Green Manufacturing Initiative

Western Michigan University
Manufacturing Research Center
Dr. John Patten, Director
Welcome

• Introductions (round robin)
• Update-Status since last meeting (Dec. 2010)
  – Budgets
  – Projects
  – Companies
  – Faculty and Students
  – Web site
• Going Forward-Future
Budgets
January 2010 to April 2011

• DOE Grant $972,000 (awarded 2010) ($668,512)
  – Spent: $202,112
  – Remainder: $466,400

• Categories
  – Faculty/Staff/Students: $170,116
  – Tuition: $9,244
  – Contracted Services: $5,000
  – Consulting: $2,012
  – Supplies: $4,920
  – Travel: $8,079
  – Other: $2,741
Projects

• Completed
  – Chrome Plating, Electric Fork Lift, Building Envelope (heating)
Projects continued

• Ongoing
  – Assessments (site)
  – Autophereretics
  – Co-Tri generation
  – Oven-Dryer energy utilization/efficiency
  – Renewable Energy (solar and wind)
  – Waste to Fuel/Energy (wood and food, and batteries); Reuse and Recycle
  – Waste to Reuse: Polystyrene, Powder Paint and Mixed Polymers (pyrolysis), Wood (thermo modification)
Projects continued

• To do
  – Site Assessment: Fabri-Kal
Other Project Activities

• Green Manufacturing Certification (SME and Purdue Univ)
• Green Product Certifications and Standards
  – Building Green, LEED (US GBC), ISO, Green Seal, etc.
• NSF I/UCRC with MSU
• Software tools (analysis, DOE)
• Financial incentives (energy)
• Recycling (dumpster diving)
Companies

- Armstrong International
- Bells Brewery
- Borroughs
- Erdman
- Fabri Kal
- Haworth
- Herman Miller
- Kellogg
- Landscape Forms
- Ottawa Gage
- Post (Ralcorp)
- SP Industries
Companies being Recruited

• Borg Warner
• Cascade Engineering
• Consumers Energy
• Denso
• Eaton
• Heinz
• IAC
• Johnson Controls
• Kalsec
• L3 Communications
• Perrigo
• Steelcase
• Whirlpool
Faculty, Staff and Students

- Faculty: John Patten and Dave Meade, Mike Barcelona, Claudia Fajardo, Murali Ghantasala, Margaret Joyce, Dave Middleton, Pete Parker,
- Staff: Carey Schoolmaster
- Students: Matt Johnson (Stryker), Steve Srivastava, Sean Derrick, Gary Nola, Nate Christensen, Ryan Kamm, Trevor Williams, John Ihling, Michael Brio
Partners

• Michigan State University (chemistry & packaging)
• University of Michigan (Ann Arbor)
  – Michigan Industrial Energy Center (MIEC)
• Grand Valley State University
  – Michigan Alternative and Renewable Energy Center (MAREC)
• US Department of Energy: Save Energy Now, ALLY
• MMTC (Bill Small)
• Sustainable Research Group (Bill Stough)
Activities

• Conferences
• Publications
• Presentations
• Posters
• News articles
• Brochures and information
Web site

• http://www.wmich.edu/mfe/mrc/greenmanufacturing/index.php

• Online Journal: Green Manufacturing Research Journal
Future

• DOE Funding: 2011-2012
• NSF I/UCRC
• Other funding opportunities:
  – NSF GOALI