**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

| | |
|---|---|
| Order Instituting Rulemaking To Enhance the Role of Demand Response in Meeting the State's Resource Planning Needs and Operational Requirements. | Rulemaking 13-09-011<br>(Filed September 19, 2013) |

**NOTICE OF EX PARTE COMMUNICATION BY
THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**


Roger E. Collanton
General Counsel
Anthony Ivancovich
Deputy General Counsel
Anna A. McKenna
Assistant General Counsel
Jordan Pinjuv
Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel. 916-351-4429
Fax. 916-351-7222
Email: jpinjuv@caiso.com

Attorneys for the California Independent
System Operator Corporation


March 9, 2015

**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

| | |
|---|---|
| Order Instituting Rulemaking To Enhance the Role of Demand Response in Meeting the State's Resource Planning Needs and Operational Requirements. | Rulemaking 13-09-011<br>(Filed September 19, 2013) |

# NOTICE OF EX PARTE COMMUNICATION BY THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

Pursuant to Article 8 of the California Public Utilities Commission (Commission) Rules of Practice and Procedure, the California Independent System Operator Corporation (CAISO) hereby files this notice of the following oral and written ex parte communication with Matthew Tisdale, advisor to Commissioner Florio.

On March 5, 2015 from approximately 10:00 a.m. to 12:00 p.m., the CAISO met with Mr. Tisdale and members of the Commission's Energy Division as part of an education session regarding CAISO demand response integration into CAISO markets.  The meeting was held at the Commission's offices, 505 Van Ness Avenue, San Francisco, California. Present for the CAISO were Mr. Ali Miremadi, Operations Policy Manager and Mr. John Goodin, Regulatory Policy Manager.

During the education session, Mr. Miremadi presented the PowerPoint presentation included as Attachment 1 to this notice. The CAISO also provided an update regarding the state of the CAISO's Demand Response Registration System (DRRS) and provided an update on the status of the demand response working groups.

The CAISO informed the education session participants that a DRRS stakeholder process will be initiated in 2015, with requirements gathered and documented by the end of 2015. The CAISO also noted that the most recent aggregate location issues raised by stakeholders will be addressed in this stakeholder process. The CAISO indicated that the DRRS is scheduled for deployment in 2016.

Mr. Miremadi provided an update regarding the recommendations of the telemetry sub-group of the integration working group. Mr. Miremadi stated that a change to the CAISO threshold telemetry requirement will require a change in the tariff and that it is unlikely that this issue will be resolved prior to the submission of working group reports on May 1, 2015. The CAISO indicated that its telemetry requirements for resources providing energy are more lenient compared to other regional transmission organizations/independent system operators. The CAISO stated that its telemetry requirements for ancillary service providers are more stringent due to requirements specific to the Western Electric Coordinating Council region. Mr. Miremadi stated that other telemetry changes proposed by the working group will likely not require tariff changes or a stakeholder process and will be addressed in the May 1, 2015 working group submission.

With respect to the calculation customer baseline methodologies, the CAISO stated that any new baseline methodologies will need to be incorporated into both CAISO systems and the tariff. Details of how to compute any new baselines will be addressed in the DRRS stakeholder process.

The CAISO also informed Mr. Tisdale of the timeline for real time market dispatch, as provided in Attachment 1, and emphasized the difficulties of optimizing resources not included in the markets.

Respectfully submitted,
**By: *<u>/s/ Jordan Pinjuv</u>***
Roger E. Collanton
General Counsel
Anthony Ivancovich
Deputy General Counsel
Anna A. McKenna
Assistant General Counsel
Jordan Pinjuv
Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
T: 916-351-4429
F: 916-608-7222
jpinjuv@caiso.com

Attorneys for the California Independent
System Operator Corporation

Dated: March 9, 2015

ATTACHMENT A

# Information Session with CPUC on DR Integration into CAISO Markets

Ali Miremadi

March 4, 2015

# The ISO has two markets

## Day-ahead energy market

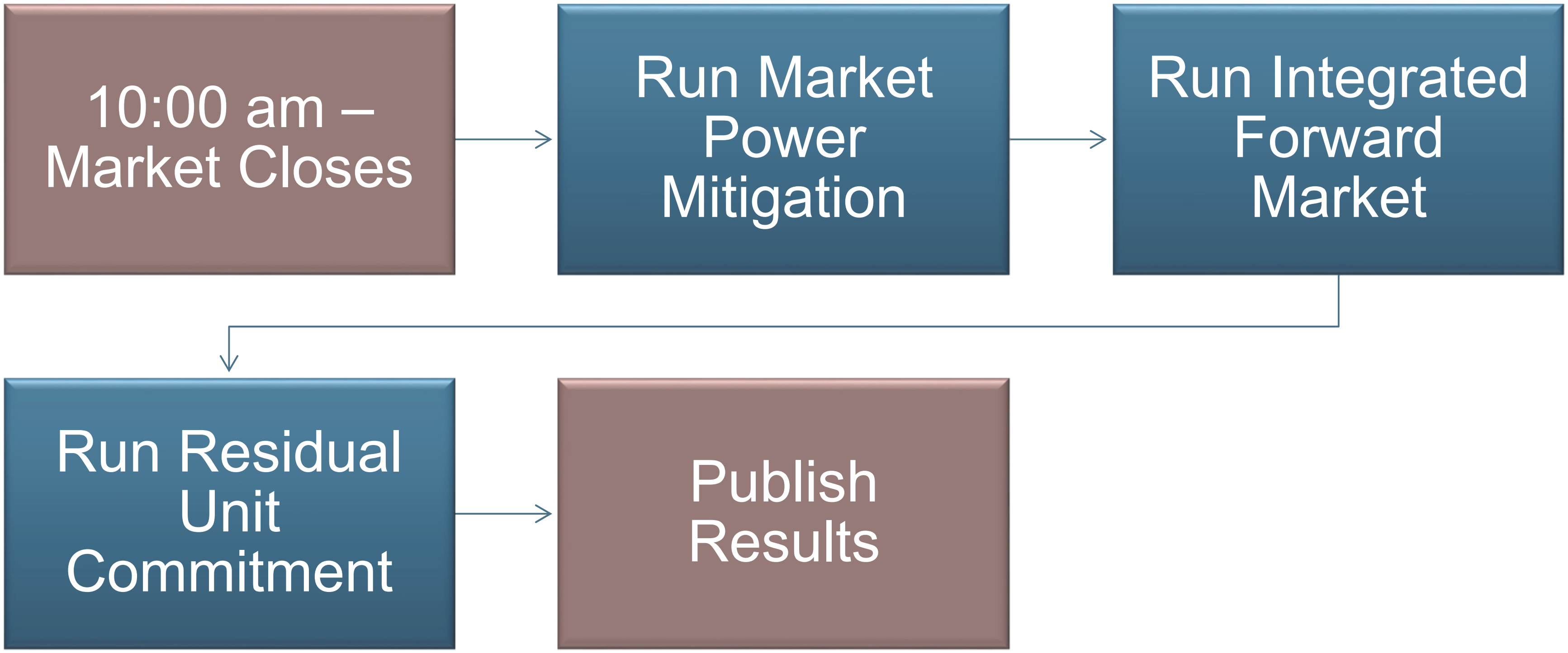
- Enables parties to schedule contracted supply/demand
- Enables suppliers to offload excess supply in the form of energy or ancillary services
- Enables Load Serving Entities to secure pricing for load due to changes in load forecasts or for incremental changes in demand

## Real-time energy market

- Fifteen-minute market to support renewable integration
- Spot market intended to meet instantaneous demand
- Supply, participating load and demand response can bid

# Day-ahead market process

- Market opens 7 days before the trade date



# Integrated forward market process

- Clears bid-In supply against bid-In demand
  - Day-ahead schedules
  - Virtual awards
- Procures 100% ancillary services
  - Ancillary service awards
- Unit commitment
  - ISO commitment
  - Self commitment

# Capacity procurement targets

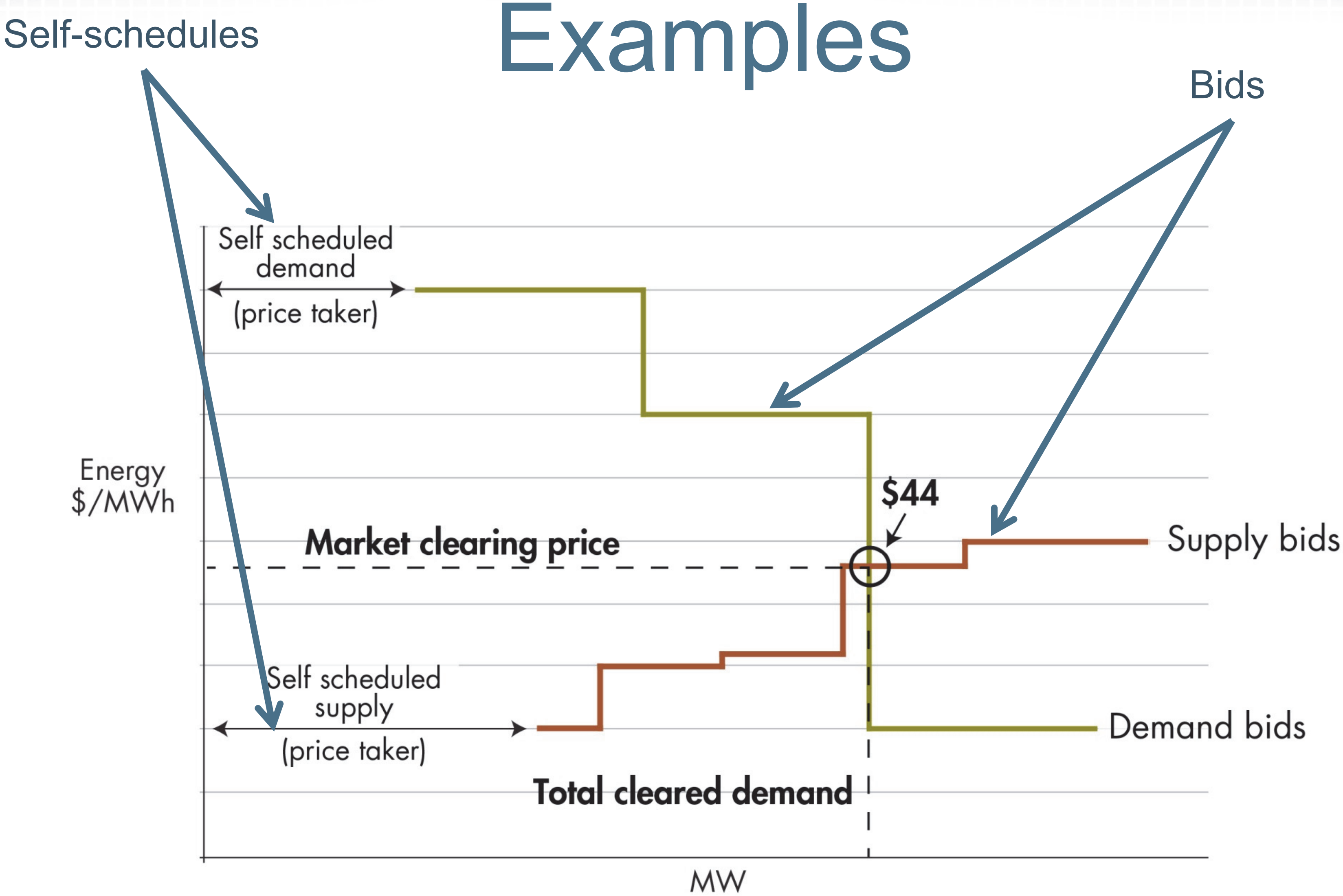
**Regulation requirement**

- Percentage of CAISO forecast of CAISO demand (CFCD) for each hour based on the need to meet WECC and NERC performance standards (CPS1 and CPS2)

**Contingency reserve requirements** (Spin/Non-spin)

- Based on WECC and NERC reliability standards.

# Examples



Self-schedules
Bids
Self scheduled demand
(price taker)
Energy $/MWh
$44
Market clearing price
Supply bids
Self scheduled supply
(price taker)
Demand bids
Total cleared demand
MW

# Residual unit commitment

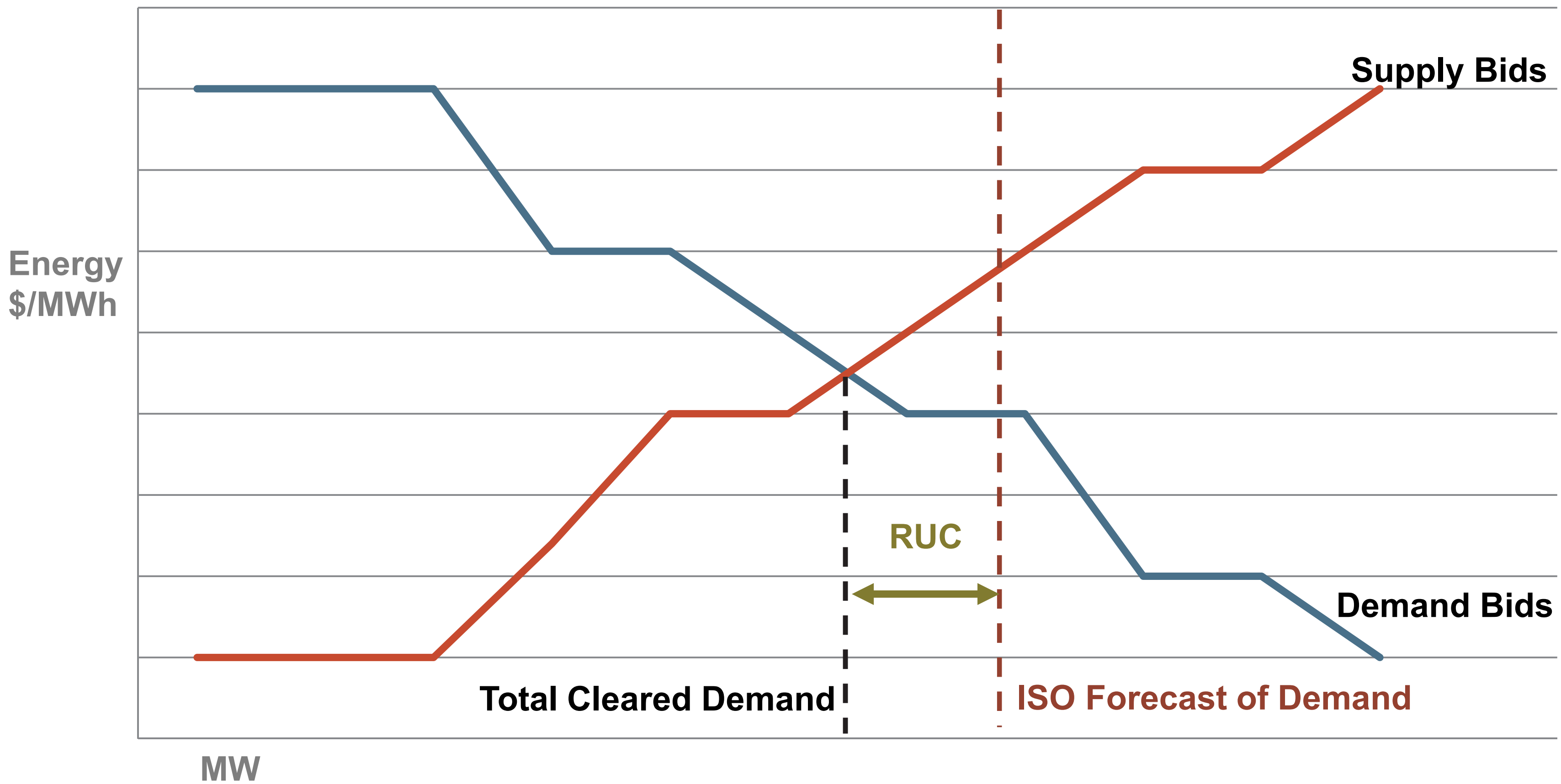
A method of ensuring reliability of the grid

Capacity procurement from additional day-ahead supply for real-time

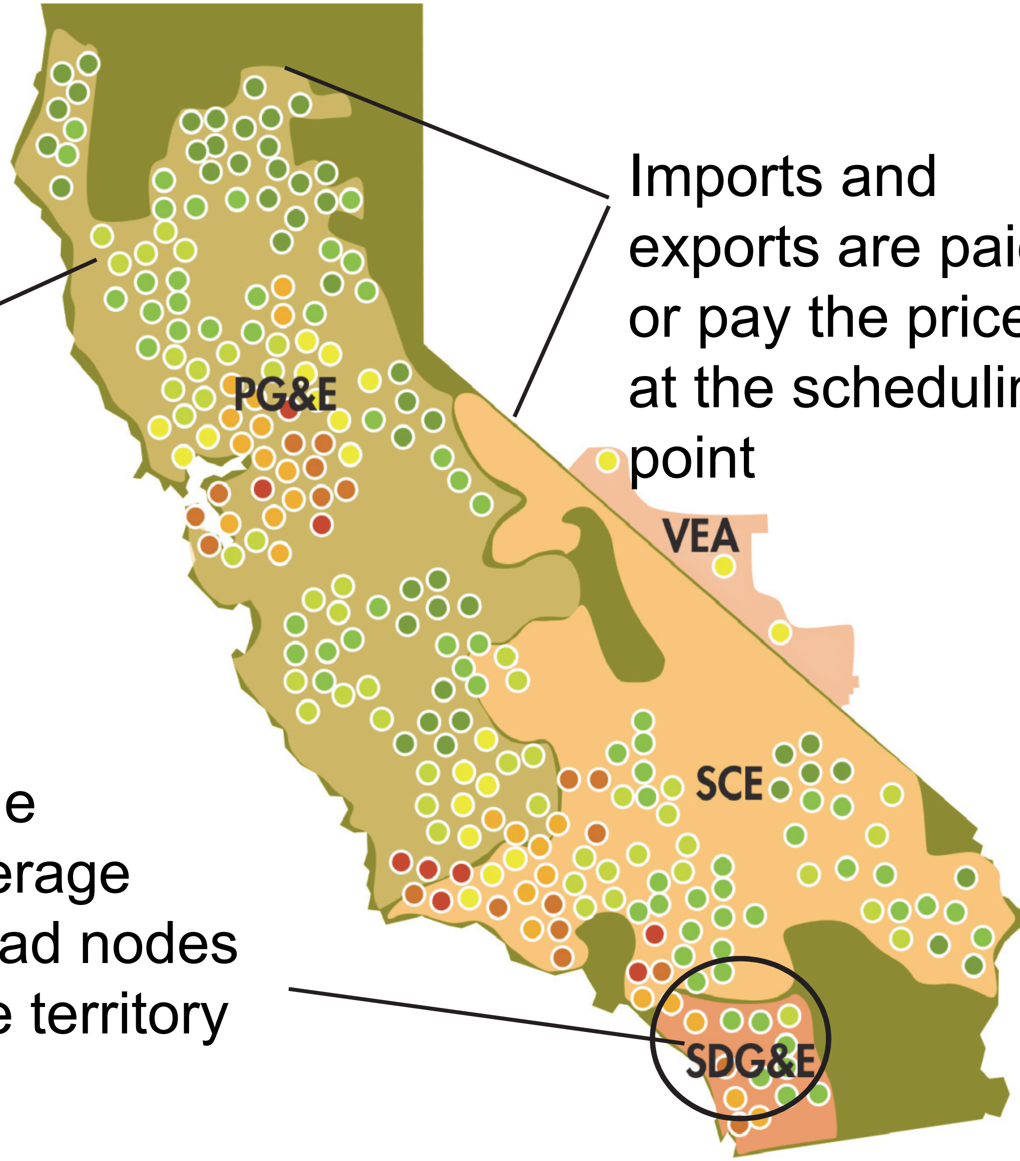
Selects from resource adequacy capacity and economic bids

Awarded resources must submit an energy bid in the real-time markets

# Residual unit commitment determination



# Nodal Pricing




A resource is paid the nodal price

Imports and exports are paid or pay the price at the scheduling point

Load pays the weighted average price of all load nodes in the service territory

# What's the purpose of the real-time market?

To procure "balancing" energy to meet the instantaneous demand that draws energy from the grid

To dispatch supplies to meet the demand forecast and export schedules

To reduce supply if there is not enough demand

In extreme conditions, to curtail demand based on economic signals when supply is exhausted or unavailable (ISO BAA)

To procure ancillary services as needed (ISO BAA)

# Benefits of ISO spot markets

Centralized economic dispatch optimizes use of all resources – reduces cost of serving demand

Resolve transmission constraints economically

Transparency on constraints and costs

System is re-dispatched every five minutes to meet current system conditions

# The hour-ahead process (HASP)

- Produces
  - Advisory schedules for pricing nodes
  - Final hourly block intertie schedules for energy and AS
  - Intertie schedules and AS awards are published approximately 45 minutes before the start of the operating hour.

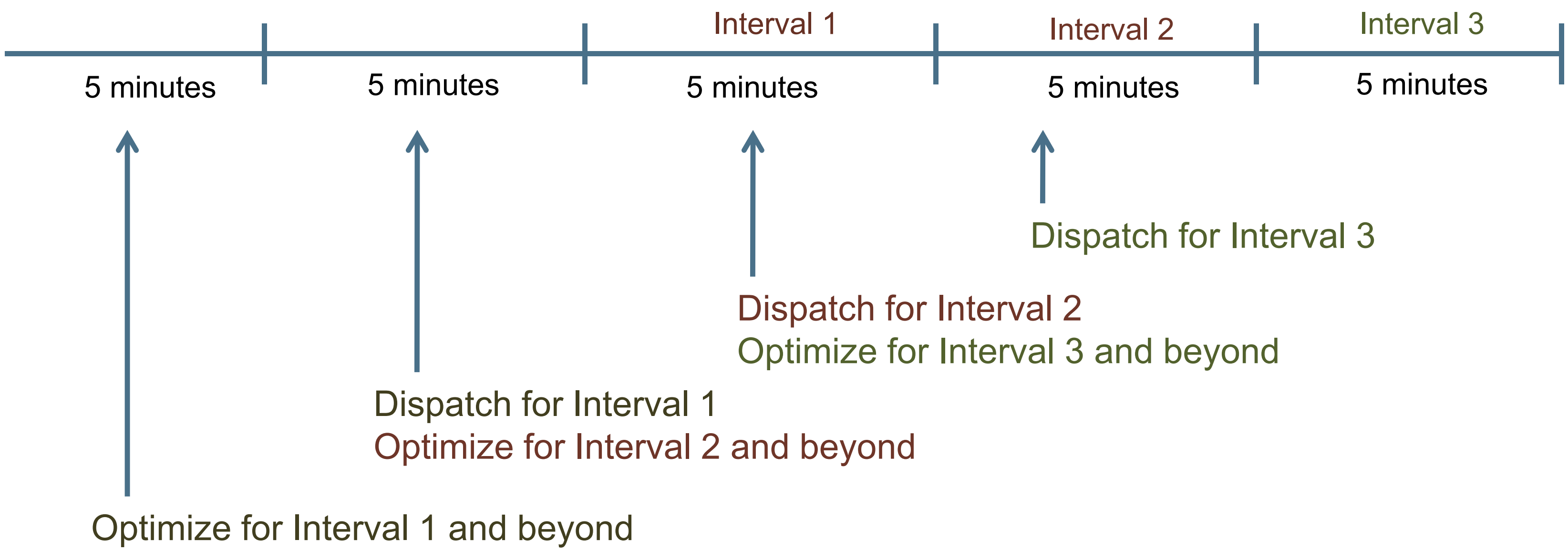
- Each hourly block has 4 equal 15 minute schedules

- Schedules are final unless operational curtailment.  The FMM LMP is used to settle each 15 minute interval.

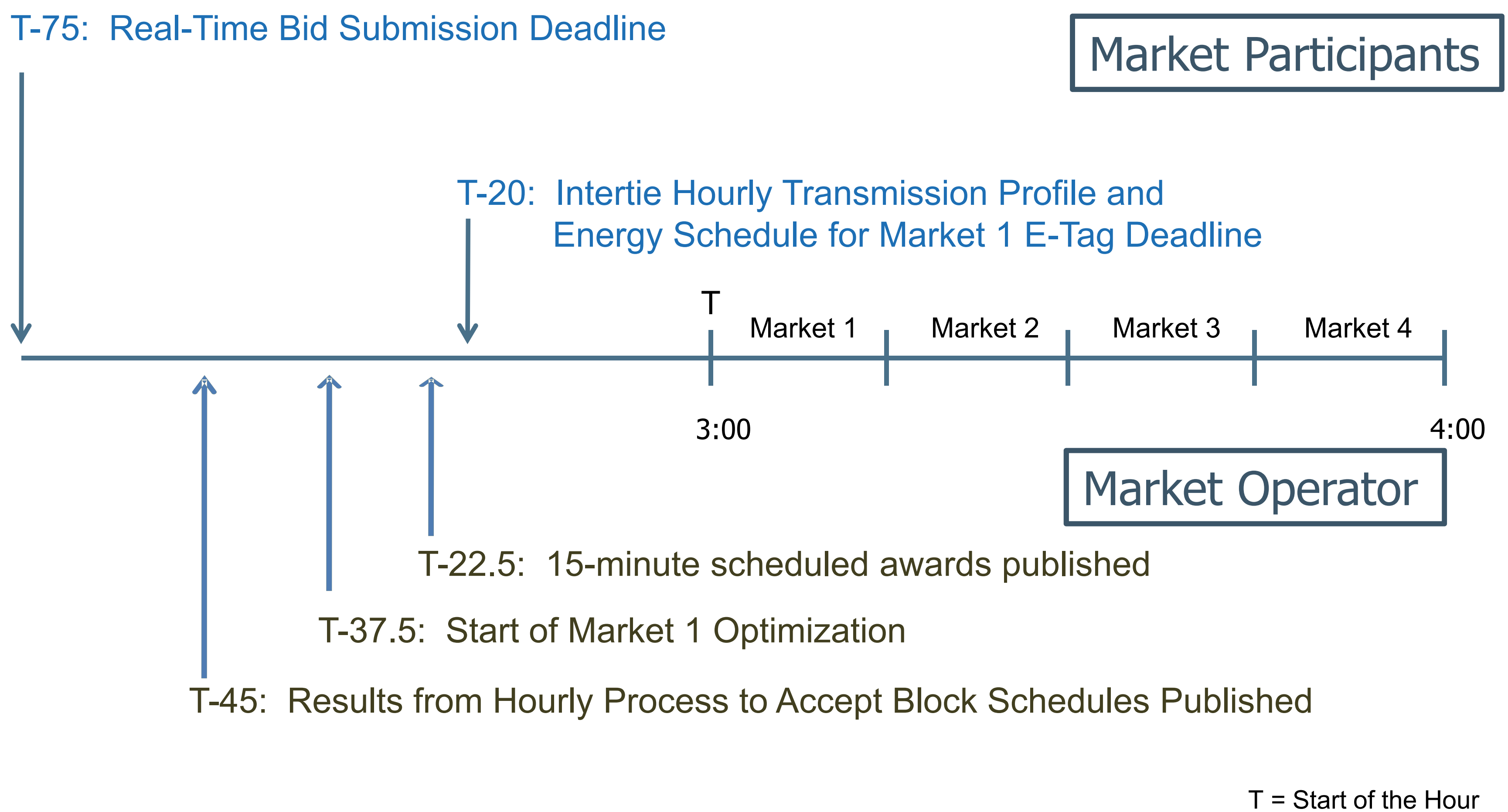
# The goals of the fifteen minute market

- Adapt real-time market design to support participation of variable energy resources
- Provide the option for 15-minute scheduling on interties
- Continue to support fixed hourly intertie transactions and minimize seams issues in western interconnect
- Address market inefficiencies with current real-time market
- Leverage existing market software to greatest extent possible

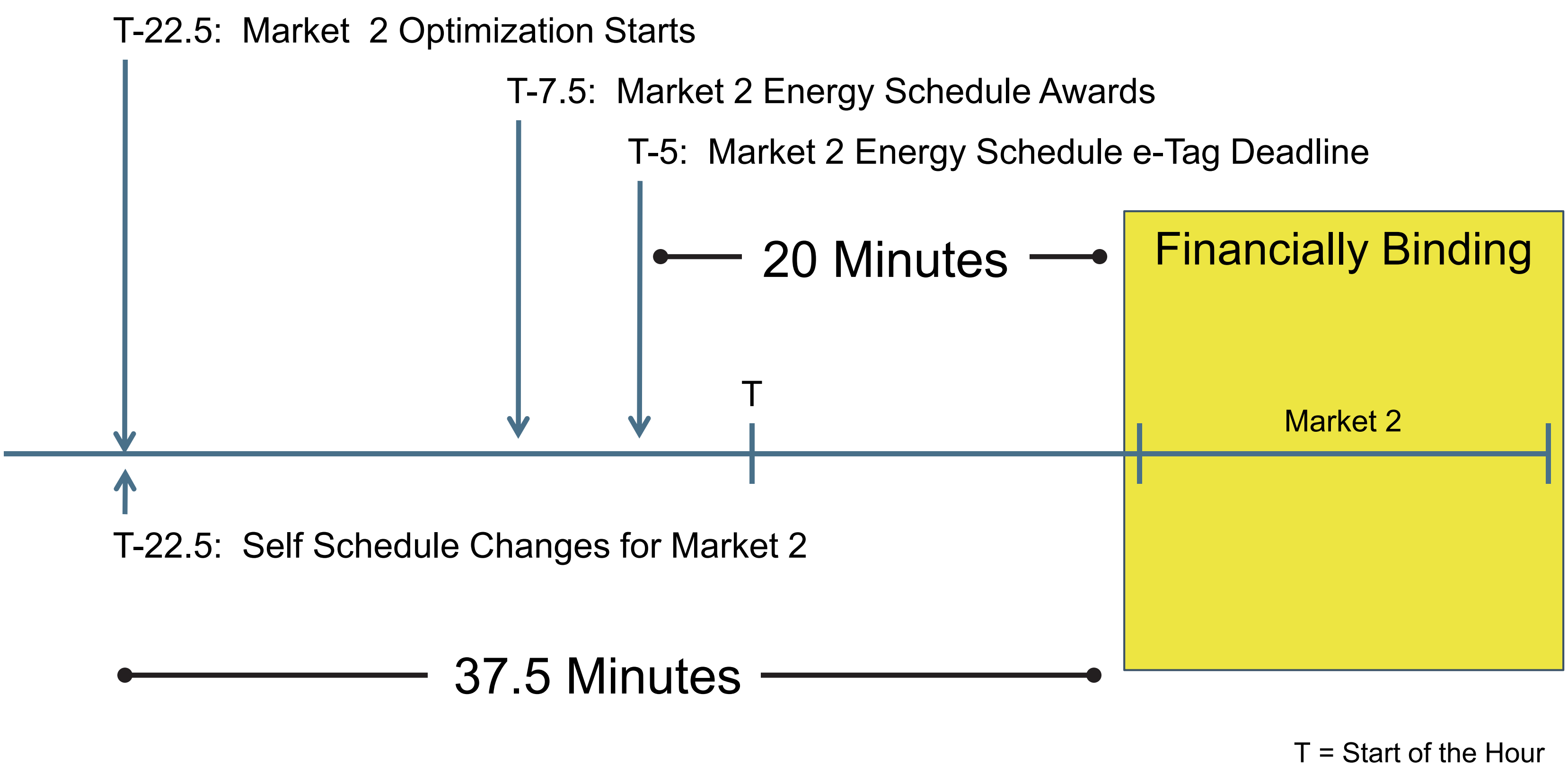
# The real-time optimization looks at a multi-interval horizon in determining how to dispatch resources for the next 5-minute interval.



# Hourly process for real-time market

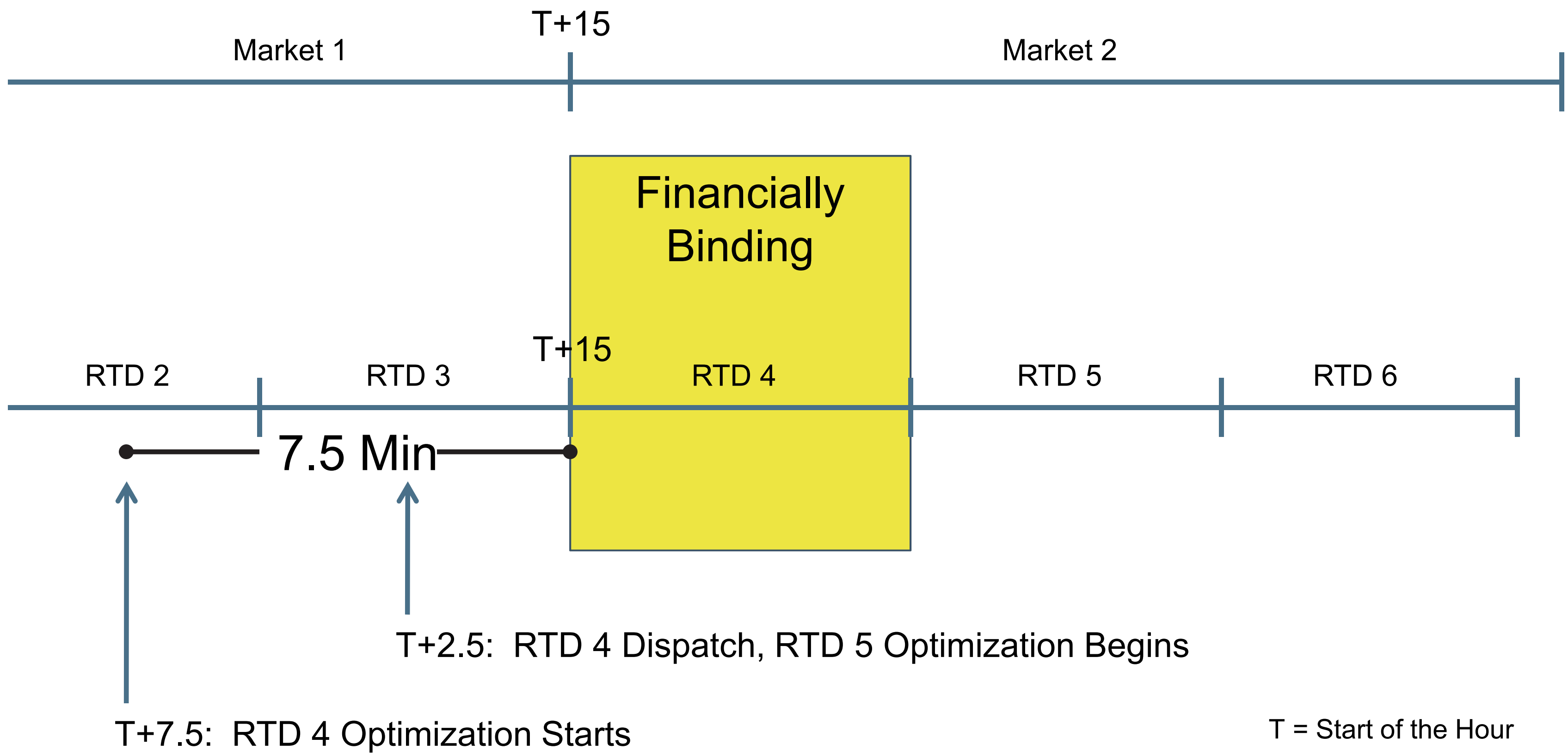


# 15-minute market timeline




- Second interval of RTUC optimization used to avoid seams issues
- RTPD 2 becomes the first interval in new 15 minute market

# RTD market timeline




- RTD provides operational instruction to all generation and demand response resources

# Stakeholder requested the ISO expand support for additional NAESB approved baseline methodologies.

| | | |
|---|---|---|
| **Baseline Type 1** | Included in existing BPM/Tariff | Use of historical interval meter data for calculation of a baseline performance |
| **Baseline Type 2** | Included in existing BPM/Tariff | Use of statistical sampling to estimate the usage of an aggregated DR where interval metering is not available for all aggregated customers |
| **Maximum Base Load** | Will require FERC filing | The ability of DR resource to keep its usage at or below a specific level that typically is determined based on historical peak usage |
| **Meter Before & After** | Will require FERC filing | Usage during dispatch period is compared to a prescribed period of time before dispatch |
| **Metering Gen Output** | Will require FERC filing | Output of generator behind load is metered directly and used as demand reduction |

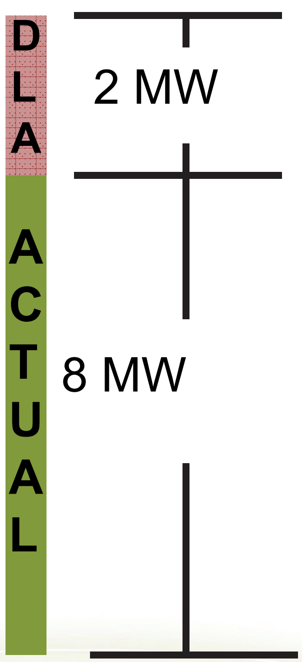
Statistical sampling has yet to be utilized by participants.

# Simple Settlement Example with Default Load Adjustment

**<u>Settlement Assumptions:</u>**

LSE DA Schedule = 10MW
PDR DA Award = 2MW

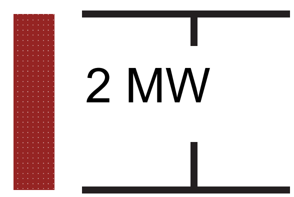
LSE Adjusted Meter Quantity
2 MW DLA + 8 MW Actual
= 10 MW





Add PDR
Performance to LSE
DLAP

PDR Performance Measurement
Adj Baseline – Actual = 2MW




**LSE paid for 0 MW** (Scheduled – Actual)

DRP paid for 2 MW (Expected = Performed)

No Double Payment for Demand Response at Wholesale level