



MORE THAN SMART







Transmission-Distribution Interface Working Group Meeting

September 12, 2017

Today's Agenda:

- 9:30 – 9:45: **Introductions and level-setting**
- 9:45 – 10:30: **Updates on ongoing related matters**
- 10:30 – 12:00: **DO-to-DER provider communication of distribution system condition changes (Tom Bialek)**
- 12:00 – 1:00: **Lunch Break**
- 1:00 – 2:00: **Presentation from Olivine + Discussion (Robert Anderson)**
- 2:00 – 2:45: **Presentation on Potential Alternative DSO Models + Discussion (Lorenzo Kristov)**
- 2:45 – 3:00: **Discuss future meeting dates + logistics**
- 3:00 – 4:00: **Refreshments**

Orientation to 2017 Work Plan

Status	Milestone
	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. 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.
	3. 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
	4. Identify principles for a DO approach to DER curtailment resulting from distribution level constraints
	5. Consider any unique perspectives or challenges for municipal utilities w/in ISO footprint
	6. 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

Orientation to 2017 Work Plan (cont'd)



7. Develop methods for short-term DER forecasting and impacts at T-D Interface (IOUs)



8. Develop method for DO feasibility assessment of ISO's day-ahead DER schedules and real-time dispatches



9. Explore how various DSO models would impact design of the T-D interface coordination framework

Recent Activities

April:

- Developed and refined draft use cases
- Reviewed CPUC Distribution Service definition
- Pathion “Solar +” Presentation

May:

- Advanced Microgrid Solutions introduced “Energise” Pilot
- Refined draft use cases

June - July:

- Presentation on CPUC-CAISO Multi-Use Application Proposal
- Began evaluation of potential grid service conflicts
- Stem presentation on deployed projects
- Published white paper and led outreach

August:

- Review of ISO and DO resource integration processes
- SCE-SGS-AMS Presentation of EASE pilot
- Input into DOE Energy Advisory Committee

Updates:

- CPUC-CAISO Multi-use Application Framework (Lorenzo Kristov, CAISO)
- ESDER Phase 3 (Jill Powers, CAISO)
- UDC DERA 30 Day Review Process (PG&E)
- EASE Pilot Implementation (SCE / AMS)
- Valencia Gardens Pilot Implementation (PG&E / Pathion)
- Implementation of coordination procedures identified in July White Paper (All)
- Other?

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

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