

Winter Readiness 2025 for Scheduling Coordinators (SCs)



Today's Trainer

Dottie Vance
Customer Readiness
Trainer

Housekeeping



REMAIN MUTED

Keep yourself muted to
minimize background noise



ASKING QUESTIONS

Unmute to ask verbal
questions or write
in the chat pod

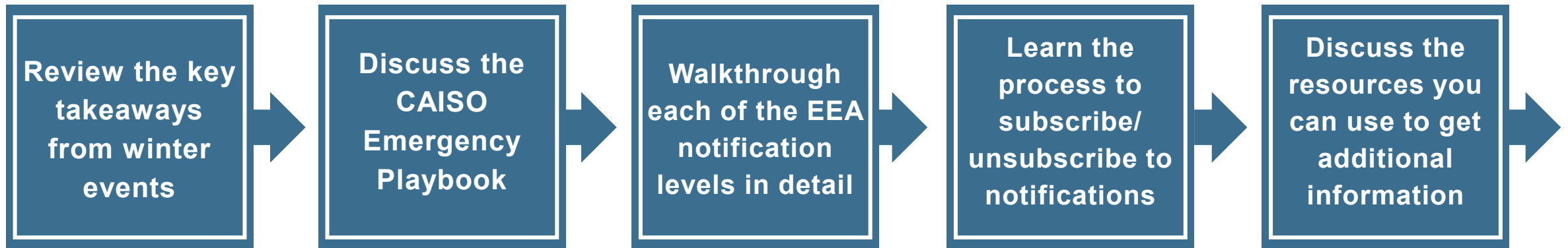


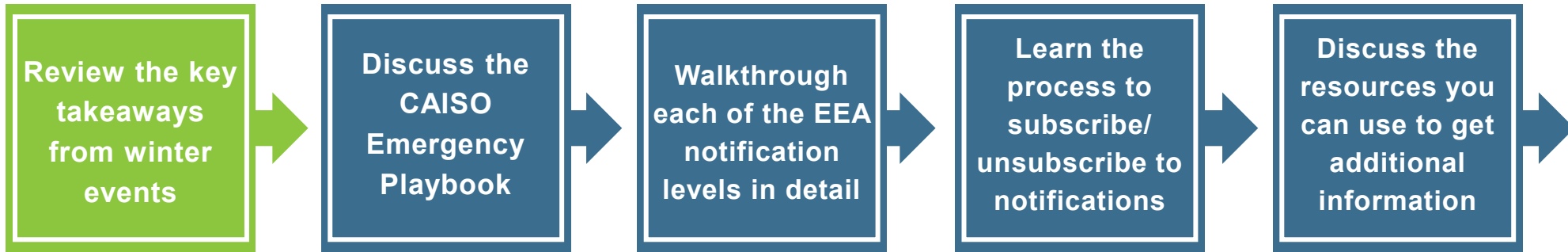
RAISING HAND

Raise your hand using WebEx
interactivity tools

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Agenda





WINTER EVENTS

Key Takeaways from January 2024 Winter Event

An **extreme cold weather event** gripped the Pacific Northwest and northern Rocky Mountain states over the Martin Luther King Jr. Day weekend, January 13 to 15, 2024 (*record low temps*).

NERC

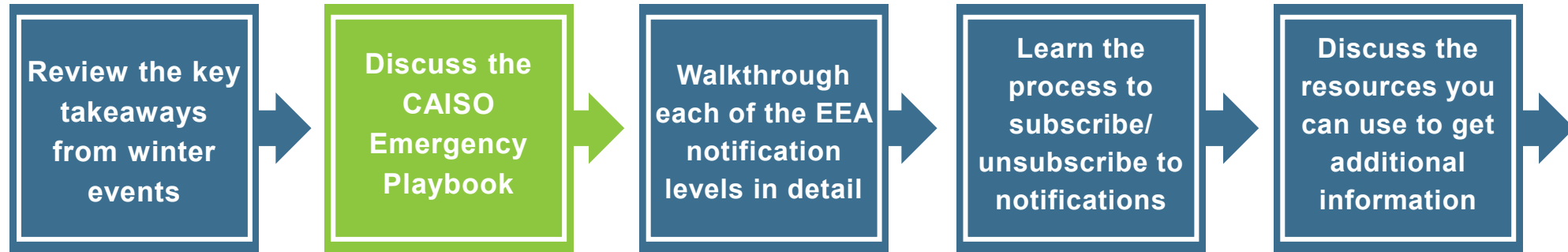
Communication

- Recommended to evaluate energy adequacy and for load-serving entities to review their demand projections to ensure the highest level of reliability.

CAISO

Communication

- [Notice](#) to all customers.
- Emails sent to evaluate potential impacts on their resources
- Opt-in reminders to WEIM entities for Assistance Energy Transfer (AET) request (*if needed*)
- Energy Emergency Alerts (EEAs)



EMERGENCY PLAYBOOK REVIEW

Emergency Playbook: 4 – 7 days out

Operational Assessments

- **Monitoring** demand forecast 7 days out
- **Assessing** resource adequacy, system conditions, weather, and other potential grid impacts,
- **Planning** for any next possible steps

Operational Coordination with External Entities

Pending actual/potential system conditions, coordination with:

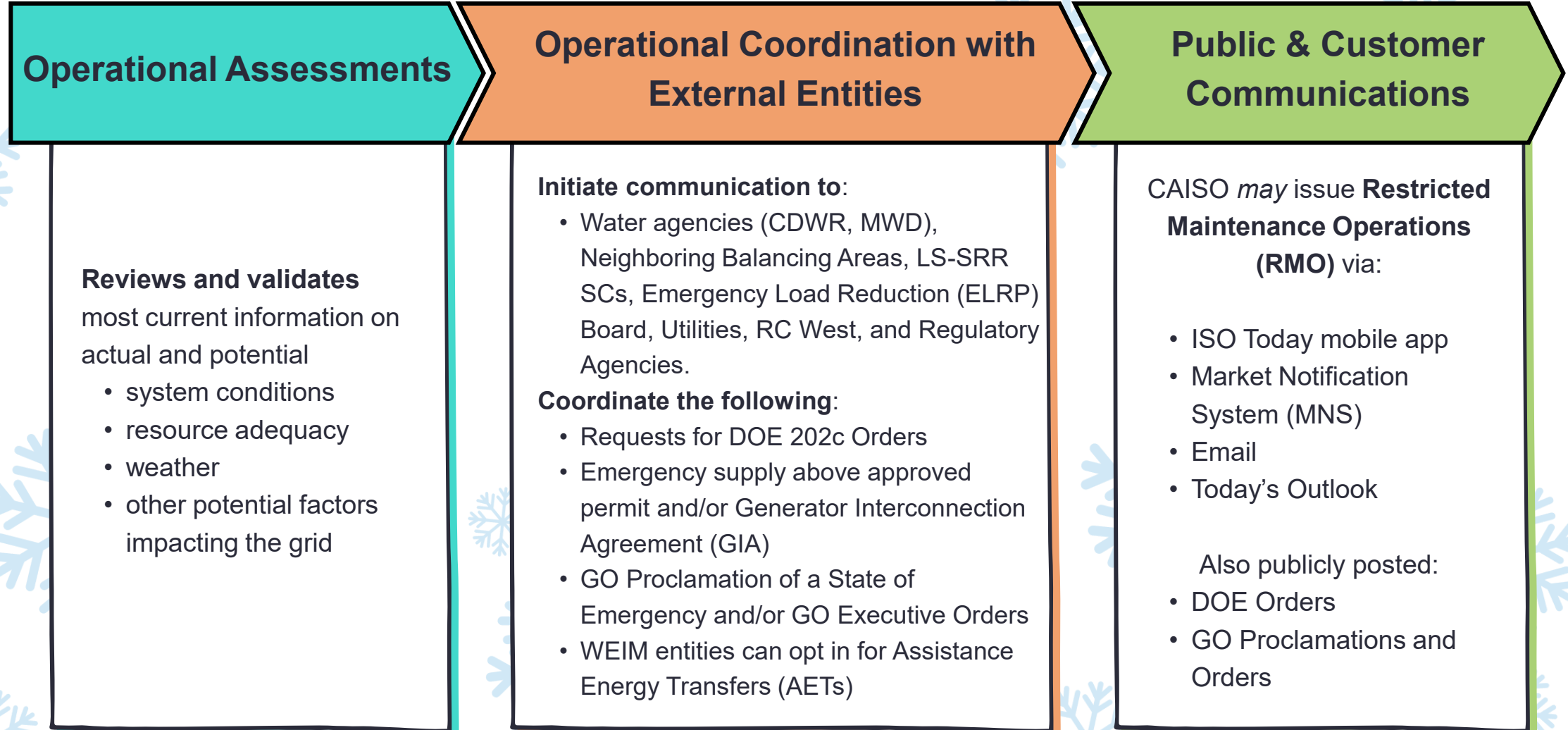
- Governor's Office (GO)
- Heads up to Long-start strategic reserve resource scheduling coordinators (LS-SRR SCs)
- Water agencies
- Consider need for Department of Energy (DOE) 202c orders

Public & Customer Communications

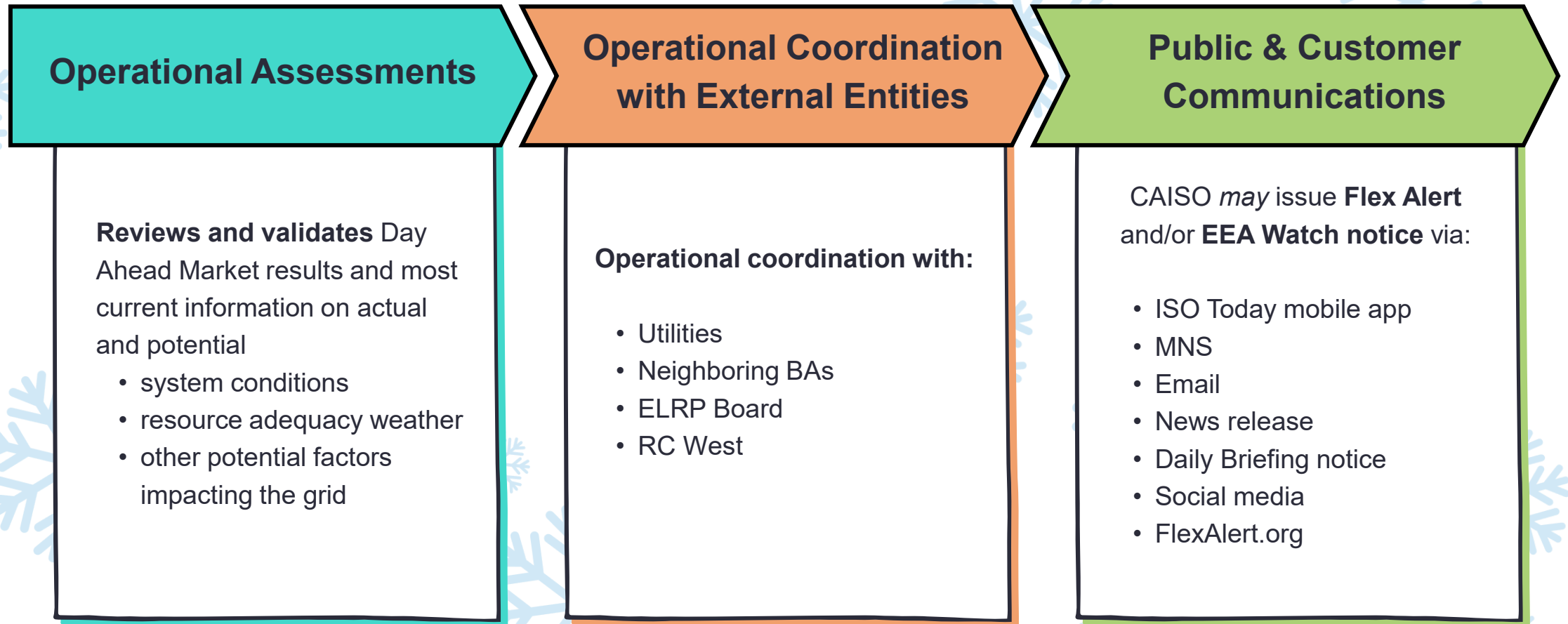
CAISO *may* issue an **extreme temperature heads** up via:

- CAISO website
- CAISO social media

Emergency Playbook: 1-4 Days Out

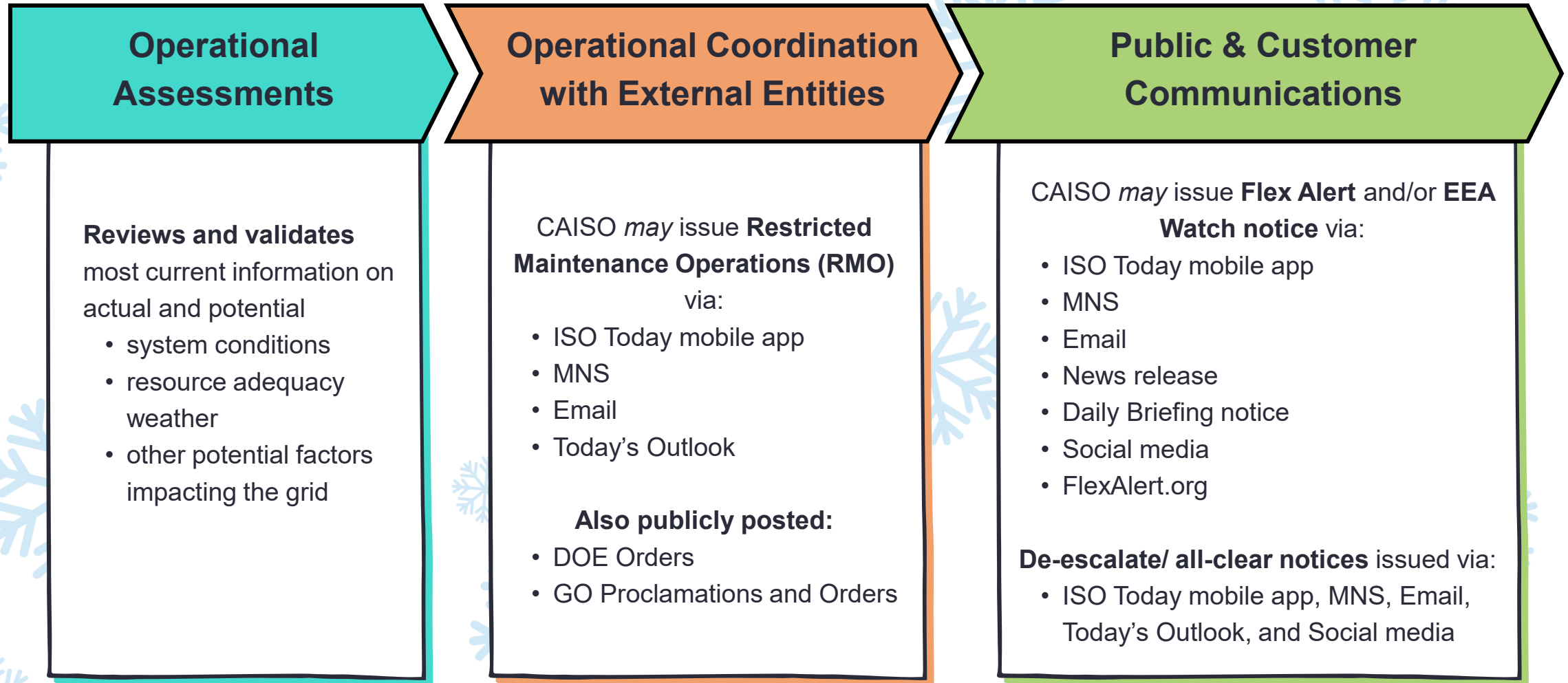


Emergency Playbook: 1 Day Out



Emergency Playbook: Operating Day

Link - <https://www.caiso.com/Documents/extreme-weather-event-process-and-communications.pdf>



What Questions Do You Have?



Unmute yourself

or



Raise your hand



ENERGY EMERGENCY ALERTS (EEA) OVERVIEW

Energy Emergency Alert (EAA) Levels

Emergency Alert Levels
Flex Alert
Restricted Maintenance Operations
Transmission Emergency
EEA Watch
EEA 1
EEA 2
EEA 3 – (Preparing for Potential Rotating Outages)*
EEA 3 – Firm Load Interruption*

Emergency Notification Levels

Please note: If an SC knows that their resource will have a difficult time starting up, please communicate with the ISO as soon as possible (*e.g., starting in advance to the event*).

Notifications Levels	BA What is happening?	What's Needed?	By When?
Flex Alert (<i>not just for summer</i>)	Potential energy shortages or gas curtailments, ongoing grid issue (fire, natural disaster), variable or uncertain temperature forecast, cloud cover, etc.	Public awareness to reduce the demand for energy by voluntary means	Ideally issued in advance – day ahead
Restricted Maintenance Operations	Actual or potential impacts to balancing and/or transmission operations	Reschedule planned work to keep equipment and resources in service if outages could threaten grid reliability	Give advanced notice (1 day+) if possible
Transmission Emergency	Could be system wide or could be local transmission limitation DR/interruptible/non-firm load dispatched-off	Load management procedures may be in effect in impacted area Additional bids, incremental dispatch, emergency assistance, evaluate transmission limitations	Issued in real time – current/next hour(s)

Energy Emergency Alert Notification Levels

NERC EEA Levels	BA What is happening?	RC Confirm/ Translate	What's Needed?	By When?
EEA Watch	<u>Day ahead</u> analysis is forecasting one or more hours energy deficient	All available generation projected to be in use	Additional bids, incremental dispatch	Issued in advance – day ahead by 1500
EEA 1	<u>Real time</u> analysis is forecasting one or more hours energy deficient	All available generation in or projected to be in use	Be prepared for dispatch of DR resources	Issued in real time, ideally hours ahead
EEA 2	The BA is no longer able to provide its expected energy requirements and is energy deficient	Load management procedures in effect	Additional bids, incremental dispatch, incrementally reduce exports, emergency assistance, evaluate transmission limitations	Issued in real time – current/ next hour(s)

Energy Emergency Alert Notification Levels (cont.)

NERC EEA Levels	BA What is happening?	RC Confirm/ Translate	What's Needed?	By When?
EEA 3 (Prepare for Potential Rotating Outages)	Counting armed firm load as non-spin contingency reserves	BA unable to maintain CR, firm load interruption is imminent	Emergency assistance, evaluate transmission limitations	Issued in real time - current/ next hour(s)
EEA 3 – Firm Load Interruption (Ordering Rotating Outages)	Unable to maintain CR, manual load shedding is starting/ in progress	Unable to maintain CR, firm load interruption is in progress	Receive firm load shed operating instructions (rotating outages) via blast call.	Issued in real time – “w/ in 10 minutes” current/ next hour(s)

Energy Emergency Alert Notification Levels (cont.)

How do EEAs levels end?	Can there be several EEAs?
<p>When an EEA is issued, that EEA level stays in effect until it is either:</p> <ul style="list-style-type: none">• Cancelled (<i>manual action by CAISO operator</i>) or• Terminated (<i>when the time for the EEA ends</i>) <p>EEA 0 - Termination</p> <ul style="list-style-type: none">• When the energy deficient BA can meet its load and operating Reserve requirements, it will request to terminate the EEA	<p>Yes! You can have more than one EEA in effect at any given time.</p> <p><u>Please note exception:</u> Only one EEA Watch should be in effect at any time</p>

Extreme Cold Weather Event Scenario Overview

7 day outlook indicating record low temperatures across the Western U.S.

CAISO BA Peak load forecast is 50,000 MW

CAISO RA capacity is below forecast load

Rest of WECC* reporting potential record high loads

No major transmission or generation outages

***Western Electricity Coordinating Council (WECC)**

D+7 through D+2 processes

CAISO BA actions include but not limited to the following:



EXTERNAL COMMUNICATIONS

Issue a “Extreme Weather Bulletin” [news release](#)



RESOURCES

Display a [7 day outlook graph](#) on website with load forecast & resource adequacy (RA) capacity trends



ISSUE RMO

Issue a Restricted Maintenance Operations (RMO) notice



EXTERNAL COORDINATION

Coordinate with all California water agencies and other BAs re: their forecasted conditions

D +1 Actions

CAISO BA actions include but not limited to the following:



FLEX ALERT

Notification issued before or after day-ahead market (DAM)



ISSUE AN RMO

If this hasn't already happened, issue a Restricted Maintenance Operations (RMO) notice



EEA WATCH

If market results are unable to meet DA forecasted load, an EEA watch is issued per procedure by 1500

- Request RC West issue EEA Watch for next day



EXTERNAL COORDINATION

Send messaging regarding infeasibilities and possible export & wheel curtailments and communicate with Emergency Load Reduction Board (ELRP) Board

Day of Process – EEA 1

CAISO BA actions include but not limited to the following:



EEA 1 NOTICE

When system conditions require CAISO BA issues EEA 1 notice.

- Request RC West issue EEA 1 for CAISO BA



EXTERNAL COMMUNICATIONS

Continuous communication with CAISO LSEs and neighboring BAs of conditions including forecasted deficiencies

- If there is potential for counting firm load as Contingency Reserves or firm load removal, System Status Update emails will include prorata share estimates by hour.

EEA 2

CAISO BA actions include but not limited to the following:



DISPATCH OF:

- All unloaded generation above RA designation
- All available remaining interruptible load is called upon and any pump load that can be dropped is called on
- Excess contingency reserves while still maintaining required contingency reserves
- All available energy from load following MSS resources



EXTERNAL COMMUNICATIONS

Allows CAISO BA to arrange for any emergency assistance

EEA 3 (Prepare for Potential Rotating Outages)

CAISO BA actions include but not limited to the following:



EEA 3 - PREPARE FOR POSSIBLE ROTATING OUTAGES

Notice issued by Operations, posted on social media, and news releases will indicate “EEA 3 – Prepare for Possible Rotating Outages”



EXTERNAL COORDINATION FROM CAISO BAA

CAISO BA will contact the UDC/MSS entities capable of interrupting load (rotating outages) in 10 minutes

- Could be needed if a contingency occurs to help keep the grid stable



PLEASE REVIEW IMPORTANT REMINDERS

This is not an instruction to interrupt firm load

CAISO will issue Operating Instructions for firm load removal –
do not act based on System Status Update emails.

EEA 3 – Firm Load Interruption (Ordering Rotating Outages)

CAISO BA actions include but not limited to the following:



EEA 3 – ORDERING ROTATING OUTAGES

The notice issued by Operations, on social media and news releases will be titled “EEA 3 – Ordering Rotating Outages”



BLAST CALL OPERATING INSTRUCTIONS

CAISO BA no longer able to meet demand and will initiate firm load shed operating instructions (rotating outages) **via blast call**.

- Will still require load armed as contingency reserve to be available for contingency

Shed Values			
CAISO			
	Zone	Fixed Pro-Rata Share	MW Curtailed
<input checked="" type="checkbox"/>	Pacific Gas and Electric	46.38%	232.06
<input checked="" type="checkbox"/>	Southern California Edison	39.09%	195.59
<input checked="" type="checkbox"/>	San Diego Gas & Electric	8.50%	42.52
<input checked="" type="checkbox"/>	NCPA	2.30%	11.51
<input checked="" type="checkbox"/>	Riverside	1.22%	6.11
<input checked="" type="checkbox"/>	Anaheim	1.00%	5.01
<input checked="" type="checkbox"/>	Pasadena	0.51%	2.55
<input checked="" type="checkbox"/>	Vernon	0.36%	1.80
<input checked="" type="checkbox"/>	Valley Electric	0.30%	1.50
<input checked="" type="checkbox"/>	Azusa	0.13%	0.66
<input checked="" type="checkbox"/>	Banning	0.10%	0.50
<input checked="" type="checkbox"/>	Corona	0.04%	0.20

Utilities communicate with customers and rotate load blocks hourly and/or in accordance with your respective emergency plans

Restoration – Emergency Downgrade Return to Normal

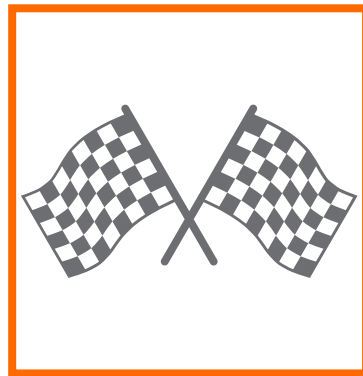
- ✓ If firm load shed was required, CAISO BA will restore firm load as soon as system conditions allow
- ✓ MW restoration values will be determined by Shift Manager prorata



EEA 3 TO EEA 2

Operating Instructions to restore firm load

Operating Instructions to no longer “arm” firm load as Contingency Reserves



EEA 2 TO EEA 1

Operating Instructions/ dispatch ended and all available energy from UDC/ MSS



EEA 1 TO EEA WATCH

No concerns serving load and meeting CR requirements



EEA 0

Continued updates to RC until event over and CAISO BA returned to EEA 0 with all Emergency notices cancelled

What Questions Do You Have?

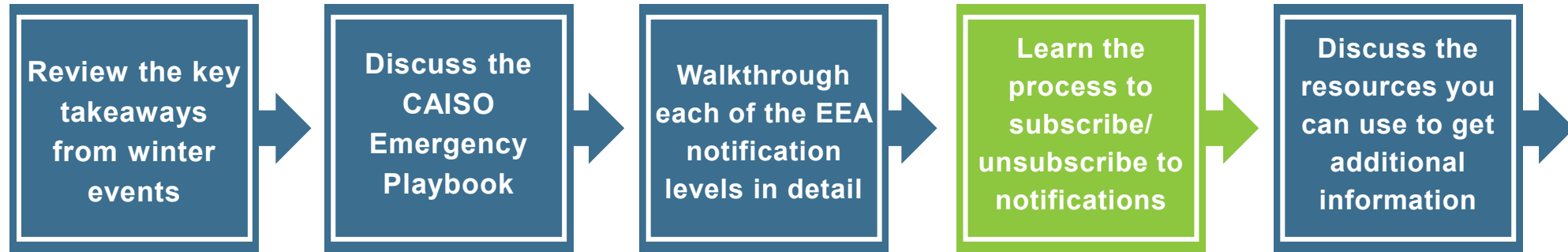


Unmute yourself

or




Raise your hand



SUBSCRIBING TO EMERGENCY NOTIFICATIONS

ISO Communication Methods

The **ISO Communications Method** document houses information on all of the ways that we send out emergency notification information



ISO communication methods

The ISO offers various communications methods to keep stakeholders and customers informed of grid events. The following communication methods are available on a subscription basis or publicly available.

- **Daily Briefing** is a summary of the day's notices; [subscribe here](#)
- **Twitter**; follow the ISO via the following handles
 - @ISONotices all ISO notices
 - @California_ISO primary channel
 - @FlexAlert Conservation tips and Flex Alerts when a grid warning or emergency is in effect
- **MNS** – Market notification system; system status update email sent at 8:00 a.m., 10:00 a.m., 12:00 p.m., and then hourly until warning has ended
 - Publicly via [QASIS](#), click "System Status Update Email"
 - By [registering for MNS service](#)
 - In CIDI tool, upper right corner of the "My Account" page
 - In the [Market Participant Portal](#) (residents only)
- **GMS** – Grid messaging system. Messages sent to all balancing authorities.
- **Customer service emails**, primary contact for each scheduling coordinator, transmission operators, public information officers, and Emergency Services as provided to the balancing authority.
- **Emergency notifications** (formerly A/V). If you want to receive emergency notifications, you must be added to the distribution list. Emergency notifications are auto-published.
- **System status update e-mails**. This is an operations distribution list for operational staff. To be added to this list, you must request to be added.

Day-ahead Warnings are sent through

- Notices (Daily Briefing)
- GMS
- Customer service e-mail to all primary contact persons
- System status update e-mail sent at 3:00 p.m.

Energy Emergency Alert (EEA) Watch are sent through

- Twitter
- MNS, EN e-mail, Today's Outlook & ISO Today mobile app
- GMS
- System status update e-mail sent at 8:00 a.m., 10:00 a.m., 12:00 p.m., and then hourly until warning has ended

EEA 1 notifications are sent through

- Notices (Daily Briefing)
- MNS, EN e-mail, Today's Outlook & ISO Today mobile app
- Twitter
- GMS
- System status update e-mail hourly from time EEA 1 is called until event has ended

EEA 2 notifications are sent through

- Notices (Daily Briefing)
- MNS, EN e-mail, Today's Outlook & ISO Today mobile app
- Twitter
- GMS
- System status update e-mail hourly from issuing EEA 2 until event has ended

EEA 3 notifications (preparing for rotating outages and or ordering rotating outages) are sent through

- Notices (Daily Briefing)
- MNS, EN e-mail, Today's Outlook & ISO Today mobile app
- Twitter
- GMS
- System status update e-mail hourly from issuing EEA 2 until event has ended
- Load serving entity blast call – a single call to all load serving entities

Cancellation or downgrading of events will have the same communication method as the original issuance.

	Twitter	GMS	Emergency notification, MNS, EN e-mail, ISO Today mobile app	Notice	Customer service e-mail	System status update e-mail	Blast call
Restricted Maintenance Operations		X	X				
Flex Alert (day ahead)	X		X	X			
Flex Alert (day of)	X		X	X			
EEA Watch (day of)	X	X	X	X		X	
EEA 1	X	X	X	X		X	
EEA 2	X	X	X	X		X	
EEA 3	X	X	X	X		X	X
All clear	X	X	X	X	X		

California Independent System Operator
www.caiso.com | 250 Outcropping Way, Folsom, CA 95630 | 916.351.4400
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CS/OG/05/2023

Notification Methods

To locate: CAISO.com > [Subscriptions button \(bottom of webpage\)](#)

	Twitter	GMS	Emergency notification, MNS, Today's Outlook, ISO Today mobile app	Notice	Customer service email	System status update email	Blast call
Restricted Maintenance Operations		X	X				
Flex Alert (day ahead)	X		X	X			
Flex Alert (day of)	X		X	X			
EEA Watch (day of)	X	X	X	X		X	
EEA 1	X	X	X	X		X	
EEA 2	X	X	X	X		X	
EEA 3	X	X	X	X		X	X
All clear	X	X	X	X	X		

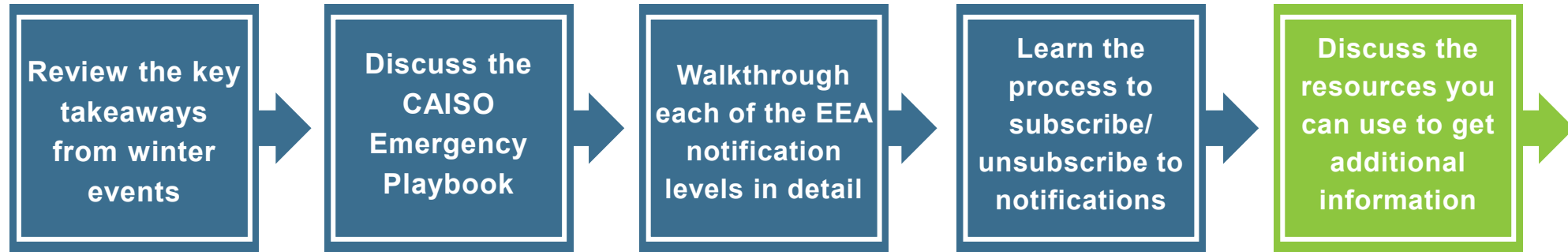
<http://www.caiso.com/Documents/ISOCommunicationMethods.pdf>

Subscribing and Unsubscribing

- If you **would like to be added** to the EA notification distribution list:
 - Self subscription is available! Check it out here:
<https://www.caiso.com/subscriptions/subscription-emergency>
- If you **would like to be removed** from the EA notification distribution list:
 - At the bottom of each notification level, there is an opt out link users can select.



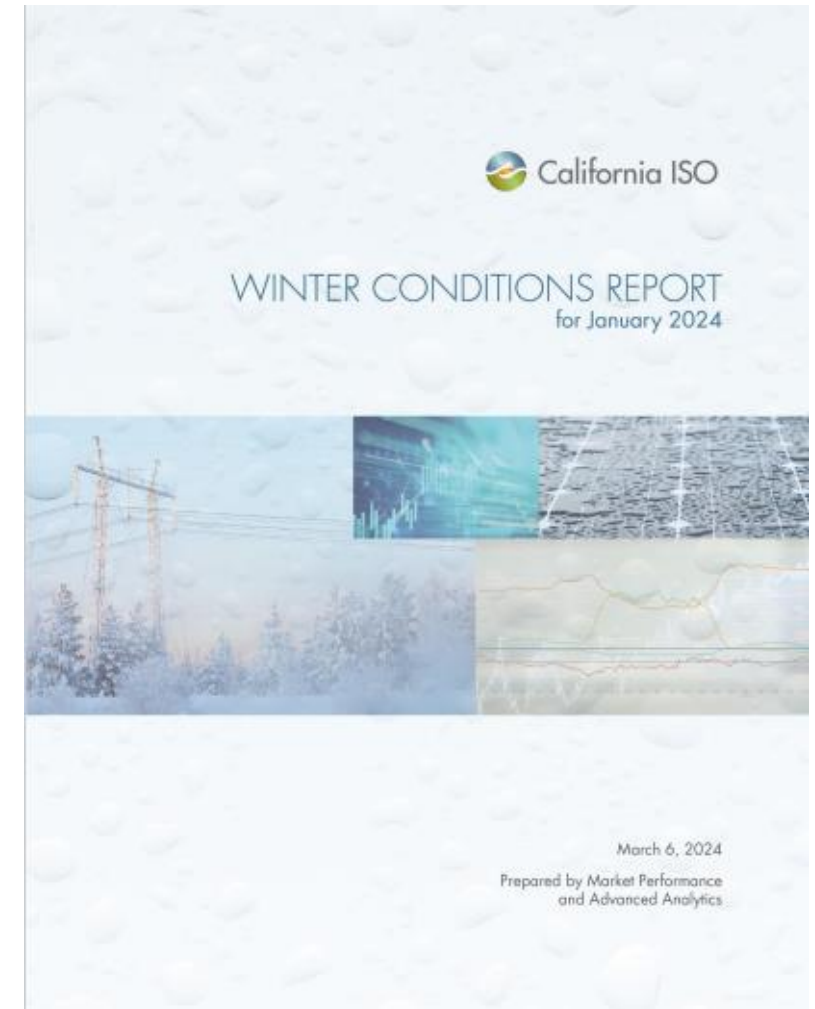
Make sure you check your junk/trash folders in case the notification emails ends up in those folders!



ADDITIONAL RESOURCES

Winter Resources

- **Preparing for winter takes on greater importance (*Energy Matters Blog*)**
 - Located on the caiso.com website [here](#)
- **Energy Matters blog**
 - Located on the caiso.com website [here](#)
- **Market performance and planning forum**
 - Quarterly forum to discuss issues/dialogue on release planning, implementation and new market enhancements [here](#)



Additional Resources – Operational Procedures

NERC Standards (<https://www.nerc.com/pa/Stand/Pages/ReliabilityStandards.aspx>)

- [COM-002-4 - Operating Personnel Communications Protocol](#)
- [EOP-011-4 – Emergency Operations](#)
- [EOP-012-2 – Extreme Cold Weather Preparedness and Operations](#)
- [TOP-002-5 – Operations Planning](#)

RC West Procedures (<https://www.caiso.com/rules/Pages/OperatingProcedures/Default.aspx>)

- [RC0410 – System Emergencies](#)

CAISO BA Procedures (<https://www.caiso.com/rules/Pages/OperatingProcedures/Default.aspx>)

- [4420 – System Emergency](#)
- [4410 – Emergency Assistance](#)
- [4510 – Load Management](#)
- [4510A – Load Shed Calculation Guideline](#)
- [4100 – System Operations Emergency Plan](#)
- [4120 – Gas Transmission Pipeline System Limitations or Outages](#)



Additional Resources

Resource operations readiness – performance expectations

[Training](#) | [Video](#)

Resource operations readiness – battery performance expectations

[Training](#) | [Video](#)

Resource operations readiness – managing interconnections

[Training](#) | [Video](#)

Summer Readiness 2025 Training

[Training](#) | [Video](#)

A photograph of a classroom with a blue overlay. The room features a large whiteboard at the front, a teacher's desk with a projector, and rows of student desks and chairs. Exit signs are visible above the doors on either side of the front wall.

Wrap Up

Summary, Q&A

Wrap-up





Tell us How we Did

Takes 3-5 minutes to complete

Helps us improve future training

Link: <https://www.surveymonkey.com/r/caisocoursesurvey>

Instructor Dottie
Training course Other: Winter Readiness

Thank you for your participation!



For clarification on anything presented in this training, send an email to:

CustomerReadiness@caiso.com

For other questions or stakeholder specific questions or concerns use one of these methods:

- Submit a [CIDI ticket](#)
- Contact your Scheduling Coordinator
- Use the “[Contact us](#)” page on [caiso.com](https://www.caiso.com) to submit questions