Welcome to the OpenADR Alliance

Please help yourselves to lunch as we get ready

to begin today's sessions.

Housekeeping

Network Name: meetingroom
Password: None Needed

Follow us!

@OpenADRAlliance

Engage: #OpenADRmtg

Housekeeping

Network Name: membermeeting
Password: None Needed

Parking Validation Directions:

1. Scan Ticket
2. Wait for 3 beeps
3. Take scanned ticket to Pay Station to Pay for Parking
4. Take Ticket to the Gate to Exit (credit card only)

Wednesday's Agenda Recap

- 12:00 –1:00 **Lunch**

- 1:00 – 1:45 **OpenADR Update**

- 1:45 - 2:00 **Making Sense of Industry Events**

- 2:00 – 3:00 **Supply-Side vs. Demand-Side Perspectives**

- 3:00 - 3:30 **Break**

- 3:30 – 4:00 **Securing OpenADR Implementations**

- 4:00 – 5:00 **OpenADR Case Study**

- 6:00 – 8:00 *OpenADR Networking Reception*

OpenADR Networking Reception

AutoGrid

Sponsor

UNIVERSAL DEVICES

Co-sponsor

June 18, 2014 Maggiano's Little Italy
Santana Row 3055 Olin Ave., Suite 1000 San Jose, California 95128
6PM – 8PM
*Appetizers & cocktails will be served

Carpooling encouraged/Taxis will be out front around   5:40pm

openADR
ALLIANCE

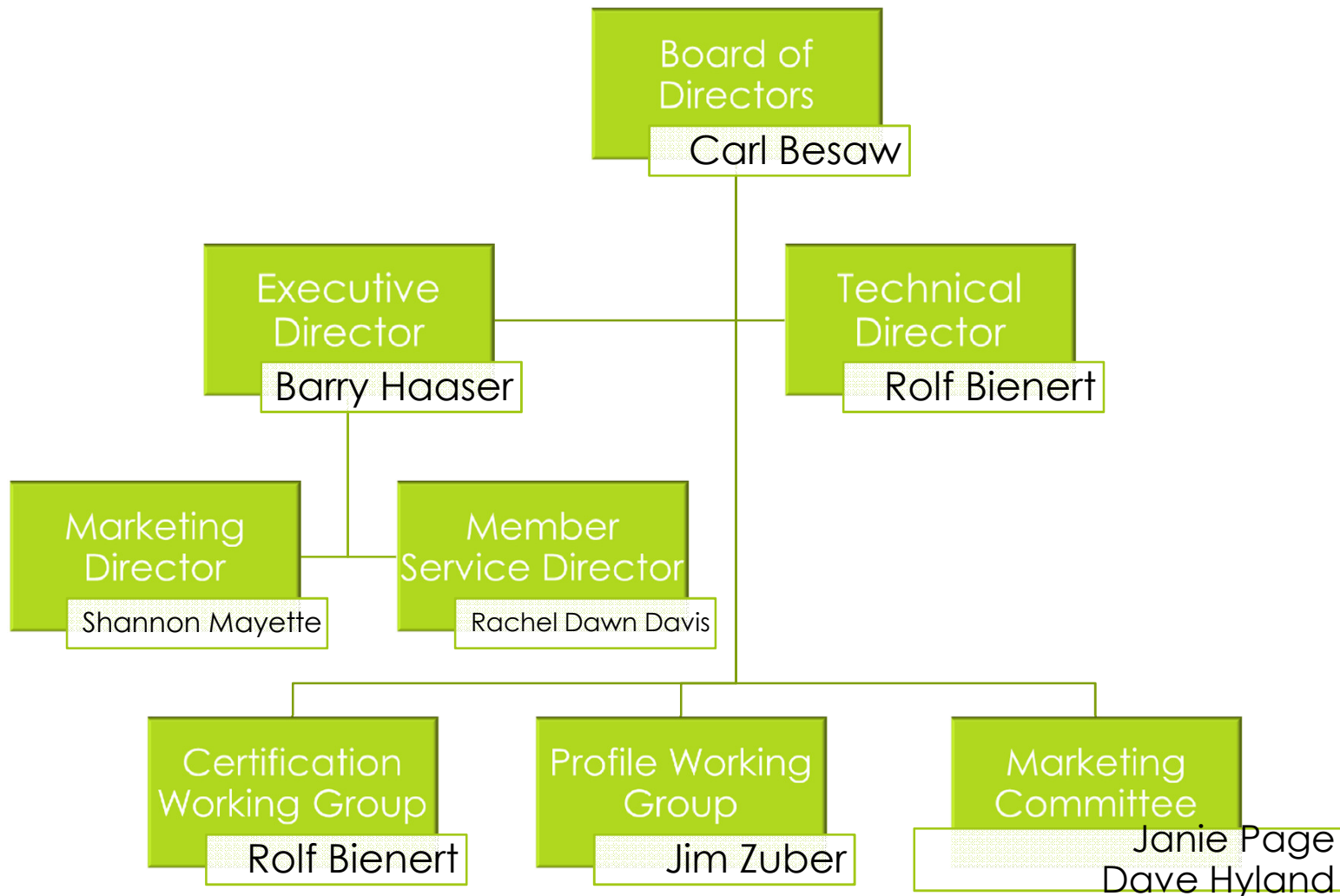# OpenADR Alliance Introduction and Update

June 18, 2014

San Jose, CA

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

Executive Director
Barry Haaser

Technical Director
Rolf Bienert

Marketing Director
Shannon Mayette

Member Service Director
Rachel Dawn Davis

Certification Working Group
Rolf Bienert

Profile Working Group
Jim Zuber

Marketing Committee
Janie Page
Dave Hyland

openADR ALLIANCE

Board of Directors

Albert Chiu, Secretary/Treasurer

Venki Ramachandran Director

Ed Koch, Director

Carl Besaw, Chairman

Rish Ghatikar, Vice Chairman

Jeff McAulay, Director

openADR ALLIANCE

OpenADR Team

Barry Haaser
Managing Director

Rolf Bienert
Technical Director

Shannon Mayette
Marketing Director

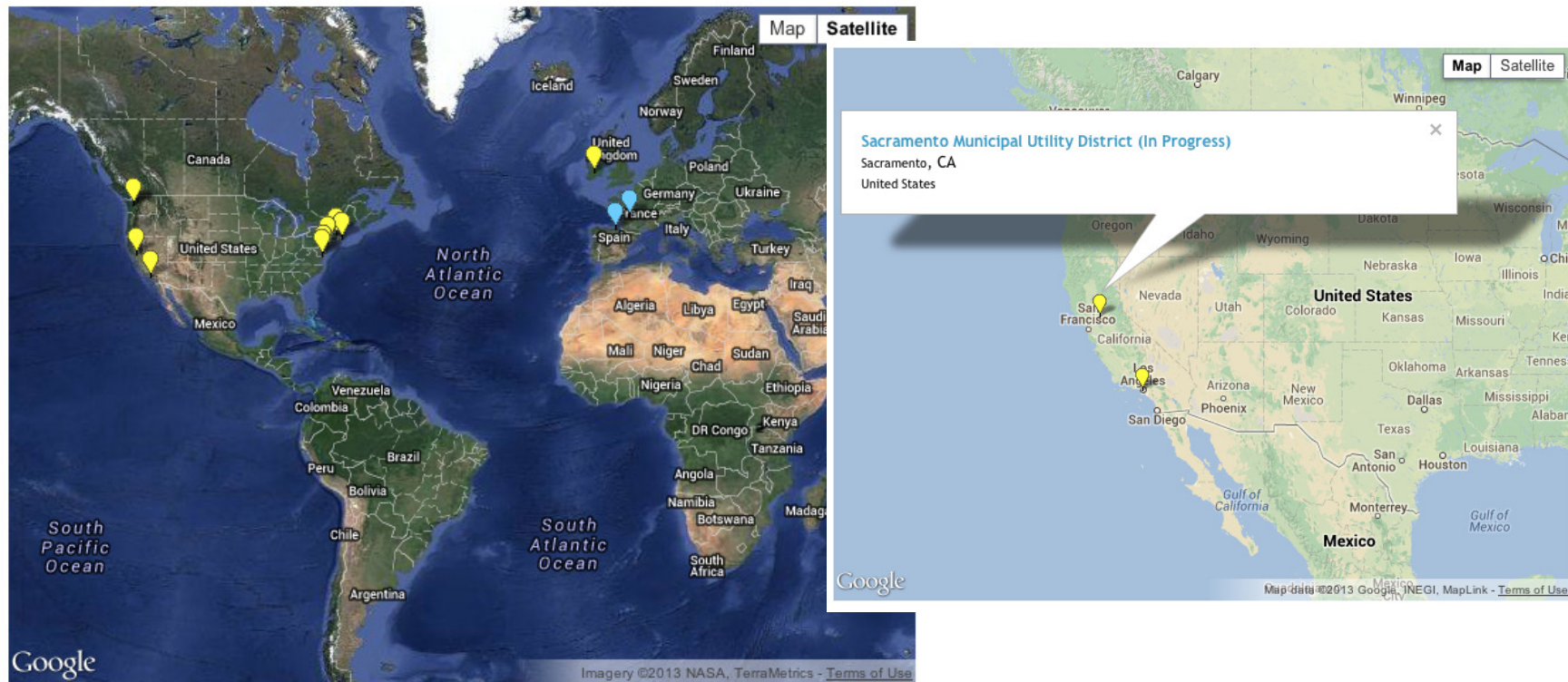**Sharon Calcagno**
Administrative Services Coordinator

Rachel Dawn Davis
Member Services Director

openADR
ALLIANCE

OpenADR Deployment Map

Source: http://drrc.lbl.gov/openadr/map

OpenADR Deployment Map

Completed

- Bonneville Power and Light
- China Electric Power Research Institute

In Progress

- Ireland
- Martha's Vineyard
- NYSERDA
- PJM Interconnect (MD)
- PJM Interconnect (NJ)
- PJM Interconnect (PA)
- Sacramento Municipal Utility District
- Scottish and Southern Energy
- Seattle City Light
- Southern California Edison
- World Energy

Under Consideration

- Australia
- France
- India
- Kauai Island Utility Cooperative
- South Korea - Jejong Island
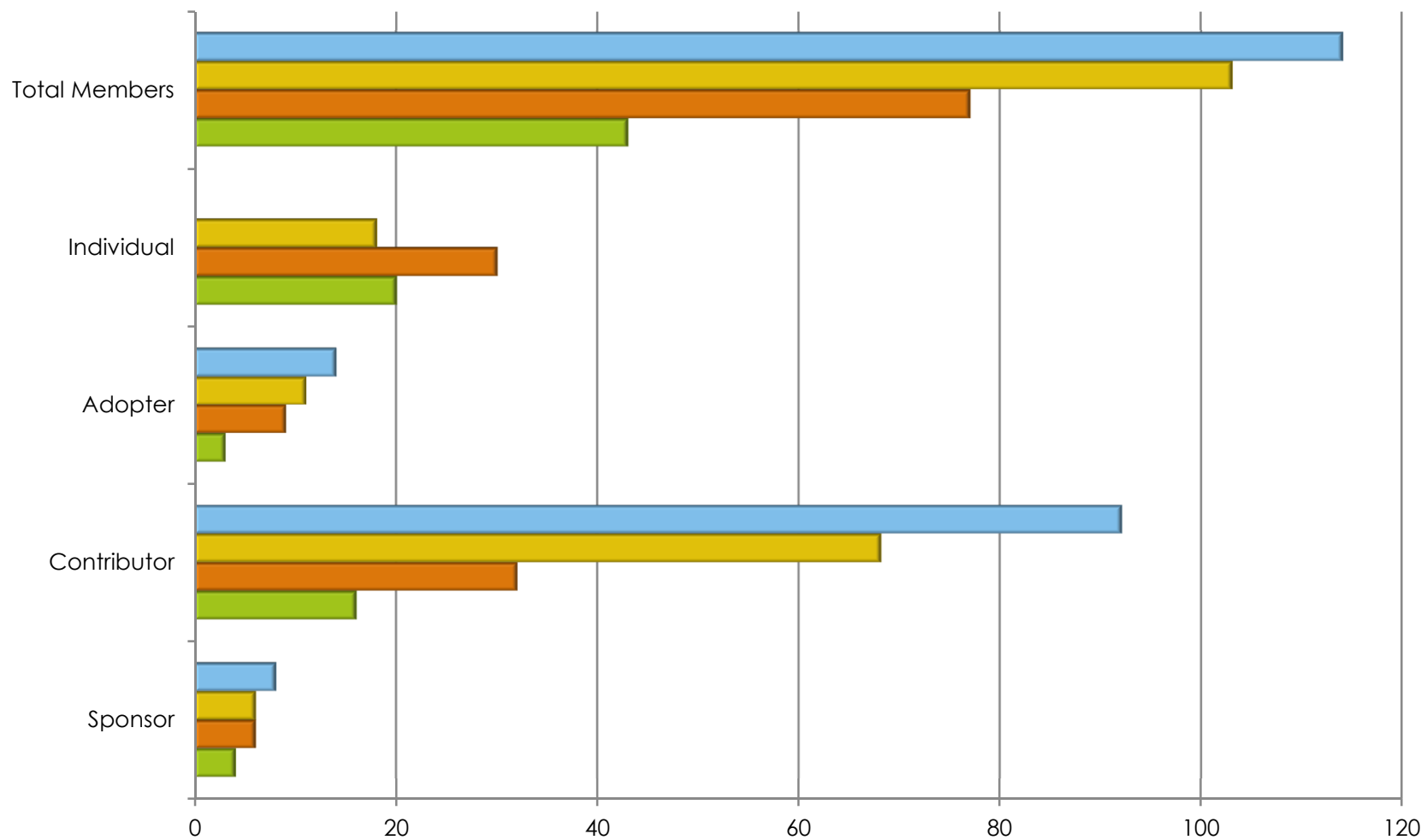- Spain

Source: http://drrc.lbl.gov/openadr/map

Affiliate Organizations

- Support OpenADR Alliance goals and purposes as established by the OpenADR Alliance Board of Directors

- Conform OpenADR Bylaws, policies, and procedures

- Established as non-profit organization (when possible)

- Operates in a specific or region

- No legal relationship (subsidiary or division)

- Each member of Affiliate is also a member of OpenADR Alliance

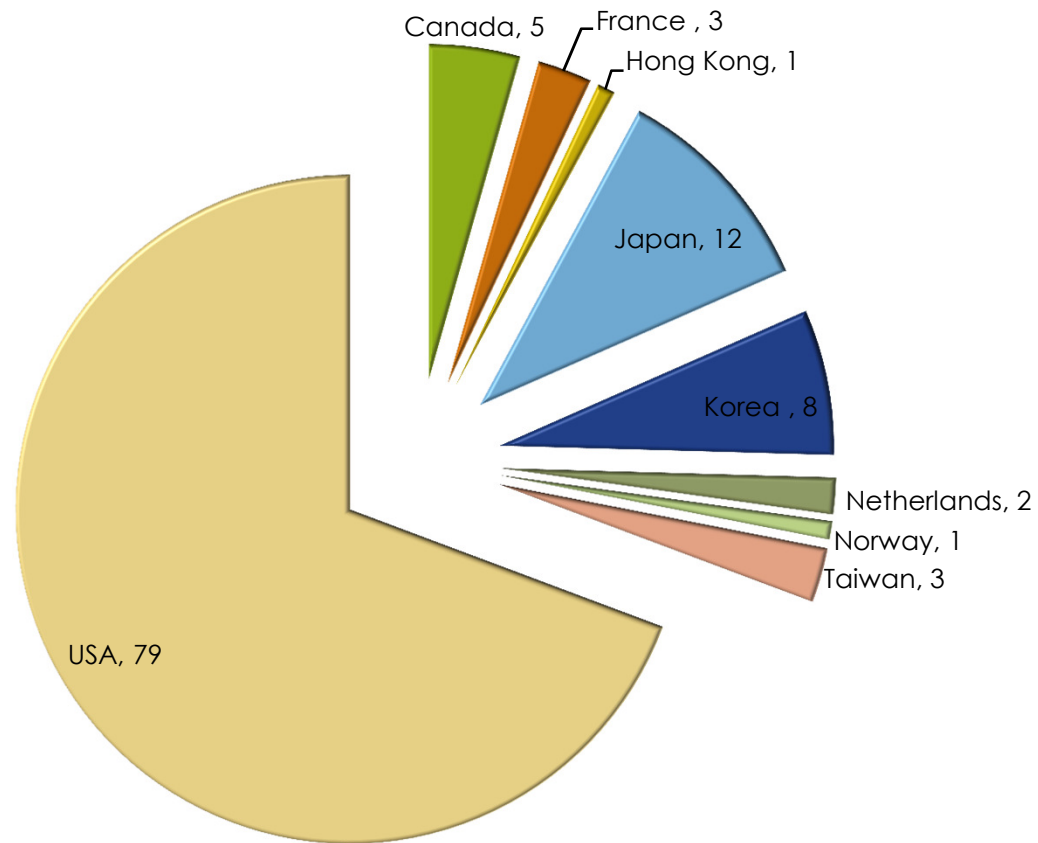- Interest in Japan, Korea and Taiwan

OpenADR Member Categories

- **Sponsor** membership is extended to industry stakeholders that strongly support the vision, mission, and activities of the OpenADR Alliance who wish to serve on the Board of Directors

- **Contributor** membership is open to any vendor organization offering hardware, software or services

- **Adopter** membership is open to organizations such as consumer and government organizations, research agencies, and regulatory bodies not otherwise classified as a vendor community or manufacturer of products, systems, or components

Member Growth

OpenADR Members by Country

Sponsor Members

Contributor Members Here Today

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

Adopter Members

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 by September 1, 2014.

Seeking volunteers to support these initiatives.

Contact Rachel Davis – rachel@openadr.org

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.

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 QualityLogic to implement a virtual test server supporting various DR programs to help utilities, system operators and vendors with OpenADR programs and products.

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.

Marketing Update

OpenADR Press Releases: Strong Momentum

◻ May 2014 –Availability of Over 50 Certified Products

◻ March 2014 -New Sponsor Member IPKeys, Certified Products, Global Adoption and Strong Member Presence at DistribuTECH

◻ Feb. 2014-OpenADR™ Alliance and Wi-SUN® Alliance Form Strategic Relationship to Advance Energy Efficiency

◻ Feb. 2014 - Approval of Publicly Available Specification (PAS) Brings OpenADR Another Step Closer To Becoming A Full International Electrotechnical Commission (IEC) Standard

Media Coverage

- **Each release generates approx 300** clicks from journalists, analysts and bloggers

Media & Analyst Relations

- 13 Press/Analyst meetings to date

- Contributed articles on Demand Response by OpenADR Alliance for June issues: POWER Engineering , PowerGrid International; FierceEnergy *(ongoing opportunity for utilities to contribute)*

- "Latest Auto DR Platform Empowers Customers" (Co-authored by IPKeys and LBNL) –included in summer issue of Electric Energy Magazine

- Article focused on importance of certification the works (co-authors OpenADR/ QualityLogic) for Energy Central

- OpenADR 2.0 whitepaper in draft

Members in the News

- June 2014 –Universal Devices Integrates Real Time Weather with OpenADR and Home Automation Platform

- May 2014 - Powerit Solutions Receives OpenADR Alliance 2.0b Profile Certification

- May 2014-IPKeys, PJM, Walmart, Berkeley Lab and Schneider Electric Demonstrate Energy Management Advances with OpenADR 2.0b Market Pilots

- April 2014 -ecobee Becomes First Thermostat Company to Receive OpenADR 2.0b Certification

- March 2014- Honeywell And CPS Energy Expand Efforts To Help Make The Electrical Grid Smarter, More Reliable

- January 2014 - EPRI Releases Open Source OpenADR 2.0b VTN and VEN Code ; Greenlots Is First EV Charging Provider to Earn OpenADR Certification; Enbala Becomes Member

DistribuTECH 2014 Recap

◻ Created awareness of OpenADR – Gathered over 100 leads, Ad in PowerGrid International, Email blast prior to show, 7 press/analyst meetings, OpenADR focus in many track sessions

◻ Strong sense of community throughout show floor and in 10x20 booth: Highlighted 23 members exhibiting on the show floor, membership cards distributed, relationship building

◻ Created a buzz around OpenADR at show through Social Media, post show coverage

DistribuTECH 2015

◻ Increasing presence in 2015 with 20x20 booth #3811 to involve members through theater and exhibit pavilion.

◻ OpenADR members can promote their products and services through kiosks, theater presentations and online media kit.

◻ Two panel discussion submitted:

  ◻ *Implementing Automated DR Programs Using an Open Standard*
  ◻ *Using Legislation to Drive Demand Response Adoption*

DistribuTECH 2015 Sponsorships

- **Member kiosks:**
  - $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 *15 minute company presentation in theater *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.

- **Theater presentation:** $200

- **Online Media Kit**: $100

*Questions contact Shannon Mayette at **shannon@openadr.org**

Promotion Vehicles for Members

- Monthly newsletter: Our newsletter is sent to over 3,000 contacts
  - Member section on the OpenADR website to highlight news stories and press releases
  - Social Media Outlets: OpenADR can post your news to our LinkedIn Groups, FaceBook, Twitter feed
  - OpenADR executives can provide a quote for your upcoming press releases
  - Let us help write and promote your case studies – *template available*
  - Bi-weekly Marketing Working Group calls

Standardize. Automate. Simplify.

OpenADR 2.0 – Technical Update

Rolf Bienert
Technical Director OpenADR Alliance

Key Milestones

- Q4 - 2013
  - First OpenADR 2.0b certified products
  - Japan test events
  - Discussions with Korea Smart Grid Association
  - Over 2500 (3821 as of today!) downloads of OpenADR specs

- Q1/2 – 2014
  - Begin work on Demand Response Program Implementation Guidelines
  - Passed 40 Certified Products (now 52 devices)
  - Successful trial in Japan
  - Korean Chapter in discussions
  - IEC PAS published by PC 118 – ICE PAS 62746-10-1
  - EPRI Open Source Software stack released
  - Multiple new projects in Europe and US

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 **Thursday's at 3PM** US Pacific time, shared time slot with Implementation Committee

- Good place to ask questions about schema and conformance statements

openADR
ALLIANCE

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

openADR
ALLIANCE

Implementation Working Group

- Open to all members

- Newly formed working group

- Shares 3PM US Pacific time slot on Thursdays

- 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

Feature sets of OpenADR Profiles

openADR ALLIANCE	1.0	2.0a	2.0b
Simple Event Service (EiEvent – simple levels only)	✔	✔	✔
Full Event Service (EiEvent)	-	-	✔
Real Time Pricing / Baselines (EiEvent)	-	-	✔
Reports & Telemetry (EiEvent & EiReport)	-	-	✔
Opt in/out	✔	✔	✔
Opt in/out scheduling service (EiOpt)	-	-	✔
Registration Service (EiRegisterParty)	-	-	✔
2-Peer Security with digital certificates	-	✔	✔

OpenADR in the IEC

- The OpenADR Alliance has been active in several IEC working groups

  - **IEC PC118** recently 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

OpenADR in the IEC

Adapted structure of the standard

- 62746 Ed.1: Systems Interface between Customer Energy Management System and the Power Management System
  - 62746-1 Overview (include Glossary)
  - TR 62746-2 Use Cases and Requirements
  - 62746-3 Architecture
  - 62746-4 Data Model
  - 62746-5 Service interface to customer system
  - 62746-10 Mapping
  - 62746-10-1 PAS OpenADR
  - 62746-10-2 CIM compliant Mapping to XMPP
    - Message content and exchange patterns
    - Message transport and services
    - Security
    - Availability, redundancy
    - Placeholder <Engineering > (maintenance, parameterization, configuration, commissioning, registration)
    - Profiles, Interoperability
    - Placeholder <Conformance Testing>

Korea Update

- ◻ Korea is ready to form Korean OpenADR Alliance Affiliate (OpenADR Korea)

- ◻ Organized by Korean Smart Grid Association

- ◻ Korean companies can join locally
  - ◻ Membership fees are split between Affiliate and OADR Alliance

- ◻ Affiliate will have local activities and own board of directors

- ◻ Technical and Marketing activities to be discussed

- ◻ Certification testing will become available locally

Japanese Market

- ☐ Proposal to form OpenADR Japan on the table

- ☐ Several demo projects on the way organized by TEPCO, METI, Waseda University

Japanese Market

Japanese Market

- Proposal to f...

- Several dem...
  METI, Wased...

2014/15 OpenADR Work Items

- Vendor Guide
  - Service and Payload Definitions
  - Glossary of Schema Payload Elements
  - Glossary of Enumerated Values
  - OpenADR A and B Profile Differences
  - Frequently Asked Questions
  - A Profile Sample Payloads
  - B Profile Sample Payloads

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, Residental)

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 ALLIANCE

OpenADR DR Parameters
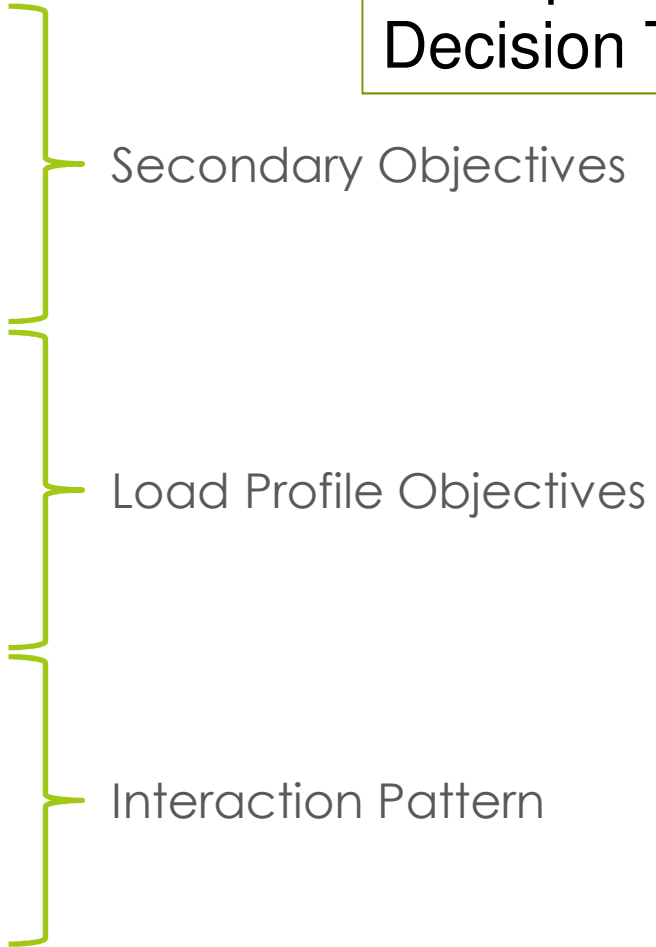
□ Grid Reliability & Safety (Primary Objective)

> Frequency and Voltage Stability

> Resource Adequacy

> Peak Capacity   Secondary Objectives

> Ramping

> Contingency

>> Peak Shaving

>> Load Following

>> Frequency Regulation   Load Profile Objectives

>> Reserves

>> Asset Protection

>>> Transactive (Incentivize)

>>> System Load Requests   Interaction Pattern

>>> Indirect Automation

>>> Control Physical Devices

>>>> Different Customer segments (C&I, …)

Example of Decision Tree

@openADR ALLIANCE

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 (**not** a new Profile specification)

- Vendor Guide document

Thank You!

Q&A

Rolf Bienert
Technical Director

rolf@openadr.org
+1 925 336 0239

Barry Haaser
Managing Director

barry@openadr.org
+1 408 310 9213

www.openadr.org

openADR
ALLIANCE

Wednesday's Agenda Recap

- 12:00 –1:00 **Lunch**

- 1:00 – 1:45 **OpenADR Update**

- 1:45 - 2:00 **Making sense of Industry Events**

- 2:00 – 3:00 **Supply-Side vs. Demand-Side Perspectives**

- 3:00 - 3:30 **Break**

- 3:30 – 4:00 **Securing OpenADR Implementations**

- 4:00 – 5:00 **OpenADR Case Study**

- 6:00 – 8:00 *OpenADR Networking Reception*

Making sense of Industry Events

Anto Budiardjo
CEO
PointView, Inc.

https://www.pointview.com/

Supply Side v. Demand Side:

An Experts' Perspective

Mary Anne Piette
Director, Demand Response Research Ctr

Wednesday's Agenda Recap

- 12:00 –1:00 **Lunch**

- 1:00 – 1:45 **OpenADR Update**

- 1:45 - 2:00 **Making sense of Industry Events**

- 2:00 – 3:00 **Supply-Side vs. Demand-Side Perspectives**

- 3:00 - 3:30 **Break**

- 3:30 – 4:00 **Securing OpenADR Implementations**

- 4:00 – 5:00 **OpenADR Case Study**

- 6:00 – 8:00 *OpenADR Networking Reception*

Securing OpenADR Implementations:

Oscar Marcia
President, NetworkFX™

Securing OpenADR Implementations:

Fred Yoo
Senior Program Manager
Integrated Demand Response

OpenADR Networking Reception

AutoGrid

Sponsor

Universal Devices

Co-sponsor

June 18, 2014 Maggiano's Little Italy
Santana Row 3055 Olin Ave., Suite 1000 San Jose, California 95128
6PM – 8PM
Appetizers & cocktails will be served

Carpooling encouraged/Taxis will be out front around **5:40pm**

openADR
ALLIANCE

Thank You!

Rolf Bienert
Technical Director

rolf@openadr.org
+1 925 336 0239

Barry Haaser
Managing Director

barry@openadr.org
+1 408 310 9213

Shannon Mayette
Marketing Director

shannon@openadr.org
+1 +1 602 882 4733

Rachel Dawn Davis
Dir. Member Svcs

rachel@openadr.org
+1 201 707 6558

openADR ALLIANCE