Ohio / DOE

Industrial Technology Program

Great Lakes Pollution Prevention Roundtable

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Energy Industries of Ohio

September 23, 2004
Energy Industries of Ohio

- Incorporated June, 2000
- 501c.3 Private, Non-Profit Organization
- Promote Collaboration between Energy Producers and User Industries
  - Facilitate Research and Development
  - Project Technical Management
  - Project Financial Management
- Funded through Specific Project Grants
Ohio IOF Program

- 3 Year Old Program
- Industry Sectors Addressed
  - Federal
    - Agriculture (Biomass), Aluminum, Chemicals, Forest Products, Glass, Metal Casting, Mining, Petroleum, Steel
  - Ohio
    - Biomass (Agriculture, Forest Products, Food Preparation), Aluminum, Polymers, Glass, Metal Casting, Mining, Steel
Ohio IOF Program

  - Outreach – Present DOE / ODOD Programs to Industry
  - Industry Sector Strategy Development
  - Training – DOE Best Practices
  - Project Team and Proposal Development

- Work through and with:
  - State Agencies
  - Universities, Research Organizations
  - Industry Associations
  - Companies
Ohio IOF Program Partners

Ohio Biomass Task Force

Ohio Coal Development Office

September 23, 2004
Contact Information

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Ohio IOF Program

- Sector Specific Activities
- Grants Program
  - Sector Specific
  - Crosscutting Technologies
  - Supporting Industries
- Best Practices
Sector Specific Activities

- Roadmap Reviews
- Critical Issues Conference
  - October 8, 2003
  - 80 Participants
  - Identified 11 Common Issues
- Follow-on Activities
  - Communication
  - Program Identification
  - Proposed New Programs
Critical Issues Conference

- OEE provided Conference Results to Governor Taft and Senator Voinovich in preparation for the Manufacturing Conference in November
- 6 “Common Issues“ Identified
  - Environmental Permitting
  - CAAA Issues (Title V, NSR, MACT)
  - Land Use Issues
  - Workforce Development
  - DEG
  - Recycling
Critical Issues Conference

- Legislative Issues
  - Tort Reform
  - Business Tax Reform
  - Health Care Costs
  - Workman’s Compensation Issues
  - Hospitalization Insurance
  - Free Trade – Dumping, Job Losses
Workforce Training

- Recently announced Grant (DOE)
- Training New and Existing Employees in:
  - Steel
  - Metal Casting
  - Forging
- Goal: Development of Curriculum for 1-2 year training programs
Ohio IOF Program

- Sector Specific Activities
- Grants Program
  - Sector Specific
  - Crosscutting Technologies
  - Supporting Industries
- Best Practices
Selected Project Activities

- CBRC
- EAF/BOF Hoods and Roofs
- ALFA Foam
- Materials for Molten Metal Processing
CBRC Project

- Fly Ash as Sand Replacement
- Reduced Landfill Use
- Worker Safety
- Good Results
- Follow-on w/ GM
- Defiance Pending
Objective: Demonstrate use of syntactic foams to reinforce frames in light trucks, SUVs

Drivers:
- Federal CAFÉ Standards
- Vehicle weight determines engine size, breaking distance, fuel economy, collision characteristics, etc.

Anticipated Results:
- Equal or better performance at lower weight
- Improved crash worthiness
- Improved NVH characteristics
- Implementation without warping
ALFA Foam Project
BOF/EAF Hood and Roof Program

- DOE funded effort - $1.0 million + $861k match
- To analyze and study Hood - Roof as systems
- Review Alloys, Coatings and Weld Overlays
BOF/EAF
Hood and Roof Project

- Survey of Existing Hood/Roof Systems
- Identification of Alternatives
  - Aluminum Bronze Evaluations
- Continuing Activities
  - Modeling of System – Corrosion, Fluid Flow
  - Aluminum Bronze Test Installation
Advanced Stellerator
Princeton Plasma Physics Laboratory

- **Funding:** ~$550,000
  Prototype Casting

- **Objective:** Produce Containment Shell Castings for next generation fusion reactor

- **Potential Follow-on**
Metal Casting Project

- West Virginia University Project Lead
  - Develop improved materials for molten metal applications
  - Materials for containment as well as in-tank applications
  - Looking to identify new ceramic and ceramic composite materials
  - Goal: 10 x Improvement in Service Life
Ohio IOF Program

- Sector Specific Activities
- Grants Program
  - Sector Specific
  - Crosscutting Technologies
  - Supporting Industries
- Best Practices
Best Practices

- Ohio’s Envinta 1 to 5 Program
- Best Practices Tools and Training
- Technology Showcase
- Plant Wide Assessments
- UD Industrial Assessment Center
Ohio-Based Assistance

Envinta 1 to 5 Energy Assessments
- Identifies Organizational Attitudes and Program/Policy Support
- Benchmarked against Database of companies operating in the same industry
- Recommends Follow-on Steps

Energy Assistance Grants
- Up to $15,000 (2 x $7,500) to match company investments in EE
Ohio-Based Assistance

- Ohio Air Quality Development Authority
  - Provides low-cost loans for industrial projects that reduce air pollution
  - Project capital equipment exempt from taxes for the life of the loan
  - Projects from $250,000 to $10,000,000+

- Originally focused on treatment / control

- Mission expanded to P² Approaches.
DOE Best Practices
Training and Tools

Program Partners
- US Department of Energy
- Ohio Office of Energy Efficiency
- Cleveland State University
- Energy Industries of Ohio
- Ohio Society of Professional Engineers
- Glass Manufacturers Industry Council
- American Ceramics Society
- CAMP Inc.
- Dominion East Ohio Gas
- TechSolve
- Ohio Environmental Education Fund

Nearly 200 professionals have been trained in:
- Compressed Air
- Boiler and Steam
- Process Heating
- Motors and Piping Systems
Technology Showcase

- Highlights results of energy efficiency and technology development in DOE ITP sectors
- Ohio Showcase
  - Scheduled for Sept. 27-29, 2005 in Cleveland
  - Will include Steel, Metal Casting, Glass, Polymers, Forging Sectors
    - R&D Presentations
    - Assessment Presentations and Results
    - Plant Tours
    - Best Practices Training
      - Process Heating
      - Air Compressor Systems
Plant Wide Assessments

- Competitive Grants through DOE
- Up to $100,000 in DOE Funds
  - Matched by Company (generally In-Kind)
- Comprehensive Evaluation of a Facility
Plant Wide Assessments

- Assessments in Ohio
  - Commonwealth Aluminum
  - Corning (E)
  - Amcast (K)
  - Caraustar Industries
  - Appleton Paper (K)
  - Ford – Cleveland Casting Plant (K)
  - Sawbrook Steel (bC)
  - SIFCO
  - Cargill (K)
Industrial Assessment Centers

- University-based DOE program
- Targeted toward small and medium sized companies (500 employees; $75 M Sales)
- Identifies cost reduction opportunities via energy efficiency, waste reduction, productivity improvement
- Conducts 25 assessments per year