

# **Energy Industry in Context**



**U.S. electrical power industry is experiencing some of the most significant long-term changes in its history!**

# **Energy Industry in Context**

- **1990-2006: >25% employment, 200,000 EEs**
  - Improved production,
  - Operating efficiencies,
  - Consolidation
- **Reductions also in education and training**
- **Employment continues to remain stable today**
- **BUT demand for energy and consumption increases**

# **Energy Industry in Context**

- **While the physical infrastructure degrading...**
- **Electrical system becoming more sophisticated**
- **Growing political pressure to expand and integrate clean renewable energy, and energy efficiencies =**
  - **Reduce environmental pollution**
  - **Improve energy security**
  - **Spur economic development and job creation**

# **Energy Industry in Context**

**Utilities and governments investing in new research and technology upgrades to:**

- Support a “smarter” electrical grid**
- Increase use of renewable generation sources**
- Boost consumer education**
- Expand incentive programs to spur greater efficiencies through consumer engagement**

# Workforce Ready?



# **Snapshot of Trends, Challenges:**

## **2013: 16 ERs, 9000 EEs, 5 NW States**

- Retirements – 1,522 craft/prof EEs next 5 yrs, 17% current workforce across 9 occupations
- 60% utility workers 45 yrs.+
- Future labor pool smaller; many unprepared
- Shortage of qualified applicants, esp. power engineers, power system operators, electricians
- Competition for qualified applicants intense



# **Snapshot of Trends, Challenges:**

**2013: 16 ERs, 9000 EEs, 5 NW States**

- **Students view energy field as “green” with opportunities to work on:**
  - **Renewable energy and efficiency projects that are sustainable and environmentally responsible**
- **Building the K-12 Pipeline with relationships:**
  - **Activities at all levels to generate interest**
  - **Stress importance of STEM education**
  - **Best practices evolving**

# **Snapshot of Trends, Challenges:**

## **Sector Strategies**

- **PNCECE: sector strategy in WIRED and DOE Smart Grid Workforce Development grants**
- **Statistical evidence that sector strategies:**
  - **Address current and emerging skill gaps**
  - **Engage directly with industry across boundaries**
  - **Better align state programs & resources serving employers and workers**



# **PNCECE Website**

[http://cleanenergyexcellence.org/wp-content/uploads/2013/11/LaborMarketStudy-2013\\_WEB.pdf](http://cleanenergyexcellence.org/wp-content/uploads/2013/11/LaborMarketStudy-2013_WEB.pdf)

**Workforce Challenges of Electric Power Employers in the Pacific Northwest**

**By: Alan Hardcastle, Ph.D. with Pamela Jull, Ph.D. and Sally Zeiger Hanson, M.Ed., Washington State University Energy Program, for the Pacific Northwest Center of Excellence for Clean Energy “A Centralia College Partnership”, OCTOBER 2013**

[http://www.nationalskillscoalition.org/assets/reports-/state\\_sector\\_strategies\\_coming\\_of\\_age.pdf](http://www.nationalskillscoalition.org/assets/reports-/state_sector_strategies_coming_of_age.pdf)

**State Sector Strategies Coming of Age: Implications for State Workforce Policymakers,**

**By: The National Governors Association, Corporation for a Skilled Workforce, & National Skills Coalition**