The Industries of the Future - West Virginia
Monthly Update
February 2007 http://iofwv.nrcce.wvu.edu Vol. 8.2

Excerpts from presentations at the West Virginia Senate Economic Development Committee meeting on January 23, 2007

Beri Fox, President and CEO, Marble King, Inc.

The glass industry is a "heirloom" industry for the State of West Virginia. West Virginia Glass in known for its quality worldwide. That's positive. We are surviving but we want to thrive. We're doing our part by working with groups like Industries of the Future. The glass industry brings a huge amount of recognition to the State, as well as, many visitors increasing tourism for West Virginia. For example, **Marble King will be featured on John Ratzenberger's "Made In America" show on the Travel Channel. The show airs on March 6 at 9:00 PM**. This will give positive coverage for the State of West Virginia. We're also opening a gift shop, museum and interactive children's center as a way to expand our business without using high price energy!!

Fenton Art Glass does a wonderful job as a West Virginia ambassador with their QVC airings, many which are filmed at the Fenton factory in Williamstown. Blenko Glass has produced three different films that air on PBS nationwide. Both offer factory tours and their gift shops bring visitors by the busloads. We hope to do the same with ours. Look at what the State spends in dollars to attract tourists. These companies are already attractions. Please don't overlook their importance!

Allan Fowler, Vice President of WV Operations, The Dow Chemical Company

The global chemical industry is a $2.2 trillion industry and employs 10 million people. For every chemical industry job 6 downstream jobs are created. The U.S. chemical industry is a $560 billion industry employing 870,000 Americans and in West Virginia the industry employs 11,000 people and an additional 50,000 people indirectly. The chemical industry is 17% of all WV manufacturing jobs with an average wage of $70,000/yr.

The chemical industry is responding to high energy and feedstock costs. Of the 50 global petrochemical projects around the world in excess of 1 Billion dollars, only one is in North American. The chemical industry is moving to where the raw materials are cheaper!

So what about West Virginia? Fossil fuels will account for nearly 90% of the growth in energy (and raw materials) between now and 2030 and the trend will likely continue for many years after that. Alternative technologies are slow to develop and it is a lengthy process. The large infrastructure systems (plants, etc.) are extremely expensive and will take decades to "change". But we must start now!

Is "Chemicals from Coal" a good idea? Yes, it is a good idea! The U.S. must be a player and West Virginia must be in the mix through R&D and raw materials. WVU, NETL, and numerous other initiatives need to be nurtured and fed.

Dow Chemical recently announced an expansion at the South Charleston site. The expansion is for a specialty chemical, Cellosize (hydroxyethyl cellulose), which is not as sensitive to oil/gas raw material prices (that's why it is still in WV). The chemical industry left in WV is largely specialty-based. The large, commodity-based chemicals have long since left West Virginia for areas with less expensive oil/gas raw material prices. Dow already has a large asset base in South Charleston and we need to maximize our return on that investment. Our partnership with Bayer CropScience has been critical in making the plant site competitive over the past 2-3 years.

Arden Sims, CEO, Globe Metallurgical, Inc.

My firm's factory in Alloy produces pure silicon for a wide variety of uses. We employ 215 full time staff and operate 24/7 to extract nearly pure silicon from quartz rock. Silicon production is energy intensive, using electric arc smelters to melt quartz and separate the oxygen from the silicon. Even with the relatively low power rates in Alloy, electricity accounts for 31 % of our production costs, we face tough competition from all over the world.

Like many West Virginia companies, much of the electricity and fuel we use ends up as hot exhaust. A great deal of hot exhaust rises off each smelter. Fans pump this hot exhaust through long outdoor pipes that allow the heat escape to atmosphere, then through a bag house to collect the fine particles. The potential energy in this exhaust is unfortunately wasted.

Initial engineering studies indicate that an energy recycling plant could produce about 1/4 of our power, while burning no

EVENTS

Top Homeland Security Issues Facing West Virginia Seminar sponsored by Instrumentation, Systems and Automation Council of West Virginia will be held February 13, 2007 at Scarlett Oaks Country Club in South Charleston, WV. For more information or to register, please call Mary Ann at (304) 744-2252 or e-mail at isacwv@gmail.com.

Small Business Start Up Workshop sponsored by the West Virginia Small Business Development Center will be held February 14, 2007 in Huntington, WV. For more information or to register, call Kathleen Thornton at (304) 696-6272.

Great Energy Efficiency Day IV sponsored by the Alliance to Save Energy will be held February 14, 2007 in Washington, D.C. For more information or to register, log on to http://www.ase.org/geed .

Polymer Composites Conference IV sponsored by the West Virginia Department of Transportation, the Federal Highway Administration and the Constructed Facilities Center at WVU will be held March 20-22, 2007 at Lakeview Golf resort and Spa in Morgantown, WV. For more information, please call (304) 293-7608, or request a preliminary program at CFC@mail.wvu.edu.

IOF-WV Contacts

Carl Irwin
WVU NRCCE
(304) 293-2867 ext. 5403
Carl.Irwin@mail.wvu.edu

Jeff Herholdt
WV Development Office
(304) 558-2234
jherholdt@wvdo.org

Kathleen Cullen
WVU NRCCE
(304) 293-2867 ext. 5426
Kathleen.Cullen@mail.wvu.edu

Angela Shock
WVU NRCCE
(304) 293-2867 ext. 5434
Angela.Shock@mail.wvu.edu

The IOF-WV Monthly Update

February 2007 http://iofwv.nrcce.wvu.edu Vol. 8.2

additional fuel and producing no additional pollution. This facility would use the currently wasted hot exhaust to produce steam to drive a steam turbine generator and produce 30 to 35 megawatts of power around the clock. This facility requires a one-time investment of roughly 45 million dollars.

The economics of this energy-recycling project appear, at this stage, to be positive. The extra 30 megawatts of electric capacity would allow us to increase production and reduce the needs for coal. We would not have to curtail steel production in the dry season, and the added electric capacity would allow Alloy to add a sixth smelter and hire 20 more full time operators.

West Virginia has a tremendous resource of waste energy. If this committee can find a way to share the slim risks of host manufacturing plants curtailing operations, many firms will exploit this energy resource and thus provide a long list of benefits to the State. Energy recycling would improve the competitive position of manufacturing in the state, lower pollution and its related health expenses, avoid costly investments in conventional generation and transmission, increase and preserve good jobs in the state, and enhance tax revenues. By being a leader in electric innovation, West Virginia also will attract new industry to the state.

David Levine, President and CEO, Datacaster Corp.

I am pleased to announce a new public-private partnership to commercialize an important technology platform (Reality Computing) developed by researchers at the West Virginia University GeoVirtual Laboratory. "Reality Computing" provides 3D environmental simulations and location-based services. This platform has profound implications for a number of industries, including energy, natural resources, agriculture, utilities, real estate, municipalities, tourism and entertainment.

A commercially supported version of the platform is expected to be available through a new company, Datacaster Corporation, in October 2007. Datacaster will maintain two offices, with product development and engineering operating out of the WVU Business Incubator in Morgantown, WV and the sales and business development team in Martinsburg, WV.

Environmental applications include natural resource management, along with land use and municipal planning, to maximize both ecological conservation and economic returns. Location-based services support logistics and operations in pipeline and transmission line maintenance. Please come upstairs to our Industries of the Futures booth for a demonstration of Reality Computing.

Co-Funding Opportunities for IOF-WV Research Teams

Announcement	Due Dates	Funding
National Science Foundation **Materials Processing and Manufacturing (MPM)** www.nsf.gov	Now Open (Request for Proposals) Full proposal window - January 15 to February 15, 2007 (Proposal Due)	Estimated Funding: TBD
National Science Foundation **Manufacturing Machines and Equipmenty** www.nsf.gov	Now Open (Request for Proposals) Full proposal window - January 15 to February 15, 2007 (Proposal Due)	Estimated Funding: TBD
National Science Foundation **Manufacturing Enterprise Systems (MES)** www.nsf.gov	Now Open (Request for Proposals) Full proposal window - January 15 to February 15, 2007 (Proposal Due)	Estimated Funding: TBD
National Science Foundation **Energy for Sustainability** www.nsf.gov	Now Open (Request for Proposals) Full proposal window - Feruary 1 to March 1, 2007 (Proposal Due)	Estimated Funding: TBD

West Virginia University
National Research Center for Coal & Energy
Industries of the Future- West Virginia Program
PO Box 6064
Morgantown, WV 26506-6064

West Virginia USA
West Virginia Development Office

Industrial Technologies Program
Energy Efficiency & Renewable Energy
U.S. Department of Energy