



Food Water Energy Nexus September 30, 2014

**Alan Perlstein
Executive Director & CEO
Mid-West Energy Research Consortium**



- WI Economic Development and Industry Clusters
- Investing In Three Industry Clusters
- The Global Water Council The logo for the Global Water Council, consisting of two stylized blue water droplets or clusters of dots.
- Food and Beverage Council The logo for the Food and Beverage Council, featuring the letters 'FaB' in a green, rounded font. To the right of the letters are four small square icons: a green one with a plant, a blue one with a factory, a blue one with a truck, and a yellow one with a gear.
- Mid-West Energy Research Consortium The logo for the Mid-West Energy Research Consortium, featuring the lowercase letters 'm-worc' in a bold, sans-serif font. The letter 'o' is replaced by a red circular graphic with a white swirl inside. Below the letters, the text 'MID-WEST ENERGY RESEARCH CONSORTIUM' is written in a smaller, red, sans-serif font.
- Three “Too Much’s and Three Grand Challenges

- Can't Wish Industry Clusters Into Existence
 - High Industrial Concentration; With Dominant Leadership Positions
 - Strong Academic Presence; Leading Research and Talent Development Organizations
 - Supportive Public Policy and Engaged Government and Non Government Organizations
- Three Driver Clusters in Wisconsin
 - Energy, Water, Food & Beverage



Wisconsin Economic Development Corp Targeted Six Industry sectors (Statewide)



Water Technology



Energy, Power & Controls



Food/Bev Production/Processing



Life Sciences/Medical Devices



**Manufacturing
Advanced/Defense**



Dairy Production/Processing

PUTTING ENERGY TO WORK



Industry Led, Strong Academic Presence



High Job Creation



High Economic Impact



Sustainable



High Compound Returns



Low Managed risk

Wisconsin Driver Industry Clusters



Medical &
Bio Medical
Technology

Financial
Services



FaB



Regional Economic Growth is Spurred By Investment in Three Industry Clusters

PUTTING ENERGY TO WORK

The Water Council

- Non-profit, economic development org. focused around water
- Public/Private Partnership launched in 2009
- Consists of over 150 corporate members that encompass the entire water cycle
- Int'l organization, headquartered in Milwaukee, the center of SE WI's Water Technology Cluster



The Water Council - Initiatives

- **Global Water Center:** Physical hub of Water Technology Cluster, houses office/research/lab space for small, medium & large multinational water tech companies, as well as accelerator space for innovative water entrepreneurs
- **The BREW** (Business. Research. Entrepreneurship. In Wisconsin.): the only place-based, mentor-driven seed accelerator in US strictly focused on addressing freshwater issues
- **Small Business Forward:** Partnership w/ JPMorgan Chase to identify and match potential investment capital resources with entrepreneurs/startups/small businesses, in water
- **Alliance for Water Stewardship (AWS):** N. American headquarters & Partner for implementation of AWS International Water Stewardship Standard v1.0

We are FaB – the makers, bakers, brewers, canners, bottlers, roasters, operators, artisans, innovators, leaders, owners, managers, professionals and trades, technicians and scientists, growers, distributors, suppliers, grocers and restaurateurs that bring us – and the world – our Food and Beverage.

www.fabwisconsin.com

118 FaB Wisconsin Employer Members



76%

Food and Beverage Enterprises

■ 43% less than 50 ■ 23% 51–300 ■ 11% 301+ employees



24%

Other Businesses, Non-profits, Education, Government, Utility, Economic Development

FaB

FOOD and BEVERAGE WISCONSIN



FaB's Strategic Objective

“To build an industry ecosystem of support for food and beverage makers”

39th

among 74
largest
metros for
**food
business**

1st

concentration
of **food
industry
talent***

3rd

for the
concentration
of **food
scientists***

4th

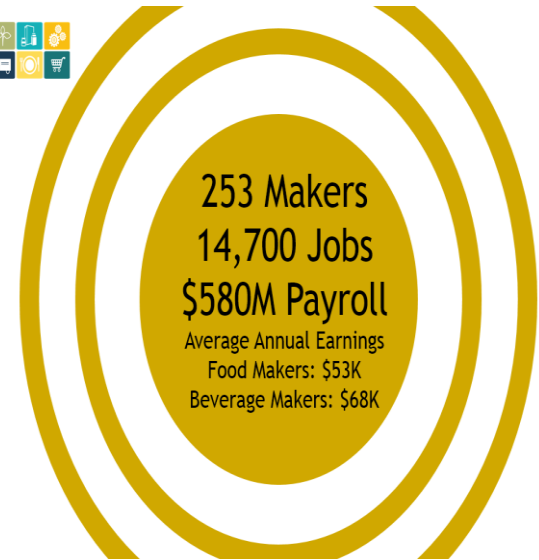
Most
competitive
**water &
waste
water
rates ***

*Among 50 Largest Metro

FaB Wisconsin

Shaping an economic food future that results in maker job growth

Making it easier to innovate, expand, locate or start a food and beverage enterprise.



FaB's Strategic Objective

To build an industry ecosystem of support for food and beverage makers



1. A Talent Continuum

Student ◀▶ Professional
Novice ◀▶ Expert



2. An Innovation Continuum

Concept ◀▶ Commercialization
Product ◀▶ Customer



3. A Business Continuum

Start-Up ◀▶ Expanding
Local ◀▶ Exporting

Zone for Job Growth & Capital Investment



www.fabwisconsin.com



What is M-WERC?



- M-WERC is one of America's Largest Energy, Power and Control (EPC) Industry Clusters
- Public Private Partnership that Connects the Region's Expansive Academic, Economic Development, Government, NGO and Industrial EPC Participants
- Three Year Organizational Growth
 - FY11-12 - 8 to 26 Members & Supporters FY12
 - Year End FY13 = 56 Members
 - FY15 ~104 Members & Supporters, Budget \$2.5M



M-WERC Sponsored \$2.5 in Research \$325K in Workforce Development

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



Combining Technology Innovation, Workforce Development and Strategic Collaboration to Promote Industry Expansion

M-WERC Industry Participants

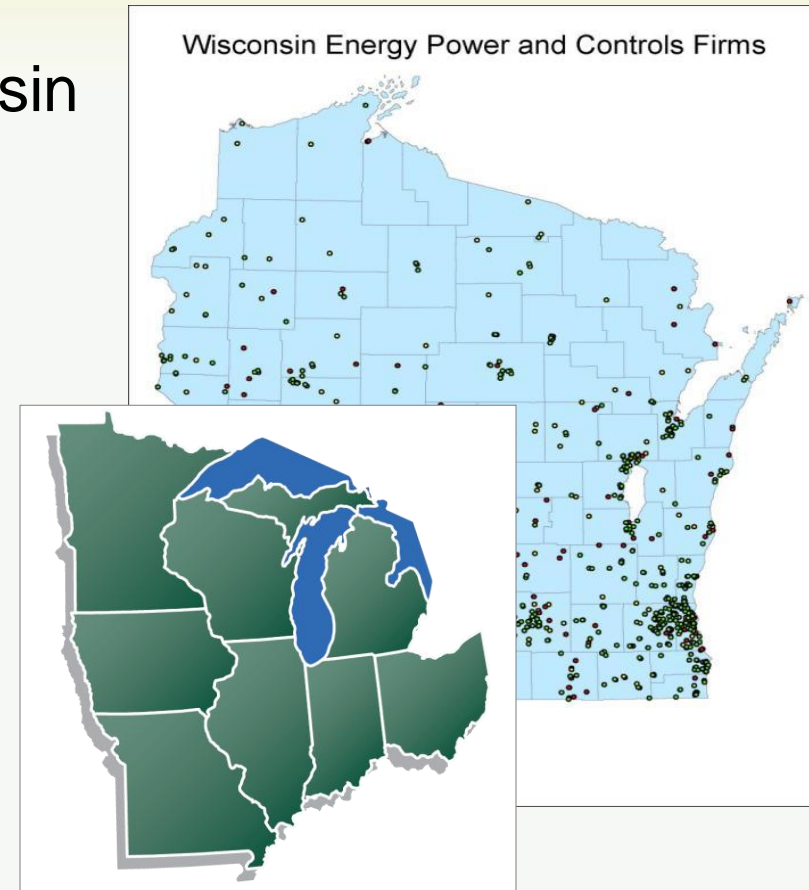


GREENFIRE



PUTTING ENERGY TO WORK

- 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



The Midwest Region Has Expansive Capabilities in Energy, Power & Control



Energy + **Power** + **Control**

- Generation
- Renewable
- Fossil
- Nuclear
- Bioenergy

- Transmission
- Distribution
- Storage
- Conversion
- Quality

- Industrial Automation
- Building Automation
- Energy Management
- SMART Grid & Microgrid
- Electric Vehicles

We Are Working on the Future of Energy, Power & Control

PUTTING ENERGY TO WORK

Road Maps Drive Our Missions

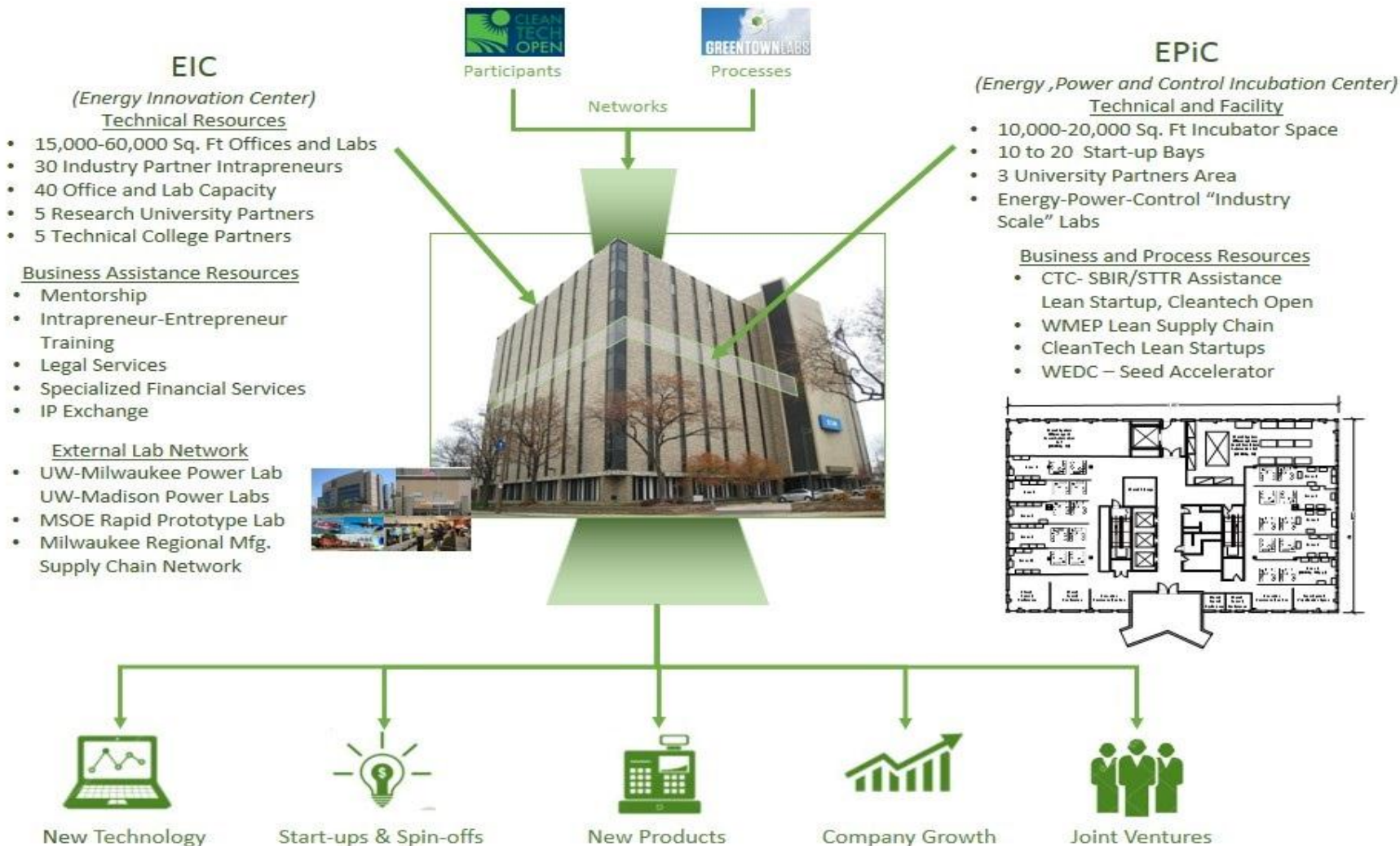
- **Technology Innovation**
- **Market & Industry Development**
- **Supportive Public Policy**
- **Workforce Development**
- **Development and Strategic Collaboration**

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



PUTTING ENERGY TO WORK

The EIC and EPiC Incubator



Food Water Energy Nexus

- *Too Much Water to Produce Today’s Energy*
- *Too Much Energy For Fresh & Waste Water Systems*
- *Too Much Energy, and Water Used in Today’s Food Manufacturing, Storage and Preparation*

Grand Challenges

- Global Reliable, Sustainable, Energy & Electric Power
- Global Reliable, Sustainable Fresh Water & Sanitation
- Global Food Prod’n & Distribution To Eliminate Hunger