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# Welcome

Welcome to the sixth biennial ACEEE Summer Study on Energy Efficiency in Industry. The theme of this year's conference is *Sustainability and Industry: Increasing Energy Efficiency and Reducing Emissions*. We chose to address the overarching theme of sustainability in order to explore the links between industrial energy efficiency and some of the larger issues being discussed globally in meetings such as the World Summit on Sustainable Development where tens of thousands of participants—including heads of State, national delegates, leaders from non-governmental organizations (NGOs), and businesses—met in Johannesburg, South Africa last fall. We also chose the theme of sustainability because a growing number of industrial businesses are adopting and pursuing sustainability goals that include increased energy efficiency and reducing emissions. In addition, government policies and programs at the local, state, national, and international level are addressing these key industrial sustainability issues.

At the most abstract level, sustainability is defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Translated more concretely with respect to industry, sustainability means not only using natural resources wisely and efficiently, but also providing products that minimize waste and pollution. This conference will focus on issues related to increasing the sustainability of the industrial sector, with an emphasis on improving energy efficiency and reducing related atmospheric emissions throughout the entire life-cycle of manufactured products. The sessions will highlight energy-efficiency technologies, policies, and actions that contribute to more sustainable industrial production both in the U.S. and internationally.

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The industrial sector consumes about 40 percent of the world's primary energy and is responsible for nearly the same share of the world's energy-related carbon dioxide (CO<sub>2</sub>) emissions. When all greenhouse gases are considered, industry's share is closer to 30 percent. Of course, there are significant differences in industrial energy use and emissions levels between countries, with the United States and China leading the world in total energy consumption and related emissions, respectively.

In the U.S., industrial sector primary energy consumption was 35 Quads (36 exajoules) in 2000, 35 percent of the country's total. For the first time, U.S. greenhouse gas emissions fell between 2000 and 2001, led by large declines in emissions from the industrial sector. Not only did energy-related CO<sub>2</sub> emissions drop, but also emissions of all six Kyoto Protocol gases declined, with the most significant reductions in the emissions of perfluorocarbons (PFCs) and sulfur hexafluoride (SF<sub>6</sub>). What fraction of these declines is related to specific energy-efficiency and emissions-reduction programs as compared to structural changes and economic factors is an area ripe for research and discussion.

The industrial sector in developing countries consumes close to 45 percent of their primary energy. In China, which is rapidly building its infrastructure and relies heavily on the industrial sector for basic materials such as steel and cement, this sector consumes nearly 75 percent of the country's primary energy. However, energy-related greenhouse gas emissions from China's industrial sector, as well as from the country as a whole, have been declining since they peaked in 1996 due to a combination of many factors including strong energy-efficiency programs, using higher quality coal, fuel-switching away from coal, and economic reforms throughout China that have led to structural changes in the industrial sector. While many of the energy-efficiency and greenhouse-gas-mitigation technologies and programs used in the U.S., Europe, and other industrialized countries can assist developing countries with moving toward a more sustainable energy path, the significant gains that some developing countries have already made must be acknowledged and built upon.

The goals of this Summer Study are to enhance communication between academic and government experts who conduct research in the field of industrial energy efficiency and sustainability, and the private sector who must ultimately implement energy efficiency and sustainability practices in addition to stimulating additional research on the technologies, products,

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social aspects, and policies required to achieve industrial energy efficiency and sustainability. Paper presentations each morning will provide detailed and practical information on subjects related to sustainability, organized into six panels: Industrial Energy Efficiency and Sustainability Issues; Leadership and Management Practices in Industrial Energy Efficiency and Sustainability; Policies and Programs to Achieve Industrial Energy Efficiency and Sustainability; Industrial Energy Efficiency Measures and Technologies; Combined Heat and Power and Distributed Power; and Data, Analysis, and Modeling. Afternoon informal sessions led by workshop participants will further explore research and activities related to industrial energy efficiency and sustainability.



In addition to the morning and afternoon sessions designed around these objectives, we will be featuring "Partnerships to Address Sustainability" on Wednesday. A "roundtable" discussion during lunch will introduce conference attendees to nearly a dozen organizations that bring together businesses that are leaders in the area of energy efficiency and sustainability. These multi-stakeholder groups provide myriad services to their business members and often require specific commitments to be made or actions to be taken related to improving energy efficiency or reducing greenhouse gas emissions. An evening Partnerships poster display session will provide a forum for the Partnership organizations to more fully discuss their programs with conference attendees.

Participants from around the world and from industry, government, academia, consulting firms, and utilities will spend three days sharing information and ideas on sustainability and energy efficiency. This mix of backgrounds and perspectives is critical to achieving the objectives of the Summer Study. We encourage all participants to actively engage in the discussions.

We welcome you to the 2003 ACEEE Summer Study, *Sustainability and Industry*, and trust that you will find your time and effort to participate rewarding.

**Mack McFarland**, DuPont  
**Lynn Price**, Lawrence Berkeley National Laboratory

# 2003 ACEEE Summer Study on Energy Efficiency in Industry

TUESDAY, JULY 29	WEDNESDAY, JULY 30	THURSDAY, JULY 31	FRIDAY, AUGUST 1
	8:30 A.M. – 10:00 A.M. SESSION A Panels 1—6	8:30 A.M. – 10:00 A.M. SESSION C Panels 1—6	8:30 A.M. – 10:00 A.M. SESSION E Panels 2, 3, 4 & 6
	10:00 A.M. – 10:30 A.M. Morning Break	10:00 A.M. – 10:30 A.M. Morning Break	10:00 A.M. – 10:30 A.M. Morning Break
	10:30 A.M. – 12:00 NOON SESSION B Panels 1—6	10:30 A.M. – 12:00 NOON SESSION D Panels 1—6	10:30 A.M. – 12:00 NOON SESSION F Panels 3, 4 & 6 (Panels 4 & 6 will each run 2 concurrent sessions)
	12:00 NOON - 2:00 P.M. Lunch & Partnership Roundtable Discussion Moderator: Tom Jacob, DuPont	12:00 NOON - 2:00 P.M. Lunch & ACEEE Champion of Energy Efficiency in Industry Awards	12:00 NOON - 2:00 P.M. Lunch & Plenary — Natural Gas Markets — Bruce Henning, Energy & Environmental Analysis, Inc.
2:00 P.M. – 8:00 P.M. Registration & Set Up Displays/Partnerships	2:00 P.M. – 5:00 P.M. Informal Sessions	2:00 P.M. – 5:00 P.M. Informal Sessions	
6:00 P.M. – 8:00 P.M. Reception	5:00 P.M. – 7:00 P.M. Partnership Displays & Reception	5:00 P.M. – 7:00 P.M. Display Session & Reception	
	7:00 P.M. – 8:00 P.M. Dinner	7:00 P.M. – 10:00 P.M. Evening Reception & Dinner	
8:00 P.M. – 9:30 P.M. Plenary Björn Stigson, World Business Council on Sustainable Development	8:00 P.M. – 9:30 P.M. Plenary — A Business Case for Sustainable Growth — Tom Jacob, DuPont; Al Hildreth, General Motors; & Ron Nielsen, Alcon		

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# Acknowledgments

## PROGRAM COMMITTEE

**Mack McFarland**, *Conference Co-Chair*, DuPont

**Lynn Price**, *Conference Co-Chair*, Lawrence Berkeley National Laboratory

**R. Neal Elliott**, **Rebecca Lunetta**, **Glee Murray**, and **Steven Nadel**, ACEEE

## PANEL LEADERS

### INDUSTRIAL ENERGY EFFICIENCY AND SUSTAINABILITY ISSUES

**Herb Cabezas**, U.S. Environmental Protection Agency,  
Office of Research and Development, National Risk Management Research Laboratory

**Ron Nielsen**, Alcan

### LEADERSHIP AND MANAGEMENT PRACTICES IN INDUSTRIAL ENERGY EFFICIENCY AND SUSTAINABILITY

**Lawrence Ambs**, University of Massachusetts

**Steven Schultz**, 3M Energy Management

### POLICIES AND PROGRAMS TO ACHIEVE INDUSTRIAL ENERGY EFFICIENCY AND SUSTAINABILITY

**Tim McIntosh**, Natural Resources Canada

**Suzanne Watson**, Northeast-Midwest Institute

### INDUSTRIAL ENERGY EFFICIENCY MEASURES AND TECHNOLOGIES

**Miriam Pye**, New York Energy Research and Development Authority

**Paul Scheihing**, U.S. Department of Energy, Office of Industrial Technologies

### COMBINED HEAT AND POWER (CHP) AND DISTRIBUTED POWER

**Al Hildreth**, General Motors

**Tom Kerr**, U.S. Environmental Protection Agency,  
Office of Atmospheric Programs, Energy Supply & Industry Branch

### DATA, ANALYSIS, AND MODELING

**John A. "Skip" Laitner**, U.S. Environmental Protection Agency,  
Office of Atmospheric Programs

**Ernst Worrell**, Lawrence Berkeley National Laboratory

# 2003 ACEEE Summer Study on Energy Efficiency in Industry

*A map of the Rye Town Hilton is located at the end of this program.*

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## TUESDAY, JULY 29

2:00 P.M. – 8:00 P.M.

REGISTRATION — *Westchester Ballroom Foyer*

SET UP DISPLAYS, including Partnerships Displays —  
*Westchester Ballroom C*

6:00 P.M. – 8:00 P.M.

RECEPTION — *Westchester Ballroom AB*

8:00 P.M. – 9:30 P.M.

OPENING PLENARY — *Westchester Ballroom D*

WELCOME TO SUMMER STUDY

**Steve Nadel**, ACEEE

INTRODUCTION OF SUMMER STUDY CO-CHAIRS

**Mack MacFarland**, *DuPont* and

**Lynn Price**, *Lawrence Berkeley National Laboratory*

WELCOMING ADDRESS

**Peter Smith**, Acting President, *New York State Energy  
Research and Development Authority*

INTRODUCTION OF KEYNOTE SPEAKER

**Mack MacFarland**, *DuPont*

KEYNOTE SPEAKER

**Björn Stigson**, President, *WBCSD (World Business Council  
on Sustainable Development)*

*"Energy Efficiency in the Context of Sustainable  
Development"*

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## WEDNESDAY, JULY 30

7:30 A.M. – 8:30 A.M.     ACEEE REGISTRATION & CONTINENTAL BREAKFAST —  
*Westchester Ballroom Foyer*

8:30 A.M. – 10:00 A.M.     CONCURRENT PANEL SESSIONS — SESSION A  
NOTE: Papers to be presented are listed with the name of the lead author only. The lead authors usually, but not always, present papers. “Substitute” presenters are not named in this guide.

### PANEL 1 — *Westchester Ballroom D4*

#### Session A

##### **Life-Cycle Approaches to Sustainability and Energy Efficiency**

- A Life-Cycle Cost Analysis (LCCA) for Setting Energy-Efficiency Standards in Brazil: The Case of Residential Refrigerators  
**Guilherme de C. Queiroz**, *International Energy Initiative*
- U.S. Aluminum Production Energy Requirements: Historical Perspective, Theoretical Limits, and New Opportunities  
**William T. Choate**, *BCS, Incorporated*
- ULSAB-AVC (Advanced Vehicle Concepts) — A Solution for Today (Engineering, Life Cycle Inventory, and Cost Analyses)  
**William Heenan**, *The Steel Alliance*

### PANEL 2 — *Westchester Ballroom D5*

#### Session A

##### **Voluntary Programs**

- The WWF Climate Savers Program: Greenhouse Gas Reduction Strategies at Work  
**Matthew Banks**, *World Wildlife Fund, Climate Change Program*
- Encouraging Development of Sustainable Energy Management Systems in the Manufacturing Sector  
**Elizabeth Dutrow**, *U.S. Environmental Protection Agency*
- A Collaborative Strategy to Strengthen the Business Case for Industrial Sector Energy Efficiency  
**Tracy Narel**, *U.S. Environmental Protection Agency*

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### PANEL 3 — *Westchester Ballroom D6*

#### Session A

##### **Innovative Methods for Promoting Industrial Energy Efficiency**

- Combining Long-Term Agreements with Emissions Trading: An Overview of the Current EU Energy Efficiency Policies for the Industrial Sector and a Proposal for a New Industrial Efficiency Policy  
**Paolo Bertoldi**, *European Commission, Directorate General JRC*
- Energy Efficiency in Environmental Permits in Europe  
**Marianne Lindström**, *Finnish Environment Institute*
- Promoting Innovative Energy Technologies through Output-Based Emission Policies  
**Susan A. Freedman**, *Northeast-Midwest Institute*

### PANEL 4 — *Town of Rye Room I (TOR I)*

#### Session A

##### **Industrial Assessments**

- Benefits of Multi-Day Industrial Center Assessments for Large Energy-Intensive Facilities  
**Warren M. Heffington**, *Texas A&M University*
- Capturing Energy and Resources through Remanufacturing  
**Nabil Z. Nasr**, *Rochester Institute of Technology*
- ENERGY STAR® Guides for Energy Efficiency Opportunities, Featuring the Motor Vehicle Assembly Industry  
**Christina Galitsky**, *Lawrence Berkeley National Laboratory*

### PANEL 5 — *Town of Rye Room II (TOR II)*

#### Session A

##### **Removing Barriers to CHP and DG**

- Removing Barriers to the Development of Clean Distributed Generation and Combined Heat and Power  
**Thomas Bourgeois**, *Pace University Energy Project*
- Preliminary Review of Utility Practices Toward CHP  
**Elizabeth Brown**, *American Council for an Energy-Efficient Economy*

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WEDNESDAY, JULY 30

8:30 A.M. – 10:00 A.M. CONCURRENT PANEL SESSIONS (continued)

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- Market Experiences in Overcoming Barriers to CHP and DG in Wisconsin's Municipal and Investor-Owned Utilities, and Brownfield Redevelopments  
**Thomas Giffin**, *Science Applications International Corporation*

**PANEL 6** — *John Halsted Room*

**Session A**

**Modeling: Challenges and New Approaches**

- Towards Increased Policy Relevance in Energy Modeling  
**Ernst Worrell**, *Lawrence Berkeley National Laboratory*
- Confronting the Challenge of Hybrid Modeling: Using Discrete Choice Models to Inform the Behavioural Parameters of a Hybrid Model  
**Nic Rivers**, *Simon Fraser University*
- Explorations with the LIEF 2002 Model  
**Rachel Cleetus**, *Tellus Institute*

10:00 A.M. – 10:30 A.M. MORNING BREAK — *Westchester Ballroom Foyer*

10:30 A.M. – 12:00 NOON CONCURRENT PANEL SESSIONS — Session B

**PANEL 1** — *Westchester Ballroom D4*

**Session B**

**Assessment and Modeling Methods**

- Programs for Integrated Industrial Audits: The Audit Process and Case Studies for the NSTAR Eco-Efficiency Program and the NGRID ISOS Program  
**Gary Epstein**, *Energy & Resource Solutions, Inc.*
- Modeling Industrial Behavior and Feedback Between Energy and Material Flows and Capital Vintage: Implications for Material, Energy, and Climate Change Policy Design  
**Brynhildur Davidsdottir**, *Boston University*
- Fiber Recovery from Waste Paper: A Breakthrough in Re-Pulping Technology  
**Jerry Aue**, *Energy Center of Wisconsin*

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**PANEL 2** — *Westchester Ballroom D5*

**Session B**

**Corporate Programs**

- Using Six Sigma to Drive Energy Efficiency Improvements at DuPont  
**John Kane, Jr.**, *E. I. duPont de Nemours & Co.*
- Practical Next Steps When the CEO is Finally Ready for Energy Management  
**John Nicol**, *Science Applications International Corporation*

**PANEL 3** — *Westchester Ballroom D6*

**Session B**

**Issues Related to Greenhouse Gas Emissions Reduction Projects**

- Transactions Costs in Efficiency and Emissions Reductions Projects in the Industrial Sector  
**Eric Smith**, *U.S. Environmental Protection Agency*
- Wisconsin's Approach to Quantifying Emission Reductions: Coordinating the Focus on Energy Program with the Wisconsin Voluntary Emission Reduction Registry  
**David Sumi**, *PA Consulting Group*
- Voluntary GHG Reductions: Early Experiences of Climate Leaders  
**Neil Kolwey**, *Platts Research and Consulting*

**PANEL 4** — *Town of Rye Room I (TOR I)*

**Session B**

**Process Heating**

- Opportunities for Energy Efficiency in Hydrocarbon Resin Manufacturing Facilities  
**Ahmad R. Ganji**, *BASE Energy, Inc.*
- Forced Internal Recirculation Burners for Boilers and Process Heating  
**R. A. Knight**, *Gas Technology Institute*
- Highly Preheated Combustion Air Furnace with Oxygen Enrichment for Metal Processing to Significantly Improve Energy Efficiency and Reduce Emissions  
**Arvind Atreya**, *University of Michigan*

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WEDNESDAY, JULY 30

10:30 A.M. – 12:00 NOON CONCURRENT PANEL SESSIONS (continued)

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**PANEL 5** — *Town of Rye Room II (TOR II)*

**Session B**

**CHP and DG Analysis and Data Resources**

- Framework for Evaluating the Indirect Benefits of Distributed Energy  
**David Lewis**, *BCS, Incorporated*
- Calling Out the DOGS: Results and Development of the Distributed On-Site Generation Screening (DOGS) Tool  
**Tom Rooney**, *GDS Associates, Inc.*
- EIA and CHP: What Is Going On?  
**Patrick J. Balducci**, *Pacific Northwest National Laboratory*

**PANEL 6** — *John Halsted Room*

**Session B**

**Multi-Agent Modeling**

- Modeling Electricity Contract Choice: An Agent-Based Approach  
**Joseph M. Roop**, *Pacific Northwest National Laboratory*
- The Role of a Dynamic Marketplace in the Adoption of Industrial Efficiency Innovations  
**Stephen J. DeCanio**, *University of California, Santa Barbara*
- Assessing the Role of Voluntary Programs in Climate Change Policy  
**Robert Lempert**, *RAND*

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12:00 NOON – 2:00 P.M. LUNCH — *Westchester Ballroom AB*

PARTNERSHIPS TO ADDRESS SUSTAINABILITY:  
ROUNDTABLE PRESENTATIONS  
**Tom Jacob**, *DuPont* — Moderator

2:00 P.M. – 5:00 P.M. INFORMAL SESSIONS — *rooms to be announced onsite*

5:00 P.M. – 7:00 P.M. PARTNERSHIP DISPLAYS & RECEPTION — *Westchester Ballroom C*

**Participating Programs Include:**

- **Environmental Defense–Partnership for Climate Action**  
Gustavo Silva-Chavez, PCA Analyst
- **Green Power Market Development Group**  
Craig Hanson, Senior Associate, *Sustainable Enterprise Program, World Resources Institute*
- **International Climate Change Partnership**  
Kevin Fay, Executive Director
- **Pew Center on Global Climate Change**  
Sally C. Ericsson, Director of Outreach
- **U.S. Department of Energy, Office of Industrial Technologies and ClimateVISION**  
Paul Scheihing, Team Leader, *Chemical and Enabling Technologies Office of Industrial Technologies Office of Energy Efficiency and Renewable Energy*
- **U.S. Environmental Protection Agency Climate Leaders Program**  
Vince Camobreco, *Office of Air and Radiation, Energy Supply and Industry Branch*
- **U.S. Environmental Protection Agency, ENERGY STAR® in the Industrial Sector**  
Elizabeth Dutrow, Manager, *Industrial Sector Programs, ENERGY STAR*  
Tracy S. Narel, Manager, *Industrial Sector Supplier Alliances, ENERGY STAR*
- **World Business Council on Sustainable Development**  
Tom Jacob, *DuPont*
- **World Wildlife Fund–Climate Savers**  
Matthew Banks, Program Officer, *Climate Program at World Wildlife Fund*

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WEDNESDAY, JULY 30  
(continued)

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- 7:00 P.M. – 8:00 P.M. DINNER — *Westchester Ballroom AB*
- 8:00 P.M. – 9:30 P.M. PLENARY — *Westchester Ballroom D*
- INTRODUCTION OF PLENARY SPEAKERS  
**Lynn Price**, *Lawrence Berkeley National Laboratory*
- SPEAKERS  
**Tom Jacob**, *DuPont* — A Business Case for Sustainable Growth  
**Al Hildreth**, *General Motors* — GM's Energy Sufficiency Plans  
**Ron Nielsen**, *Alcan* — Strategic Partnerships at Alcan

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THURSDAY, JULY 31

- 7:30 A.M. – 8:30 A.M. REGISTRATION & CONTINENTAL BREAKFAST — *Westchester Ballroom Foyer*
- 8:30 A.M. – 10:00 A.M. CONCURRENT PANEL SESSIONS — Session C

**PANEL 1** — *Westchester Ballroom D4*

**Session C**

**Energy and Sustainability at the State and National Level**

- State of California Economic Analysis of Sustainable Building: Phase I  
**Greg Kats**, *Capital E*
- Energy Intensity Indicators for Non-Energy Intensive Industries: An Analysis for Germany, the Netherlands, and the United Kingdom  
**C.A. Ramirez**, *Utrecht University, Copernicus Institute*
- Accelerating Innovation: Building on the Past to Expand Biorefining and Sustainable Manufacturing in Wisconsin  
**Preston Schutt**, *Wisconsin Department of Administration, Energy Division*

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**PANEL 2** — *Westchester Ballroom D5*

**Session C**

**Energy Management Strategies**

- Overcoming Barriers to Effective Energy Management in Industrial Settings  
**Michael Brown**, *Georgia Tech Energy and Environmental Management Center*
- You Never Know Until You Try: An Independent Evaluation of the EnVINTA One-2-Five® Energy Program  
**Jane S. Peters**, *Research Into Action, Inc.*
- Data Centers and Energy Use: Let's Look at the Data  
**William Tschudi**, *Lawrence Berkeley National Laboratory*

**PANEL 3** — *Westchester Ballroom D6*

**Session C**

**International/China**

- Sectoral and Geographic Analysis of the Decline in China's National Energy Consumption in the Late 1990s  
**Joanna I. Lewis**, *Lawrence Berkeley National Laboratory*
- Voluntary Agreements for Increasing Energy Efficiency in Industry: Case Study of a Pilot Project with the Steel Industry in Shandong Province, China  
**Lynn Price**, *Lawrence Berkeley National Laboratory*
- Motor System Optimization in China: A Capacity-Building Model for Industrial Energy Efficiency  
**Aimee McKane**, *Lawrence Berkeley National Laboratory*

**PANEL 4** — *Town of Rye Room I (TOR I)*

**Session C**

**Water/Wastewater**

- Opportunities and Barriers in Madison, Wisconsin: Understanding Process Energy Use in a Large Municipal Water Utility  
**Scott Olsen**, *Madison Gas and Electric Company*
- Anaerobic Digestion: The New York State Experience  
**Barry Liebowitz**, *New York State Energy Research and Development Authority*  
(Note: This is an oral presentation only. There is no corresponding published paper in the proceedings.)

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THURSDAY, JULY 31

8:30 A.M. – 10:00 A.M. CONCURRENT PANEL SESSIONS (continued)

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- A Systems Approach to Saving Energy in Water and Wastewater Facilities  
**Jon Biemer**, *Bonneville Power Administration*

**PANEL 5** — *Town of Rye Room II (TOR II)*

**Session C**

**CHP and DG Technologies and Applications**

- Fuel Cells and CHP: An Industrial Market Status Report  
**Anna Monis Shipley**, *American Council for an Energy-Efficient Economy*
- Assessment of Fuel Cell Applications for Critical Industrial Processes  
**Dan Birleanu**, *Energy & Resource Solutions, Inc.*
- Inner City Redevelopment: Brownfield Reuse and Clean On-Site Energy Generation Systems  
**Suzanne Watson**, *Northeast-Midwest Institute*

**PANEL 6** — *John Halsted Room*

**Session C**

**Indicators, Indices, and Trends**

- The Energy Intensity of the Dow Jones Industrial Average  
**Peggy Podolak**, *U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy*
- Decomposition of Manufacturing Energy Use in IEA Countries: How Do Recent Developments Compare to Historical Long-Term Trends?  
**Fridtjof Unander**, *International Energy Agency*
- Decomposition of Changes in Energy Use: The Comparison of Two Approaches From a Canadian Perspective  
**Jessica Palmer**, *Natural Resources Canada*
- Availability and Use of Energy Data in an Environment of Industry Reclassification and Energy Market Reforms  
**Robert K. Adler**, *Energy Information Administration*

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10:00 A.M. – 10:30 A.M. MORNING BREAK — *Westchester Ballroom Foyer*

10:30 A.M. – 12:00 NOON CONCURRENT PANEL SESSIONS — Session D

**PANEL 1** — *Westchester Ballroom D4*

**Session D**

**Economics and Policy in Energy Efficiency**

- Transition towards Sustainable Production: Policy Planning for a Systems Change  
**Bianca Oudshoff**, *Ministry of Economic Affairs, The Netherlands*
- A Technical Framework for Industrial Greenhouse Gas Mitigation in Developing Countries  
**Mark Howells**, *University of Cape Town, Energy Research Institute*

**PANEL 2** — *Westchester Ballroom D5*

**Session D**

**Energy Efficiency and Sustainability Tools**

- Lifecycle Energy System Scan (LESS): More about LESS in Long-Term Agreements  
**Erik ter Avest**, *Netherlands Agency for Energy and the Environment*
- Evaluation Feedback Drives Industrial Energy Management Training Approach  
**Brenda A. Jessen**, *Energy Center of Wisconsin*

**PANEL 3** — *Westchester Ballroom D6*

**Session D**

**International**

- Canadian Industry Program for Energy Conservation: Improving Industrial Energy Efficiency in Canada  
**Glenda Taylor**, *Office of Energy Efficiency, Natural Resources Canada*
- The “Efficient Compressed Air” Campaign in Germany: Market Transformation to Activate Cost Reductions and Emissions Savings  
**Peter Radgen**, *Fraunhofer Institute Systems and Innovation Research*

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THURSDAY, JULY 31

10:30 A.M. – 12:00 NOON CONCURRENT PANEL SESSIONS (continued)

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- Energy Efficiency through Long-Term Agreements: Broadening the Horizon in the New LTA Approach  
**Reinier Gerrits**, *Netherlands Agency for Energy and the Environment*

**PANEL 4** — *Town of Rye Room I (TOR I)*

**Session D**

**Industry Sectors**

- A Market Transformation Strategy for Highly Efficient Steel Making  
**Barry D. Solomon**, *Michigan Technological University*
- Energy Conservation Opportunities in the Pulp and Paper Industry: An Illinois Case Study  
**Michael J. Chimack**, *University of Illinois at Chicago, Energy Resources Center*
- Energy Efficiency Opportunities in the Glass Manufacturing Industry  
**Mark D'Antonio**, *Energy & Resource Solutions, Inc.*

**PANEL 5** — *Town of Rye Room II (TOR II)*

**Session D**

**Regional CHP Applications**

- Co-Generation Potential in Canada  
**Cathy Strickland**, *Canadian Industrial Energy End-Use Data and Analysis Centre*
- Motor Systems Optimization Case Studies in the Peoples Republic of China  
**Vestal Tutterow**, *Lawrence Berkeley National Laboratory*
- California's Self-Generation Incentive Program: What Is the Consumer Response and Is the CAISO System Peak Load Being Impacted?  
**Patrick Lilly**, *Itron, Inc./RER*
- Industrial Focus of NYSERDA's Combined Heat and Power Program  
**Dana L. Levy**, *New York State Energy Research and Development Authority*

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**PANEL 6** — *John Halsted Room*

**Session D**

**Regional and Sectoral Studies**

- State-Level Analysis of Industrial Energy Use  
**R. Neal Elliott**, *American Council for an Energy-Efficient Economy*
- Electric Efficiency in California's Industrial Sector: The Potential Gap  
**Michael Rufo**, *Quantum Consulting, Inc.*
- The Role of Steel in the U.S. Economy: Decomposing the 1982-1997 Forward and Backward Linkages of the Steel Industry  
**David M. Anderson**, *Pacific Northwest National Laboratory*

12:00 noon – 2:00 P.M. LUNCH — *Westchester Ballroom AB*

PRESENTATION OF THE ACEEE CHAMPIONS OF ENERGY EFFICIENCY IN INDUSTRY AWARDS  
**Steve Nadel** and **Neal Elliott**, ACEEE

2:00 P.M. – 5:00 P.M. INFORMAL SESSIONS — *rooms to be announced onsite*

5:00 P.M. – 7:00 P.M. DISPLAY SESSION & RECEPTION — *Westchester Ballroom C*

7:00 P.M. – 10:00 P.M. EVENING RECEPTION & DINNER  
*Rye Playland Amusement Park*

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## FRIDAY, AUGUST 1

7:30 A.M. – 8:30 A.M. REGISTRATION & CONTINENTAL BREAKFAST — *Westchester Ballroom Foyer*

8:30 A.M. – 10:00 A.M. CONCURRENT PANEL SESSIONS — Session E

**PANEL 2** — *Westchester Ballroom D5*

### Session E

#### Foreign Technical Programs

- A Strategy for Energy Efficiency Actions in the Mexican Industrial Sector: The Pemex Experience  
**O. de Buen R.**, *National Commission for Energy Conservation (CONAE)*
- Achieving Further Reductions of Energy Consumption and CO<sub>2</sub> Emissions in an Efficient Mexican Industry: The Case of the Cement Industry  
**L. Ozawa-Meida**, *University of East Anglia, School of Environmental Sciences*

**PANEL 3** — *Westchester Ballroom D6*

### Session E

#### Small-to-Medium Business Operations

- Economic Incentives and the Timing of Investments in Energy Conservation: The Case of California Agriculture  
**Ellen Burnes**, *California State University Fresno*
- The Mom and Pop Machine Shop: Designing Programs for Small Industrial Customers  
**Philippus Williams**, *Quantum Consulting*
- Decision-Making Among Small Manufacturers and What This Means for Program Design  
**Lori Megdal**, *Megdal and Associates*

(NOTE: This is an oral presentation only. It is based on a previously published paper: Megdal, Lori, et al. 2002. "Decision-Making Among Small and Medium Manufacturers, And Indications of What Is Needed to Reach These Customers." In Proceedings of the ACEEE 2002 Summer Study on Energy Efficiency in Buildings, 8.818. Washington, D.C.: American Council for an Energy-Efficient Economy.)

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**PANEL 4** — *Town of Rye Room I (TOR I)*

### Session E

#### Motor Systems I

- EASA AEMT Study of Motor Repair Impact on Efficiency  
**Thomas H. Bishop**, *Electrical Apparatus Service Association*
- Case Studies: Small Particulate Blower Systems Energy Efficiency  
**Chao Chen**, *Snohomish County Public Utility District*
- Applications of AIRMaster+ in Real Industrial Facilities  
**Satyen Moray**, *Energy & Resource Solutions, Inc.*

**PANEL 6** — *John Halsted Room*

### Session E

#### Understanding and Representing Technology

- Characterizing Emerging Industrial Technologies in Energy Models  
**John A. "Skip" Laitner**, *U.S. Environmental Protection Agency*
- Machine Drive Electricity Use in the Industrial Sector  
**Brian Unruh**, *Energy Information Administration*
- On Accounting for Energy Savings from Industrial Productivity Improvements  
**Kyriaki Papadaratsakis**, *Rutgers University, Center for Advanced Energy Systems*

10:00 A.M. – 10:30 A.M. MORNING BREAK — *Westchester Ballroom Foyer*

10:30 A.M. – 12:00 NOON CONCURRENT PANEL SESSIONS — Session F

**PANEL 3** — *Westchester Ballroom D6*

### Session F

#### Audits and Benchmarking

- Development of Cleanroom Energy Benchmarks and Baselines for Use in Industrial New Construction Energy Efficiency Programs  
**Stephen Fok**, *Pacific Gas and Electric Company*
- Energy Code Applicability for Industrial Facilities  
**Natalie Hildt**, *Energy & Resource Solutions, Inc.*

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FRIDAY, AUGUST 1

10:30 A.M. – 12:00 NOON CONCURRENT PANEL SESSIONS (continued)

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- Career Paths of Senior Industrial Assessment Center Program Alumni  
**Bruce Tonn**, *University of Tennessee, Knoxville*

**PANEL 4** — *Town of Rye Room I (TOR I)*

**Session F-1**

**Industrial Process Systems**

- The Development of a Next Generation Melting System for Glass Production: Opportunities and Progress  
**Elliott Levine**, *U.S. Department of Energy*
- Energy and Waste Minimization in the Investment Casting Industry  
**Raymond H. Puffer**, *Rensselaer Polytechnic Institute*
- Maintenance Decisions Matter: An Alternative Approach to Stimulating Energy Savings  
**Hugh Falkner**, *Future Energy Solutions, UK Action Energy Programme*

**PANEL 4** — *Westchester Ballroom D4*

**Session F-2**

**Motor Systems II**

- Industrial Motor System Optimization Projects in the U.S.: An Impact Study  
**Robert Bruce Lung**, *Resource Dynamics Corporation*
- Efficient Motors: Industry Allies Business Development in Energy Efficiency Services  
**Jon Linn**, *Northeast Energy Efficiency Partnerships, Inc.*
- Motor Projects in the Pacific Northwest  
**Kenneth J. Anderson**, *Northwest Energy Efficiency Alliance*

**PANEL 6** — *John Halsted Room*

**Session F-1**

**Understanding Differences and Drivers**

- Electricity Use and Related CO<sub>2</sub> Emissions for Cooker Manufacturing in Denmark, England, and Sweden: A Benchmarking Study

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**E. Nord-Ågren**, *University of Linköping, Division of Energy Systems and University of Gävle, Division and Energy & Mechanical Engineering*

- Two Approaches for Measuring the Efficiency Gap Between Average and Best Practice Energy Use: The LIEF Model 2.0 and the ENERGY STAR™ Performance Indicator  
**Gale A. Boyd**, *Argonne National Laboratory*
- Modeling Economy-Wide Impacts of Investments in Industrial Energy Efficiency: A South African Case Study  
**Randall Spalding-Fecher**, *University of Cape Town, Energy and Development Research Centre*

**PANEL 6** — *Westchester Ballroom D5*

**Session F-2**

**Policies and Programs**

- Estimating the Impacts of Voluntary Programs: Results from a Recent Study on the Canadian Industry Program for Energy Conservation  
**Lee Ann Westfall**, *Natural Resources Canada, Office of Energy Efficiency*
- Understanding R&D Investment Trends in Energy-Intensive Industries  
**Jack Eisenhauer**, *Energetics, Inc.*
- Modeling Energy-Efficiency Program Effort and Administrative Expenditures  
**Donald A. Hanson**, *Argonne National Laboratory*

12:00 noon – 2:00 P.M. LUNCH & CLOSING PLENARY — *Westchester Ballroom AB*

SPEAKER

**Bruce Henning**, Director, *Regulatory and Market Analysis, Energy and Environmental Analysis, Inc.*  
**“Impact of Natural Gas Markets on Energy”**

Following Mr. Henning's presentation, invited “responders” will provide a policy perspective on industry's needs and the role that energy efficiency can play in addressing the natural gas market crisis.

