The Fortieth Industrial Energy Technology Conference

Final Program

Hosted By:

ENERGY SYSTEMS LABORATORY
TEXAS A&M ENGINEERING EXPERIMENT STATION

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On behalf of the hosts and sponsors of the Fortieth National Industrial Energy Technology Conference (IETC), welcome! Our program brings together nationally prominent experts from many areas of industrial energy management. This year’s two-day conference consists of eleven technical sessions and panel discussions and over forty individual presentations. In addition, each day will be highlighted by outstanding corporate, industrial and government speakers.

The IETC staff and your hosts, Texas A&M University System’s Energy Systems Laboratory and the Louisiana Department of Natural Resources, along with our many co-sponsors are committed to providing all attendees with a wealth of information that will help them improve the performance of their companies--something to take home and use immediately!

This year’s 2018 Energy Managers’ Workshop builds on its past successes and will again provide a great opportunity for you to expand your energy management proficiency through an event associated with the conference. Nine top energy managers and industry leaders present an impressive and extensive workshop agenda entitled: “Energy Management: Strategies and Successful Applications.”

We are confident that you will profit from the experience and technical expertise of our presenters and panelists, and best of all, the interaction with so many energy professionals in one place.

James A. Eggebrecht, PE, Executive Director
Industrial Energy Technology Conference
Technical Sessions
The traditional technical sessions consist of 25-minute presentations followed by a 5-minute question and answer period after each presentation. There will be a 5-minute break between papers to permit movement of conferees between sessions.

Workshops
The Pre-Conference Energy Managers Workshop continues for its twenty-sixth year, exploring the topic of “Energy Management: Strategies and Successful Applications.”

Reception
The IETC reception is at 5:30 p.m. on Wednesday evening June 13.

Sponsored Coffee Breaks
Wednesday’s & Thursday’s Breaks are sponsored by KBC Advanced Technologies.

Wednesday IETC Energy Award Luncheon
The IETC Awards Luncheon features IETC Energy Awards presentations to Sharon Nolen, Eastman Chemical and TE Connectivity.

Thursday Keynote Speaker
Features Valri Lightner, U. S. Department of Energy.
Valri Lightner, Acting Deputy Director, Office of Energy Efficiency and Renewable Energy’s Advanced Manufacturing Office, U.S. Department of Energy

For over 30 years, Ms. Valri Lightner has been a technology development manager for the federal government. Valri’s team manages research, development and adoption of energy-related advanced manufacturing technologies and practices to drive U.S. economic competitiveness and energy productivity. The program is executed through collaborations of industry, academia, and government. In the Loan Programs Office, Valri’s team provided the technical management of a portfolio including vehicle manufacturing, transmission, fossil, nuclear, efficiency and renewable energy projects. Valri previously led public-private research and development partnerships in biofuels, fuel cell for transportation, and pulp and paper energy efficiency.

Valri has a Bachelors Degree in Chemical Engineering from Villanova University.
TE Connectivity has made significant progress in energy efficiency over the past 8 years. In 2010 the company joined the DOE Better Plants program and met the program goal of a 25% improvement in energy intensity in just 4 years (2013 using a baseline year of 2009). The company then re-pledged in 2014 for another 25% energy intensity improvement in ten years with all 58 plants in the U.S., representing more than 8 million square feet of manufacturing space. The company decided to move from the program to the challenge level, whereby they engaged themselves to share data and participate in two case studies. Since then, the company has improved its energy intensity by approximately 10%. The company’s first goal was achieved using an aggressive approach and a broad range of measures to decrease energy consumption. These measures included improving energy awareness across the corporation, energy metering, forming energy teams at multiple sites, conducting energy audits, upgrading lighting and compressed air systems, improving building structure, building utilities HVAC systems, changing production practices, upgrading outdated equipment and waste heat recovery. Since the start of the second pledge period, the company created an internal website called the Center of Excellence (COE), which includes a database of energy reduction projects that were implemented at other plants. A critical component of the company’s success is the Center of Excellence that leverages innovation and teamwork to improve energy efficiency and deploy best practices across the enterprise. In addition, the company hosted a Better Plants In-Plant training on energy treasure hunt exchanges. Based on the knowledge gained from the training event, TE Connectivity’s energy teams were able to conduct 9 energy treasure hunts at other TE plants in the first year following the DOE training. These events yielded average energy savings of 5.5% per plant and more than $1.2 million in energy cost savings.

Sharon Nolen, Eastman Chemical

Sharon Nolen is currently the Manager of Global Natural Resource Management at Eastman Chemical Company. In 2010, Eastman's Corporate Energy Team was restructured and revitalized with Sharon being a key individual in the future success. With Sharon’s help, three guiding principles were established – ensuring the accuracy of information, maximizing existing assets, and incorporating energy efficiency in capital investments. From these guiding principles, Sharon helped establish an energy strategy and program focused on five key components - energy awareness, measurable goals, knowledgeable resources, site wide initiatives, and energy efficiency projects. That same year - 2010, Eastman decided to pursue an inspirational goal to radically improve and reduce its energy intensity by 20 percent by 2020 with a 2008 baseline, through the U.S. Department of Energy’s Better Buildings, Better Plants program. She has been instrumental in helping Eastman Chemical strategically partner with external programs such as the DOE’s Better Plants program and EPA’s Energy Star program. In 2011, Sharon convinced management that there was a clear need for a sizable capital budget for energy projects by quantifying the gap between the forecasted impact of current plans and the company’s energy intensity goal. From a small initial investment, she has been able to demonstrate success of her program with proven results to the point that Eastman has grown her annual budget to be over $8 million per year for capital energy projects. This amount has become a part of the company’s base funding budget projections. From this fund, numerous energy efficiency projects (from lighting, to CHP systems upgrades, to leak-programs, to distillation process improvements) have been funded throughout the years to help Eastman save tens of millions company-wide.
How to contact us:

General conference information, presentations, speakers
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Get updated IETC information at
http://ietc.tamu.edu/

Proceedings
The IETC Proceedings are available at the IETC website:
http://ietc.tamu.edu/program

Call for Papers
Abstracts are now being accepted for the Forty-First Industrial Energy Technology Conference. Interested authors should submit one electronic abstract of not more than 400 words by October 1, 2018 to:

James A. Eggebrecht
IETC Executive Director
Energy Systems Laboratory
Phone: (979) 845-1508
Email: jegge@tamu.edu

Continuing Education & Professional Development Credits
The Industrial Energy Technology Conference and the workshops meet the criteria for continuing education and professional development hours required by many state professional engineering boards. Check with Kimberly or Jim at the registration desk for information and a CEU form.
26th Energy Managers Workshop Schedule
Energy Management: Strategies and Successful Applications

Tuesday, June 12

7:00 am - 8:00 am   Registration

7:00 am - 8:00 am   Continental Breakfast, Parish Hall, 10th Floor

**Workshop held in Louisiana Ballroom, 10th Floor**

8:15 am - 8:30 am   Opening Remarks – James Eggebrecht, Texas A&M University

8:30 am - 9:15 am   Efficiency 2.0: Energy Technologies, Markets and Policies for the New Tomorrow
R. Neal Elliott, American Council for an Energy Efficient Economy

9:15 am - 10:00 am  Empowering Industrial Energy Efficiency: DOE Partnership Programs
Bruce Lung, U.S. Department of Energy

- 30 minute break -

10:30 am - 11:00 am  Partnerships Enhance Energy Efficiency Efforts
Sharon Nolen, Eastman Chemical Company

11:00 am - 11:45 am  Which Energy Management Standard is Best for Your Company
Dave Arkell, 360 Energy

12:00 pm - 1:00 pm   Lunch in Feliciana Room, 10th Floor

1:00 pm - 1:45 pm    A Step by Step Method for Energy Analysis of Industrial Processes
Mike Stowe, Advanced Energy

1:45 pm - 2:15 pm    Zero to Ten in Under Twelve Months
Thomas Theising, Sustainable Energy Solutions

- 30 minute break -

2:45 pm - 3:30 pm   Energy Assessments and Treasure Hunts – Tricks of the Trade
Walt Brockway, Brockway Consulting

3:30 pm - 4:30 pm   Energy Optimization Projects: Identification and Implementation
Jimmy Kumana, Kumana & Associates

4:30 pm - 5:00 pm   Wrap-up, critiques & dismissal
Wednesday Morning, June 13

7:00 am - 5:00 pm  Registration, Parish Hall, 10th Floor

7:15 am - 7:50 am  Breakfast for Wednesday’s and Thursday’s Authors and Session Chairs  
Feliciana Room, 10th Floor, sponsored by ICF  
For all other attendees in Parish Hall, 10th Floor Registration Area

8:00 am - 8:15 am  Welcoming Remarks: James Eggebrecht, Executive Director, IETC and Edward O’Brien Director Energy, Louisiana Department of Natural Resources  
Louisiana Ballroom, 10th Floor

8:15 am - 8:30 am  American Chemistry Council Recognition of Energy Awards Recognition of Responsible Care Energy Awards, Lloyd Webb, Olin Corporation

8:30 am - 9:00 am  Plenary Address by Jay Zoellner, Edison Energy

9:10 am - 11:50 am  Sessions 1 - 4

Session 1 - Enterprise Energy Optimization Through Smart Manufacturing  
(Panel Discussion)

Session Chair: Dean Schneider, Clean Energy Smart Manufacturing Innovation Institute  
Feliciana East Room, 10th Floor

9:10 am - 9:40 am  “Introduction to Smart Manufacturing and the Smart Manufacturing Platform™,” Dean Schneider, Southern Regional Manufacturing Center, CESMII.

9:45 am - 10:15 am  “The Process of Smart Manufacturing,” Scott Miller, South Central, Southern Regional Manufacturing Center, CESMII.

10:15 am - 10:40 am  Coffee Break and Exhibits – Parish Hall, 10th Floor

10:40 am - 11:10 am  “CESMII Technology Development Program,” Scott Miller, Southern Regional Manufacturing Center, CESMII.

Session 2 - Combined Heat & Power

Session Chair: Tarla T. Toomer, Ph.D., U. S. Department of Energy  
Feliciana West Room, 10th Floor


9:45 am - 10:15 am  “Combined Heat and Power as a Facility Resiliency Option,” Marina Badoian-Kriticos, Texas PACE Authority and Isaac Panzarella, Southeast CHP TAP.

10:15 am - 10:40 am  Coffee Break and Exhibits – Parish Hall, 10th Floor

10:40 am - 11:10 am  “CHP Partnership Case Studies: Marietta and Calvert City,” Doug Cash, DTE Energy.

11:15 am - 11:45 am  “Efficiency and Profitability Improvement of a Cogeneration Plant Using Advanced Controls,” Benoit Janvier, Enero Solutions Inc.
Session 3 - Renewables and New Technologies

Session Chair: Sharon Nolen, Eastman Chemical
St. Landry Room, 9th Floor


10:15 am - 10:40 am  Coffee Break and Exhibits – Parish Hall, 10th Floor


Session 4 - Water Usage and Energy Issues

Session Chair: Bruce Lung, U. S. Department of Energy
St. Tammany Room, 9th Floor


10:15 am - 10:40 am  Coffee Break and Exhibits – Parish Hall, 10th Floor


11:15 am - 11:45 am  Sachin Nimbalkar will demonstrate the Plant Water Profiler Tool.

12:00 pm - 1:30 pm IETC Energy Awards Luncheon
Louisiana Ballroom, 10th Floor
# PROGRAM AT A GLANCE

## Tuesday, June 12 – Energy Managers Workshop

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<tr>
<td>7:00 am – 5:00 pm</td>
<td>Registration and Information</td>
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<td>8:00 am – 5:00 pm</td>
<td>Energy Managers Workshop</td>
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<tr>
<td>12:00 pm – 1:00 pm</td>
<td>Energy Managers Workshop Lunch</td>
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## Wednesday, June 13 – Day 1 of Conference

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<tr>
<td>7:00 am – 5:00 pm</td>
<td>Registration and Information</td>
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<tr>
<td>7:15 am – 7:50 am</td>
<td>Conference Authors/Presenters Breakfast</td>
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<tr>
<td>8:00 am – 8:15 am</td>
<td>Opening Welcome</td>
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<tr>
<td>8:15 am – 8:30 am</td>
<td>American Chemistry Council Recognition of Energy Awards</td>
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<tr>
<td>8:30 am – 9:00 am</td>
<td>Plenary Address by Jay Zoellner, Edison Energy</td>
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### Technical Sessions 1 - 4

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<tr>
<td>9:10 am – 11:45 am</td>
<td>1 – Enterprise Energy Optimization through Smart Manufacturing (Panel Discussion)</td>
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<td>2 – Combined Heat &amp; Power</td>
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<td>3 – Renewables &amp; New Technologies</td>
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<td>4 – Water &amp; Energy Issues</td>
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<td>10:20 am – 10:50 am</td>
<td>Break Time Sponsored by KBC Advanced Technologies</td>
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<tr>
<td>12:00 pm – 1:30 pm</td>
<td>IETC Energy Award Luncheon</td>
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### Technical Sessions 5 - 7

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<th>Time</th>
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<tr>
<td>1:45 pm – 5:00 pm</td>
<td>5 – American Chemistry Council Award Winners 1</td>
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<td>6 – Steam Plants &amp; Equipment</td>
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<td>7 – Developing Industrial Programs</td>
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<td>2:50 pm – 3:20 pm</td>
<td>Break Time Sponsored by KBC Advanced Technologies</td>
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<td>5:30 pm – 7:30 pm</td>
<td>Reception</td>
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## Thursday, June 14 – Day 2 of Conference

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<td>Registration and Information</td>
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<td>8:00 am – 8:30 am</td>
<td>Break Time Sponsored by KBC Advanced Technologies</td>
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### Technical Sessions 8 - 11

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<th>Time</th>
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<tr>
<td>8:30 am – 12:00 pm</td>
<td>8 – American Chemistry Council Award Winners 2</td>
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<td>9 – Compressed Air</td>
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<td>10 – Data Analysis Methods</td>
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<td>11 – Strategic Energy Management &amp; ISO 50001</td>
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<tr>
<td>9:35 am – 10:10 am</td>
<td>Break Time Sponsored by KBC Advanced Technologies</td>
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<td>11:50 am – 1:30 pm</td>
<td>Luncheon &amp; Keynote Address</td>
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**Wednesday Afternoon, June 13**

1:45 pm - 5:00 pm  
Sessions 5 – 7

**Session 5 - American Chemistry Council Energy Award Winners 1**

Session Chair: Lloyd Webb, Olin Corporation  
Feliciana East Room, 10th Floor

1:45 pm - 2:15 pm  
“Baytown Olefins Plant Train 5 Auxiliary Burner Installation”  
Marina Barta, ExxonMobil Chemical Company.

2:20 pm - 2:50 pm  
“Gas Turbine Rotor Replacement,”  
Donald Bodman, Olin Corporation.

2:50 pm - 3:20 pm  
Coffee Break and Exhibits –  
Parish Hall, 10th Floor

3:20 pm - 3:50 pm  
“Freeport Power 6 475# Steam Optimization Project,”  
Will Bosshart, Olin Corporation.

**Session 6 - Steam Plants & Equipment**

Session Chair: Thomas Theising, Sustainable Energy Solutions LLC  
Feliciana West Room, 10th Floor

1:45 pm - 2:15 pm  
“Steam System Optimization and Risk Mitigation Begins with Design!”  
James R. Risko, TLV Corporation.

2:20 pm - 2:50 pm  
“Energy Cost Optimization in a Sugar Industry,”  
Ven V. Venkatesan, VGA Engineering Consultants, Inc.

2:50 pm - 3:20 pm  
Coffee Break and Exhibits –  
Parish Hall, 10th Floor

3:20 pm - 3:50 pm  
“Industrial Projects Energy Efficiency,”  
Mana M. Owaidh and Solomon Oji, Saudi Aramco.

3:55 pm - 4:25 pm  
“Conserving Steam Through Steam Leak and Steam Trap Surveys and Insulation Surveys,”  
James Nipper Petro Chemical Energy.

4:30 pm - 5:00 pm  
“Save Energy – Optimize Your Pipe/Tank Heating Systems,”  
D. J. Cipriano, Controls Southeast Inc.
Session 7 - Developing Industrial Programs

Session Chair: Walt Brockway, Brockway Consulting
St. Landry Room, 9th Floor

1:45 pm - 2:15 pm  “TX-PACE: Capitalizing on Operational Savings to Create Resilient Industrial Properties,” Marina Badoian-Kriticos, Texas PACE Authority.


2:50 pm - 3:20 pm  Coffee Break and Exhibits – Parish Hall, 10th Floor


4:30 pm - 5:00 pm  “Industrial Assessment Centers are Helping Rural Economies by Helping Rural Manufacturers,” Jill Ferguson and Ethan A. Rogers, American Council for an Energy Efficient Economy.

5:30 pm - 7:30 pm Reception
Parish Hall, 10th Floor
Thursday Morning, June 14

8:00 am - 12:00 pm  Registration for New Arrivals, Parish Hall, 10th Floor

8:00 - 8:30 am  Coffee & Breakfast Snack Break - Parish Hall, 10th Floor

8:30 am - 11:50 am  Session 8-11

Session 8 - American Chemistry Council Award Winners 2

Session Chair: Vince Torres, Texas Industries of the Future
Feliciana East Room, 10th Floor

8:30 am - 9:00 am  “Waste Heat Recovery Boiler,” John Zylks, Occidental Chemical Corporation.

9:05 am - 9:35 am  “Pyrolysis Furnace Efficiency Improvement” Musab Tayelkarim, Olin Corporation.

Session 9 - Compressed Air

Session Chair: Thomas Theising, Sustainable Energy Solutions LLC
Feliciana West Room, 10th Floor

8:30 am - 9:00 am  “Understanding the Needs of Your Compressed Air System,” Thomas Theising, Sustainable Solutions, LLC.


9:35 am - 10:05 am  Coffee Break and Exhibits – Parish Hall, 10th Floor

10:10 am - 10:40 am  “Understanding Controls for Multiple Centrifugal Air Compressor Systems,” Tim Dugan, Compression Engineering Corporation.

10:45 am - 11:15 am  “Sizing VFD Compressors for Multiple Air Compressor Systems,” Tim Dugan, Compression Engineering Corporation.

11:20 am - 11:50 am  Panel Discussion – Talk with the Presenters About Specifics of Your System
Session 10 - Data Analysis Methods

Session Chair: Jim Robinson, DES Global LLC
St. Landry Room, 10th Floor

8:30 am - 9:00 am  “Big Data Stand Aside: Small Data Maximizes Profitability for Energy Performance,” David Arkell, 360 Energy.


9:35 am - 10:05 am  Coffee Break and Exhibits – Parish Hall, 10th Floor

10:10 am - 10:40 am  “Industrial Internet of Things,” Andrew Scheaffer, APTIM.


11:20 am - 11:50 am  “Online Monitoring and Optimization of the Energy System at Motiva Port Arthur Refinery” Raul Adarme, Motiva, and Pablo Montagna, KBC Advanced Technologies

Session 11 - Strategic Energy Management and ISO 50001

Session Chair: Vern Martin, FlowCARE Engineering Inc.
St. Tammany Room, 9th Floor

8:30 am - 9:00 am  “The DOE 50001 Ready Program: A Case Study in Progress,” Michael Stowe, Advanced Energy.


9:35 am - 10:05 am  Coffee Break and Exhibits – Parish Hall, 10th Floor

10:10 am - 10:40 am  “BASF Corporation’s Transition to ISO 50001,” Jeanine Gordon, BASF.


11:50 am - 1:30 pm Keynote Luncheon
Louisiana Ballroom, 10th Floor
IETC Staff
James A. Eggebrecht, Executive Director
Kimberly Greer, Conference Manager

Advisory Board
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Neil Davies, Spirax Sarco, Inc.
R. Neal Elliott, American Council for an Energy Efficient Economy
Peter Garforth, Garforth International llc
Scott Harrison, Vistra Energy
Dave Lauterbach, DowDuPont
R. Bruce Lung, U. S. Department of Energy
Michaela Martin, ICF International
Vern Martin, Flowcare Engineering Inc.
Cynthia Mascone, Chemical Engineering Progress
Paul Miller, Louisiana Department of Natural Resources
Sharon Nolen, Eastman Chemical Company
Bryan Rasmussen, Texas A&M University
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Steve Schultz, 3M Company
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Mike Stowe, Advanced Energy
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Vince Torres, Texas Industries of the Future
Eddy Trevino, Texas State Energy Conservation Office
Kirtan K. Trivedi, ExxonMobil Research and Engineering Company
Vestal Tutterow, Lawrence Berkeley National Laboratory
Thomas Wenning, Oak Ridge National Laboratory
Jay Wrobel, US Department of Energy
Jay Zoellner, Edison Energy

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Energy Systems Laboratory, Texas A&M University

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