

Energy Efficiency in a Low-Cost Energy State – Why Bother?

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Industrial Energy Intensity

	Annual Industrial Energy Consumption (2001) 10^{12} BTUs	BTU/\$GSP
PA	1,285.60	9,569
OH	1,428.9	10,633
KY	845.9	16,043
TN	745.5	12,143
WV	311.4	17,358

2004 U.S. Industrial Energy Intensity = 11,984 BTU/\$GDP

PPG Commitment

“We have a target for energy productivity gains of 5% per year. That’s an improvement on a per-ton basis of our use of energy. We call it an energy productivity measurement.”

Charles Bunch, CEO of PPG and President of NAM,
Wall Street Journal, October 29, 2007

It's Good for West Virginia Business!

- Reduce energy costs to help industry and manufacturing remain competitive in the face of globalization challenges and rapidly changing new technologies
- Get ahead of future environmental costs and energy shocks, i.e. possible carbon taxes and future Katrinas

It's Good for Economic Development!

- Industrial energy efficiency expertise is an “exportable” product
- Attract companies interested in reducing energy intensity to West Virginia
- Florida example*
 - By 2023, Florida could save \$28 million in energy costs and create more than 14,000 jobs through energy efficiency
 - The direct and indirect jobs created would be equivalent to nearly 100 new manufacturing plants relocating to Florida

* American Council for an Energy Efficiency Economy, <http://www.aceee.org>

It's Good for Universities!

- Engage university researchers – increase research funding for energy efficiency projects
 - Academic strengths – assessments, research, project development
 - Important part of university outreach and service
 - Can do longer-term, higher risk projects
- Educating tomorrow's workforce and raising awareness of efficient use of resources

West Virginia Can Deliver

■ Assessments

■ WVU Industrial Assessment Center

- Conducted 330+ industrial energy assessments
- The average recommended energy cost savings exceed \$75,000 per year per facility

- Plant-Wide Assessment at PPG identified energy savings measures worth \$2.2 million/year with a 14 month average payback period. \$1.7 million in savings to be implemented.

WV Can Deliver (continued)

■ R&D

- DOE project entitled “Multifunctional Metallic and Refractory Materials for Molten Metal Handling”
 - MSA 2020 Alloy Patent held by Metaullics Systems Company, L.P.
 - Weld Overlay Coating Process Patent held by WVU, Metaullics, ORNL
 - In-plant trials of hardware coated with MSA 2020 at Nucor-Arkansas, Nucor-Indiana, and Nucor-South Carolina
 - Software tool to evaluate energy and costs savings in galvanizing lines resulting from use of new materials
- Glass Industry Assistance Program
 - Savings at Marble King of \$35,000 per year by installing recuperator, furnace doors, and other energy saving measures

What's in the Pipeline?

- Workshop on how companies cope with high and volatile energy prices
- New funding for energy efficiency assessment/implementation program – SEN-WV (Cytec Industries, AGC Flat Glass, Century Aluminum, Chemtura, Wheeling-Nisshin)
- Continue research on advanced materials – metals, glass, polymer composites
 - Corrosion survey – huge cost to U.S. economy (3%-5% of GDP!)
 - Reduce carbon footprint of U.S. steel industry
 - New coating technologies for glass and metals
 - Development of superalloys for higher efficiency power generation – Special Metals Corp., GE, WVU

Pipeline (continued)

- Energy intensive industry cluster – Marshall County example
- Recycle waste energy
- Wood/polymer composites
- Demand side management project with AEP
- Energy storage technologies

Path Forward

- Build on West Virginia energy efficiency leadership and expertise – WVDO, WVDE, WVU, U.S. DOE, industry
- Make West Virginia the Nation's #1 industrial location for energy efficiency resources and services
- Develop energy efficiency service companies – exportable “product”
- Declaration: Achieve 20% of Governor Manchin's energy independence goal through energy efficiency

For More Information

- IOF-WV website:

<http://www.iofww.nrcce.wvu.edu/>

- WVU IAC website:

<http://www2.cemr.wvu.edu/~wwwiac/>

Thank you!