

DSO Workshop

High DER Proceeding

May 3, 2022

SCE strongly believes that DERs and associated foundational technologies are essential for the future grid, and is already investing accordingly

- SCE's grid modernization initiatives have deployed technologies and tools to support local reliability and resiliency, as well as facilitating DER growth and enabling DER services, with more investments in progress.
- SCE's *Pathways* and *Re-imagine the Grid* studies have illustrated the importance of unlocking the value of DERs while simultaneously focusing on customer affordability and equity.
- DERs are a key tool to achieving GHG goals, but the grid infrastructure and capabilities must evolve to enable and utilize DERs as part of achieving our future objectives in an affordable/efficient manner.

An updated DSO model can help solve many of the key issues facing the grid today

CUSTOMER



- Higher Usage and Load Density
- Increasing focus on reliability and resiliency
- More end users sensitive to power quality (i.e., power electronics)

Supply



- Integration of high levels of renewables (intermittent and far from load centers)
- Ensuring Resource Adequacy and maintaining grid stability (i.e., lower levels of inertia)

Climate



- Climate risks such as wildfires, floods and extreme temperatures
- Impacts to assets, load, and supply

Key points

1. System functions must be explicitly considered and integrated with market functions of the DSO.
2. The complexity of DSO roles and responsibilities must be appropriately considered, especially considering potential impacts to sustainability/affordability and reliability/resiliency.
3. Clear upfront criteria should be established for evaluating DSO models, including a quantitative benefit-cost analysis.

System functions must be explicitly considered and integrated with market functions of the DSO

- **The DSO must perform two distinct but interdependent functions:**
 - **System functions:** capabilities *necessary to maintain or improve reliability and resiliency*, such as planning, situational awareness, communication, grid control, etc. Also includes capabilities necessary to *enable market functions* below.
 - **Market Functions:** all functions necessary to *enable services*, such as scheduling, dispatch, verification, settlements, etc. Also includes where market functions can *support system requirements and reliability* discussed above
- **DSO Model Proposals should include explicit connections between new market and system functions**
 - Proposals should explain where market functions depend on new system capabilities, and/or how system requirements are supported by market functions



The complexity of DSO roles and responsibilities must be appropriately considered, especially considering potential impacts to sustainability/affordability and reliability/resiliency.

The white paper asks: should “distribution system ownership” be separated from “distribution service market operations” or remain consolidated? In actuality, it’s a bit more complicated than that...

A partial list of the roles performed by today’s DSOs (i.e. distribution utilities)

- Planning
 - Capacity / load growth
 - Infrastructure replacement
 - Maintenance
 - Climate Adaptation
 - Grid modernization
- Infrastructure development
 - Licensing/Permitting
 - Engineering
 - Design
 - Procurement
 - Construction
- Operations
 - Grid control activities
 - Operations engineering
 - Switching program writing
 - Real-time switching
 - Tap changes and other voltage control devices
 - Work coordination
 - Crew scheduling and dispatch
 - Construction
 - Maintenance
 - Outage Management
 - Scheduled outages
 - Emergency repairs
 - Customer service / customer communication
- Operations (contd.)
 - DER Dispatch
 - Demand response operations
 - DIDF projects scheduling and dispatch
 - Generation Interconnection
 - Wildfire accountability
 - Wildfire Mitigation Planning
 - Mitigation initiative execution
 - Wildfire risk modeling / Consequence modeling
 - Weather forecasting
 - System hardening
 - Assumption of wildfire liability
 - Preventative activities
 - Inspections and repair
 - Vegetation Management

Recommendation: DSO Model proposals should clarify how the critical roles (from the above list and/or additional roles) of distribution system operations will be performed.

Clear upfront criteria should be established for evaluating DSO models

- Prior to adoption, all major technology investments, policy reforms, and/or market redesigns should be evaluated with detailed quantitative analysis, included a detailed benefit-cost analysis.
- SCE recommends that stakeholders establish a set of metrics to ensure the initial discussions can inform this future evaluation.
- An initial screening/evaluation can occur through qualitative discussion of key attributes to help stakeholders determine which proposed models should move forward to the more detailed analysis.
- SCE proposes the following set of illustrative questions and criteria to guide an initial evaluation:

Achieving Track Objectives	Benefits and Feasibility Attributes	Risk Assessment
<p>How will the proposed DSO model lead to improvements in the stated objectives of the Track?</p> <ul style="list-style-type: none"> • plan and operate a high DER grid • unlock economic opportunities for DERs to provide grid services • limit market power • reduce ratepayer costs • increase equity • support grid resiliency • meet State policy objectives <p>How are proposed system capabilities or market functions expected to achieve these objectives?</p>	<p>Qualitatively discuss key elements of the proposed model</p> <ul style="list-style-type: none"> • High-level estimate of expected benefits to customers (and how they accrue to customers) • High-level estimate of expected costs of the model (and what drives those costs) • Implementation timing • Technological considerations • Policy considerations 	<p>Initial qualitative discussion of risk</p> <ul style="list-style-type: none"> • What are the key risks associated with model? • What strategies / approaches will help mitigate these risks?

Conclusion

SCE looks forward to active collaboration with stakeholders to identify a sustainable DSO model that:

- Appropriately takes system and market function integration into account
- Recognizes and addresses the complexities associated with grid planning and operations and does not compromise safety and reliability
- Is selected after evaluation against objective criteria