

AESP's Summer Conference & Expo
Times they are EE-changin'
How Technology and Challenges Shape Business Models

August 29-31, 2017
Toronto, ON Canada

Monday, August 28

1:00pm – 5:00pm **"Utilities Only" Program Manager Workshop** (extra fee required)

Suitable for:

Program managers who are new to the role or who have a few years' experience.

Policy professionals, program planners/designers, marketers, evaluators and energy professionals in related areas who desire a comprehensive understanding of the program lifecycle and processes.

Workshop Overview

Ten hours of learning will be supplemented by interactive group activities and handouts to ensure retention of the information, put to practice the thought processes required, and not be bored!

The workshop modules include:

- Why offer DSM Programs?
- Needs Assessment and Fact Finding
- Building Blocks – Design for Success
- Program Launch and Implementation
- Program Management
- EM&V Part 1: Types, Metrics & Methods
- EM&V Part 2: Results and the Future
- Reporting

Tuesday, August 29

8:00am – 4:00pm **"Utilities Only" Program Manager Workshop continued**

8:00am – 3:30pm **Pre-conference Training Course** (extra fee required)

Learning to S.E.E.: Sell Efficiency Effectively™

Trainer: Mark Jewell, Selling Energy

Most decisions are emotional decisions, and making the commitment to dedicate time and resources to enhance efficiency is no exception. Whether you are selling efficiency solutions or seeking project approvals, understanding what factors play a role in the decision-making process and knowing how to build rapport with key stakeholders vastly increase your odds of success. This workshop features highlights from the weeklong Efficiency Sales Professional™ (ESP™) Boot Camp, including: reframing the benefits of efficiency so that they can be measured with the yardsticks that your customers are already using to measure their own success; developing concise and compelling communication tools that really engage decision-makers; migrating the discussion from the “bits, bytes and blinking lights” of your offering to prospect-specific messages that motivate project approvals; and much more. This workshop will give you the insights, focus, and skills you need to define your most promising targets, streamline your sales process, and maximize your closing ratio.

4:15– 5:30pm

UtilitiesConnect

Gather with fellow utility company staff in this private closed-door meeting where you can ask questions and discuss your issues and challenges. The theme in today’s session? Outsourcing, the practice of hiring consultants, implementers, evaluators and other contractors. Let’s talk about the pros, the cons, the issues and the solutions. Later, we will invite a representative from DNV GL in to share with you the results of their comprehensive study of utility outsourcing models. You may be surprised to know that there are five main outsourcing models in practice. Which is yours and how many do you use?

5:30 – 7:00pm

Evening Reception in Expo Hall

7:15 – 8:15pm

New Member/New Professional Event

This event is strictly for new members and new professionals only. Come make some new friends before the conference starts. The event kicks off with a short presentation titled “Life on the Other Side.” Whether you work in the utility side of the industry or in the vendor/consultant side, you’ll learn a little about life on the other side from the perspective of AESP’s Quinn Parker, who has worked at both NV Energy and CLEARresult.

Wednesday, August 30

7:30 – 8:30am

Continental Breakfast and Networking in Expo Hall

8:30 – 10:00am

Opening Plenary Session

Welcome Address: John Hargrove, AESP; Raegan Bond, Alectra Utilities; and Terry Young, IESO

Keynote Presentation:

Embracing Disruptive Innovation

Patrick Schwerdtfeger

Disruptive innovation invalidates existing business models. The energy sector is a case in point. Solar panels (and other alternative energy sources) are getting cheaper and more efficient by the day, and we're reaching "grid parity" in one market after another. Technology evolves along an exponential curve. Energy professionals who understand these trends will thrive. Those who don't will become irrelevant over time. Disruptive innovation generally comes from the edges of industries, not the center. It comes from 'adjacent markets' often catching executives by surprise. Patrick Schwerdtfeger will highlight the trends and provide predictive models and frameworks to anticipate where innovation will lead in the years to come.

10:00 – 10:30am

Networking Break in Expo Hall

10:30 – 11:45am

Session 1A: Times they are EE-Changin': Policy, Carbon Pricing & Municipal Governments

Climate change policies and DSM – potential synergies, silos and second thoughts.

Moderator: Raegan Bond, Alectra

Speakers: Sean Meleschuk, Utilities Kingston; Terry Young, Independent Electricity System Operator; Malini Giridhar, Enbridge Gas Distribution; Doug Lewin, CLEARResult

Even with recent political swings in U.S. climate change policy, it is clear that the world is moving towards a low-carbon economy. While there is potential for the goals of energy efficiency and carbon-reduction to be mutually supportive, we are already witnessing some challenges with integrating climate change objectives into existing DSM regulatory frameworks and business models. These challenges are being seen both in jurisdictions that are retreating away from climate change policies, as well as in regions that are driving the climate change agenda forward. With senior experts spanning different countries, market actors and fuel sources, this interactive panel session will explore the complexities of integrating climate change goals into existing DSM business models and regulatory frameworks and will debate potential strategies for overcoming these challenges. Audience members will gain greater insights into the variation of policy issues and political contexts across geographic regions and at different levels of government, and will come away with some new ideas that may challenge their pre-conceived notions on the best way forward to simultaneously meet climate change and DSM goals.

This session will also include an interactive polling feature for audience participation.

10:30 – 11:45am

Session 1B: New Opportunities are Knocking

Moderator: Steve Bohlman, WECC

Driving Grid Efficiency: Successful Utility Strategies for Promoting Electric Vehicles
Speaker: Mitchell Rosenberg, DNV GL

This presentation will deliver the results of a survey of current utility efforts to promote ownership and operation of electric vehicles. Topics to be covered will include: The range of activities utilities are currently pursuing to promote EVs. Examples of successful efforts in each key type of activity: consumer education, promotion of EV purchases by individuals and fleets, development of charging infrastructure, EV rates to achieve higher load factors, linkage of EV charging to green power sources, and others. Summary of the evaluated benefits of EV promotion programs, including increased utility revenues, improved load factors, distribution system impacts, and GHG emission reductions. Regulatory treatment of expenditures to promote EV Framework for development of EV strategies for individual utilities given conditions in their service areas, including: level of EV purchases, share of renewables in supply, residential and business geography, complimentary activities of municipal and state governments, and regulatory climate.

Indoor Cannabis Production: The Next Efficiency Opportunity

Speakers: John Morris, D+R International; Derek Smith, Resource Innovation Institute

Legalized medical cannabis production is now happening in 25 states. Recreational cannabis production is now legal in 9 states. In 2017, over 17 states have introduced measures to legalize recreational cannabis. As the industry matures, we can see utilities along a continuum of engagement with this newly regulated customer segment. The purpose of this panel is to highlight the work utilities can do to address the unique needs of cannabis producers. The panel will also help attendees identify education and outreach strategies to growers, how to right size systems for new growers coming on line and provide examples of sound building science principals for indoor grow facilities.

A Battery of Choices, But What Does it Mean?

Speaker: Tom Wilson, Honeywell

Energy storage is a hot topic in the industry. With being able to place storage assets behind-the-meter at end-use customer sites and on the distribution system or transmission level, storage has the potential to redefine the industry. Utilities are asking, how can storage investments provide value, how to get started, what to ask of vendors and much more. Studies cited by the Energy Storage Association show that battery energy storage systems easily compete in power-system markets for ancillary services. A Battery Energy Storage System (BESS) can respond as much as 100 times faster to grid operator signals than power turbine generators. This session will look at stacking multiple services effectively and efficiently by mixing and matching value streams to maximize profit from storage investment. This session will also help utilities understand energy storage whether they are new to it or have been doing it for a few years.

11:45am – 1:00pm

Networking Lunch in Expo Hall

1:00 – 2:15pm

Session 2A: EM&V is Changin' too

Moderator: Sherry McCormack, SWEPCO

Alas, Poor RCT, I Knew Him Well: Behavioral EE in the Age of Mass Marketing

Speaker: Paul Higgins, Navigant

When Opower introduced Home Energy Reports a decade ago, a key element in their success was the incorporation of experimental design: because HER programs are designed as randomized control trials, the statistical power, reliability, and extrapolability of the resulting energy savings estimates are dramatically enhanced, making them relatively insensitive to modeling choices and thus difficult to dispute. But in the interim, new program designs have emerged to challenge the Opower model that incorporate elements that are difficult to adapt to an RCT design – opt-in enrollment, mass marketing, on-line self-service, gamification. We will explore the following questions: • Why are utilities embracing these new options? • Why are regulators resistant? • When is it worth striving to design a program that retains experimental design – even when it is mass-marketed or otherwise intrinsically self-selected? • What are best-practice approaches when doing so? • And what methods are available to evaluators when an RCT isn't feasible?

Integrating M&V into Projects: Aligning Evaluators, Planners, Developers, and Customers!

Speaker: Jeff Perkins, ERS

There is wide agreement across the industry that the measurement & verification (M&V) of actual energy reductions should be taken to a new level. In some cases, the concept for this next step in M&V can mean using whole building data and machine learning to assess savings on a rolling basis without intrusion, while in other cases it might mean more. What works for residential, may not work for commercial. California is suggesting that implementers should take on some elements of M&V, while in New York, system planners are using M&V to quantify and target EE projects for "non-wires" solutions in load constrained areas. Fortunately for all of us, at the same time we are all working out such details, the exploding Internet of Things (IoT) is allowing us to get more intimate with our buildings. Many of you have had a taste of data available from Wi-Fi thermostats - a third party device fueling your learning – what else might there be? The fact is, using off-the-shelf devices, we could now be gathering building data at a high resolution, broadly, and completely for each and every efficiency retrofit completed. Not only can this serve evaluators, but more importantly it will serve everyone from system planners, to project developers, to, yes, even customers. With low cost sensors deployed throughout a facility, gathering vast amounts of data, and dumping it off to the cloud: inexpensive, ubiquitous, accessible, reliable... powerful. This presentation will explore the changing world of E & M & V with real world examples of smart gathering of data to better evaluate and tune efficiency programs and deliver assured capacity reductions!

A Tale of Two Programs

Speaker: Joseph Dolengo, National Grid

Commercial and industrial (C&I) programs in the US northeast have nearly completely transitioned energy efficiency measures from linear fluorescent to LED lighting in only a few short years. How is that working in the field? A program administrator (PA) in New York incorporated a lighting-quality and lost-opportunity audit into the evaluations of a downstream prescriptive and customer lighting program; subsequently the Massachusetts PAs incorporated the same audit into the evaluation of the statewide upstream lighting program, respectively. The two contractors for these two independent evaluations worked together to incorporate a common assessment of lighting quality and

lost opportunity in the M&V site work. Hear the outcomes of two delivery program models along multiple facets, including lighting-quality field outcomes, lost opportunities, customer satisfaction, energy savings performance, and evaluability. The groundbreaking lighting-quality and lost-opportunity audit was initiated by the New York PA, inspired by the New York “Reforming the Energy Vision” (REV) initiative, which calls for evaluations that are “designed and implemented to yield timely information that [feeds into] the annual iterations of utility programs.” The New York downstream program evaluation also included real-time rolling sampling, a method for selecting for M&V during the evaluated program year that allows for continuous program feedback. The Massachusetts upstream program presented formidable evaluation challenges since there are only minimal details on the final installation location of products and the dispersion of the products is widespread. Fixtures designed to optimize the output of a fluorescent linear lamp, with its radial light emissions profile, are being refit with point-source LEDs. Potential problems may include non-uniform distribution of lumens, over-lit spaces (which potentially reduces savings), and other quality issues like glare. A field-based check-in on the performance of LED technology, now that it is widely deployed, was judged as a prudent step that would also yield lighting power densities, which the PAs were seeking for program design. The lighting-quality audit checks for lighting uniformity, light levels with comparisons to benchmarks, glare, and color rendition. The audit also includes a lost-opportunity assessment. It has been hypothesized that the application-oriented model, which is often contractor led, will result in a more customized, higher quality installation than an upstream program installation. This analysis will allow us to test that hypothesis.

1:00 – 2:15pm

Session 2B: Making Room for DER in Today’s Grid (Panel)

Moderator: Bob Collins, IESO

What’s hiding behind the meter and how to access its power

Panelists: Nicholas Ingman, Independent Electricity System Operator; Vikram Singh, Alectra Energy Solutions; Dave Hebert, Sunverge Energy

The traditional distribution system as we know it is evolving and higher penetrations of energy resources within the distribution system are becoming more commonplace. ISO’s are seeking to understand the potential impacts and opportunities of these changes on the operation of the bulk power system, distributors are trying to understand how to optimize integration of distributed energy resources (DER) within existing grid infrastructure, and all market actors are faced with quickly eroding definitions of supply-side resources vs demand-side management. Leveraging the findings from Alectra’s (formerly PowerStream’s) POWER.HOUSE pilot, this session will provide a 360-degree view (customer, utility, manufacturer, system operator) of the practical challenges and benefits of deploying and managing a Virtual Power Plant comprised of utility-owned residential solar plus storage assets. It will also discuss broader implications and opportunities for an interoperability framework between bulk-system controlled resources and distribution-system controlled resources.

2:15 – 3:00pm

Networking Break in Expo Hall

3:00 – 4:15pm

Session 3A: Food for Thought: Ideas in Implementation (Rapid Fire)

Moderator: Steve Baab, DNV GL

Transforming the Residential HVAC and DHW Industry from Paper Rebate Redemption to Upstream Incentives

Speaker: Marissa Westbrook, The United Illuminating Company

Many utility energy efficiency programs have utilized paper as the medium for rebate collection and fulfillment. More recently, programs have started offering online platforms for rebate redemption. But now, five public electric and natural gas utilities in Connecticut have transformed the residential consumer mail-in rebate into a point-of-sale instant discount through participating HVAC and DHW distributors and retailers. This session will focus on the goals, successes, challenges, and future enhancements to working with equipment distributors and retailers to offer instant discounts, which have resulted in an increase in the redemption of high efficiency HVAC and water heating equipment between 200% and 1,000% since 2014.

Food for Thought: Ingredients for a Delicious Meter-Based Restaurant Program

Speaker: Amy Allen, kW Engineering

A meter-based M&V approach can aid utilities in meeting increased targets for energy savings, and quantifying savings more rigorously. In 2015, California adopted legislation (Senate Bill 350 and Assembly Bill 802), to pursue deep, reliable, and lasting energy savings by authorizing efficiency program administrators to quantify gross energy savings using a normalized metered energy consumption (NMEC) approach, with an existing conditions baseline. While this approach aligns the accounting of energy savings with a customer's expectations, it is not without risk. Learn the technical risks associated with the applicability and accuracy of the meter-based savings methodology, and how it informs program designs to assure program success. In response to the legislation, a major Southern California gas program administrator is developing a program that targets gas, electricity, and water resources for commercial restaurants in its service territory. The program proposes to quantify normalized savings using a NMEC methodology, which requires modelling of energy use with weather and other independent variables. Key questions concerning the applicability of models to restaurants arise: can the restaurant's energy use patterns be modeled, and are the modeling algorithms appropriate for the restaurants? Hear the results of an in-depth analysis of natural gas energy use in restaurants that have participated in recent past energy efficiency programs. We collected baseline and post-installation monthly gas data for over 400 restaurants, applied a set of piecewise linear regression models, and determined the accuracy of each model for the population.

Including the Commercial Kitchen Sink: Engaging customers to maximize savings through whole building renovation approach

Speaker: Joel Logan, The Weidt Group

Alliant Energy's Renovation Pilot is assisting commercial customers in identifying efficiency opportunities through upgrading and replacing their existing equipment utilizing whole building energy analysis. The Pilot uses building existing conditions as the savings baseline. The program's process allows for cost-effective analysis to be applied to

a wide range of building types and uses that, combined with an incentive scale that rewards bundling multiple efficiency improvements, helps customers achieve deeper energy savings. The portfolio of projects currently participating show a 10% increase in both electric and natural gas savings using existing conditions as the baseline compared to a current energy code baseline.

Pay for Performance Incentives Using Performance-Based Rebates

Speaker: Valerie Eacret, ERS

Custom-calculated efficiency rebate programs can create savings uncertainty for energy efficiency program administrators. Because rebates are typically paid based on first-year annual savings, awarded incentives for these projects may be based on greatly over- or underestimated lifetime project savings. Often, evaluated savings for these projects are below reported energy savings, which results in poor realization rates for the program. For example, controls projects are notorious for not delivering persistent energy savings after project completion. And, data centers may not be fully loaded until years after their construction is finished, resulting in unrealized savings from implemented measures. Uncertainty in these savings can reduce the cost-effectiveness of a program and/or leave savings on the table. Reducing this uncertainty improves program performance and has the potential to spread limited rebate funds across more customer projects, which helps address customer equity concerns. These pay for performance programs have been tested and successfully address all of these concerns. The solution is rebate payments spread over multiple years based on the results of periodic commissioning reports and measured data. The presenter will detail these programs, highlights lessons learned from their implementation, and discusses the near 100% realization rate and other results of the evaluation of the data center program.

3:00 – 4:15pm

Session 3B: Emerging Trends in Data Analytics

Moderator: Gary Epstein, ERS

Green Button: Are the Costs and Benefits Worth It?

Speaker: Julie-Ann Vincent, Dunskey Energy Consulting

With the advent of new technologies both for saving energy and for understanding how we use energy, we are beginning to see more demand-side management (DSM) behaviour-based programs. Green Button enables customers to access and securely share their utility data in a standardized format so they can connect to mobile and web-based energy-savings solutions and even demand-side management (DSM) programs and applications. However, it has been unclear as to whether the benefits of implementing such a standard outweighs the costs, particularly if utilities are mandated to do so. We'll outline the methodology used to conduct a cost-benefit analysis of Green Button in Ontario, one which demonstrated that Green Button can be a cost-effective option for utilities to pursue and offer results that can inform whether or not the implementation of Green Button is beneficial in a particular jurisdiction or context, as well as the considerations that should be included when making that assessment.

Using Big Data to Tell a Better Story

Speaker: Brent Huchuk, ecobee

As the idea of 'data' becomes more ubiquitous in the utility space, connected home manufacturers and utilities are taking their corporate and social responsibility seriously by developing big data-sharing initiatives with academic and research communities. The type of data being provided by these entities is normally expensive and difficult to collect – to the point that studies are often conducted on, and models are built around, 10 to 20 homes at a time, in very small geographies. Having access to large-scale individual home energy usage data creates a network of thousands, and possibly tens of thousands, of engaged customers from across North America, living in a diversity of energy markets, different climates, home types and more. Utilities can benefit both from participating in the research and from the research undertaken by other leading organizations across North America to develop more customized and customer-friendly approaches to demand response and energy efficiency.

Data Analytics on AMI Information

Speaker: Tim Guiterman, EnergySavvy

Utilities, regulators, and grid operators are becoming more and more reliant on energy savings to reduce constrained load pockets, support non-wires alternatives and act as a reliable resource across the distribution grid. Deploying efficiency as a resource requires reliable M&V that can estimate savings from energy efficiency projects and programs accurately, quickly and with replicability. New measurement approaches, commonly called M&V 2.0, are emerging to perform this task. Several states are shifting towards M&V 2.0 as an enabling technology to support the future of energy efficiency. In states like New York, energy efficiency funding is effectively transitioning away from the system benefit charge to ratebase and non-wires alternative projects are becoming an important option to address load pockets. Enabling this transition will require M&V 2.0 to get real-time feedback, with more granularity, to deliver the next level of savings. This presentation will demonstrate why M&V 2.0 is necessary to ensure that savings are measured quickly and accurately for energy efficiency to serve as a resource in the modern world.

How Analytics Solutions Are Transforming Utility Customer Engagement and Driving Opportunities for the Commercial Mid-Market

Speaker: Jen Grado, Toronto Hydro

Changes and trends in the customer buying experience – driven by technology advances in energy analytics, integration between software and programs, and increasing forms of self-service – are opening new opportunities for utilities to engage with their mid-market commercial customers. In this session, attendees will be presented with a case study on how Toronto Hydro employed commercial analytics program solutions to unlock energy and cost savings for mid-market business customers at scale. Toronto Hydro leveraged Ecova's Retroefficiency Analytics Platform to target and prioritize several hundred mid-sized (Class B) office buildings with both interval and monthly meter data. Virtual energy assessments segmented customers with high savings potential into retrofit and other types of efficiency programs, and teams of customer engagement specialists engaged customers with building-specific insights to drive increased participation and implement

comprehensive energy efficiency projects – from LED retrofits to HVAC upgrades and building automation system installations.

4:15 - 4:45pm

Espresso Learning Shot: Making Remote Work

Speaker: Danielle Marquis, AM Conservation

A recent survey of global business leaders found that 34% expected more than half their fulltime workforce to be working remote by 2020. In fact, many of us already work remote and may not even realize it—just think about how often you already bring work home with you at night or over the weekend. And for millennials, flexibility is the number one reason they're attracted to a workplace. Digital natives are now in management, they've long realized work is fluid and can be done outside a traditional office, and they're becoming the architects of workplace culture. But, just like every other new innovation, there's bound to be opportunities and challenges. Our speaker, a leader who has worked remote most of her career and current leads a team across various states, will lead us on a frank discussion about the pros and cons of working remotely and share best practices to make the remote workplace work for leaders and their teams.

5:00 – 6:30pm

Evening Reception in Expo Hall

Thursday, August 31

7:30 – 8:30am

Continental Breakfast and Networking in Expo Hall

8:30 – 9:45am

Session 4A: Electrification Conversation (Panel)

Moderator: Erika Lontoc, Enbridge

Beneficial Electrification Strategy and Deployment Approaches for Electric and Gas Utilities

Panelists: Bob DiBella, ICF; Ammar Nawaz, Hydro One; and Steve McGill, Enbridge Gas

This panel session explores innovative strategies under evaluation by utilities seeking to meet carbon goals, increase engagement with customers and reverse flat or declining energy sales. Electrification of transportation, goods movement and other traditionally non-electric end uses is a substantial opportunity for electric utilities to achieve business, environmental and customer service objectives. At the same time, gas utilities are encouraging stakeholders to take a close look at the economics of broad electrification, particularly in the residential/commercial space heating and water heating sectors. In this session, the panelists will each present their point of view on the topic followed by a balanced discussion of electrification opportunities and challenges.

8:30 – 9:45am

Session 4B: Energy Management is the Boss

Moderator: Peter Rowles, Energy Management Consultant

Enabling Smart Energy Management Technology for Energy Savings in the Small Commercial Sector

Speakers: Jeff Quint, Waterloo North Hydro and Peter Black, ecobee

Three local distribution companies in the Kitchener, Waterloo, Cambridge region of Ontario along with support of Union Gas are deploying an IESO funded pilot targeted to assess the customer engagement and energy savings potential of smart thermostat energy management technology selecting the ecobee EMS Si as the exclusive device being offered. SMB is a notoriously difficult customer sector for utility program engagement and has traditionally struggled to achieve a cost-effective business case to enable energy management technology for the relatively small facility size. This pilot was developed to provide these customers with a simple cost effective SMB designed EMT platform ultimately help them achieve higher visibility and control across their HVAC energy costs as well as providing EE savings both electric and gas to help the utilities achieve their DSM goals. Jeff Quint from Waterloo North Hydro and Peter Black from ecobee will co-present discussing the details of the offering and lessons learned from the pilot experience to date.

Strategic Funding for Embedded Energy Manager Programs - The Untold Stories of Ontario's Energy Managers

Speaker: Carrie Aloussis, IESO

Ladies and Gentlemen, the stories you will hear are true. If you are about to start, or update, an Energy Manager DSM Program where you believe all you need is approved customer funding to hire energy managers and a good set of program rules, then we recommend you stop reading right now, move on, and forget about attending this presentation. Since the launch of Ontario's various Energy Manager Programs in 2011, Ontario has become a North American leader in leveraging customer-embedded energy specialists to drive the adoption of strategic energy management principles, fast track energy saving projects and increased participation in existing DSM programs to help meet Ontario's 2015 to 2020 8.7 TWh savings target. In Ontario, we've learned that providing customer incentives alone to hire energy managers won't yield the desired program results. Funding for all Energy Manager programs should be balanced between customer incentives and funding for dedicated training and support. But, you don't have to take our word for it. Listen to the untold stories from Ontario's energy managers as they describe the challenging realities of succeeding as newly hired energy managers; where the technology issues seem easier than the people issues. It's a rare individual that has all the technical and non-technical skill-sets needed to succeed in a workplace culture where energy management is not well understood. After hearing these stories, you will understand why we invest, and continue to invest, in a broad scope of energy manager support services. The scope of which covers training and content development from energy financial analysis, presentation skills, business case writing, to applying CUSUM analysis for facility baseline modeling. We provide energy managers with direct one-on-one on-boarding and support, as well as creating and fostering a community of information sharing through our online hub, monthly newsletters and the relationships that are developed from attending the many regional and sector based training events. [The purpose of CUSUM Analysis is to assess the validity of the model over the course of the year, expressed as cumulative variance as a percentage of annual consumption and to identify any significant sustained changes in electricity consumption during the year

(identified by a change in slope of the CUSUM curve where cumulative variance exceeds +/- 1.5%) that may require further investigation.]

These true stories will validate how additional investment in energy manager support is a strategic use of funds which is having a lasting impact not only for Ontario's funded energy managers but also for the employers they work for.

Finding Energy Kaisens: An Approach for Strategic Energy Management for Industrial Customers

Speaker: Sean McCoy, DNV GL

Kaisen is Japanese for "improvement" – and when it comes to energy efficiency (EE), improvement can come in one of two ways: 1) upgrading to more efficient equipment or 2) changing fundamental processes that integrate EE as part of an on-going effort. Since DTE Energy's (Michigan) Commercial & Industrial EE program launch in 2009, DNV GL has designed offers and measures designed to meet the needs of customers seeking to upgrade specific equipment. Now, however, we also have in place a new Strategic Energy Management (SEM) program, launched in 2016, that takes EE to an entirely new level for DTE's C&I customers. With our energy Kaisen approach, DTE customers participating in various C&I programs can now improve problematic processes, rather than simply implementing measures, providing the dual benefits of energy savings and process improvement. DNV GL selected this approach for the SEM program because it allows a solution to be customized to reflect each customer's needs, level of energy expertise, organizational structure and resources. This multi-faceted program provides technical assistance and financial incentives to improve industrial process efficiency and reduce energy consumption, CO2 emissions and operational costs. It also utilizes Subject Matter Experts (SMEs) to identify low- or no-cost energy savings opportunities and larger capital EE projects.

9:45 – 10:30am

Networking Break in Expo Hall

10:30 – 11:45am

Session 5A: REV-ving up New Business Models

The Market Partnerships Enabling New Utility Business Model Opportunities

Moderator: Tim Michel, PG&E

Panelists: Andy Frank, Sealed; and Steve Mannhard, Simple Energy; Iuliana Calin, Nest

The evolving utility landscape has opened up a number of new business model opportunities for utilities and private sector partners. This panel will outline how 3 different companies (Sealed, Simple Energy, and Nest) are working with utilities in new and innovative ways that provide value for all parties. This panel will therefore be able to give some concrete examples of how utilities are engaging with customers and third parties. Sealed will discuss their pay with your energy savings financing program, HomeAdvance, and how they have worked with three different New York utilities to effectively reach customers while providing a new utility revenue stream. Simple Energy will discuss how utilities across the North America are deploying transactional platforms that enable them to offer new products and services to their customers, drive new revenue streams, and position themselves as a market enablers for customers,

companies, the broader community, and the grid. Furthermore, Simple Energy will also discuss the opportunity for utilities to leverage their demand-side management portfolio as a strategic asset to evolve their business model. Nest will discuss participation in demand response auction markets. The rise of engaged consumers and an increased need for flexible loads on the grid create new market opportunities. Nest will explore how the Ontario demand response auction market can be a great tool for future revenue streams for electric utilities and residential customer engagement. By partnering with smart thermostat leaders utilities diversify their offer, explore new business models and provide deeper customer engagement.

10:30 – 11:45am

Session 5B: Tech Talks: Intelligent Efficiency, Lighting Controls & VRF

Moderator: Kurt Hauser, Missouri River Energy Services

Do Advanced Lighting Controls Make Sense Now for All?

Speakers: Safdar Chaudhry, Richard Heath & Associates and Dario Moreno, Southern California Edison Co.

The speakers will provide an overview of Southern California Edison's (SCE's) Advanced Lighting Control System (ALCS) pilot program and discusses results and lessons learned from several projects, monitored and evaluated under this program. A recent wave of new lighting control technologies offers greater energy savings than ever before. With the use of advanced control strategies and dimmable LED lighting fixtures, several SCE research projects have resulted in savings of 60% to 90%. The results of ALCS projects were favorable with significant energy savings, mostly resulting from replacing the HID or fluorescent fixtures with LED fixtures. Additional savings resulted from the installation of ALCS, featuring task tuning, motion sensing, and daylight harvesting. Although, the lighting controls had relatively smaller savings, they enhanced the control capabilities and provided ease of use for the end users. Regardless of these successes, the installation costs for LED fixtures and control retrofits were identified as a roadblock to widespread acceptance, if the generous incentives were not taken into consideration. In addition, the data acquisition and analyses of ALCS projects and validation of control software results were not without challenges.

Industry Input Report: Variable Refrigerant Flow Systems for Commercial Buildings

Speaker: Ian Metzger, Lockheed Martin Energy

Air Northwest, founded by Bonneville Power Administration and Pacific Northwest public utilities, is the premier resource for HVAC energy efficiency information in the Northwest. Participants in this network of HVAC professionals are provided the latest information about commercial HVAC best practices and utility incentives for energy efficient technologies, resulting in higher levels of customer service and energy efficiency expertise throughout the Northwest. This presentation discusses detailed results of the Air Northwest industry input report on commercial Variable Refrigerant Flow (VRF) sales and installation. The research consisted of an online survey, followed by more detailed phone interviews with VRF professionals, including: engineers, contractors, distributors, and manufacturer representatives. The results of the surveys and interviews identified trends

relating to barriers, savings, market, non-energy benefits, costs, and other lessons learned.

Intelligent Efficiency and Utility Programs: Reports from the Midwest

Speaker: Haley Keegan, Midwest Energy Efficiency Alliance

Recent advances across a wide-ranging spectrum of technology are creating significant new opportunities in the energy efficiency landscape. The Midwest Energy Efficiency Alliance (MEEA) expects this evolution to rapidly and fundamentally change the ways energy efficiency is identified, achieved and measured across the country. The term intelligent efficiency, while broad, refers to the growing number of products, software applications, services and systems that are enabling not only the collection and analysis of large quantities of data, but also the remote or automated control of energy-consuming devices and processes. By leveraging information and control technologies to create networks of sensors and connected devices, intelligent efficiency solutions enable more system-level savings, greater end user engagement, the creation of dynamic baselines, real-time savings measurement and the continuous commissioning of equipment. A number of Midwest utilities and municipalities are pursuing innovative program models based on intelligent efficiency technologies and are already capturing deeper savings as a result. At the same time, there is ample opportunity for regional energy efficiency stakeholders to lead in this area. MEEA recently surveyed Midwest energy efficiency programs and initiatives promoting or utilizing a range of emerging technologies including Home Energy Management Systems, Commercial Advanced Lighting Controls, Energy Management Information Systems and Smart Manufacturing. The utilities highlighted include ComEd, DTE Energy, Xcel Energy, AEP Ohio, KCP&L, and others. MEEA then conducted a literature review and held interviews with over 20 representatives from utilities, program implementers, manufacturers, solution providers and other relevant stakeholders. MEEA has synthesized from these interviews the main market barriers impeding emerging intelligent efficiency solutions and offered many general recommendations for the energy efficiency community.

Noon – 1:30pm

Closing Lunch & Networking Event

Happy Birthday Canada!

It's Canada's 150th birthday and everyone gets cake! As well as lots of networking, quick bites of learning, and delicious servings of signature Canadian cuisine, wine and beer. Yes! Libations at Lunch – it's a party! Go ahead and mix and mingle among the food stations. And for an added bonus, make it a lunch-and-learn experience by visiting the learning stations to pick up practical and valuable tips on the following subjects:

- 5 Ways to Make an Instant Connection
- 5 Ways to Battle Procrastination
- 5 Ways to Better Brainstorming
- 5 Ways to Better Email Management

Join us for what will undoubtedly be a fun and festive event – with a dash of learning thrown in!

1:30 pm

Conference Adjourns