M-WERC Overview

Alan Perlstein
Executive Director and CEO
Mid-West Energy Research Consortium
What is M-WERC?

• M-WERC is one of America’s Leading Energy, Power and Control (EPC) Industry Clusters
• Public Private Partnership Leveraging Market Knowledge of Industrial EPC Members
• Maximize Effectiveness of the Region’s Leading Academic, Economic Development, Government, and NGO Organizations to Grow EPC Space
  – Innovation
  – Work Force & Talent Development
  – Public Policy
  – Strategic Collaboration
  – Market & Industry Expansion

Energy + Power + Control

- Generation
- Renewable
- Fossil
- Nuclear
- Bioenergy

- Transmission
- Distribution
- Storage
- Conversion
- Quality

- Industrial Automation
- Building Automation
- Energy Management
- Smartgrid & Microgrid
- Electric Vehicles

• Three Year Organizational Growth
  – FY11-12 - 8 to 26 Members FY12
  – FY13 56 Members to 76 Members FY14
  – FY15 ~104 Members ~ Budget $2.5M

M-WERC Sponsored $2.5M in Research $325K in Workforce Development
Why We Started in Wisconsin

• Energy Power & Control in Wisconsin
  – 900 Companies
  – 100,000 Employees
  – Over $38 Billion in Sales

• Expanding Collaboration in Key Technology Sectors to Companies, Universities and Partners Throughout the Midwest Region +525,000 jobs

The Midwest Has Expansive Capabilities in Energy, Power & Control
We Combine the Power of Wisconsin’s Top Four Engineering Research Universities with the Power of Industry and the Training Know-how of Leading Technical Colleges

M-WERC Academic Participants

Combining Technology Innovation, Workforce Development and Strategic Collaboration to Promote Industry Expansion
M-WERC Industry Participants
Road Maps Drive Our Missions

Mission Areas

• Technology Innovation
• Market & Industry Development
• Supportive Public Policy
• Workforce Development
• Development and Strategic Collaboration

Technology Focus Areas

• Distributed Energy Resources and Systems (DERS)
• Building Energy Efficiency
• Energy Water Nexus
• Renewable Energy
• Energy Storage
• Biofuels

PUTTING ENERGY TO WORK
Critical Deliverables & Insight Of Industry Roadmaps

- Market size and growth projections
- Customer value-based market and product segments
- Identification of competitive regions in US and the World
- Linkage to other Roadmaps and Leverage Points
- Technology “SWOT” Analysis
- Regional “SWOT” relative to Technology
- Regional GAP analysis
- Proposed Action Plans for each M-WERC Mission Area
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**Putting Energy to Work**
Three Road Maps FY14/FY15

- **Distributed Energy Resources Systems (Complete!)**
  - CY12-CY17 Growth $1B-$3B
  - Key Markets: Hospitals, Campuses, Bases, Municipalities
  - Technology Gaps: System Integration, Protection & Controls

- **Energy Efficiency (Complete!)**
  - CY12-CY17 Growth $149B-$209B
  - Technology Gaps: Embedded Intelligence, Smart Grid Interoperability, System Integration, Energy Storage

- **Energy Storage (ECD March 2015)**
- **Energy Water Nexus (Start June 2015)**
EPC Coordinated Network of Labs

National Labs and Administrations
- Bonneville Power Administration
- Argonne National Laboratory
- INL Idaho National Laboratory
- NETL National Energy Technology Laboratory
- NREL National Renewable Energy Laboratory

2014-2016

Partner Consortium Labs
- UW-Engine Research
- UWM Innovation Lab
- MSOE Rapid Prototype
- Marquette Mechatronics

2015-2016

University Lab/ Capabilities
Network Investments

Coordinated Microgrid
Labs
2013-2015

M-WERC
Mid-West Energy Research Consortium

EIC

The Nations First
Coordinated
Network of
Capabilities and
Labs
dedicated to
E-P-C

MV Power Systems
CHCP Systems
Power System Automation
2014-2017

PUTTING ENERGY TO WORK
M-WERC Now Controlling Three-and-a-Half Floors; About 70,000 square feet.

Can grow to Five Floors and 120,000 Square Feet.

Build Out In Two Stages – Now to September of Next Year – and Then Complete By October 2016.
Energy Innovation Center

The ENERGY INNOVATION CENTER Will:

- Solidify M-WERC’s Role As A Global Hub For EPC Research, Talent Development and Industry Growth and Expansion
- Assist Our Corporate Members by Providing A Unique Environment To Create And Acquire New Businesses And Line Extensions
- Provide A Unique Open Innovation Platform To Create, Test and License New EPC Technologies
- Establish A Vibrant and innovative Space To Connect and Market To The EPC Ecosystem
South half of 7th Floor being developed for Energy Innovation Center initial occupants

- Our initial “demonstration space” for sales.
- First wave of business start-ups, M-WERC Staff, key partners, and Business Services Providers.
- Will eventually repurpose this floor as we build out the other floors of the facility.
A Business Start-Up Incubator will be located within the Energy Innovation Center.

The Incubator will support new clean energy start-up companies.

New businesses and companies embracing energy, power, automation and control.
Academic labs and Corporate Member labs will be the focus of the Third Floor.

Focusing on our members who want unique lab space, specialized research areas, or “skunkworks” collaborative working areas.