

Can't Travel? Attend Remotely via Video Conference!

We use Microsoft Teams as our platform for remote connections. You do not need to have a Teams account in order to participate remotely. You may join the meeting through your web browser or by downloading and installing the Teams app. You will have the ability to ask questions through the microphone on your computer, or by typing a question into the chat box



ELECTRIC VEHICLES 101

An Energy Industry Primer on EV Planning, Integration, & Maximizing the EV Opportunity

April 16-17, 2020

EUCI Conference Center

Plaza Tower One Conference Center

Denver, CO

    TAG US #EUCI
FOLLOW US @EUCIEvents



EUCI is authorized by IACET to offer 1.0 CEUs for the course

OVERVIEW

American consumers and policy makers are increasingly seeing Electric Vehicles (EVs) as a vital part of achieving sustainable transportation and emission reduction goals of greenhouse gases and other pollutants. The EV industry is growing at an astounding pace, as major automobile manufacturers increasingly develop new electric car products, and overall affordability for EVs is increasing to allow for more consumers to purchase EVs than ever before.

This course will provide a thorough primer on Electric Vehicles (EVs), with a special emphasis on the relevance of the rapidly growing EV industry to utilities and the energy industry. It will deliver insight into the technologies that make EVs possible, real-world cost and performance, comparing them to traditional vehicles. Attendees will gain an awareness of the overall EV marketplace, relevant policy measures and trends, charging/charging infrastructure, and learn about overall challenges and opportunities the EV industry presents for the energy industry. There will be technical sessions addressing power related issues, load forecasting, strategic planning, and utility case studies related to EV program design, product development, and rate design. It will untangle the complex issue of vehicle to grid integration (VGI), detailing the technical and economic challenges that EVs impose on electricity grid operations, and the relationship of EVs to renewable energy.

LEARNING OUTCOMES

- Discuss a brief history of electric vehicles (EVs) & their status today
- Review the environmental benefit of EVs & their growing in climate change and clean energy policies
- Describe EV market landscape, consumer perspectives, & future projections on the EV industry
- Assess how the EV industry is impacting utilities and related challenges & opportunities for the energy industry
- Describe how utilities are structuring rate design, demand charging & customer programs for EVs
- Evaluate elements of effective design for utility EV programs & EV product development
- Analyze EV charging technologies, considerations for access and efficiency, and charging analytics
- Review charging infrastructure planning & deployment case studies
- Assess how to successfully plan for EV charging infrastructure to meet policy goals through modeling tools & program design
- Analyze cutting edge research and case studies on optimizing electric vehicle grid integration (VGI)
- Evaluate planning and operational analytical tools to optimize how EVs function on the grid



“Great overview of the EV space with real life examples to take back to the utility for a better experience for customers.”

Senior Regulatory Counsel,
PSEG Long Island



“Excellent opportunity to obtain detailed knowledge on the full breath of activity in the EV space.”

Director of Business Development,
Clean Power Research

AGENDA

THURSDAY, APRIL 16, 2020

- 8:00 – 8:30 am** **Registration & Continental Breakfast**

- 8:30 – 9:45 am** **The Rise of the Electric Vehicle (EV): A Key Disruptive Technology in the Clean Energy Era**
 - A brief history of EVs
 - How the EV is transforming the traditional automobile industry
 - The environmental benefit of EVs
 - Federal, state, and local regulations and how they interact with one another
 - The role of EVs in state and federal policy
 - o Regional climate action plans
 - o Electrification initiatives
 - Where EV policies are emerging
 - EVs and renewable energy

- 9:45 – 10:00 am** **Morning Break**

- 10:00 – 11:15 am** **Electric Vehicle (EV) Technologies, Types & Brands**
 - Foundational characteristics & concepts of an EV
 - Types of EVs, their parts, and functions:
 - o Hybrid electric vehicles (HEVs)
 - o Plug-in hybrid electric vehicles (PHEVs)
 - o All-electric vehicles (EVs)
 - Comparison of combustion engine, hybrid and electric
 - o type of emission and fuel use
 - o efficiency, speed/acceleration, maintenance, mileage, cost

- 11:15 am – 12:00 pm** **The Electric Vehicle (EV) Marketplace & Consumer Trends**
 - The electric vehicle (EV) car market
 - o overview of types of cars, major brands & top market sellers
 - o Projections and plans from the auto manufacturer industry
 - Consumer trends
 - o Consumer purchasing trends to date
 - o Emerging trends
 - o Consumer education & awareness on EVs

- 12:00 – 1:00 pm** **Group Luncheon**

- 1:00 – 1:45 pm** **Electric Vehicles (EVs) & Utilities: Impacts and Opportunities**
 - Impacts of EVs for utilities and the energy industry – now and in the future
 - Understanding the utility-EV opportunity
 - Strategic planning for EVs:
 - o Evaluating grid impacts
 - o Load forecasting
 - o Charging infrastructure management
 - o Informing rate design
 - Trends in utility EV program design
 - Optimizing the utility’s role in the EV landscape

AGENDA

THURSDAY, APRIL 16, 2020 (CONTINUED)

1:45 – 3:00 pm

Electric Vehicle (EV) Charging & Analytics

- Overview of the EV charging process & equipment
- EV charging equipment
 - o Electric Vehicle Supply Equipment (EVSE)
 - o Level 1 chargers
 - o Level 2 chargers
 - o DC Fast Chargers
- Addressing key charging challenges: Access & efficiency
- What is smart charging?
 - o Smart charging value chain
 - o Specific customer examples & real applications
- EV charging analytics

3:00 – 3:15 pm

Afternoon Break

3:15 – 5:00 pm

Vehicle Grid Integration (VGI)

Vehicle Grid Integration (VGI) tools and processes support the optimization of electric vehicle (EV) connection and interaction to the electric grid. This session will provide an overview of VGI, discussing:

- Benefits of VGI:
 - o Supporting customers needs at times that are beneficial to the grid
 - o Support for utilities and grid operators with grid balancing services
 - o Optimization of available use of power on the grid
- Analysis of EV use profiles, benefits, and battery life
- Optimizing VGI dynamics to ensure
 - o Lower customer rates
 - o Utilization of higher proportions of renewable energy
 - o Efficient use of EVs as grid assets
- Policies that incentivize VGI technology solutions
- Needs for grid interoperability standards
- Evaluating grid services technology opportunities

FRIDAY, APRIL 17, 2020

8:00 – 8:30 am

Continental Breakfast

8:30 – 10:00 am

Charging Infrastructure Planning for Electric Vehicles (EVs)

- Overview of EV Infrastructure
- Charging infrastructure modeling & deployment
- Technical charging installation
- Utility – EV manufacturer coordination on infrastructure deployment
- Enabling programs and technologies for infrastructure needed in a specific region
- Assessment of charging infrastructure needs in support of electric vehicle deployment and emission reduction goals
- New policy concepts encouraging cost-effective infrastructure buildouts and mechanisms to finance the installation of charging infrastructure while encouraging private investment
- Key technologies that enable interoperability and smart charging
- Best practices for modeling & assessing needs for charging infrastructure

AGENDA

FRIDAY, APRIL 17, 2020 (CONTINUED)

10:00 – 10:15 am **Morning Break**

10:15 – 11:45 am **Utility Case Studies of Electric Vehicles (EVs)**

- Designing effective EV programs
- Planning, operating & managing EVs on the grid
- Optimizing charging processes & rate design
- Long-term assessment & analysis of EVs

11:45 am **Program Adjourns**

INSTRUCTORS



Andrew Dillon
Senior Principal/ West Monroe Partners

Andrew Dillon is a Senior Principal at West Monroe Partners, where he leads the DER Interconnection solution platform. He has more than 20 years' experience focusing on grid modernization technologies, most recently managing a project to introduce DER interconnection processes to EV charging infrastructure. He previously founded the real-time grid control company Varentec. Andrew is a co-author of two patents on advanced grid control using smart inverters.



Stacey Simms
Senior Portfolio Manager – EV Fleet Strategies / Xcel Energy

Stacey Simms works at Xcel Energy as a Senior Portfolio Manager in EV Fleet Strategies. She is responsible for the development and deployment of programs and strategies for the electrification of the transportation sector, focusing on fleets and mass transit. She works to achieve Xcel Energy's goals to decrease the carbon intensity of the transportation industry, further promote the transition to a carbon free energy future and keep customer bills low. She currently helps manage and support an Electric Vehicle (EV) assessment program and EV Supply Equipment (EVSE) assessment and construction program in MN, programs which will be deployed in future to all of Xcel Energy's service territories.



Nigel Zeid
Electric Vehicle Specialist & Educator/ Nissan

Nigel Zeid has worked at Boulder Nissan since 2007. Over the last 12 years, he has evolved from a car salesman into an ecumenical electric vehicle (EV) educator and pollinator. He is actively involved in EV regional policy and industry discussions and initiatives. Nigel is a top salesman at Nissan and is passionate about helping others along the EV road. He is originally from London and taught animation there for a decade before beginning his career in EV sales.

INSTRUCTIONAL METHODS

PowerPoint presentations, interactive group exercise, and group discussion will be used during this course.

REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for a minimum of four hours to be eligible for any continuing education credit.

IACET CREDITS



EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

EUCI is authorized by IACET to offer 1.0 CEUs for this course

EVENT LOCATION



Plaza Tower One Conference Center

6400 S Fiddlers Green Cir. Greenwood Village, CO 80111

The EUCI conference center is conveniently located adjacent to the Arapahoe at Village Center Light Rail Station, allowing easy access to and from DIA, Downtown, and Local Area Attractions. EUCI will validate parking at the Plaza Tower One Conference Center.

NEARBY HOTELS

Each of these hotels offers a complimentary shuttle to and from the EUCI conference center.

Hyatt Regency Denver Tech (2.8 miles away)

7800 E. Tufts Ave. Denver, CO 80237
303-779-1234

Special EUCI Room Rate: \$179.00 or lowest available rate

To access EUCI room rate visit

denvertechcenter.regency.hyatt.com

Click "Book Now", then click "Special Rates",

Click "Corporate or Group Code" and enter **CR102338**

You may also call central reservation at **1-800-233-1234**

and give them the corporate code of **CR102338**

Springhill Suites DTC (0.3 miles away)

7900 East Peakview Ave., Greenwood Village, CO 80111
303-721-3321

Wingate by Wyndham (0.3 miles away)

8000 E. Peakview Ave., Greenwood Village, CO 80111
303-626-2641

Hyatt Place DTC (2.1 miles away)

8300 E. Crescent Pkwy, Greenwood Village, CO 80111
303-804-7000

Denver Marriott Tech Center (3.1 miles away)

4900 S. Syracuse St., Denver, CO 80237
303-779-1100

REGISTER 3, SEND THE 4TH FREE

Any organization wishing to send multiple attendees to this conference may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

To Register Click Here, or

Mail Directly To:

PMA Conference Management
PO Box 2303
Falls Church VA 22042
201 871 0474
Fax 253 663 7224
register@pmaconference.com

EVENT LOCATION

Plaza Tower One Conference Center

6400 S Fiddlers Green Cir.
Greenwood Village, CO 80111

See nearby hotels on page 6

PLEASE SELECT

- ELECTRIC VEHICLES 101 COURSE**
APRIL 16-17, 2020: US \$1495
EARLY BIRD on or before MARCH 20, 2020: US \$1295

ENERGIZE WEEKLY

Energize Weekly is EUCI's free weekly newsletter, delivered to your inbox every Wednesday. We provide you with the latest industry news as well as in-depth analysis from our own team of experts. Subscribers also receive free downloadable presentations from our past events.

Sign me up for Energize Weekly

How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

Print Name | Job Title

Company

What name do you prefer on your name badge?

Address

City | State/Province | Zip/Postal Code | Country

Phone | Email

List any dietary or accessibility needs here

CREDIT CARD INFORMATION

Name on Card | Billing Address

Account Number | Billing City | Billing State

Exp. Date | Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx) | Billing Zip Code/Postal Code

OR Enclosed is a check for \$ _____ to cover _____ registrations.

Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before March 6, 2020 in order to be refunded and will be subject to a US \$195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI's liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our office. EUCI reserves the right to alter this program without prior notice.