



4th Annual

Demand Response

& Distributed Energy Resources

World Forum 2017

October 11-12 • Hilton Costa Mesa, CA

Optimizing Auto-DR and Distributed Energy Resources for the Future Network



Utilities around the world are under increasing pressure to accommodate energy efficiency, control load, and integrate distributed energy resources such as renewables. These factors plus an urgent need to control greenhouse gasses are driving new requirements for energy resiliency, sustainability, and power quality -- all of which impact the traditional utility business case. For utilities to thrive in this changing market,

they must embrace greater network agility and work with customers to maximize value for all stakeholders in the value chain.

The **4th Annual Demand Response & Distributed Energy Resources World Forum**, October 11-12, 2017 in Costa Mesa, CA brings together stakeholders from across the DR / DER industry and internationally to examine the latest technology advances, case studies, and business strategies for optimizing demand response, energy efficiency, DER integration and control, and demand side management programs. The event will help utilities and C&I end users realize the full economic benefits of incorporating these capabilities into their operations, and leveraging the next-generation smart grid to optimize performance.

Topics to be Addressed Include:

- The evolving business model for the 21st Century energy provider
- Integrating and controlling distributed energy resources
- Refining market design to accommodate DERs
- Regulatory and policy trends impacting DR and DER
- DER standards and developments: towards unification
- New technologies and strategies for maximizing demand response performance
- Big Data analytics in optimizing DR, energy efficiency, and DER management
- The role of electric vehicles and energy storage going forward
- Tools and techniques for addressing the Duck Curve
- And more!



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Program Schedule

Note: Subject to change. Additional speakers to be announced. Last updated 8-9-17

DAY 1 – Wednesday, October 11, 2017

7:30-8:30 Networking Breakfast

8:30-9:00 **Opening Keynote Address**

- Emilio Camacho, Chief of Staff, **California Energy Commission**

9:00-10:15 **Session 1: DR / DER Market Trends, Business Drivers, and Success Strategies**

The concept of a utility “demand side” is disappearing fast as utilities recognize that the meter is just a tool; not a boundary. This panel will explore different strategies and tactics coming in program design and customer relationships.

- Phil Davis, Vice President Planning & Partners, **Sterling Energy Assets**
- Craig Wooster, Project Manager & General Contractor, **Stone Edge Farm MicroGrid Project**; CEO, **Wooster Energy Engineering**
- Doug Houseman, Grid Modernization Lead, **Burns & McDonnell**
- Michael Robinson, Principal Adviser, Market Design, **Midwest ISO**
- **Southern California Edison** (*speaker to be announced*)

10:15-10:45 Networking Coffee Break

10:45-12:15 **Session 2: The Role of Data in Delivering Next-Gen DR / DER Services**

Building a Products & Services Program to Better Serve Customers

In an effort to better serve its customers, Entergy Corporation developing a program to enable its operating companies to choose the ideal portfolio of products and services, select the best regulatory strategy, and understand the generation, transmission and distribution planning impacts from these decisions. This strategy relies on evaluating customers’ preferences and propensity to adopt various DER (PV, battery storage, EV charging, backup generation, EE, DR) and billing and payment options and utilizes a comprehensive set of analytics to develop new insights, commercial offerings, and capabilities for customers and the utility. This presentation will discuss the customer-centric business model of Entergy’s P&S program, the enhanced analytics that are leveraged throughout the process, the examination of potential financial and regulatory impacts, and our process for business model evolution.

- Matt Dearmon, Manager, Product Development, Commercial Development & Innovation, **Entergy Corporation**

The Power of Data

With the deployment of modern sensors and smart meters across the U.S., there are enormous quantities of energy-use data at our fingertips for the first time ever. Environmental Defense Fund (EDF) believes this data can revolutionize the grid, but only if people have access to data, as well as the tools needed to control their energy use and electricity bills. Illinois is making that a reality. This presentation will highlight new guidelines for securely sharing and licensing energy data, called the Open Data Access Framework, which Illinois’ leading utilities have agreed to implement. These rules clarify the type of electricity data customers and authorized third parties have access to and how the data should be delivered. Furthermore, the Illinois Commerce Commission (ICC) recently approved an energy

data-sharing program for Illinois' largest electric utility, ComEd. The program allows companies and researchers access to anonymous energy-use data from ComEd's nearly 4 million smart meters, which will encourage the development of energy-saving products and services designed to help Illinoisans save money.

- Dick Munson, Director, Midwest Clean Energy, **Environmental Defense Fund**

Optimizing BDR and Dynamic Pricing Programs with Predictive Analytics

Behavioral demand response (BDR), time of use (TOU) pricing and peak time rebate (PTR) programs help utilities integrate more renewables, lower costs and deliver savings to their customers. This presentation will examine how a utility used flexibility management software with predictive analytics to analyze more than 200 million daily load profiles with 15-minute interval data, identifying ways to personalize offerings and optimize pricing structures to improve load shed, increase customer participation and maximize customer savings. Key takeaways include:

- How flexibility management software's predictive analytics can be used to optimize BDR, TOU pricing and PTR programs
 - Best practices for collecting and analyzing data from these programs, in order to secure insights on how to improve their effectiveness
 - How to use these insights to optimize programs and improve load shed, increase customer participation and maximize customer savings
 - Lessons learned on best practices for BDR, TOU pricing and PTR program design and implementation
- Josh Keeling, Demand-Side Resource Development Lead, **Portland General Electric**
 - Jeffrey Norman, Vice President of Industry Solutions, **AutoGrid**

12:15-1:15 Networking Luncheon

1:15-2:30 Session 3: Advanced DR / DER Technologies

Leveraging Advanced DR / DER Shift vs Shed Technologies for Multiple Uses

In a world of ever increasing renewable energy production, DERs and Demand Response may be actively called upon to shift load from traditional high-use periods to the times of day that experience greater renewable output. In California, the potential for these types of "shift" resources is expected to increase in the near future, with traditional "shed" DR resources losing some of their value. What are the opportunities for advanced technologies in providing these new products, and how can they be deployed cost-effectively for utilities, third party providers, and ratepayers? Can emerging efforts to integrate deployment and technology adoption between energy efficiency and demand response programs leverage these technologies for multiple uses?

- Shelly Lyser, Senior Regulatory Analyst, **California Public Utilities Commission**
- *Session chair: Southern California Edison. Additional Speakers to be announced*

2:30-3:00 Networking Coffee Break

3:00-4:30 Session 4: On the Horizon: Cloud-Managed Buildings - A 360° Perspective

The role of the cloud in energy management services is relatively at its infancy, and its role and impact are still not very clear. Emerging platforms offer cloud-based energy monitoring software, and an increasing number of equipment manufacturers are offering cloud-based diagnostics and support. However a fully cloud-managed building has yet to be implemented. Multiple questions remain: are cloud-managed buildings warranted? Are they economically viable? Will they pose a security threat? Will they present an advantage in supporting a 100% renewable grid and new energy markets?

This session will present and discuss a 360° perspective of cloud-managed buildings including business, financing, technology, security and grid-support aspects. The panel includes a case study of a first implementation of cloud-managed buildings slated for deployment in 2018, funded by the California Energy Commission. Panelists consist of experts in energy management, energy investments, cyber security, demand response and transactive platforms.

- Michel Kamel, CEO, **MelRok**
- Anne Eisele, Director of Project & Energy Management, **Pomona College**
- Mukesh Khattar, Technical Executive, Energy Efficiency and Demand Response Program, **Electric Power Research Institute**
- Rahul Chopra, Senior Advisor, Energy Technologies Area, **Lawrence Berkeley National Laboratory**

4:30-5.30 **Session 5: DER Siting for Transmission Planning Purposes**

While some demand side programs are captured in long term planning at present, it is anticipated in future DERs can have much more of an impact on long term forecasting at specific load buses for instance, varying load shapes and ultimately influence how future supply and demand side resources could be sited. If at ISO/RTO level we do not account for this DER appropriately we could end up with a transmission plan that overbuilds or under-builds as the case might be. There are likely other potential reliability issues associated with not accounting for DERs. These could include impacts to stability study or PV/QV study results or approaches to these studies. These could have reliability implications as well as result in model validation for MOD-033. In addition depending upon the profile of the DER, the impact on peak needs to be considered as to the historical time period of the peak and in particular with solar the potential of shifting of the peak to later hours.

- Ken Schuyler, President, **PJM Environmental Information Services**
- Rao Konidena, Principal Advisor, Policy Studies, **Midwest ISO**
- Garry Chinn, Transmission Planning and Interconnection, **Southern California Edison**

5.30 – 6.30 Drink Reception

DAY 2 – Thursday, October 12, 2017

8:00-9:00 Networking Breakfast

9:00-10:15 **Session 6: DR and Storage – The new DER**
Speakers to be announced

10:15-10:45 Networking Coffee Break

10:45-12:15 **Session 7: New Strategies for Intermittent Renewable Energy Integration**

- Ross Malme, Principal, **Skipping Stone**
- Gary Connett, Director, Member Services, **Great River Energy**
- Conrad Eustis, Director-Retail Technology Strategy, **Portland General Electric**

12:15-1:15 Networking Luncheon

1:45-2:45 **Session 8: Meter as the Hub for DER Management**

- Andy Marshall, Practice Director, Distributed Energy Resource Management, **Landis+Gyr**

1:45-2:45 **Session 9: Autonomous Demand Management**

What can be done to change the shape of the “Duck Curve”? Demand Reduction (DR) is basically “demand restriction” and although simple and relatively inexpensive to implement it has undesirable side effects, most notably affecting comfort.

Autonomous Demand Management, in its simplest form, a “load controller” has been around since 1982. Back then, there was a problem to solve, the utility put a rate structure in place to encourage behavior modification and a small industry grew to meet the needs of the customer. The utility won (lower demand), the customers won (lower bills), and a small industry won (sales revenue and jobs). Fundamentally, many utilities have the same type of problem to solve, which is to figure out a way to motivate or cause their customers to have a more uniform demand. With a more uniform demand, supply planning and forecasting are much easier and equipment and resource capacity are better utilized for a more efficient system.

This case study shows that Autonomous Demand Management does work and work well. A population of 50 homes have been studied (with and without solar generation) and analyzed to show conclusively that it is possible to change the shape of the demand curve and do it in a way that doesn't affect customer comfort. In fact, done properly, the customer doesn't know it's being done.

- Scott Scharli, Senior Planning Analyst, **Salt River Project**
- Nick Wold, Director of Business Development, **Inergy Systems**

2:45-3:15 Networking Coffee Break

3:15-4:15 **Session 10: Integrating Electric Vehicles as DERs**

Electric Vehicles as DERs

An electric vehicle is most people's first introduction to "Smart Grid," "TOU Rate," "Demand Response" and related terminology and technologies. Electric vehicles are a unique, dispatchable load that can be leveraged for site level, distribution level, and wholesale electric system benefits. This presentation discusses results to date from the May 2017 Honda SmartCharge Beta Program -- a V1G program with a driver smartphone app, back-end server, and vehicle telematics approach designed to schedule the charging of the customer's Fit EV. The SmartCharge system achieves the user's transportation needs while reducing the CO2 emissions associated with charging, increasing renewable energy in the charging mix, reducing the utility's cost of distributing energy to EVs, incorporating Demand Response calls, and participating in real-time wholesale markets. Honda's electrification efforts are steeply ramping up, with a 2030 goal of 2/3 of sales being HEVs, PHEVs, BEVs, and FCVs.

- Ryan Harty, Manager of Connected and Environmental Business Development Office, **American Honda Motor Co.**

Leveraging Open Standards to Meet Government Mandates & Electrification Goals

Increasingly, cities and states are implementing stricter environmental regulations, and setting goals for fleet electrification and public charging infrastructure. To meet growing demand, utilities are turning towards de facto open standards like Open Charge Point Protocol (OCPP) for charger to central system communication and Automated Demand Response (OpenADR) as the new open model for interoperability. Such was the case when Eastern Washington's leading

utility, Avista Corp., was tasked with helping to meet the state's "Electric Vehicle Action Plan" goals in 2016. These open standards allow electric vehicle assets to meet growing regulatory mandates, and the shift is providing system-wide value.

This presentation discusses the importance of leveraging open standards to effectively integrate renewables, electric vehicles, and storage to meet and exceed government mandates. Thomas Ashley will cite the work his company has done with progressive utilities like Avista to incorporate EV infrastructure into the grid through open standards. This case study will serve as a proof-point for higher EV penetration, in a way that maximizes the utilization of existing grid assets and minimizes unnecessary distribution and capacity upgrades, providing the most value and benefits possible to all electric customers.

- Tom Ashley, Senior Director of Government Affairs & Public Policy, **Greenlots**

Media Partners



The OpenADR Alliance fosters the development, adoption, and compliance of the Open Automated Demand Response (OpenADR) standard through collaboration, education, training, testing, and certification. The OpenADR Alliance is open to all interested

stakeholders interested in accelerating the adoption of the OpenADR standard for price- and reliability-based demand response. More information can be obtained at www.openadr.org.



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The OSGP Alliance, founded in 2006 as the Energy Services Network Association (ESNA), is an independent global, not-for-profit association that promotes the adoption of the Open Smart Grid Protocol (OSGP) and related services and infrastructure for smart grid applications.

Members include utilities, software, hardware and service providers, and solution integrators that share a common goal and vision for promoting open standards for energy demand side management, smart grid and smart metering systems. Visit www.osgp.org.



The Environmental Defense Fund, a leading national nonprofit organization, creates transformational solutions to the most serious environmental problems. EDF links science, economics, law and innovative private-sector partnerships. Visit www.edf.org.

Sample Attendee Feedback

"Excellent dialog and exchange of thought. I liked the forward thinking and discussion of future directions."

-- Jack Peterson, Manager - Energy Operations Support, Southern California Edison

"The event was well organized and extremely informative. I have already recommended it to colleagues."

-- Leigh Holmes, Manager of Utility Programs, EnerNOC, Inc.

"Good, well-organized event. Gave a good picture of today and tomorrow, and the issues and challenges. Good, relevant presentations with little or no advertorial presentation."

-- Terry Casey, CEO Europe, Intellistar

"It was very interesting and I learned a lot. This is absolutely the best in the US so far."

-- Magnus Lindén, Senior Consultant, Energy Markets Group, Sweco Energuide

"Very good selection of topics and speakers from different backgrounds and stakeholders. Excellent organization. Thank you!"

-- Dr. Toni Goeller, General Manager, MINcom Smart Solutions GmbH, Germany

"Great contacts, presentations and information. Very useful!"

-- Charles (Ted) Witham, West Region Sales Director, Endpoint Automation, Cooper Power Systems by Eaton



Conference Venue

Hilton Orange County/Costa Mesa

3050 Bristol St

Costa Mesa, CA 92626

(714)540-7000 | [Map & Directions](#)

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group, **4th Annual Demand Response World Forum 2017**, at the time the reservation is made in order to receive the special group rate.

Fly in for the World Forum and leave some time to explore all the action of Orange County. Play a round of golf at nearby Pelican Hill or Oak Creek golf courses. Check out exciting rides at Disneyland and Knott's Berry Farm. Cheer on the Angels at Anaheim Stadium and see the Anaheim Ducks heat up the ice at the Honda Center. Shop at exclusive boutiques, glide across the bay on a water taxi, or kick off your shoes and walk along the water's edge at the most beautiful beaches in California. For insider information on the local culture, attractions, restaurants, shopping, and events near the Hilton Orange County / Costa Mesa, [click here](#).

Sponsorship & Exhibition Opportunities



Sponsorship of the Forum ensures that your technology solutions and expertise are positioned prominently to a range of international energy professionals interested in demand response and distributed energy resources management.

This is a unique opportunity to target a key group of decision-makers, network managers, utility executives, investors, and energy providers who will be in attendance. Sponsors receive a range of valuable exposure opportunities for highlighting their involvement in the Forum and maximizing their interaction with attendees. Prominent logo positioning on event website, Tabletop Exhibit space, and an opportunity to distribute corporate information to attendees are just a few benefits of sponsorship. To receive full details, please [contact us](#).

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The [Smart Grid Observer](#) is an online information portal and weekly e-newsletter serving the global smart grid industry. SGO delivers the latest news and information on a daily basis concerning key technology developments, deployment updates, standards work, business issues, and market trends driving the smart energy industry worldwide. The publication serves a global readership of executives and practitioners in the electric power generation, transmission, and distribution industry. For a free subscription, click [here](#). Recent sponsors of SGO programs include:



Registration

Register securely online at www.drworldforum.com/register.htm

Registration Type	<u>Early Bird (before September 8, 2017)</u>	<u>After September 8</u>
Standard Registration	\$995.00	\$1,295.00
Government, Academic, & Non-Profit	\$795.00	\$995.00

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