



MCE Board of Directors Meeting  
Special Meeting & Public Workshop  
Wednesday, June 24, 2026  
4:30 p.m.

1125 Tamalpais Ave  
San Rafael, CA 94901

2300 Clayton Road, Suite 1500  
Concord, CA 94520

*Public comments may be made in person or remotely via the details below.*

**Remote Public Meeting Participation**

Video Conference:

<https://us02web.zoom.us/j/89558191522?pwd=3ZDhGry61ufbKYiEKaAmZDKJaB5qrf.1>

Phone: Dial (669) 900-9128, Meeting ID: 895 5819 1522, Passcode: 551526

Materials related to this agenda are available for physical inspection at MCE's offices in San Rafael at 1125 Tamalpais Avenue, San Rafael, CA 94901 and in Concord at 2300 Clayton Road, Suite 1500, Concord, CA 94520.

DISABLED ACCOMMODATION: If you are a person with a disability who requires an accommodation or an alternative format, please contact MCE at (888) 632-3674 or [ada-coordinator@mceCleanEnergy.org](mailto:ada-coordinator@mceCleanEnergy.org) at least 72 hours before the meeting start time to ensure arrangements are made.

Agenda Page 1 of 1

1. Roll Call/Quorum
2. Opening Remarks (Discussion)
3. Index+ Contracting and CAISO Load Hedging (Discussion)  
*Receive a presentation, followed by open Q&A session for all attendees.\**
4. Adjourn

*The Board of Directors may discuss any or all of the items listed on the agenda irrespective of how the items are described.*

\*Please note that if a quorum is not achieved for this special meeting, the meeting will proceed as a public workshop to discuss the matters listed on this agenda. Any members of the MCE Board of Directors will participate in the discussion in the same fashion as the public and such Board Members may not discuss among themselves, other than as part of the scheduled agenda, any other specific business of MCE.



# Index+ Contracting and CAISO Load Hedging

Public Workshop

June 24, 2026

# Power Resources: 5 Key Building Blocks

**1. CAISO Load:** forecasting, scheduling, settlements

**2. Power Purchase Agreements and Energy Storage Service Agreements**

- Clean energy (unless stand-alone storage)
- CAISO load hedging
- Resource adequacy (RA)

Today's Focus

**3. Index+ Contracts:** clean energy

- Includes power charge indifference adjustment (PCIA) allocations

**4. Pure Hedge Agreements:** CAISO load hedging

**5. RA-Only Contracts:** resource adequacy

# Index+ Contract Fundamentals

## 1. Generating Resources

### **Resource Category and Technology**

- Renewable energy: solar, wind, geothermal, bioenergy, small hydro
- Low carbon energy: large hydro, asset controlling supplier, nuclear

**Resource IDs**: specific resources must be listed in the contract

**Resource Locations**: CAISO and/or Non-CAISO

**Existing vs. New**: MCE almost always procures from existing resources

# Index+ Contract Fundamentals

## 2. Scheduling/Delivery Obligations

**Delivery Term:** Less than one year to three years

**Scheduling Coordinator:** Always the seller

**Delivery Point:** Energy always delivered to CAISO

- MCE takes title to both the energy and environmental attributes

**Delivery Requirements:** Seller's choice is standard (i.e., no set profile)

**Delivery Certainty:** Firm or unit-contingent or seller's choice

**Volume:** Firm MWh or percentage of resource or MWh range

# Index+ Contract Fundamentals

## 3. Compensation Structure and Price

**Seller:** collects and keeps CAISO revenue

- This is logical since the seller is the scheduling coordinator

**Buyer:** pays for energy and environmental attributes, minus a CAISO credit

- CAISO credit is driven by the fact that seller keeps the CAISO revenue
- Buyer's net price equals the price of the environmental attribute

**Price** = Index price + attribute price - CAISO credit, where CAISO credit equals the index price

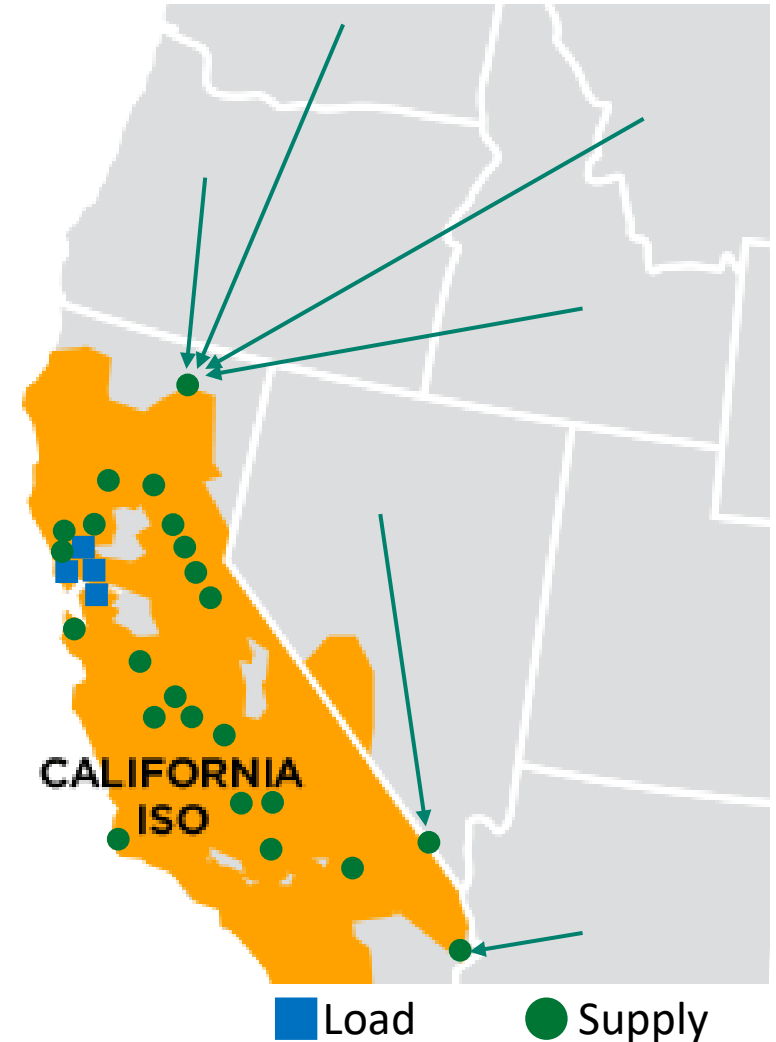
# Index+ Contract Fundamentals

## 4. Power Content and Emissions Accounting

- **Timing:** Calendar year supply volumes are compared to calendar year load
- **Location:** Supply injected into one location of CAISO grid can serve load in another location of CAISO grid

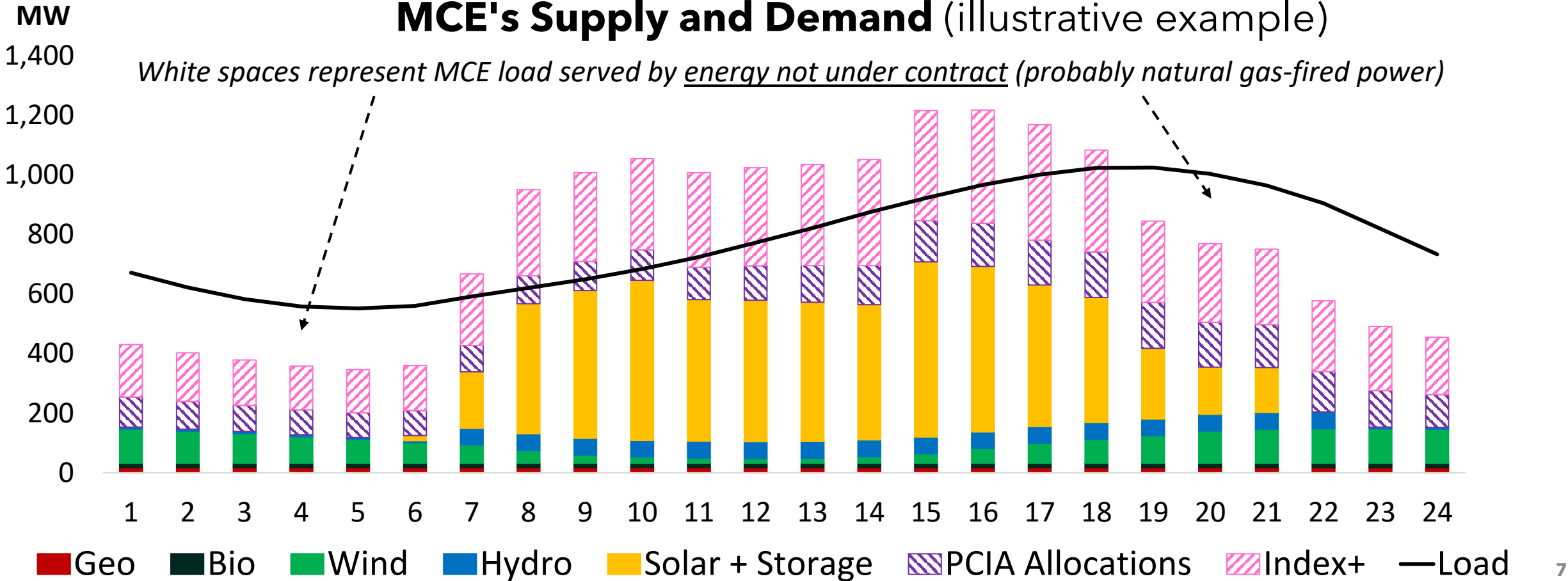
This official CA Energy Commission methodology is required for all CA load-serving entities and applies to all energy contracts (PPAs, index+, PCIA allocations, etc.)

### Illustration of MCE Load and MCE Supply (PPAs, Index+ and PCIA Allocations)



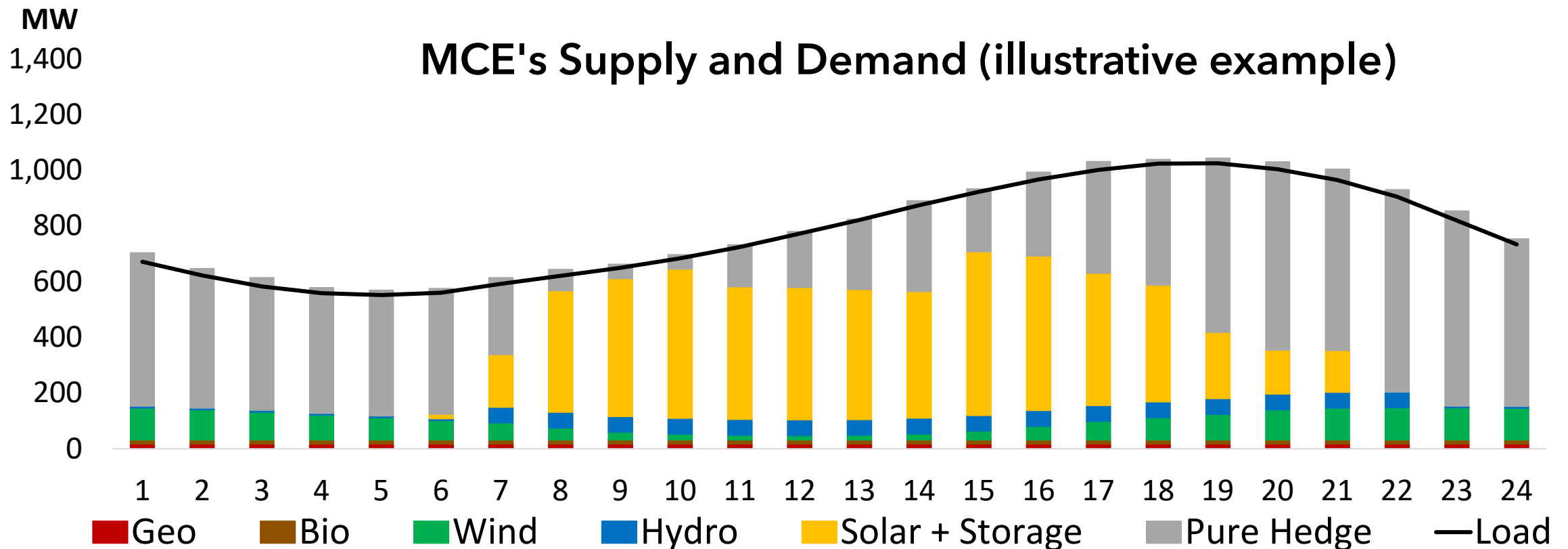
# Index+ Contracts: Portfolio Implications

Sellers typically require flexibility to deliver at any time during the term. In part due to this specific contracting provision, MCE does not match its supply and load on an hourly basis.



# Hedge Contracts: Introduction

- Neither PCIA allocations nor index+ contracts hedge MCE's CAISO load payments.
- To obtain such hedges, MCE uses "fixed price contracts" such as PPAs. Since MCE does not have a PPA portfolio today that can volumetrically hedge its CAISO load (example below), MCE must supplement with pure hedge agreements.



# Hedge Contract Fundamentals

## 1. MCE has gross exposure to its CAISO load payments

- MCE is a load-serving entity
- MCE must pay the CAISO for the energy consumed by its customers:  
*[day-ahead scheduled energy x CAISO day-ahead load hub prices] + [incremental metered energy x CAISO real-time load hub prices]*
- Load hub prices are volatile and thus generate uncertainty for MCE's CAISO load settlements

# Hedge Contract Fundamentals

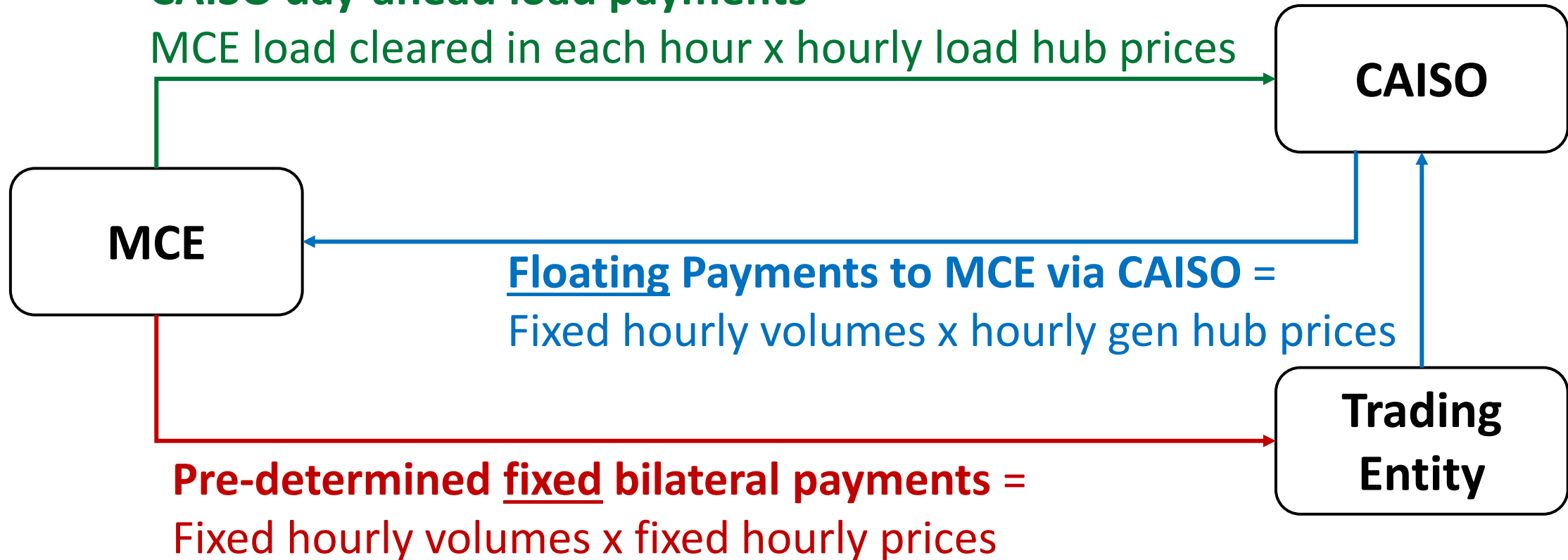
## 2. MCE uses fixed price contracts to hedge its CAISO load payments

- To hedge its CAISO load payments, MCE uses fixed price contracts:
  - MCE pays a fixed price in exchange for a floating CAISO price
  - The floating CAISO price is correlated with the load hub price used for MCE's CAISO load settlements
  - This correlation hedges MCE's exposure to load hub price volatility
- PPAs are a type of fixed price contract:
  - MCE pays a fixed price in exchange for the rights to the floating CAISO prices (day-ahead and real-time; usually at generator node)
- MCE supplements its PPAs with pure hedge agreements (details provided on the next slide)

# Hedge Contract Fundamentals

**CAISO day-ahead load payments =**

MCE load cleared in each hour x hourly load hub prices

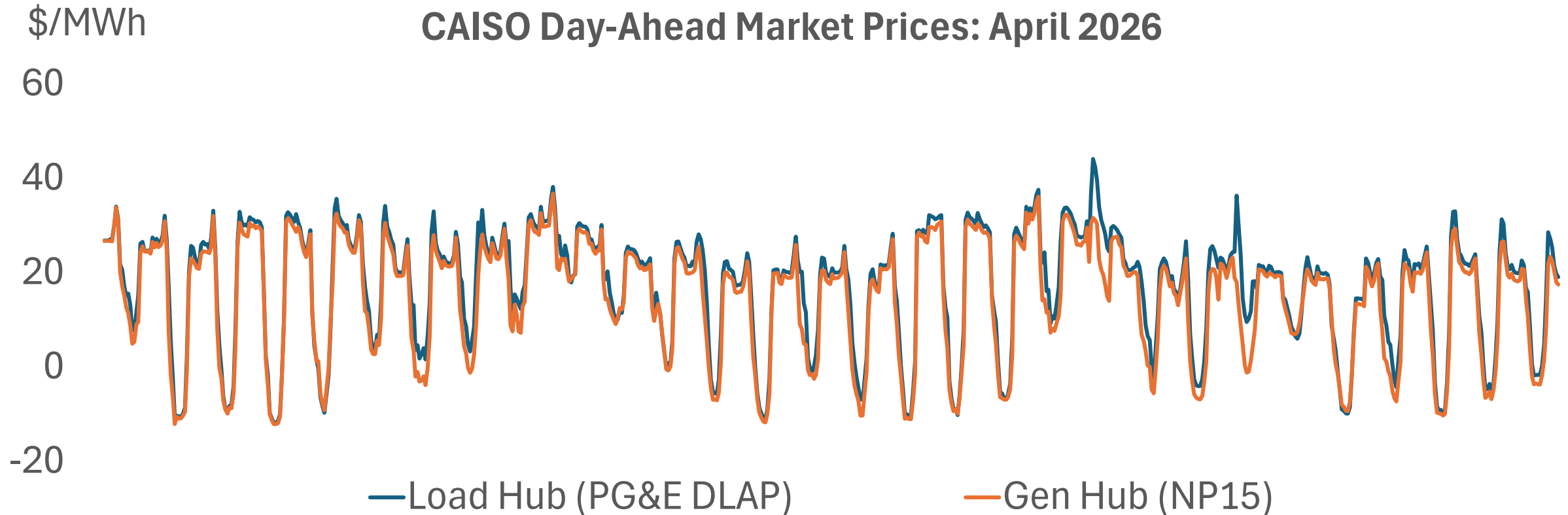


**MCE net price for each MWh of hedged load =**

hourly fixed price + hourly load hub price – hourly gen hub price

# Hedge Contract Fundamentals

- Load hub and gen hub prices are correlated (see chart directly below)
- To the extent that these prices diverge, MCE has congestion revenues rights to mitigate the impact



# Choices and Ideas for MCE

## Mandatory Load-Serving Entity Obligations

- Schedule and pay for CAISO load
- Procure required mid-term reliability (MTR) capacity
- Procure required resource adequacy (RA) capacity
- Procure required energy for renewable portfolio standard (RPS)
- Procure 100% carbon-free energy by 2045
- Procure CA carbon allowances

## Choices for MCE

- CAISO load hedging coverage
- Clean capacity beyond MTR
- Clean energy beyond RPS
- PPAs. vs index+ contracts
- Existing vs. new resources
- GHG emissions targets

## Ideas for Today's Discussion

- Consider restructuring MCE's retail products and/or associated targets
  - **PPAs Only:** scale back Light Green targets to levels that can be achieved with PPAs only
  - **RPS Compliance:** scale back Light Green targets to the levels required for RPS compliance only
  - **Hourly Green:** add a new product that meets specific renewable energy, clean energy or GHG emissions thresholds as measured on an hourly basis (for example, MCE 24/7 Green Pilot)
- Consider whether targets should be treated as **expectations** with a +/-5% band, instead of **floors**

# Thank you



[mceCleanEnergy.org](http://mceCleanEnergy.org)  
[info@mceCleanEnergy.org](mailto:info@mceCleanEnergy.org)

# Index+ Example: MCE Buys PCC 1 Renewables

**Seller:** ABC Renewables Company

**Resource Category:** PCC 1 Renewable Energy

**Technology:** 2 solar, 2 wind, 2 small hydro (the 6 specific resources must be listed in exhibit A)

**Location:** all 6 resources located within CAISO

**Online date:** all 6 resources are existing/online

**Delivery Term:** 1/1/2026 through 10/31/2026

**Scheduling Coordinator:** Seller

**Delivery Point:** SP15 Trading Hub (CAISO)

**Delivery Requirements:** Seller's choice within delivery term

**Delivery Certainty:** Firm (seller will face penalties for non-delivery)

**Volume:** 75,000 MWh of firm volume

**CAISO revenue:** Seller keeps the CAISO revenue from all 6 resources

**MCE payment to seller:** volume delivered x price, where:

- Price = SP15 (Index price) + \$10/MWh (attribute price) – CAISO credit = \$10/MWh

**Power Content and Emissions Accounting:** annual

# Index+ Example: MCE Buys Large Hydro + ACS

**Seller:** XYZ Hydro Company

**Resource Category:** Large Hydroelectric Energy

**Technology:** 5 large hydro, 3 asset controlling supply (8 resources listed in exhibit A)

**Location:** all 8 resources located outside of the CAISO in Pacific Northwest

**Online date:** all 8 resources are existing/online

**Delivery Term:** 1/1/2026 through 10/31/2026

**Scheduling Coordinator:** Seller

**Importer into California:** Seller [responsible for CA carbon allowances]

**Delivery Point:** NP15 Trading Hub (CAISO)

**Delivery Requirements:** Seller's choice within delivery term

**Delivery Certainty:** Firm (seller will face penalties for non-delivery)

**Volume:** 75,000 MWh of firm volume

**CAISO revenue:** Seller keeps the CAISO intertie revenue

**MCE payment to seller:** volume delivered x price, where:

- Price = NP15 (index price) + \$5/MWh (attribute price) – CAISO credit = \$5/MWh

**Power Content and Emissions Accounting:** annual

# Pure Hedge Agreement: Example

**Seller:** ABC Trading Entity

**Buyer:** MCE

**Product:** Day-Ahead CAISO Energy via Inter-SC Trade

**Delivery Point:** NP15 Generation Hub

**Delivery Term:** 8/1/27 through 9/30/27

**Contract Quantity:** see tables below

**Fixed Price:** (to be paid by MCE): \$50/MWh

**Notional Value:** 65,408 MWh x \$50/MWh = \$3,270,400

**Results**

- MCE pays \$50/MWh
- MCE collects for each hour:  
Contract Quantity x Day-Ahead NP15 Price

*Note: this is not physical energy. It is a payment between two parties facilitated by the CAISO*

Aug 2027	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total (MWh)
Weekdays	60	60	60	60	60	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	60	60	60	60	22,440
Weekends	40	40	40	40	40	40	20	20	20	20	20	20	20	20	20	20	20	20	20	20	40	40	40	40	6,120

Sep 2027	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total (MWh)
Weekdays	75	75	75	75	75	75	40	40	40	40	40	40	40	40	40	40	40	40	40	40	75	75	75	75	28,820
Weekends	50	50	50	50	50	50	28	28	28	28	28	28	28	28	28	28	28	28	28	28	50	50	50	50	8,028

**TOTAL = 65,408 MWh**

# Glossary

## **Asset Controlling Supplier (ACS)**

An Asset Controlling Supplier is an electric power entity approved by the California Air Resources Board that owns or operates interconnected generation facilities, or serves as the exclusive marketer, and is assigned a supplier-specific greenhouse gas emissions factor for wholesale electricity imported into California. ACS energy is mostly large hydroelectric energy but also includes nuclear energy and unspecified market purchases.

## **California Carbon Allowances**

California Carbon Allowances are tradable compliance instruments issued under California's Cap-and-Invest program. One allowance represents authorization to emit one metric ton of carbon dioxide equivalent, and covered entities must obtain enough allowances to cover their verified greenhouse gas emissions.

## **California Independent System Operator (CAISO)**

The CAISO is one of 38 balancing authorities (or "grid operators") that comprise the western grid. To help manage grid reliability, the CAISO operates wholesale electricity markets. In the day-ahead market, CAISO schedules electricity resources one day in advance based on forecasted demand and generation availability, allowing load-serving entities and generators to plan and secure energy at predictable prices. In the real-time markets, CAISO makes adjustments in near real time, typically in 5 to 15 minute intervals, to respond to actual grid conditions. These markets help ensure that supply and demand remain balanced at all times, making CAISO both a grid and a market operator. Load-serving entities, typically through a Scheduling Coordinator (definition below), schedule their load and transact in day-ahead and real-time markets to stay balanced.

# Glossary

## **CAISO Revenue**

CAISO Revenue generally refers to payments, credits, or other settlement proceeds assigned by CAISO to a resource or scheduling coordinator for market activities such as energy deliveries, dispatches, imbalance energy, ancillary services, or other CAISO-settled transactions.

## **CAISO Load Payments**

CAISO Load Payments are the settlement charges paid by load-serving entities or their scheduling coordinators for serving customer demand through the CAISO markets. These payments generally reflect energy consumed by load, market prices, imbalance charges, congestion, losses, and other CAISO settlement components.

## **California Energy Commission (CEC)**

The CEC is California's primary energy policy and planning agency. It has responsibility for activities that include forecasting future energy needs, promoting energy efficiency and supporting renewable energy technologies. The CEC is also responsible for managing the Power Source Disclosure program, which provides retail electricity customers with information about their sources of energy and associated greenhouse gas emissions.

## **Load-Serving Entity (LSE)**

LSEs are a categorization term that includes investor-owned utilities (IOUs), electric service providers (ESPs), and CCAs, all three of which offer power supply service within the IOU's service territory.

# Glossary

## Portfolio Content Categories

Under CPUC rules, renewable energy is segmented into three Portfolio Content Category (PCC) types depending on a variety of factors including location of the resource and whether the renewable energy is delivered into one of the California balancing authority areas (i.e., into one of the California grids). Any time a megawatt-hour of renewable energy is generated, a corresponding renewable energy certificate (REC) is generated.

- PCC 1 renewable energy is directly interconnected or directly scheduled into one of the California grids. PCC 1 renewable energy is a “bundled product,” as the buyer takes title to both the energy and the renewable energy certificate. MCE today procures PCC 1 renewable energy
- PCC2 renewable energy is neither directly interconnected to one of the California grids, nor is it directly scheduled into one of the California grids. Instead, the renewable energy is consumed outside of California, and substitute energy is imported into one of the California grids. PCC 2 renewable energy is considered bundled because the buyer takes title to both the REC and the energy, even though the renewable energy, itself, is not delivered to a California grid. MCE today does not procure PCC 2 renewable energy.
- PCC3 renewable energy is defined as a product where the RECs and the underlying energy are sold separately – referred to as “unbundled RECs” because the energy and RECs are not bundled together in a purchase. MCE today does not procure PCC 3 renewable energy.

# Glossary

## Portfolio Content Categories (continued)

In California, a PCC3 REC does not provide LSEs with the same environmental benefit as a PCC1 REC. While cheaper than PCC1 and PCC2 resources, this type of resource does not provide the same environmental or economic benefits. PCC3 resources are assigned a separate emissions factor that is greater than the renewable energy resource that originally generated the energy underlying the REC. PCC3 resources are the only resource type that can be considered “attribute-only”, meaning that an LSE is purchasing some portion of the attributes of renewable energy without paying for the cost of the underlying power (though they are required to buy an equivalent volume of power from any resource type).

This means if an LSE wants to purchase unbundled RECs to use as a method for reducing greenhouse gas emissions, LSEs do not receive a 1-to-1 greenhouse gas reduction benefit and must procure more PCC3 RECs in order to have a similar emissions profile to PCC1 resources.

MCE does not make any net-specific purchases of unbundled RECs. MCE may receive small amounts of unbundled RECs as a byproduct of broader portfolio transactions. For example, MCE’s 2024 power content label reported 2% unbundled RECs. These RECs were not directly procured by MCE but part of a larger allocation via a CPUC mechanism (i.e. the Voluntary Allocation & Market Offer or VAMO framework).

# Glossary

## **Power Charge Indifference Adjustment (PCIA)**

The PCIA is an “exit fee” that is intended to protect bundled utility customers from paying the “stranded costs” associated with the IOU previously procuring energy on behalf of the customer now being served by a CCA. When customers leave bundled service to purchase electricity from an alternative supplier, such as MCE, the IOU, which had previously contracted for wholesale energy generation to serve these customers, is able to charge these departing customers the cost of that power.

## **Power Charge Indifference Adjustment (PCIA) Allocations**

PCIA Allocations refer to the assignment of costs, credits, and resource attributes from investor-owned utility legacy procurement portfolios to customers or load-serving entities based on the applicable PCIA vintage and regulatory methodology. These allocations are intended to ensure departing and remaining bundled customers pay or receive their fair share of above- or below-market portfolio value.

## **Mid-Term Reliability (MTR)**

Mid-Term Reliability is a CPUC procurement framework that requires load-serving entities to procure additional net qualifying capacity from new or eligible resources to maintain electric system reliability in the mid-term planning period, particularly as demand grows and older resources retire. MTR resources are generally expected to support reliability while advancing California’s clean energy goals.

# Glossary

## Renewable Portfolio Standard (RPS)

California's RPS program was established in 2002 by Senate Bill 1078 with a requirement that 20% of electricity retail sales be served by renewable resources by 2017. The program was accelerated in 2015 with SB 350, which mandated a 50% RPS by 2030. SB 350 includes interim annual RPS targets with three-year compliance periods and requires 65% of RPS procurement to be derived from long-term contracts of 10 or more years. In 2018, SB 100 increased the RPS requirement to **60% by 2030** and requires **all the state's electricity to come from carbon-free resources by 2045**.\*

RPS-eligible resource types are listed in the CEC's RPS Eligibility Guidebook.\*\* These resource types include:

- Bioenergy
- Geothermal
- Small Hydroelectric (projects  $\leq$  30 MW)
- Solar
- Wind

\*<https://www.cpuc.ca.gov/rps/>

\*\*<https://www.energy.ca.gov/publications/2025/rps-eligibility-guidebook-tenth-edition-commission-guidebook>

# Glossary

## **Resource Adequacy (RA)**

RA refers to a statewide mandate for all load-serving entities (LSEs) to obtain (through ownership or procurement) specific quantities of power capacity to ensure that the CAISO will have enough power supply to meet power demand. LSEs must demonstrate that they have met such requirements by making compliance showings in the years and months ahead of when the power actually flows. Resource capacity that is shown in such compliance filings must be offered into the CAISO's day-ahead and real-time markets, so that it can be used to clear demand. RA also provides incentives for the siting and construction of new resources needed for reliability in the future.

## **Scheduling Coordinator**

A Scheduling Coordinator is an entity certified by CAISO to act on behalf of market participants. Scheduling Coordinators submit bids and schedules, manage market communications and settlements, and are responsible for complying with CAISO tariff requirements for the resources or load they represent.