Expanding Metering & Telemetry Options – Phase 2 (Distributed Energy Resource Provider or “DERP” proposal)

Draft Final Proposal (June 10, 2015)

Stakeholder web conference
June 17, 2015
9:00 – 12:00
## Agenda

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<tr>
<td>9:00-9:10</td>
<td>Introduction, Stakeholder Process</td>
<td>Tom Cuccia</td>
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<td>9:10-11:45</td>
<td>DERP draft final proposal</td>
<td>Tom Flynn, Jill Powers</td>
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<td>11:45-12:00</td>
<td>Next Steps</td>
<td>Tom Cuccia</td>
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ISO Stakeholder Initiative Process

POLICY AND PLAN DEVELOPMENT

Straw Proposal ➔ Revised Straw Proposal ➔ Draft Final Proposal ➔ Board

Stakeholder Input

We are here
## Stakeholder process schedule

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<td>November 10, 2014</td>
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<td>Revised Straw Proposal</td>
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DERP Draft Final Proposal
Summary of key advances

• Distributed energy resources ("DER") aggregation
  – Provides framework for aggregation of DER to meet the ISO’s 0.5 MW minimum participation requirement

• Metering
  – Provides that a DERP aggregation will be a scheduling coordinator metered entity ("SCME") rather than an ISO metered entity ("ISOME")

• Data concentration
  – Allows DER to rely on data concentration services to interact with the ISO through one point of contact
Distributed Energy Resources ("DER")

- DER means any distribution connected resource, regardless of size or whether it is connected behind or in front of the end-use customer meter.
- Distribution connected means connected to the distribution facilities controlled by a distribution utility, regardless of voltage level, and served by the ISO grid.
- Examples of DER include generation such as rooftop solar, energy storage, plug-in electric vehicles, and demand response.
Distributed Energy Resource Provider ("DERP")

- Owner/operator of one or more aggregations of individual DER that participate in the ISO market as an aggregate resource
- Provides the ISO with accurate information about its DER and timely updates this information when changes to these resources occur
- Executes a DERP agreement with the ISO
DERP (continued)

• Accepts certain responsibilities and obligations under the ISO tariff
  – Ensures its DER participate in the ISO market through a scheduling coordinator (“SC”)
  – Operates and maintains its DER consistent with applicable provisions of the ISO tariff (e.g., ISO dispatch instructions and operating orders)
  – Must comply with applicable outage requirements as well as any applicable reliability criteria

• Must also comply with applicable utility distribution company tariffs, requirements of the applicable local regulatory authority, as well as interconnection requirements
DERP Aggregation

- Means the single market resource – the non-physical “virtual” or “logical” resource – made up of one or more underlying physical sub-resources.

- Once registered as part of a DERP aggregation, individual sub-resources must remain and participate as part of the aggregation.
Metering

- DERP aggregations will be scheduling coordinator metered entities ("SCME") rather than ISOME
- Avoids having each sub-resource in a DERP aggregation engaged in a direct metering arrangement with the ISO
- Each sub-resource must be metered per local regulatory authority or ISO standards
- The SC will provide the ISO with aggregate settlement quality meter data ("SQMD") from all of the underlying sub-resources in a DERP aggregation for settlement
Metering (continued)

• SCs are responsible for performing audits and tests annually to ensure compliance with all applicable local regulatory requirements
  – If no local regulatory authority requirements, then ISO proposes use of default requirements (see Appendix A of 11-10-14 draft straw proposal)
• ISO will maintain authority to audit and test the metering facilities and data handling and processing procedures of the SC and the DERP
Locational dispersion of DERP aggregations

- Must be within a single sub load aggregation point (“sub-LAP”)
- May consist of one or more sub-resources at single or multiple locations within a single sub-LAP
- May be across multiple pricing nodes (“PNodes”) within a single sub-LAP
- ISO not proposing a limit on the number of PNodes within a sub-LAP that may be involved in a single DERP aggregation
Capacity of DERP aggregations and their sub-resources

- No minimum size limitation on the individual sub-resources in a DERP aggregation
- DERP aggregations across multiple PNodes may not exceed 20 MW
- No size limitation on DERP aggregations limited to a single PNode
Mixing of sub-resource types

• For DERP aggregations limited to one PNode:
  – The sub-resources may be heterogeneous (i.e., a mixture of sub-resource types is permitted)
  – It is not required that all of the sub-resources move in the same direction as the ISO dispatch instruction

• For DERP aggregations across multiple PNodes:
  – All sub-resources must be homogenous
  – All sub-resources must move in the same direction as the ISO dispatch instruction
  – All storage sub-resources must be operating in the same mode (i.e., charging or discharging, but not a mix of both)
Demand response in DERP aggregations

- Demand response participating as a proxy demand resource ("PDR") or reliability demand response resource ("RDRR") is not part of the DERP proposal
  - PDR/RDRR would continue to participate under its existing demand response framework and not under the DERP framework
- All sub-resources in DERP aggregations must be direct metered and not rely on a baseline methodology to measure performance.
DERP agreement

- Establishes the terms and conditions under which the ISO and DERP will discharge their respective duties and responsibilities under the ISO tariff
- Identifies each and every sub-resource subject to the agreement (individual sub-resources in DERP aggregations must be identified and updated in a schedule to the agreement)
- Each DERP, regardless of how many aggregations it has, will only execute a single DERP agreement
- Individual sub-resources in DERP aggregations would not enter into an additional participation agreement
- Individual sub-resources cannot participate in more than one DERP aggregation
Scheduling coordinator ("SC") services

- A DERP could serve as its own SC or hire the services of an SC.
- A DERP’s SC must meet the ISO’s SC certification requirements and all other applicable obligations.
- Just as a DERP may choose to be an SC, an SC may choose to be a DERP or obtain the services of a DERP.
- A DERP may have a relationship comparable to an “agent” relationship under which the DERP serves as the agent for the SC (see figure on next slide).
- SC will be responsible for managing the risk of this “agent” relationship with a DERP.
SC services (continued)
Data management services

• Data concentration
  – Proposal allows DER to rely on data concentration services to interact with the ISO through one point of contact
  – ISO would maintain visibility to and interact with DER at the data concentration point where single market resources represent an aggregation
  – SC (or DERPs providing services to an SC) would perform any necessary mapping of data behind the aggregation
Data management services (continued)

• Revenue metering
  – Proposal requires settlement metering for all DER
  – SCs representing DERPs must ensure their meters or revenue measuring devices meet local regulatory authority requirements

• Telemetry
  – In general, DERP aggregations will not be required to provide telemetry if they are under 10 MW in size
  – However, to participate in ISO ancillary services markets a resource of any size is required to provide and maintain real-time visibility, and in the case of regulation, respond to the ISO’s EMS control signal
Next Steps

Request stakeholder comments by June 24, 2015
Comments mailbox: InitiativeComments@caiso.com
Please use comments template provided

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