# 2013 National Symposium on Market Transformation

*"Innovation and Transition in Market Transformation"*

**Marriott Wardman Park Hotel ▪ Washington, D.C. ▪ March 24-26, 2013**

***Presented with Support from U.S. EPA/DOE ENERGY STAR® Programs***

## Sunday, March 24

**1:00 to 5:00 pm** — **MT 101** — *T.M. Ballroom South*

Speakers: **Joanne Morin**, CEE
**David Cohan**, Northwest Energy Efficiency Alliance
**Ken Tiedemann**, BC Hydro

"MT101" is an introductory course for those new to the field who want to learn the fundamentals of market transformation. The session will cover a range of topics including an overview of market transformation as one strategy for driving energy-efficient products and services, administrative models for the delivery of market transformation programs, various program models used to serve different market segments, and program evaluation.

## Monday, March 25

**8:30 am to 10:00 am** — **Welcome & Plenary Session** — *T.M. Ballroom South-West*

**Innovation and Transition in Market Transformation**

Moderators: **Steve Nadel**, ACEEE
**Ed Wisniewski**, CEE

Speakers: **Janice Berman**, Pacific Gas and Electric Company
**Tom Eckman**, Northwest Power and Conservation Council
**Dan York**, ACEEE

Twenty years in, we have many market transformation successes to celebrate. Market transformation has proven to be a successful strategy for engaging market players in advancing energy efficiency, yielding large and sustainable energy savings. In light of new opportunities and growing challenges—better data and mechanisms for engaging end-users, aggressive energy savings targets, volatility in natural gas markets, and mounting concerns over climate and other environmental issues, the market transformation field is in a time of transition. In this plenary session, speakers will offer perspectives on innovation and transition in market transformation from the utility and resource planning perspectives and share insights from next generation program strategies emerging across the country.

**10:00 to 10:30 am** — **Break** — *Southwest Foyer*

**10:30 am to 12:00 pm** — **Concurrent Sessions**

*Session 1A* — *T.M. Ballroom South*

**Natural Gas: What Recent Market Trends Mean for Energy Efficiency Programs**

Moderator: **Kara Rodgers**, CEE

Speakers: **Gillian Wright**, Southern California Gas Company
**Neal Elliott**, ACEEE
**Kevin Petak**, ICF International
**Monica Kachru**, Northeast Utilities
**Elizabeth Noll**, American Gas Association
**John Laverty**, Columbia Gas of Ohio

Over the past few years, we have seen a dramatic change in natural gas supplies resulting from the rapid growth of non-conventional gas resources. As a result, near-term gas prices have fallen to the lowest levels seen in a decade.

While natural gas prices have dropped, we have seen price increases in other electric power resources, particularly coal, as a result of market globalization and updated environmental regulations that led to higher operating and capital costs. These changes are creating significant uncertainty largely as a result of the complexity of the interactions of the various market forces. These changes in natural gas markets are impacting energy efficiency programs as they are perceived as competing with currently lower resource costs. This session will explore the outlook for natural gas supplies and prices over the next one to five years, and discuss how this outlook should influence program administrator and regulator planning.

*Session 1B* *T.M. Ballroom West*

**Utility Credit for Advancing Building Energy Codes – Recent Updates from Practice**

Moderator: **Harry Misuriello**, ACEEE

Speakers: **Olga Livingston**, Pacific Northwest National Laboratory
**Isaac Elnecave**, Midwest Energy Efficiency Alliance
**Allen Lee**, Cadmus Group
**Randall Higa**, Southern California Edison

Efforts to promote building energy codes and code compliance through energy efficiency program portfolios have been underway at the state and national levels and reported on at the Market Transformation Symposium for the past two years. Recently, numerous state efforts, two significant topical reports, and research on calculation methods for quantifying lost energy savings from shortfalls in code compliance have addressed a number of major barriers to more widespread implementation of this type of program. This session will present research results from a new major study by the Cadmus Group to address utility regulatory implementation in Massachusetts. We will also hear from Pacific Northwest National Laboratory on a new research project to develop tools to calculate lost energy savings from energy code compliance data. Last we will hear from states that are in the process of putting these types of programs in place and the regulatory and technical challenges that are being met.

**12:00 to 1:30 pm** **Lunch** *T.M. Ballroom Northeast*

Keynote Speaker: **Sarah Dunham**, Director, Office of Atmospheric Programs, U.S. Environmental Protection Agency

**1:30 to 3:00 pm** **Working Sessions**

*Residential Track* *T.M. Ballroom South*

A1: **Residential Zero Net Energy: Early Progress, Challenges, and Opportunities**

Moderator: **Alice Rosenberg**, CEE

Speakers: **Chip Fox,** San Diego Gas & Electric
**Alison Hollingsworth**, Vermont Energy Investment Corporation

Deep energy efficiency and net-zero goals are the next frontier in residential energy efficiency. With technologies, design, and construction practices used to create these buildings readily available today, what progress is being made toward the development of a self-sustaining market? This session will focus on measured performance of zero net energy (ZNE) homes and report on utility initiatives to promote their adoption. Early adopters in California, New Jersey and Vermont will discuss how advanced tier homes are performing in operation, as well as utility experience to date with the challenges that programs are encountering and strategies to overcome them.

Discussion Questions:

- What lessons have been learned in the early adoption phase about indoor air quality, comfort, and savings attainment?
- How have early utility programs explored the potential for savings from ZNE homes and any interactive issues with the grid?
- What types of utility incentives and program structures are in place, or being planned, to encourage development of ZNE projects?

- How are utility efforts interacting with the evolution of residential building codes and code enforcement? (What are IECC/ASHRAE's plans to develop a ZNE code and what's the ramp up?)
- How can utility incentives be used to support deep energy efficiency and net-zero goals?

*Commercial Building Performance Track* *T.M. Ballroom West*

B1: **Using Targeted Energy Outcomes to Deliver Market Transformation**

Moderator: **David Cohan**, Northwest Energy Efficiency Alliance

Speakers: **Randall Higa**, Southern California Edison
**Jim Edelson**, New Buildings Institute

As increasingly stringent energy codes have realized much of the energy savings potential available through the design of buildings (increased insulation, improved windows, etc.), building operations are becoming an increasingly important target for achieving savings. Current code structures, however, are poorly suited to regulation of building operations because code authority ends at the point of occupancy and building officials have neither the knowledge nor the tools to go beyond that. Establishing mandatory maximum energy use levels for building operations – which we call Targeted Energy Outcomes or TEOs – could achieve very large energy savings but also requires the establishment of a new regulatory paradigm with supporting organizations, policies, and tools. Such a shift would require a multi-faceted, long-term effort to determine the appropriate TEO levels to set, enact complementary policies, and provide adequate education and training for market actors. This session will look at the future of TEOs and the implications of moving beyond current codes structures and consider the challenges and benefits of looking at actual building performance as the measure of compliance.

Discussion Questions:

- What are the advantages offered by a TEO framework, especially for existing buildings and new construction that is approaching zero net energy? What are the challenges in moving to this metric?
- What opportunities or drawbacks exist for utility pay-for-performance programs relative to TEO policies?
- What data would be needed to set the energy targets levels? Is it available? Could the targets be based on modeling? How would enforcement be handled after certificate of occupancy?
- What potential benefits, in addition to incentivizing better building operation, are there to pursuing a regulatory structure based on targeted energy outcomes?
- What challenges arise from variations in weather and use patterns, tenant vs. building responsibilities, and other building- and climate-specific issues?

*Product Strategies Track* *Madison A*

C1: **Federal Energy Efficiency Standards: Understanding the Process and Maximizing the Market Transformation Impacts**

Moderator: **Jennifer Amann**, ACEEE

Speakers: **John Cymbalsky**, U.S. Department of Energy
**Patrick Eilert**, Pacific Gas and Electric Company
**Anthony Fryer**, Appliance Standards Awareness Project

As product specifications developed and promoted through market transformation initiatives are adopted as federal minimum standards, future savings are locked in. Refrigerators and clothes washers represent two successful examples of this process where successive cycles of program efforts have enabled multiple improvements to federal standards. ENERGY STAR often plays a role in this progression and its regular specification changes have also been a path towards higher efficiency. This is not to say that federal standards are the be-all and end-all in market transformation. Rapid product introduction and evolution may be too fast for federal standards to be effective (energy-efficient laser disc player, anyone?).

The federal standards-setting process has accelerated appreciably in recent years. Nevertheless, federal action on the most important and strategic equipment standards has become difficult to predict, and there have been some setbacks and delays that have both created lost efficiency opportunities and hurt the performance and credibility of programs that rely on the standards to complete market transformation. What actions can be taken by government, energy

efficiency organizations, and program administrators in these cases to help put the standards process back on track or minimize the negative effects?

Discussion Questions:

- What are the clear product success stories of national energy codes and standards? How do or don't those apply to equipment that is currently moving into the standards process?
- What are some clear examples where the market is transformed without the need of national standards to lock the savings in place? Are there any lessons learned from these examples?
- How is the current standards process going from the program administrator perspective? From the DOE perspective? How could it be improved?
- In the case of the lighting standards, where new products unexpectedly came to market, are there strategies available to DOE to address these developments?

*Program Strategies Track* *Madison B*

D1: **Incorporating Behavior and Feedback into Efficiency Program Portfolios**

Moderators: **Kira Ashby**, CEE
**Ken Tiedemann**, BC Hydro

Speakers: **Ed Vine**, Lawrence Berkeley National Laboratory
**Jane Peters**, Research into Action

Traditional market transformation programs have used an engineering economics approach where it is assumed that economic agents base their energy use decisions on life-cycle costing or some similar approach. However, a growing body of research suggests that behavioral approaches to energy efficiency and market transformation can capture additional savings and transform markets. This session will review recent work on behavioral energy savings and examine how this work can help inform behavior-oriented market transformation activities. Presenters will address recent developments in the planning, implementation, and evaluation of behavioral programs.

Discussion Questions:

- What is working well in the field (and in what contexts) and why is it working? How do we more effectively capture savings from these behavior-based feedback programs?
- In what settings have these behavioral feedback programs been successfully deployed in the past? What other settings might be good prospects for the future?
- What is the potential for behavior-based programs that incorporate feedback to reduce energy consumption and transform markets?
- What are the key opportunities for behavior-based programs and how can they be strengthened and supported? What specific opportunities do you see for behavioral programs that use feedback in particular?
- What are some new or innovative ways of providing feedback with the goal of changing behavior that have gone largely untapped to date? How might these methods for providing feedback be more effectively used in the future?

*Financing Track* *McKinley*

E1: **Capitalizing Efficiency Investments: Is Financing Sufficient?**

Moderator: **Casey Bell**, ACEEE

Speakers: **Joel Freehling**, CB&I
**David Terry**, National Association of State Energy Officials

Over the past several years, numerous strategies and mechanisms for reducing upfront cost barriers to energy efficiency have emerged and are experiencing increased political popularity due to the perception that they can essentially pay for themselves. Yet, there is a risk in embracing financing as the "silver bullet" approach to capitalizing energy efficiency investments, especially at the expense of other motivations that influence the decision-making of building managers and owners. Recent research has shown financing may increase the leverage of public dollars, but

in most cases it is not able to drive demand to the same degree as direct incentives like rebates, and cannot be expected to replace other incentives in the current marketplace. Furthermore, the availability of low-cost, attractive financing products is not sufficient to overcome structural barriers in the commercial buildings market such as owner debt constraints, split-incentive issues in multi-tenant buildings, and difficulty aligning projects with lease lengths. This panel will explore the limits of energy efficiency financing and the role of incentives such as rebates, off-balance sheet mechanisms, and tax policy in encouraging investment in energy efficiency.

Discussion Questions:

- How do we better integrate efficiency into capital planning processes, which may or may not include financing?
- How can cues from the real estate market help identify targeted opportunities for catalyzing energy efficiency investment within specific regional markets? What are the implications of building labeling?
- How do we best leverage financing as a tool to encourage investment in energy efficiency? What are some of the "best practice" strategies?
- To what extent can financing play a role in driving demand for energy efficiency? Are there ways to increase the attractiveness of financing products?
- What are some of the limiting factors that impact the scalability of energy efficiency financing?

**3:00 to 3:30 pm** **Break** *Southwest Foyer*

**3:30 to 5:00 pm** **Working Sessions**

*Residential Buildings Track* *T.M. Ballroom South*

A2: **Innovative Policies and Partnerships for Multifamily Housing**

Moderator: **Ed Londergan**, Northeast Energy Efficiency Partnerships

Speakers: **Peter Ludwig**, CNT Energy
**Rick Samson**, Stewards of Affordable Housing for the Future

Diverse and complex ownership structures, varied utility bill payment arrangements, and other considerations in market-rate and affordable multifamily housing create unique needs for programs serving the multifamily market. Matching program offerings to market needs requires program administrators to work with multifamily building owners to develop effective program designs. Innovative programs are working to address the unique issues involved in multifamily retrofits. In this session, participants will learn about projects targeting the improvement and expansion of multifamily efficiency programs as well as policy and partnership models delivering on-bill repayment pilots and whole-building retrofits.

Discussion Questions:

- What major barriers must be addressed in small to mid-size multi-family markets in order to achieve whole building energy saving retrofits? What approaches are in place today and what have been the challenges, successes, and lessons?
- What aspects of these programs' successes appear to be transferrable to other jurisdictions, climate zones, and building types?
- What are the essential elements of partnerships between utilities and building owners, and other multifamily stakeholders and policymakers that may help create improved programs for multifamily buildings and overcome traditional barriers?

*Commercial Building Performance Track* *T.M. Ballroom West*

B2: **The Program Administrator's Role in Driving Energy Performance Benchmarking**

Moderator: **Andrea Krukowski**, Institute for Market Transformation

Speaker: **Jaclyn Hood**, Pacific Gas and Electric Company
**Manuel Vera**, Pepco

As an important step toward increasing understanding of a building's energy performance, benchmarking motivates building owners to pursue energy efficiency upgrades and reduce energy consumption. For utilities, benchmarking drives customers to other energy efficiency programs and is a method of validating energy savings. However, to improve market penetration of benchmarking and for utilities and the commercial building sector to capitalize upon these benefits, building owners and operators need better access to their utility consumption data, which is often difficult to obtain. This session explores how utilities can spur energy savings and market transformation by incorporating benchmarking into their energy efficiency programs and improving data access for customers for the purpose of benchmarking. Speakers will discuss current utility solutions for providing commercial customers with utility data and facilitating benchmarking, as well as the effectiveness of these programs, challenges faced by utilities, privacy guidelines, and federally developed standards.

Discussion Questions:

- How have energy efficiency program administrators leveraged benchmarking in voluntary programs?
- What challenges do building owners and facility managers face when benchmarking?
- What role can utilities and nonutility program administrators play in facilitating benchmarking?
- What are the barriers to more widespread disclosure of energy consumption data to commercial customers?
- What opportunities are there to accelerate more widespread disclosure of energy consumption data to customers?

*Product Strategies Track* *Madison A*

C2: **Superior Energy Efficiency: Effectively Differentiating Highly-Efficient Products**

Moderator: **John Taylor,** CEE

Speakers: **Ellen Pfeiffer,** National Grid
**Larry Tabizon**, Southern California Edison

While ENERGY STAR continues to offer a useful marketing platform for energy efficiency, several regions must address high market penetration of some ENERGY STAR products. To this end, several initiatives are currently in use by energy efficiency program administrators to differentiate superior energy efficiency for their customers. This session will describe the challenges faced by program administrators, delve into the dynamic tension between program "cost-effectiveness" and "market transformation," and consider marketing strategies that will minimize confusion to consumers and attract involvement of trade allies. Attendees will also be invited to share their professional experiences and suggestions regarding efforts to push the marketplace towards superior energy efficiency.

Discussion Questions:

- What are the barriers to simply requiring ENERGY STAR-labeled products for program incentives? Which products are most challenging due to high market penetration?
- What drivers exist for efficiency programs to pursue promotion of products with superior efficiency?
- What initiatives to differentiate superior efficiency have been attempted and what were the results? What tools exist for program administrators?
- What feedback regarding efforts to differentiate superior energy efficiency have attendees received from trade allies?

*Program Strategies Track* *Madison B*

D2: **Emissions Reductions from State Energy Efficiency Policies & Programs**

Moderator: **Niko Dietsch**, U.S. Environmental Protection Agency

Speakers: **Ward Lenz**, North Carolina State Energy Office
**John Shenot**, Regulatory Assistance Project
**Ted Aburn,** Maryland State Department of Environment

State environment departments are looking for new ways to lower emissions and improve air quality. At the same time, their energy counterparts at public utilities commissions and state energy offices continue to make progress with proven energy efficiency policies and programs. This session will examine promising opportunities for state air regulators to account for the emissions-reductions gains from energy efficiency. It will also describe EPA's new "EE/RE Roadmap" for helping areas with poor air quality incorporate energy efficiency into State Implementation Plans, and will identify the key policy, data, and analysis challenges that interested jurisdictions are facing. An overview of high-level policy and quantification issues will be presented, followed by an in-depth look at a single state's experience.

Discussion Questions:

- What is the policy framework that is guiding state efforts to capture the air quality impacts of efficiency, and what are the key motivators for states?
- For states getting started, how can air regulators be assured that energy efficiency impacts are real and credible, and that the magnitude of impact is worth their time?
- What policy, analysis, and information resources are available from U.S. EPA and elsewhere to make it easier for states to capture the air quality gains from energy efficiency?
- What role can the energy efficiency community play in helping jurisdictions leverage efficiency as an air quality strategy?

*Financing Track* *McKinley*

E2: **The Bottom Line on High Performing Homes: New Research on Credit Risk and Price Premiums**

Moderator: **Robert Sahadi**, Institute for Market Transformation

Speakers: **Michael Fratantoni**, Mortgage Bankers Association
**Bill Garber**, Appraisal Institute
**Richard Borges**, Appraisal Institute

In the United States, the mainstream financial system has been slow to target or differentiate loans made to borrowers seeking to finance energy-efficient properties. However, a growing body of literature suggests that energy-efficient properties are generally more affordable, comfortable, and durable, and have a lower associated risk of mortgage default. How will this emerging research support changes in the real estate transaction process and influence the demand for energy-efficient homes? This session will feature a panel of industry experts to provide insight on the bottom line impact of efficiency for consumers, appraisers, realtors, and financial institutions. Topics of focus will include default risk reduction, determination of market value, and favorable/flexible underwriting for energy-efficient homes.

Discussion Questions:

- What can be done to improve the residential building industry's understanding of the risks and rewards of investing in energy efficiency ventures?
- How can market data support the key proposition that a lender or investor should treat expected energy savings as reliable income?
- Can the findings of market valuation studies be used to justify an appraisal adjustment?
- How can energy cost savings be incorporated into lenders' analysis of borrowers' ability to pay?
- How does recent research support new developments in efficiency financing and mortgage lending practices to capture the added value of energy-saving features (including PACE and the SAVE Act)?

**6:00 to 8:00 pm** **Cocktail Reception** *T.M. Ballroom Northeast*

*Sponsored by **ICF International***

## Tuesday, March 26

**8:30 to 10:00 am** **Concurrent Sessions**

*Session 2A* *T.M. Ballroom South*

**Regional Roundup**

Moderator: **Ed Wisniewski**, CEE

Speakers: **Gene Rodrigues**, Southern California Edison
**Susan Stratton**, Northwest Energy Efficiency Alliance
**Jay Wrobel**, Midwest Energy Efficiency Alliance
**Howard Geller**, Southwest Energy Efficiency Project
**Sue Coakley**, Northeast Energy Efficiency Partnerships
**Karen Hamilton,** New York State Energy Research & Development Authority
**Mandy Mahoney,** Southeast Energy Efficiency Alliance

This session will explore notable changes in state legislative and regulatory policies, changes in program objectives, and program successes within and across various geographies of the U.S. We've incorporated a range of perspectives through our panel composition that includes policy advocates, program coordinators, and program administrators. Presenters will be asked to comment on emerging industry trends relative to their respective organization's responsibilities and accomplishments. The session will also provide results of CEE's annual budgets and impacts report for regions of the U.S. and aggregated U.S. and Canadian figures. Attend this session to learn more about the emergence of the Program Administrator Industry, policy and program developments, and cross-cutting topics affecting programs, and to pose questions for panel consideration.

*Session 2B* *T.M. Ballroom West*

**Next Big Ideas: A Look at Promising Technologies Making their Way to Efficiency Programs**

Moderator: **Jennifer Anziano**, CEE

Speakers: **Richard Lord**, Carrier Corp.
**Eric Lind**, Lutron Electronics
**Kevin Messner**, Association of Home Appliance Manufacturers

The role of identifying new technologies and program opportunities is core to market transformation as once emerging technologies reach market maturity, markets are transformed, and new codes and standards are set. In recent years, efficiency programs have faced rapidly expanding program targets, the rate of minimum standard setting has increased, and there is limited potential for further efficiency gains in many traditional and core programs. Therefore, efficiency programs are looking for new promising and reliable emerging technologies to expand their existing portfolios. At this session, industry representatives will provide their perspective on what technologies are coming down the pipeline and speak to the relative program readiness of the opportunity, ranging from demonstrated performance, quality, and market considerations. The panelists will cover a range of technologies in core program areas, such as lighting, HVAC, and appliances. The session will also touch on the industry perspective of how connected products may bring additional efficiency gains for programs.

**10:00 to 10:30 am** **Break** *Southwest Foyer*

**10:30 am to 12:00 pm** **Concurrent Sessions**

*Session 3A* *T.M. Ballroom South*

**Federal Policy Update: What's the Outlook for Energy Efficiency?**

Moderator: **Suzanne Watson**, ACEEE

Speakers: **Allen Stayman,** U.S. Senate Committee on Energy & Natural Resources
**Jennifer Schafer,** Cascade Associates
**Jeff Genzer,** Duncan, Weinberg, Genzer & Pembroke
**Trent Bauserman**, White House Council on Environmental Quality

A new Congress has been sworn in and the Obama Administration has started its second term. The Congress is still split with Republicans controlling the House and Democrats controlling the Senate. What's the outlook for energy efficiency policy in Washington? In this session, knowledgeable Washingtonians, legislative staff, and administration officials will share their perspectives on the potential for progress on energy efficiency including legislative options as well as options for direct administrative action by the White House and federal agencies.

*Session 3B* *T.M. Ballroom West*

**20 Years of Market Transformation: Bridging the Gap between Theory and Practice**

Moderator: **Amy Cortese**, New Buildings Institute

Speakers: **Susan Stratton**, Northwest Energy Efficiency Alliance
**Phil Welker**, Portland Energy Conservation Inc.
**Priscilla Richards**, New York State Energy Research & Development Authority

The term "market transformation" first gained traction in the efficiency community 20 years ago. In the intervening years, market transformation concepts have evolved as our understanding of the market has grown and new actors have come on the scene. Organizations responsible for market transformation initiatives and programs now have experience that offers lessons to inform best practice for working "upstream." More and more, local utility programs are working to better understand their customers in order to build long-term, engaged relationships with end-users and trade allies. But markets remain dynamic, complex, and difficult to change. How have market transformation efforts intervened to create lasting change in favor of energy efficiency? Does the long-term view of market transformation and the short-term need for resource acquisition to create immediate energy savings create conflict or necessitate collaboration? This session will explore the state of market transformation today from various perspectives. Highlights of experiences from market-based programs that work more directly with actors such as manufacturers, distributors, retailers, and trade allies will provide insight into the successes and pitfalls. A significant portion of this session will include a panel discussion centered on critical issues related to definitions, cost-effectiveness, initiative lifecycle (i.e., exit strategy versus continuous improvement), and metrics for success.

**12:00 to 1:15 pm** **Lunch** *T.M. Ballroom Northeast*

**ACEEE's 3rd National Exemplary Programs Awards Presentation**

**1:15 to 2:45 pm** **Working Sessions**

*Residential Track* *T.M. Ballroom South*

A3: **Keeping Residential Natural Gas Efficiency Programs Stable in an Age of Price Instability**

Moderator: **Kara Rodgers**, CEE

Speakers: **Phil Degens**, Energy Trust of Oregon
**Jay Wrobel,** Midwest Energy Efficiency Alliance

Utilities and other program administrators are adapting residential natural gas efficiency programs to the uncertainty caused by low avoided costs. The cost-effectiveness of many of the gas measures that have been the mainstays of gas efficiency programs has been eroded in this new era of low gas prices. Two program administrators will offer examples of strategies and approaches they are using to maintain residential gas programs. One approach is to bundle measure costs and savings together and to value the savings at the whole-house level. This achieves deeper savings while reducing "lost opportunities." Another approach is to address a number of the factors that go into the calculation of cost-effectiveness. Key among them is the recognition of the inherent uncertainty of many of the values that are used in calculating cost-effectiveness. Other approaches are being considered, such as strategic targeting of high-savings customers to increase average savings or developing acceptable non-energy benefit estimates for inclusion in the cost-benefit calculation. The discussion will then turn to potential for upstream market transformation and how the inclusion of market transformation as a long-run program strategy can support current program efforts.

Discussion Questions:

- How are you adapting gas programs to make them more cost-effective?
- How are you reaching upstream to transform markets? Which markets and market actors are you addressing?
- What value are you seeking to deliver to homeowners? How does your program help do that?
- What value are you failing to capture? How might you capture it?
- What opportunities do you see in the climate of low avoided costs?

*Commercial Building Performance Track* *T.M. Ballroom West*

B3: **Untapped Opportunities: New Approaches to Accelerate Efficiency in Small and Medium Business Markets**

Moderator: **Jason Erwin**, CEE

Speakers: **Amy Cortese**, New Buildings Institute
**Tom Coughlin**, National Grid

Delivering cost-effective efficiency solutions for small and medium businesses (SMB) at scale poses challenges, partly due to the cost and time involved in with assessing, prioritizing, and targeting energy efficiency opportunities across a diverse set of customers, and building and system types relative to the potential savings benefits on a per building basis. However, advances in IT, analytics, and data processing are enabling "low touch"/"rapid"/"remote" energy assessment and market segmentation approaches that have the potential to streamline the customer engagement process and increase savings in this untapped market. Participants in this session will learn about energy assessment techniques, market segmentation approaches, and go-to market strategies to engage and encourage efficiency actions in the diverse SMB marketplace. Topics of focus include: an introduction to new assessment approaches being tested; benefits, costs, and program considerations around deploying new assessment/market segmentation approaches; and approaches to market that increase the likelihood that SMB owners will take action. Participants will work together to identify common areas that require more testing and validation to accelerate SMB-related savings.

Discussion Questions:

- What are major assessment and segmentation barriers to addressing SMB market efficiency potential? How consistent are these barriers across market segments?
- How do new technologies/approaches address these barriers? What are the key considerations and factors to understand the relative benefits and costs as applied in the SMB space?
- What are the SMB go-to-market strategies being assessed/tested? Beyond assessments, what strategies and approaches are program administrators using to turn opportunities into actual energy savings?

- How do programs align offerings with natural market cycles to accelerate and maximize program uptake? What, if any, roles can national level actors or programs play to accelerate market response?

*Lighting Track* *Madison A*

C3: **Upstream Approaches to Commercial and Industrial Lighting Programs**

Moderator: **Gabe Arnold,** Optimal Energy

Speakers: **Dan Mellinger,** Efficiency Vermont
**Rishi Sondhi,** NSTAR

Residential lighting programs have relied on upstream retail partners to drive products such as CFLs, while commercial programs have mainly focused on downstream program delivery with direct customer interactions. Given the current federal minimum standards for many commercial lighting products, programs are looking for new approaches to supplement their savings from traditional programs. This session will explore approaches to providing upstream incentives to the commercial lighting distribution channel in order to increase program participation and decrease costs and resources associated with program delivery. Participants will discuss results and impacts from the upstream approach relative to traditional customer-focused programs and considerations for designing and implementing these programs.

Discussion Questions:

- What are the market conditions that might make one upstream approach relatively more favorable than another?
- Who are the key target audiences for program outreach and how might the approaches discussed help enable engagement and collaboration?
- What are key aspects to know and understand about supply chain actors to inform program participation criteria (e.g., what information will distributors need to be able to share with programs to make the program work and how do you deal with business sensitive sales info)?
- What other products might be well suited for this type of approach and why?

*Data and Evaluation Track* *Madison B*

D3: **Standards for Evaluation, Monitoring and Verification**

Moderator: **Michael Li**, U.S. Department of Energy

Speakers: **Bill Saxonis,** New York State Department of Public Service
**Ken Tiedemann**, BC Hydro

There is a growing need to standardize the ways in which traditional energy efficiency programs and market transformation programs are evaluated. A total of 17 states have either developed or are in the process of developing uniform approaches for estimating savings from energy efficiency programs using both technical reference manuals and EM&V Protocols. This session will review the trends in standardizing uniform EM&V protocols by national and state-level organizations and explore the implications of these protocols for furthering the goal of market transformation.

Discussion Questions:

- What are the differences and similarities between EM&V of traditional energy acquisition programs (DSM) and market transformation programs?
- What level of rigor is appropriate for EM&V of different market transformation activities (such as information programs, incentive programs, pilots, codes and standards)?
- What are the key features of state Technical Reference Manuals and of state EM&V Protocols?
- How can EM&V activities be leveraged to support market transformation?

*Industrial Track* *McKinley*

E3: **A National Program Infrastructure for Strategic Energy Management**

Moderator: **Jess Burgess**, CEE

Speakers: **Paul Scheihing**, U.S. Department of Energy Advanced Manufacturing Office
**Hossein Haeri,** Cadmus Group
**Steve Martin**, Bonneville Power Administration

While an increasing number of program administrators are supporting strategic energy management at industrial facilities, the adoption of strategic energy management program approaches is uneven across the United States and Canada. In some regions and service territories, strategic energy management programs are a valuable source of cost-effective energy savings, and in other places energy management offerings are stymied by high program costs and regulatory challenges. Over the last two years, a diverse group of program administrators have come together to compare their energy management program approaches, results, and lessons learned. Based on these experiences they have developed a consistent lexicon and minimum elements of strategic energy management that they all can support. During this session, participants will learn more about the commonalities across strategic energy management programs and explore the opportunity to expand the availability of effective, proven strategic energy management offerings to industrial facilities across North America.

Discussion Questions:

- What are the most significant drivers and benefits associated with strategic energy management programs?
- What are the most significant barriers to the expansion of strategic energy management practices in the industrial sector in North America? How can energy efficiency program administrators help to address these barriers?
- What evidence is the most compelling to regulators and to customers when it comes to making a case for strategic energy management programs?
- What challenges are program administrators facing in the design or delivery of strategic energy management offerings?

**2:45 to 3:00 pm** **Break** *Southwest Foyer*

**3:00 to 4:30 pm** **Working Sessions**

*Residential Track* *T.M. Ballroom South*

A4: **Involving Trade Allies in Market Transformation: Why, When, and How?**

Moderator: **Rebecca Foster**, Vermont Energy Investment Corporation

Speakers: **Talbot Gee**, HARDI
**Jim Jerozal**, Nicor Gas

What do manufacturers, distributors, contractors, and retailers know about their markets that efficiency program planners don't? What program changes would increase program participation and generate greater energy savings? To answer these questions, many efficiency programs work collaboratively with their local trade allies, using varying approaches and achieving varying degrees of success. At one end of the spectrum, engagement with trade allies is ad hoc and takes place at the individual program level. At the other end of the spectrum, trade allies' role is formalized, as it is in California's Western HVAC Performance Alliance (WHPA). The WHPA was born out of a directive in California's "Big and Bold Strategic Plan" to require greater collaboration among the CPUC, CEC, IOU's, and industry stakeholders to "transform the HVACR market." During this session, utility and industry representatives will discuss the pros and cons of different approaches to trade ally engagement. The session will be relevant for efficiency programs just getting started with trade ally engagement and for those with more sophisticated approaches. While presenters will focus on

industry involvement in HVAC programs, lessons learned and discussion will span all sectors and program types.

Discussion Questions:

- What are the regulatory and structural barriers preventing efficiency programs from greater engagement with trade allies and what steps can be taken to overcome them?
- What are best practices for engaging with trade allies on an individual program level?
- How can we deliver on the promise of industry collaboratives to improve efficiency program results?

*Commercial Building Performance Track* *T.M. Ballroom West*

B4: **Continuous Energy Efficiency Improvements for Better Whole-Building Energy Performance**

Moderator: **Kim Erickson**, CEE

Speakers: **Bill Prindle**, ICF International
**Jane Peters**, Research Into Action

With energy savings targets going up and more stringent mandatory performance standards putting pressure on traditional, widget-based lighting and HVAC programs, energy efficiency program administrators are seeking new sources of savings from existing building operations, maintenance, and behavior savings opportunities. A recent CEE program summary shows that nine energy efficiency program administrators are offering continuous energy improvement program approaches for commercial buildings. While promising, these approaches are primarily funneling customers to other existing programs to capture energy savings, funded as a customer service initiative, or exist in somewhat unique regulatory environments. One of the key barriers to more widespread adoption of continuous energy improvement programs is lack of an accepted approach to credibly quantify energy savings within EM&V frameworks more often designed with one-for-one capital improvement programs. After a brief introduction to whole-building performance program approaches and common EM&V challenges, participants will hear from industry experts about approaches they are using, including the proof and support for continuous energy improvement programs.

Discussion Questions:

- What challenges do typical regulatory and evaluation frameworks create for commercial continuous energy improvement programs?
- How are program administrators, evaluators, and regulators working together in some areas to address these challenges? What have stakeholders learned so far?
- What strategies and considerations for building consensus among program administrators, evaluators, and regulators to enable continuous energy improvement programs may be relevant and replicable across service territories?
- What national resources may support efforts for program administrators, evaluators, and regulators to work together to test and develop the new program approaches needed to meet rising savings goals?

*Lighting Track* *Madison A*

C4: **Performance Insights on Solid State Lighting**

Moderator: **Linda Sandahl**, Pacific Northwest National Laboratory

Speakers: **Joey Barr,** Pacific Gas and Electric Company
**Taylor Jantz-Sell,** U.S. Environmental Protection Agency
**Ruth Taylor**, Pacific Northwest National Laboratory

In order to successfully capture energy savings from solid state lighting (SSL), both residential and commercial consumers must be satisfied with these products' performance. Consumer dissatisfaction with any attribute can lead to removal of SSL products as well as decisions to avoid their purchase in the future. Both of these outcomes could significantly stifle or set back market transformation towards energy-efficient lighting. This session will look at steps being taken to contribute to customer SSL product satisfaction by reviewing the state of independent performance testing and market intelligence regarding SSL product performance. Presenters will identify important attributes of

product performance, product types, and applications where SSL is performing well relative to legacy technologies and examine known, remaining issues with SSL performance that may inhibit market acceptance. Arming participants with this information will enable stakeholders to work together more effectively to create the conditions for positive consumer experiences with SSL products.

Discussion Questions:

- Which SSL applications/product types have performed best relative to key attributes of product/application performance? What are the strategies used to achieve that performance?
- Which SSL applications/product types have demonstrated poor performance?
- What key performance attributes tend to be the most troublesome for these applications?
- What common research, testing, market intelligence, or other needs must be addressed to increase confidence that consumers' performance expectations will be met by SSL products/applications or other types of new/innovative technologies?

*Data and Evaluation Track* *Madison B*

D4: **Big Data, Confidentiality, Efficiency: What Will It Take to Provide Vendor Access and Customer Value?**

Moderator: **Neal Elliott**, ACEEE

Speakers: **Kathrin Winkler**, EMC Corporation
**Jim Merriam**, Vermont Energy Investment Corporation

The energy efficiency world is struggling with the promise of big data and how it will transform our market. There is tremendous potential for greater engagement and effectiveness from initiatives that invest in and deliver verifiable savings through new ecosystems of software, technology, and stakeholder and trade ally partnerships. There is also significant risk and uncertainty that makes this future uncertain. The challenges include: questions about ownership and confidentiality of data; cross-sector and cross-market interactions that do not correlate to utility jurisdictions; complicated and sophisticated EM&V requirements; increasing dependence on closed and proprietary services by single vendors; high initial development and deployment costs; and a highly fragmented and largely inaccessible marketplace for developers of innovative solutions best deployed at scale. Discussion will focus on the core elements needed to deploy, aggregate, and use big data to support development of innovative collaborative markets and provide benefits while protecting customers.

Discussion Questions:

- What can energy efficiency markets learn from other industries (e.g., mobile devices, health care, education) that have grappled with these issues? How can we navigate through the barriers identified to unlock the power in this big data and provide value-added services to the market?
- Can the development of an open source data platform with shared data service APIs, such as anonymous customer energy usage trends, help leapfrog some of the difficult "ownership and access" issues regarding customer data?
- Is now the time to discuss formation of a new entity focused on delivering a software stack with core data, services, and APIs that is "open source" and designed to meet the needs and interests of stakeholders?
- Could this initiative provide a foundational level of program capability and compatibility to accelerate industry innovation and establish a more efficient and effective marketplace for energy efficiency services and solutions?
- Does Green Button provide a starting point that could enable the development of collaborative services to utilize big data to transform the market? If not this, than what is needed? What are the barriers to moving forward?

*Industrial Track* *McKinley*

E4: **Environmental Regulations and Combined Heat and Power**

Moderator: **Ethan Rogers**, ACEEE

Speakers: **Joe Bryson**, U.S. Environmental Protection Agency
**Katrina Pielli**, U.S. Department of Energy

To encourage deployment of new combined heat and power (CHP) systems, the Department of Energy and others have targeted several heavily industrial states for technical assistance and support. This technical assistance has taken several forms, including webinars on specific CHP topics, hosted dialogues to discuss particular barriers, and feasibility assessments for CHP provided by Clean Energy Application Center staff. This session will discuss the scope and scale of these efforts, and identify opportunities for those involved in this work to better engage with existing utility and energy efficiency programs around the country.

Discussion Questions:

- What have been the most effective ways to target potential opportunities/facilities?
- Is outreach conducted on a facility-by-facility level? Are there particular partners/vendors/trade associations that have been useful in increasing program outreach?
- How are utilities leveraging the tools available, if at all? How are their programs supporting this work?
- What barriers are potential customers facing in the targeted states/regions? Are they able to use any existing custom incentive programs? Are they explicitly barred from using them?

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