CA Energy Commission
Transactive Energy Projects

Is There a Transactive OpenADR in Your Future?

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OpenADR Member Meeting and Open House
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Transactive Energy in the CEC’s GFO-15-311 Solicitation

**Advancing Solutions That Allow Customers to Manage Their Energy Demand**

- **Group 1: Load Management Systems that Facilitate Participation as Supply-side Resources**
  - Operational strategies for participation as supply-side resources
  - Includes onsite renewable generation, CHP, electricity and thermal storage, energy efficiency, electric vehicles, and load management systems

- **Group 2: Load Management Systems that Facilitate Participation as Demand-side Resources**
  - Behind-the-meter load management systems and operational strategies, program designs and retail tariff options
  - Minimize the cost and complexity of customer participation
  - Maximize the potential of large numbers of small loads to improve system load factor, shave peaks, integrate renewable generation and otherwise provide low opportunity-cost resources to the grid.

- **Group 3: Develop One or More Transactive Signals to Facilitate Demand Response**
  - Develop, test and operationalize one or more transactive signals that can be used by utility customers—and the other Recipients under this solicitation—as a basis for automating their load management strategies
Some Definitions

• TE Framework
  • “A set of economic and control mechanisms that allows the dynamic balance of supply and demand across the entire electrical infrastructure using value as a key operational parameter.” – GridWise Transactive Energy Framework

• Transactive “Signal”
  • “A dynamic price or informational signal that reflects and anticipates system conditions.” – California Energy Commission Solicitation GFO-15-311
  • An incentive or price “signal” that reflects system needs and can be used as a basis for automating load management strategies
  • Combines real-time system information with forecasts of loads and distributed generation production
  • Could be based on ISO/RTO market prices or utility tariffs as well as include information on other indicators of system conditions
Using OpenADR to Transport a DAHP Transactive Signal

From the OpenADR Program Guide:

B.7 Distributed Energy Resources (DER) DR Program

Note that as this is a real time pricing program there really is no differentiation between a simple, typical, and complex use case. Therefore sample data will only be shown for a typical use case.

B.7.1 Scenario 1 - Typical Use Case, B profile

- Event
  - Notification: Day ahead
  - Start Time: midnight
  - Duration: 24 hours
  - Randomization: None
  - Ramp Up: None
  - Recovery: None
  - Number of signals: 1
  - Signal Name: ELECTRICITY_PRICE
    - Signal Type: price
    - Units: USD per Kwh
    - Number of intervals 24
    - Interval Duration(s): 1 hours
    - Typical Interval Value(s): $0.10 to $1.00
    - Signal Target: None
  - Event Targets: venID_1234
  - Priority: 1
  - VEN Response Required: never
  - VEN Expected Response: n/a

- Reports
  - None

Put Transactive Signal here
A Transactive Signal Moving to a Controllable Load
Together…Shaping the Future of Electricity

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