What’s Working?!  
Turning Waste to Cash in Wisconsin

Clint Fandrich  
Wisconsin Office of Energy Innovation  
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History of IEE and CHP

A long history with heavy industry
- Logging
- Paper Mills
- Manufacturing

Modernization of industry
- Policy initiatives for energy efficiency

Terms:
IEE = Industrial Energy Efficiency
CHP = Combined Heat and Power
AD = Anaerobic Digestion
TWTC = Turning Waste to Cash

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History of IEE and CHP

Late 1990s and early 2000s

- “Focus on Energy empowers the people and businesses of Wisconsin to make smart energy decisions with enduring economic benefits.”

Large Energy Users program:
- In 2015, $5.14 for every $1 spent

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New industry and hospitals with CHP

- Gundersen Health – La Crosse, Wisconsin
- Barron, Wisconsin School District
- Rothschild Biomass Cogeneration Plant

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History of IEE and CHP

Forest County Potawatomi AD System
• Provides all space and water heating
• 2MW electricity generation capacity
• Takes in food waste from nearby industry

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Many active industry advocates for IEE and CHP

Recent challenges encourage collaboration
• Rising energy costs
• Increasing global industrial competition

Other economic sectors getting involved...

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WI and Competitive Award
WI and Competitive Award
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2013 SEP Competitive Award

Program Description:
• $75,000 from USDOE
• Assemble inclusive IEE and CHP stakeholder group to evaluate state of play and avenues for project implementation
• Objective 1 – Increase awareness of cost-effective IEE and CHP programs
• Objective 2 – Assist with sustainable IEE and CHP project implementation

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Industrial Energy Efficiency

Project Partners:

- WIEG: Wisconsin Industrial Energy Group
- MEEA: Midwest Energy Efficiency Alliance
- m·w·rc: Mid-West Energy Research Consortium
- Focus on Energy: Partnering with Wisconsin utilities
- Leidos
Industrial Energy Efficiency

**Primary Activities:**
- Identify Barriers to IEE Project Development
- Evaluate Successful IEE Projects around Wisconsin and the Midwest
- Circulate IEE Best Practices
- Convene Stakeholders

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Industrial Energy Efficiency

**Wisconsin Action Plan (IEE):**

- Increase Funding and Support for Strategic Energy Management (SEM)
- Establish an IEE Recognition Program
- Engage Business Associations and Trade Allies to Highlight IEE Project Development

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Combined Heat and Power

Project Partners:

seventhwave
Wisconsin Paper Council
University of Wisconsin-Madison
U.S. Department of Energy CHP Technical Assistance Partnerships

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Primary Activities:
• Identify Barriers to CHP Project Development
• Circulate CHP Best Practices
• Convene Stakeholders
Combined Heat and Power

Primary Activities:

Wisconsin Biogas Survey Report
Combined Heat and Power

Primary Activities:

- City WWTP
- Landfills
- Industry
- Agriculture

Pie chart showing:
- 92.1 MW in yellow
- 24.64 MW in red
- 10.04 MW in green
- 14.48 MW in blue

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Combined Heat and Power

Primary Activities:

Major Findings of the Survey

Setbacks and Challenges:
• Managing Foaming and Complex Digestate Chemistry
• Electricity Generation Equipment Endurance
• Project and Operational Financing
• PPAs and Interconnection
• Other Non-Financial Barriers

Potential Solutions:
• Pre-Mixing and Feedstock Storage Tanks
• Biogas Scrubbing and Improved Contaminant Removal
• Advanced Training
• Diversification of Ownership Models
• Information Sharing and Annual Conference
• Excite Biogas Research and Development

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Combined Heat and Power

Wisconsin Action Plan (CHP):

- Evaluate Challenges and Opportunities with Standby Rates and Interconnection Costs
- Engage with and Harness Capacity of Utilities
- Develop Options and Action Plan for EPA’s Clean Power Plan

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Concluding Thoughts

Big challenges and \textit{opportunities} remain in IEE and CHP project development.

It is a time of transition for one of the strongest IEE programs in Wisconsin, Focus on Energy

Again, there is \textit{enormous} untapped potential for bioenergy and CHP in Wisconsin
Thank you!

Clint Fandrich – Market Development Manager
Wisconsin Office of Energy Innovation

clinton.fandrich@wisconsin.gov
(608) 267-7854