

**Ohio Energy**

23RD ANNUAL OHIO

**Energy  
Management  
CONFERENCE**

# **Workshop HH**

**Energy Efficiency Financing  
Programs, Best Practices,  
Training, Energy Audits, and  
Energy Conservation  
Opportunities**

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**Wednesday, February 20, 2019  
2 p.m. to 3:15 p.m.**

## **Biographical information**

**Manny Anunike, PhD, Energy Specialist  
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Manny Anunike is an Energy Specialist with the Ohio Development Services Agency, where he is responsible for commercial, institutional, and industrial energy efficiency and renewable energy initiatives. He also performs technical reviews of energy efficiency and renewable energy projects' development and deployment, Energy Loan Funds, Loan Loss Reserve, Conversion Facilities Tax Exemption, and Power Siting Board applications. He earned his 5-year professional degree in architecture from Southern University's College of Engineering, Louisiana, a Master's degree from Minnesota State University, Minnesota; as well as a PhD from the University of Dayton, Ohio. Dr. Anunike is a Senior Member of The Association of Energy Engineers.

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**Nikhila Rao, General Manager, Graphet Data Mining  
431 Ohio Pike Suite 203-N, Cincinnati, OH 45255  
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Ms. Nikhila Rao is a certified One-2-Five diagnostic facilitator and is responsible for supporting site sustainability needs and has oversight for Graphet's state, utility and corporate energy efficiency program deliverables. Ms. Rao has a BS in Engineering and an MBA in Information Systems from the University of Cincinnati.

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# Energy Efficiency and Energy Finance Programs

Manny Anunike, PhD  
Energy Specialist  
Energy Section, Office of Community Assistance

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# Energy Efficiency and Energy Finance Programs

## Learning Outcomes

### Ohio Development Services Agency's:

- Energy Efficiency Program (EEP)
- Energy Financing Programs (Energy Loan Fund & Loan Loss Reserve Programs)
- Energy Efficiency Training Opportunities (OCIEE)

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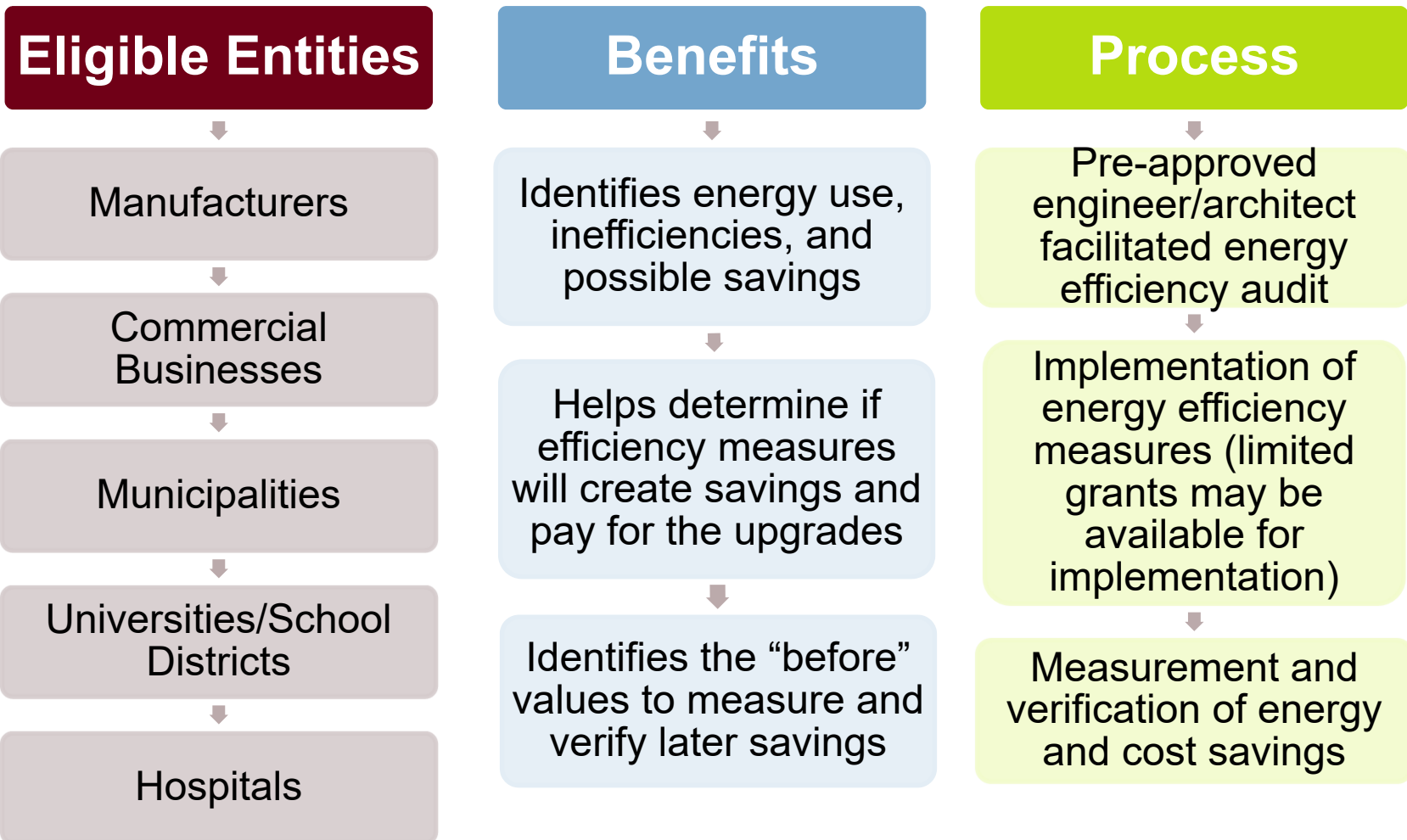
## ODSA's Energy Efficiency Program (EEP)

The ODSA's EEP is a comprehensive energy efficiency program aimed at helping businesses, manufacturers, nonprofits, schools, hospitals, colleges/universities, and local governments to reduce energy use and improve energy efficiency which will result in lower energy and operations costs.

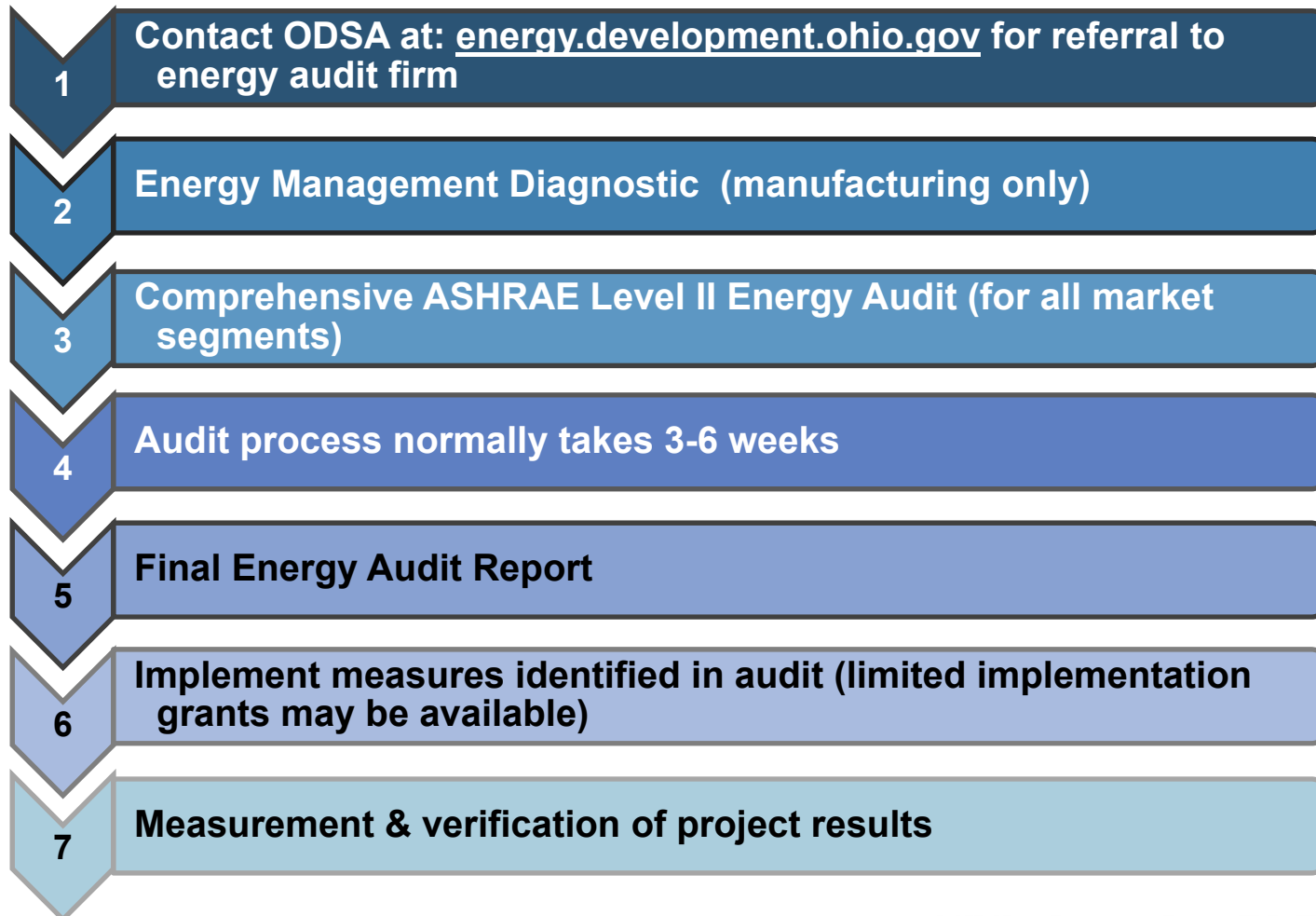


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# EEP Eligible Entities/Benefits/Process



# Energy Efficiency Program Process



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# Energy Efficiency Program Process Detail

## Process Detail:

- Energy Management Diagnostic (1-2 hr. meeting for manufacturers with facilitator) at **no-charge**
- Facility ASHRAE Level II energy audit for both manufacturing and non-manufacturing clients
- Resulting final audit report typically covers:
  - Existing buildings/facilities conditions analysis
  - Energy use patterns and utilities analysis
  - Energy efficiency measures analysis and recommendations
  - Potential funding strategies and resources
  - Measurement & Verification strategies



## Energy Efficiency Program - Additional Details

- Energy audit grants available to qualified manufacturing/non-manufacturing clients
  - ODSA pays 75% (or 50% for non-manufacturing) of the energy audit up to \$22,500 (or \$15,000 for non-manufacturing) maximum
  - Client pays the other 25% (\$7,500), or 50% (\$15,000 for non-manufacturing) plus any cost in excess of \$30,000 if applicable
  - Limited Equipment/Installation (Phase 3) grants available to qualified manufacturing/non-manufacturing clients. ODSA pays 50% up to \$25,000 maximum for eligible energy efficiency equipment/installation for manufacturing/non-manufacturing clients
  - ODSA and Customer pay energy engineer/auditor directly for their portion of the cost
- Qualified/eligible client
  - An Ohio manufacturer, or
  - Any other eligible Ohio entity of 10,000 sq. ft. or more

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# ODSA's Energy Efficiency Finance Programs

## Energy Loan Fund & Loan Loss Reserve Fund



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## Energy Loan Fund

- Low-cost loans for ***energy efficiency*** and ***renewable energy*** improvements to existing structures
- Expected results include:
  - A minimum of 15% energy use reduction
  - A payback of 15 years or less
  - Economic impacts such as job creation or retention and community impacts such as downtown revitalization
  - Improvement in environmental quality
- Loans in the range of \$250,000 to \$2,500,000 and at between 1 & 3% interest

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# Energy Loan Fund

- Eligibility:
  - Manufacturers
  - Commercial Businesses
  - Public Entities (including local governments)
  - Nonprofits
  - Hospitals
  - Colleges/universities
- More information or to apply:
  - [https://www.development.ohio.gov/bs/bs\\_energyloanfund.htm](https://www.development.ohio.gov/bs/bs_energyloanfund.htm)

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## Loan Loss Reserve Fund

- Offers credit/collateral enhancement of up to 50% of a qualified energy efficiency project on an existing structure
- Administered in partnership with eligible Ohio Port Authorities as they originate loans for energy projects. A minimum of 15% energy savings and a simple payback period of 15 yrs. or less are required
- \$17 million originally available for this program

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# Loan Loss Reserve Fund

## Participating Ports:

- Cincinnati
- Cleveland-Cuyahoga County
- Columbus-Franklin County
- Dayton-Montgomery County
- Lake County
- Lorain County
- Summit County
- Toledo-Lucas County

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# EEPM Customer Case Studies



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# Case Study (Graphet Data Mining) Pre-forms and Injection Blow Molds Co. Vandalia, OH

Baseline Energy Cost	\$231,865 annually
Projected Energy Savings	\$61,097 (26%)
Estimated Project Costs	\$103,151
Simple Payback	1.7 years

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Chilled Water Savings	\$25,399 (11%)
Compressed Air Savings	\$17,401 (7.5%)
Lighting Savings	\$15,099 (6.5%)
Other System Savings	\$3,198 (1.4%)



# Case Study (Graphet Data Mining) Fabrication of Industrial Equipment Cincinnati, OH

Baseline Energy Cost \$460,502 annually  
Projected Energy Savings \$160,637 (35%)  
Estimated Project Costs \$365,613  
Simple Payback 2.3 years

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Lighting System Savings \$6,903 (1%)  
Compressed Air System Savings \$14,815 (3%)  
Process Heating Savings \$34,646 (8%)  
CHP Systems Savings \$81,832 (18%)  
Other Systems Savings \$22,441 (5%)



# Case Study (Graphet Data Mining) Food Processing/Manufacturing Massillon, OH

Baseline Energy Cost	\$2,462,529 annually
Projected Energy Savings	\$359,065 (15%)
Estimated Project Costs	\$384,899
Simple Payback	1 year



HVAC System Savings	\$19,938 (1%)
Refrigeration System Savings	\$204,666 (8.3%)
Compressed Air System Savings	\$63,304 (2.6%)
Lighting Savings	\$71,158 (3%)



# Case Study (JCC Energy Solutions) Food Products Manufacturing Marion, OH



Baseline Energy Cost	\$1,599,110 annually
Energy Cost Savings	\$299,906 (19%)
Estimated Project Costs	\$1,087,000
Simple Payback	3.6 years

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Compressed Air	\$87,646 (5.4%)
Steam System	\$83,000 (5.2%)
Process Heat	\$66,833 (4.2%)
Motors	\$62,427 (3.9%)

# Case Study (JCC Energy Solutions) Machine Tools Manufacturing Tiffin, OH

Baseline Energy Cost	\$24,706 annually
Energy Cost Savings	\$13,770 (56%)
Estimated Project Costs	\$61,429
Simple Payback	4.5 years



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Compressed Air	\$7,105 (28.8%)
Lighting	\$2,586 (10.5%)
HVAC	\$2,197 (8.9%)
Motors	\$1,882 (7.6%)



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## Energy Efficiency Program Contacts

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- [https://development.ohio.gov/bs/bs\\_renewenergy.htm](https://development.ohio.gov/bs/bs_renewenergy.htm)
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- [https://www.development.ohio.gov/cs/cs\\_llr.htm](https://www.development.ohio.gov/cs/cs_llr.htm)

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# Energy Efficiency Training Opportunities: OCIEE

Ohio Center for Industrial Energy Efficiency



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# Ohio Programs Provide Required Elements for Energy Efficiency Results

## Incentives & Financing

- Energy Loan Fund
- Grant funded audits and implementation

## Subject Matter Expertise

- Facilitators provide Ohio Energy Efficiency Program outcomes

## Information & Education

- Best Practices Training coordinated by Ohio Center for Energy Efficiency (OCIEE)



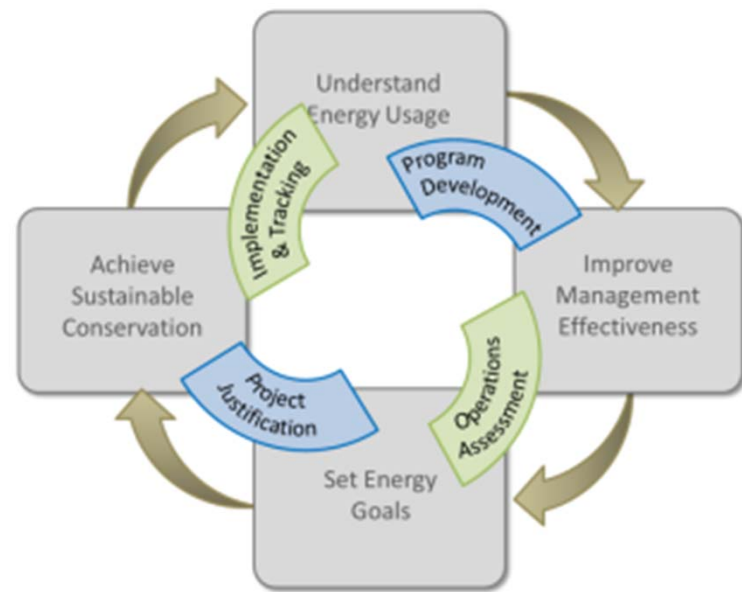
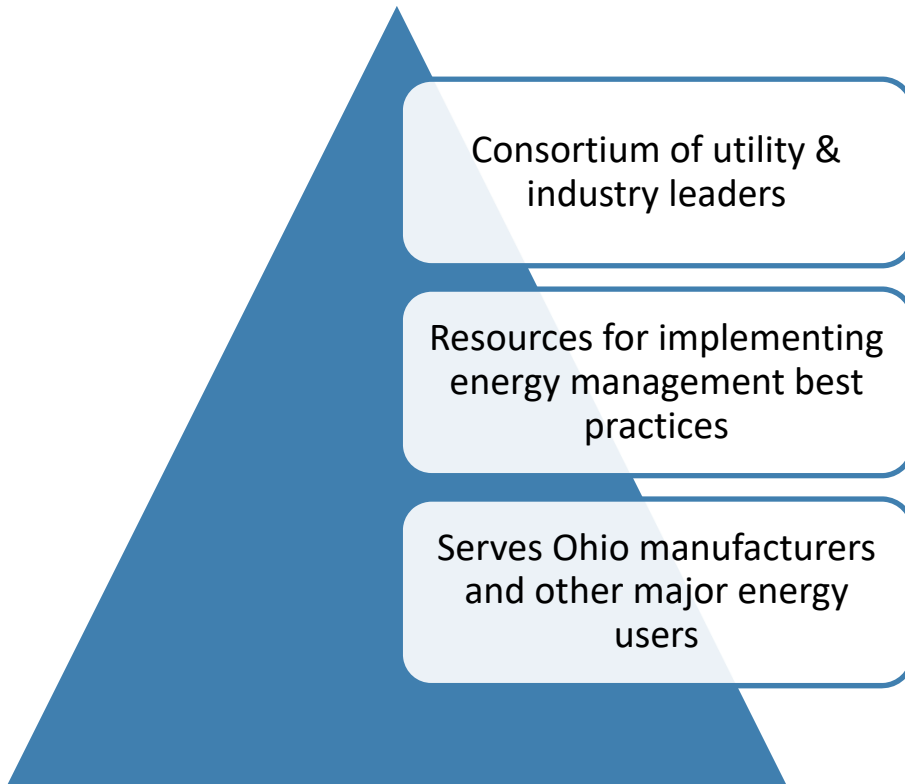
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## OCIEE for Training & Outreach

- OCIEE's mission is to assist with energy efficiency education and best practices training
- OCIEE improves the competitiveness of Ohio industry through
  - increased energy efficiency
  - reduced operating costs
  - improved environmental performance



# OCIEE Serves Ohio's Energy Champions



MASTER Best Practices for Energy Intensive Systems and Applications

# Framework for Energy Management Best Practices



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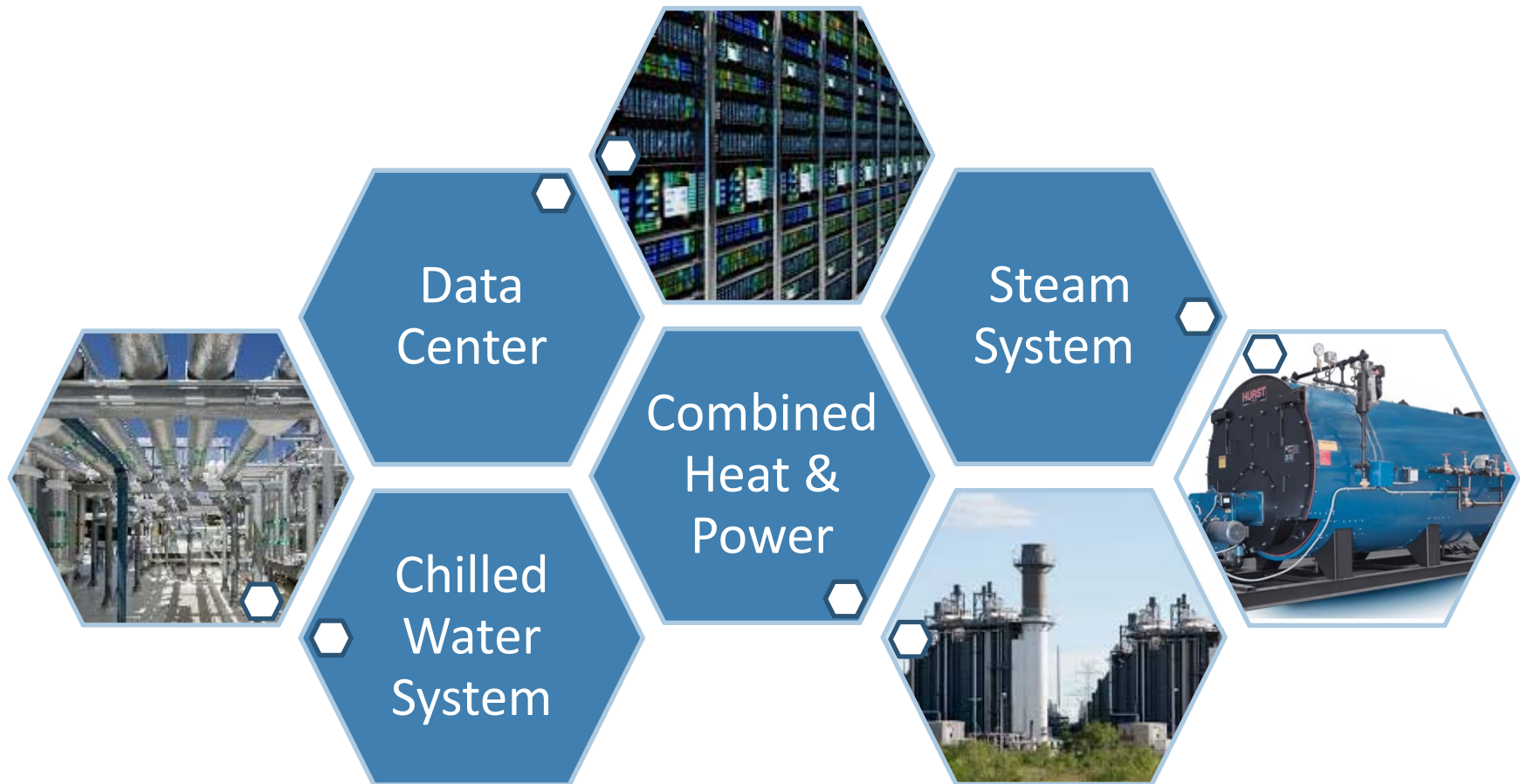
# Energy Champions MASTER Best Practices for Energy Efficiency

<b>M</b>	Measure
<b>A</b>	Analyze
<b>S</b>	Select
<b>T</b>	Track
<b>E</b>	Evaluate
<b>R</b>	Report

Training sessions help energy champions to:

- achieve their ideas
- ease energy decision making
- prioritize top energy management actions to implement
- set targets and track metrics
- report progress and accomplish business goals

# Training for Energy Intensive Systems



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