



## 2006 IOF-WV Symposium - brief notes

**Brooks McCabe**, *“Legislature must be a partner with industry”*

WV tax revenues at all-time highs, but economy is iffy – WV chemical industry in 2010 will not be pretty

What can the State and Legislature do to make your life better - must take the time to understand – WV crisis coming in 2 to 3 years

**Mike Eastman**, *“Target is to replace 35% of NG with syn gas from coal and other opportunity fuels”*

Identify technology obstacles for industrial use of syn gas – need technology roadmap and deployment options – tax credits, loan programs, etc.

Bio/coal systems may offer lower enviro and CO<sub>2</sub> footprint: coal + wind, coal + biomass - need all forms of fuels

**Richard McCormack**, *“Some think it may take a collapse for U.S. to get serious about doing something”*

During ‘90s, the conversation was how rise to meet challenge of Japan – answer was mostly adoption of best practices – lean, TQM, etc.

Early 2000s – confluence of ideas and innovations – computers, graphics, telecom, combined with business best practices – doubling of capability every 18 months

The game changed in 2002 – 2003, helicopter part made in U.S. cost \$921, identical part made in Poland cost \$256! Question became – how to reduce costs by 75% - not by just 25 – 30 %

Furniture costs in NC - 35% cheaper shipped from China to warehouse within one mile of previous manuf plant

Number 1 U.S. export is waste paper – 33 U.S. companies export waste paper

120 major chemical plants being built worldwide, 1 being built in U.S.

3 million U.S. manuf jobs lost since 2000 – equivalent to a 35-story Vietnam memorial of names

Current debate is driven by domestic producers – they are irate, struggling – who is protecting who?

NAM represents interests of global multinational companies – multinationals represent China’s interests in DC

Fundamental questions are being asked – can America be super power w/o manuf? How get power back to masses? Why is U.S. not enforcing trade agreements? Why no WTO cases?

Must discuss - Why is the U.S. not a good place for manuf investment? How create really good incentives? Need benchmarks - what are other countries doing?

**Charles Bayless**, *“There is not enough energy/fuel to go around”*

Where are we going as a nation WRT fuel use?

U.S. has 4% of the world’s population and uses 29% of the world’s energy – produce 26% of world’s GDP

Developing countries are transitioning from labor economy to energy economy – they are trying to get to where we are – must use everything we can get in energy

KWH/capita: China in 1995 = U.S. in 1904! China moving up 2.5 times faster than U.S. moved up the chart

For every BTU made, we throw away 2 BTUs, i.e., the energy industry is about 33% efficient – cannot continue to do this

Look at Reserves to Production Ratios: NG = 10 yrs. @ \$8/MMBTU; oil = 13 yrs. @ \$10/MMBTU; coal = 247 yrs. @ \$3/MMBTU

Economics will drive us as a nation to coal – but there are problems we must solve

Global warming is here and we must address it – must reduce carbon emissions from fossil fuel plants – U.S. can develop CO<sub>2</sub> capture technologies – export to ROW

U.S. is extremely vulnerable to oil cut off – must work toward energy independence

This energy crunch is different from ‘70s – then it was supply limits – today is growth in developing countries energy demand - and there is no stopping it now

**Derrick Williamson**, *“The party’s over!”*

No meaningful rate changes in WV in over a decade – have had a good long run in WV

AEP filed for IGCC plant in OH, WV, and KY – who wants it? Cost of \$1.2 billion – would come on line 2012 – 2018

Would mean a \$25 million rate increase – 1% to 2% increase. AEP seeks up-front reimbursement

Securitization of bonds for wet scrubbers at Allegheny Power – cost went from \$38 million to \$573 million!

Shift of risk to rate payers – could drive up industrial rates by as much as 18%

(Over)

### EVENTS

**West Virginia Manufacturers Association Charleston Area Legislative Meeting** will be held December 12, 2006 at the Marriott in Charleston, WV. For more information contact the WVMA at (304) 342-2123 or [wvma@wvma.com](mailto:wvma@wvma.com).

**IOF-WV Day at the Capitol** sponsored by the West Virginia Development Office and IOF-WV will be held January 23, 2007 at the West Virginia Capitol building in Charleston, WV. Great opportunity to meet with legislators and showcase West Virginia products. For more information contact Kathleen Cullen at (304) 293-2867 ext. 5426 or [Kathleen.Cullen@mail.wvu.edu](mailto:Kathleen.Cullen@mail.wvu.edu).

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## Neal Elliott, "This is not your parent's energy crisis!"

Delivery is more of a problem than supply – refinery shortage – crude quality is down – coal quality is down – PRB coal – not enough rail capacity – not enough infrastructure in place – transmission constraints – infrastructure takes time to fix

Big opportunities for energy efficiency and renewables – new supply takes years to come online – EE is essentially immediate

Diversify risk and defer need to build expensive new lines, plants, etc

Energy efficiency reduces exposure to energy price volatility – renewable energy diversifies energy sources with opportunity fuels – decouple energy supply from volatile mkt – cold weather can move prices 20%

20% reduction in energy use => increase net profit by 18%

Indonesia will not export LNG after 2010 - shipping costs up by 400%

In 1995 Dow committed to reduce energy intensity by 20% within 10 years – saved \$4 billion in expenditures with 22% reduction by 2005!

Can't keep throwing away 2/3 of energy value of fuels!

## Tom Casten, "I believe the single best way to regain industrial competitiveness is to recycle energy"

Present and coming energy policies are mandating GHG reductions – California, NE states, EU

Inconvenient truths: trends of energy efficiency have reversed – efficiency has stagnated in electricity industry since 1960 – key to many problems – industrial competitiveness, pollution, global warming

Grid costs will rise – U.S. addiction to fossil fuel dictates expensive wars to protect oil – we've had no good energy policies for 45 years

Convenient truth: Could produce 20% of U.S. electricity demand by mining waste heat

Build new power plants near thermal users – easily cut costs by half relative to conventional generation

Industry has options – recycle energy to reduce costs and reduce pollution - co-locate industry with power sources to capture efficiencies

Conventional central generation to end user wastes 2/3 of fuel value that goes into the power plant

Decentralized generation, CHP, with energy recycling wastes only 1/3 of fuel value that goes into the power plant

Coal is difficult for CHP – gasify it, put it in a pipeline, and use at manuf site for max efficiency

The U.S. ranks 12 among nations in deployment of CHP

Policy goals for WV:

Remove barriers to modern technology – facilitate companies generate their own power

Enable energy recycling projects to capture value they create – avoiding T&D capital and line losses – credit for safety, health, and environmental savings

Provide open standard offer for power from ER facilities


Limited loan guarantees for industrial ER, valid only if waste energy ceases

Eliminate barriers to industrial efficiency

Permit energy recycling as pollution control devices

## Co-Funding Opportunities for IOF-WV Research Teams

Announcement	Due Dates	Funding
U.S. Department of Energy <b>Industrial Energy Savings Assessments</b> (eligible applicants must have energy consumption in excess of 1 trillion Btu per year) <a href="http://www1.eere.energy.gov/industry/saveenergynow/">http://www1.eere.energy.gov/industry/saveenergynow/</a>	Now Open (Request for Proposals) January 19, 2007 (Proposals Due)	\$4,000 (plants providing cost share is encouraged)
National Science Foundation <b>Materials Processing and Manufacturing (MPM)</b> <a href="http://www.nsf.gov">www.nsf.gov</a>	Now Open (Request for Proposals) Full proposal window - January 15 to February 15, 2007 (Proposal Due)	Estimated Funding: TBD
National Science Foundation <b>Energy for Sustainability</b> <a href="http://www.nsf.gov">www.nsf.gov</a>	Now Open (Request for Proposals) Full proposal window - February 1 to March 1, 2007	Estimated Funding: TBD

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