



Industries of the Future – West Virginia

Industrial Technology Partnerships

ASERTTI / NASEO Meeting – Winter 2005

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WVU National Research Center for Coal & Energy (NRCCE)

- Fuel Utilization Research Laboratory (FURL)
- Appalachian Oil & Natural Gas Research Consortium (AONGRC)
- Water Research Institute (WRI)
- National Alternative Fuels Training Center (NAFTC)
- National Environmental Services Center (NESC)
- Industrial Technologies Research Program (ITRP)

For further information visit:

www.nrcce.wvu.edu

WVDO Energy Efficiency Program

Jeff Herholdt, Manager

- Industries of the Future – West Virginia
- Student Engineering Intern Programs
- Glass Industry Assistance Program
- Wood Industry Assistance Program
- Natural Gas Utilization Center
- Industrial Assessment Center Audits
- Biofuels Development
- West Virginia Wind Working Group

West Virginia is an “Energy” State

- Coal produced ~ 146 million tons per year
- Natural Gas produced ~ 180 BCF per year
- Electricity generating capacity ~ 15,000 MW
- Export ~ 70% of electricity
- Wind power ~ 66 MW capacity
 - Another 350 MW permitted
- CHP ~ 320 MW in place
 - 85 MW Greenbrier County site pending
 - Potential of 424 MW commercial and industrial applications

WV Energy-Intensive Industry Sectors

Industry Sectors	GSP (\$M)	Employment	GSP/Emp
Primary & Fabricated Metals	1,128	16,113	\$70,005
Stone, Clay, & Glass	310	5,280	\$58,712
Chemicals & Polymers	1,675	12,399	\$135,092
Rubber & Plastics	273	3,947	\$69,166
Lumber & Wood Products	532	8,989	\$59,183
Total for IOF-WV Sectors	3,918	46,728	\$83,847
Total for WV Manufacturing	5,198	71,346	\$72,856
IOF-WV % of Manufacturing	75%	65%	
Coal Mining	2,600	17,634	\$147,442
Oil & Natural Gas	224	6,107	\$36,679
State Totals	45,518	882,271	

*Source: U.S. Department of Commerce, Bureau of Labor Statistics, 2002 data, www.bea.doc.gov

Partnerships – The IOF-WV Approach



Industry Working Groups are the Heart of the IOF-WV Program

- University researchers with strong industry ties
- Enthusiastic industry contacts – (that provide cost share!)
- National lab expertise
- West Virginia Development Office – industry representatives, energy efficiency program, leadership
- Co-funding agencies and foundations

Solutions for WV Companies

- Targeted energy savings at Century Aluminum of \$15 million per year with new diagnostic and control system
- “Improved Materials for Galvanizing Line Hardware ” – goal of 10 X increase in lifetime of submerged hardware
- Permitting productive reuses of spent foundry sand has saved HK Casting \$657,000 to date
- \$1.48 million in energy saving opportunities at Bayer Chemical with a payback of < 12 months

Solutions for WV Companies (con'd)

- G+ projects: Marble King, Judel Glass and Oak Ridge National Laboratory
- Development of composite materials utilizing residues from wood products industry and virgin or recycled plastics
- Development of new processes to disperse polymer adhesives in pressure sensitive adhesives – annual savings to the industry of \$6 million and 1 trillion BTU per year by 2020.

Outreach Activities

- Annual IOF-WV Symposia
- Annual IOF-WV Day at the State Capitol
- IOF-WV monthly *UpDate*
- Talks, exhibits, and consulting on the IOF-WV “journey”
- Newspaper and magazine articles
- Radio and television interviews
- IOF-WV Video

What's Next

- Future challenges for Industries of the Future
- Strong support across the U.S. for ITP programs, e.g. AMMEX, NASEO, ASERTTI, NEMWI,
- Opportunities to partner with industries in your state and community – help define the next generation of manufacturing technologies.
- Check out the WV ITP at <http://iofwv.nrcce.wvu.edu>
- Check out the national ITP at <http://www.eere.energy.gov/industry/>