



## Before We Begin

### Announcements

- We are currently recording
- Raise your hand and join us by camera during discussions
- Use the chat

**For all who plan to be an active participant in this workshop, please share as follows**

- Name and preferred pronouns
- Organization you're representing, if any
- Complete the following sentence using a one-word adjective:

*I hope the process used to complete Track 2 of this Rulemaking is...  
[one word adjective]*

The decarbonization of our economy is within reach, and more important than ever.

We convene, educate, and empower stakeholders working to decarbonize our economy.



# GRIDWORKS



### Our objectives for today's meeting are as follows

- Engage a diverse group of contributing stakeholders
- Consider how Track 2 relates to other High-DER Rulemaking activities
- Introduce concepts and terminology
- Garner lesson learned from similar processes
- Receive feedback and guidance from stakeholders on how this process should be conducted

## Objectives and Agenda

#	Agenda Item	Facilitator	Duration	Start Time	End Time
1	<b>Introductions</b>	Gridworks	10 min	10:00am	10:10am
2	<b>Initiative Overview</b> <ol style="list-style-type: none"> <li>Commissioner Darcie Houck</li> <li>Rob Peterson, Energy Division</li> </ol>	CPUC	20 min	10:10am	10:30am
3	<b>Introduce Concepts and Terminology</b>	Gridworks	20 min	10:30am	10:50am
<i>10-minute Break</i>					
4	<b>Lessons Learned from Australia and UK</b> <ol style="list-style-type: none"> <li>Mark Paterson (Strategen)</li> <li>Jason Brogden (Jason Brogden Consulting)</li> </ol>	Gridworks	45 min	11:00am	11:45am
<i>30-minute Break (Lunch)</i>					
5	<b>Process Proposals</b> <p>Gridworks and Party Presentations In-person participation survey Facilitated discussion to follow</p>	Gridworks	150 min	12:15pm	2:45pm
6	<b>Next Steps and Closing</b> <p>Next Steps Workshop feedback survey</p>	Gridworks	15 min	2:45pm	3:00pm

## Welcome and Opening Remarks



**Commissioner Darcie Houck**

## Energy Division Slides



## Introduce Key Concepts and Terminology



### Evaluating Alternative Distribution System Operator Models for California

March 2022

1

### Gridworks Paper provides:

- Introduction to Rulemaking, Track 2
- Background: DER and the Grid in California
- Definition of Distributed Energy Resources and Distribution System Operator
- Summary of Comparable Processes and Outcomes from other Jurisdictions
- Proposed Process to Openly Evaluate DSO Options in California

### Purpose of White Paper:

- To begin an **inclusive stakeholder engagement process** addressing the two questions posed in the November 15 Scoping Ruling.
- Provide an onramp for all participants in the California process, **leveling the playing field and engaging parties in a process we intend to be open and creative.**

### Defining Terms: Distributed Energy Resource

- California Public Utilities Code defines **Distributed Energy Resource** as “distributed renewable generation resources, energy efficiency, energy storage, electric vehicles, and demand response technologies.”
  - Federal Energy Regulatory Commission defines Distributed Energy Resource as “any resource located on the distribution system, any subsystem thereof or behind a customer meter.”

### Defining Terms: Distribution System Operator

- Definitions of Distribution System Operator include:
  - the **entity responsible for planning and operational functions associated with a distribution system** that is modernized for high levels of DERs
  - **securely operates and develops an active distribution system** comprising networks, demand, generation and other flexible DER...
  - ... a **neutral facilitator of an open and accessible market...**
  - **...enable competitive access to markets** and the optimal use of DER on distribution networks to deliver security, sustainability and affordability in the support of whole system optimisation.
  - ... **enables Customers to be both producers and consumers**; enabling Customer access to networks and accessible markets, Customer choice and great Customer service.
  - **a market-based system for distributed energy resources (DER) services**
  - an **expanded technical capability of a current distribution network services provider** to identify and communicate network constraints
- **Definition of DSO depends on the objectives being served and the corresponding functions expected by its users**

## Past to Present

Past	Present
Generation is firm dispatchable	Generation is variable
Generation follows load; always kept in power balance	Controllable loads can and must be capable of following generation to achieve power balance
Distribution can be treated as a passive load attached to transmission	Distribution is active and may serve resources to transmission
Real power flows in one direction only at the distribution level	Two-way power flows in distribution feeders and substations, and event into the transmission system
Generation source selection performed on cost and reliability requirements	Renewable energy and climate-change-related policies affect the selection of generation sources
Designed for reliability, not economy	System increasingly economically driven and competitive

# Past to Present

Function	Transmission System Operator and Transmission Owner	Distribution Operator (DO)
Balance supply and demand	Balances for its area, include net load of all distribution areas and interchange with adjacent balancing areas	No current balancing responsibility; DO delivers energy to and from the transmission system to customers and maintains safety and reliability.
Maintain frequency	Supports frequency for its system or at regional interconnections, along with other balancing authorities	Distribution operator is not responsible for maintaining frequency.

**In the past**, the key players in grid operation are the Transmission System Operator (TSO), Transmission Owner (TO), and Distribution Operator (DO) ...

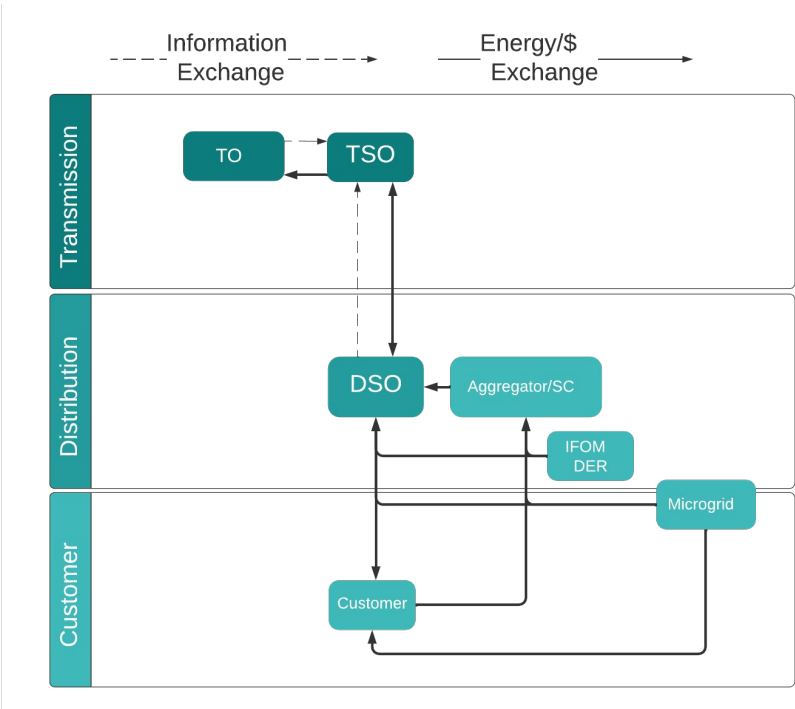
The architecture of new DSO models is **the work of re-shaping these roles and responsibilities**, including whether and how a DSO, DER Owner, DER Operator (Aggregator), and Customer may take on new roles in grid operations.

Function	Transmission System Operator and Transmission Owner	<u>Distribution System Operator and Distribution Operator (DO)</u>	<b>DER Owners, Operators, and Customers</b>
Balance supply and demand	Balances for its area, include net load of all distribution areas and interchange with adjacent balancing areas  Our work would fit here...	No current balancing responsibility; DO delivers energy to and from the transmission system to customers and maintains safety and reliability.  ... here...	... and here.

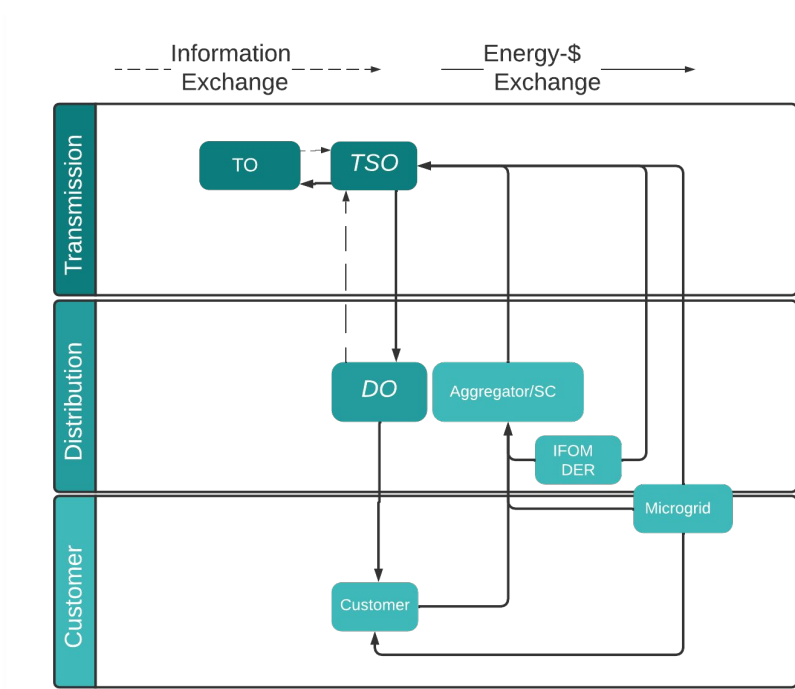


# Introduce Key Concepts and Terminology

Total DSO Model



Total TSO Model



Our work is about the relationship between grid operators and DERs. Structural diagrams provide clarity when considering re-shaping the various roles and responsibilities.



### Three DSO Model Distinguishing Features

- How is the value of DER to the distribution grid exchanged between system operators and DER owners?
- What is the relationship between wholesale and distribution services a DER provides? How are they coordinated?
- Are the profit-making opportunities of distribution system ownership separated from distribution service market operations or left consolidated?



### Goals

1. Ensure the initiative provides solutions to problems
2. Center equity and increase the diversity of participating stakeholders
3. Leverage the insights gained from Australia, the UK and New York, while creating the process and new ideas California needs
4. Inspire stakeholders to do good work
5. Be timely

### 5-Step Process

1. Set targets (“Essential 2030 Operations”)
2. Assess Gaps
3. Propose Solutions
4. Assess Barriers
5. Determine Potential Actions

### Step 1 Set Targets:

**Essential 2030 Operations: Identify the operations essential to the distribution grid in 2030 in line with the proceeding's High-DER future grid vision**, including the required planning, investment and market functions needed to enable those operations.

- a. Activity:
  - i. Collect and organize relevant, existing goals to anchor the aims of the initiative (Facilitator, Energy Division)
  - ii. Workshop 1: Identify the operations essential to the distribution grid in 2030 (Parties, with Facilitator guidance)
  - iii. Request and incorporate feedback (Facilitator)
  - iv. Document the outcome and issue to stakeholders (Facilitator)
- b. Guidance:
  - i. Objectives for the grid **go beyond technical and economic challenges to include social (e.g., equity) and environmental (e.g., wildfire risk mitigation) challenges**
  - ii. A manageable scope may necessarily require abstractions for now
  - iii. Do not re-litigate existing policy

### Step 2 Gap Assessment

**Gap Assessment:** Assess the current status of the identified 2030 Essential Operations and deduce any gaps, real or perceived. The results of Objective A and B **yield a shared problem/opportunity statement.**

- a. Activity:
  - i. Collect and organize relevant, existing official documents which speak to gaps (Facilitator, Energy Division)
  - ii. Workshop 2: Provide additional information to inform gaps (Parties, with facilitator guidance)
  - iii. Request and organize feedback (Facilitator)
  - iv. Document the outcome and issue to stakeholders (Facilitator)
- b. Guidance:
  - i. Use official documents where possible to avoid subjective, debated conclusions
  - ii. Work together to supplement as needed



### Step 3 Propose Solutions

**Propose Solutions: Create DSO model proposals** to address identified gaps.

- a. Activities:
  - i. Create DSO models which address identified gaps (Parties)
  - ii. Workshop 3: Present proposals and receive feedback (Proposing Parties)
  - iii. Document the outcome and issue to stakeholders (Facilitator)
- b. Guidance:
  - i. **Invest time and effort to build mutual understanding of proposals**
  - ii. Proposals **may include incentive mechanisms** to encourage operator performance consistent with Essential 2030 Operations.
  - iii. Proposals **may include outcomes of the CPUC's Smart Inverter Operationalization Working Group** initiative to prioritize use cases (Final Report due Q1 2023).

### Steps 4 and 5 Barriers Assessment and Actions Recommendations

**Barrier Assessment and Action Recommendations:** Identify what barriers (i.e., legal, regulatory, procedural, technical and financial) challenge the closing of those gaps by proposed DSO models. Then show what findings, conclusions, or actions the Commission or other policy makers could take to overcome barriers

- a. Activities:
  - i. Workshop 4:
    - 1. Identify barriers to various DSO model implementation (Parties, with facilitator guidance)
    - 2. Identify actions to overcome various barriers (Parties, with facilitator guidance)
    - 3. Identify tradeoffs, pros and cons (Parties, with facilitator guidance)
  - ii. Document the outcome and issue to stakeholders (Facilitator)
  - iii. Request and organize feedback (Facilitator)
- b. Guidance: Continued Next Slide...

### Steps 4 and 5 Barriers Assessment and Actions Recommendations (Continued)

#### Guidance:

- i. Invest time and effort to build mutual understanding of barriers
- ii. Where possible, provide potential actions in the form of Findings of Fact, Conclusions of Law, or Ordering Paragraphs.
- iii. Recognize trade-offs openly
- iv. Include incentive mechanisms worthy of further investigation
- v. Include outcomes of the CPUC's Smart Inverter Operationalization Working Group initiative to prioritize use cases (Final Report due Q1 2023).

### Frequently Asked Questions about Gridworks Proposal

- What happens after Workshop 4?
  - Gridworks compiles the outcomes of the four workshops, including party proposals. Gridworks edits the compilation for consistency, brevity, and cohesion, then submits the draft *Future Grid Study*.
  - Record development...
- What will be on the record?
  - Gridworks will serve quarterly reports on the progress of the initiative, available to the ALJ as record evidence (July, October, January '23, April '23)
  - Parties file comments and reply comments on the *Study* and present their perspective at an *en banc* of the Commission (Q3 2023)
  - Proposed Decision (Q4 2023), including comments and reply comments

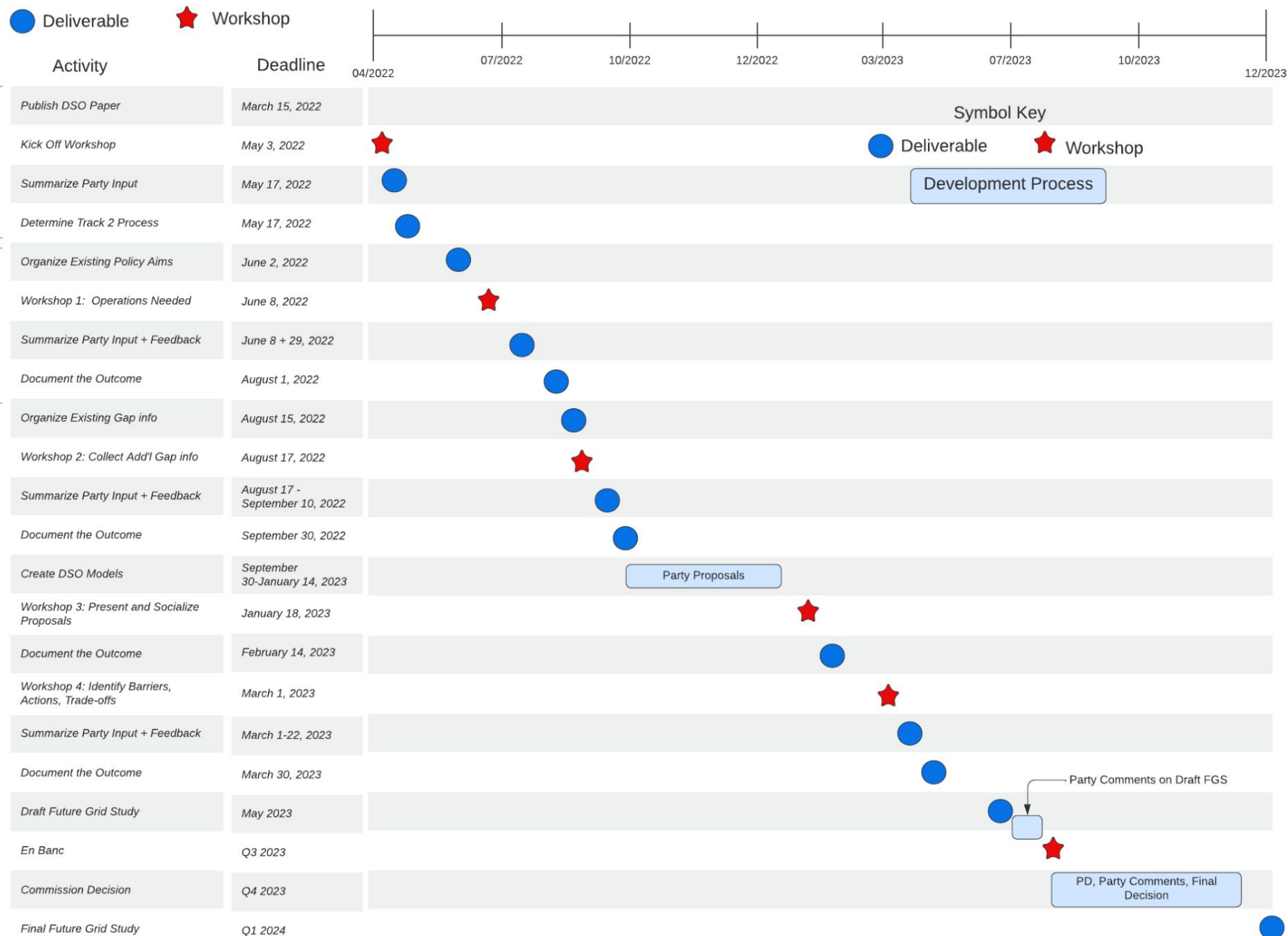
### Frequently Asked Questions about Gridworks Proposal (cont'd)

- What is Gridworks' role?
  - Gridworks is responsible for:
    - organizing and leading workshops, including supporting materials and reporting (*Future Grid Study*);
    - soliciting and faithfully representing stakeholder perspective; and
    - organizing stakeholder proposals to achieve consistency, brevity, and cohesion.
- How will proposed DSO models be evaluated?
  - Parties will provide perspective on the merits of the proposals; Gridworks will organize and characterize that perspective. As always, the Commission may order further evaluation as needed.

## Gridworks Process Proposal

Track 2: Distribution System Operator Roles and Responsibilities	
White Paper and Kickoff Workshop	May 3, 2022
Future Grid Workshop Series (Workshops #1-4)	June 8, 2022
	August 17, 2022
	January 18, 2023
	March 1, 2023
Deadline to request Evidentiary Hearing For Track 2 issues	April 30, 2023
<i>Future Grid Study</i> and En Banc	Third Quarter 2023
Proposed Decision	Fourth Quarter 2023





Party Presentations

### Discussion Questions

- What is one key similarity and difference between the ideas presented?
- What suggestions are motivating and energizing?
- What suggestions are concerning?
- What appear to be the key challenges to completing this work?
- How have similar challenges been addressed in other initiatives at the Commission or beyond?
- How would you briefly summarize your recommendation?

## Next Steps

### Where we do we go from here

1. Summarize party input from this workshop as an addendum to the white paper and issue to stakeholders (Gridworks)
2. Determine final Track 2 stakeholder engagement process based on party input (Gridworks, Energy Division)
3. Create Supporting Documents for Workshop 1, June 8
4. Other?



**MATTHEW TISDALE**

mtisdale@gridworks.org | 510 508 0761

**[www.gridworks.org](http://www.gridworks.org)**



**GRIDWORKS**