POWER UP!

Preparing Florida's Students for Tomorrow's Economy through Partnerships

Carol Higley
2011 Co-Chair
Florida Energy Workforce Consortium

Florida Energy Workforce Consortium

- Formed in 2006 to develop solutions to meet the current and future workforce needs of Florida's energy industry
- Comprised of energy industry, construction, preK – 12 and post-secondary education, and workforce representatives
- *Compete for a talent puddle or work together to build a talent pool?*

Florida Energy Workforce
CONSORTIUM

Florida Energy Workforce Consortium

Workforce

FPL.

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Center For ENERGY Workforce Development

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The Challenge

The need for skilled, well-educated workers is growing

Demand is up

1 in 3 U.S. workers is age 50 or older.

By 2015 a 15% decline is projected in ages 35 – 44.

"More than half of today's utility workforce will be eligible for retirement over the next 10 years."
- *US Bureau of Labor Statistics*

"The positions that will experience the highest rates of attrition over the next five years are those most difficult to fill: Engineer technicians and skilled and craft employees."
- *APPA*

The Challenge

There are not enough skilled workers to fill the jobs

"The number of high school students taking trade or industry-related vocational and technical courses in preparation for a skilled or craft labor job has declined by 35% in the past decade."
- *UWPN Issues Update*

"More than half of applicants for skilled, entry-level positions at utility companies lack academic or basic skills required for employment."
- *UBEC survey of industry CEOs*

"More than 70% of HR executives say that incoming workers with inadequate skills are their most serious problem over the next three years."
– *Deloitte Consulting*

Supply is down

Simply put, demand exceeds supply

"Baby boomer" employees retiring in large numbers

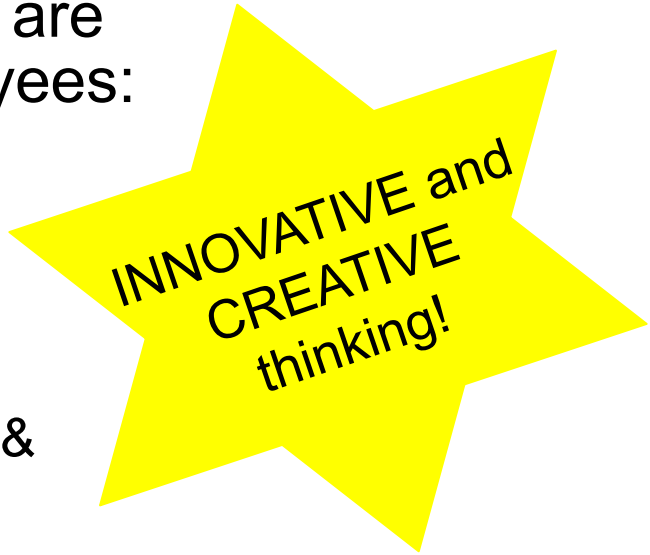
Smaller pool of workers who have the appropriate technical skills

This shortage directly impacts the Energy Industry

- Utility workforce is four years older than national average
  - *US Bureau of Labor Statistics*
- Demand for technical and craft workers increasing
- Failure rates on pre-employment tests are increasing
- Potential threat to both productivity and reliability

The New Economic Development Reality

- A skilled workforce has become more important than land and buildings
- As layers of middle management have been eliminated, these workplace skills are increasingly required of all employees:
  - Critical thinking
  - Problem-solving
  - Communication skills
  - Teamwork and Self-direction
  - Global, civic, financial, economic & entrepreneurial literacy



Florida's Economy

- 20th largest in the world
- Also hit by recession – have lost 7M jobs
- 19M Floridians (4th largest state – will surpass New York to become 3rd in next 10 years)
- By 2020…+2.5M / +1.4M Net New Jobs
- By 2030…+5M

Are We Ready for 2030?

"Florida needs to plan better and grow smarter over the *next 7 million people* than we did during the last 7 million."

Steve Halverson, President & CEO, The Haskell Company & Chair of the Florida Chamber of Commerce

TALLAHASSEE DEMOCRAT

onday, March 2, 2009 Tallahassee.com 75 Cent

Florida moving toward diverse 'next economy'

Democrat file

"The new economic-development currency is people and talent and skills," said Mark Wilson, president of the Florida Chamber of Commerce. "We've got to invest in our education system, our higher-education system, and create the kind of jobs that are higher-wage."

Chamber chief: State is 'never going back to what it was'

TALLAHASSEE.COM/ECONOMY

- Watch videos about how budget cuts are affecting residents.
- Find out how the economic downturn affects you and other groups with our Pocketbook Personalities.
- Look for our interactive graphics about the effects of budget cuts throughout the week.

Dark Days

State revenue history

Florida Energy Workforce CONSORTIUM

"Talent is the new economic development currency."

Mark Wilson
President & CEO
Florida Chamber of Commerce

get into energy FLORIDA

Talent Supply is Our #1 Priority

Florida Trend

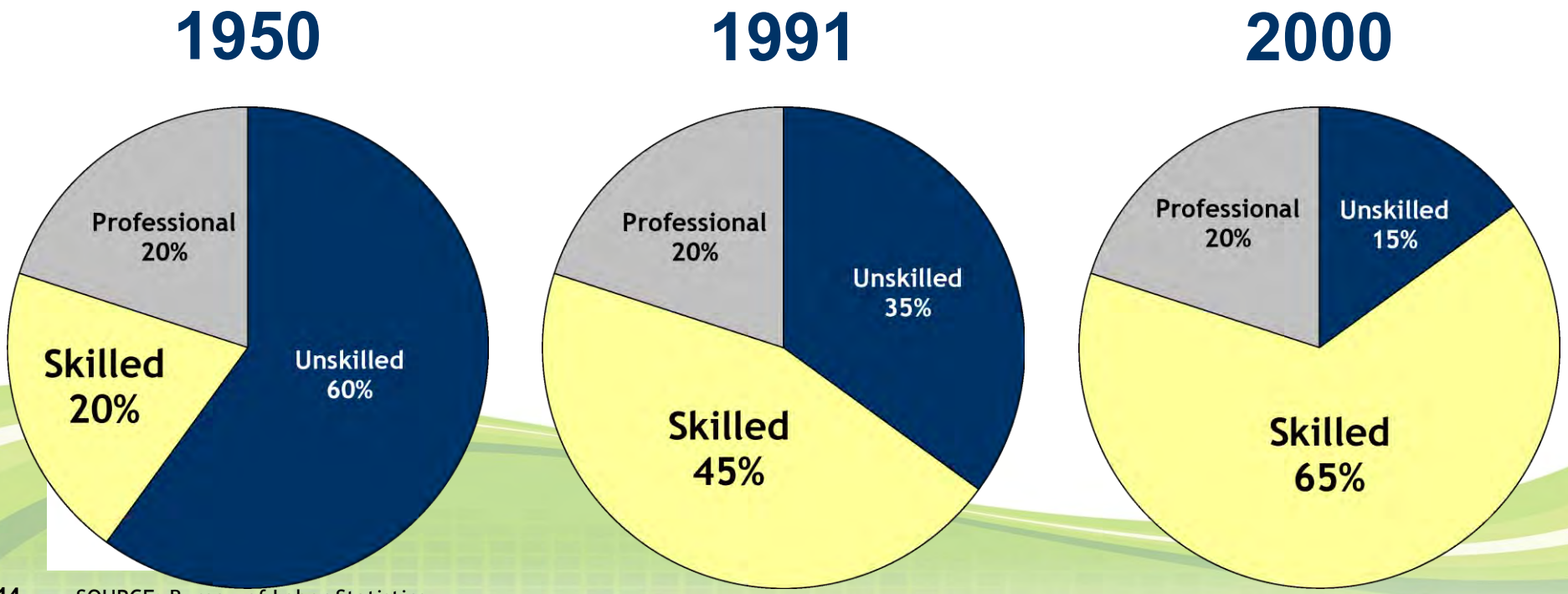
"For the first time, Enterprise Florida and the Council of 100 joined forces with the Chamber to advocate for an economic recovery and transition plan."

Talent Supply is FEWC #1 Priority

- A qualified, diverse workforce – for us and our contractors
- Various career entry points with various educational attainments
- Pipeline of students
- Core values

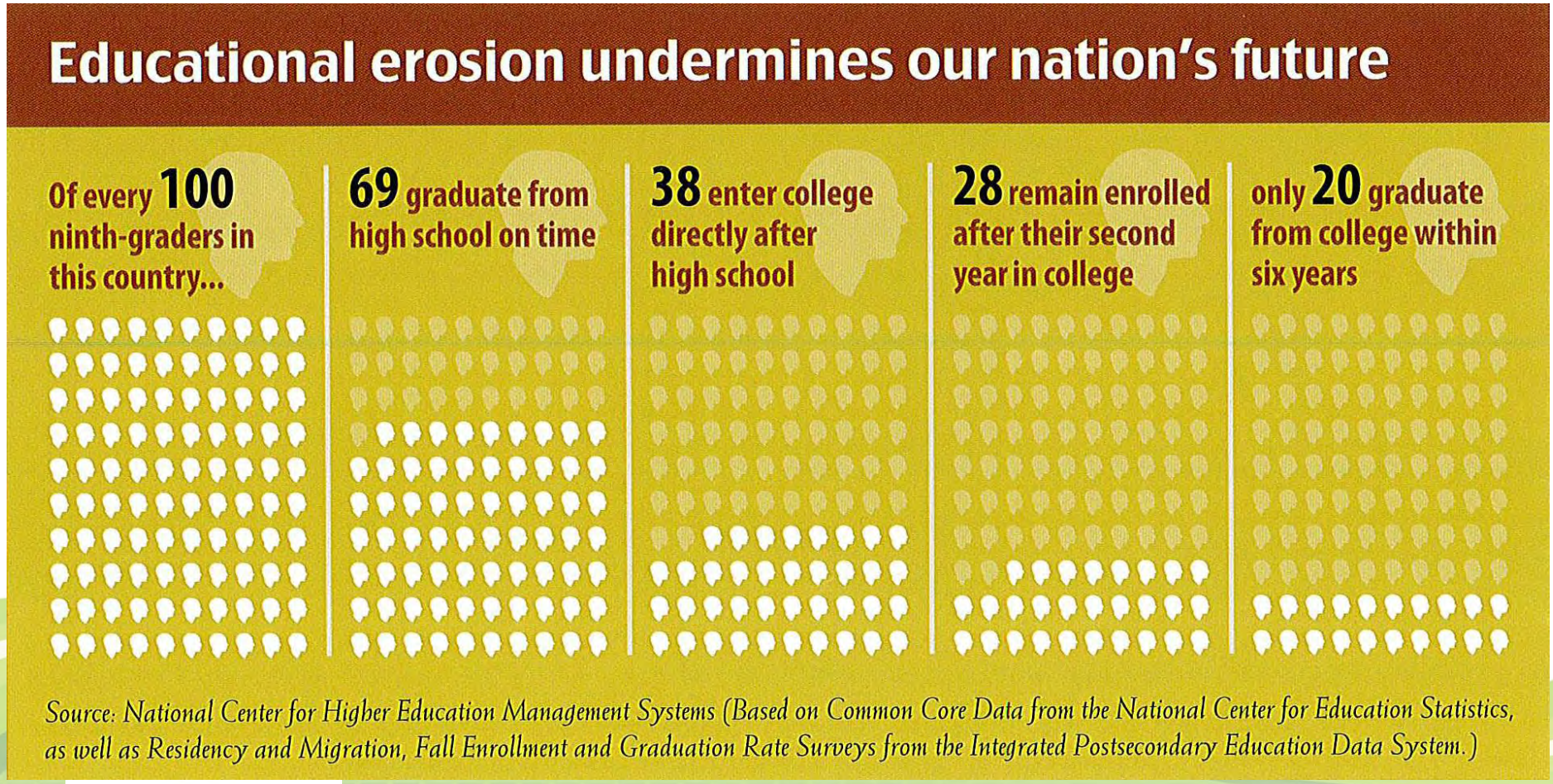
The Changing Workforce…

DEMAND TRIPLES *(% of Total Workforce)*



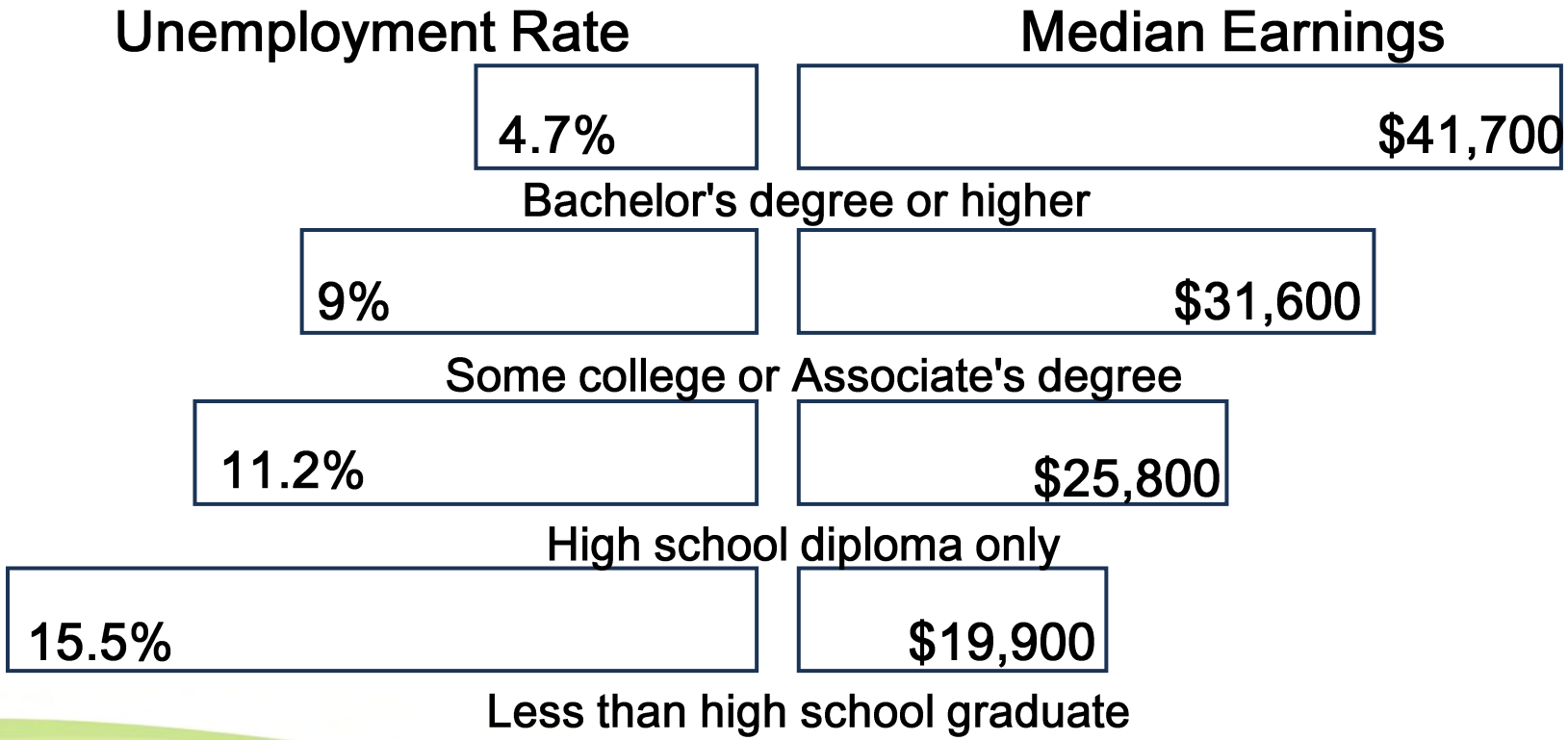
SOURCE: Bureau of Labor Statistics.

Post-Secondary Education



SOURCE: National Center Education Statistics. (2010)

Implications of Educational Achievement



AWI, October 2009; U.S. Census Bureau, American Community Survey, 2008;

Workforce Misperceptions…

U.S. CENSUS BUREAU

- 8 of the 10 fastest growing occupations through 2014 do not require a bachelor's degree

They Require a 2-year Associate's Degree or Post-Secondary Training – *these can often be earned in high school now – have to rethink the traditional boundaries of secondary/ post-secondary*

SOURCE: "Educate the Work Force of Tomorrow" by Luke Bellsnyder & Jon Fisher. (03/06/2009)

So What Is Our Need?

- A qualified, diverse workforce – for us and our contractors
- Various career entry points with various educational attainments – technician-level and degreed engineers, accountants, etc.
- Pipeline of students
- Core values

FEWC Top Occupations of Concern

- Line Installers and Repairers
- Plumbers, Pipefitters & Steamfitters
- Welders
- Maintenance and Repair Workers
- Electricians
- Engineering Technicians
- Engineers (electrical, mechanical, chemical, civil…)
- Instrumentation & Control Technicians
- Power Plant Operators

What Are These Careers Like?

- All are high-skill, high-wage
- All require some basis of knowledge/skill prior to entry, but we provide training
- All have opportunities for advancement – both through technical and management paths
- Provide world-class benefits, including pensions, 401k matches, tuition reimbursement, career development, etc.
- For more information, visit www.getintoenergy.com

So How Do We Get There?

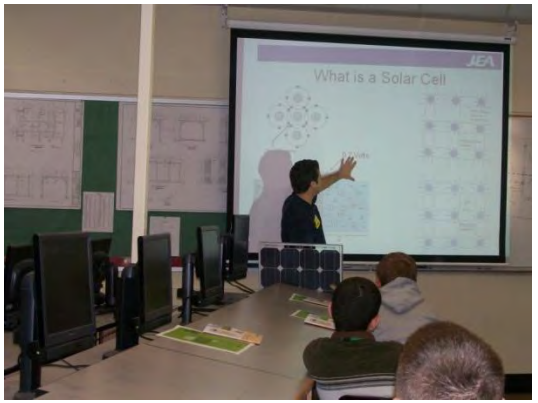
- PARTNER and COLLABORATE!
- Work locally, regionally, at state, and at national levels to brand our industry careers and create talent pipeline programs
- Focus on key areas:
  - State & National Outreach
  - Career Awareness
  - Policy & Education
  - Untapped Labor Sources
  - Funding & Resources

Career Awareness

- Career Awareness to drive students to pipeline programs
  - Careers in Energy Week: October 17 – 21 *Second Year*
  - State-wide student competition to brand energy careers (www.getintoenergyflorida.com)
  - Recognize winners at Florida Science Fair and Florida SkillsUSA with get into energy Florida branded items/info
  - Energy summer camps
  - BEST and FIRST Robotics competitions

Partnership with Business/Industry

- Advisory Board
- Recruitment/Open House
- Classroom Speakers
- Field Study Experiences
- Thematic Learning Activities
- Job Shadowing
- Internships
- Mentoring
- Teacher Externships



Offer Resources

- Florida Dept. of Education - Energy Frameworks http://www.fldoe.org/workforce/dwdframe/energy_cluster_frame11.asp
- Florida Dept. of Education - Energy Career Academies http://data.fldoe.org/careeracademies/default.cfm?action=careerPath&careerPathID=18
- Banner Center for Energy http://bannercenterforenergy.com/index.html
- Banner Center for Energy – List of FL Energy Training Programs http://bannercenterforenergy.com/trainingProgramFL.html
- Florida Solar Energy Center http://www.fsec.ucf.edu/en/
- US Dept. of Energy Education page- http://energy.gov/science-innovation/science-education
- Energy Information Administration Education page - http://www.eia.gov/kids/
- The National Energy Education Development project – http://www.need.org
- Engineering K12 Center - http://egfi-k12.org/
- Energy Industry Fundamentals Curriculum (revised) – NEW!
- www.cewd.org/curriculum/

Partnership with STEM*florida, Inc.*

- Funded through Workforce Florida, Inc. as a business-led initiative that will result in the alignment of all STEM program activities;
- Focus on PreK to advanced degree STEM education programs, activities and research aligning to workforce expectations;
- Sustainable organization/process will be created such that all STEM initiatives in Florida successfully connect, align and cooperate to achieve the common goal of improving demand-driven talent production in STEM

Pipeline Program:
Energy Career Academies

- Have 22 in Florida, many replicated after Gulf Power Academy at W. Florida High School in Pensacola (2001)
- Many utilize NCCER Electrical curriculum, resulting in industry-recognized and valued credentials
- Most offer articulation, energy industry pre-employment testing, and local energy company engagement
- Currently piloting the new energy courses at Gulf Power Academy and Lakeland Electric Power Academy and eight other high schools around the state this Fall, 2011

Pipeline Program:
Banner Center for Energy

- **Florida's industry-driven resource for post-secondary energy workforce education and training**
- Located at Indian River State College but with educational partners across Florida
- Focus on industry-driven degree and certificate programs to meet needs of energy industry in Florida (nuclear, non-nuclear generation and distribution)
- Offer entry-level, advanced-level, and skills upgrade training

http://bannercenterforenergy.com/

Policy and Education

- Partnered with Florida Department of Education to gain approval for the addition of an Energy Industry Cluster - ***FIRST IN NATION!***
- Partnered with FDOE to develop energy curriculum framework for five (5) courses:
  - Energy Foundations
  - Introduction to Alternative Energy
  - Power Generation Technician
  - Power Distribution Technician
  - Solar Energy Technician

Policy and Education

- Develop curriculum materials for Energy Courses
- Create Florida Energy Teachers Network – will add teacher “toolkit” to Get Into Energy Florida web site
  - Complete and publish compilation of readily available resources for K-12 teachers to use to integrate energy concepts into the math, science and reading curriculums
  - Develop an FEWC teacher externship program for CTE, Science and Math teachers
- Replicate energy career academies
- Partner with CEWD to ensure aligns with national competency model and curriculum pathways




Center For
ENERGY
Workforce Development

Industry Solutions–Regional Implementation

Get Into Energy Career Pathways

Who is CEWD

- First partnership between utilities and their associations – EEI, AGA, NEI and NRECA to focus solely on these issues
- Incorporated in March, 2006
- Utilities, associations and supplemental labor contractors join as members
- Partnering with educational institutions, workforce system, and unions to create workable solutions
- Currently have 73 members from large IOU's to smaller cooperatives and municipalities that represent about 75% of employees in Electric and Natural Gas Utilities

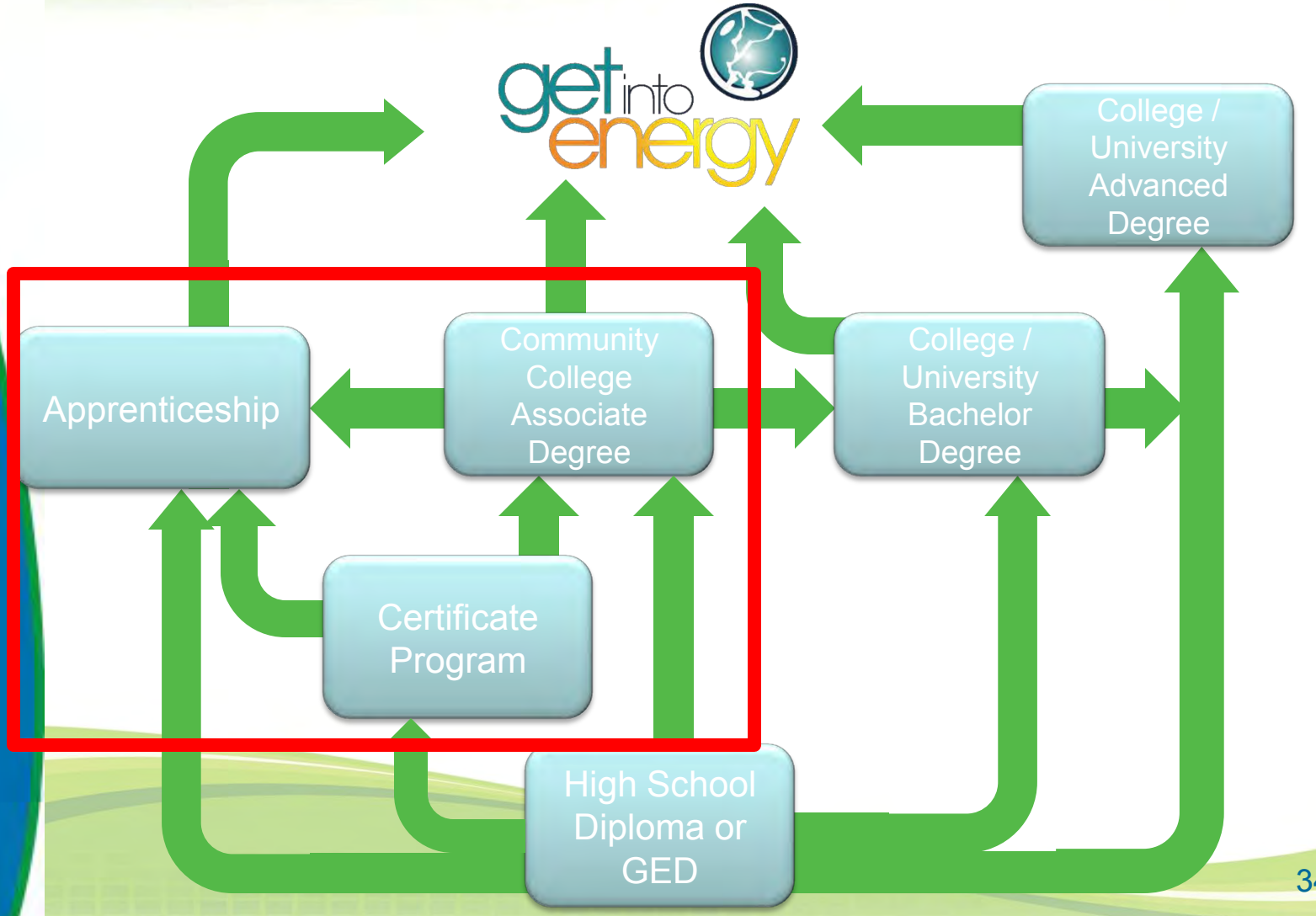
www.getintoenergy.com

Feature Get Into Energy on your Web site with the free Get Into Energy badge

Drivers for Workforce Development in Electric and Natural Gas Utilities

- A need to balance supply and demand for the energy workforce in key job categories
- Skill gaps in potential applicants
- New and emerging technologies that require additional skills

Energy Education Pathways



Get Into Energy Career Pathways

Stakeholders and Modules

Students

Get Into Energy

Outreach and Career Coaching

Educators

Career Pathways Curriculum and Stackable Credentials

Employers

Employer Collaboration and Support

Get Into Energy Career Pathways

Florida Energy Workforce Consortium

GIE
Outreach and Career Coaching

GIE Basic Training

GIE Industry Fundamentals

- Job Specific
- Job Specific
- Job Specific
- Job Specific
- Job Specific

get into energy

Industry involvement in all phases of workforce development leading to employment

Stakeholder: Students

Build on existing Get Into Energy Career information
Career Coaches follow students through 6 months of employment

Outreach and Support Services

- **Recruit from pipeline organizations**
  - JAG
  - YouthBuild
  - Job Corp
  - Hard Hatted Women
  - The Corp Network
- **Intake and Case Management using Kuder Journey system**
- **Assessment**
  - Energy Industry Employability (New)
  - WorkKeys
  - Career Interest
- **Career Interest matching and referral to manufacturing, construction or other energy positions**
- **Additional Screening for Energy Skilled Trades**
  - Background and Drug Screening
  - Education Evaluation
  - Support Services Evaluation
- **Education and Support Services Plan**

Get Into Energy Career Pathways

Florida Energy Workforce Consortium

GIE
Outreach and Career Coaching

GIE Basic Training

GIE Industry Fundamentals

- Job Specific
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get into energy

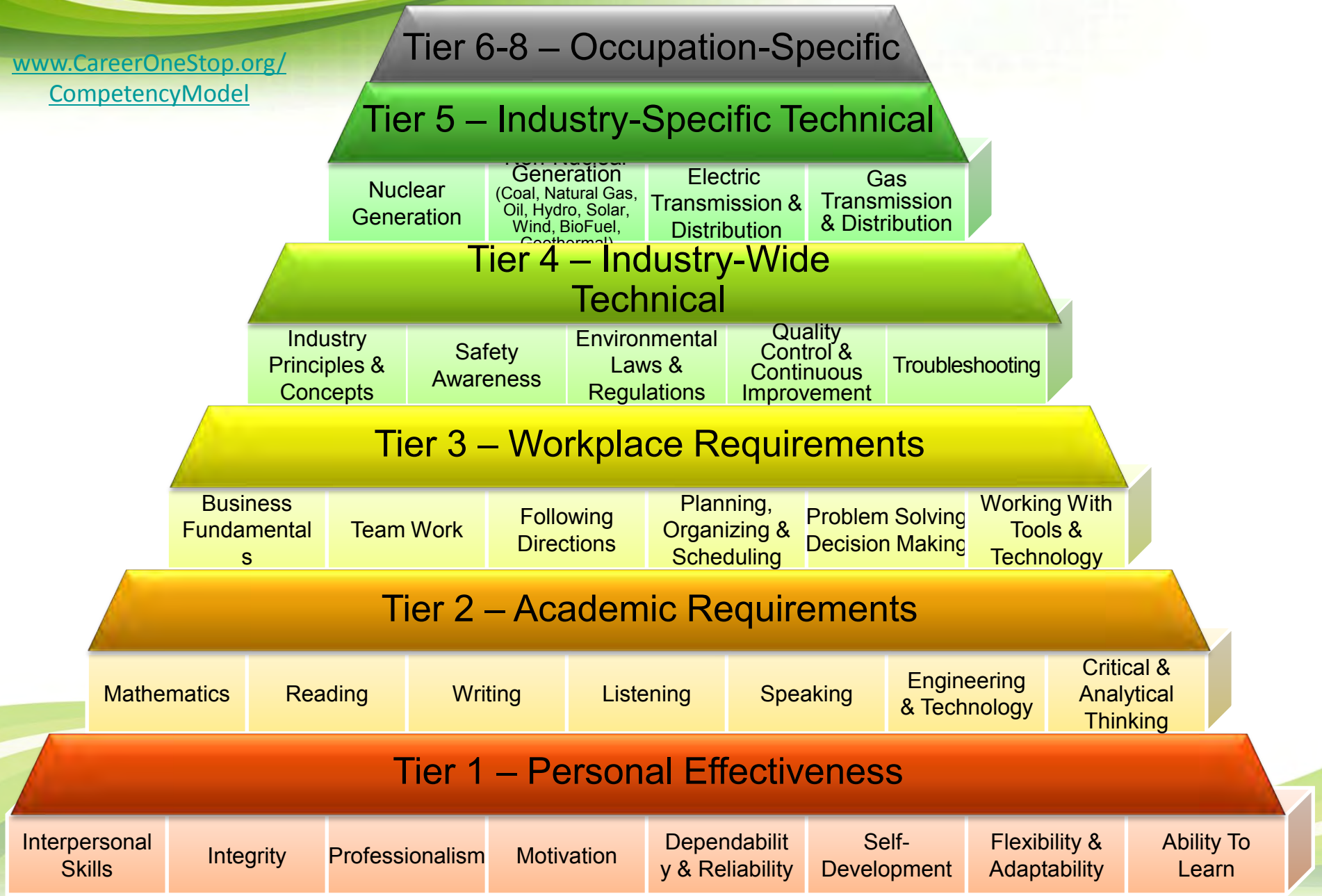
Industry involvement in all phases of workforce development leading to employment

Stakeholder: Educators

- Built on Energy Competency Model
- Creates flexible model that can be used to train for careers today and tomorrow
- Uses existing curriculum
- Different models for different jobs
- Education leads to industry recognized credentials at all levels
- Education focus is on key demand careers for lineworkers, utility technicians, plant / field operators and pipefitters / pipelayers / welders

Energy Competency Model

www.CareerOneStop.org/CompetencyModel



Training Components

Tier 6–8 Job Specific Skills/Credentials

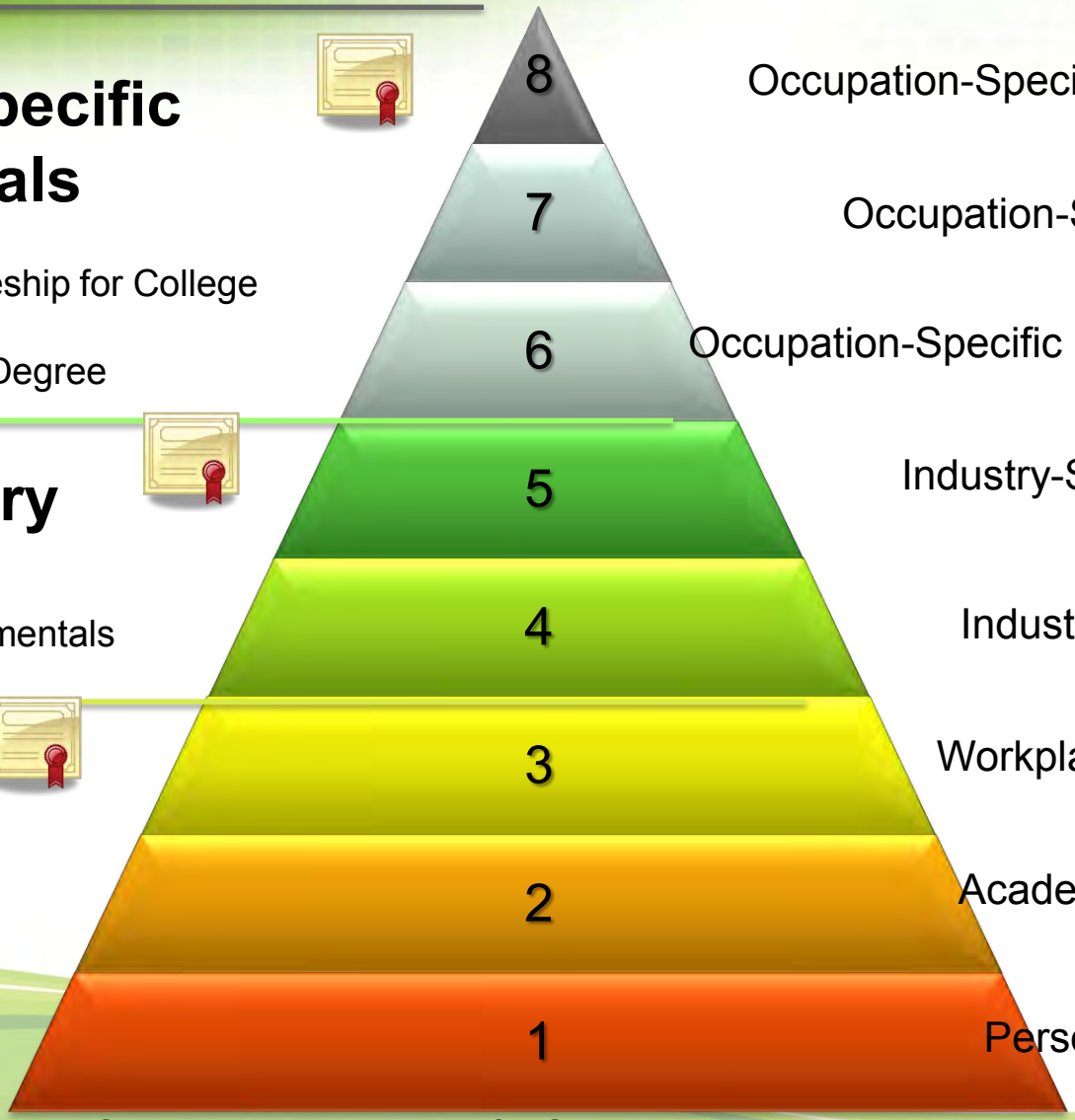
- Associate Degree
- Boot Camp / Apprenticeship for College Credit
- Accelerated Associate Degree

Tier 4–5 Industry Fundamentals

- Energy Industry Fundamentals Certificate

Tier 1–3 Basic Training

- Energy Industry Employability Skills Certificate
- National Career Readiness Certificate



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

Get Into Energy Career Pathways

Florida Energy Workforce Consortium

GIE
Outreach and Career Coaching

GIE Basic Training

GIE Industry Fundamentals

- Job Specific
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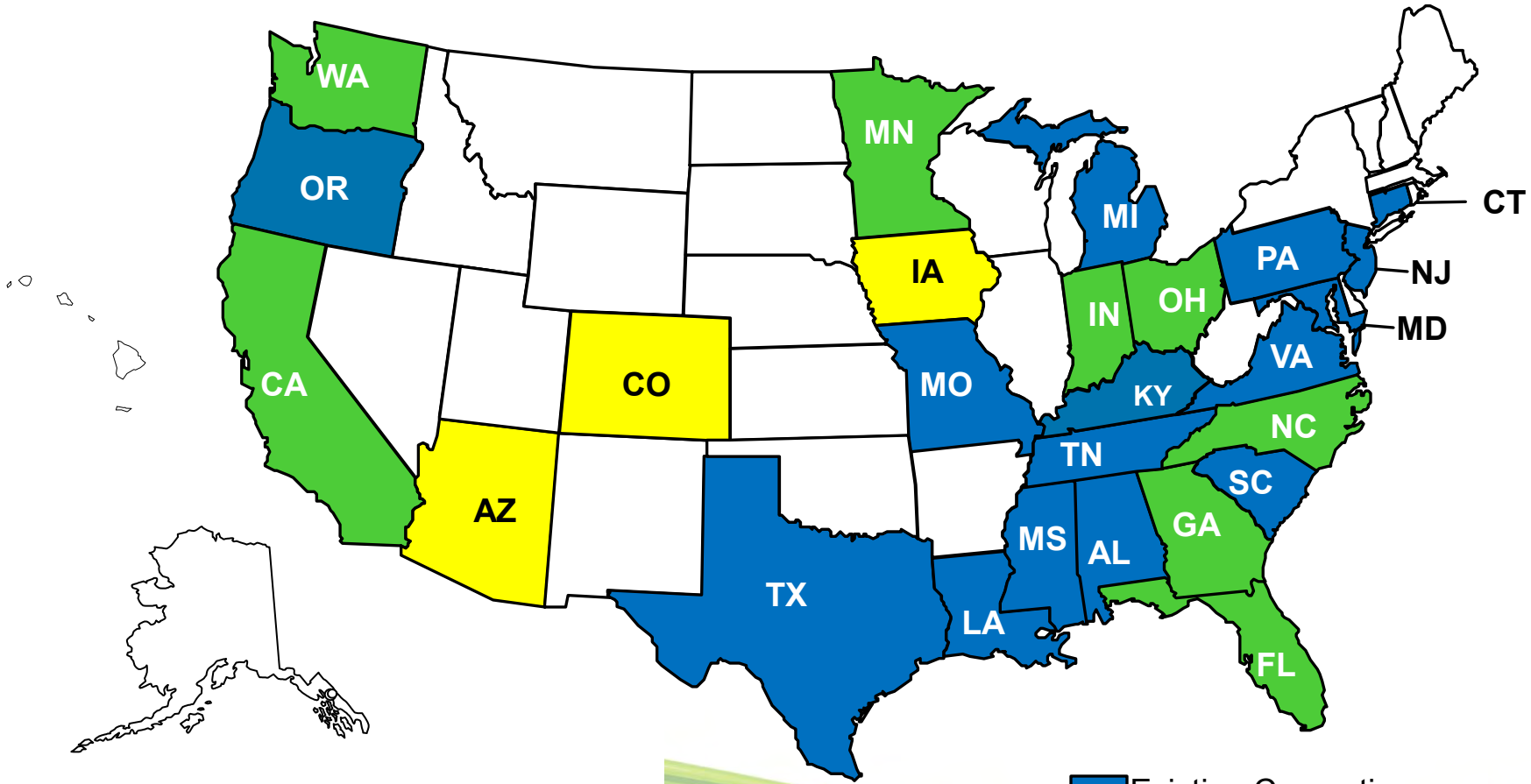
Industry involvement in all phases of workforce development leading to employment

Center For ENERGY Workforce Development

State Energy Workforce Consortia

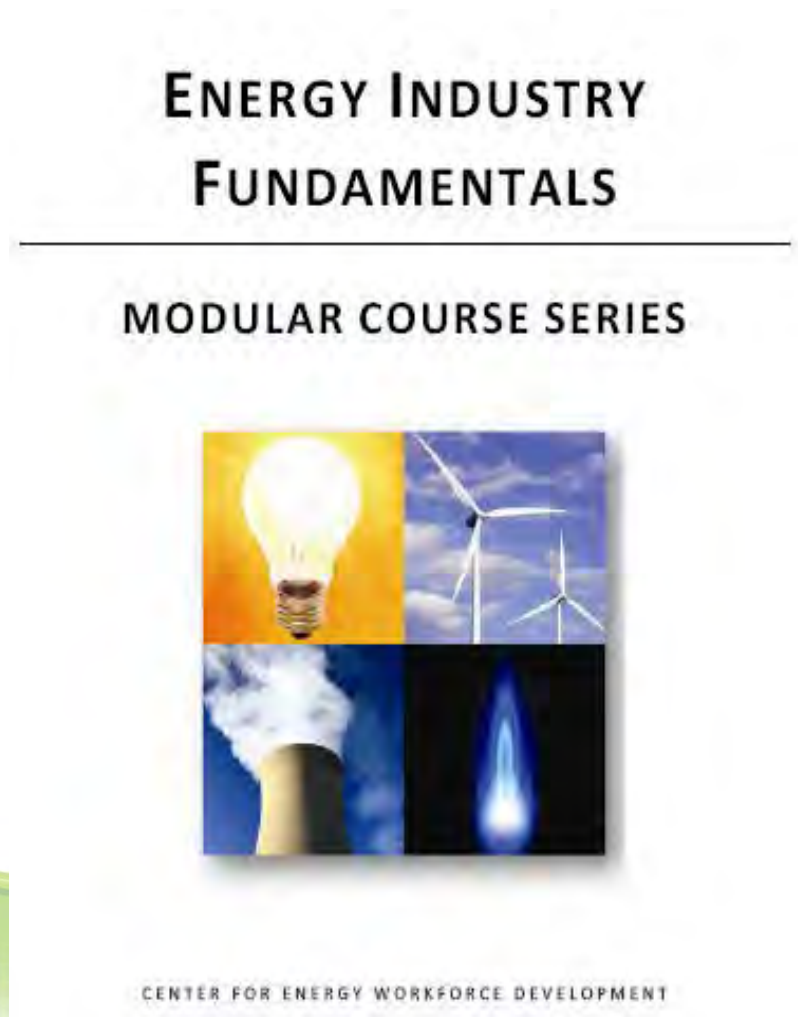


Implementation Approach

- State Consortia will lead implementation
- Implement Career Coaching Process in eight states
- Implement selected education pilots in eight states based on existing education supply and industry demand
- Track students from recruitment through six months of employment or handoff to another industry

Energy Industry Fundamentals

Course Materials Overview



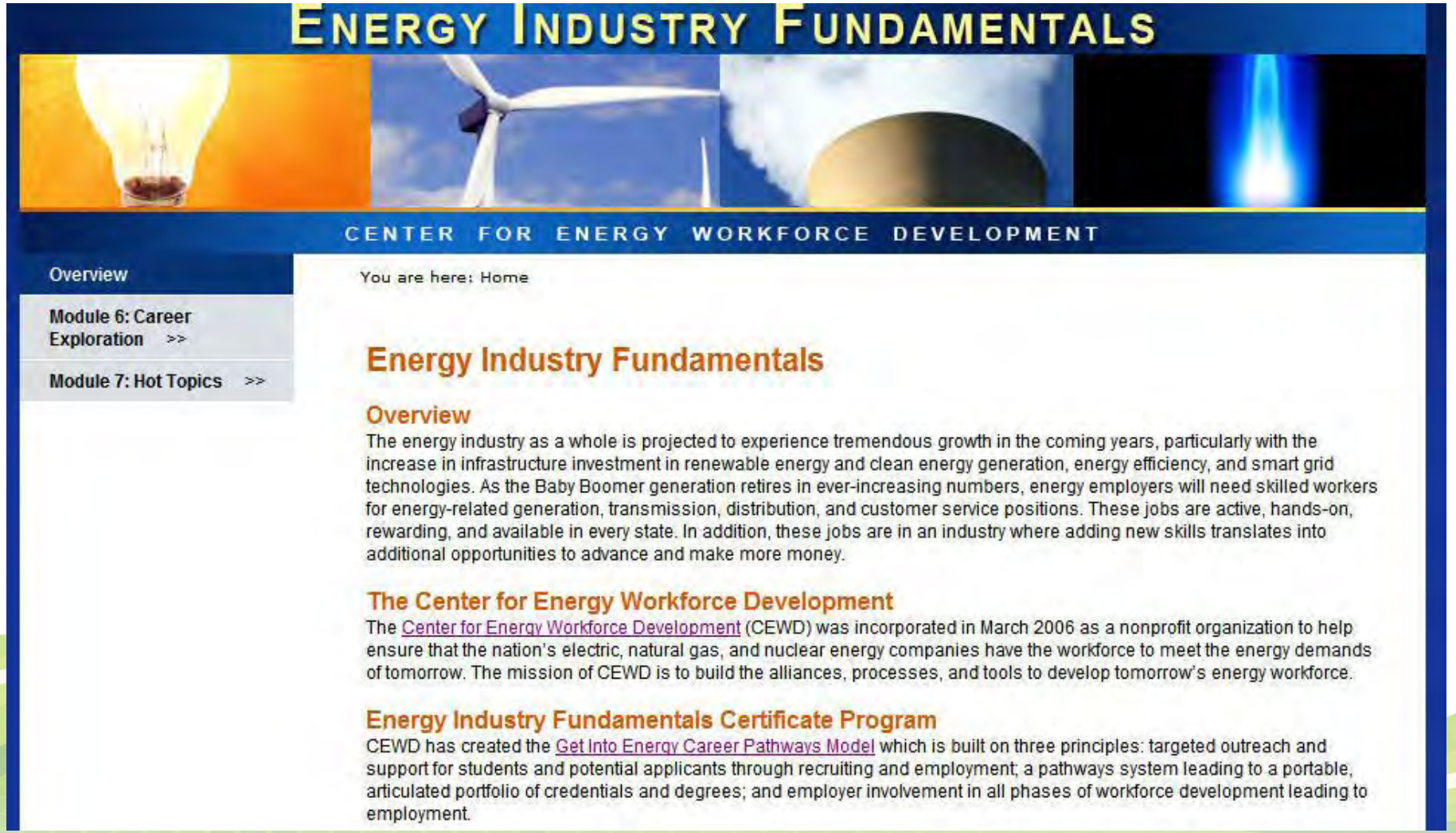
Overview of the EIF Course *Print-Based Modules:*

- Module 1: History and Organization of the Industry
- Module 2: Safety
- Module 3: Electric Power Generation
- Module 4: Electric Power Transmission
- Module 5: Electric Power Distribution

Web-based Modules:

- Module 6: Career Exploration
- Module 7: Hot Topics in Energy

Modules 6 and 7 (in development) are web-based



Overview page

Energy Industry Fundamentals Course Materials

An instructor guide and participant materials have been developed for use at a high school, community college, workforce center, or other appropriate training locale. Modules 1 - 5 have been designed as print materials for both instructors and students; Modules 6 and 7 have been designed for online implementation.

Module titles:

- Module 1: History and Organization of the Industry
- Module 2: Safety
- Module 3: Electric Power Generation
- Module 4: Electric Power Transmission
- Module 5: Electric Power Distribution
- Module 6: Career Exploration
- Module 7: Hot Topics in Energy

The printed modules (1-5) contain the following sections:

Instructor's Guide

- Unit Overview
- Learner Expectations (student learning objectives)
- Teaching Strategies
- Pacing Chart for Unit Lesson Delivery
- Unit Student Materials (student unit text)
- Teaching Resources
    - PowerPoint Presentation Outline
    - Vocabulary Activity (student handout or instructions for conducting activity)
    - Guided-notaking Outline (student handout)
    - Laboratory and Activity Worksheets
    - Unit Review Questions
- Assessment Resources
    - Unit Quiz
    - Answer Keys for Vocabulary, Note-taking, Activities, Review Questions, and Quiz
- Course PowerPoint Presentation Guide
- Supplemental Resource List

Registration to download materials

Student Materilas

- Instructional Subject Matter Content
  - Text
  - Photos and Graphics
  - Glossary

The online modules (6-7) consist of resource webpages of instructional content, including:

- Overview of working in the energy industry
- Career Profiles
- Extension Activities
- Links to industry and association career resources
- Links to outside content such as videos and learning activities

Accessing the Curriculum

We invite you to create a free user account (using the link provided below) to begin exploring the instructional modules listed above. An instructor's guide, student text, and set of Powerpoint files may be downloaded for modules 1-5.

Florida's Approach to Secondary Certifications: CAPE

- Career and Professional Education Act
  - Legislation enacted in 2007
  - Builds on rich history of career education to bring industry-driven credentials as driver for curriculum and increased funding factor
- Most Energy Career Academies are CAPE Academies

Florida's Approach to Secondary Certifications: CAPE

- Registered Academies:
  - 2009-10: 838
  - 2010-11: 1,302
- Certifications Granted to Students:
  - 2008-09: 2,732
  - 2009-10: 16,459

Focus on Credentials

- Portable/stackable (Energy Competency Model)
- Industry-driven:
  - Secondary: new curriculum frameworks and courses; CAPE
  - Post-secondary: Banner Center for Energy; additional progression opportunities: Banner Center for Alternative Energy; Banner Center for Construction; Banner Center for Manufacturing
- Responsive

Critical Success Factors

- True business engagement, for both educators AND students
- Inspire early and often (both educators AND students), particularly in STEM disciplines
- Project-based learning in teams
- Integration of academics and CTE – BOTH DIRECTIONS: Reinforce CORE in CTE and teach in context in academic classrooms!
- Have to address the CTE “squeeze” – funding and class time
- Must continue to overcome perceptions… students, parents, counselors, administrators, etc.

Moving forward…

- Have to continue to update these credentials (add to the stack) as new industry skillsets drive need for new training
- Want to go national when possible; when can't, we develop the Florida solution
- Entry-level requirements vary across FEWC member companies, so we look to the common requirements

Questions?

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www.getintoenergy.com

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