

Welcome to the OpenADR Member Meeting & Open House

Thank you to our host



SOUTHERN CALIFORNIA
EDISON

Housekeeping

- To access Internet
 - EEC-I Wireless (Network)
 - eeci6090 (Password)

- Presentations will be made available the meeting on www.openadr.org.

Agenda: May 13, 2015

- **Lunch:** 12:00 p.m. – 1:00 p.m.
- **Welcome & Keynote Address:** 1:00 p.m. – 1:45 p.m.
- **OpenADR Update:** 1:45 p.m. – 2:30 p.m.
- **Break:** 2:30 p.m. – 3:00 p.m.
- **OpenADR 2.0 Utility Deployments:** 3:00 p.m. – 4:00 p.m.
- **OpenADR Committee Updates and Q&A:** 4:00 p.m. – 5:00 p.m.
- **Reception**

OpenADR Networking Reception

May 13, 2015

At this location 5:30 PM – 7:30
PM

**Appetizers will be served*



Annual Member Meeting

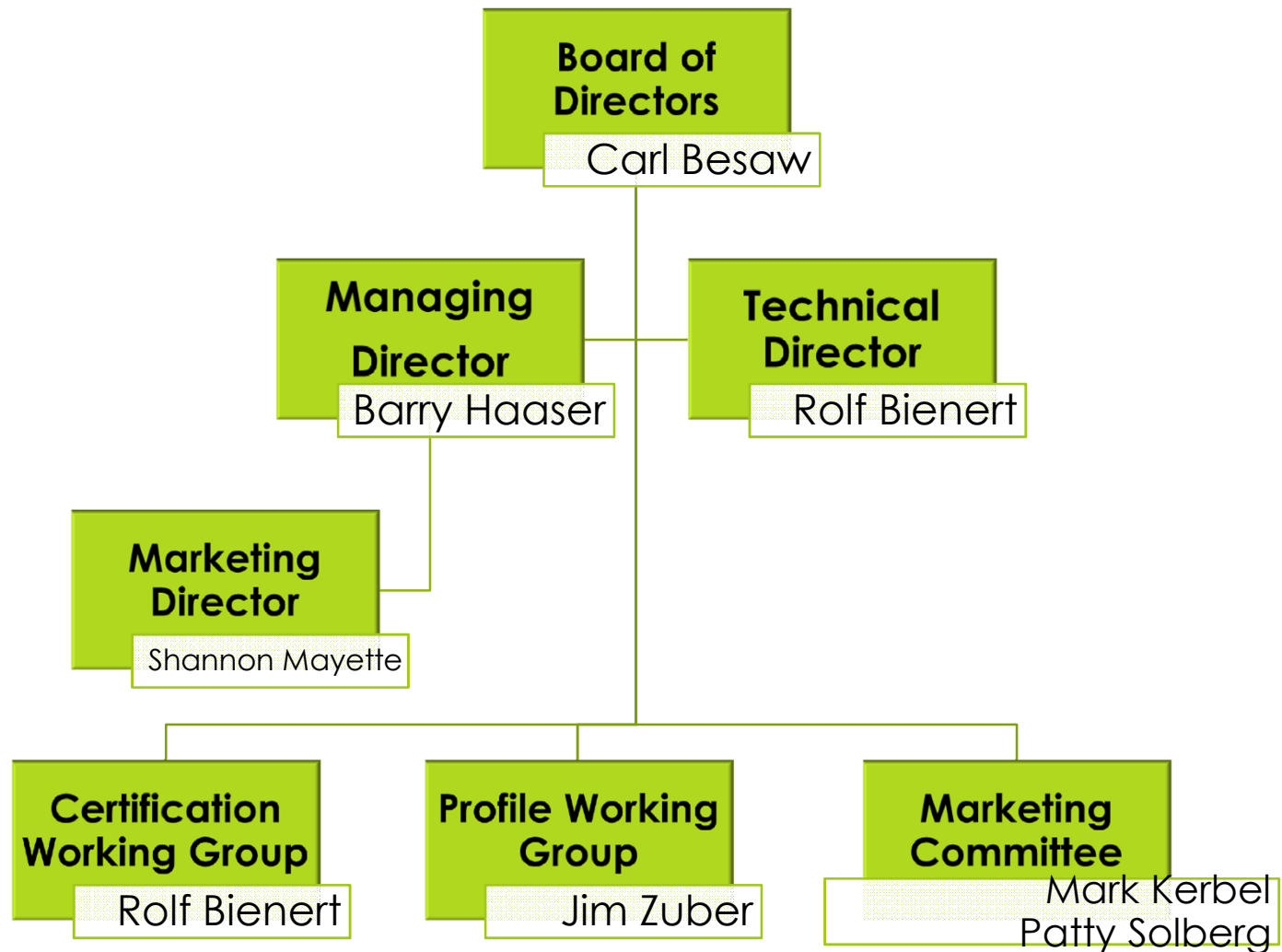
Barry Haaser
Managing Director

May 13, 2015

OpenADR Mission

The mission of the OpenADR Alliance is to foster global development, adoption, and compliance of Open Automated Demand Response (OpenADR) standards through collaboration, education, testing, and certification.

Organizational Structure



Board of Directors



**Carl Besaw,
Chairman**



**Rish
Ghatikar,
Vice
Chairman**



**Albert Chiu,
Secretary/Tre
asurer**



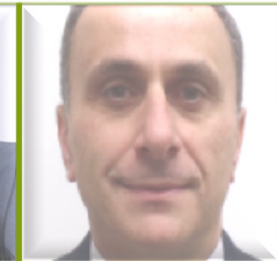
**Jay Nelson,
Director**



**Venki
Ramachandra
n
Director**



**Pierre Mullin,
Director**



**Robert
Nawy,
Director**

OpenADR Team



Barry
Haaser
Managing
Director



Rolf Bienert
Technical
Director



Shannon
Mayette
Marketing
Director



Sharon
Calcagno
Member
Services
Coordinator

Sponsor Members



Contributor Members Here Today



For Full List: <http://bit.ly/OpenADRMembership>



Adopter Members



Hawaiian Electric Company



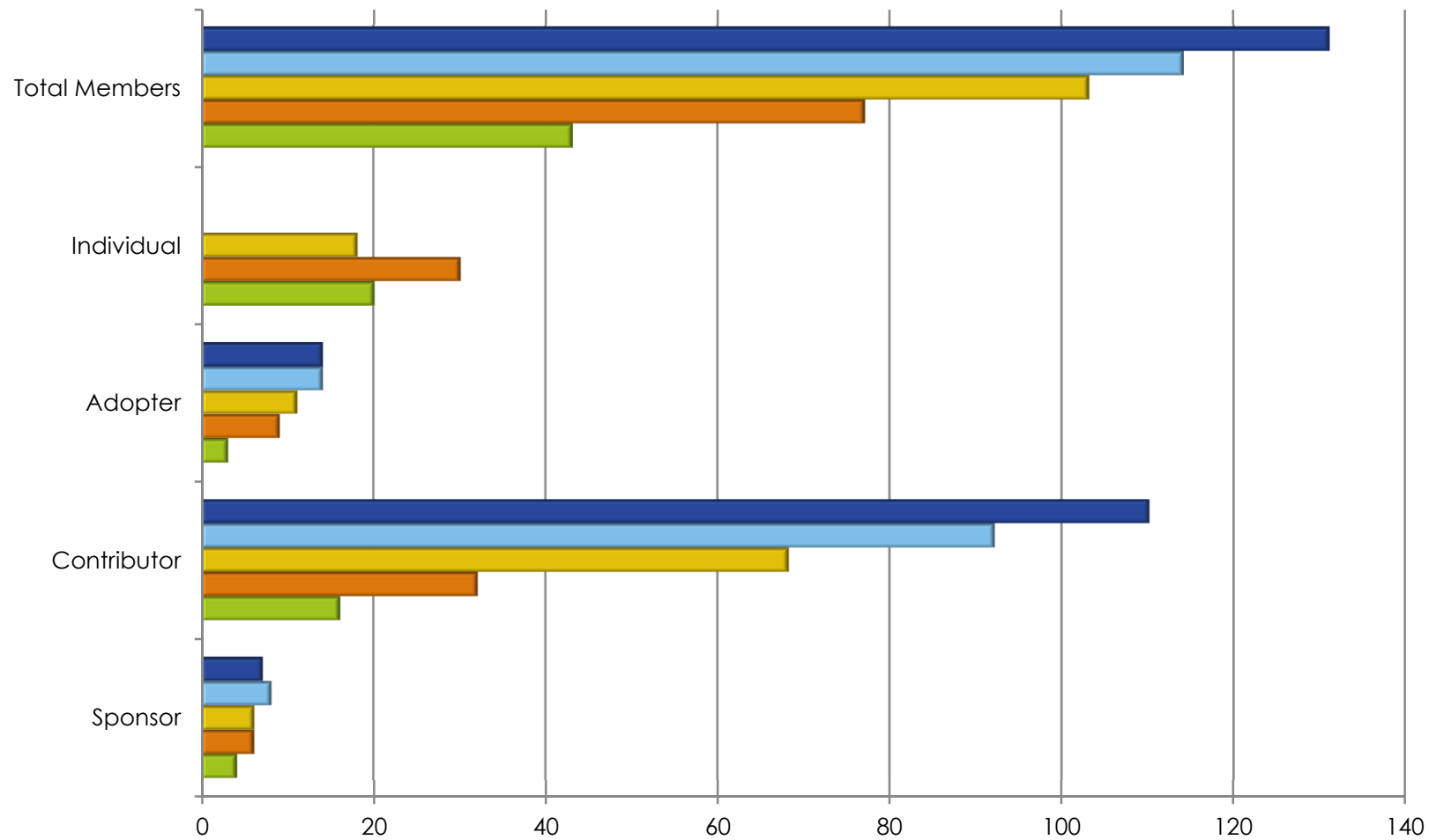
財団法人 エネルギー総合工学研究所



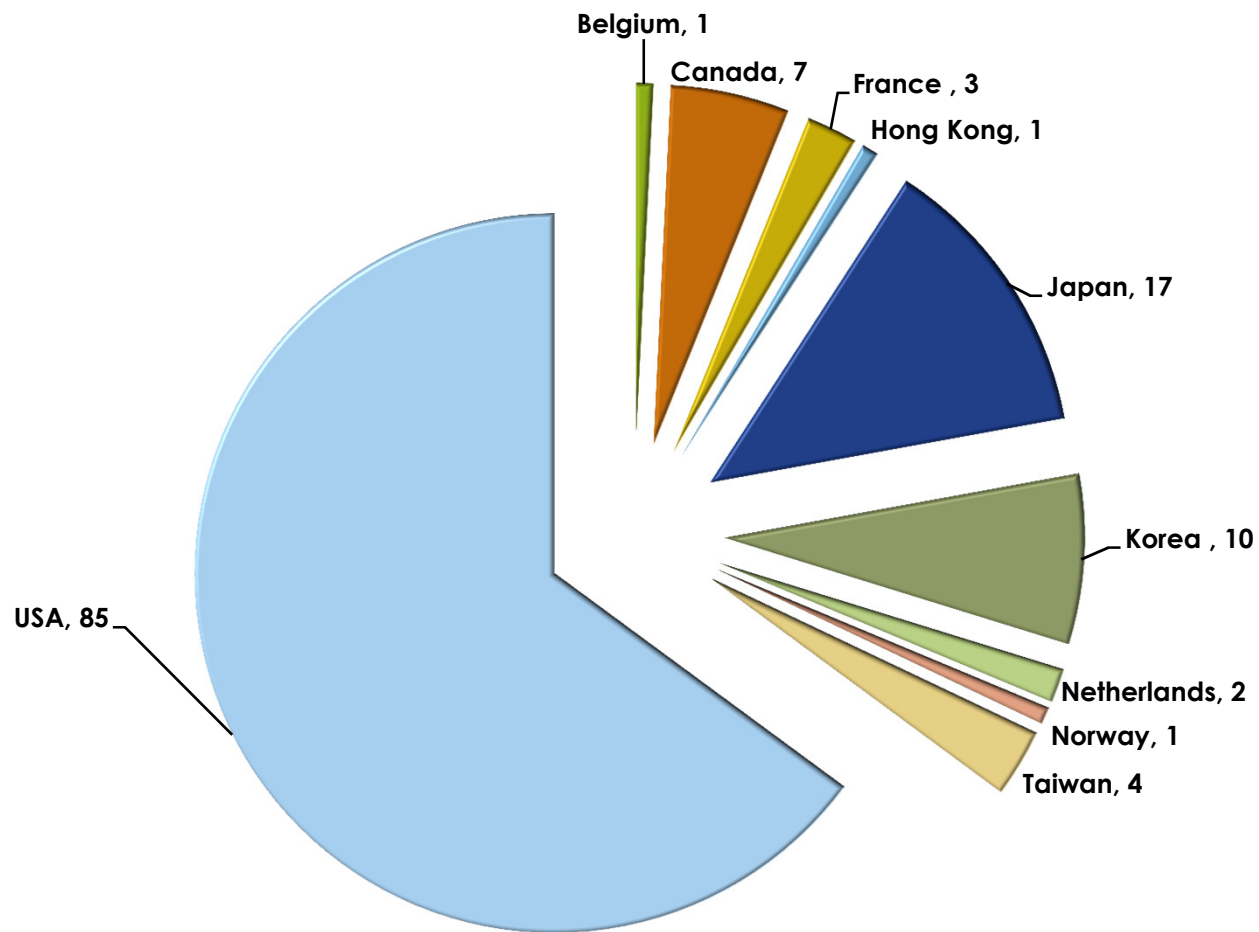
KOREA ELECTROTECHNOLOGY
RESEARCH INSTITUTE



Member Growth



OpenADR Members by Country



OpenADR 2014/15 Goals

- Increase number of projects/programs using OpenADR 2.0.
- Develop a base line and methodology to measure OpenADR adoption.
- Facilitate global adoption of the OpenADR standard.
- Expand membership worldwide.

Goals & Objectives

- Increase number of projects/programs using OpenADR 2.0.
 - Make OADR simpler and easier to deploy by publishing draft implementation guidelines for developers and users (utilities and system operators).
 - Organize webinars targeting utilities and system operators on OpenADR program development and implementation.
 - Create RFP & RFI language to help utilities write OpenADR related specifications.

Implementation Guide

- Define DR program templates modeled after most popular DR programs
- Define deployment scenarios with actors and roles clearly defined
- Define best practices recommendations for OpenADR characteristics
- Provide a decision tree to aide utilities in selecting templates and deployment scenarios



OpenADR 2.0
Demand Response Program Guide

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DR Program Templates

- ❑ Critical Peak Pricing
- ❑ Capacity Bidding Program
- ❑ Residential Thermostat Program
- ❑ Fast DR Dispatch (Ancillary Services)
- ❑ EV Charging
- ❑ Distributed Energy Resources
- ❑ Other Templates under consideration

Webinars

- September, 30 2014: OpenADR Implementation: Commercial and Industrial Customers
- October 20, 2014: Implementing DR Programs
- November 18, 2014: EVs and OpenADR
- January 20, 2015: OpenADR Developments Webinar
- February 24, 2015 Advancing DR Automation and Standards in Building Codes (CA Title 24)
- March, 24 2015: Developing and Applying Open-Source Implementations of OpenADR
- April 21, 2015: OpenADR and Its Impact on Building Control Systems

Create RFP & RFI Language

- Seeking volunteers for new working group.
- Purpose: To create language to help utilities and system operators issue RFPs and RFIs using standard language.
- Goals:
 - Make it easier for energy providers to create new programs.
 - Standardize language to ensure consistent program development.
 - Create more member value for utilities and system operators.

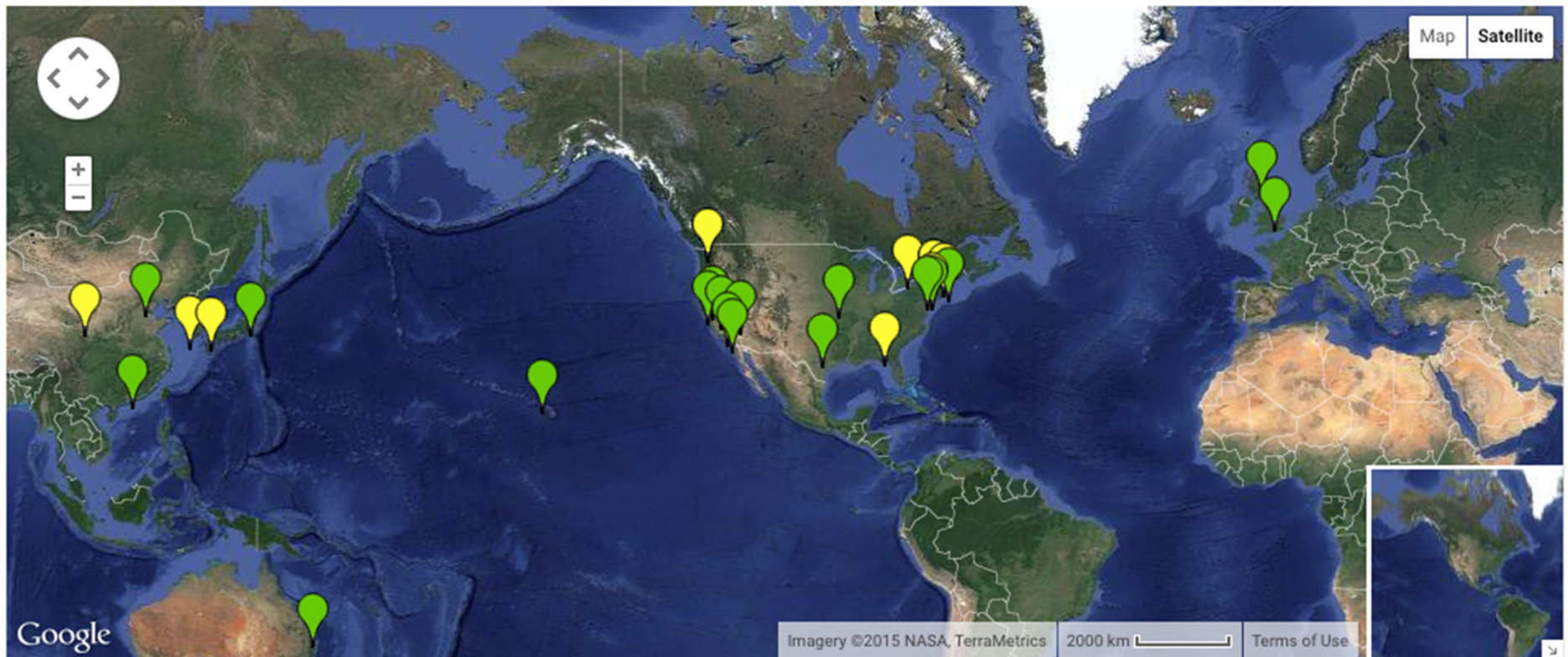
Goals & Objectives

- Develop a base line and methodology to measure OpenADR adoption
- Create a project database and dashboard containing detailed information on existing programs; changes to existing programs; and any new programs.
- Implement a methodology to track new and modified regulations impacting OpenADR adoption.
- Create a searchable database of certified products to allow people to locate products by type, region, application and company.

OpenADR Deployment Map

OpenADR Deployments

This map illustrates the locations of the the OpenADR Deployments. Each marker indicates a specific location. Click on the marker for more information.



Map Key

- Completed
- In Progress
- Under Consideration

Coming soon to www.openadr.org

OpenADR Deployment Map

In Progress

OEM Central Server	Other
Bonneville Power Administration	Commercial
Automated Demand Response and Ancillary Services Demonstration Project	Other
Japan	Other
South Korea	Other
Tallahassee	Other
Toronto	Other
World Energy	Bonneville Power Administration
New York State Energy Research & Development Authority (NYSERDA)	Summer and Winter Demand Response tests at several locations in Seattle area, 14% peak load reduction
State Grid Corp of China	Location: Seattle, WA United States See map: Google Maps
Shinjuku	Status: In Progress
India	Category: Commercial
Evaluating Smart Thermostats' Impact on Energy Efficiency & Demand Response	Links: BPA
conEdison	

Source: <http://drcc.lbl.gov/openadr/map>

Track New and Modified Regulations Impacting OpenADR

- To be completed.
- Seeking advice on sources of information for this goal.

Searchable Database

- Dynamic searchable database
- 70 certified VTNs and VENs
- Simplifies product search process
- Over 500 unique visitors search for certified products each month
- www.openadr.org/certified-products



Search for products

SERVER

Cloud based Integrated Stand Alone

CLIENT

Building Automation Systems Energy Management Systems Home Automation Systems

Appliances Thermostats Agriculture

Pool Pumps HVAC Cloud Based Control

Home Area Network Controlled Embedded Device Lighting Control

BUSINESS TYPE

Commercial Small - Medium Residential

OPENADR PROFILE

OpenADR 2.0a OpenADR 2.0b

ADVANCED SORTING ▶



Goals & Objectives

- Facilitate global adoption of the OpenADR standard.
- Drive IEC committees with an interest in OpenADR to complete CIM adapter interface standard.
- Increase industry education and outreach through active participation at 5 conferences, 4 webinars and 1 trade show.
- Work with Quality Logic to implement a virtual test server supporting various DR programs to help utilities, system operators and vendors with OpenADR programs and products.

International Standardization

- The OpenADR Alliance has been active in several IEC working groups
 - **IEC PC118** published the OpenADR 2.0b Profile Specification as IEC/PAS 62746-10-1
 - IEC PC118 and **TC57 WG 21** are working on adapting OpenADR into the CIM framework
 - **IEC TC65 WG17** (Industrial Automation) is leaning on OpenADR 2.0 functionality

Industry Education and Outreach

- Participation at 5 conferences
 - PLMA Fall meeting
 - DR World Forum
 - Demand Response & Ancillary Services
 - PJM Summit
 - Smart Energy Summit
 - PLMA Spring meeting
- Host 4 webinars
 - Hosted 7 webinars since September 2014
- Participate in 1 trade show
 - Sponsored 20x20 booth at Distributech

DistribuTECH 2015

- Sponsored 20x20 booth
- Four co-exhibitors
 - AutoGrid, Fujitsu, Powerit Solutions and Universal Devices
- Delivered 15 theater presentations
- Generated over 100 leads
- Committed to another 20x20 booth for 2016 near Schneider Electric



openADR ALLIANCE
Dynamic Energy Management

OpenADR is a low cost, fast, secure and reliable standard for delivering price and event information over any secure IP-based communications network. This important industry standard allows utilities, grid operators and energy aggregators to send DR signals directly to customer control systems using a common information model and existing communications infrastructure. As the most comprehensive standard for Automated Demand Response, OpenADR has achieved widespread support worldwide.

To learn more about how the OpenADR standard can help your business we encourage you to visit the OpenADR Alliance booth #3811. You can see OpenADR implementations by Fujitsu, Powerit Solutions and Universal Devices and learn about OpenADR technology, developer resources and implementations in the member theater.

Theater Schedule

Time	Company	Title
Tuesday, Feb. 3rd		
12:00 PM	OpenADR Alliance	An Introduction to the OpenADR Standard
1:00 PM	Universal Devices	OpenADR with Off-the-Shelf Devices
2:00 PM	Fujitsu	Working Towards Human-Centric Demand Response Solutions
3:00 PM	QualityLogic	Utility Guide to OpenADR Program Design
4:00 PM	EPRI	Open-Source Implementations of OpenADR 2.0b
5:00 PM	OpenADR Alliance	An Introduction to the OpenADR Standard
Wednesday Feb. 4th		
11:00 AM	Powerit Solutions	Leveraging the Industrial Internet of Things to Automate Demand Response Participation
12:00 PM	QualityLogic	Developing OpenADR Products
1:00 PM	EcoFactor	Integrated DSM Program Delivers Significant Energy Savings with Greater Comfort
2:00 PM	Southern California Edison	Incorporating Existing Smart Thermostats in DR Programs
3:00 PM	OpenADR Alliance	An Introduction to the OpenADR Standard
4:00 PM	QualityLogic	Using the QualityLogic Cloud Server for Product and Program Development
Thursday, Feb. 5th		
11:00 AM	Southern California Edison	OpenADR and EVs
12:00 PM	LBNL	DER, Transactive Energy and OpenADR
1:00 PM	OpenADR Alliance	An Introduction to the OpenADR Standard

For more information on the OpenADR Alliance please visit www.openadr.org

FUJITSU

Powerit Solutions

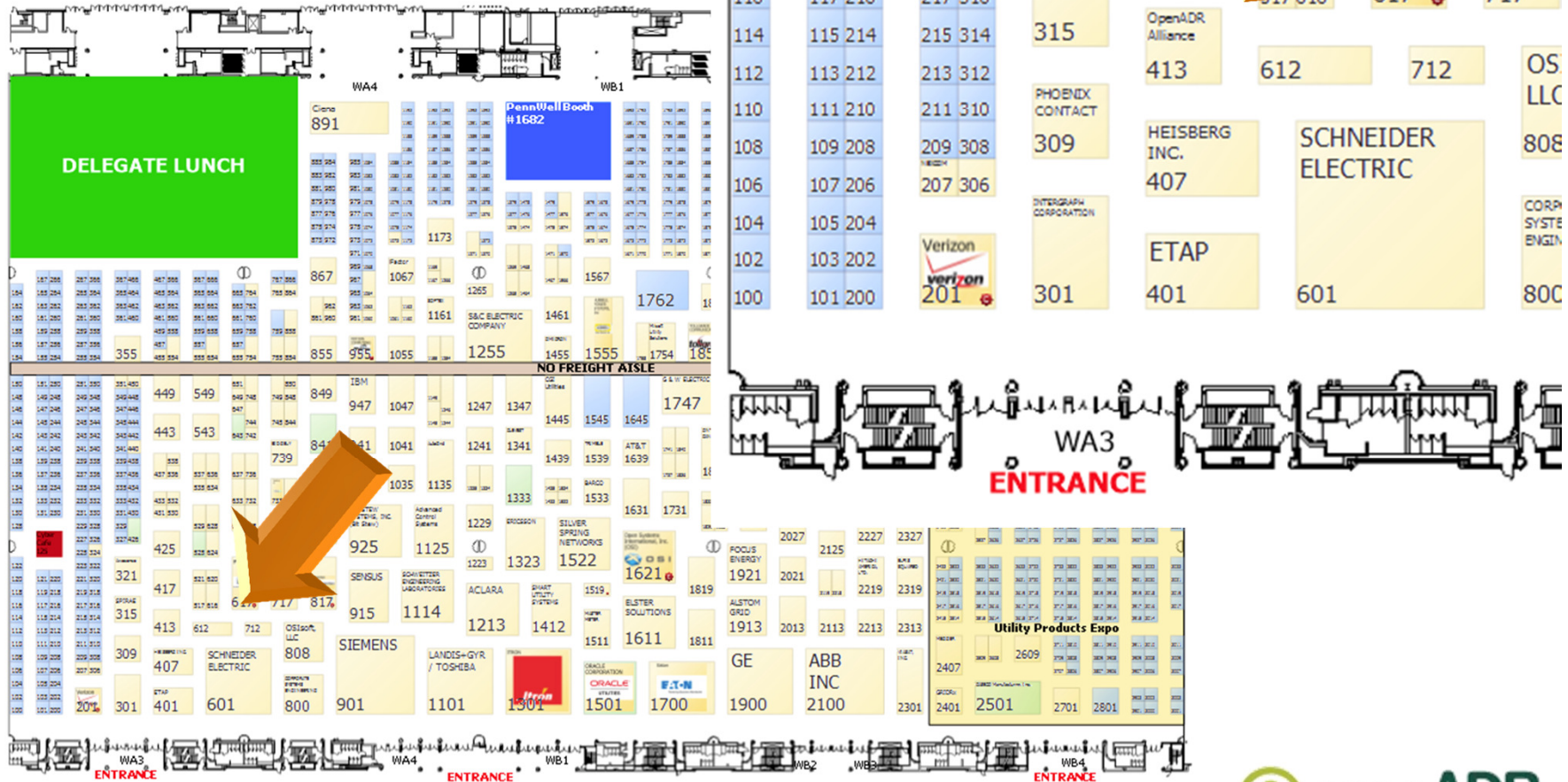
UNIVERSAL DEVICES

Booth #3811

openADR ALLIANCE

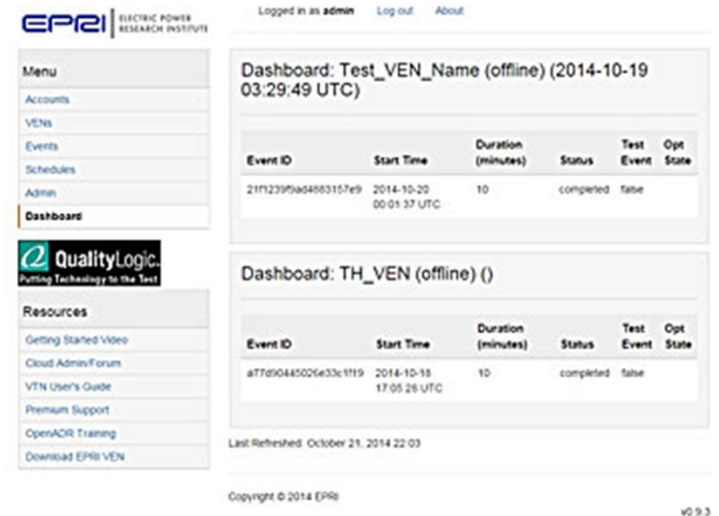
DistribuTECH 2016

- 20x20 booth (#413)
- Space for co-exhibitors



Virtual Test Server

- OpenADR Cloud-Based Test for VENS Subscription Service offered by QualityLogic
- Provides access to a Cloud server implementation of a certified Virtual Top Node (VTN) developed by the Electric Power Research Institute (EPRI)
- Serves as a reference for testing Virtual End Nodes (VENS).
- Platform for running small scale pilots, verifying interoperability of VENS with a certified VTN or as a learning tool to increase understanding of the OpenADR technology



The screenshot shows a web dashboard for QualityLogic. At the top, it says "Logged in as admin" with links for "Log out" and "About". The main content area has two sections:

- Dashboard: Test_VEN_Name (offline) (2014-10-19 03:29:49 UTC)**

Event ID	Start Time	Duration (minutes)	Status	Test Event	Opt State
21f12395ad4883157e9	2014-10-20 00:01:37 UTC	10	completed	false	
- Dashboard: TH_VEN (offline) ()**

Event ID	Start Time	Duration (minutes)	Status	Test Event	Opt State
a77050445026e33c1119	2014-10-15 17:05:26 UTC	10	completed	false	

At the bottom, it says "Last Refreshed: October 21, 2014 22:03" and "Copyright © 2014 EPRI".



www.qualitylogic.com



Goals & Objectives

- Expand membership worldwide.
 - Support the development of four OpenADR affiliate organizations.
 - Recruit 20 vendors in building and industrial automation into the alliance.
 - Form European interest group to address European market.

OpenADR Alliance Korea



- OpenADR Korea formed by Korea Smart Grid Association Jan. 2015.
- Conform OpenADR Bylaws, policies, and procedures.
- No legal relationship.
- Each member of OpenADR Korea is also a member of OpenADR Alliance.



NAO DIGITAL



New Adopter Members

- Korea Smart Grid Institute
- London Hydro

New Contributor Members

- AMG Solution, Inc
- Blue Pillar, Inc.
- Carrier Corporation
- CaSA Connected Appliances Ltd
- CEIVA Logic, Inc.
- ChargePoint, Inc.
- Control Dynamics
- Cross Chasm
- cyberGRID GmbH
- Dialight
- Exergy Controls
- Global Design Corporation
- GridPoint
- Intellastar LLC
- JLM Energy, Inc.
- Kyocera
- Naodigital
- Nebland Software, LLC
- Nissin Systems Co., Ltd.
- Obvius Holdings LLC
- Oi Electric Co.,Ltd.
- Olivine, Inc.
- Osaki
- Power Control Solutions
- Steffes Corporation
- Takaoka Toko Co.,LTD
- ThinkEco

European Special Interest Group

- The European Special Interest Group is up and running
- Co-Chairs: Abhishek Bahl from AutoGrid and Bernd Kosh from Fujitsu
- Focused on generating OpenADR awareness in Europe
- Meets monthly



Website Redesign



Member Login

Search our Site...

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UTILITIES:

Products and systems built on the OpenADR open standard help utilities maintain grid reliability and their customers (and consumers) to realize significant value

Control Your Energy Future

Demand Response (DR) programs help utilities maintain grid reliability and enable customers to realize significant value. Unfortunately, existing proprietary solutions add unnecessary cost and complexity. The OpenADR Alliance was created to standardize, automate and simplify DR to enable utilities to cost-effectively meet growing energy demand, and customers to control their energy future. Together we are creating the future of demand response today. [Join us.](#)

Quick Links

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[Specification Download](#)

[Build a Product](#)

[All Press Releases](#)

Click Here For Upcoming Webinars

OpenADR Events		PointView
MAY 13 2015	OpenADR Member Me... May 13 to May 14 SCE Education Center, Irwindale, CA	Follow
MAY 26 2015	2015 National Town M... May 26 to May 28 Ronald Reagan Building, Washington, DC	Follow

About the OpenADR Alliance

The OpenADR Alliance (now with over 130 member companies) was formed 2010 by industry stakeholders to build on the foundation of technical activities to support the development, testing, and deployment of commercial OpenADR and facilitates its

Latest News

- [Call for Review: OpenADR Alliance Releases Draft of OpenADR 2.0 Program Guide](#)
- [OpenADR Alliance, 20+ Members to Showcase Smart Grid Solutions](#)



Promotion Vehicles for Members

- **Monthly newsletter:** OpenADR Connections newsletter is sent to over 5,000 contacts
- **OpenADR website:** Highlight OpenADR news stories and press releases
- **Social Media Outlets:** Post your OpenADR news to our LinkedIn Groups, FaceBook, Twitter feed
- **Case Studies:** Let us help write and promote your success stories

DISTRIBUTECH 2016 ~ Feb 9-11, Orlando

The Alliance's member booth (20x20) will provide a great opportunity for you to showcase your products or services at a reduced rate.

- **Member kiosks:** **prices subject to change*
 - \$4,000 for non-exhibiting members (\$1,500 PennWell fee)
 - \$2,500 for exhibiting members.

Cost for Kiosk includes: *Booth logistics *Copy of all leads captured at show *Company listed in show guide as exhibitor *Mention in pre-show email blast through PennWell *Show guide ad and all Alliance pre and post show communications.

Interested?

*Sponsorship information will be available early September. Please contact Shannon Mayette at shannon@openadr.org

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Technical Update

Rolf Bienert
Technical Director

Profile Working Group

- Open to All Members
- Reviews all issues concerning the profile specification, PICS, and test plan
- Creates new specifications and updates
- Tracks issues with specification
- Meets Friday's at 9am US Pacific time, shared time slot with Implementation Committee
- Forum for asking questions about schema and conformance statements

Security Working Group

- Open to All Members
- Reviews all issues concerning the profile specification security aspects
- Meets when needed at 9am US Pacific time on Wednesdays

Services Architecture

- Web Service - logical request-response services
 - Event Service – Send and Acknowledge DR Events
 - Opt Service – Define temporary availability schedules
 - Report Service – Request and deliver reports
 - Register Party Service – VEN Registration, device information exchange

- Each service has a single common endpoint

- XML Payloads – Root element defines service operation

Implementation Working Group

- Open to all members
- Newly formed working group
- Shares 9AM US Pacific time slot on Fridays
- Is tasked to create the Implementation Guidelines:
 - Implementation Architectures
 - Define roles of VTNs and VENs in deployments
 - Defines use cases for DR programs
 - Maps OpenADR 2.0 to DR programs

2014/15 OpenADR Work Items

Currently OpenADR 2.0 defines the communications interface

- No specific DR Program Definitions & Restrictions
- Very flexible
- **Many Implementers (VTN & VEN) seek more Guidance and Harmonization**



VTN (Utility,
Aggregator, DR
Operator)



VEN
(C&I, SMB,
Residential)

Implementation Working Group started work to expand the domain of the protocol

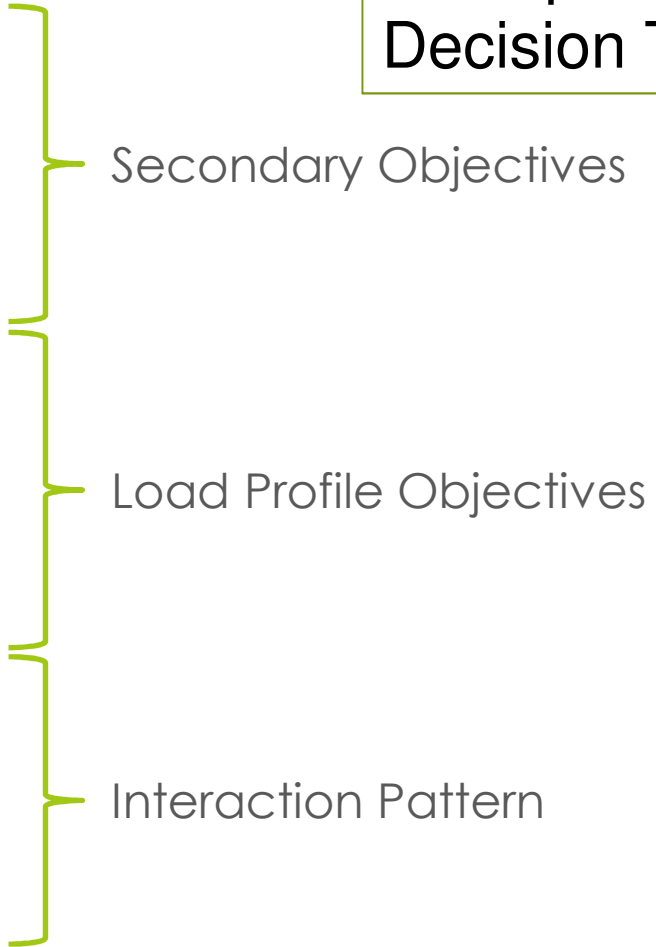
- Define common DR program goals and objectives
- Reduce the complexity by defining common OpenADR-based DR programs
- Create a decision tree for implementers to select the relevant program to support
- Create testable DR program templates

OpenADR DR Parameters

■ Grid Reliability & Safety (Primary Objective)

- Frequency and Voltage Stability
- Resource Adequacy
- Peak Capacity
- Ramping
- Contingency
 - Peak Shaving
 - Load Following
 - Frequency Regulation
 - Reserves
 - Asset Protection
 - Transactive (Incentivize)
 - System Load Requests
 - Indirect Automation
 - Control Physical Devices
 - Different Customer segments (C&I, ...)

Example of
Decision Tree



OpenADR DR Parameters

- Additional Primary & Secondary Objectives
 - Procurement of Energy
 - Spot Market Prices
 - Price Arbitrage
 - Asset Management
 - Damage Prevention
 - Maintenance Reduction
 - Lifetime Extension
 - Capacity Management
 - Economic Benefits
 - Emergency Management
 - Environmental
 - Negawatt
 - Clean Energy

DR Program Guide Outline

- The new OpenADR Program Guide will include the following sections
 - Definition of Actors
 - Processes
 - DR Decision tree
 - Program Attributes
 - Program Templates
 - Deployment Scenarios
 - RFI Templates

Current Work Items

- Collect existing and planned DR Program information
 - All input is welcome!
- Review existing DR Program description
- Filter program parameters to establish common criteria
- Define OpenADR 2.0 DR Profiles
- Join the effort now to help us define the future programs!

Agenda: May 14, 2015

- **Continental Breakfast:** 8:00 a.m.
- **The Present and Future of Title 24 and Its Impact on OpenADR :**
8:30 a.m. – 9:30 a.m.
- **Developer Tools and Resources:** 9:30 a.m. – 10:30 a.m.
- **Break:** 10:30 a.m. – 11:00 a.m.
- **The Changing Role of Cloud Servers:** 11:00 a.m. – 12:00 p.m.
- **Lunch:** 12:00 p.m. – 1:00 p.m.
- **Optimizing Buildings for OpenADR:** 1:00 p.m. – 2:00 p.m.
- **Securing OpenADR Implementations:** 2:00 p.m. – 2:30 p.m.
- **Closing Remarks:** 2:30 p.m. – 3:00 p.m.

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