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**Networking for Education and Training in the US**

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# Networking for Education and Training in the U.S.

School of Nuclear Knowledge Management  
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***Presentation by Ed Boyles***



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## Education and Training Networking in the US

Unions,  
Labor Councils,  
Apprentice Programs,  
etc.

**LABOR**

Universities,  
Technical Colleges,  
High Schools  
& more

**EDUCATION**

**STATE**

Gov. Office,  
Local WIB  
Local DOL's

**ENERGY INDUSTRY**

Utilities, INPO, NEI, Contractors, etc.

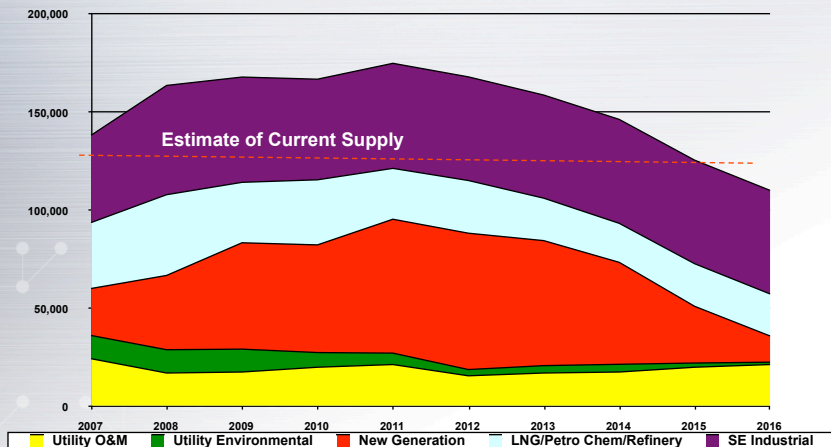


## Potential New Construction in Southeastern United States

- ❖ 29 to 30 nuclear units
- ❖ 16 coal fired units
- ❖ 26 gas turbines
- ❖ 35 combined cycle plants
- ❖ 3,500 miles of transmission lines
- ❖ Refinery capacity to expand by 1 million barrels a day



# Southeastern U.S. Skilled Craft Demand





## Networking – Industries & Universities

- ❖ Networking between industry and universities are not new
- ❖ Often a industry will partner with several selected universities
- ❖ Managers may serve on boards, advise on curriculum, provide funds for scholarships, etc.
- ❖ University student serve as interns to gain experience
- ❖ Universities provide access to qualified students – engineering, business, science, IT, etc.
- ❖ Universities develops curriculum/programs to meet industry needs



## Traditional Partnerships – Technical College

- ❖ Partnerships with two year Technical Colleges increasing
- ❖ Provides ready source of qualified technical personnel – Skilled Trades
- ❖ Curriculum adjustment to assist utility training program – shorter training time – employees reach full competence quicker (4 years vs. 2.5 years)
- ❖ Tech Colleges prepare students to meet utility prerequisites (EEI, Appendix 11 - Math, Science, Electronics, etc.)
- ❖ Tech Colleges can easily place qualified candidates – helps them recruit new students





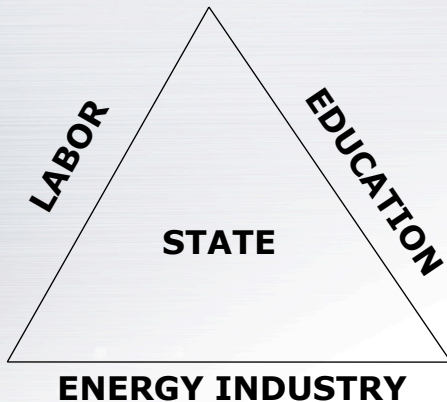
# A New Approach

## *Energy Consortiums* *A regional approach*



# Regional Energy Consortiums

Tennessee, Alabama, Mississippi  
Southeast Region





# Energy Consortiums

A regional approach to address human resource development challenges



Industry Solutions - Regional Implementation

**Strategic Planning Guide for  
Energy Consortia**  
**A self-assessment tool for states**  
Provided by the Dept. of Labor



# Energy Consortia

## Center for Energy Workforce Development Strategic Planning Guide for Energy Consortia

### Steps for Success - A Self-Assessment Tool for States

- ❖ *Step One: Determine if the state level is the right geographic area to focus on as you develop solutions to these issues.*
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- ❖ *Step Three: SWOT Analysis*
- ❖ *Step Four: Establish a Shared State Identity and Vision*
- ❖ *Step Five: Devise Strategies*
- ❖ *Step Six: Leverage Resources and Implement*



## State Consortia Example

# TEICC

Tennessee Energy,  
Industry and  
Construction  
Consortium





## Charter (Focus on Skilled Craft Shortage)



### Shared Vision

- ❖ .... create an infrastructure that will provide a diverse skilled workforce adequate to meet the needs of energy, industry and construction. The Consortium will accomplish this by ensuring that appropriate enabling and sustaining systems are in place.....

### PRIMARY OBJECTIVES

- ❖ Implement a management structure and obtain resources to implement Consortium Action Plan priorities.
- ❖ Develop working partnerships with relevant federal agencies, state and national organizations, state and national support organizations.
- ❖ Support and enhance performance-based education, work-based learning and training programs for skilled and professional craft labor.....
- ❖ **Career Awareness and Outreach:** Plan and implement effective communications strategies that raise and create awareness among key audiences of the critical need for diverse skilled technical workers....
- ❖ **Funding Strategies:** Identify existing resources (federal, state, associations and partnerships) and determine where to make proposed long- and short-term investments.
- ❖ **Policy and Education:** Develop and implement strategies to influence state policy to support, promote and enhance career clusters and pathways in schools, e.g., career and technical education, pre-apprenticeship and DOL registered apprenticeship and proprietary schools.



## STRUCTURE / GOVERNANCE

**Managed by an Executive Committee with members assigned to subcommittees**

### ❖ **Executive Committee**

- Executive Committee Chair
- Executive Committee Vice Chair
- Executive and Secretary

### ❖ **Subcommittees are made up of Chair, Vice-Chair and Members**

- **Career Awareness and Outreach Subcommittee**
- **Funding Strategies Subcommittee**
- **Policy and Education Subcommittee**
- **Untapped Labor Sources Subcommittee**



# TEICC Members

## ❖ **Tennessee Valley Authority**

- ❖ Tennessee Valley Public Power Authority
- ❖ B&W Y-12 LLC
- ❖ State of Tennessee
- ❖ B&W Clinch River
- ❖ Energy Solutions
- ❖ Alston
- ❖ USEC
- ❖ Oak Ridge National Laboratory
- ❖ Day & Zimmerman NPS, Inc.
- ❖ G-UB-MK Constructors
- ❖ Knoxville Chamber
- ❖ East Tennessee Economic Council
- ❖ US Department of Labor

- ❖ Tennessee Board of Regents
- ❖ Millwright Machinery Erectors
- ❖ International Association of Heat & Frost Insulators & Allied Workers
- ❖ International Union of Painters and Allied Trades
- ❖ International Union of Operating Engineers
- ❖ Sheet Metal Workers' International Association
- ❖ Tennessee AFL-CIO Labor Council
- ❖ International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers
- ❖ Tennessee Carpenters Regional Council
- ❖ Laborers-Employers Cooperation and Education Trust
- ❖ Atomic Trades and Labor Council
- ❖ International Brotherhood of Electrical Workers
- ❖ Cooperative Agreement of Labor & Management
- ❖ Shaw/Stone & Webster
- ❖ L E Meyers





## Consortium Member's Plan

# Tennessee Valley Authority Work Force Development Plan





## TVA Workforce Development for Skilled Craft

### ❖ Objectives

- **Raise awareness** of potential craft shortages
- **Promote alignment and integration** of federal, state and local plans
- **Increase collaboration** between the energy industry and government initiatives in workforce development, economic development and education
- **Identify existing efforts** and programs that are successfully addressing the issue to serve as models of excellence
- **Develop long term strategies** to ensure a workforce is available to meet the demands for building and maintaining the energy infrastructure



# Who is involved?

## ❖ **INDUSTRY**

- Utilities
- All fuel types
- Contractors

## ❖ **LABOR**

- Unions
- Apprentice program coordinators

## ❖ **EDUCATION**

- Career & Technical Community Colleges
- Four year institutions
- High Schools

## ❖ **STATE**

- Governors WIB
- Local WIB
- Regional DOL



## Consortium Roles

### ❖ INDUSTRY

- HR demand data
- Skills required
- Jobs

### ❖ EDUCATION

- Curriculum
- Policy
- Access to students

### ❖ LABOR

- Apprentice programs
- Alignment with industry - skill demands

### ❖ STATE

- Access to programs
- Knowledge of funding



# On Line Learning Partnerships

ENERGY PROVIDERS COALITION FOR EDUCATION

# EPCE

Industry representatives that develops, sponsors, and promotes industry-driven, standardized, quality **online learning programs** to meet the workforce needs of the energy industry.



American Public Power Association



A unit of American Electric Power

Dominion Nuclear  
Business Unit



Constellation Energy



Building Community



FPL



nationalgrid



National Rural Electric  
Cooperative Association

A Touchstone Energy Cooperative



ELECTRICAL  
CONTRACTOR  
SINCE 1945



minnesota power

AN ALLETE COMPANY



Madison Gas and Electric



Northwest Public Power Association



Northeast  
Utilities System



# EPCE Academic Partners

**BSAST Degree Energy  
Utility Technology**  
*Thomas Edison State College*



**BS Degree Nuclear Engineering Technology**  
*Excelsior College*



**AAS Degree in Electric Power Technology**  
Transmission & Distribution Fundamentals  
with specializations in:

- Substation
- System Design
- Metering
- Line Construction



*Bismarck State College*

**AAS degree in Nuclear Power Technology**  
Curriculum based on industry objectives for:

- Non-licensed Operators
- Health Physics
- Chemistry technician
- Maintenance technician



*Bismarck State College*

**Certificate in Electric  
Power Technology**



*Bismarck State College*

Certificate/training  
programs for company  
career pathways  
*Bismarck State College*



**Certificate in Nuclear  
Power Technology**



*Bismarck State College*

**High school curriculum for the  
electric power industry**

*Virtual High School*





## Local Examples

- ❖ **Teen Work Program – Sponsored by Knoxville Utility Board – Provides an opportunity for high school seniors to work as interns for one month with various industries, including TVA**
- ❖ **Leadership Academies for Elementary Schools (Mississippi) – Provides opportunities for students (e.g., sixth graders) to learn about how to succeed in the real world. Focus on teamwork, communications and leadership**
- ❖ **TVA scholarship programs for current work force children – Focus on gifted students (evaluations by outside consultants)**





## Benefits

- ❖ **Business and industry gain and maintain a steady flow of workers.**
- ❖ **Post-secondary education gains financial, curriculum, and student recruitment support.**
- ❖ **Business and industry reduce overhead associated with redundant in-house training programs.**
- ❖ **Post-secondary education fulfills mission to meet learning needs of its varied constituencies.**



## Summary

- ❖ In the U.S. a closer working relationship has developed between the energy industry, government and academic community that reflects an increased sense of urgency.
- ❖ Current work force challenges such as the aging work force and the potential for new construction have served to drive this trend.
- ❖ Partnerships between educational institutions, utilities, government and unions have proven to provide mutual benefits for those involved.

A background image for the bottom section of the slide. It shows a person's hands in a dark suit typing on a laptop keyboard. Overlaid on this image is a network diagram consisting of white dots connected by thin white lines, suggesting a global or digital network.

# Thank You !

**Ed Boyles**