



Monthly UpDate

Industries of the Future-West Virginia

Industrial Technology Partnerships

December 2004

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Volume 5.12

Industrial energy costs - is there a crisis?

By Bill Johnson, IOF-WV Engineering Scientist

The answer:

At the recent IOF-WV Symposium, comments by three West Virginia industry leaders - **Chris Evans** of Bayer Crop Science, **Allan Fowler** of Dow, and **Ron Thompson** of Century Aluminum – left little doubt there is a crisis in U.S. industrial energy costs:

- Electric power represents a third of Century's production cost at its Ravenswood plant. U.S. power prices are twice as high as those in Africa, Australia, Canada and Russia and rising electricity costs have had a devastating impact on the U.S. aluminum reduction industry. Of 34 U.S. plants operating in 1978, only 14 remain.
- Bayer Crop Science is a major user of both natural gas and coal, primarily for production of steam and electricity. Recent increases in the prices of both fuels have led to projected 2005 steam costs that are 70% higher than in 2001. The impact of this increase is over \$10 million annually at Bayer's Institute, WV site alone.
- The chemical industry depends on natural gas not only for energy, but also as a key raw material. Gas price increases in 2004 will add \$1 billion to Dow's corporate energy costs, on top of a \$2.7 billion increase in 2003.

With U.S. natural gas prices currently four to 10 times the prices in other major gas-producing regions of the world, U.S. manufacturers paid \$72.9 billion more for natural gas in the past 49 months than in the previous 49 months! And recently the U.S. chemical industry has swung from its historical position as a major net exporter (averaging ~\$18 billion from 1992 to 1997) to a net importer (\$5 billion in 2003).

The outlook:

Howard Gruenspecht, Deputy Administrator for the U.S. DOE's Energy Information Administration, said that natural

gas prices could remain well above historical levels for the foreseeable future. A key issue is increased use of natural gas for generating electricity. Between 1990 and 2002, the share of natural gas used in power generation increased by 40% and this trend is expected to continue.

Some solutions:

Scott Richlen of the U.S. DOE's Industrial Technologies Program (ITP), highlighted resources available to companies through the ITP's BestPractices program. Energy assessments, software tools, qualified specialists to evaluate plant energy systems, and information on a wide range of industrial energy efficiency technologies are available at little or no cost to participating companies. You may contact **B. Gopalakrishnan (Gopala)** of the WVU Industrial Assessment Center at (304) 293-4607 ext. 3709 for information on DOE-sponsored industrial energy assessments.

Three recent ITP-sponsored Plant-Wide Energy Assessments (PWEA) at WV companies have identified over \$5 million in potential annual energy savings. **Gary Roark** of Pechiney Rolled Products in Ravenswood reported that a PWEA at Pechiney resulted in total potential savings of \$2.5 million per year with simple paybacks of less than two years.

Another approach for reducing dependence on natural gas is the use of alternative fuels. **Ed Brammer**, with Multi Trade in Martinsville, VA, shared his experiences in installing and operating on-site wood-fired energy facilities. The abundance of wood residues in West Virginia makes this renewable fuel a "natural" alternative energy source for manufacturers to consider.

The West Virginia Development Office and WVU are developing a new outreach program to work with companies in the state on reducing energy costs – with a focus on efficient use of natural gas. Please contact **Bill Johnson**, IOF-WV Engineering Scientist, at (304) 293-2867 ext. 5530 for information about this program.

EVENTS

Going Global - Exporting Your Product sponsored by the WVU Center for Chinese Business, the WV Development Office, the WV Export Council, the WVU Research Council, the WVU Small Business Development Center, and the WV Small Business Development Center will be held on **December 2, 2004** at the Caperton Center, Clarksburg, WV and on **December 9, 2004** at the Hampton Inn, Wheeling, WV. For further information visit www.sbdcwv.org or contact the WVU Center for Chinese Business at (304) 293-7884.

Authorized Safety General Industry Companies sponsored by the WV Small Business Development Center will be held on **January 26-27, 2005** at CTC Shepherd, 400 W Stephen St Martinsburg, WV. For further information visit www.sbdcwv.org.

2005 WV Manufacturers Association Day at the Capitol will be held **Thursday, February 10, 2005** at the State Capitol in Charleston, WV. For further information contact the WVMA at (304)342-2123 or wvma@wvma.com.

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If you prefer to receive this newsletter electronically, please email Nadine Kelly

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Co-Funding Opportunities for IOF–WV Research Teams

Announcement	Due Dates	Funding
NSF SBIR/STTR Manufacturing Innovation www.eng.nsf.gov/sbir/MI	Now Open (Requests for Proposals) December 8, 2004 (Proposals Due)	Total Funding: \$17,500,000
DOE SBIR/STTR www.science.doe.gov/sbir	Now Open (Requests for Proposals) December 13, 2004 (Proposals Due)	Phase I: \$100,000 Phase II: \$100,000-\$750,000
NSF SBIR/STTR Manufacturing Innovation www.eng.nsf.gov/sbir/MI	November 8, 2004 (Request for Proposals) December 8, 2004 (Proposals due)	Total Funding \$17,500,000
DOE SBIR/STTR www.science.doe.gov/sbir	Currently Open (Request for Proposals) December 13, 2004 (Proposals due)	Phase I: \$100,000 Phase II: \$100,00-\$750,000
Basic Research for Hydrogen Fuel Initiative http://e-center.doe.gov	Currently Open (Request for Proposals) January 4, 2005 (Proposals due)	Total Funding \$12,000,000
NSF Advanced Materials SBIR/STTR www.nsf.gov	October 1, 2004 (Request for Proposals) January 18, 2005 (Proposals due)	Phase I: \$100,000 Phase II: \$100,00-\$750,000
USDA Higher Education Challenge Grants Program www.csrees.usda.gov	Now Open (Requests for Proposals) February 3, 2005 (Proposals Due)	Total Funding \$5,500,000
Engineering Research Centers Partnerships in Transforming Research, Education and Technology www.nsf.gov	Currently open (Request for Proposals) November 8, 2004 (Pre-proposals due) June 16, 2005 (Proposals due)	Total Funding FY 2006 \$12,000,000
USDA FY 2005 National Research Initiative Competitive Grants Program www.csrees.usda.gov	Currently Open Due Dates vary - See Solicitation	\$150,000,000 in total funding

2005 IOF-WV Day at the Capitol!

The 2005 IOF-WV Day at the Capitol will be held Tuesday, February 22, 2005 at the State Capitol in Charleston, WV. For registration and event information visit <http://iofww.nrce.wvu.edu>. For further information contact Kathleen Cullen at (304) 293-2867 ext. 5426 or Kathleen.Cullen@mail.wvu.edu.

See you at the rotunda!

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