women
- Includes visuals for women in all positions
- I don't know

## The funding for this initiative is

- Sufficient
- Limited
- Dependent on \_\_\_\_\_
- I don't know

## My company's personnel, systems, policies, and practices are aligned to support the needs of women

- External HR policies and procedures support the needs of women
- We have established mentoring programs for women and girls
- We have established women employee resource groups
- There is limited internal structure to support women and girls
- I don't know

Notes

# Worksheet: List the Internal Support and Resources Available

For example:

*Other Resources – Well-established Women in Engineering Employee Resource Group*

Or,

*Other Resources – Veteran-focused web presence*

**Notes**

# Identify Collaborations and Partnerships

Current  
partners

## Education partners for this initiative are

- Known – we have identified secondary and postsecondary education partners and have established relationships
- Known for secondary
- Known for postsecondary
- Unknown
- Not needed

## Community and other partnerships are

- Known – we have identified partners and have established relationships
- Unknown
- Not needed

## Internal company partnerships are

- Known – we have identified a cross-functional team to support the initiative
- Unknown
- Not needed

Notes

# Worksheet: Collaborations and Partnerships

Name the specific people or organizations that can help you implement this initiative.

**Notes**

# Pipeline Programs for Girls Grades K-8

## Quick, easy ways to reach girls **Grades K-8**

- Get the word out about the **Get Into Energy** website!
- Talk to the community development and energy efficiency teams to find out what they are doing with students at local schools. See how you can get involved and talk about energy careers at those events.
- Have a lineworker or engineer participate in an elementary school career day. Provide copies of **Energy at Work** flashcards and puzzles donated by NEF.
- Donate **Get Into Energy spiral notebooks** to local elementary and middle schools.
- Do STEM lessons from the **Get Into Energy / Get Into STEM booklet**. Then, talk STEM careers in the energy industry.
- Volunteer** at a local FIRST® event.

## Require some resources

- Help a local Girl Scout troop **develop and earn badges** in Electricity, Energy, Engineering, or Nuclear Science.
- Host Careers in Energy Week activities at the company or through the consortia (for ideas, go to <http://www.cewd.org/state-consortia/>).
- Host a **Pizza, Pop, and Power Tools** event.
- Mentor a **FIRST®** team.
- Join an existing **FIRST®** team.

## Require additional resources

- Host a **Women in the Trades Girls Career Day**.
- Start a new **FIRST®** team.
- Become a **FIRST®** team sponsor.
- Start a girls **iCAN program** in local middle schools (toolkit coming in late 2016).

## Long-term pipeline program

- Sponsor a middle school career academy using the **CEWD/NEF middle school curriculum** (coming in summer 2016).

# Pipeline Programs for Girls Grades 9-12

## Quick, easy ways to reach girls **Grades 9-12**

- Get the word out about the [Get Into Energy](#) website!
- Have employees go out to the schools to talk about their careers and distribute [Career Pathways sheets](#).
- Distribute Careers in Energy posters to local schools, available on [ShopCEWD](#).
- Plan and deliver hands-on activities during the annual [Careers in Energy Week](#).
- [Host a Career Fair](#).
- Do an energy lesson at a high school using one of [NEF's lesson plans or kits](#). Then, talk about the energy industry, entry requirements, salaries and benefits, and the importance of background checks.

## Require some resources

- [Mentor](#) high school youth.
- Host a [Get Into Energy Summer Camp](#).
- Mentor a [FIRST®](#) team.
- Join an existing [FIRST®](#) team.
- Learn about [Hermanas Diseña Tu Futuro \(Sisters, Design Your Future\)](#).
- Learn about [Utility Preview Day, Northwest Technical College](#).

## Require additional resources

- Offer high school students summer [internships](#).
- Start a new [FIRST®](#) team.
- Become a [FIRST®](#) team sponsor.
- Sponsor a [mentoring program](#).
- Become a [SkillsUSA Career Expo](#) partner.

## Long-term pipeline program

- Start a [scholarship program](#) for high school seniors going into the energy industry.
- Sponsor/start a local [energy career academy](#).

# Pipeline Programs for Women

## Quick, easy ways to reach college women

- Contribute to IEE's Scholarship Plus initiative.
- Attend college career fairs.
- Mentor a college student.

## Require some resources

- Project adjunct professor support to college and universities.
- Provide internship and co-op opportunities to college students.
- Serve on college and university's curriculum development advisory councils.
- Support the Society of Women Engineers and serve on their Corporate Advisory Council.

## Require additional resources

- Start a company scholarship program.
- Donate equipment to college labs.

## Quick, easy ways to reach transitioning women

- Have the women's ERG host community events.
- Promote open positions at local One Stops.
- Get involved in women in the trades organizations.

## Require some resources

- Create a special women's section on your website with messaging targeting what's most important to them.
- Develop advertising materials targeted at women and with photos of women, especially in careers in which they are underrepresented, such as trades.
- Offer a Get Into Energy Math & Test Prep Workshop for a class of transitioning women.
- Host a Veterans Only Career Information Day focused on women veterans.

## Require additional resources

- Offer a Women in Sustainable Employment (WISE) Pathways Course.
- Start a scholarship program for women transitioning to the energy industry who need postsecondary education.
- Start a Troops to Energy Jobs program focused on women veterans.
- Offer the Natural Gas Bootcamp to a cohort of women.

# Pipeline Programs for Women in Transition

## Scope

### My initiative is

- Short term – less than 1 year to implementation
- Long term – more than 1 year to implementation

### My initiative will

- Enhance or adapt an existing initiative
- Expand an existing initiative
- Create a new initiative

### The work team size is

- 1
- 2-4
- 5-10
- More

### The purpose of my initiative is

- Build career awareness
- Build specific skills
- Educate
- Recruit
- Retain

### The number of girls or women I need to reach is

- Less than 100
- 100 – 500
- 500 – 2,500
- More
- I don't know

## Notes

## Worksheet: Statement of Scope

In one sentence, write a statement of scope:

By *when*, *who* will *action verb what*

For example:

*By June 2017, the Women and Girls Team will have communicated pathways for engineering careers in energy to 100 girls at the West High School.*

Or,

*By September 2017, the Women and Girls team will have conducted 3 sessions of WISE Pathways.*

Or,

*By September 2017, the Women and Girls team will have awarded 5 Girls in Energy Scholarships to High School Seniors entering programs of study in Energy Engineering at a partner university.*

### Notes

## Worksheet: Build a Team

- Who is on the team?
- How will you communicate?
- What are the roles and responsibilities of each team member?

### Notes

## Worksheet: What I Need to Know

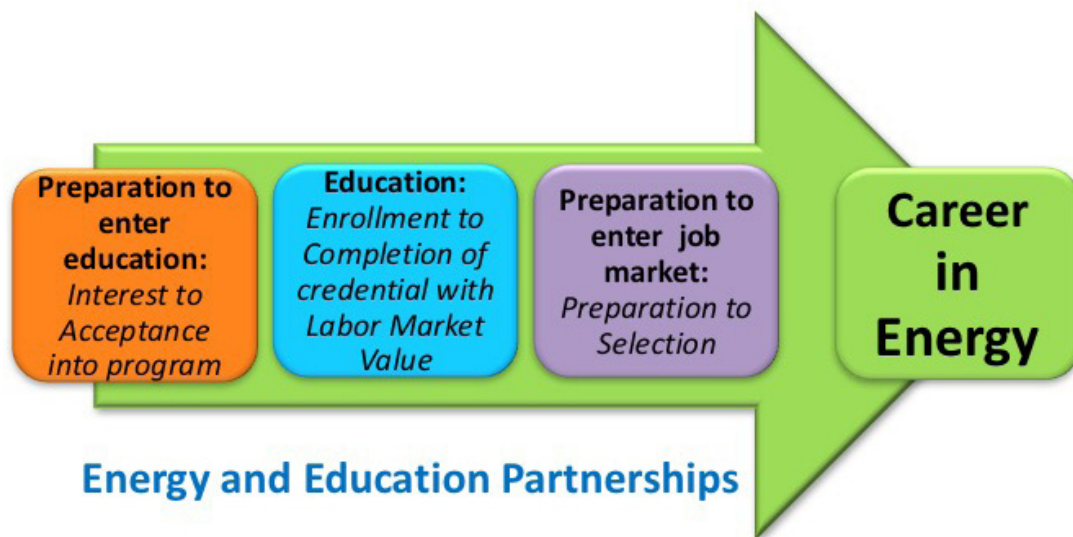
Go back through the workbook to identify specific areas where you checked “I don’t know” or “unknown” and list the critical items.

**Notes**

# Worksheet: Actions

- Create actions for before, during, and after implementation
- Actions start with a verb
- For each action, assign a responsibility and a due date

## Pathway to Energy Careers

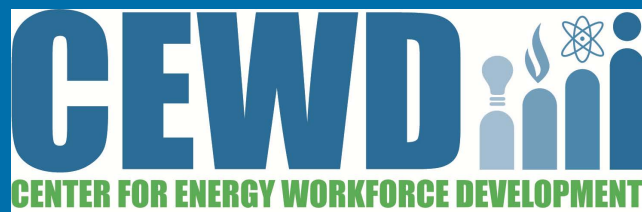


### Notes

# Worksheet: Create Your Elevator Speech

- Should be less than two minutes
- Should be a mini business case:
  - why are you doing this,
  - what are you doing,
  - what will it take,
  - what will you achieve,
  - what will happen if you don't do anything?

## Notes



**701 Pennsylvania Ave., N.W.  
Washington, DC 20004-2696  
202-638-5802  
[www.cewd.org](http://www.cewd.org)**

**TAB:**  
**Resources**

## National Industry Associations

- American Association for Blacks in Energy (AABE)
- Associated General Contractors (AGC)
- Energy Providers Coalition for Education (EPCE)
- National Association of Manufacturing (NAM)
- National Network for Business & Industry Associations (NNBIA)
- U. S. Chamber of Commerce / Institute for Workforce Competitiveness

## National Education / Workforce Associations

- American Association of Community Colleges (AACC)
- American Council on Education (ACE) Division for Lifelong Learning
- Association for Career & Technical Education (ACTE)
- National Association of Workforce Boards (NAWB)
- State Career Clusters Initiative

## National Government Agencies

- Department of Energy
- Department of Labor's Education and Training Administration
- Department of Education

## Secondary

- National Energy Foundation (NEF)
- SkillsUSA

## Unions

- International Brotherhood of Electrical Workers (IBEW)
- Utility Workers Union of America (UWUA)

## Veterans

- Department of Labor's Veterans & Employment Training Service/Hire Vets First
- Utility Industry Workforce Initiative
- Department of Defense
- Veteran's Affairs

## Women

- Energetic Women
- Society of Women Engineers (SWE)

## Engineering

- Power & Energy Society of IEEE (PES)
- IEEE Women in Engineering

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Starting a Summer Camp at Your Energy Company	To offer a one-day program designed to build awareness among parents and middle school students about the operation of energy companies and the wide array of potential careers.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Builds students’ interest in the energy industry</li> <li>-Builds employees’ self-esteem by showcasing what they do</li> <li>-Builds a positive image of the company in the community</li> </ul>	16 weeks	\$1,000-\$3,000	The toolkit provides a project manager’s to-do list, a summer camp agenda, registration materials, lesson plans, and an evaluation form.
Get Into Energy Summer Camp	To offer a three-day program, highly interactive summer camp (with field trips) designed to build awareness among parents and middle school students about the operation of energy companies and the wide array of potential careers.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Builds students’ interest in the energy industry</li> <li>-Builds employees’ self-esteem by showcasing what they do</li> <li>-Builds a positive image of the company in the community</li> </ul>	24 weeks	Over \$10,000	The toolkit is extensive and has everything needed to host the three-day camp. Donated by KCP&L.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Green Energy Summer Camp	To offer a one-week summer camp program designed to build awareness of energy efficiency, renewable energy, and green jobs for middle and high school students.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Builds students’ interest in the energy industry</li> <li>-Helps students understand more about energy efficiency and renewable energy</li> <li>-Builds employees’ self-esteem by showcasing what they do</li> <li>-Builds a positive image of the company in the community</li> </ul>	4 months in advance of camp start date	Under \$1,000 per camp	The toolkit provides a project manager’s to-do list, material lists and agendas for both middle and high school students, registration materials, lesson plans, and an evaluation form.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Hosting a Teachers' Career Day	To offer a one-day program designed to build awareness among high school science and technology teachers about the operation of energy companies and the wide array of potential careers.	Supports the "grow your own" approach	<ul style="list-style-type: none"> <li>-Helps companies to strengthen relationships with local career and technical education principals, teachers, and students</li> <li>-Builds awareness at schools on energy careers and the real-world application of science and technology</li> <li>-Builds a positive image of the company in the community</li> </ul>	16 weeks	\$1,000-\$3,000	The toolkit provides a project manager's to-do list, budget template, letter to teachers, career day program agenda, lesson plans, registration materials and an evaluation form.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Teacher Externship	To provide an experience in which teachers spend time in a workplace to learn through direct experience about trends, skill requirements, and opportunities in industries related to their subject to enrich and strengthen their teaching and bring relevance to student learning. Externships range from a day of job shadowing to longer externships that are usually project-based and can last as long as a full summer.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Helps companies to strengthen relationships with local career and technical education principals, teachers, and students</li> <li>-Builds awareness at schools on energy careers and the real-world application of science and technology</li> <li>-Builds a positive image of the company in the community</li> </ul>	At least 16 weeks, but depends on length of externships	Depends on the length of the program	Includes teacher externship agreement, suggested activities, employer externship work plan, externship time log, skills observation form, journal, and evaluation form.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Organizing a FIRST LEGO® League	To host a team for an international robotics program that ignites an enthusiasm for discovery, science, and technology in kids ages 9 to 14.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Helps companies to strengthen relationships with local career and technical education principals, teachers, and students</li> <li>-Builds awareness at schools on energy careers and the real-world application of science and technology</li> <li>-Builds a positive image of the company in the community</li> </ul>	16 weeks	Under \$1,000	Toolkit provides a one-pager for management, project manager to-do list, letter to teachers, information sheet for parents, registration form, list of resources, and links for FLL on the web.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
STEM Reading is Power!	To launch a <i>Reading is Power!</i> program to get middle school students excited about science, technology, engineering and math, and get them reading.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Helps companies to strengthen relationships with local middle school principals, teachers, and students</li> <li>-Builds awareness at schools on energy careers and the real-world application of science and technology</li> <li>-Builds a positive image of the company in the community</li> </ul>	16 weeks	\$1,000-\$3,000	The toolkit provides a one-pager for management, budget worksheet, project manager task list, information sheets for libraries and parents, flyer for kids, program registration form, reading log, student evaluation form, and an <i>Everyone’s a Winner</i> party flyer.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Career Clusters	To be able to talk confidently to school districts, specifically high schools, about how career clusters fit into the context of energy careers.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Helps companies to strengthen relationships with local career and technical education principals, teachers, and students</li> <li>-Builds awareness at schools on energy careers and the real-world application of science and technology</li> </ul>	N/A	N/A (informational kit)	The toolkit provides a one-pager for management, Energy Jobs career clusters map, career cluster definitions, career cluster PPT for schools, and career cluster resources.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Adding a 17 <sup>th</sup> Career Cluster in Your State	To bring attention and awareness of energy careers.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Helps companies to strengthen relationships with local career and technical education principals, teachers, and students</li> <li>-Builds awareness at schools on energy careers and the real-world application of science and technology</li> </ul>	6 months	N/A (informational kit)	State energy workforce consortia can use this toolkit, which includes a presentation (with a script in the notes section) and other materials, to make the case for adding a 17th career cluster.
Career Fairs	To help companies maximize the impact at local career fairs with high school students.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Builds students’ interest in the energy industry</li> <li>-Creates an employment pipeline</li> </ul>	N/A	N/A (informational toolkit)	The toolkit provides career fair tips, packing list, summary sheets for the industry’s top four job categories, nuclear crossword, puzzle, Test Your Energy IQ, and Energy Sudoku.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Veterans-only Career Day	To help CEWD member companies prepare for, plan, and conduct a Veterans-Only Career Information Day. The purpose of the Career Day is to create awareness of various energy jobs/careers in the energy industry amongst Veteran populations, resulting in an increase in the number of Veterans applying for energy jobs.		<ul style="list-style-type: none"> <li>-Help create a potential pipeline of qualified workers for energy jobs.</li> <li>-Increase alignment of the candidate skills with job requirements.</li> <li>-Provide clear signaling to Veterans of the company's or state energy workforce consortium's education/job requirements.</li> </ul>	2 – 6 months if a Veteran hiring strategic plan is in place; if not, then it may require 6-8 months to gain buy in and commitment at the company level.	\$1,000-\$3,000	Toolkit includes overview, planning timeline and checklist, presentation, sample agenda, sample flyer, and tracking sheet.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Mentoring	To enable members to launch a new mentoring program with high school youth or improve upon a program already in place.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Builds students’ interest in the energy industry</li> <li>-Creates an employment pipeline</li> <li>-Builds a positive image of the company in the community</li> <li>-Helps employees sharpen their skills</li> </ul>	12 weeks	\$5,000-\$10,000	Toolkit provides a project manager’s task list, budget template, guidance in developing policies and procedures, and all required forms.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Internships/Co-ops	To enable members to launch a new internship program or improve upon one already in place.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Builds students’ interest in the energy industry</li> <li>-Creates an employment pipeline</li> <li>-Builds a positive image of the company in the community</li> <li>-Helps employees sharpen their skills</li> </ul>	One semester in advance of starting program	Over \$10,000	The toolkit provides a internships and co-ops overview, an organizational audit, a management buy-in PPT, a project manager’s to-do list, a budget template, a work plan template, marketing ideas, a sample employment letter to students, a sample program agreement, and a supervisor evaluation form for students.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Scholarships	To enable members to launch a new scholarship program or improve upon one already in place.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Builds students’ interest in the energy industry</li> <li>-Creates an employment pipeline</li> <li>-Builds a positive image of the company in the community</li> </ul>	One semester in advance of starting program	Dependent upon scholarship amount.	This toolkit outlines all you need to know about how to establish and market a scholarship program, including everything from an initial task list to information about pertinent IRS rules and other laws and even a sample application form.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Grant Writing	To help companies and their partners for preparing a top-notch grant application.	Provides guidance on how to navigate the world of grants	-Helps member get funding for programs --Brings together industry, education, and workforce in the community	Depends upon due date of grant application	N/A (informational kit)	The toolkit provides an ABCs of Grant Writing document, a decision-making matrix, a project manager's task list, a document to help define roles, federal forms, a cover document section, grant writing tips, a resources list, and a sample final report.

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
High Performing Program Self-Assessment	To help evaluate a company's own programs to determine if improvements need to be made; determine if an existing program is one that you would like to implement at a local community college; determine if an existing program is graduating qualified students that you might want to hire.	Supports "grow your own" programs	<ul style="list-style-type: none"> <li>-Helps members to abandon programs that are not effective</li> <li>-Builds relationships with local community colleges</li> <li>-Ensure that community college's energy curriculum is accurate</li> </ul>	Dependent on if using toolkit to evaluate an existing program or implementing a new one	N/A (informational kit)	The toolkit contains a sample strategic planning document, sample selection and recruitment strategy, sample charter agreement, sample meeting agenda, list of potential roadblocks, list of budget components, list of performance measures, sample student safety record tracking report, sample client satisfaction survey, and sample employability skills course content.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
How to Get Started Communication Kit	To provide members with a set of documents, weaved together by a common theme, which can be distributed to potential employees.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-Increases the employment pool</li> <li>-Helps guide potential high quality applicants through the hiring process, therefore requiring less time of company staff</li> </ul>	None—all materials ready to go	None	The toolkit contains a summary of the CEWD pipeline survey, a <i>Get Into Energy</i> presentation, the energy industry competency model, Energy Career Clusters map, summary of the hiring process, summary of energy company benefits, summary of employment testing, summary of Competency-based Interviewing, and an FAQ document.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Educators Communication Kit	To provide members with a set of documents, weaved together by a common theme, which can be distributed to schools.	Supports the “grow your own” approach	-By reaching out to schools, builds students’ interest in the energy industry -Creates an employment pipeline	None—all materials ready to go	None	The toolkit contains a summary of the CEWD pipeline survey, a <i>Get Into Energy</i> presentation, the energy industry competency model, Energy Career Clusters map, links to lesson plans, and an FAQ document.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Energy Career Academy	To enable member to launch an Energy Career Academy with a local career and technical education partner.	Supports “grow your own” programs	<ul style="list-style-type: none"> <li>-Builds students’ interest in the energy industry</li> <li>-Creates an employment pipeline</li> <li>-Helps companies to strengthen relationships with local career and technical education principals, teachers, and students</li> <li>-Helps employees sharpen their skills</li> </ul>	15 months	Over \$10,000	Toolkit provides management buy-in PPT, planning timeline, framework, budget template,
Careers in Energy Week	To bring attention and awareness of energy careers.	Supports the “grow your own” approach	<ul style="list-style-type: none"> <li>-By reaching out to the community, builds interest in the energy industry</li> <li>-Creates an employment pipeline</li> </ul>	12-16 weeks	Printing costs of bill stuffer	The toolkit provides a variety of templates that can be used internally for the company and with school partners.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Employability Skills Workshop	To demonstrate the types of soft skills required at energy companies to potential employees.	Helps to build a more qualified pipeline	-Enables companies to implement a skills awareness program without having to use internal resources to develop it	16 weeks	\$1,000-\$3,000	Included in the toolkit are detailed instructor and participant guides that allow a company to implement quickly.
A Toolkit for Recruiting and Retaining Women in Nontraditional Positions (co-sponsor Hard Hatted Women)	To help members increase the diversity of their workforce.	Supports the “grow your own” approach	-Provides members with techniques that have been tested to bring more women into non-traditional positions in the energy industry -Builds a positive image of the company in the community	Dependent upon techniques used	Dependent upon techniques used	Hard Hatted Women (HHW) has compiled the results of their 30 years’ experience along with recognized best practices in recruiting and retaining women, which include a variety of techniques from advertising to job shadowing.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Workforce Development Evaluation	To help evaluate a company's own workforce development programs to determine if improvements need to be made.	Supports the "grow your own" approach	-Provides members with a process using key performance indicators and critical success factors to measure the effectiveness of their workforce development initiatives	N /A	N/A (informational kit)	The toolkit includes a survey and dashboard that can provide a company detailed, customized feedback.
Women in Sustainable Employment (WISE) Pathways	To bring attention and awareness of energy careers.	Supports the "grow your own" approach	-Geared towards workforce centers and community colleges, builds awareness of in-demand careers in the area -Focuses on energy, construction, and manufacturing, which utilize similar knowledge and skill sets	16 weeks	Over \$10,000	Included in the toolkit are detailed instructor and participant guides and PPT presentations that allow an organization to implement without a long lead time.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Mentoring Veterans	To enable members to launch a new mentoring program with Veterans or improve upon a program already in place.	Supports the investment in building a diverse, qualified pipeline	- Supports retention of employees, especially as part of a Diversity and Inclusion Plan	12 weeks	Free	The toolkit provides structure for the first several months of the mentor/mentee working together to ensure that the typical issues a Veteran may have when they are new to the company can be covered. Other items included in the toolkit are articles as well as applications and questionnaires that can be used to either jumpstart a Veteran mentoring program or enhance one the company already has in place.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Workplace Mentoring	Similar to the Mentoring Veterans Toolkit, but can be used with non-Veteran employees.	Supports the investment in building a diverse, qualified pipeline	- Supports retention of employees, especially as part of a Diversity and Inclusion Plan	12 weeks	Free	The toolkit provides structure for the first several months of the mentor/mentee working together to either jumpstart a mentoring program or enhance one the company already has in place.

## Summary of CEWD Toolkits

Toolkit	Purpose	What member needs does it meet?	What are the benefits of the program to the member company?	Lead Time	Cost to implement program (See Cost Ranges*)	CEWD Membership Dollars at Work: What do you get?
Speaker in a Box	To bring attention and awareness of energy careers.	Supports the “grow your own” approach	-Builds students’ interest in the energy industry	None	Free to under \$50 for materials for energy activities	Sample agendas, interactive energy activities, and a presentation template for doing career awareness presentations at local schools, grades K-12

\*Cost ranges: under \$1,000; between \$1,000-\$3,000; between \$3,000-\$5,000; \$5,000-\$10,000; over \$10,000

CEWD Communities of Practice are structured to offer information and sharing on specific topics of interest to CEWD members and to offer “think tanks” for CEWD in the development of new tools and resources for its members.

**Contractors Community:** The Contractors Community of Practice is intended for contractor members of CEWD to collaborate in addressing their unique workforce challenges. The COP meets monthly to address issues, including the approach for quantifying contractor labor demand and the impacts of labor shortages for their skilled jobs.

*Liaison: Beth Britt ([beth@cewd.org](mailto:beth@cewd.org))*

**Diversity Community:** Increasing diversity in the talent pipeline continues to be a driving force behind member company workforce development efforts. The community shares best practices and resources and focuses on how to utilize the Strategic Linkages approach detailed in CEWD’s diversity and inclusion materials. The Community meets quarterly via conference call and includes both company representatives and NEEN members.

*Liaison: Valerie Taylor ([valerie@cewd.org](mailto:valerie@cewd.org))*

**Energy Industry Fundamentals (EIF) Community:** The EIF Approved Providers Community of Practice provide EIF curriculum and credential implementation support to a growing network of EIF educators. The group is broken down into high school and training providers and then community college providers. This group shares ideas on what has been successful teaching the course and achieving the desired outcome of credential attainment.

*Liaison: Julie Strzempko ([julie@cewd.org](mailto:julie@cewd.org))*

**High School Community:** The High School Community of Practice represents states that are in all stages of implementing high school energy academies or members that have less formal programs set up with their local high schools. The Community meets quarterly via conference call and shares resources and best practices.

*Liaison: Valerie Taylor ([valerie@cewd.org](mailto:valerie@cewd.org))*

**Knowledge Transfer and Retention (KT&R) Community:** The Knowledge Transfer and Retention (KT&R) Community of Practice is focused on sharing process and procedure information that might improve their own or others KT&R programs. This COP is focused on not only providing the industry with “options” of programs but they also want to share successes and failures related to implementation.

*Liaison: Ray Kelly ([ray@cewd.org](mailto:ray@cewd.org))*

**Troops to Energy Jobs Community:** Each quarter, interested member company representatives meet through teleconference to share ideas, discuss best practices, and share their military recruiting, training, and retention strategies. There are over 50 member companies who have officially committed to the Troops to Energy Jobs objectives.

*Liaison: Rosa Schmidt ([rosa@cewd.org](mailto:rosa@cewd.org))*

**Workforce Planning Analytics Community:** The WFP Analytics Team is a community generally focused on sharing best practices in workforce analytics within their companies or lessons learned through analytics work within their companies. Time is spent during discussions to share best practices, ask benchmarking questions and document best practices for use on the CEWD Essentials of workforce planning wizard.

*Liaison: Ray Kelly ([ray@cewd.org](mailto:ray@cewd.org))*

# Websites Guide

## Center for Energy Workforce Development (CEWD) [cewd.org](http://cewd.org)

The main CEWD website is home to a wealth of information for energy companies. There is information on all of the Get Into Energy State Consortia, energy news and events, and documents about the state of the energy workforce. The CEWD Member Wizard includes tools, resources, and best practices for specific categories, such as educators or lineworkers.

## CEWD Energy Industry Curriculum Center [cewd.org/curriculum](http://cewd.org/curriculum)

The Curriculum Center offers an array of energy-related educational materials on topics such as the fundamentals of energy, energy careers, and new technologies. The majority of materials are geared towards high school or community college students, but there are resources for younger age groups as well.

## Get Into Energy (GIE) [getintoenergy.com](http://getintoenergy.com)

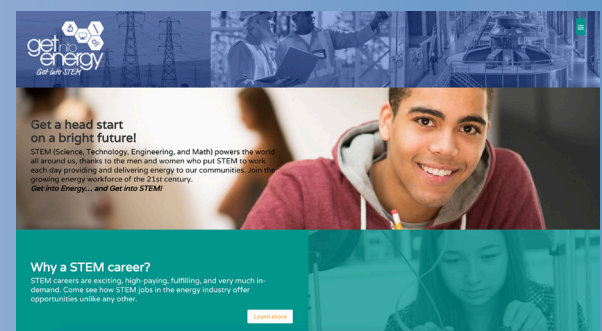
The GIE website has four main target audiences: youth, women, engineers, and transitioning workers. There is information on different energy careers, videos about working in the energy industry, a training program locator, a math refresher study program, and more. The [getintoenergy.jobs](http://getintoenergy.jobs) site has up-to-date job listings from energy companies around the country.

## Troops to Energy Jobs [troopstoenergyjobs.com](http://troopstoenergyjobs.com)

Troops to Energy Jobs is designed to help veterans make a successful transition to a rewarding career in the energy industry. There is also information for energy companies on how to implement their own initiatives for military veterans. Troops to Energy Jobs includes a roadmap that veterans can follow, from learning about the energy industry all the way through to being hired.

## **NEW!** Get Into Energy/Get Into STEM (GIE/GIS) [stem.getintoenergy.com](http://stem.getintoenergy.com)

The Get Into Energy/Get Into STEM website offers middle and high school students engaging and up-to-date information on a wide range of STEM topics. Equally important, a key goal is to clearly demonstrate the STEM connection to all careers in the energy industry. The site also includes a comprehensive Teachers section with energy-related STEM lesson plans.



# Social Media Guide



## Facebook

### *Center for Energy Workforce Development (CEWD)*

<https://www.facebook.com/Center-for-Energy-Workforce-Development-CEWD-219217258149829>

The CEWD Facebook page provides links to different resources available on the CEWD website, including members-only information. Energy companies can share this information with their employees and partners, such as educators. For certain events, such as Careers in Energy Week, the CEWD Facebook page shares additional information geared towards the event.

### *Get Into Energy*

<https://www.facebook.com/Get-Into-Energy-153791511363899>

The Get Into Energy Facebook page provides information to the public on careers in energy. There are links to information on the GIE website, news articles about employment opportunities and career training, and job openings from energy companies around the country. There are also photos and videos from FIRST<sup>®</sup> Robotics competitions. Because this page is geared towards the public, energy companies, educators, and individuals can share these posts on their own Facebook pages.

### *Troops to Energy Jobs*

<https://www.facebook.com/TroopsToEnergyJobs>

The Troops to Energy Jobs Facebook page is our newest addition to social media. So far, we have been walking through each step of the Troops to Energy Jobs Roadmap. There are also news articles related to military veteran employment, particularly in the energy industry, as well as job openings from energy companies around the country. Energy companies can share this information with job applicants who are military veterans.



## Twitter

### *CEWD/GIE*

<https://twitter.com/getintoenergy>

We have a joint Twitter account for CEWD and GIE. We share many of the same links found on the two Facebook pages. We also retweet energy companies and other organizations, including job openings and information about the energy industry. During FIRST<sup>®</sup> Robotics competitions, we post photos of the events.

### *Troops to Energy Jobs*

<https://twitter.com/troops2energy>

The Troops to Energy Jobs Twitter account focuses mainly on job openings posted on Twitter by energy companies around the country. We also share links to the Troops to Energy Jobs website and relevant news articles.



## Instagram

### *Get Into Energy*

<https://www.instagram.com/getintoenergy>

The Get Into Energy Instagram is used exclusively for the FIRST<sup>®</sup> Robotics competitions. There are photos from regional, super regional, and national events. Students, teachers, mentors, and sponsors can like and comment on the photos.



## Explore Exciting Careers in Energy!

www.getintoenergy.com

### Lineworkers

Lineworkers (sometimes called the "power line crew") are the people who install and repair cables, wires, and other critical infrastructure equipment that power homes, businesses, hospitals, schools and more. They are often the people you see driving poles or working on overhead buckets, working on the power lines high above the ground.

If you enjoy working outdoors and aren't afraid of heights, lineworker might be the right career for you!

### Engineers

Engineers are necessary throughout the entire energy industry, because there are so many different types of engineering positions available: electrical, power, mechanical, nuclear, energy, environmental, and more. Engineering is all about discovering, inventing, making, and maintaining.

If you want to use scientific and mathematical knowledge to build our energy future, engineers might be the right career for you!

### Utility Technicians

Utility technicians are in charge of installing, testing, maintaining, repairing, and upgrading the electrical equipment, machinery, and buildings that are essential to the power industry. They are also responsible for maintaining and repairing the equipment used to generate and transmit electricity.

If you're a great problem solver, utility technician might be the right career for you!

### Power Plant Operators

Power Plant Operators are in charge of operating and controlling the machines that generate power in coal, natural gas, nuclear, and other power plants. Their job is extremely important because they make sure customers have enough electricity to run their homes, businesses, and other power plants.

If you like working in a control room, power plant operator might be the right career for you!

### Gas Technicians

Gas Technicians install, maintain, and repair gas lines and equipment. They are responsible for laying pipe for gas lines and gas valves. They have to be able to connect the pipes and valves to a gas meter and to repair the pipes that are already in place.

If you have an interest in fixing things together, gas technician might be the right career for you!

## Explore Exciting Careers in Engineering!

www.getintoenergy.com

### Electrical Power

Electrical power engineers make a big difference in the world of energy by working to ensure that electric energy is generated and delivered reliably and efficiently while advancing environmental quality improvements. They help customers use electric energy to meet their needs economically. Electrical power engineers are also driving the technologies of the future.

### Environmental

Environmental engineers develop techniques to recover usable materials and reduce waste created during manufacture of a product. Environmental engineers also design air pollution control for power companies.

### Mechanical

Mechanical engineers design and operate fossil fuel, hydroelectric, geothermal, nuclear, and cogeneration power plants. They also involved in all aspects of the production and construction of energy infrastructure and also involved in existing projects.

### Solar Energy Systems

Solar energy systems engineers design, develop, and evaluate energy-related projects and programs to reduce energy costs or improve energy efficiency during the designing, building or remodeling stages of construction. Solar energy systems engineers may specialize in many different areas.

### Nuclear

Nuclear engineers have a range of responsibilities at a nuclear power plant, including helping to develop complex, multi-step plans to support plant operations. Nuclear engineers also maintain, assess, and improve the performance and reliability.

### Wind Energy

Wind energy engineers learn about wind loads with technology related to electricity generation, delivery, and use. Wind energy engineers design underground or on-grid wind farm collector systems.

There are plenty of other types of jobs waiting for you in the energy industry! Learn more about them at: [www.getintoenergy.com](http://www.getintoenergy.com)

### Careers in Energy Poster

Introduces five exciting energy careers: lineworker, engineer, power plant operator, technician, and pipefitter/pipefitter/welder.

### Careers in Engineering Poster

Highlights seven exciting energy-related engineering careers: electrical power, mechanical, nuclear, energy, environmental, solar energy systems, and wind energy.

### Putting STEM to Work Poster

Provides an introduction to STEM (Science, Technology, Engineering, and Mathematics) and examples of STEM-oriented jobs in the energy industry.

### Please Specify Poster When Ordering Professionally Printed

- 10 Posters (\$50)
- 50 Posters (\$175)
- 100 Posters (\$300)

## Putting STEM to Work!

Are you able to apply your math skills to other subjects?  
Do you find unique ways to utilize technology for learning?  
Does using and creating models help you understand new concepts?

Then a STEM job in the energy industry might be right for you!

### What's STEM?

STEM is learning that integrates Science, Technology, Engineering, and Mathematics alongside skills like problem solving and critical thinking to make connections between what you are learning and the world around you. STEM activities might include using or making a model, collecting and evaluating evidence, and applying skills from one area to another.

Below are some of the many STEM jobs in the energy industry:

#### POWER PLANT OPERATOR

Power plant operators are in charge of operating and controlling the machines that generate power in coal, natural gas, nuclear, and other power plants. Their job is extremely important because they make sure customers have enough electricity to run their homes, businesses, and other power plants.

#### TECHNICIAN

Utility technicians are in charge of installing, testing, maintaining, repairing, and upgrading the electrical equipment, machinery, and buildings that are essential to the power industry. They are also responsible for maintaining and repairing the equipment used to generate and transmit electricity.

#### ENGINEER

Engineers are necessary throughout the entire energy industry, because there are so many different types of engineering positions available: electrical, power, mechanical, nuclear, energy, environmental, and more. Engineering is all about discovering, inventing, making, and maintaining.

www.getintoenergy.com

### Careers in Energy Booklet

Highlights five exciting energy careers, along with required skills and salary ranges.

#### Professionally Printed

- 100 Booklets (\$260)
- 500 Booklets\* (\$600)
- 250 Booklets (\$400)
- 1,000 Booklets\* (\$900)

\*Includes customization

### Explore Exciting Careers in Energy!

INSIDE...  
• LINEMEN  
• POWER PLANT OPERATORS  
• UTILITY TECHNICIANS  
• PIPEFITTERS/WELDERS  
• ENGINEERS

Learn more at [www.getintoenergy.com](http://www.getintoenergy.com)

### LINEMEN

Linemen (also known as line installers or line technicians) install and repair cables, wires, and other critical infrastructure and distribution equipment at homes, schools, and other buildings.

**LINEMEN ALSO NEED TO:**

- Have a good physical, cooperative attitude.
- Work well with others.
- Have to read and understand customer needs and how to solve them.
- Be able to be on the job for a long time.

**TESTING AND CERTIFICATES/LICENSES**

Many occupations require a specific certificate or license. Some states also require a license for linemen. A Commercial Driver License may be required, and an electrical license may be required for linemen.

**AVERAGE ANNUAL SALARY\*\***

- Entry-Level: \$31,450
- Mid-Level: \$61,100
- Senior-Level: \$81,325

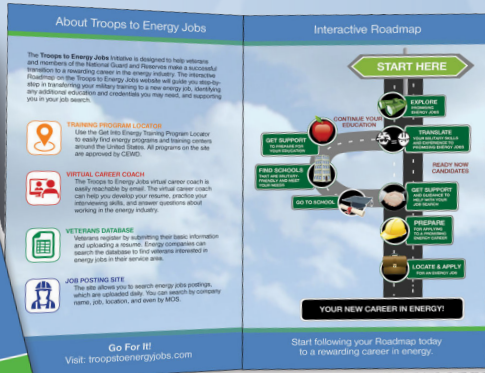
**THE FUTURE OF LINEMEN**

The future of linemen is bright. With the "Smart Grid" initiative to improve energy delivery and distribution, linemen will be in high demand. They will be able to use their skills to help create a more sustainable and efficient energy system.



## Troops to Energy Jobs Flyers

An introduction to the Troops to Energy Jobs Roadmap that helps veterans transition to careers in energy.



### Professionally Printed

- 250 Flyers (\$125)
- 500 Flyers (\$200)
- 1,000 Flyers (\$305)



## Troops to Energy Jobs Business Cards

Great for sharing at job fairs and easily customized to include your company's logo.

### Professionally Printed

- 100 Cards (\$30)
- 250 Cards (\$40)
- 500 Cards (\$60)
- 1,000 Cards (\$75)

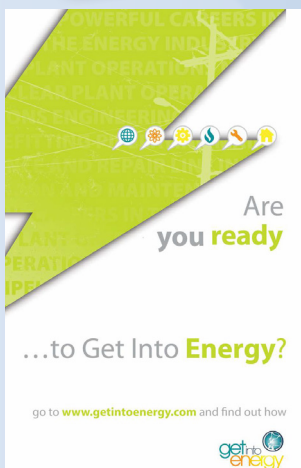


## GIE "Are You Ready?" Brochure

Information on the many career opportunities in the energy industry, including engineering, plant operations, line installation and maintenance, pipefitting/pipelaying, and maintenance and repair.

### Professionally Printed

- 1,000 Brochures (\$1,000)
- 2,500 Brochures (\$2,000)
- 5,000 Brochures (\$4,000)



## GIE "Are You Ready?" Notebook

Spiral notebook, perfect for school and work.

### Professionally Printed

- 250 Notebooks (\$975)
- 500 Notebooks (\$1,925)
- 1,000 Notebooks (\$3,790)



## GIE Products

Get energized about careers in energy with sleek and useful USB car chargers and tape measures, featuring the Get Into Energy website ([getintoenergy.com](http://getintoenergy.com)) on reverse.

**Tape Measure**  
(\$2.70 each)

**USB Car Charger**  
(\$2.70 each)



Center for Energy Workforce Development

[www.cewd.org](http://www.cewd.org)

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