



Enabling The Standard for Automated Demand Response

Barry Haaser
Managing Director

Peak Is Outpacing Generation

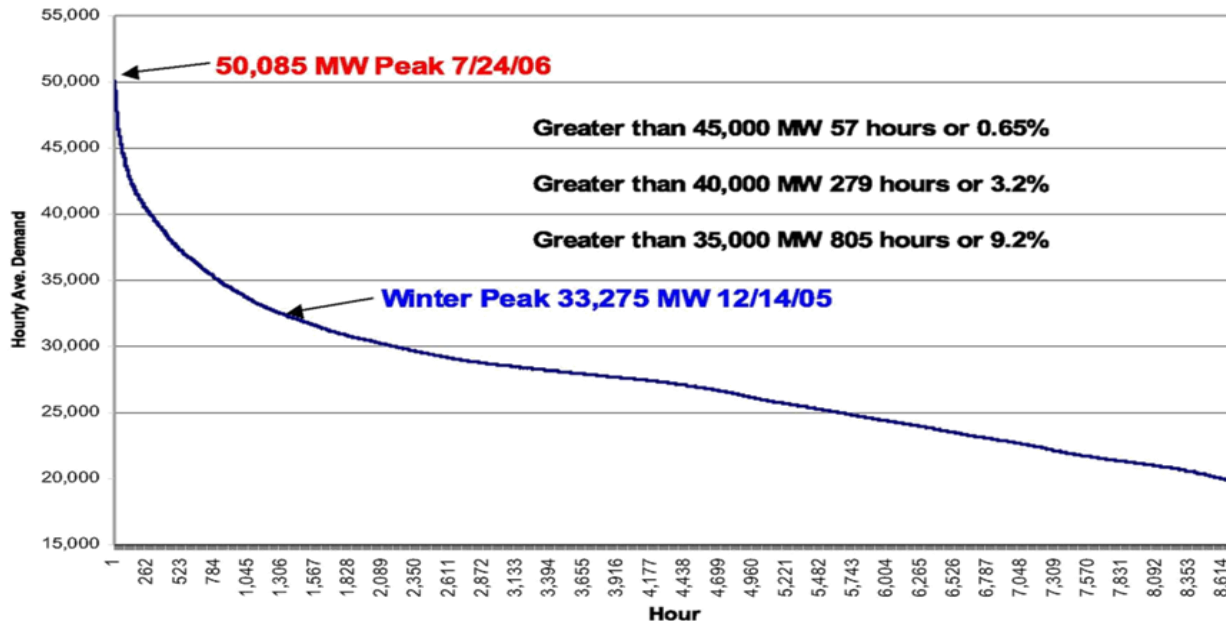
10% reduction for ~60 hours/yr = 5000MW or 50 100MW peak plants



California Independent System Operator Corporation

CAISO Load Duration Curve

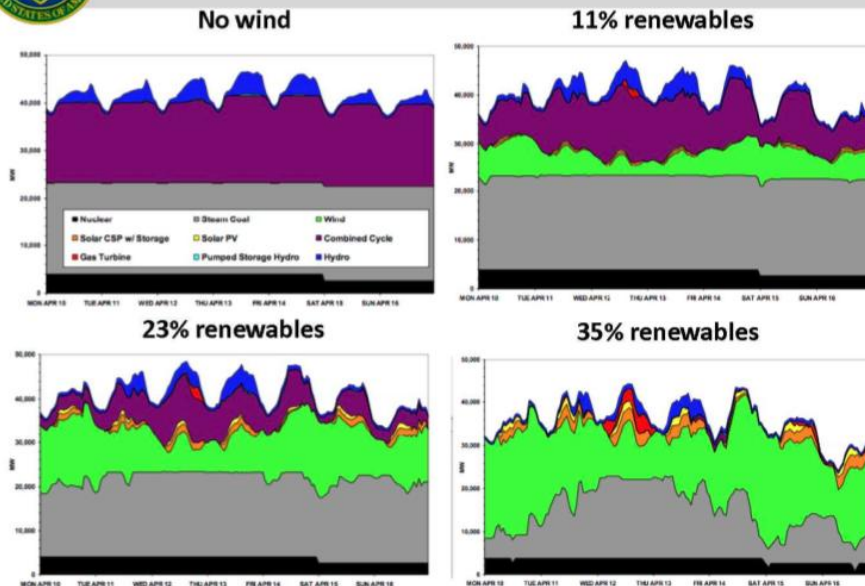
Sept '05 to Sept '06



Distributed Energy Resources (DER) Are Impacting The Grid



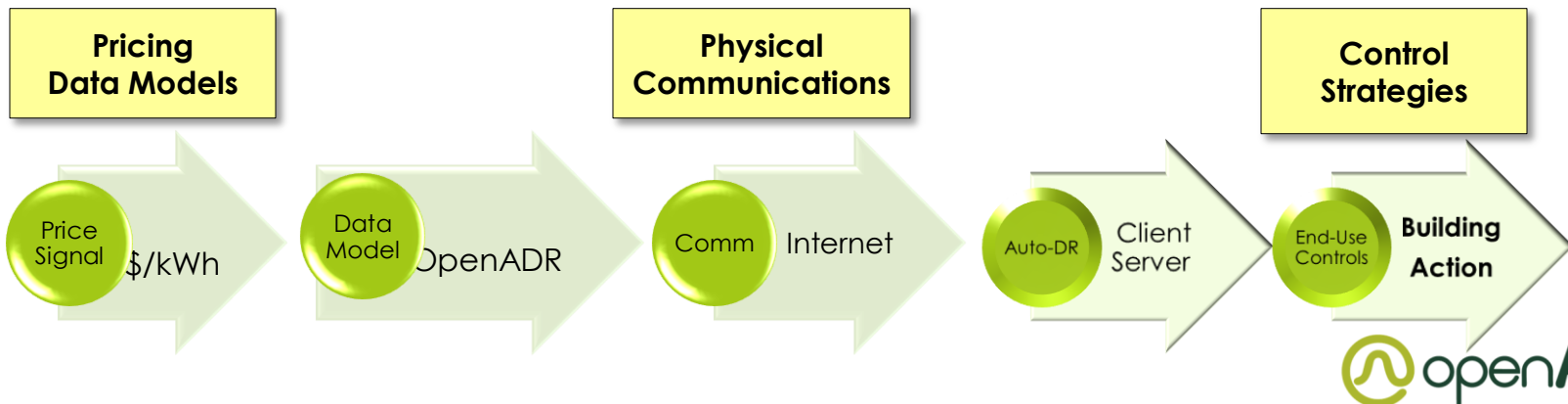
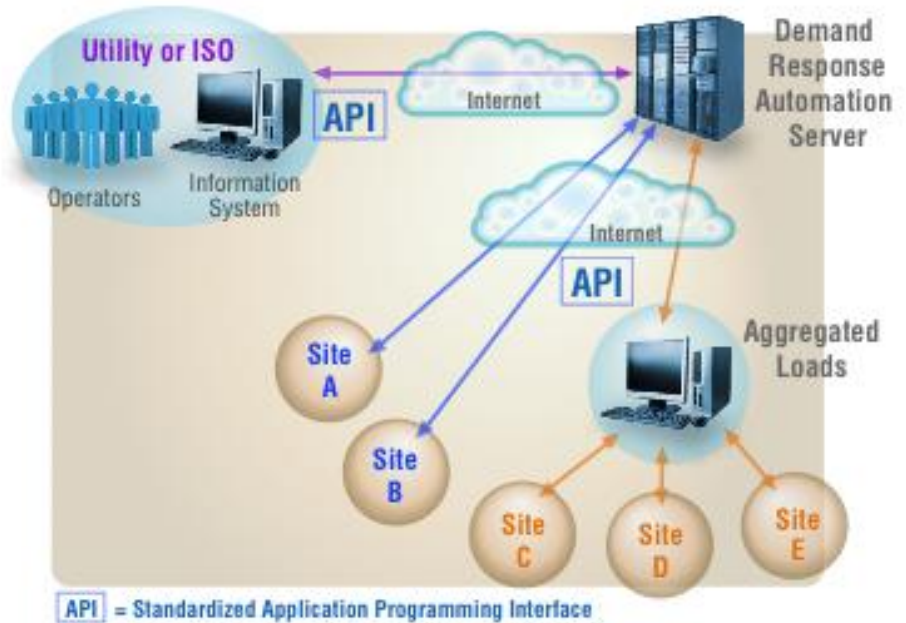
OE - Variable Generation Affects Grid Operations



- Increased dependence on Distributed Energy Resources (DER)
- 33% target in California
- DER is variable
- Load balancing will be required to stabilize the grid
- PUCs turning to new pricing programs and DR

What is Open Automated Demand Response?

- Open Automated Demand Response (OpenADR) provides a non-proprietary, open standardized DR interface that allows electricity providers to communicate DR signals directly to existing customers using a common language and existing communications such as the Internet.



Support for OpenADR

- In 2009, U.S. Commerce Secretary Gary Locke and U.S. Energy Secretary Steven Chu included OpenADR within the “Smart Grid Interoperability Standards Framework to help expedite development of a nationwide smart electric power grid.
- Federal Energy Regulatory Commission (FERC) identified OpenADR as a key standard for demand response.
- Association of Home Appliance Manufacturers (AHAM) identified OpenADR as key technology for appliances.
- FERC Commissioner Jon Wellinghoff identifies DR as a 'killer application' for the smart grid.

What Differentiates OpenADR?

- OpenADR is commercially deployed by over 80 vendors
- OpenADR is deployed throughout the US and being adopted internationally
- OpenADR has strong support from the regulatory community
- OpenADR is backed by key standards organizations
 - OASIS (Organization for the Advancement of Structured Information Standards)
 - NAESB (The North American Energy Standards Board)
 - UCA International Users Group
 - SGIP (Smart Grid Interoperability Panel)

Benefits of OpenADR

Price & Reliability

Communicates DR information (e.g. dynamic prices, shed levels, reliability, etc.) from providers to customers.

Consumer Choice

Does not specify load control signals to facility. Consumers determine response.

Technology Agnostic

Can be used with facility's existing protocols and control systems.
(e.g., BACnet, SEP)

Commercialization

Used within Commercial and Industrial facilities (residential demonstration)

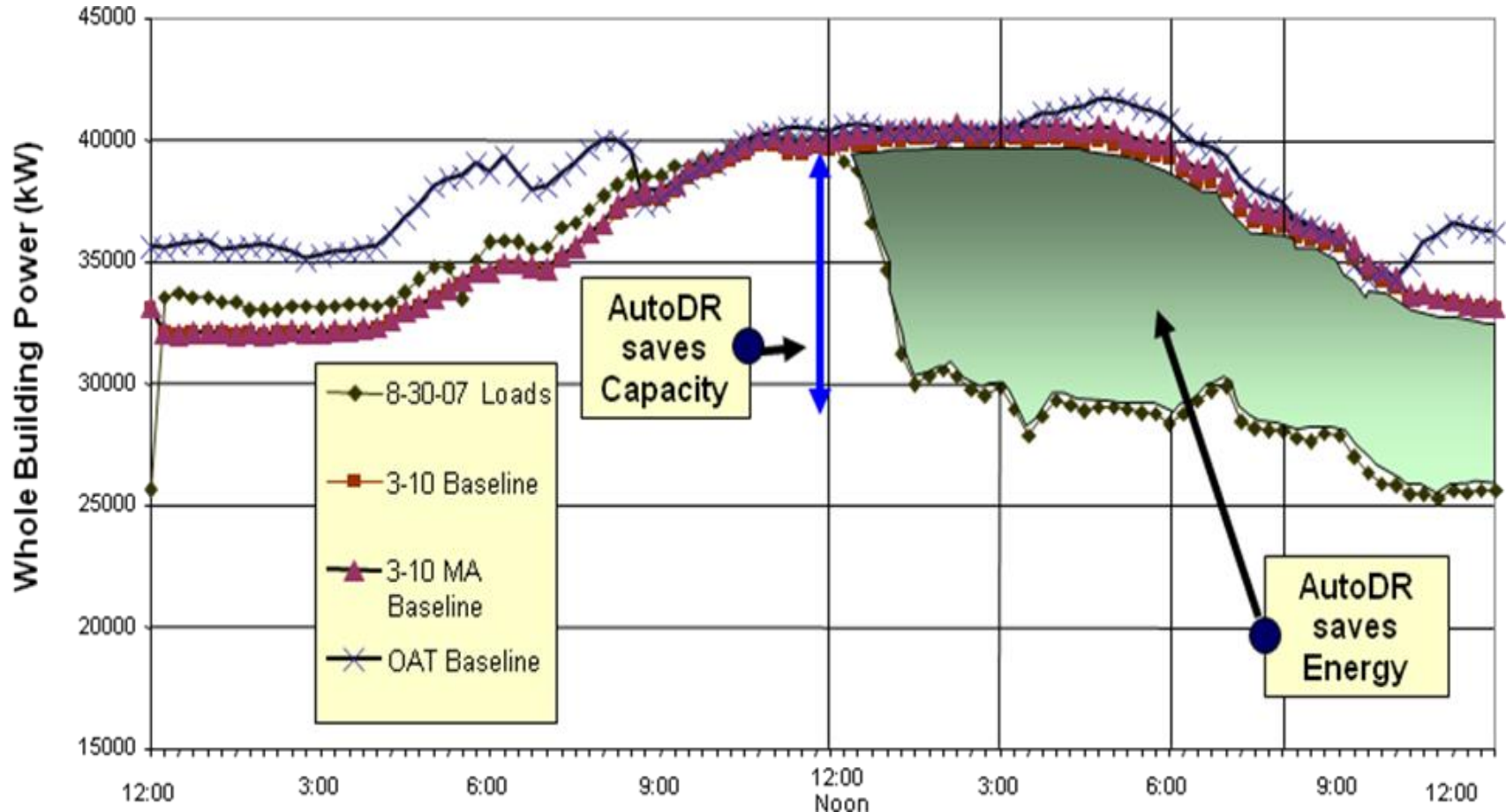
Backward Compatibility

Supports simple and smart client information representation to support diverse equipment.
(e.g., prices and shed levels)

XML data model transported over variety of mediums & interfaces

Results Of Multi-Year ADR Commercialization

OpenADR Application Impacts PG&E Demand Bid Test Day (all participants)



What is the OpenADR Alliance?

- California-based nonprofit 501(c)(6) corporation
- Member-based organization comprised of industry stakeholders interested in fostering OpenADR adoption
- Leverages Smart Grid-related standards from OASIS, UCA and NAESB
- Supports development, testing, and deployment of commercial OpenADR
- Enables stakeholders to participate in automated DR, dynamic pricing, and electricity grid reliability

Alliance Goals

- Coordination with standards organizations for release of OpenADR 2.0
- Successful Testing/Compliance Program
- Education of the Standard and it's Implementation
- Market acceptance and adoption of OpenADR

OpenADR Members

Sponsors



Contributors



Adopters



Barry Haaser
Managing Director
OpenADR Alliance
barry@openadr.org
+1 408 778 8371

www.openadr.org