



# Assembly Concurrent Resolution 188 Update

Public Stakeholder Meeting  
01/20/2023

# Reminders

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO permission.
- If you need technical assistance during the meeting, please send a chat to the event producer.

# Participating during today's call

- Please raise your hand using the “raise hand” feature in WebEx, or submit your question through the chat.
- Please state your name and organization when asking your question.

# Agenda

Topic	Presenter
Meeting logistics and introductions	Isabella Nicosia
Welcome <ul style="list-style-type: none"><li>Recap of ACR 188 requirements</li></ul>	Stacey Crowley
Brief synopsis of efforts to this point	Stacey Crowley
National Renewable Energy Laboratory (NREL) introductions & process	David Hurlbut
Review individual sections of the ACR 188 report	CAISO & NREL
Questions	CAISO & NREL
Timeline & next steps	CAISO & NREL
Contact & webpage information	Stacey Crowley

# ACR 188 overview - [Assembly Concurrent Resolution 188](#)

- Resolution requires ISO, in consultation with the CA balancing authorities (BAs), to produce a report identifying and summarizing:
  - Recent relevant studies on the impacts of expanded regional cooperation on California
  - Key issues to most effectively advance the state’s energy and environmental goals
  - Impact of regionalization on transmission costs and reliability for California ratepayers
  - Relevant updates to specified transmission development and resource diversity estimates (SB 100)
  - Updates to specified transmission development and resource diversity estimates, and discusses regional transmission organizations in Colorado, Nevada, and other regional states
  - Collaboration between states on energy policies to maximize consumer savings while respecting state policy autonomy, and engagement between neighboring states on the future of regional transmission organizations in the west
  - Report to be delivered to the CA Legislature on February 28, 2023
- ISO has engaged NREL to author the report on relevant studies

# ACR 188: Steps taken thus far

- August 2022
  - California legislature passes ACR 188 requesting the ISO to summarize existing reports on the impacts of expanded regional cooperation
  - ISO forms workgroup with BAs
- September 2022
  - ISO works with BAs to identify NREL as independent third party to conduct synthesis of reports
- October 2022
  - NREL and workgroup develops draft list of studies and approach for summarizing reports
  - ISO holds public stakeholder call to discuss approach for developing the report

## ACR 188: Steps taken thus far (cont'd)

- November 2022
  - NREL summarizes the studies and develops their findings, begins drafting the report
- December 2022
  - ISO and BAs review draft report
- January 2023
  - Draft released for public feedback
  - ISO, BAs, and NREL hold public stakeholder call

# California balancing authorities who have been partnering with us on the report

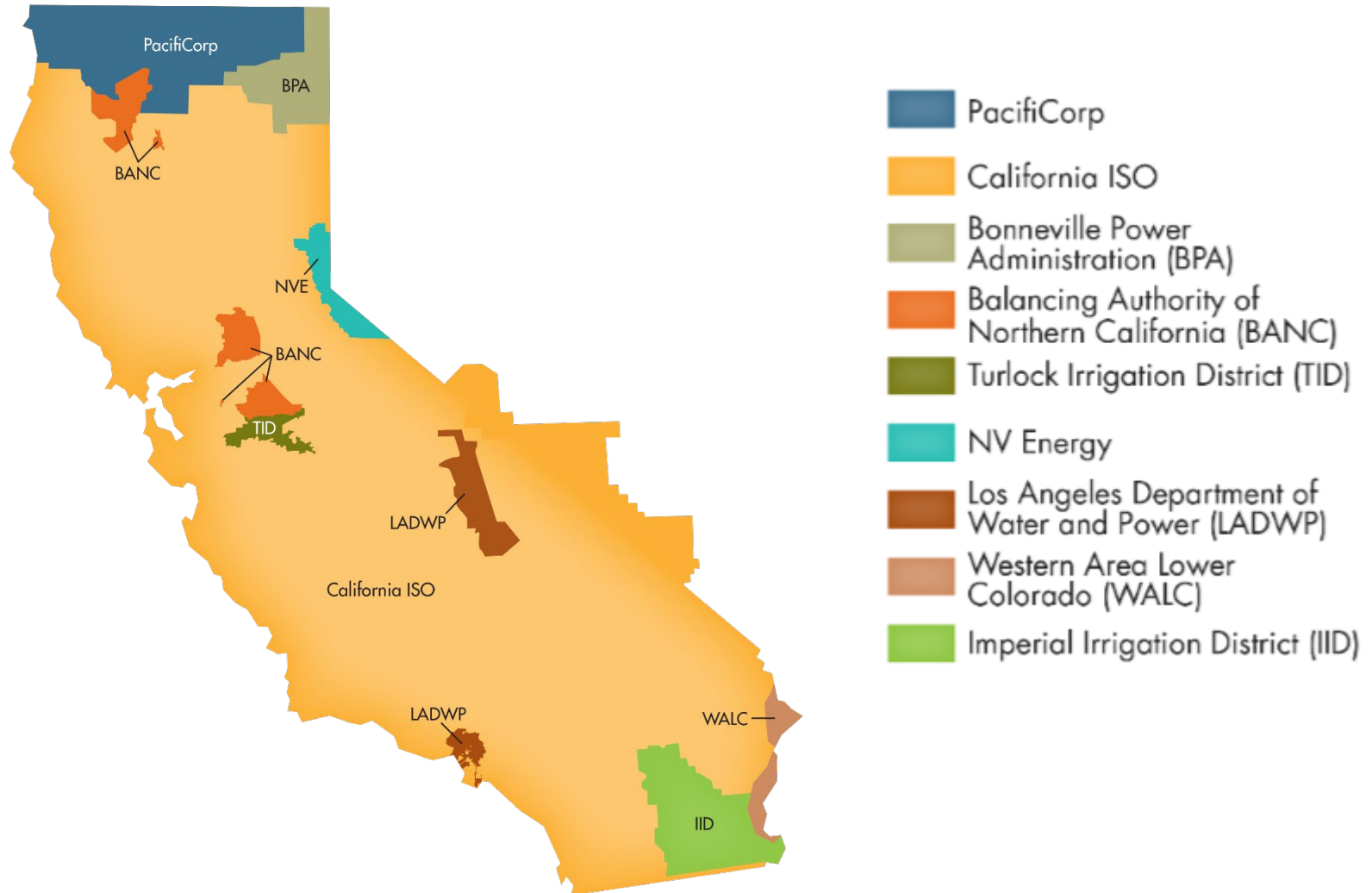


**BANC**





# California balancing authorities



## Preliminary note

- There is no endorsement by NREL, expressed or implied, of any mode of regional cooperation addressed in the review, nor of any position that the State of California might take in discussions with other western states

## Executive summary

- Cooperation depends on mutual benefits—for California *and* the rest of the West
- The literature suggests regional cooperation will help California and other states realize cost savings and common energy policy goals
- Benefits might not be spread evenly across participating states and their utilities.
- Regional coordination already takes place, but several states have recently engaged in efforts to explore benefits of expanded collaboration.

# Executive summary

- Modes of regional cooperation addressed in the literature:
  - Single West-wide RTO
  - Two Western RTOs
  - Centrally dispatched day-ahead, real-time energy markets (for utilities not opting to join an RTO)
  - A regional resource adequacy and reserve sharing program

# Executive summary

- Regional cooperation can help California achieve its goals for renewable energy and greenhouse gas reduction faster and with less cost to California customers
- An expanded RTO tends to yield greater benefits than more limited modes of cooperation, but it also increases the complexity of issues that need to be addressed (e.g. allocation of new transmission costs)
- An expanded RTO can provide improved reliability and grid resilience, more operational flexibility, as well as reduced clean energy curtailment
- More limited forms of cooperation also yield benefits

# Section 1 – Background

- What drives the value of regional cooperation
  - Climate change and grid stress related to extreme weather events
  - State policies for electrification in transportation, buildings, other sectors
  - Transformation of the resource mix in California and the rest of the West
  - Dwindling planning reserve margins, especially in California and the Northwest

# Section 1 – Background

- Changing resource mix in the West
  - Less coal
  - More wind, solar, natural gas, storage
- New mix favors new practices
  - Energy markets increasingly value flexible resources
  - Economies of scale through geographic diversity rather than central station plants
  - Operational practices focusing on “baseload” resources are less useful

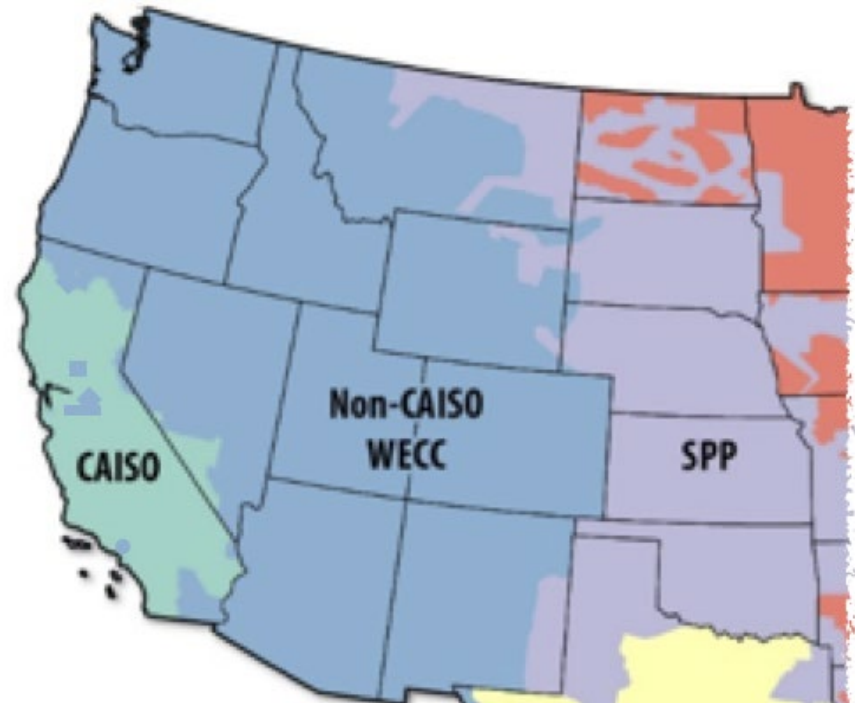
## Section 1 – Background

- Implications for how CAISO and the West exchange electricity:
  - Some entities in California will continue to regularly procure energy from the rest of the West
  - Some entities in California will need to export more surplus solar in the middle of the day to minimize curtailment
  - Reserve sharing will help California and the rest of the West deal with shrinking reserve margins



# Section 1 – Background

- Options for regional cooperation are emerging from CAISO, Southwest Power Pool (SPP), and discussions outside RTOs



## Section 2 – Regional Cooperation Efforts in the West

Several states across the West have engaged in efforts to explore the benefits of regional collaboration.

- Multi-state efforts – *State regional groups and a State-Led Market Study*, exploring options for regional coordination and a more coordinated approach to grid management
- Individual state efforts – legislation, regulatory proceedings, studies, etc. (e.g., AZ, CO, NV, NM, OR)

## Section 2 – Regional Cooperation Efforts in the West

Several frameworks for regional cooperation are currently in operation or under development in the West.

- Through CAISO:
  - Western Energy Imbalance Market (WEIM)
  - Extended Day-Ahead Market (EDAM)
- Through SPP:
  - Western Energy Imbalance Service (WEIS)
  - Markets+
- WPP’s Western Resource Adequacy Program (WRAP)
- Western Markets Exploratory Group (WMEG)

## Section 3 – Literature Included in the Review

- Technical analyses of various modes of coordination [*19 studies*]
- Policy statements and analyses by government agencies [*5 studies*]
- Analyses of legal issues [*2 studies*]
- Other relevant documents [*12 studies*]

# Section 4 – Annotated Summary of Literature

## Types of benefits

- Reduced production costs
- Reduced resource adequacy costs
- Efficient transmission planning

## Section 4 – Annotated Summary of Literature

### Options for cooperation

- A more comprehensive structure for cooperation that optimizes a wider array of grid functions (i.e., an RTO) tends to yield greater cost and decarbonization benefits than more limited forms of cooperation.
- Larger and more comprehensive structures increase the breadth of issues that must be addressed, such as new transmission cost allocation and state roles.

## Section 4 – Annotated Summary of Literature

### Options for cooperation

- Forms of cooperation that are less comprehensive than an RTO also yield benefits, even though the benefits might not be as large as they would be with an RTO.
- Resource adequacy costs may decrease overall with coordination on resource adequacy through programs such as the Western Resource Adequacy Program (WRAP).

## Section 4 – Annotated Summary of Literature

### Distribution of benefits

- The State-Led Study estimated that a single West-wide RTO would have more production cost savings over the entire region and more savings in capacity value than would two RTOs.
- Distribution of cost savings can vary among individual states and utilities.



## Section 4 – Annotated Summary of Literature

### Impacts on California's energy, environmental policies

- Reduced operating costs, capacity costs, and resource adequacy costs
- Improved resource adequacy planning
- Increased use of clean energy resources
- Lower WECC-wide emissions
- No study directly addressed the California-specific impacts of regional transmission planning and cost allocation

## Section 5 – SB 100 Joint Agency Report

- SB 100 tasked the Energy Commission, the Public Utilities Commission, and the Air Resources Board to publish a report on all the progress made toward SB 100's goals, every four years.
- 2021 Report looked at 3 Case Scenarios (60% RPS, SB 100 Core, High Electrification Study)
- Findings:
  - In all three scenarios, capacity needs to increase significantly. Example: 110 GW in 60% Scenario
  - Fixed Costs Estimates assume transmission needs will be in the billions, regardless of model
  - Greater reliance on imports is necessary
- Next Report is 2024 with demand forecasts substantially surpassing the 2021 findings.

## Final thoughts/observations

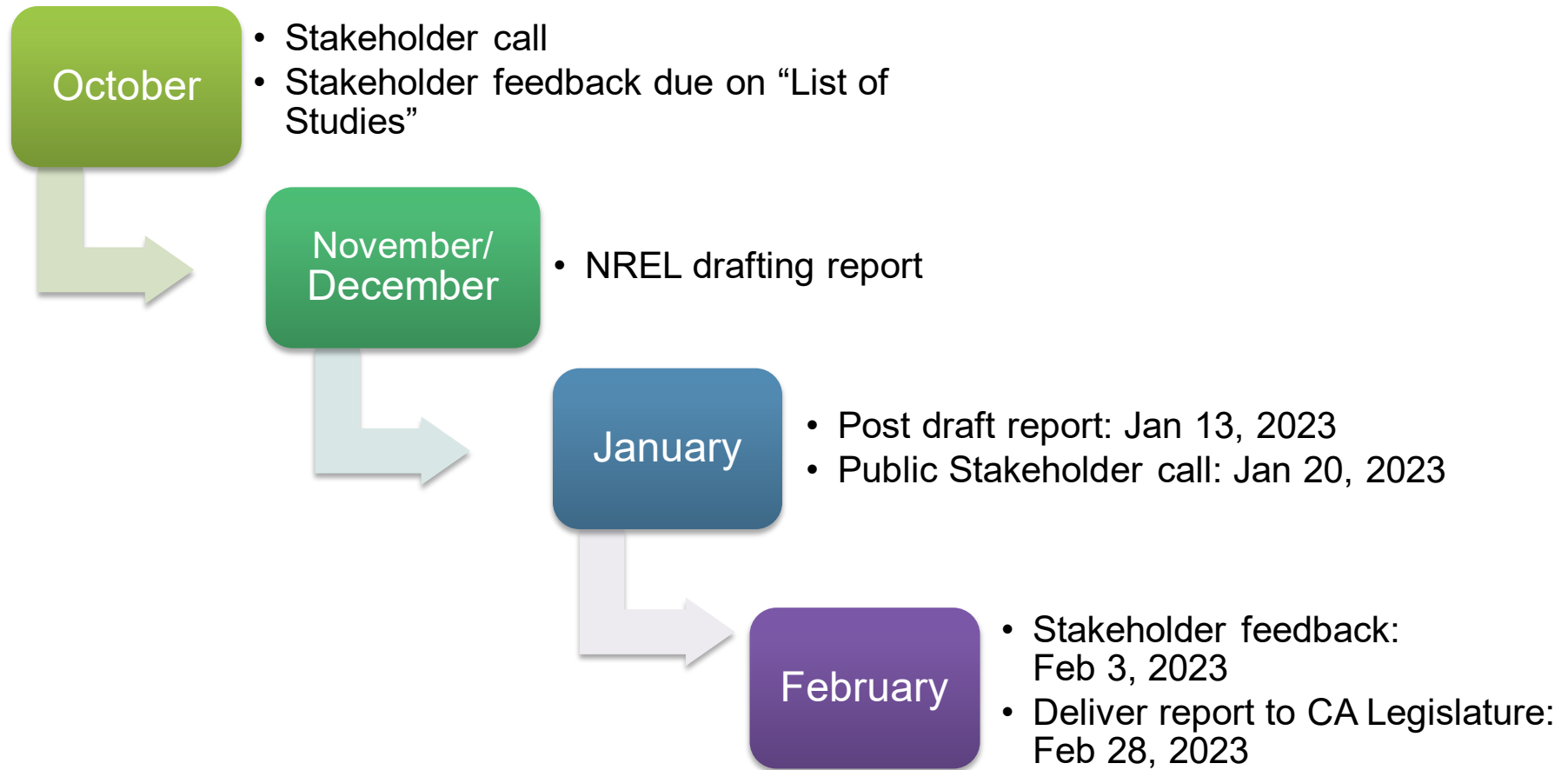
- NREL's review includes impacts on western states besides California
  - Our understanding of the Legislature's intent in ACR 188 is to gather knowledge that will inform strategies for regional cooperation that might advance California's energy and environmental goals
  - An effective strategy requires an understanding of what might drive the positions of other states



California ISO

# Questions

# Updated ACR 188 workgroup timeline



## Additional information

- ACR 188 Project Webpage:  
<http://www.caiso.com/informed/Pages/RegionalSolutions.aspx>
- Stakeholder Comments Due by February 3, 2023
  - template is available on the webpage linked above
- Submit questions or comments on ACR 188 to  
[infoACR188@caiso.com](mailto:infoACR188@caiso.com)