



# Welcome to the California ISO

Today's Presenters:

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Lead Client Trainer

November 17, 2021

Presentation to begin 9:05 am PDT  
Please open your chat pod

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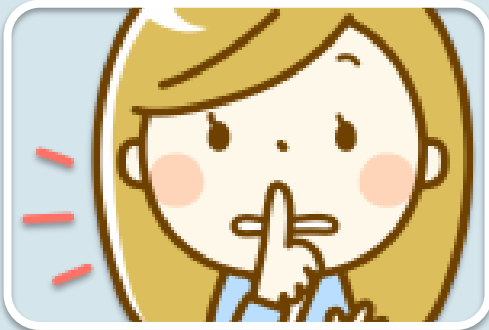
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# What we will cover today

- ISO Foundations
  - Roles, Structure and Coordination
- Functions
  - Planning, Markets, Reliability
- Participation
  - Policies & Initiatives, Stakeholder Process, ISO web tools, Training



# Housekeeping



Make sure to  
keep yourself  
muted unless  
you have a  
question



If you have a  
question, you  
may either ask  
over the  
phone or in  
the chat



If you want to  
ask a question  
or comment,  
you can  
virtually “raise  
your hand” in  
WebEx

# Before we get started...



*View copy of presentation with helpful links on our Learning Center page*



*More detailed information can be found in our computer-based training courses*

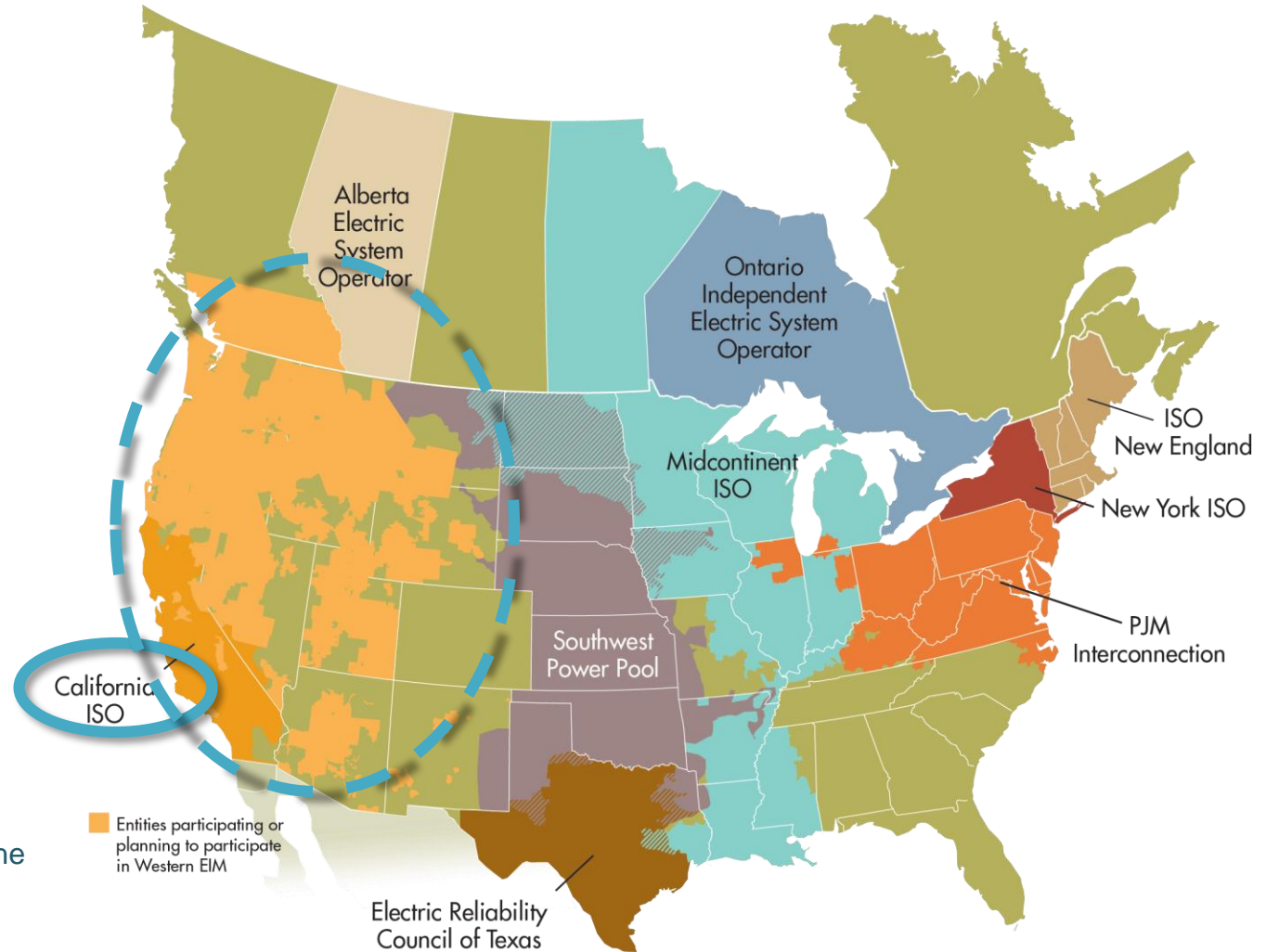


*View other previously recorded training sessions*

**See reference section at the end of this presentation for helpful links**



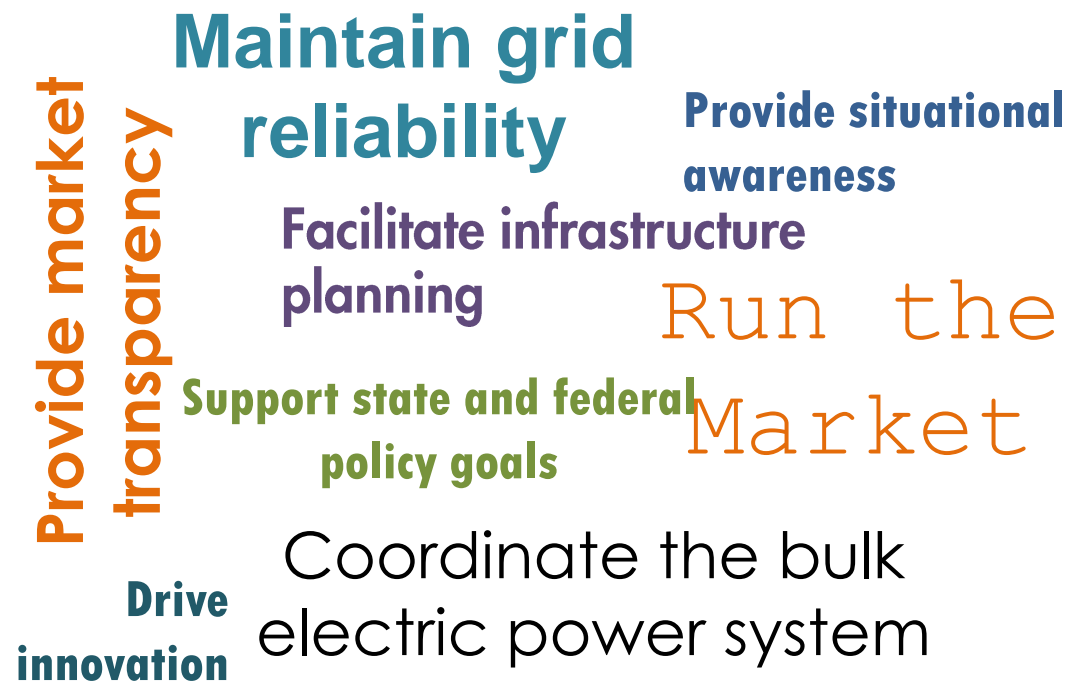
# North American energy regions share the goal of maintaining reliability and market efficiency



For more information visit the  
ISO/RTO Council website

The ISO is a nonprofit, public benefit corporation

## Our responsibilities are to...



A word cloud of the ISO's responsibilities. The words are arranged in a roughly circular pattern. The largest words are 'Run the Market' in orange, 'Maintain grid reliability' in blue, and 'Provide market transparency' in orange. Other words include 'Provide situational awareness' in blue, 'Facilitate infrastructure planning' in purple, 'Support state and federal policy goals' in green, 'Coordinate the bulk electric power system' in black, and 'Drive innovation' in blue.

Provide market transparency

Maintain grid reliability

Provide situational awareness

Facilitate infrastructure planning

Run the Market

Support state and federal policy goals

Coordinate the bulk electric power system

Drive innovation

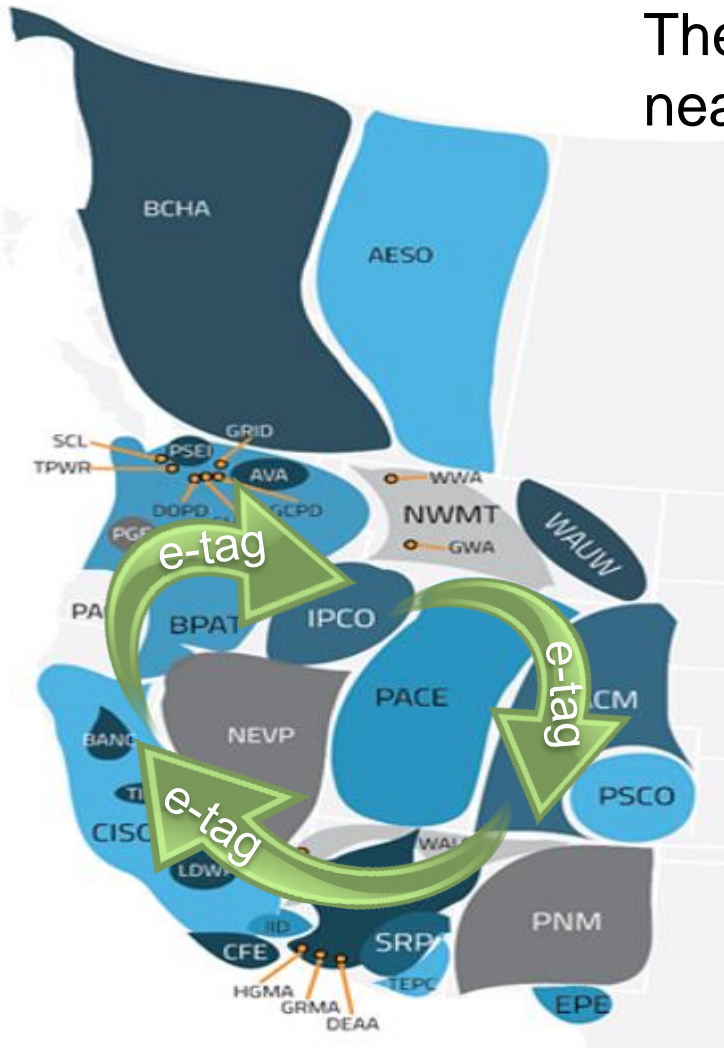
# The ISO is also a Balancing Authority (BA)

The Western Interconnection is made up of nearly 40 Balancing Authority Areas (BAAs)

*For more information about other BAAs, visit the WECC website*

Each BA is responsible for:

- reliably planning and operating an area of the high voltage grid
- instantaneously matching generation with load inside its borders
- meeting import and export obligations



# The ISO is a grid operator and market operator



## grid operator

maintains reliability by:

- balancing supply and demand
- operating transmission system within limits
- ensuring grid is secure in case of a contingency event
- orchestrating restoration in case of a system outage



## market operator

supports reliability by providing:

- a larger operational footprint
- cost minimization to balance supply and demand
- non-discriminatory grid access to supply and demand
- price transparency reflective of system conditions
- compensation for grid services

# The ISO is a Reliability Coordinator

## RC West:

- monitors the interconnected power grids in the West for compliance with federal and regional standards
- determines measures to prevent or mitigate system emergencies in day-ahead or real-time operations
- leads system restoration following major incidents



Serving over 40 balancing authorities  
and transmission operators

# The ISO adheres to strict oversight

FERC

Regulated by the **Federal Energy Regulatory Commission**

- Regulates the interstate transmission of electricity, natural gas and oil

NERC

Compliant with the **North American Electric Reliability Corp**

- Regulates the North American grid through the adoption and enforcement of reliability standards

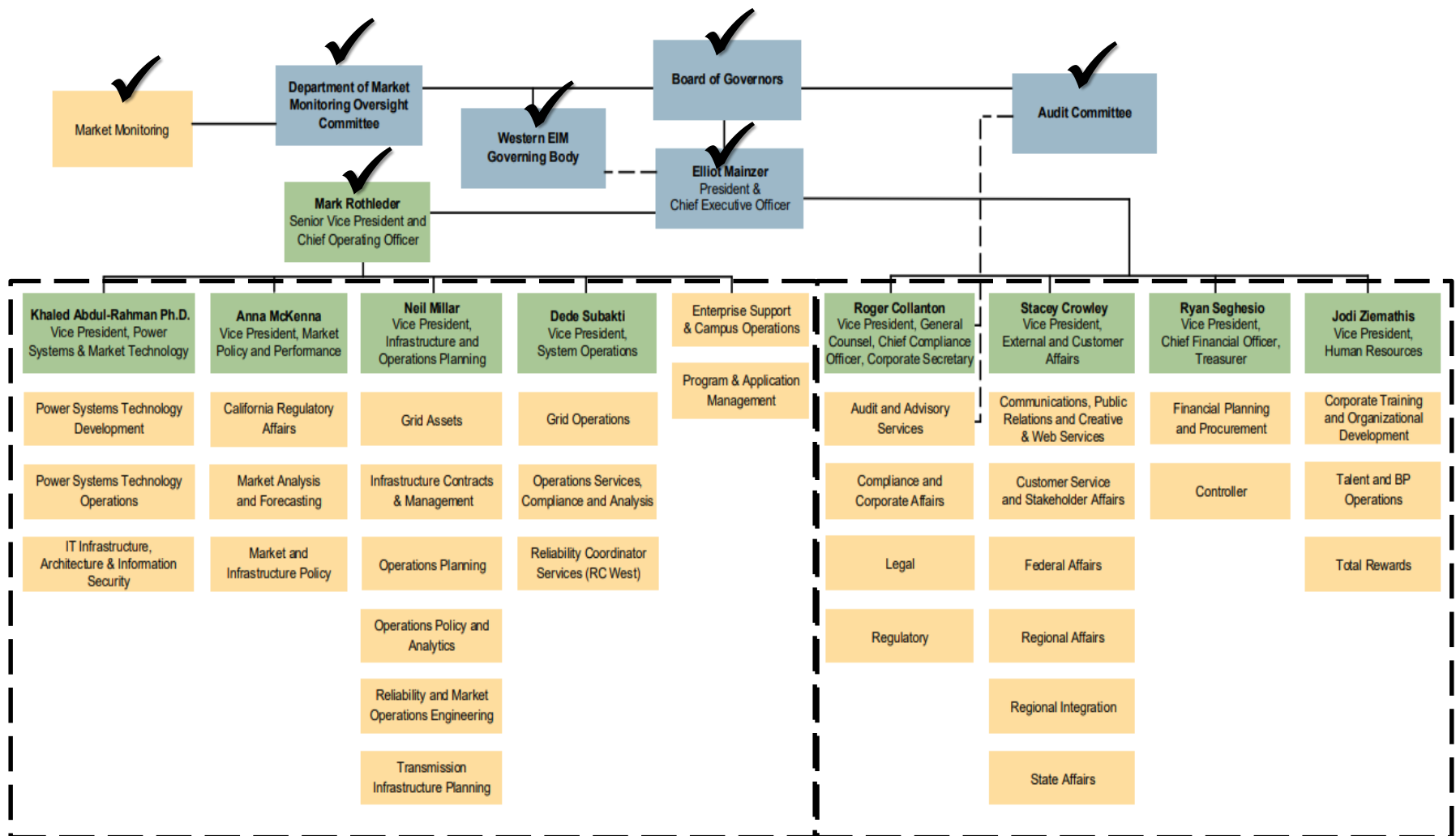
WECC

Members of the **Western Electricity Coordinating Council**

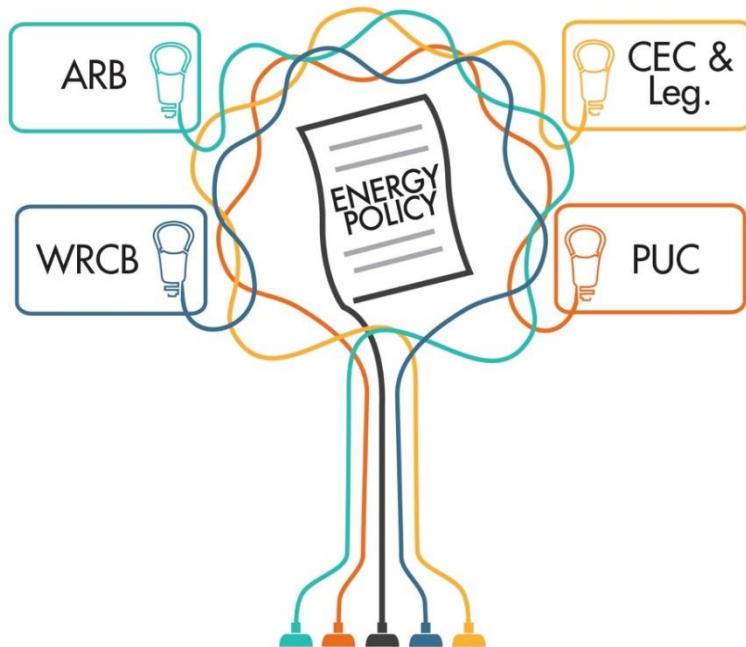
- Coordinates bulk electric system reliability in the geographic area known as the Western Interconnection



# The groups you will interact with



# ISO coordinates with state agencies



## **Air Resources Board**

- Greenhouse gas regulations



## **Energy Commission and Legislature**

- Renewable Portfolio Standard
- Energy Policies (Senate & Assembly bills)



## **Water Resources Control Board**

- Once-through cooling

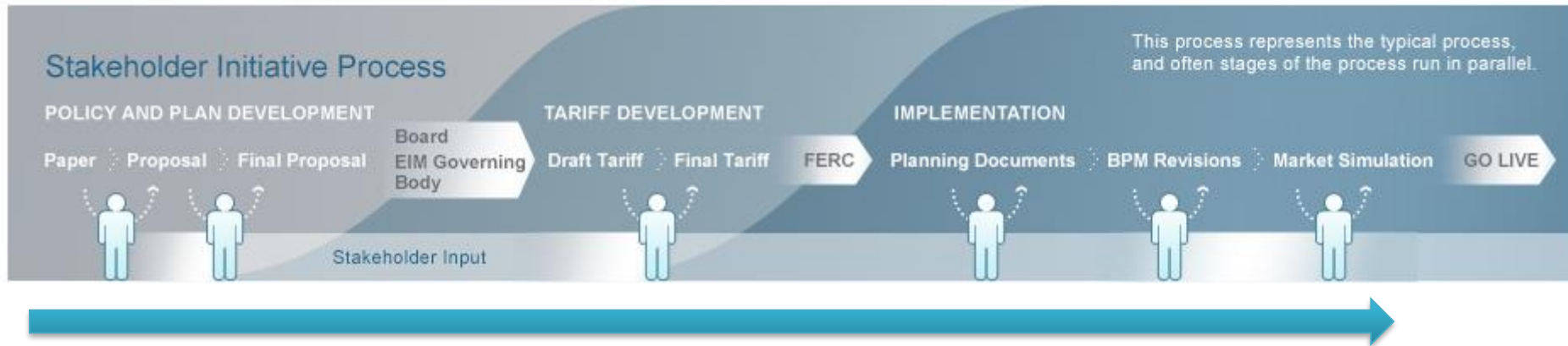


## **Public Utilities Commission**

- Resource Adequacy
- Generation Procurement
- Integrated Resource Plan

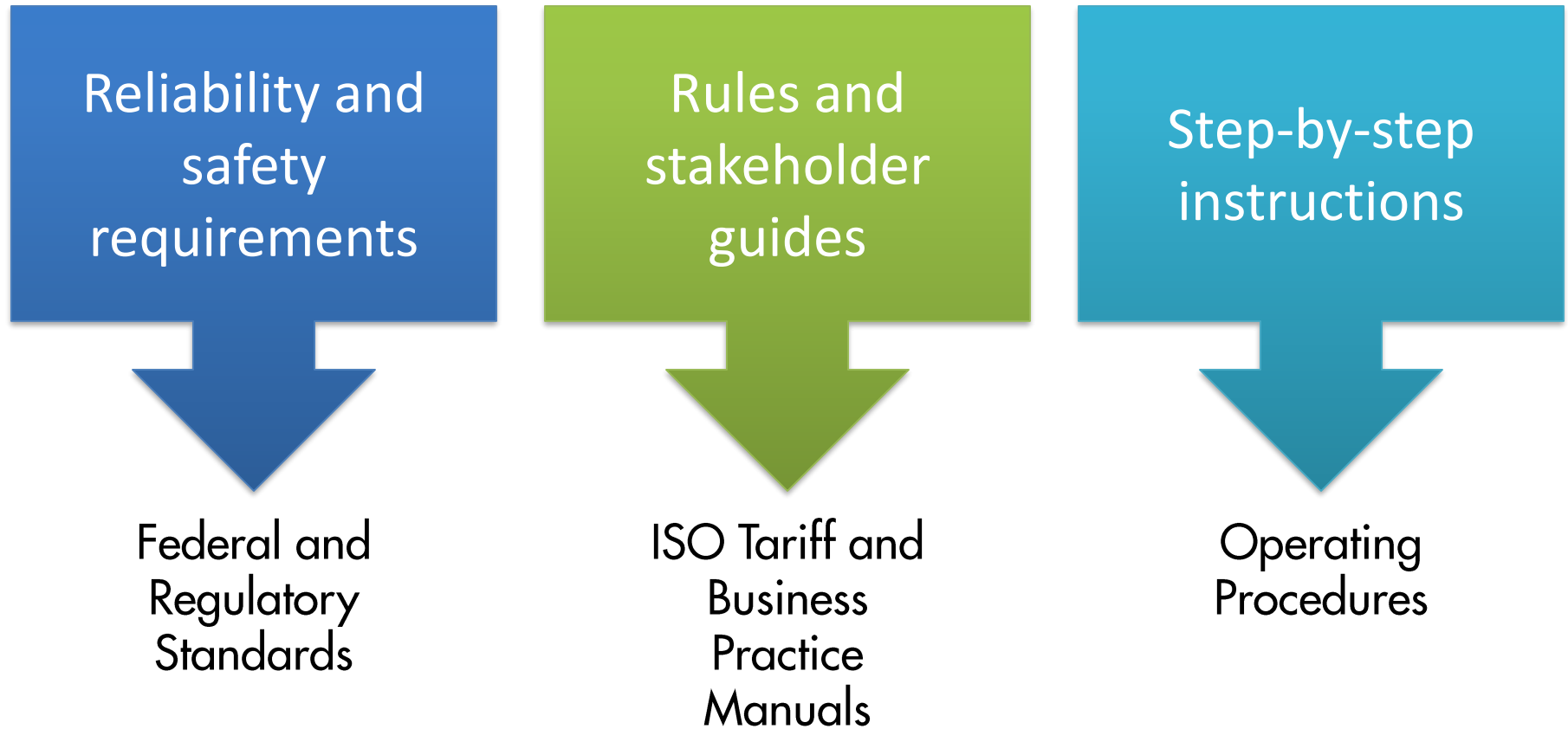


# The robust stakeholder process allows for customer engagement with the ISO

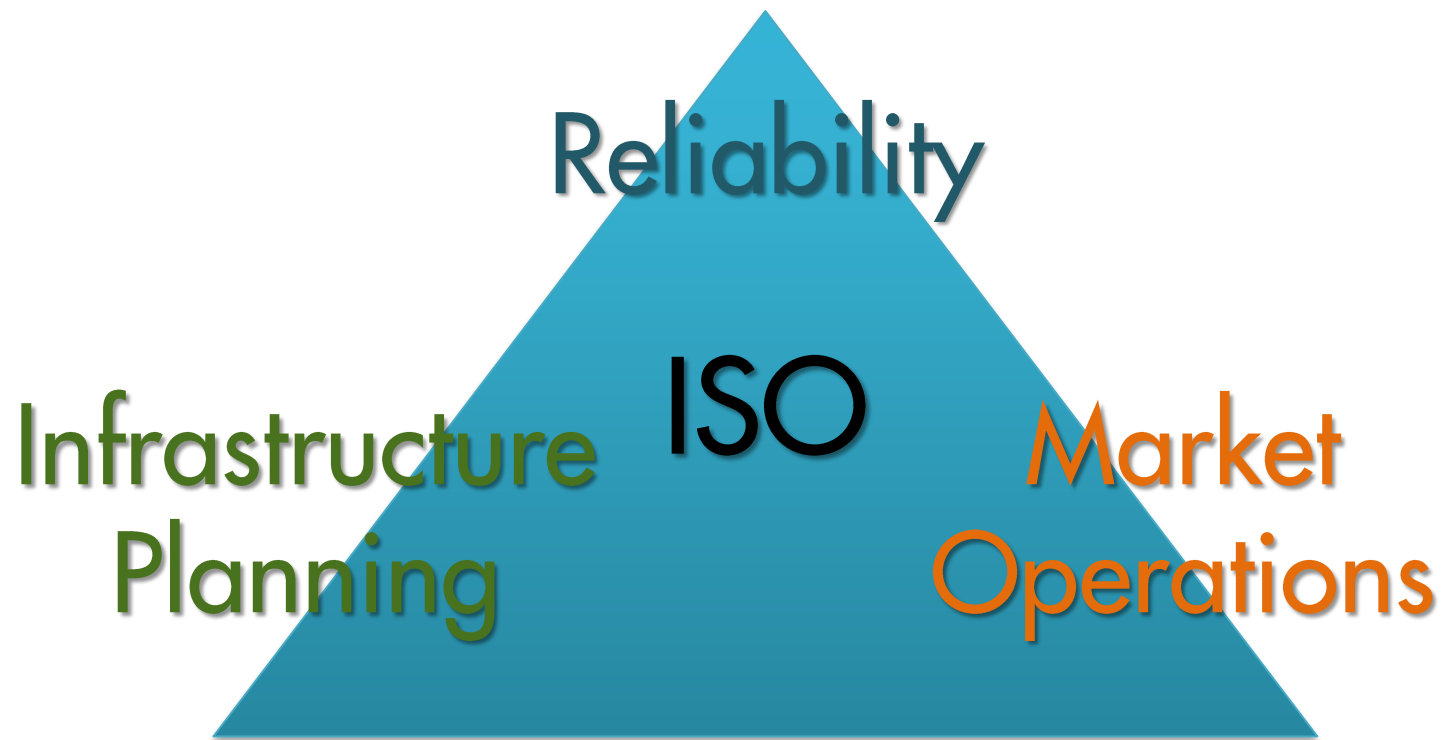


Stakeholder input is essential to ISO planning processes and for the success of new initiatives from policy development to implementation.

# Rules, guidelines and instructions define market and reliability processes

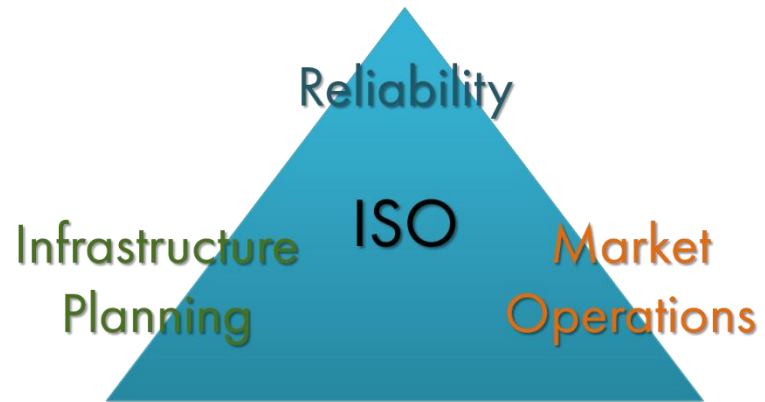


# What are the ISO's primary functions?



*CAISO is registered with NERC as a Balancing Authority, Transmission Operator, Transmission Service Provider, Planning Coordinator, Market Operator, and Reliability Coordinator.*

# What is our focus?



## Planning

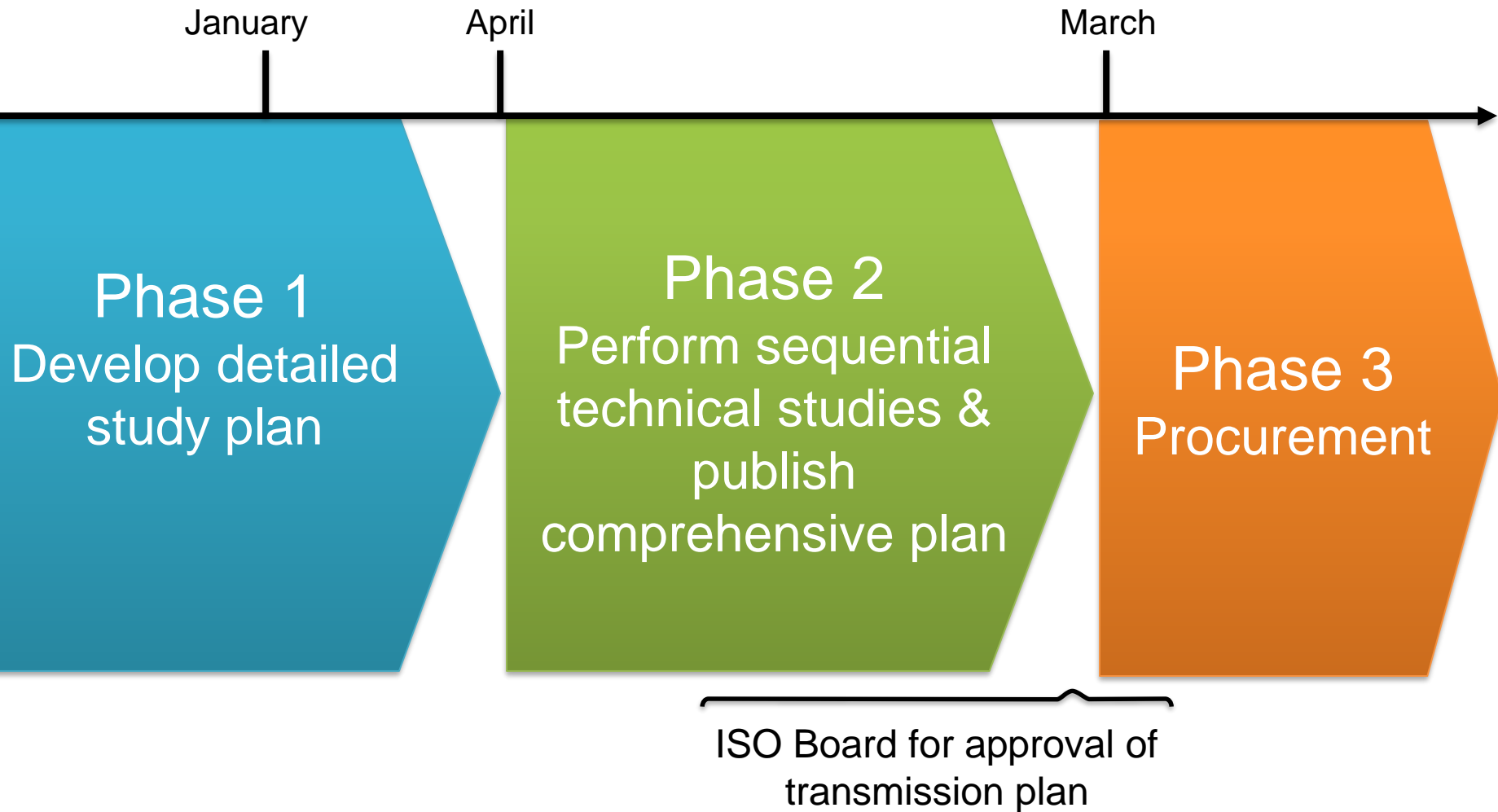
Coordinating and consolidating transmission needs of the ISO BAA

Transmission planning is a comprehensive evaluation that requires coordination

Identification of regional grid reliability requirements and projects that bring economic benefits to consumers



# Annual Transmission Planning Process



# Generation interconnection coordination brings new resources to the grid



A structured process to help resources interconnect to the grid





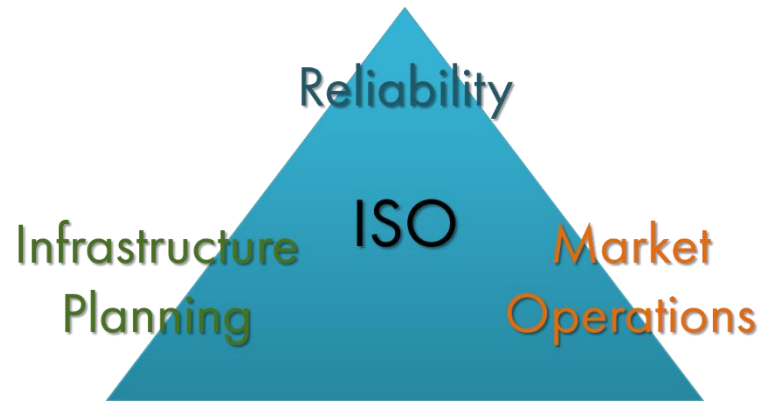
# Interconnection process map



- Submit a request to interconnect
- Participate in an interconnection study
- Complete interconnection agreements
- Follow new resource implementation process
- **Begin participating in the market**



# What is our focus?



## **Markets**

Acting as a marketplace for wholesale power

Adequate resources for a full day's operations are procured, confirmed and optimized by two markets to ensure reliability

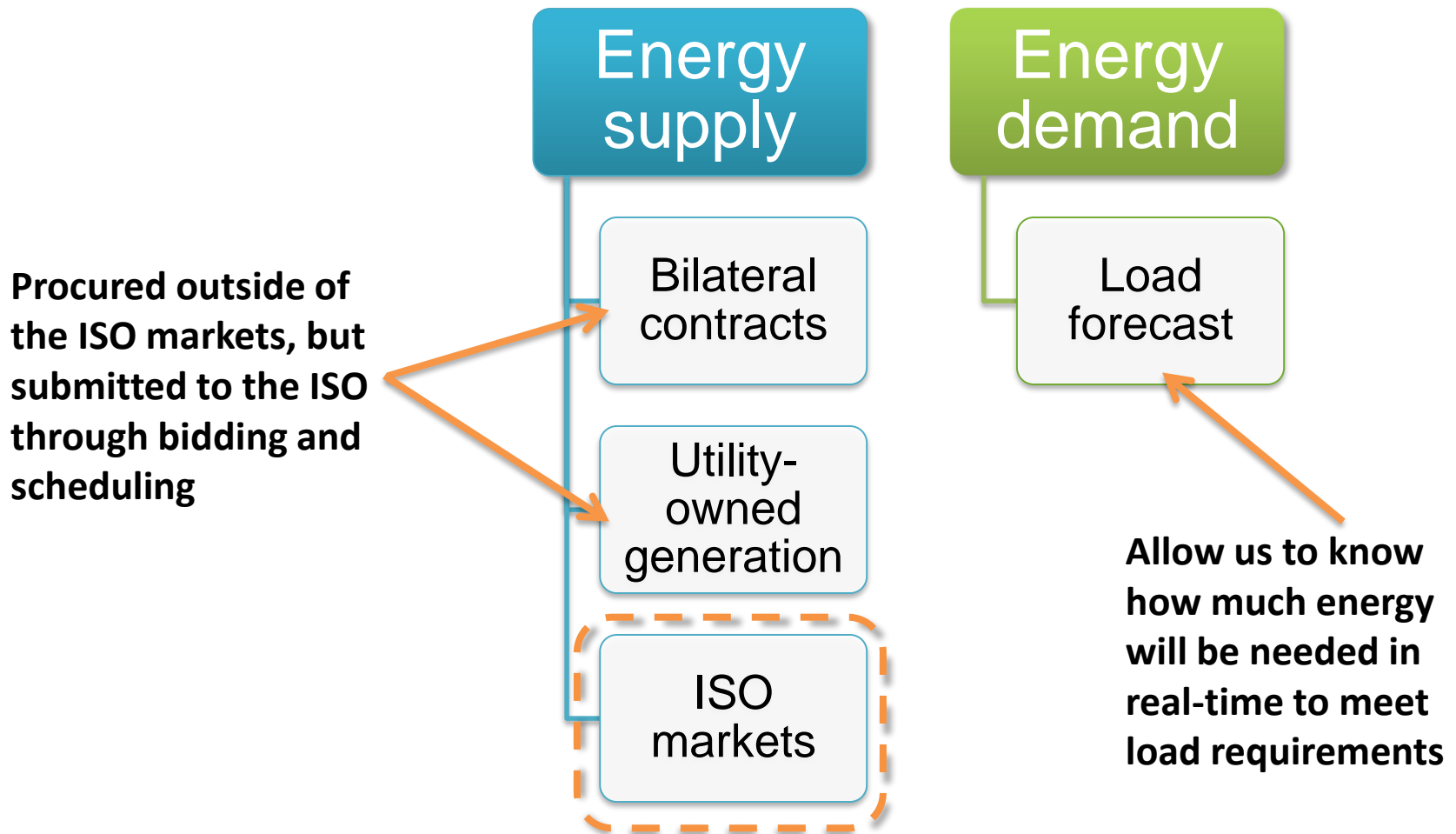
## Day-Ahead market

- *Ensures, a day in advance resources are available and deliverable in real-time*
- *Allow parties with bilateral agreements to schedule contracted supply/demand and offload excess supply as energy or Ancillary Services*
- *Secure pricing*

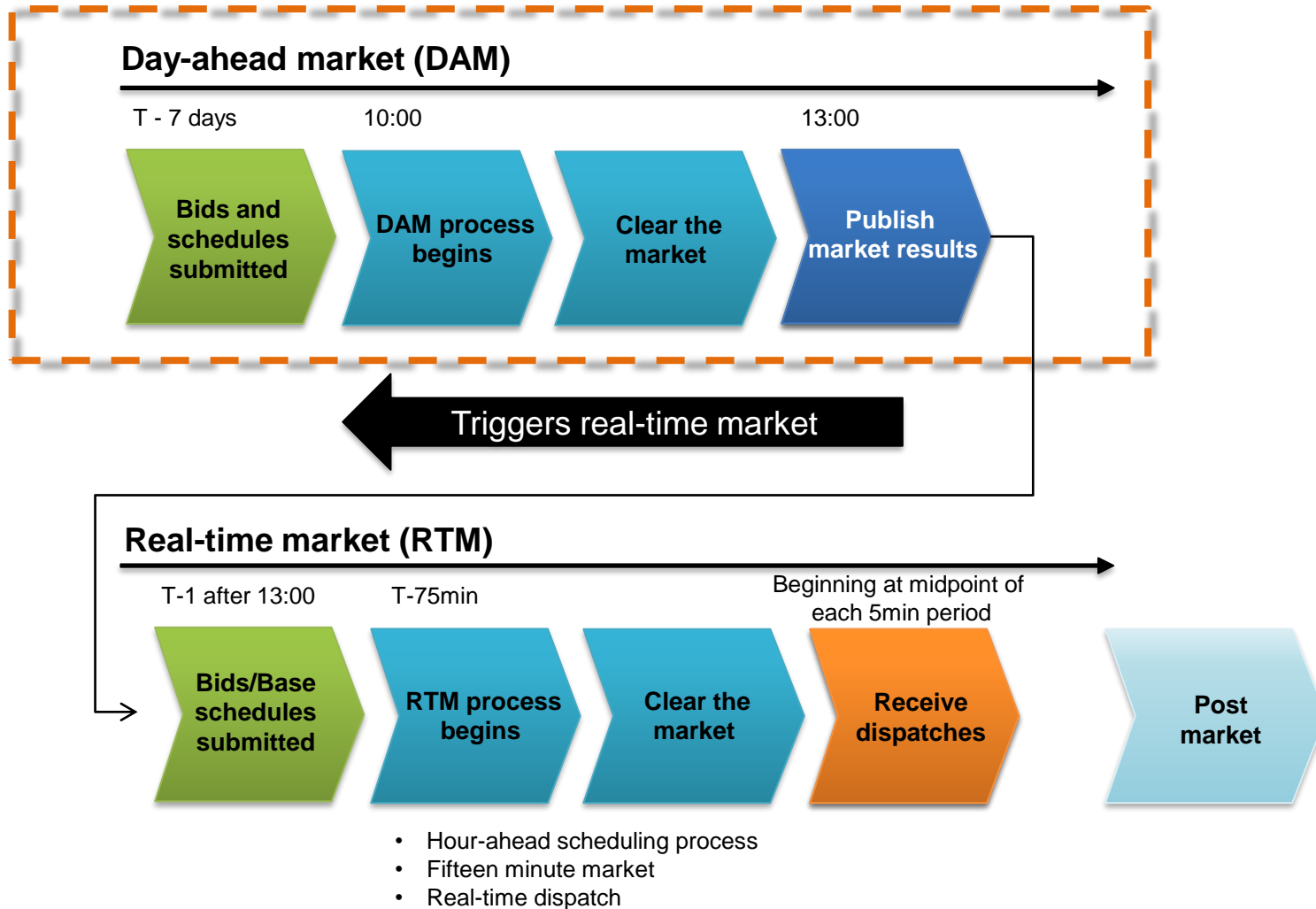
## Real-Time market

- *Hour ahead scheduling to enable import/export MWs*
- *Allows variable energy resources to submit energy forecasts and economic bids closer to financially-binding interval to increase bid accuracy*
- *Liquidates financial only bids*
- *Dispatches energy to meet instantaneous demand*

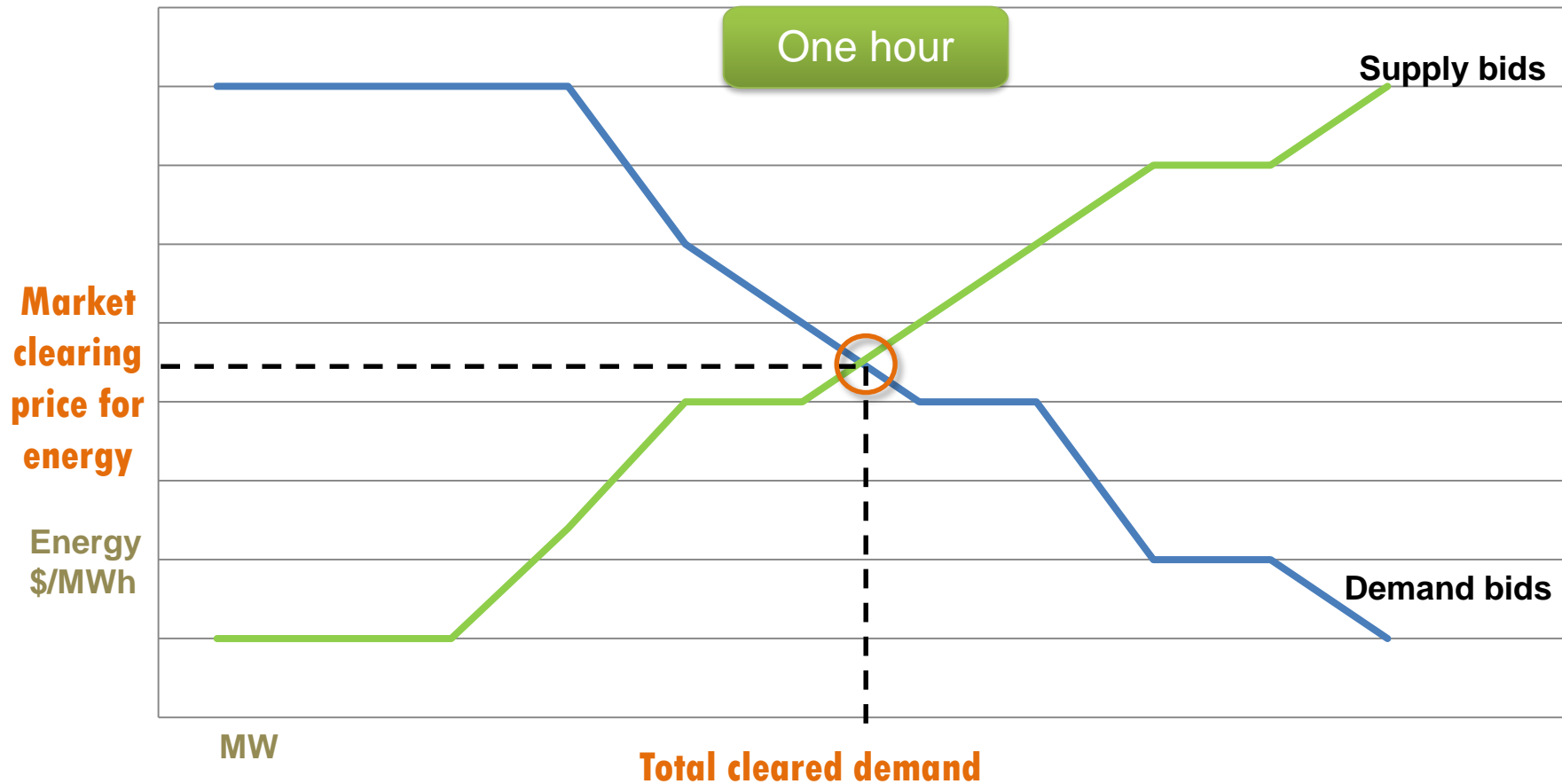
# Physical energy is the electricity needed to meet the needs of the balancing authority area



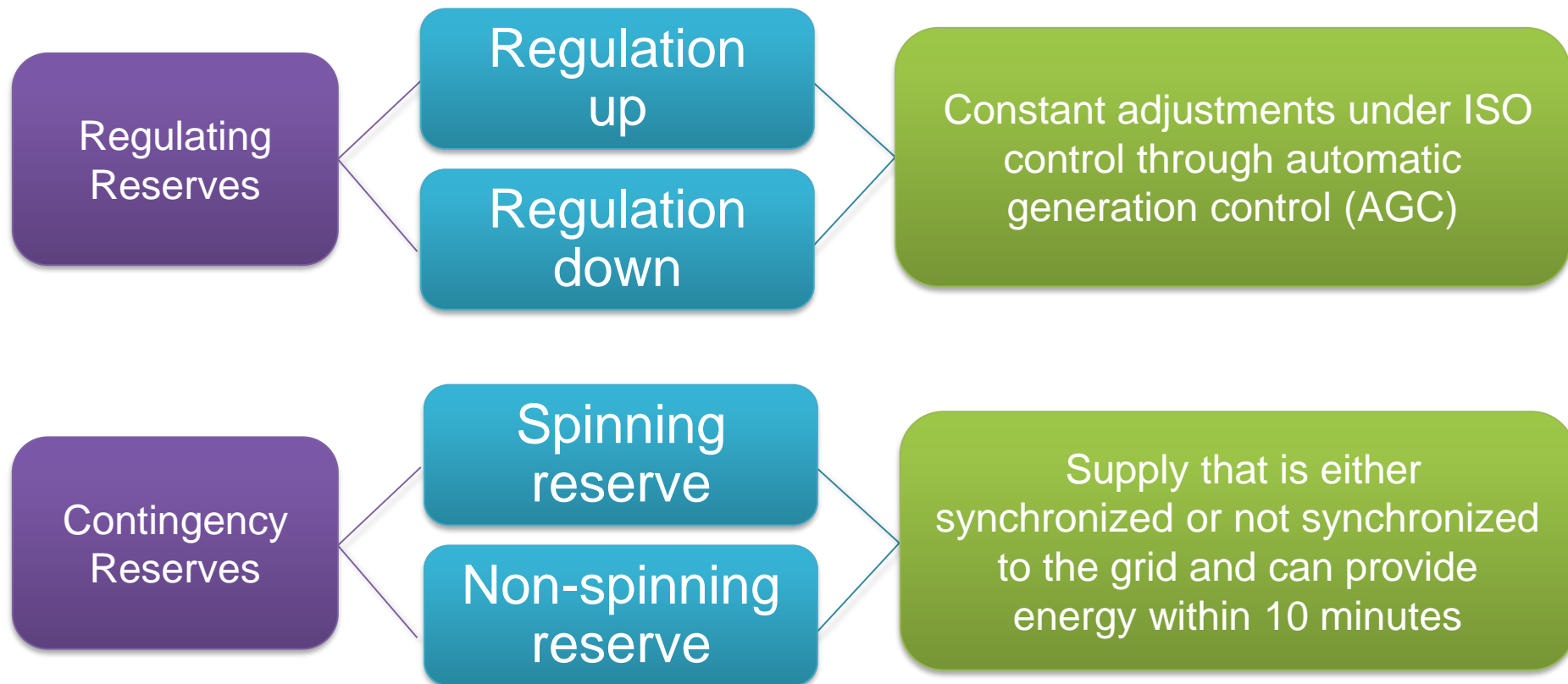
# Market timelines: day-ahead, real-time and post market



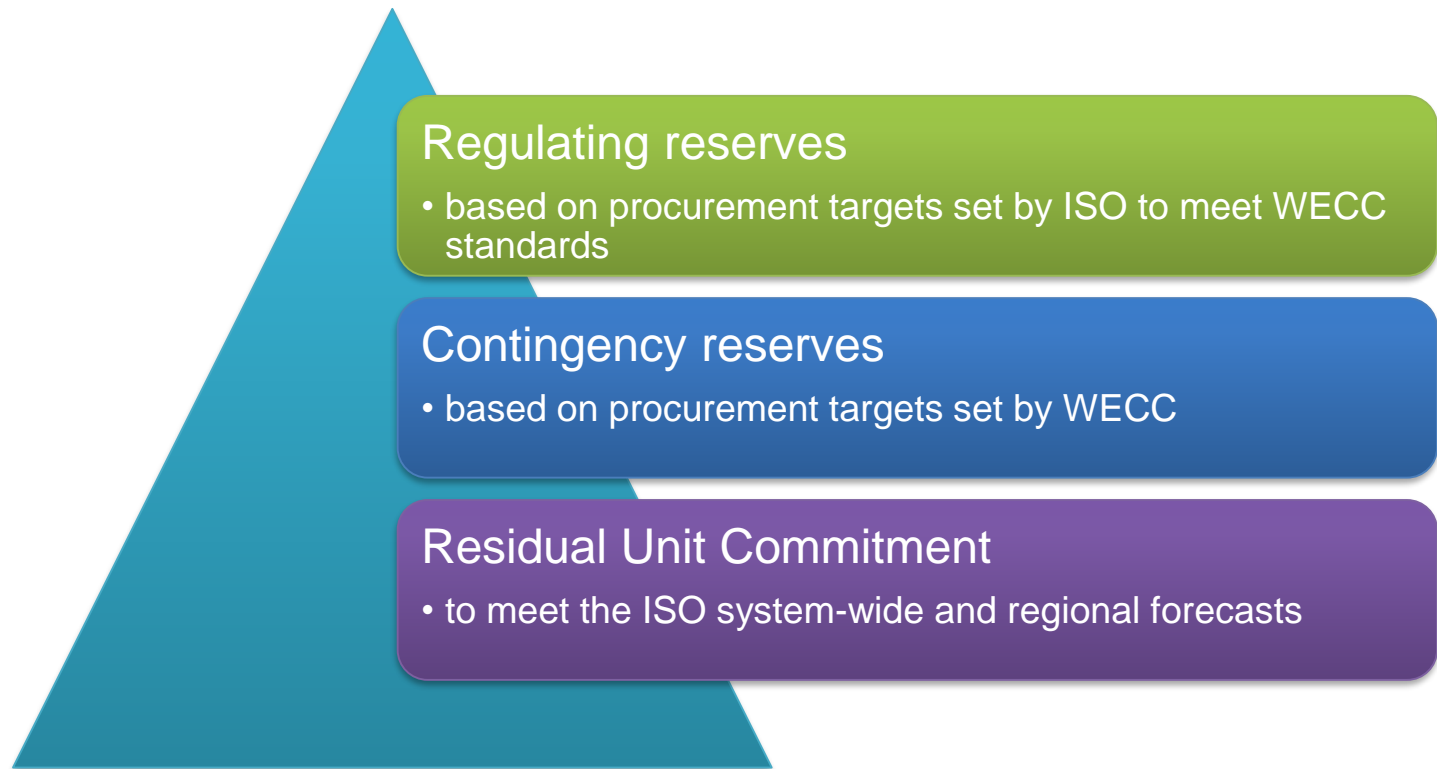
The day-ahead market determines the amount of energy that will be purchased for each hour.



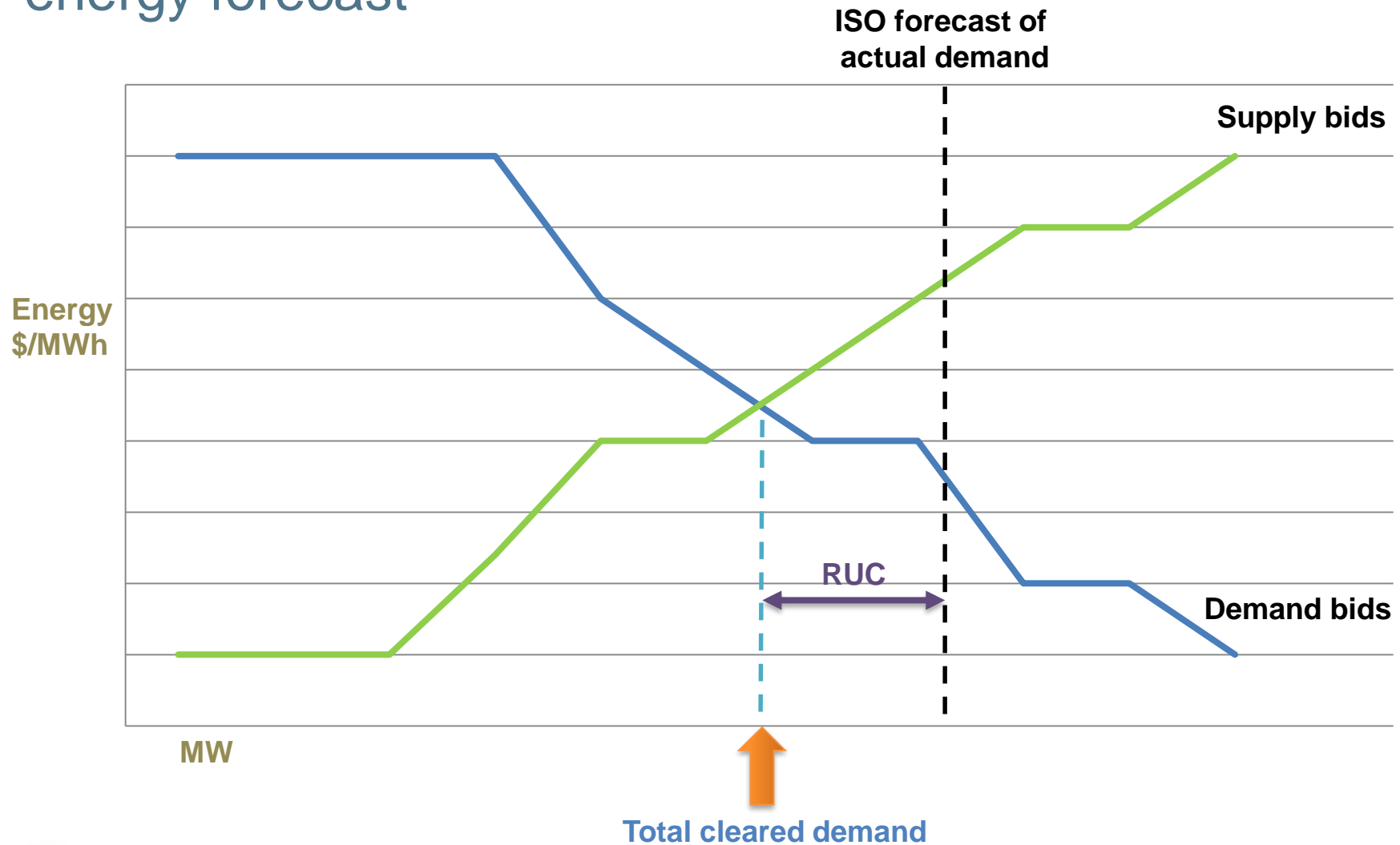
# The market also procures capacity (Ancillary Services) to meet reliability requirements



# The ISO procures ancillary services and additional capacity for the ISO BAA in day-ahead to meet reliability requirements

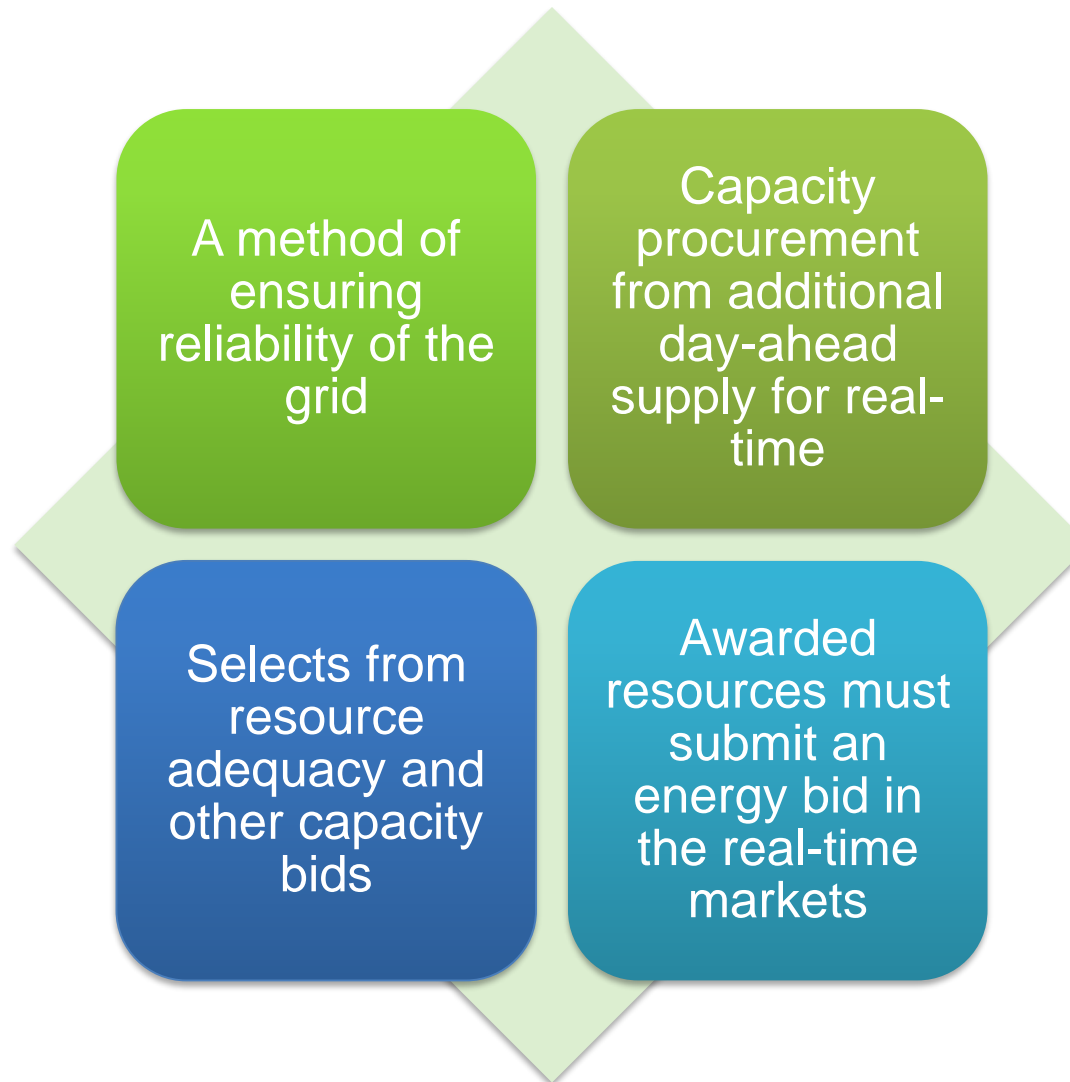


# Residual unit commitment is used to meet the ISO's energy forecast

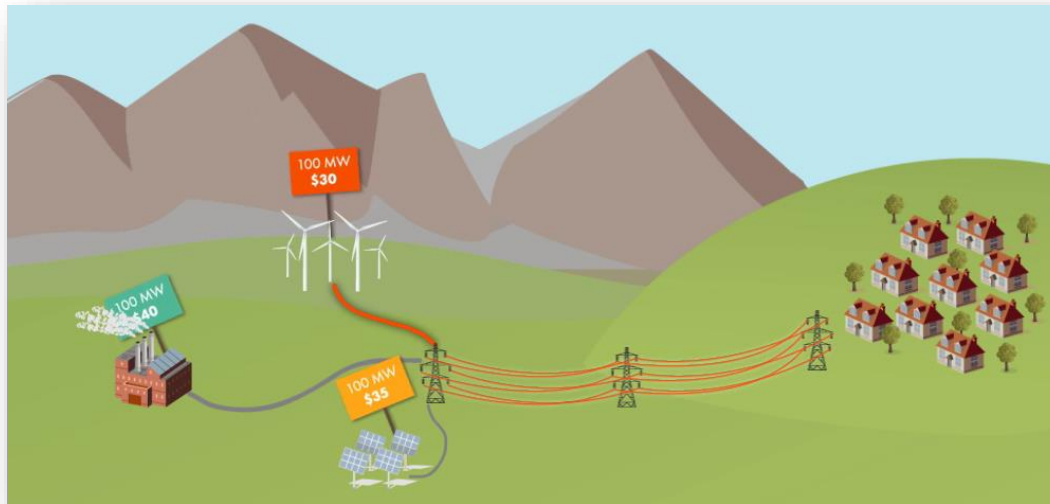




# Residual unit commitment

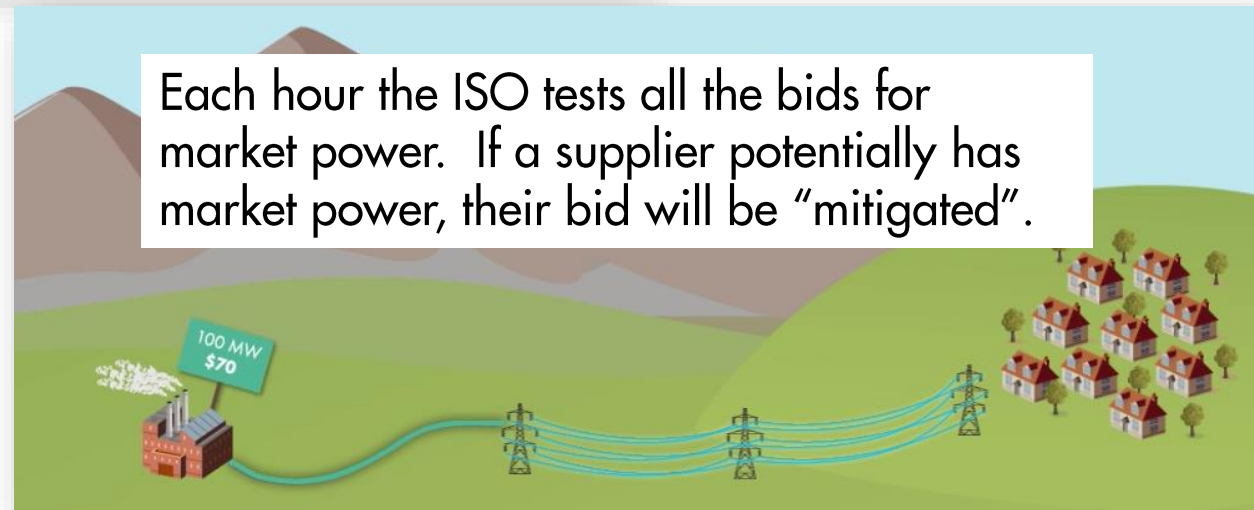


# Market Power Mitigation



✓ Competition among suppliers to serve the load

**X** No competition =  
Market power



# Grid operators need a plan for operating the next day to ensure reliability

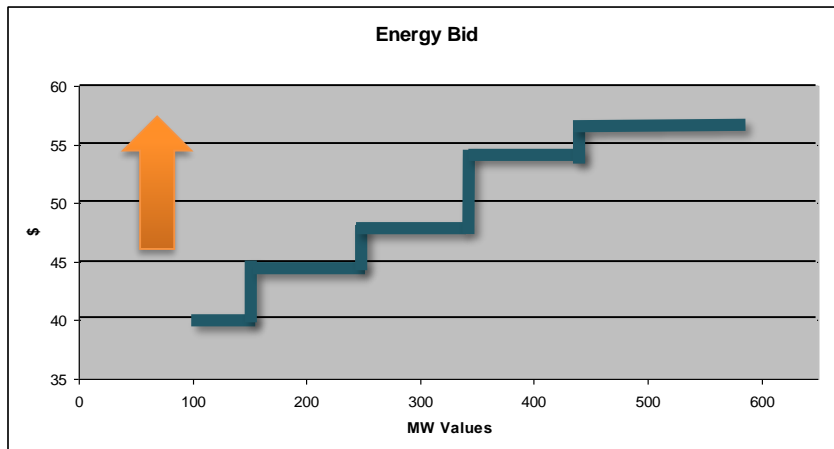
- The California ISO uses its **day-ahead market** to create a reliability plan. As a result, resources are committed to provide:
  - Supply to meet the demand that cleared in the market
  - Supply to meet the ISO demand forecast
  - Ancillary services to meet the reliability requirements



# ECONOMIC BIDS AND SELF SCHEDULES

Energy bids provide an economic signal indicating a participant's willingness to supply or purchase energy

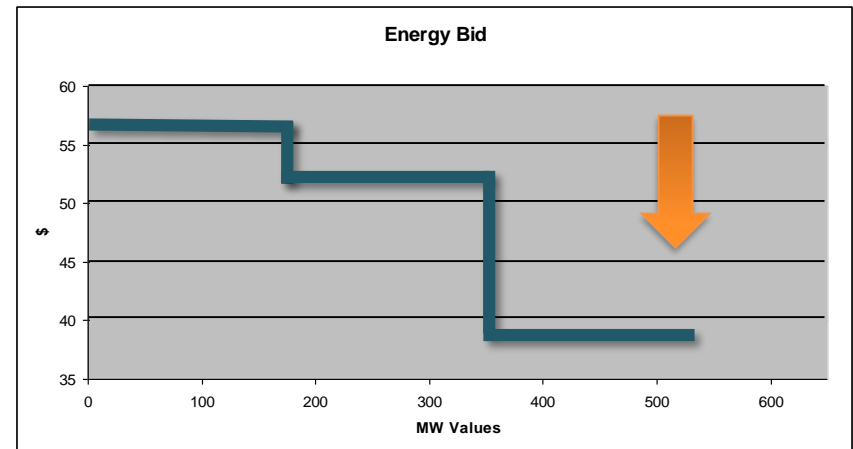
## SUPPLY BID



**generators and imports**

The **higher** the price,  
the more they will **supply**

## DEMAND BID



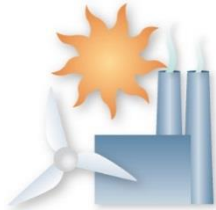
**loads and exports**

The **lower** the price, the  
more they will **buy**

# Self schedules are also known as “price takers”

## SUPPLY SELF SCHEDULE

Informs the ISO that the SC is willing to run its generator regardless of the price



## DEMAND SELF SCHEDULE

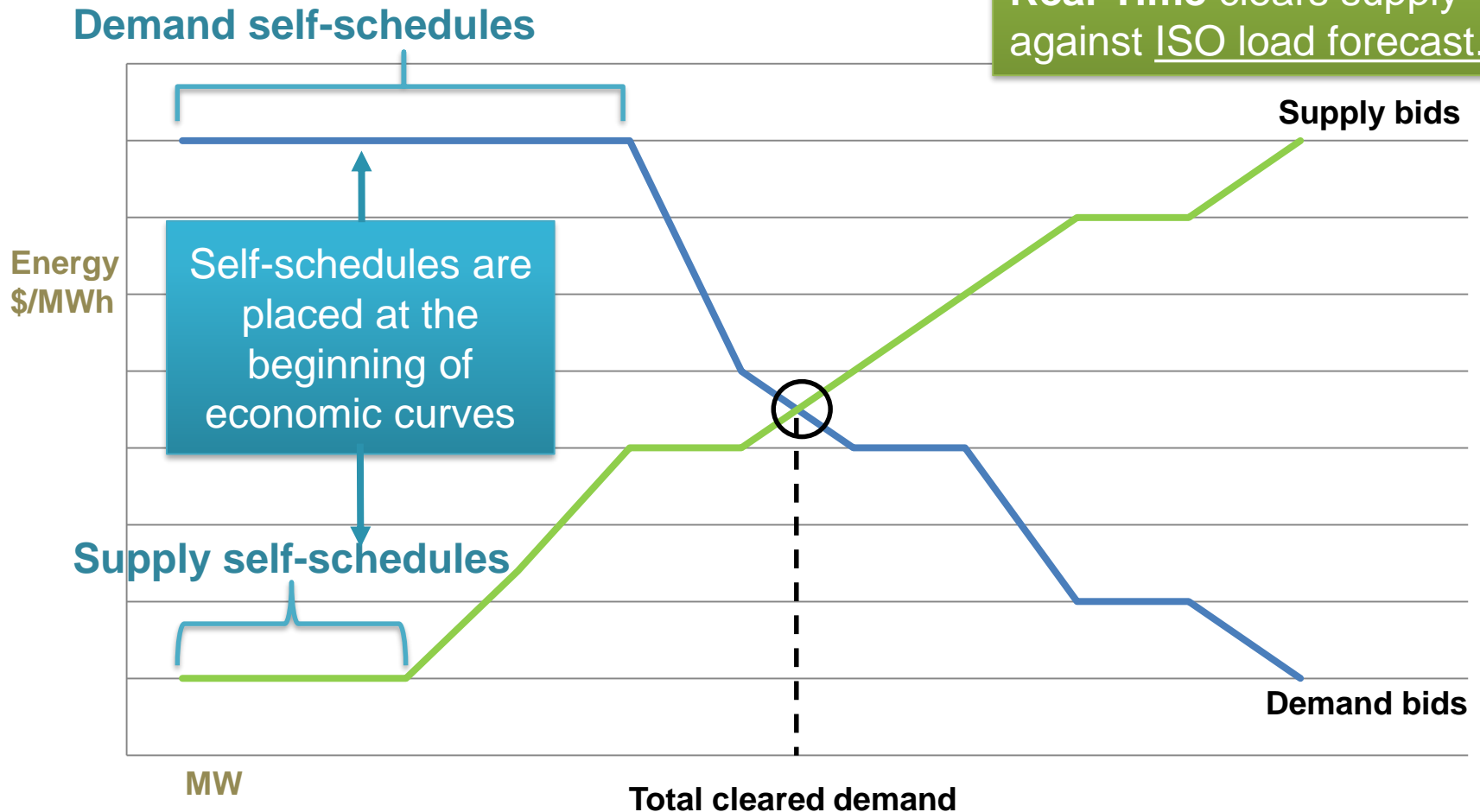
Informs the ISO that the SCS is willing to buy a certain quantity of supply, regardless of the price, to serve its load



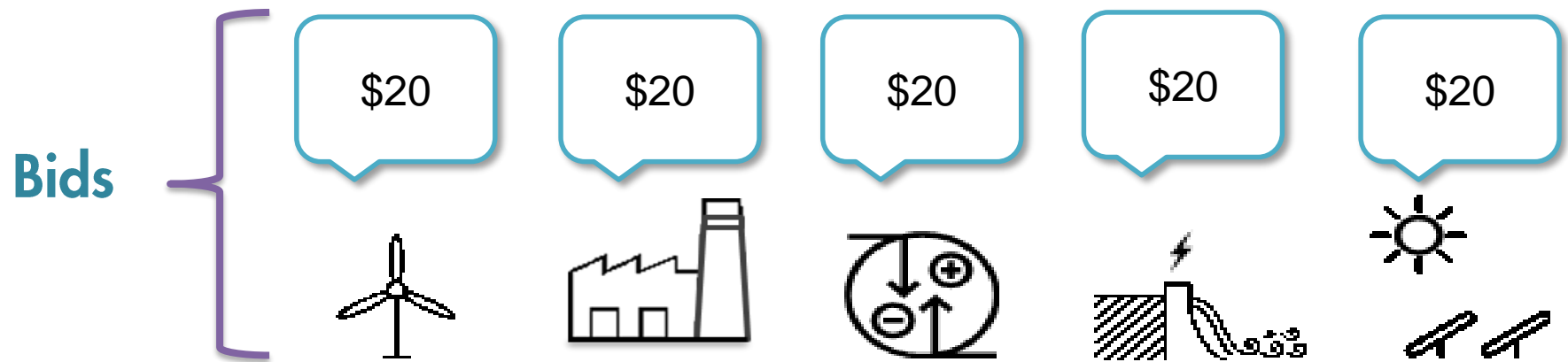
# Economic bids and self schedules

**Day-Ahead** clears supply bids against demand bids;

**Real-Time** clears supply against ISO load forecast.



# How does the market decide which resources to commit?

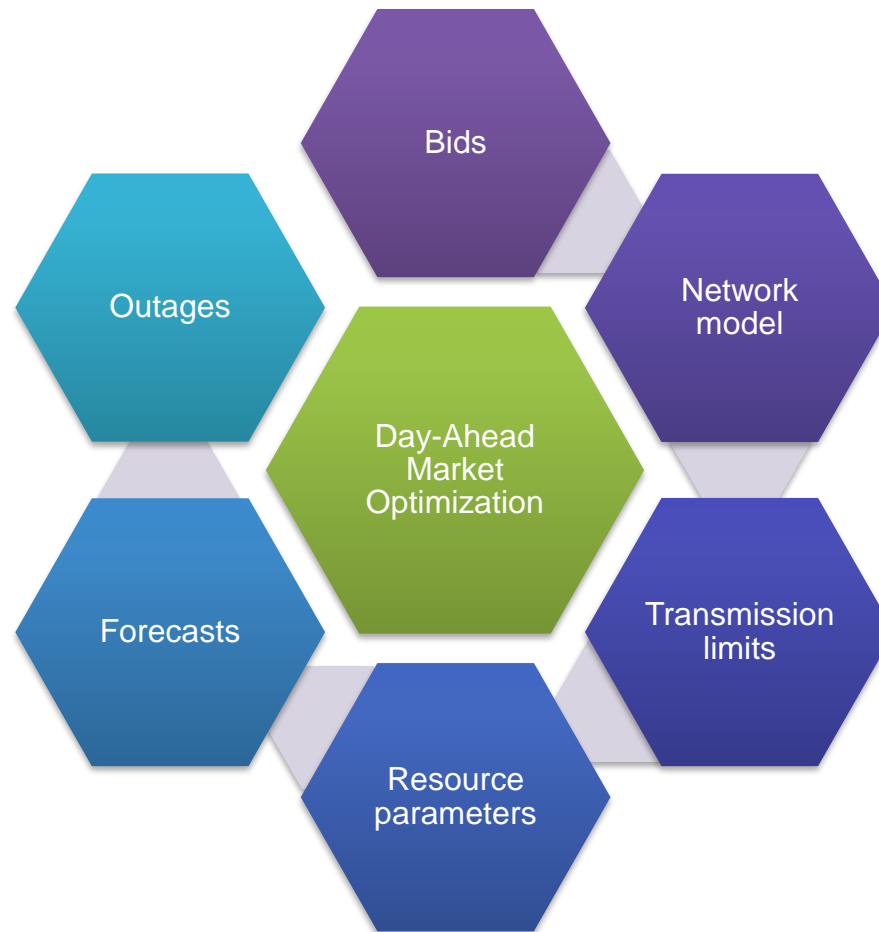


## Other cost considerations:

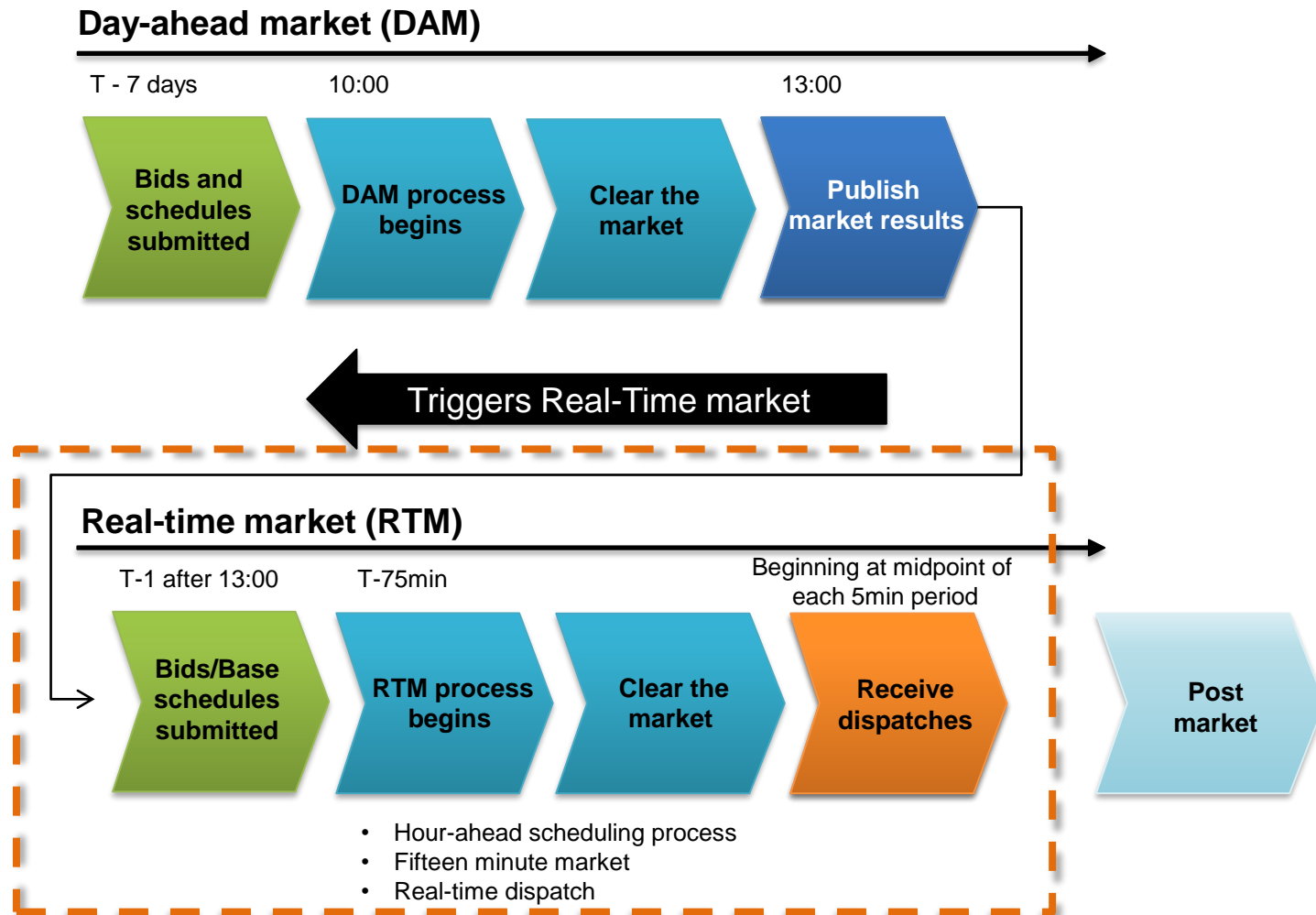
- Start-up cost (one time)
- Minimum load cost (hourly)
- Energy bid curve above minimum load (\$/MWh)



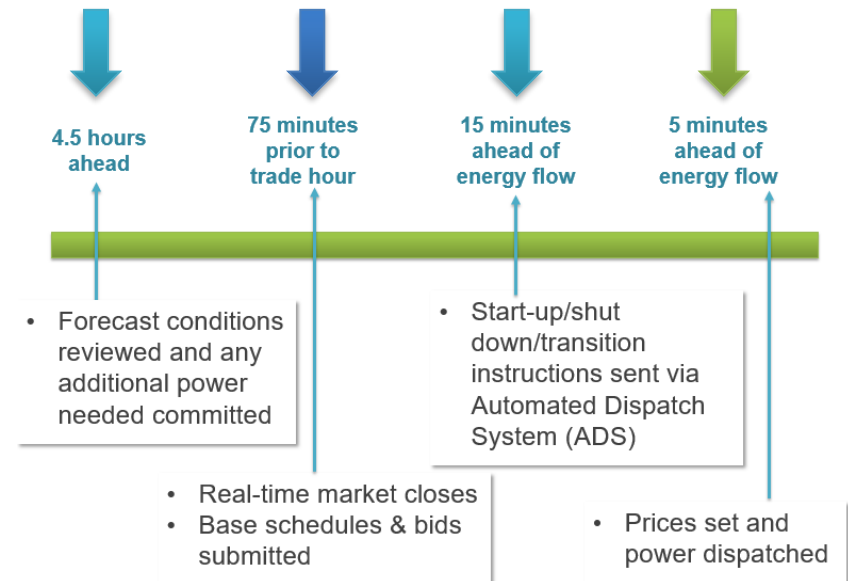
# Other inputs of the **Day-Ahead** market



# Market timelines: Day-Ahead, Real-Time and post market



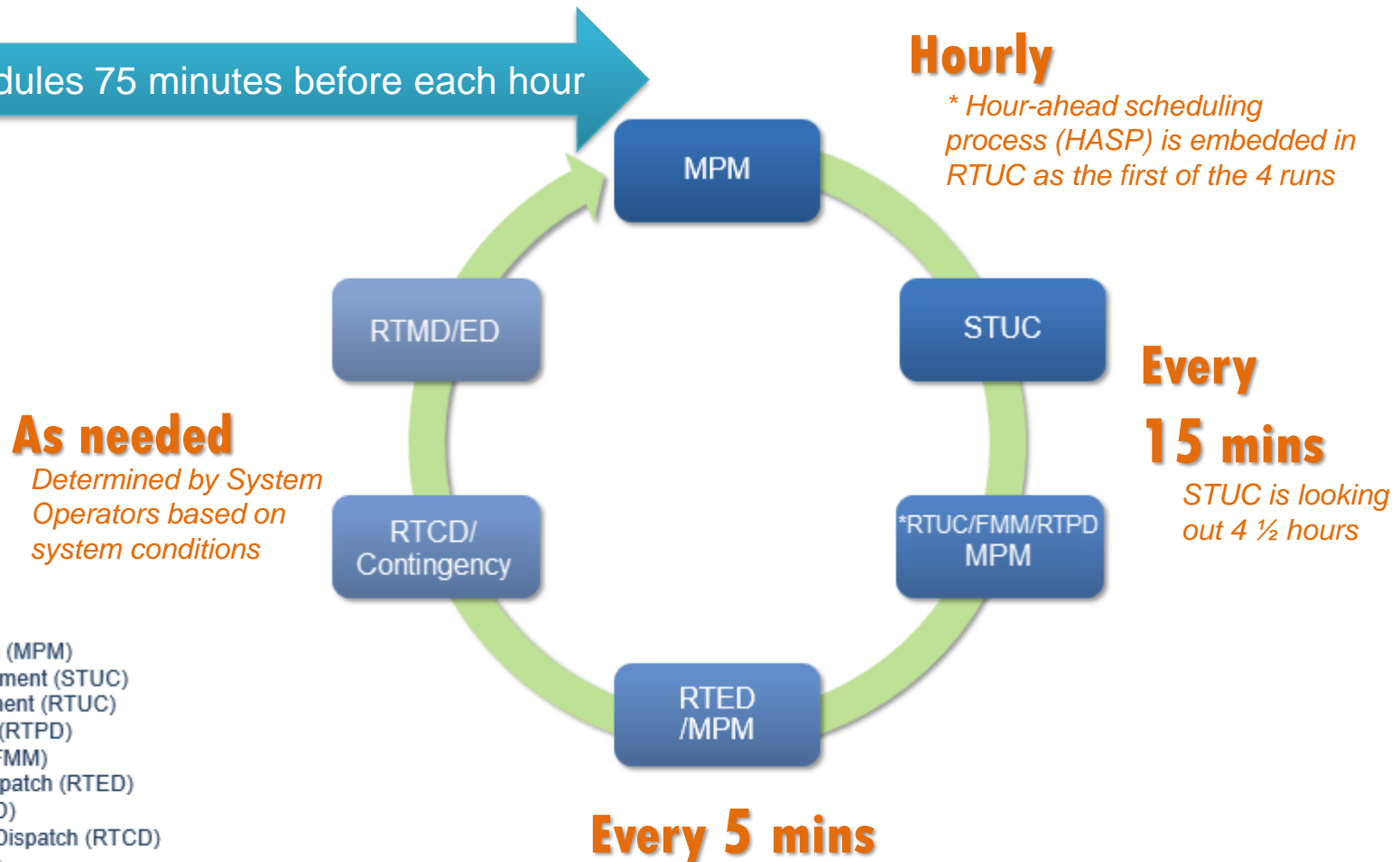
# Real-Time market processes



*The market is forward looking, evaluating market conditions for multiple time horizons (intervals) and producing the most accurate data to aid in market optimization and decision making for System Operators to maintain a reliable bulk electric system*

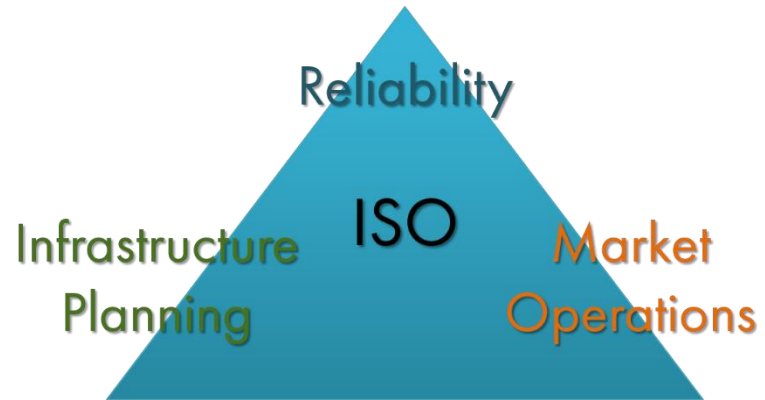
# Real-time market hourly processes

Submit schedules 75 minutes before each hour



Market Power Mitigation (MPM)  
Short Term Unit Commitment (STUC)  
Real-time Unit Commitment (RTUC)  
Real-time Pre-Dispatch (RTPD)  
Fifteen Minute Market (FMM)  
Real-time Economic Dispatch (RTED)  
Real-time Dispatch (RTD)  
Real-time Contingency Dispatch (RTCD)  
Contingency – EIM Only  
Real-time Manual Dispatch (RTMD)  
Exceptional Dispatch (ED) – EIM Only

# What is our focus?



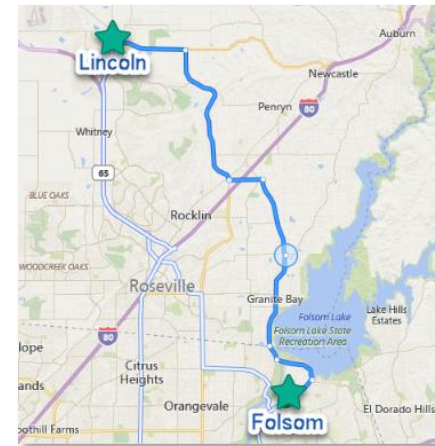
## Reliability

Balancing generation and load to meet energy needs in the ISO BAA

# System Operations supports grid reliability

## Control room personnel

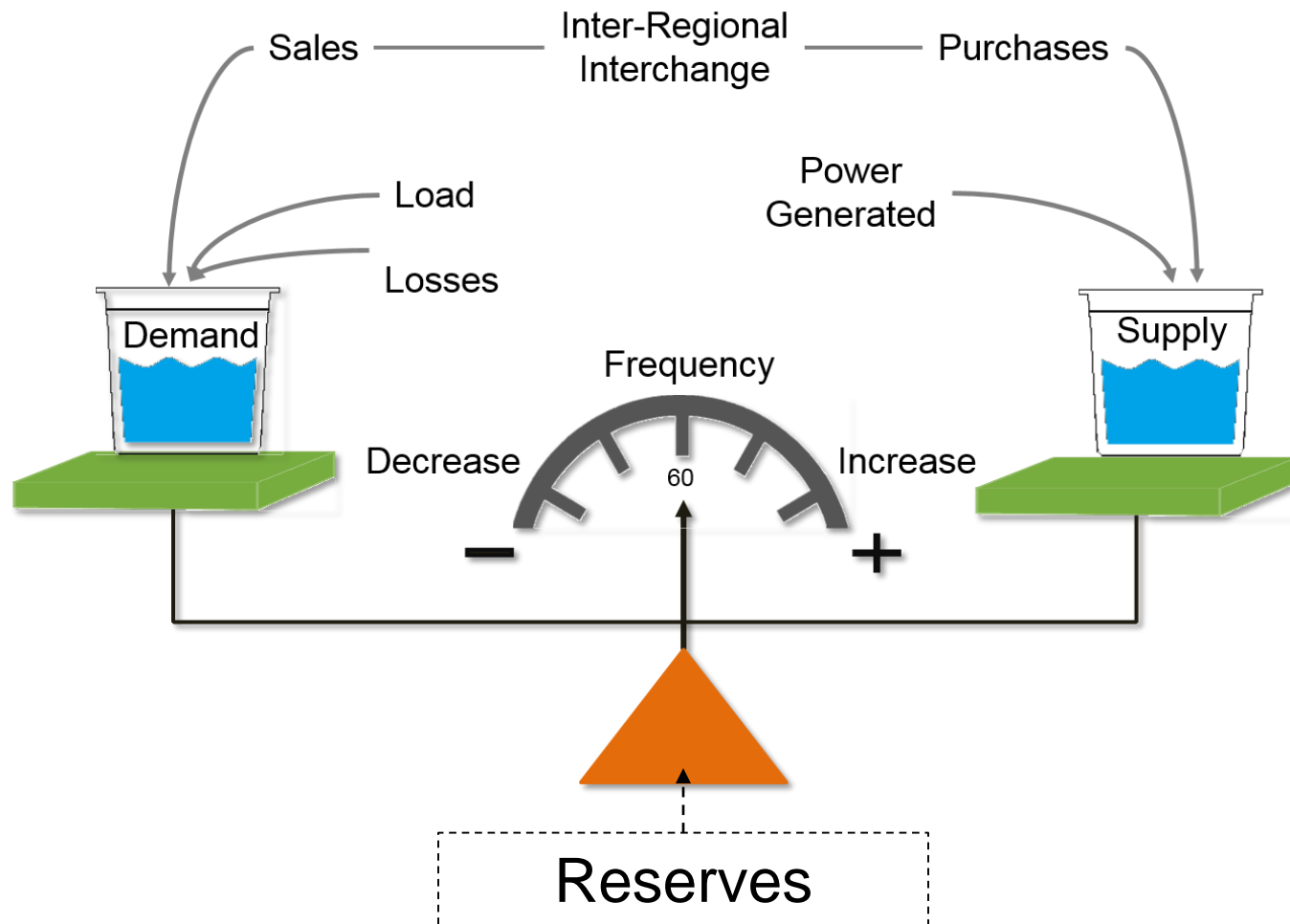
- Highly skilled, cross-trained System Operators with specific responsibilities



## Two separate control centers

- Redundant energy management, market software, and hardware systems
- Diversified, secure communications networks

# System reliability requires a constant and instantaneous match between supply and demand



# Entities can participate through market products and reliability services

## Energy



- ✓ ☐ Physical supply and demand
- ✓ ☐ Virtual supply and demand

## Financial



- ✓ ☐ Congestion Revenue Rights
- ✓ ☐ Inter-SC trades

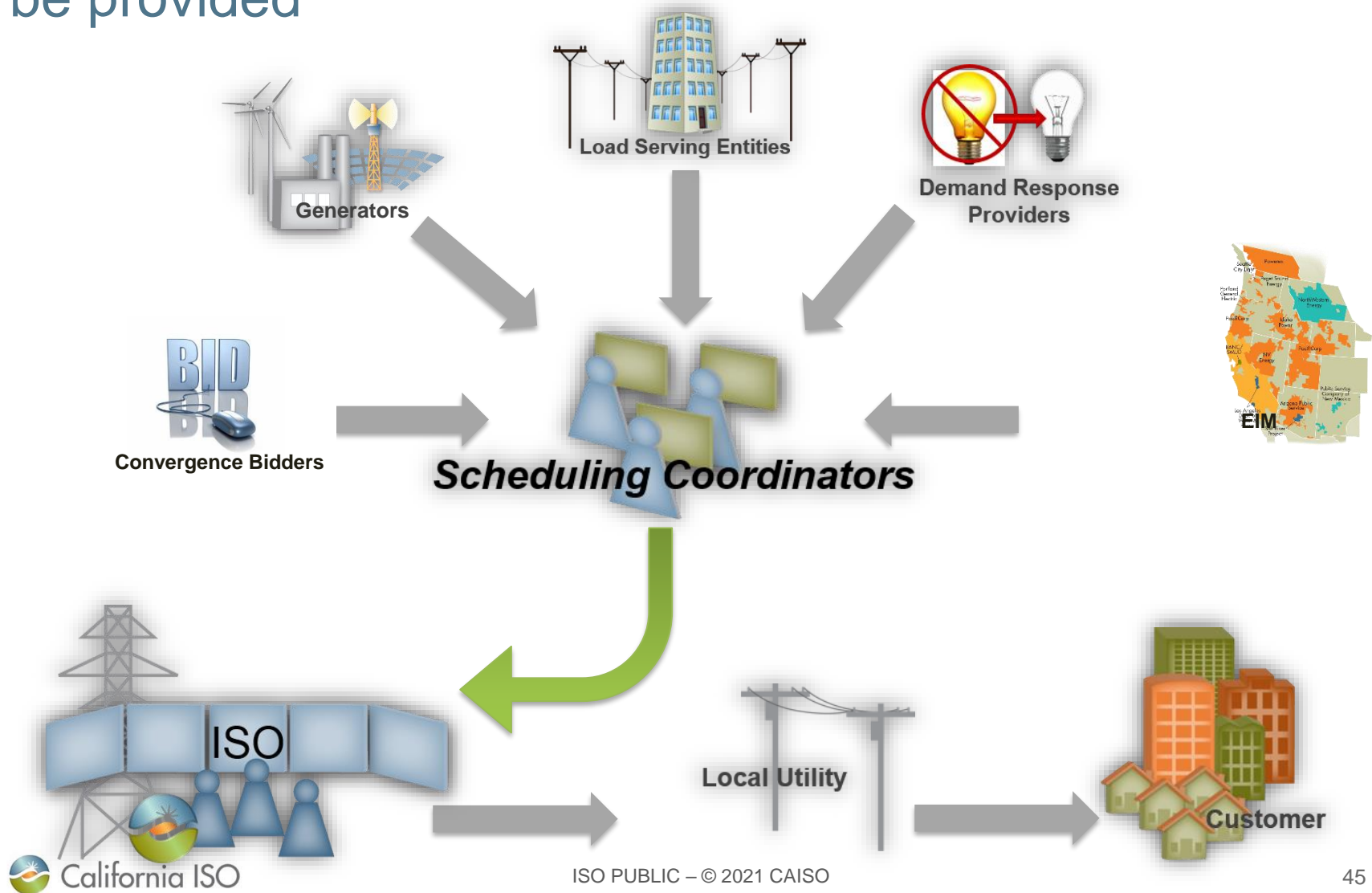
## Reliability



- ✓ ☐ Ancillary services:  
Instantaneous  
Contingency reserve
- ✓ ☐ Residual unit commitment
- ✓ ☐ Flexible ramping product
- ✓ ☐ Reliability Coordination



# Participation with the ISO depends on the service to be provided



# SC certification process requirements



Training



Financial



Testing

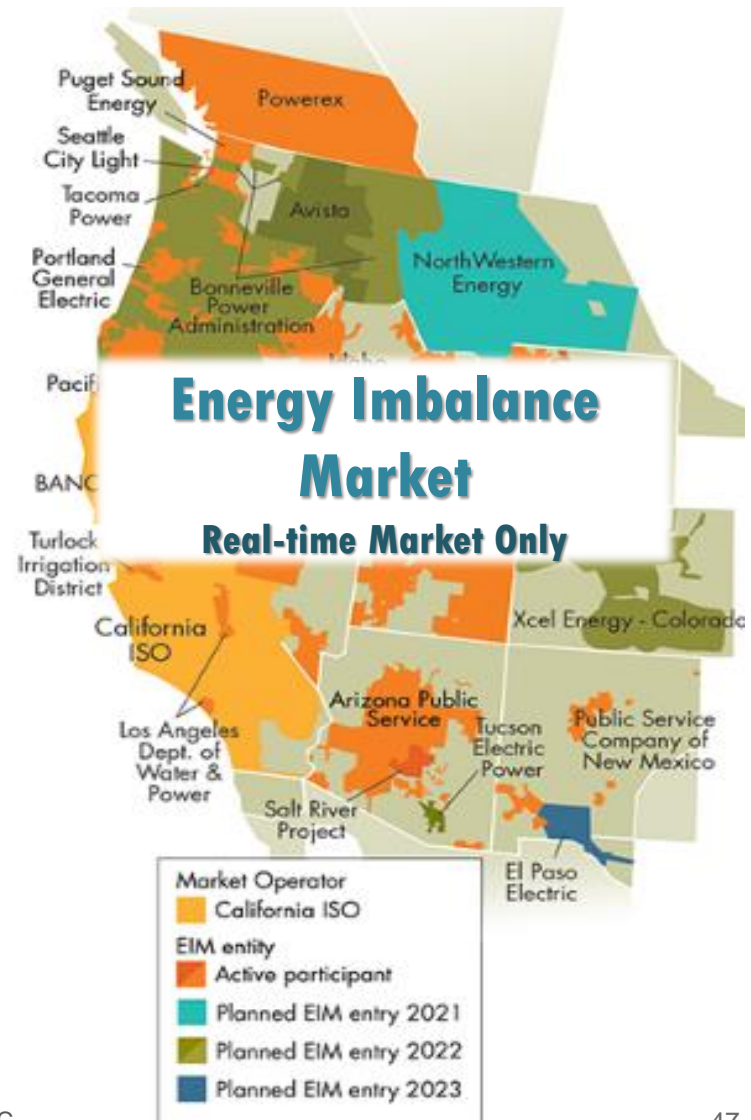


Policies

# The Western EIM is a real-time only market

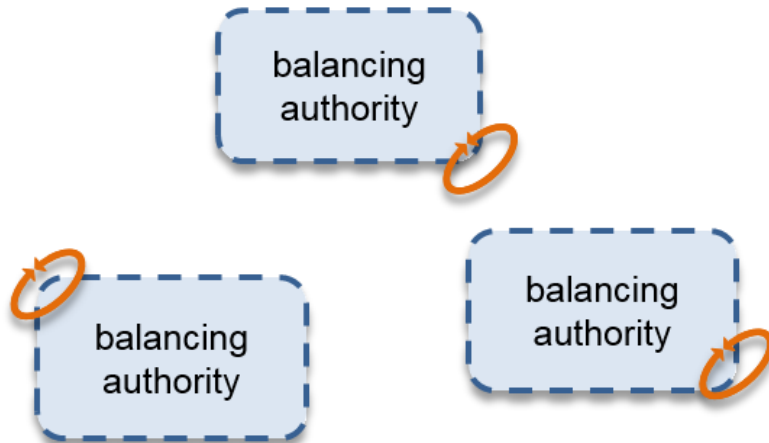


**ISO Balancing  
Authority Area**  
**Day-ahead &  
Real-time Market**

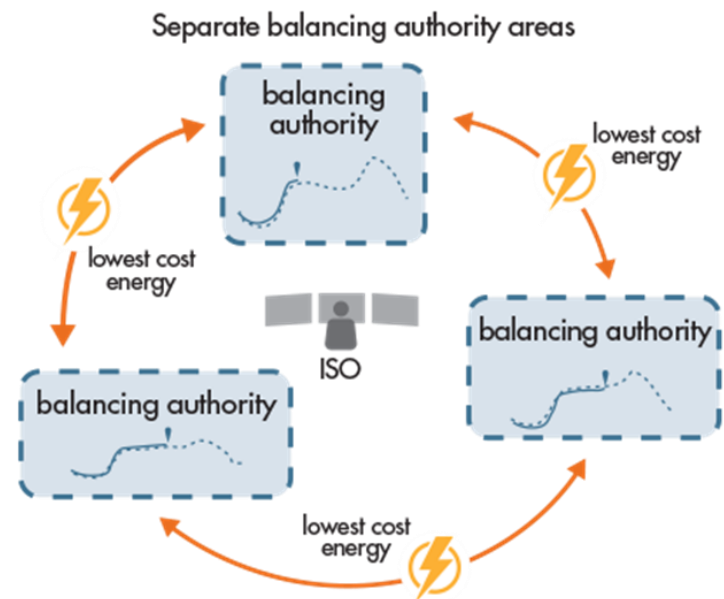


# Energy Imbalance Market key points

In a non-EIM environment:  
Each BA balances loads and  
resources within its borders

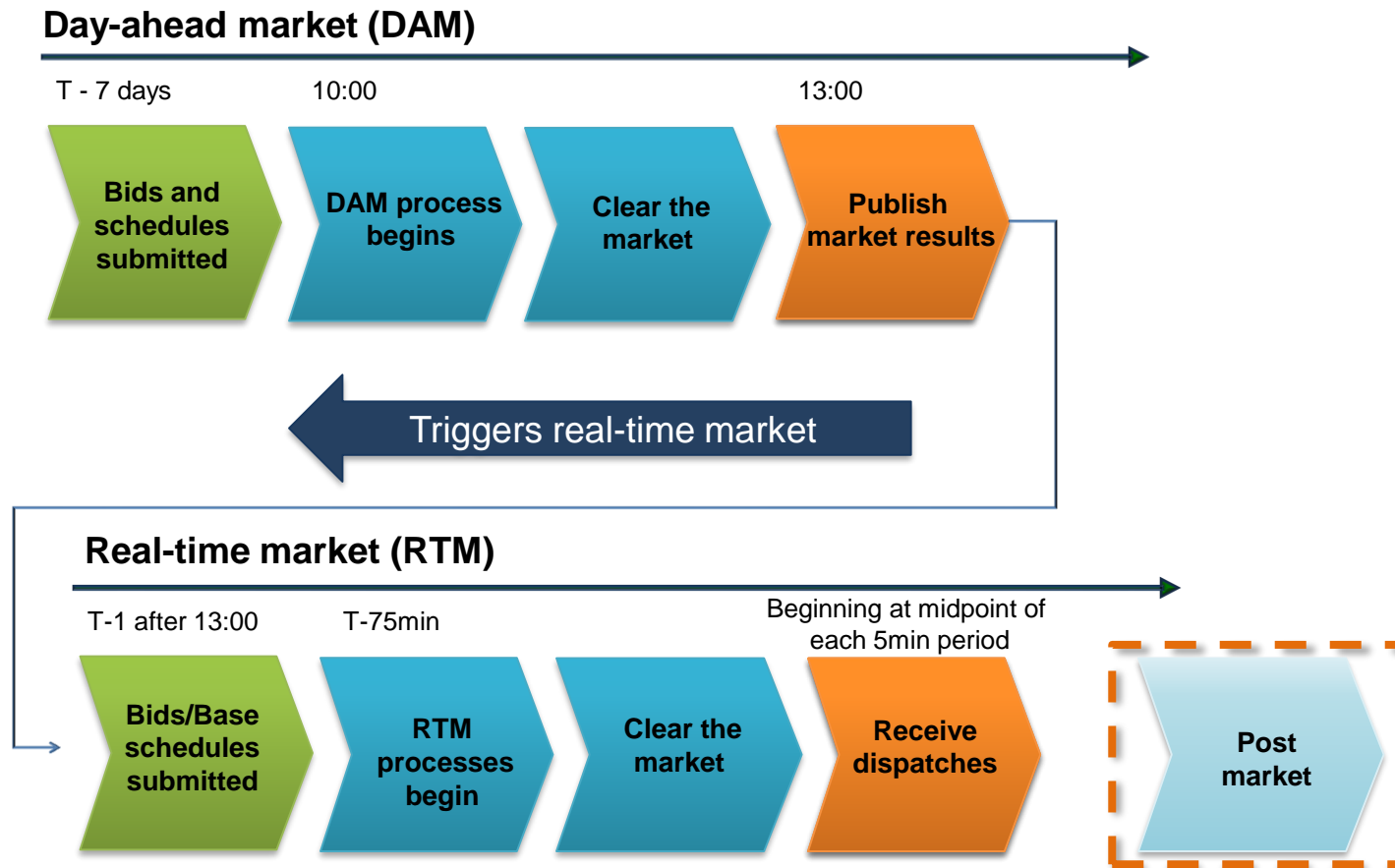


In an EIM:  
The market dispatches resources  
across BAAs to balance energy



**Entities are still responsible for running their own BAAs**

# Market process timelines: **post market**



# Let's look at a day in the life of a participating resource



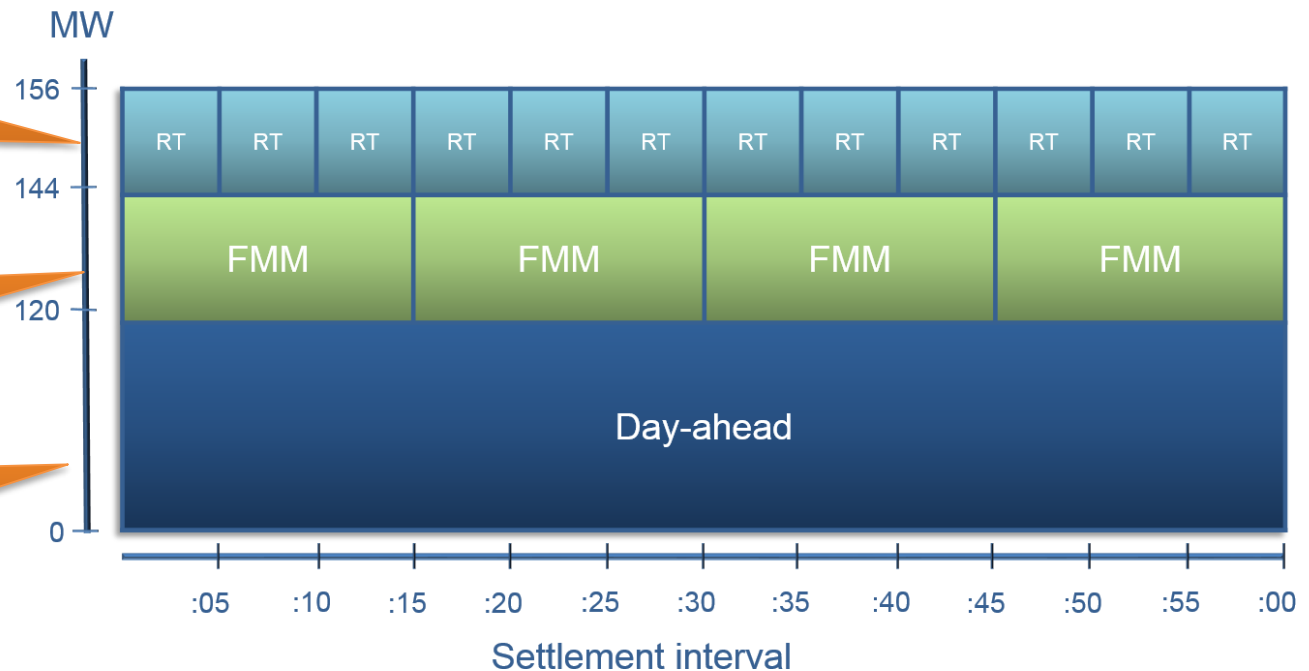
# Settlements are broken down by applicable markets

## Example of 1 hour interval

Additional real-time award

Incremental award in the FMM

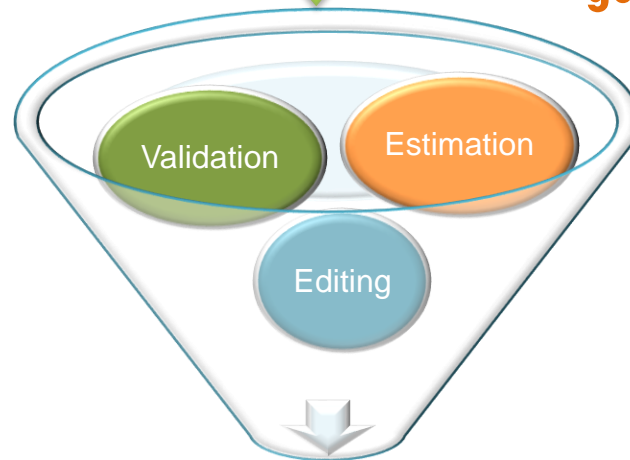
Initial day-ahead award/Base schedules



# Meter data is collected and processed for settlements



Revenue quality  
meter data



Settlement  
quality meter  
data

**Settlements**

**Settlement Quality Meter Data (SQMD) is used for billable quantities to represent the energy generated or consumed during a settlement interval**

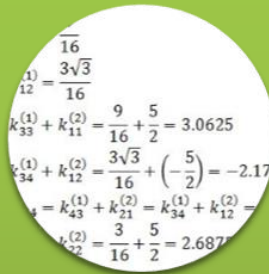
**Meter data *must* be correct for accurate settlements**



# The settlement cycle processes market activity to produce payments and charges



Inputs from day-ahead and real-time markets and meter



Calculations of formulas and settlement rules

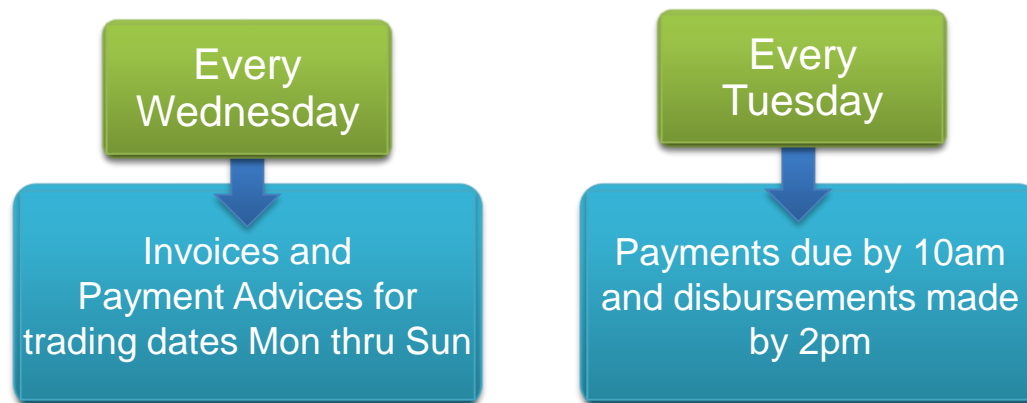


Publishing of settlement statements, invoices and payment advices

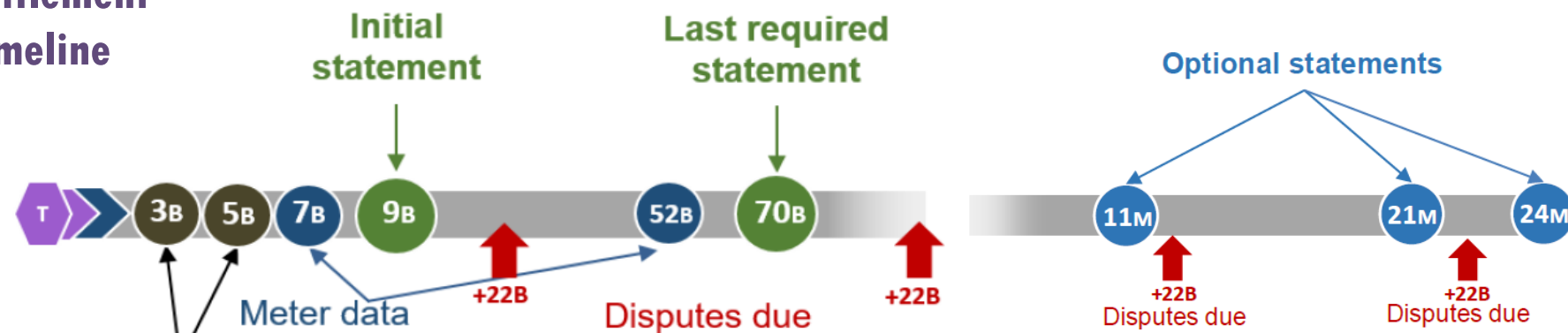


# Timelines are critical to settling the market efficiently

## Invoices & payment advices



## Settlement Timeline



Market price corrections

**T = Trade Date**  
**B = Business Days**  
**M = Months**

# FOR MORE INFORMATION...



Visit the [www.caiso.com](http://www.caiso.com) for information and resources

The California ISO is monitoring COVID-19 developments, and is taking proactive steps to protect staff, customers, community, and the electric grid. [Learn more.](#)

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California ISO

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**Resource Tabs**

ABOUT US PARTICIPATE STAY INFORMED PLANNING MARKET & OPERATIONS RULES ISO EN ESPAÑOL

**Latest Reports**

2021 Summer Loads & Resources Assessment is now available, read more >>

2021 SUMMER READINESS

Key topics

Going green

RC WEST Visit page >>

**Today's Outlook**

AS OF 13:00 05/20/2021

21,558 MW Current demand

26,646 MW Forecasted peak

17,572 MW Current renewables

82% Renewables serving load

**Calendar**

Calendar News Releases Recent Documents Notices

THURSDAY, 05/20/2021

ICAL 9:30 AM - 2:30 PM Board of Governors Teleconference Meeting (Executive Session)

ICAL 10:15 AM - 11:00 AM Market Update

ICAL 2:00 PM - 3:00 PM Summer 2021 Release - Market Simulation

ICAL 3:00 PM - 5:00 PM Western EIM Governance Review Committee Meeting (General Session)

FRIDAY, 05/21/2021

ICAL 12:00 AM - 11:59 PM Comments due - Draft 2022 Policy Initiatives Catalog

ICAL 9:00 AM - 10:00 AM Market Surveillance Committee Meeting (Executive Session)

ICAL 10:00 AM - 3:30 PM Market Surveillance Committee Meeting (General Session)

ICAL 10:00 AM - 12:00 PM Generator Interconnection - Cluster 14 Revised Study Process and Timeline

MONDAY, 05/24/2021

ICAL 11:00 AM - 12:00 PM 2021 California ISO Summer Loads and Resources Assessment

ICAL 2:00 PM - 3:00 PM Summer 2021 Release - Market Simulation

TUESDAY, 05/25/2021

ICAL 10:00 AM - 11:00 AM Technical User Group

ICAL 11:00 AM - 12:00 PM EIM Change Management Proposed Revision Request Review

**Information**

QUICK LINKS

Board

Business Practice Manuals

Careers

Tariff

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RELATED WEBSITES

Market Participant Portal

OASIS

Western EIM

Western EIM Portal

Developer

RC West Portal

STAY CONNECTED

Facebook Twitter YouTube Instagram

**Related Websites**

# Find helpful EIM resources on the Western EIM website



<https://www.westerneim.com>

Find more information about RC West under the Stay Informed tab on the ISO website



Questions?

For more information on RC West services, email us at: **RCWest@caiso.com**

<http://www.caiso.com/informed/Pages/RCWest/Default.aspx>

After the presentation, check out these links to hear from an Operator and a Market Operator about a “day in the life” from our Control Room.



California ISO Day in The Life - Grid Operations  
<https://www.youtube.com/watch?v=LG9cu1ahq-M>



California ISO Day in The Life - Market Operations  
<https://youtu.be/439RVXaP4SM>

# Open Access Same-time Information System (OASIS) provides public access to a variety of transmission system data

The screenshot shows the California ISO OASIS website. At the top is the California ISO logo and the OASIS title. Below this is a navigation bar with links: ATLAS REFERENCE, REPORT DEFINITION, PRICES, TRANSMISSION, SYSTEM DEMAND, ENERGY, ANCILLARY SERVICES, CONGESTION REVENUE RIGHTS, and PUBLIC BIDS. The main content area is divided into two columns. The left column contains 'Standards Information' (North American Energy Standards Board (NAESB), ISO Business Practice Manuals, Available Transfer Capability Information) and 'System Help' (For interface technical specifications, product release plans and other supporting documents go to: System Technical Information). The right column features a map of California with three regions highlighted: NP15 (orange), ZP26 (blue), and SP15 (green). Below the map, a status bar displays: 'For RT Interval 02:55 - LMP for SP15=\$28.0404 NP15=\$28.86688 ZP26=\$28.0803'. At the bottom, there is a 'CONNECTED' status indicator, 'QUICK LINKS' (OASIS Home, System Operating Messages, LMP Price Contour Maps, Trading Hub Real-Time Prices, Historical ACE), and the California ISO logo.

California ISO | OASIS

ATLAS REFERENCE | REPORT DEFINITION | PRICES | TRANSMISSION | SYSTEM DEMAND | ENERGY | ANCILLARY SERVICES | CONGESTION REVENUE RIGHTS | PUBLIC BIDS

**Standards Information**  
North American Energy Standards Board (NAESB)  
ISO Business Practice Manuals  
Available Transfer Capability Information

**System Help**  
For interface technical specifications, product release plans and other supporting documents go to:  
System Technical Information

NP15  
ZP26  
SP15

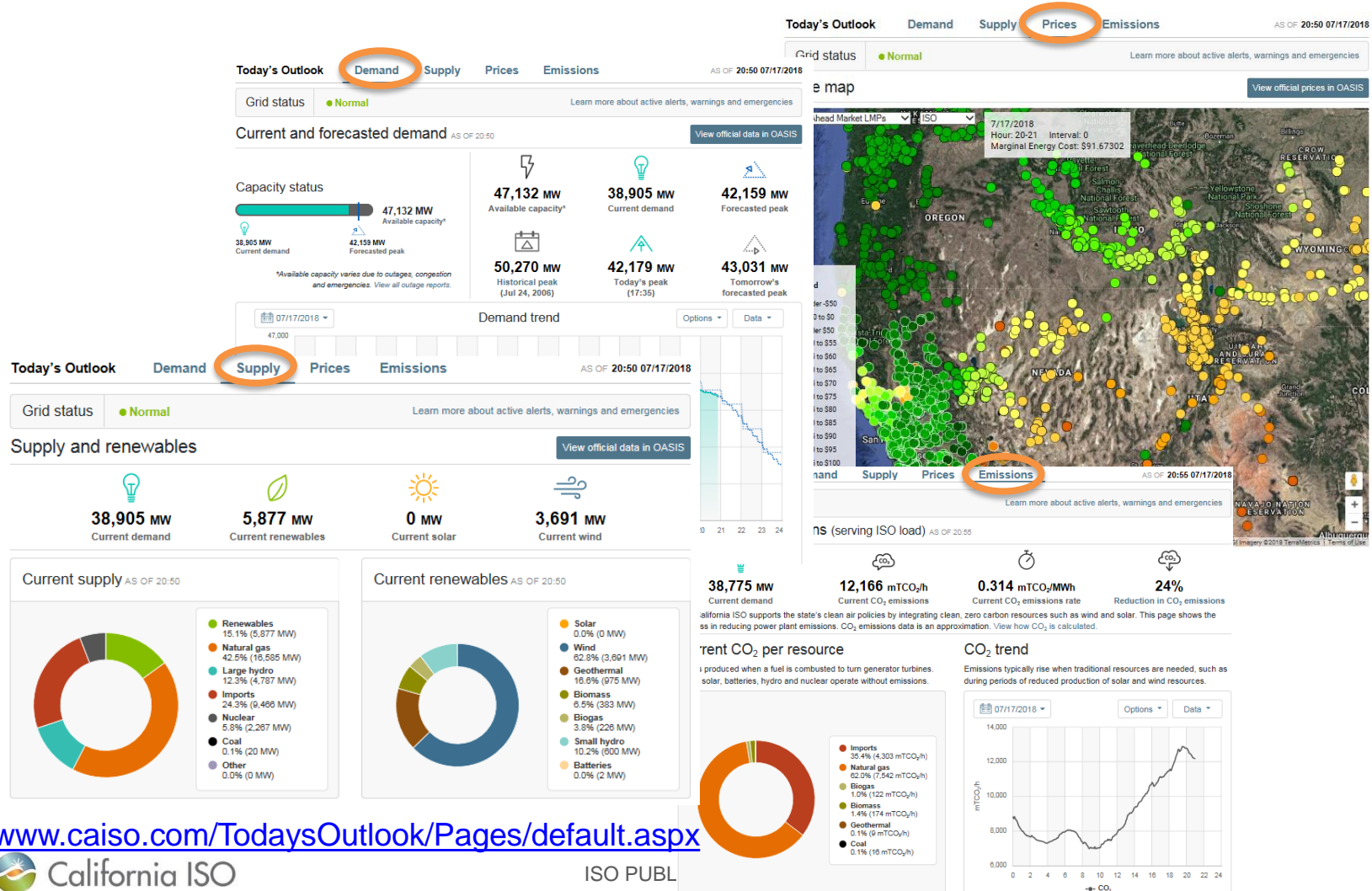
For RT Interval 02:55 - LMP for SP15=\$28.0404 NP15=\$28.86688 ZP26=\$28.0803

CONNECTED  
QUICK LINKS  
OASIS Home | System Operating Messages | LMP Price Contour Maps | Trading Hub Real-Time Prices | Historical ACE

<http://oasis.caiso.com/mrioasis/logon.do>



# Today's Outlook provides users with a broad view of supply and demand conditions impacting the ISO



<http://www.caiso.com/TodaysOutlook/Pages/default.aspx>

# Business Practice Manuals (BPMs) provide detailed rules, procedures and examples

- Market participants are encouraged to participate in our Proposed Revision Request (PRR) process



- Visit the ISO calendar to find monthly meeting dates to discuss PRRs

<http://www.caiso.com/rules/Pages/BusinessPracticeManuals/Default.aspx>

# Sign up for the Daily Briefing to get a once-a-day summary email of what is happening at the ISO

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  - Stakeholder Processes
  - Release Planning
  - Clean, Green Grid
  - Managing Oversupply
  - Regional Collaboration
  - Energy Imbalance Market
  - Reliability Coordinator
  - Regional Solutions
- Subscriptions and notifications**
  - Daily Briefing
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  - Bulletins Reports and Studies
  - Papers and Proposals
  - Regulatory Filings and Orders
- Planning
- Market & Operations
- Rules
- ISO En Español

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Home > [Stay Informed](#) > Subscriptions and notifications

## Subscriptions and notifications

We send out important notifications regarding ISO operations and markets, alerts and emergencies, and upcoming events.



### Daily Briefing

Keep up to date on meetings, procedure and system changes, stakeholder initiatives and other important information about ISO operations and markets with a daily email summarizing the day's **market notices**.



### News releases

Get the latest on the ISO, the decisions of our Board of Governors, and breaking developments in the energy industry.



### Energy Matters newsletter

Stay informed of developments in energy that will impact your community and business. Many changes are coming to California's energy landscape as the electricity grid evolves.



### Flex Alerts

A Flex Alert is a call for consumers to voluntarily conserve electricity when there is a predicted shortage of energy supply, especially if the grid operator needs to dip into reserves to cover demand. When consumers reduce electricity use at critical times, it can prevent more dire emergency measures, including possible power outages.

[Subscribe to any of the above](#)

Follow us

<http://www.caiso.com/dailybriefing/Pages/default.aspx>



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- View system conditions and pricing
- See market notices as they post
- Receive Flex Alerts
- Alerts, warnings and emergency notifications



#### Subscribe to the feeds you want

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- Stakeholder initiatives
- Alerts, warnings and emergency notifications



#### Follow us on Twitter

- Corporate
- Market notices
- Flex Alerts



#### Follow us on Facebook

- Corporate
- Flex Alert



#### Watch us on YouTube

- Informational videos
- Meeting clips
- Training

### Alerts, warnings and emergency notices

Find out when operating reserves or transmission capacity limitations threaten our ability to safely and reliably operate the grid. Receive notifications through our [app](#) or [RSS](#).

[Click here to access notices.](#)

### System operating messages

The ISO control room issues messages that describe current operational conditions on the grid and in the market. Access these notices on [OASIS](#) under Quick Links.

Check out our news webpage to find up-to-date information

## **Energy Matters Newsletter**

**Recent News  
Releases**

**Alerts, Warnings &  
Emergencies**

**Helpful Links**

**Summer Readiness and Flex  
Alerts**

## **Regional Energy Market**



**Strategic  
Planning**

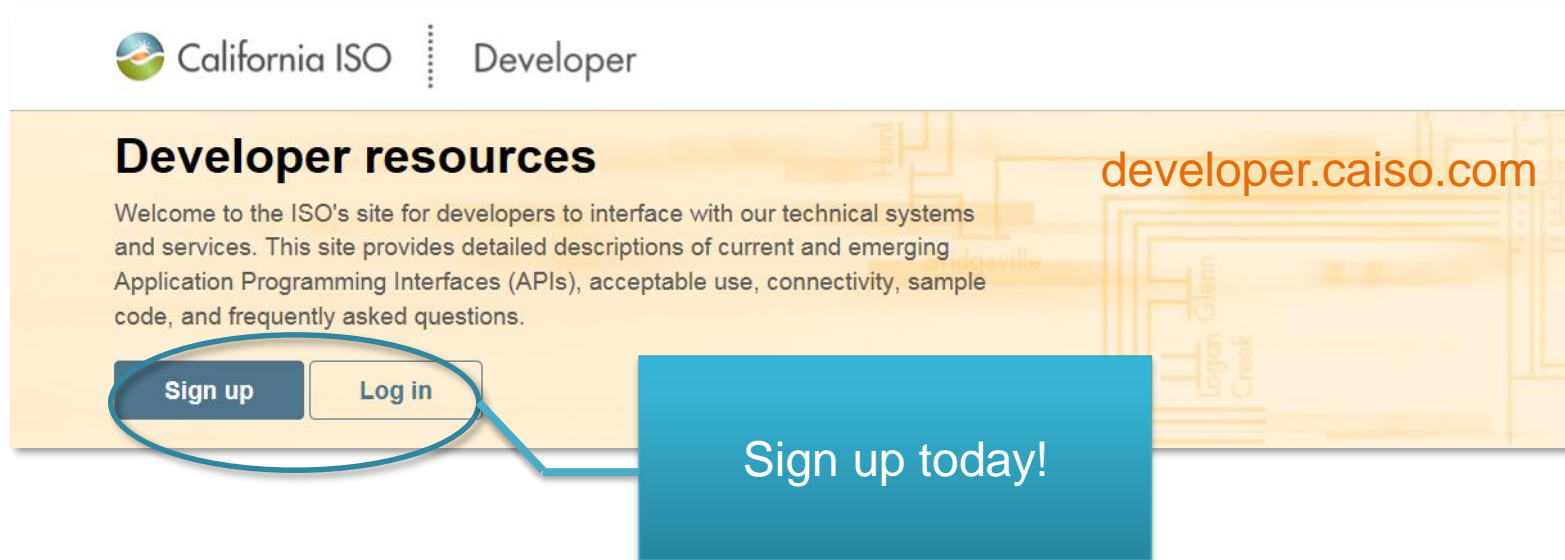
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- Media Hotline: 888-516-NEWS (6397)
- Email: [ISOMedia@caiso.com](mailto:ISOMedia@caiso.com)

# ISO has created a dedicated developer site to enhance customer service

- Comprehensive website for IT developers
  - consolidates the technical documentation needed to access non-public ISO systems



Follow this page to keep track of browsers supported for ISO applications:

<https://developerint.oa.caiso.com/pages/supported-browsers.aspx>



# Visit our Learning Center to find online resources and comprehensive training programs

<http://www.caiso.com/participate/Pages/LearningCenter/default.aspx>



ABOUT US PARTICIPATE STAY INFORMED PLANNING MARKET & OPERATIONS RULES ISO EN ESPAÑOL

Home > Participate > Learning center

## Learning center

The California ISO is committed to providing our customers with a broad menu of high-quality training courses on the ISO market functionality, as well as individual market applications. These courses are organized into learning tracks that are designed to be an industry resource for market participants and the general public to learn about electric grids and markets, and the ISO's role in the electricity system.

Video tour of the learning center

## Learning tracks

Click on a learning track to register for classes. Our courses are intended for market participants and the general public.

**Markets and operations**  
Learn about the day-ahead and real-time markets and operations that enable participants to engage the ISO.

**Western Energy Imbalance Market**  
Explore topics pertaining to the real-time energy imbalance market that enables participants to buy and sell energy when needed.

**Settlements and metering**  
Courses for settlements and billing functions. Timelines for meter data submission, payment of invoices, and the process for submitting disputes.

**Congestion revenue rights**  
Overview of the creation, allocation and auction of congestion revenue rights and associated processes.

**Reference**  
Resources designed to help users interact with the ISO, navigate our website, and request applications.

## Library

**Computer-based training**  
Quick access to the library of computer-based training courses for all learning tracks.

## Training calendar

### New modules

**Energy Storage and Distributed Energy Resources 3B**  
Presentation

**ADS UI Replacement Training Part 1**  
Presentation | Video

**Black Start Settlement**  
Guide

**Existing Day-Ahead Market Overview**  
Presentation

**Commitment Costs & Default Energy Bid Enhancements**  
Presentation | Video

If, after reading the course descriptions, you are unable to find a course that meets your organization's needs, the training and readiness group can customize a training curriculum to meet your needs. For customized training, email us at [CustomerReadiness@caiso.com](mailto:CustomerReadiness@caiso.com)

Visit our training calendar to sign up for training courses

## Markets and operations

ISO Orientation	View
Day-Ahead Overview	View
Real-Time Overview	View
Master File Process	View
Emergency Response and Abnormal Operations	View
Outages	View
Outage Management System (OMS) certificate and access to OMS needed	View
Automated Dispatch System (ADS)	View
Metering Overview	View
Interchange & e-Tagging ISO Market Awards	View

## Settlements and Metering

RC Customer Settlements	View
Energy Settlements Validation	View
Settlements Validation Practice	View
Commitment Costs	View
Settlements foundational concepts (EIM)	View
Metering overview	View
Settlements process	View

Check out our CBTs!



# The following links were referenced in the presentation

Slide #	Topic	Link
4, 66	ISO Learning Center	<a href="http://www.caiso.com/participate/Pages/LearningCenter/default.aspx">http://www.caiso.com/participate/Pages/LearningCenter/default.aspx</a>
5	ISO/RTO Council	<a href="https://isorto.org/">https://isorto.org/</a>
7, 10	FERC, NERC and WECC	<a href="http://www.ferc.com">www.ferc.com</a> , <a href="http://www.nerc.com">www.nerc.com</a> , <a href="http://www.wecc.biz">www.wecc.biz</a>
9	RC West	<a href="http://www.caiso.com/informed/Pages/RCWest/Default.aspx">http://www.caiso.com/informed/Pages/RCWest/Default.aspx</a>
11	Department of Market Monitoring Reports	<a href="http://www.caiso.com/market/Pages/ReportsBulletins/Default.aspx">http://www.caiso.com/market/Pages/ReportsBulletins/Default.aspx</a>
12	CA Air Resources Board CA Energy Commission Water Resources Control Board CA Public Utilities Commission Renewable Portfolio Standard	<a href="http://www.ca.gov/Agencies/Air-Resources-Board">http://www.ca.gov/Agencies/Air-Resources-Board</a> <a href="http://www.energy.ca.gov/">http://www.energy.ca.gov/</a> <a href="https://www.waterboards.ca.gov/">https://www.waterboards.ca.gov/</a> <a href="https://www.waterboards.ca.gov/">https://www.waterboards.ca.gov/</a> <a href="http://www.energy.ca.gov/portfolio/">http://www.energy.ca.gov/portfolio/</a>
13	Stakeholder Initiatives	<a href="https://stakeholdercenter.caiso.com/StakeholderInitiatives">https://stakeholdercenter.caiso.com/StakeholderInitiatives</a>
14	ISO Tariff Business Practice Manuals Operating Procedures	<a href="http://www.caiso.com/rules/Pages/Regulatory/Default.aspx">http://www.caiso.com/rules/Pages/Regulatory/Default.aspx</a> <a href="http://www.caiso.com/rules/Pages/BusinessPracticeManuals/Default.aspx">http://www.caiso.com/rules/Pages/BusinessPracticeManuals/Default.aspx</a> <a href="http://www.caiso.com/rules/Pages/OperatingProcedures/Default.aspx">http://www.caiso.com/rules/Pages/OperatingProcedures/Default.aspx</a>
16-20	Release Planning	<a href="http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx">http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx</a>

# The following links were referenced in the presentation

Slide #	Topic	Link
21-40	Markets BPM for Market Operations Market Processes	<a href="http://www.caiso.com/market/Pages/MarketProcesses.aspx">http://www.caiso.com/market/Pages/MarketProcesses.aspx</a> <a href="https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Market%20Operations">https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Market%20Operations</a> <a href="http://www.caiso.com/market/Pages/MarketProcesses.aspx">http://www.caiso.com/market/Pages/MarketProcesses.aspx</a>
41-43	Reliability Requirements	<a href="http://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx">http://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx</a>
44	Ancillary Services Congestion Revenue Rights Convergence Bidding	<a href="http://www.caiso.com/participate/Pages/MarketProducts/Default.aspx">http://www.caiso.com/participate/Pages/MarketProducts/Default.aspx</a>
45-46	SC Certification	<a href="http://www.caiso.com/participate/Pages/BecomeSchedulingCoordinator/Default.aspx">http://www.caiso.com/participate/Pages/BecomeSchedulingCoordinator/Default.aspx</a>
47-48	Energy Imbalance Market	<a href="https://www.westerneim.com/pages/default.aspx">https://www.westerneim.com/pages/default.aspx</a>
49-54	Settlements Metering and Telemetry BPM for Settlements & Billing Payment Calendar Charge Code Matrix Grid Management Charge	<a href="http://www.caiso.com/market/Pages/Settlements/Default.aspx">http://www.caiso.com/market/Pages/Settlements/Default.aspx</a> <a href="http://www.caiso.com/market/Pages/MeteringTelemetry/Default.aspx">http://www.caiso.com/market/Pages/MeteringTelemetry/Default.aspx</a> <a href="http://www.caiso.com/Documents/ISOMarketChargeCodesMatrix.xls">http://www.caiso.com/Documents/ISOMarketChargeCodesMatrix.xls</a> <a href="http://www.caiso.com/informed/Pages/StakeholderProcesses/Budget-GridManagementCharge.aspx">http://www.caiso.com/informed/Pages/StakeholderProcesses/Budget-GridManagementCharge.aspx</a>



# Find helpful links to the Transmission Planning Process and Generator Interconnection Process below

## **Transmission Planning Process**

Business Practice Manual for Transmission Planning Process

<http://www.caiso.com/rules/Pages/BusinessPracticeManuals/Default.aspx>

Transmission planning page

<http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>

## **Generator Interconnection Process**

Business Practice Manual for Generator Interconnection Deliverability and Allocation Procedures

<http://www.caiso.com/rules/Pages/BusinessPracticeManuals/Default.aspx>

ISO generator interconnection web pages

<http://www.caiso.com/participate/Pages/ResourceInterconnectionGuide/default.aspx>

Resource Interconnection Fair presentations

<http://www.caiso.com/informed/Pages/MeetingsEvents/PublicForums/Default.aspx>

Questions: [IRInfo@caiso.com](mailto:IRInfo@caiso.com)

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For more detailed information on anything presented, please visit our website at:  
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Questions or suggestions for future trainings? Email us at:  
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For general ISO and energy questions, please submit questions to the ISO Contact Us page at  
<http://www.caiso.com/Pages/ContactUs.aspx>