



MORE THAN SMART

Transmission-Distribution Interface
Working Group Meeting

August 2, 2017

Today's Agenda

- 9:30 – 9:45: Introductions and level-setting
- 9:45 – 11:00: Presentation of potential 30-day review process IOUs will use for newDERA entering the wholesale market (75 minutes)
- Lead: Jill Powers (CAISO) and Mark Esguerra (PG&E)
 - Objective: Overview of proposal, discussion, and feedback
- 11:00 – 12:00: Presentation of example SCE-SGS-AMS Multi-Use Application Pilot (EASE) reflective of potential grid service conflicts
- Lead: Robert Sherick (SCE), Pete Maltbaek (SGS), and Michael Grabstein (AMS)
 - Objective: Overview of the EASE pilot as an example of a resource providing wholesale and distribution grid services; discussion of pilot and relevance to understanding potential grid service conflicts
- 12:00 – 12:30: Lunch Break (30 minutes)
- 12:30 – 2:00: Continuation of EASE Pilot and Potential Grid Service Conflicts
- 2:00 – 2:30: Discussion of upcoming DOE Energy Advisory Committee action on T-D Coordination and potential collaboration
- Lead: Heather Sanders (SCE)
 - Objective: Understand potential action by DOE EA Board, provide feedback, and consider potential collaboration
- 2:30 – 3:00: Discuss future meeting dates, meeting agendas, and next steps (15 minutes)

Orientation to Working Group

Purpose:

Focusing on real-time system operation, develop a coordination framework between the ISO, the distribution utilities and DER providers to provide for reliable and efficient integration of high volumes and diversity of DERs and DER aggregations into California's electricity system.

Scope:

This effort is focused on the physical operation of the electric system in the operational or “real-time” time frame. As such it is not intended to address system planning, infrastructure investment or grid modernization, although the results of this effort will likely help to inform these other areas.

The working group will include participation by all distribution utilities connected to the ISO balancing authority area for which DER growth is occurring or anticipated (i.e., IOUs and municipals), the ISO, DER providers, and other industry stakeholders.

Orientation to Working Group (cont'd)

Goals:

- Describe operational challenges at the T-D interface for a high-DER future in California
- Identify and evaluate ways to address these challenges through enhanced operational coordination between the ISO, DOs and DER providers
- Support the needs, objectives and core functions of the ISO, DOs, and DER providers
- Establish a shared terminology and approach to problem solving
- Share findings and coordinate with related efforts within California (such as DSPx)
- Share results publicly to inform California policy makers and related efforts outside of California
- Highlight the DER provider perspective on operational challenges
- Consider the implications of CAISO regionalization
- Support where possible CPUC implementation of the DER Action Plan

Orientation to 2017 Work Plan

1. Prepare an initial white paper that summarizes the 2016 effort, including description of existing coordination procedures, anticipated operational challenges with high DER, and communication and coordination improvements identified to date
2. Educate the WG on grid modernization from IOU perspective (using 1/24 DRP workshop presentations) and consider implications of operational coordination needs on grid modernization
3. Develop example use-cases reflecting likely DER integration scenarios to ground discussion in practical implications. Consider how future pilot proposals may stem from identified use cases.
4. [Specify potential real-time coordination procedures to manage potential conflicts between DO needs and ISO dispatches. Begin with scenario approach and then broaden as needed](#)
5. Identify principles for a DO approach to DER curtailment resulting from distribution level constraints
6. Consider any unique perspectives or challenges for municipal utilities w/in ISO footprint
7. [Describe the process and timeline for integration of a new DERA into the wholesale market, including utility process for 30-day review of DERA under ISO DERP tariff as well as ISO integration process](#)
8. Develop methods for short-term DER forecasting and impacts at T-D Interface (IOUs)
9. Develop method for DO feasibility assessment of ISO's day-ahead DER schedules and real-time dispatches
10. Explore how various DSO models would impact design of the T-D interface coordination framework

Use Cases

Use Case	Configuration	Grid Services Provided
A	Single Resource	Wholesale (only)
B	Aggregated Resource – consider single-feeder and multi-feeder sub-cases	Wholesale (only)
C-1	Single Resource	Wholesale + Distribution using separate portions of capacity for each (Multiple Use Application)
C-2	Single Resource	Wholesale + Distribution using the same capacity
D-1	Aggregated Resource – consider single-feeder and multi-feeder sub-cases	Wholesale + Distribution using separate portions of capacity for each (Multiple Use Application)
D-2	Aggregated Resource	Wholesale + Distribution using the same capacity
E	Single Resource	Wholesale + Distribution: enhanced DO/DSO functionality
F	Aggregated Resource	Wholesale + Distribution: enhanced DO/DSO functionality

Background Slides

Services in **Red** have been preliminarily deemed “reliability”

Domain	All Services
Customer (BTM)	<ul style="list-style-type: none"> • TOU bill management • Demand charge management • Increased PV self-consumption • Back-up power
Distribution (IFOM)	<ul style="list-style-type: none"> • Distribution capacity deferral • Reliability (back-tie) services • Voltage support • Resiliency/microgrid/islanding
Transmission	<ul style="list-style-type: none"> • Transmission deferral • Black start • Voltage support • Inertia • Primary frequency response
Wholesale Market	<ul style="list-style-type: none"> • Frequency regulation • Imbalance energy • Spinning reserves • Non-spinning reserves
Resource Adequacy	<ul style="list-style-type: none"> • System capacity • Local capacity • Flexible capacity