Ohio Center for Industrial Energy Efficiency

Forging Industry Association Energy Workshop 2010

Lawrence C. Boyd Jr.
Manager, Core Programs

Canton, OH
March 24, 2010
Energy Industries of Ohio

- Non-profit 501(c).3 Corporation
- Facilitate Technology Development
  - Ohio’s Power Generating Industries
  - Ohio’s Energy Intensive Industries
- Foster Public-Private Collaborations
  - State/Federal
  - University
  - National Laboratory
  - Industry
- ~ $5.0 million / year Project Billings
DOE Industrial Technology Program

- Manage Ohio’s IOF Program since 2001
- Focus on Large Energy Consuming Sectors
- Best Practices Training (22 sessions)
  - Over 500 Persons Attending
- Qualified Specialist / Energy Expert on Staff
  - Process Heating Focus
  - Performed 6 PHAST Assessments last year
- Successful R&D Program
  - Patent on Aluminum Foams
  - 2006 Governor’s Award for Excellence in Energy
Ohio Center for Industrial Energy Efficiency

⇒ New 42 Month Program

⇒ Cooperative Effort between:
  - Energy Industries of Ohio (Program Manager)
  - Ohio Energy Office
  - US DOE
  - Investor-owned Utilities (FE, AEP, Duke, DP&L)

⇒ Other Participants
  - Case Western Reserve Univ., Univ. of Dayton
  - Qualified Specialists / Energy Experts across Ohio
  - For-profit Technology Providers
Ohio Center for Industrial Energy Efficiency

- **Program Objectives**
  - Integrate US DOE, Ohio and Utility Programs
  - Efficiently Deliver of DOE Programs at the State level
  - Move Toward Sustainable Effort

- **FOCUS ON IMPLEMENTATION**
Ohio Center for Industrial Energy Efficiency

 направленные на энергетическую эффективность промышленного производства и коммерциализацию новых технологий.

 Five Components

 1. Marketing and Outreach
 2. Training
 3. Assessments and Implementation
 4. Technology Demonstration
 5. Commercialization
OCIEE Training Program

- Develop Cadre of Ohio-based Instructors
- Deliver DOE Best Practices Training for:
  - Process Heating
  - Air Compressor Systems
  - Steam Systems
  - Utility Partners Provide Marketing/Delivery Support
OCIEE Assessment/Implementation Program

Three-part Process

- Envinta One-2-Five Management Evaluation
- Management Plan and Technical Assessment
- Implementation Incentives
Envinta One-2-Five Management Evaluation

- Free-of-charge to the Company
  - Ohio Energy Office pays License Fee
  - Approach similar to ISO-9000
- Outcome
  - Overall Score (1 to 5 scale)
  - Benchmarking by Industry Sector Domestically and Internationally
  - Top 5 Critical Elements for Implementation
One-2-Five Assessment Structure

One-2-Five Energy Elements within 10 Key Areas

- **Achievement**
  - 10.1 Energy cost performance in the past 12 months
  - 10.2 Auditing progress

- **Plant & Equipment**
  - 8.1 Efficiency of existing plant design
  - 8.2 Procedures – plant design/retrofit, purchasing/replacement
  - 8.3 Innovation & new technology

- **Monitoring & Reporting**
  - 9.1 Metering & monitoring
  - 9.2 Reporting, feedback & control systems
  - 9.3 Documentation & records

- **Financial Management**
  - 5.1 Criteria/budgets for capital expenditure (CAPEX)
  - 5.2 Energy operating budgets

- **Supply Management**
  - 6.1 Purchasing procedures & alternative energy options
  - 6.2 Quality & reliability of supply
  - 6.3 Optimising purchasing within supply agreement

- **Operations & Maintenance**
  - 7.1 Operating procedures
  - 7.2 Maintenance procedures

- **Leadership**
  - 1.1 Demonstrated corporate commitment

- **Understanding**
  - 2.1 Understanding of performance & opportunities

- **Planning**
  - 3.1 Targets, performance indicators (KPI) & motivation
  - 3.2 Plans

- **People**
  - 4.1 Accountabilities
  - 4.2 Awareness & Training
  - 4.3 Resourcing
Management Plan / Technical Assessment

- Based on Proposal from For-profit Consultant
- Management Plan for Critical Elements
- Technical Assessment of Plant wide Opportunities
  - Merge DOE Energy Savings Assessment into plant wide assessment
- Cost Shared Project
  - Company pays 50%; Ohio Energy Office pays 50%
Implementation Incentives

- Upon Completion of Phase I and II
- Cost Shared Implementation Projects
  - New Program
    - 50% of Project Cost; $250,000 maximum
  - Cost Share applies to any one or more projects up to the maximum amount for a period of 2 years
### 2007 Survey of Program Participants

8. Since participating in the initial management diagnostic, how has your approach to energy management changed? (check all that apply)

<table>
<thead>
<tr>
<th>Change</th>
<th>Percentage</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>Defined goals and metrics</td>
<td>57.9%</td>
<td>11</td>
</tr>
<tr>
<td>Established energy team</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>Gained executive sponsorship</td>
<td>42.1%</td>
<td>8</td>
</tr>
<tr>
<td>Assigned accountabilities to end users</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>Set capital budget for energy projects</td>
<td>31.6%</td>
<td>6</td>
</tr>
<tr>
<td>Implemented energy projects</td>
<td>68.4%</td>
<td>13</td>
</tr>
<tr>
<td>Achieved energy savings</td>
<td>63.2%</td>
<td>12</td>
</tr>
<tr>
<td>Other: continued energy focus</td>
<td>5.3%</td>
<td>1</td>
</tr>
<tr>
<td>Other: increased awareness</td>
<td>5.3%</td>
<td>1</td>
</tr>
<tr>
<td>Other: No significant change in the energy management. Exec management is more aware of activities.</td>
<td>5.3%</td>
<td>1</td>
</tr>
</tbody>
</table>
Other Financial Assistance

- **OEO Advanced Energy Fund** (System Benefits Charge)
  - Distributed Energy Resources Projects (NOFA 07-01)
  - Manufacturing Facilities Energy Efficiency (NOFA 07-04)
  - Renewable Energy Program (08-09)
  - Website: [http://www.odod.stste.oh.us/cdd/oee/ELFGrant.htm](http://www.odod.stste.oh.us/cdd/oee/ELFGrant.htm)

- **Ohio Third Frontier Fund**
  - Advanced Energy Program
  - Advanced Materials Program
  - Third Frontier Internship Program
  - Website: [http://www.ohioairquality.org](http://www.ohioairquality.org)
Other Financial Assistance

- **OAQDA Advanced Energy Fund**
  - Clean Coal Projects
  - Non-coal (Industrial) projects
  - Awards range from $50k to $2M
  - Website: [http://ohioairquality.org/advanced_energy_program_details.asp](http://ohioairquality.org/advanced_energy_program_details.asp)
Other Financial Assistance

- **American Recovery and Reinvestment Act (ARRA)**
- **Developing Renewable Energy in Ohio** – $35 million for renewable energy projects (solar, wind and biomass waste), and fuel cells and energy storage for electricity, heat, biofuel and bioproducts.
- **Targeting Industry Efficiency** – $15 million will fund grants to the manufacturing companies seeking to improve the sustainability of Ohio industry and build expertise and awareness in industrial carbon management projects.
- **Banking on New Energy Financing** – $30 million to creating an Energy Alliance that brings significant funding to energy efficiency and renewable energy projects.
- **Setting the Stage for Ohio’s Carbon Management Strategy** – $500,000 Identify industries and businesses seeking to lessen their carbon footprint, assess the economic impacts, and develop scenarios to provide policy guidance for future energy efficient economic development.
Contact Information

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- Energy Industries of Ohio
- 216-323-1898 (Phone)
- boyd@energyinohio.com

Tony Sutor
- Ohio Energy Resource Division
  - Industrial Energy Efficiency Lead
- 614-387-2733
- anthony.sutor@development.ohio.gov
## Pennsylvania Programs

<table>
<thead>
<tr>
<th>IF YOU ARE:</th>
<th>THEN YOU MAY BE ELIGIBLE FOR:</th>
<th>OPEN</th>
<th>CLOSES</th>
<th>FOR MORE INFO</th>
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</thead>
<tbody>
<tr>
<td>Business Owner? AND less than 100 Full Time Equivalent employees?</td>
<td><strong>Sm. Bus. Advantage Grant</strong></td>
<td>No</td>
<td>N/A</td>
<td>PA DEP 717-772-8909</td>
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<tr>
<td></td>
<td><strong>Sm. Bus. Energy Efficiency Grant</strong></td>
<td>No</td>
<td>N/A</td>
<td>PA DEP 717-783-8411</td>
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<tr>
<td></td>
<td><strong>Sm. Bus. Pollution Prevention Assistance Loan Program</strong></td>
<td>Yes</td>
<td>No close date</td>
<td>PA DEP 717-783-8411</td>
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<tr>
<td></td>
<td><strong>PA Sunshine Program</strong> (solar)</td>
<td>Yes</td>
<td>Until funds are used</td>
<td>PA DEP 717-783-8411</td>
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<tr>
<td></td>
<td><strong>High Performance Building Program</strong></td>
<td>Yes</td>
<td>No close date</td>
<td>PA DCED 717-787-7120</td>
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<td></td>
<td><strong>Business Energy Investment Federal Tax Credit</strong></td>
<td>Yes</td>
<td>12/31/2016</td>
<td>IRS 1-800-829-1040</td>
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<tr>
<td></td>
<td><strong>Pennsylvania Energy Development Authority (PEDA)</strong></td>
<td>No</td>
<td>N/A</td>
<td>See Grant for regional contacts</td>
</tr>
<tr>
<td></td>
<td><strong>Pennsylvania Energy Development Authority (PEDA)</strong> Duquesne Light Service Territory or ratepayers</td>
<td>Yes</td>
<td>11/06/2009</td>
<td>See Grant for regional contacts</td>
</tr>
<tr>
<td></td>
<td><strong>Solar Energy Program</strong></td>
<td>Yes</td>
<td>No close date</td>
<td>PA DCED 717-787-7120</td>
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<tr>
<td></td>
<td><strong>Alternative and Clean Energy Program</strong></td>
<td>Yes</td>
<td>No close date</td>
<td>PA DCED 717-787-7120</td>
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<tr>
<td></td>
<td><strong>Renewable Energy Program</strong> (geothermal &amp; wind)</td>
<td>Yes</td>
<td>No close date</td>
<td>PA DCED 717-783-5046</td>
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<tr>
<td></td>
<td><strong>PA Green Energy Works!</strong></td>
<td>Yes</td>
<td>N/A</td>
<td>PA DEP 717-783-8411</td>
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<tr>
<td></td>
<td><strong>PA Green Energy Works! (Solar)</strong></td>
<td>Yes</td>
<td>11/6/2009</td>
<td>PA DEP 717-783-8411</td>
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<td></td>
<td><strong>Alternative Fuels Incentive Grant (AFIG)</strong></td>
<td>Yes</td>
<td>11/6/2009</td>
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<td><strong>Act 129 Energy Efficiency &amp; Conservation Programs</strong> (electric utility programs)</td>
<td>Yes</td>
<td>2012</td>
<td>Contact Electricity Providers</td>
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<tr>
<td></td>
<td><strong>Environmental Education Grants</strong></td>
<td>Yes</td>
<td>12/18/2009</td>
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<td>No</td>
<td>N/A</td>
<td>See grant guidelines for regional contacts</td>
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<td></td>
<td><strong>Pennsylvania Energy Development Authority (PEDA)</strong>&lt;br&gt;Specific Opportunity for projects located in the Duquesne Light Service Territory or that directly benefit Duquesne Light ratepayers</td>
<td>Yes</td>
<td>11/06/2009</td>
<td>See grant guidelines for regional contacts</td>
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<tr>
<td></td>
<td><strong>Solar Energy Program</strong></td>
<td>Yes</td>
<td>No close date</td>
<td>PA DCED Site Development Div. 717-787-7120</td>
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<td><strong>Alternative and Clean Energy Program</strong></td>
<td>Yes</td>
<td>No close date</td>
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Pennsylvania Programs

⇒ DOE Programs
⇒ IAC Assistance

⇒ West Virginia University
  Director: Dr. B. Gopalakrishnan
  Phone: (303) 293-4607, ext. 3709
  E-mail: Bhaskaran.Gopalakrishnan@mail.wvu.edu

⇒ Lehigh University
  Director: Dr. Sudhakar Neti
  Phone: (610) 758-4117
  E-mail: sn01@lehigh.edu

⇒ University of Delaware
  Director: Dr. Keith Goossen
  Phone: (302) 831-0590
  Fax: (302) 831-4316
  E-mail: goossen@ece.udel.edu
Pennsylvania Programs

¬ DOE Programs
¬ Save Energy Now
  ¬ 19 Qualified Specialists across the State
  ¬ Web site

http://www1.eere.energy.gov/industry/saveenergynow
PA Contact Information

- Funding Guide Website
  http://www.portal.state.pa.us/portal/server.pt/community/office_of_energy_and_technology/10394

- Mr. Richard Illig
  Program Specialist
  Office of Energy & Technology Deployment
  P.O. Box 8772, 15th Floor
  400 Market Street | Harrisburg, PA 17101
  Phone: 717.772.5834 | Fax: 717.783.2703
  www.depweb.state.pa.us