

Balancing Authority of Northern California

Regular Meeting of the Commissioners of BANC

2:00 P.M.

Wednesday, February 23, 2022

Teleconference Meeting

Balancing Authority of Northern California

NOTICE OF REGULAR MEETING AND AGENDA

Notice is hereby given that a regular meeting of the Commissioners of the Balancing Authority of Northern California (BANC) will be held on **February 23, 2022 at 2:00 p.m.** **This meeting will be conducted pursuant to the provisions of Assembly Bill 361. Some, or all, of the Commissioners may attend the meeting electronically or telephonically.**

The following information is being provided as the forum by which members of the public may observe the meeting and offer public comment:

Phone number: 1-669-900-9128

Meeting ID: 939 6354 5060

Passcode: 796724

Meeting Link: <https://zoom.us/j/93963545060?pwd=MWF6dHIQVUtJYlVYbXE5b1FKVXBRUT09&from=addon>

AGENDA

- 1 Call to Order and Verification of Quorum.**
- 2 Matters subsequent to posting the Agenda.**
- 3 Public Comment** – any member of the public may address the Commissioners concerning any matter on the agenda.
- 4 Consent Agenda.**
 - A. Resolution 22-02-01 *Determination that Meeting in Person Would Present Imminent Risks to the Health or Safety of Attendees as a Result of the Proclaimed State of Emergency.*
 - B. Minutes of the Regular Commission Meeting held on January 26, 2022.
 - C. BANC Operator Report (January).
 - D. Compliance Officer Report (February).
 - E. PC Committee Chair Report (February).
 - F. General Manager's Report and Strategic Initiatives Update.
- 5 Regular Agenda Items – Discussion and Possible Action.**
 - A. Consider and Possibly Approve Resolution 22-02-02 *Approval of BANC Flex Ramp Approach and Product.*
- 6 Adjournment.**

Balancing Authority of Northern California

Consent Agenda Items

- A. **Resolution 22-02-01 *Determination that Meeting in Person Would Present Imminent Risks to the Health or Safety of Attendees as a Result of the Proclaimed State of Emergency.***
- B. **Minutes of the January 26, 2022 BANC Regular Meeting.**
- C. **BANC Operator Report (January).**
- D. **Compliance Officer Report (February).**
- E. **PC Committee Chair Report (February).**
- F. **General Manager Report and Strategic Initiatives Update.**

**Balancing Authority of Northern California
Resolution 22-02-01**

**RECONSIDERATION OF THE DETERMINATION THAT MEETING IN PERSON WOULD PRESENT
IMMINENT RISKS TO THE HEALTH OR SAFETY OF ATTENDEES AS A RESULT OF THE
PROCLAIMED STATE OF EMERGENCY**

WHEREAS, on March 4, 2020 the Governor of California proclaimed a state of emergency in California as a result of the threat of COVID-19; and

WHEREAS, on March 17, 2020, the Governor issued Executive Order N-29-20 authorizing exemptions to certain notice requirements under the Ralph M. Brown Act to facilitate virtual meetings of a legislative body of a local agency; and

WHEREAS, on June 11, 2021, the Governor issued Executive Order N-08-12 extending the provisions of N-29-20 until September 30, 2021; and

WHEREAS, on September 16, 2021, the Governor of California signed Assembly Bill 361 which provides for the continued suspension of certain notice requirements for virtual meeting when a legislative body of a local agency holds a meeting during a declared state of emergency and either:

- (1) state or local officials have imposed or recommended measures to promote social distancing,
- or
- (2) the legislative body holds a meeting for the purpose of determining, by majority vote, whether as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees.

WHEREAS, pursuant to AB 361, a legislative body of a local agency must, not later than 30 days after teleconferencing for the first time pursuant to AB 361, and every 30 days thereafter, reconsider the circumstances of the state of emergency and determine that the state of emergency continues to directly impact the ability of the members to meet safely in person.

NOW, THEREFORE, BE IT RESOLVED that the Commissioners of the Balancing Authority of Northern California hereby determine that meeting in person continues to present imminent risks to the health or safety of attendees as a result of the proclaimed state of emergency.

PASSED AND ADOPTED by the Commissioners of the Balancing Authority of Northern California this 23rd day of February, 2022.

James McFall
Chair

Attest by: C. Anthony Braun
Secretary

MINUTES OF THE REGULAR MEETING OF THE COMMISSIONERS OF THE
BALANCING AUTHORITY OF NORTHERN CALIFORNIA (BANC)

January 26, 2022

On this date, a Regular Meeting of the Commissioners of the Balancing Authority of Northern California was held telephonically, pursuant to the provisions of Assembly Bill 361.

Representatives:

Member Agency	Commissioner
Modesto Irrigation District (MID)	James McFall, Chair
City of Redding	Nick Zettel
City of Roseville	Michelle Bertolino
Sacramento Municipal Utility District (SMUD)	Laura Lewis, Alternate
City of Shasta Lake	James Takehara
Trinity Public Utilities District (TPUD)	Absent

Other Participants:

Jim Shetler	General Manager
Tony Braun	General Counsel
Kevin Smith	General Counsel
Kris Kirkegaard	General Counsel Support
Sonja Anderson	Western Area Power Administration (WAPA)
Bryan Griess	WAPA
Jeanne Haas	WAPA
Arun Sethi	WAPA

1. Call to Order: Mr. Shetler verified that there was a quorum to proceed; attendance is noted above. Chair McFall called the meeting to order at 2:00 p.m.
2. Matters Subsequent to Posting the Agenda: None. Mr. Shetler noted that a minor correction had been made to the voting block on Resolution 22-01-02.
3. Public Comment (any matter on the agenda): None.
4. Consent Agenda: Chair McFall invited comments from the Commission on the Consent Agenda, and there were none.

<p>ACTION: M/S (Lewis/Zettel) to approve the Consent Agenda. Motion carried by a unanimous roll call vote (Absent: Commissioner Hauser).</p>
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MINUTES OF THE REGULAR MEETING OF THE COMMISSIONERS OF THE
BALANCING AUTHORITY OF NORTHERN CALIFORNIA (BANC)

5. Regular Agenda Items.

A. General Manager Updates:

i. EIM Update:

Mr. Shetler provided updates, including on the Flex Ramp approach, which is on track for a 3/1/22 effective date. There were no questions from the Commission.

ii. EDAM Update.

Mr. Shetler provided this update on market options (Extended Day Ahead Markets, SPP Markets +, and related developments), and Mr. Braun commented on developments and schedule for the Governance Review Committee. Mr. Shetler, Mr. Braun, and Mr. Smith took and responded to questions/comments from the Commission and WAPA.

iii. SB 100 Update.

Mr. Shetler noted that the CEC is requesting additional dialogue with the BAAs on SB 100 compliance matters. Mr. Shetler provided an update regarding the possible selection of a consultant to assist with analysis of reliability modeling in the context of SB 100 resource scenarios. He also responded a question from the Commission regarding agency deadlines for statutorily required reports on SB 100 progress to the Legislature.

iv. Resource Adequacy.

Mr. Shetler overviewed for the Commission the Western Power Pool Western Resource Adequacy Program, BANC consideration of RA principles, and BANC's Resources RFP. Some discussion/questions from the Commission followed.

B. Consider and Possibly Approve Resolution 22-01-02 Resolution Commending and Thanking Michelle Bertolino for her Service to the Balancing Authority of Northern California.

The Commission took an opportunity to recognize Commissioner Bertolino.

ACTION: M/S (Lewis/Takehara) to **approve Resolution 22-01-02 Resolution Commending and Thanking Michelle Bertolino for her Service to the Balancing Authority of Northern California.** Motion carried by a unanimous roll call vote (Absent: Commissioner Hauser).

C. Consider and Possibly Approve Resolution 22-01-03 Authorization of CMUA Contract for SB 100 Support.

Mr. Shetler introduced this item. There were no questions from the Commission.

ACTION: M/S (Zettel/Bertolino) to **approve Resolution 22-01-03 Authorization of CMUA Contract for SB 100 Support.** Motion carried by a unanimous roll call vote (Absent: Commissioner Hauser).

MINUTES OF THE REGULAR MEETING OF THE COMMISSIONERS OF THE
BALANCING AUTHORITY OF NORTHERN CALIFORNIA (BANC)

- D. Consider and Possibly Approve Resolution 22-01-04 Authorization of Amended Legal Services Agreement with Braun Blaising Smith Wynne, P.C. for EIM Governance Review Committee Chair Support Services for EDAM Governance Review.

Mr. Shetler introduced this item. There were no questions from the Commission. Commissioner Zettel voiced his support.

ACTION: M/S (Lewis/Bertolino) to **approve Resolution 22-01-04 Authorization of Amended Legal Services Agreement with Braun Blaising Smith Wynne, P.C. for EIM Governance Review Committee Chair Support Services for EDAM Governance Review.** Motion carried by a unanimous roll call vote (Absent: Commissioner Hauser).

- E. Consider and Possibly Approve Resolution 22-01-05 Approval of Updated Exhibit A (EIM Participant Allocation) of the Second Amended and Restated Energy Imbalance Market Participation Agreement.

Mr. Shetler introduced this item as described in the Commission packet. There were no questions from the Commission.

ACTION: M/S (Zettel/Bertolino) to **approve Resolution 22-01-05 Approval of Updated Exhibit A (EIM Participant Allocation) of the Second Amended and Restated Energy Imbalance Market Participation Agreement.** Motion carried by a unanimous roll call vote (Absent: Commissioner Hauser).

- F. Consider and Possibly Approve Resolution 22-01-06 Authorization of Audit Services Contract Extension with Baker Tilly US, LLP.

Mr. Shetler introduced this item. There were no questions from the Commission.

ACTION: M/S (Lewis/Bertolino) to **approve Resolution 22-01-06 Authorization of Audit Services Contract Extension with Baker Tilly US, LLP.** Motion carried by a unanimous roll call vote (Absent: Commissioner Hauser).

- G. Member updates:

Mr. Shetler noted that he was evaluating impacts to the 2022 Budget from items already passed and the potential need for future adjustments given the significant resources that may be required to support continuing market developments and other matters. He will come back to the Commission at a future meeting with any requested action.

There were no other updates from Commissioners.

The Commission adjourned at 2:53 p.m.

Minutes approved on February 23, 2022.

C. Anthony Braun, Secretary



BALANCING AUTHORITY OF NORTHERN CALIFORNIA

P.O. BOX 15830 • D109 • SACRAMENTO • CA 95852 -1830

TO: BANC Commission

RE: BANC Operator Report for January 2022

Operations:

- BA Operations: Normal
- Significant BA Issues: None
- Declared BA Energy Emergency Alert Level (EEA): EEA0
- NWPP Reserve Energy Activations
 - 0 contingency requiring activation of NWPP
 - 0 MW average generation lost
 - 0 MW maximum generation lost
 - Generating unit(s) and date(s) affected: None
 - All recoveries within 0 minutes
- USF
 - 6 of 31 days with instances of USF mitigation procedure utilized
 - 0 days on Path 66
 - No operational impact on BANC
- BAAL Operation:
 - Maximum duration of BAAL exceedance: 0 Minutes
 - Number of BAAL exceedance >10 minutes: None
 - BAAL violation (BAAL exceedance >30 minutes): None
- Frequency Response (FR) Performance – Quarterly Metric:
 - 2021 Frequency Response Obligation (FRO): -15.5 MW/0.1Hz
 - 2022 Frequency Response Obligation (FRO): -18.8 MW/0.1Hz
 - Q4 Frequency Response Measure (FRM): -80.0 MW/0.1Hz
 - Q4 Number of Under-Performed Events: 0 out of 6
 - Q1~Q4 Frequency Response Measure (FRM): -64.62 MW/0.1Hz
 - Q1~Q4 Number of Under-Performed Events: 1 out of 23 (Cause of under-performed event: There was a 20 MW/min EIM ramping down during the event)

Monthly Notes:

- No additional notes or impacts for January 2022

A JOINT POWERS AUTHORITY AMONG

Modesto Irrigation District, City of Redding, City of Roseville, Trinity Public Utilities District,

City of Shasta Lake, and Sacramento Municipal Utility District

Compliance Officer Report

BANC Commission Meeting

February 2022

The following summarizes routine issues for the Commission's information and consideration. Any major issues or action items will be identified separately on the Commission agenda for action.

BA Compliance Issues:

- No significant operational Balancing Authority compliance events occurred.
- All required BA compliance reports and operating data were submitted to WECC.
- All BA/PC-applicable NERC Standard requirements are currently being reviewed as part of the annual compliance self-certification submittal, which is due to WECC on or before April 1st.
- Planning is underway for the 2022 Audit. The BANC ICPC and the BANC MCRC Charter are currently under review for potential updates, which are expected to be brought to the MCRC in February. The Commission will be updated on the audit and those document revisions at the March Commission meeting.

BANC MCRC:

- The next BANC MCRC meeting is scheduled to be held at 10:00 AM on Monday, February 28th via teleconference.

PC Committee Chair Report

BANC Commission Meeting

February 2022

The following summarizes Planning Coordinator-related issues for the Commission's information and consideration. Any major issues or action items will be identified separately on the Commission agenda for action.

BANC PC Committee Updates or Issues:

SMUD staff continue to work toward demonstrating compliance with PC-related NERC reliability standards:

- MOD-031-2 Demand and Energy Data – Staff continues to participate in WECC planning webinars for the 2022 Loads and Data request cycle. Part One of the data request has been completed by BANC PC Participants, and the data has been submitted to WECC. Part Two of the data request has been sent out to BANC PC participants for entry and is due back on February 18th.
- FAC-002-3 Facility Interconnection Studies – Staff sent out an email requesting review of the “BANC PC Qualified Changes” document from BANC PC Participants by February 25th. BANC PC Participants were also solicited to provide any new BES or qualified changes projects which would require FAC-002 assessment and reports.
- TPL-001-4 - Transmission System Planning Performance – Study Plan is being developed to be sent out to BANC PC Participants. Data requests are being prepared to be sent out over the next coming weeks.
- MOD-033-2 – Event selection for stability portion of study is underway.
- TPL-007-4 – Two Additional Requirements (R6 and R10) became effective as of January 1, 2022. SMUD has been informed and will assist BANC PC Participants with compliance evidence if needed.
- The 2022 Annual BANC PC Committee meeting was held on February 9th. Fifteen BANC PC Committee members participated. Staff made presentations on NERC PC related reliability standards and upcoming new NERC standards and/or changes to existing standards.

The table below shows the current status of all PC-related standards:

	PC Standard	Estimated % Complete	Notes
1	FAC-002-3 Interconnection Studies	10%	Email sent to BANC PC Participants soliciting information on whether there are any new BES projects or existing projects with qualified changes that would require FAC-002-3 assessment and report. Responses due to BANC PC by 5/25/22.
2	FAC-010-3 SOL Methodology for Planning Horizon	100%	The finalized version was sent to external stakeholders and BANC PC Participants on 12/28/2020.
3	FAC-014-2 Establish and Communicate SOLs	0%	The Study plan will be sent out in May 2022 for BANC PC Participant review and comment.
4	IRO-017-1 Outage Coordination	0%	Awaiting completion of TPL assessment by December to send out report.
5	MOD-031-2 Demand and Energy Data	33%	2022 Loads and Resources Part One was completed and uploaded to the WECC EFT server. Staff is coordinating the data collection for Part Two.
6	MOD-032-1 Data for Power System Modeling & Analysis		Ongoing activity.
7	MOD-033-1 System Model Validation	0%	Event selection for stability portion is underway. Dynamic portion due by June, 2023. Steady State portion due by October, 2023.
8	PRC-006-5 Underfrequency Load Shedding	0%	BANC PC data request will be sent out end of April 2022 and will be due by the end of May 2022.
9	PRC-010-2 Undervoltage Load Shedding	100%	Study has been completed. The report was finalized on 12/30/2019.
10	PRC-012-2 Remedial Action Schemes	80%	New Standard effective on 1/1/2021. Study Plan finalized on 4/10/2020. Working on performing studies for each RAS scheme.

	PC Standard	Estimated % Complete	Notes
11	PRC-023-4 Transmission Relay Loadability	0%	The Study plan will be sent out in May 2022 for BANC PC Participant review and comment.
12	PRC-026-1 Relay Performance During Stable Power Swings	0%	The Study plan will be sent out in June 2022 for BANC PC Participant review and comment.
13	TPL-001-4 Transmission System Planning Performance	8%	Study plan and data requests are being developed to be sent out next two weeks.
14	TPL-007-4 Transmission System Planned Performance for Geomagnetic Disturbance Events	100%	Two Additional Requirements (R6 and R10) became effective as of 1/1/2022. SMUD has been informed and will assist BANC PC members with compliance evidence if needed.

GM Report

BANC Commission Meeting

February 23, 2022

I wanted to summarize routine issues for the Commission's information and consideration. Any major issues or action items will be identified separately on the Commission agenda for action.

Outreach Efforts:

Refer to GM outreach report provided under separate distribution. In addition, here are some other noteworthy items:

LADWP/Seattle City Light/SRP

Dialogue continues with these entities regarding EIM participation. Based upon the group's discussions, we have agreed to continue to interact on an informal basis to make sure we are aligned on EIM issues from a POU perspective. We are routinely holding bi-weekly calls to provide updates and discuss issues. We have also used this forum to discuss POU positions regarding the EDAM development and to discuss potential summer heat wave impacts on EIM and EDAM design. We expect this group will become more active as the EDAM stakeholder process ramps up.

POU Western Markets Initiative

BANC continues to participate in this effort, which is being coordinated by APPA. The group has stepped back and is taking a less formal role with occasional update conference calls. The last call was on January 24, 2022.

Coronavirus Restrictions

Though restrictions on public gatherings and travel were being relaxed, the recent increase in infections from the Omicron variant has resulted in many restrictions being reinstated. BANC continues to generally use remote meeting attendance, both for our own internal member meetings, as well as outside meetings. However, we are starting to relax some of these restrictions as the ability to have gatherings is increased and the General Manager has started attending some in-person meetings. In addition, the BANC BA Operator (SMUD) has instituted measures to reduce coronavirus risks, including stay at home for most employees with only essential staff working at the offices.

Market Initiatives:

EIM Participation

Staff continues monitoring EIM participation. CAISO quarterly benefit reports continue to show that BANC is seeing benefits from EIM participation, with the 4th Quarter 2021 report showing gross benefits of \$31.44 million for BANC, with a total of \$175.83 million of gross benefits since joining in 2019.

With respect to BANC EIM Phase 2 effort, BANC has been passing both the EIM Capacity and Flex Ramp tests with a high success rate. Both the Technical Evaluation Subcommittee and the Settlements Subcommittee are meeting routinely and evaluating EIM operations. Staff provided a recommendation to the Commission at the September 2021 meeting regarding the Flex Ramp Approach, which the Commission approved. Additional dialogue has been held at the working level regarding a potential “pooling” concept for Flex Ramp among the WAPA Sub-BA participants. This concept was presented to the Commission at the October 2021 meeting where the Commission approved a 90-day extension of the binding date for Flex Ramp charges in order for staff and EIM Participants to further pursue the “pooling” concept. Staff have been working at the subcommittee levels to evaluate and finalize the concept. The proposed Business Practices (BPs) for the Sub-BA approach is scheduled for Commission consideration and approval at its February meeting.

EDAM Participation

The EDAM stakeholder process was on hold due to the CAISO’s focus on 2021 Summer readiness, which was also a focus for the EIM Entities. With the end of the summer months, the CAISO held a Market Forum on October 13, 2021, to address next steps with EDAM. The efforts of the sub-group discussions among the CAISO, PTOs, and EIM Entities was reported out as the basis for reinitiating the EDAM stakeholder process. The CAISO is looking at an expedited process with a goal of a final EDAM design by the end of 2022, implementation efforts in 2023, and initial go-live in 2024. The CAISO held an initial stakeholder meeting on November 12 where it laid out the concept of using stakeholder work groups to help guide the definition of an initial straw proposal for EDAM. The CAISO held an initial working group formation meeting in December and kicked off the detailed working group meetings in early January, which have been making progress over the last 30-days. The CAISO goal is to wrap-up the work group meetings in March and have an initial straw proposal by April 2022.

Other Market Developments

In parallel with the re-initiation of the EDAM process, two other West-wide market developments have occurred:

1. SPP has announced its “Markets +” effort to support utilities in the West with a range of market options from EIM to full RTO services. SPP has held stakeholder information sessions on November 17, 2021, and December 1, 2021, to explain their initial concepts. Their stakeholder work group

meetings were initiated in January 2022 seeking input on a final design that could be agreed upon by late 2022. Initial goal would be a market launch in 2024. BANC staff have been monitoring this effort.

2. A group of Western utilities have formed a group called Western Market Exploratory Group (WMEG) with a stated purpose of identifying what a full market in the West should entail. They are in the process of hiring a consultant to assist in this effort. BANC is also monitoring this group and evaluating possible participation.

WAPA:

Market Engagement

WAPA-SNR was also successful in its EIM Phase 2 go-live on March 25, 2021 and continues to be an active participant in the EIM.

WAPA-SNR and BANC continue to hold periodic calls with NCPA to help facilitate discussions on joint issues.

San Luis Transmission Project

WAPA-SNR has announced its intent to work with the Bureau of Reclamation to construct the SLTP. The San Luis & Delta-Mendota Water Authority is moving forward with approving bonding authority to provide WAPA with funding for this project. We will keep the Commission informed as more information becomes available.

WECC

WECC Board Meetings

The last set of Board and committee meetings was held in December, which were virtual. The next set of meetings will be in March and are also expected to be virtual.

WECC has issued an assessment of resource adequacy for the Western Interconnection.

WECC is also coordinating with NERC on a lessons-learned assessment of the ERCOT/SPP cold weather events this last winter. Preliminary results and recommendations were issued in September.

NWPP

Resource Adequacy Project

As agreed at the September meeting, BANC has informed NWPP that it will not be participating in Phase 3 of the Western Resource Adequacy Project (WRAP) due to

our lack of ability to have firm, long-term transfer capability at Mid-C, which is the hub for the WRAP interchanges. BANC will continue to monitor development of the WRAP and has initiated discussions with NWPP regarding our ability to participate in the future. SPP has indicated that they intend to use the WRAP as the Resource Adequacy program for any Markets + development.

RSG and FRSG Participation

BANC continues to participate in the Reserve Sharing Group and the Frequency Response Sharing Group through the NWPP and receive benefits in doing so.

NWPP Transition

NWPP announced on February 7, 2022, that it will now be doing business as the Western Power Pool (WPP) to reflect its broader Western membership. In addition, as part of moving to a FERC approved tariff for the WRAP program, the WPP board will be transitioning from its current structure to a fully independent board. A nominating committee has been formed to assist in the selection of the new independent board members. The WPP members who are not in WRAP have been granted a seat on the nominating committee and the BANC General Manager was selected to fill that role.

CDWR Delta Pumping Load:

BANC is coordinating with SMUD, CDWR, WAPA, and the CAISO regarding how the construction and pumping loads and ancillary services will be provided for this project. The CAISO has reached out to BANC/SMUD/WAPA-SNR regarding contacts for initiating discussions on how CAISO will supply energy for the construction loads in our footprints. With the Governor's announcement that the project will be downsized from two to one tunnel, CDWR has withdrawn the current applications and will be submitting revised environmental documentation. SMUD reported that CDWR has approached them regarding the revised environmental review and updated project schedule and SMUD is initiating updated studies.

SB100 Implementation

As part of SB100, the CPUC, CEC, and CARB (Joint Agencies) are required to collaborate with the California BAs to develop a quadrennial report on the status of achieving the goals of SB100. The four POU BAs (BANC, IID, LADWP, and TID) are collaborating on positions and responses. The final, initial report was scheduled for submittal to the Legislature in early January 2021; however, it was delayed and not issued until 3/15/21. The CEC did reach out to the POU BAAs via CMUA in early March 2021 seeking more engagement with the BAAs for the next round of analysis for the SB100 effort. The POU BAAs are coordinating via CMUA on how to engage in this request. A subgroup of the POU BAAs, including BANC, participated in a Joint Agency SB100 workshop on June 2, 2021. We have also had several follow-up discussions with the Joint Agencies. Based upon recent discussions, we are working with the other POU BAAs to hire consulting support for this effort. We are also

working on concepts for a reliability analysis effort and providing current known interconnection queue information as well as forecast renewable resource procurement assumptions.

Western Electricity Industry Leaders (WEIL) Group

The WEIL group has done outreach to the Western Governors' Association with a request to hold discussions on how to better coordinate electricity policy in the West. Based upon these discussions, the Western Governors and WEIL agreed to make use of the Center for a New Energy Economy (CNEE), which is headed by former CO Governor Ritter, to facilitate further dialogue. This effort has been designated as the Western Interconnection Regional Electricity Dialogue (WIRED). The group agreed to focus discussions around three topics:

- State clean electricity goals and GHG accounting
- Reliability/resource adequacy
- Transmission planning and development.

Initial draft reports have been developed by the work groups and are now being reviewed both by WEIL and the state energy policy advisors. The WEIL group discussed and reached consensus at its February 2021 CEO meeting on a position statement for this effort. WEIL continues to coordinate with CNEE and the key state energy advisors on next steps in this effort.

The WEIL CEOs last met on October 8, 2021. The next meeting of the WEIL group is being planned for February 17, 2022.

The BANC General Manager has been serving on the WEIL Steering Committee since August 2021. The Steering Committee helps to develop the agenda for the group meetings and coordinate/facilitate the meetings. Membership on the Steering Committee will be changing, and the BANC General Manager will be transitioning off the Committee over the next several weeks.

Strategic Initiatives

The 2021/2022 Strategic Initiatives updates are attached to this report.

BANC 2021/2022 Strategic Plan - Routine Initiatives February 2022 Update

No./Priority	Focus Area	Initiative	Responsibility	Target Due Date	Status
1 Medium	INDEPENDENCE	Effectively oversee the BA operations.	Jim Shetler	Ongoing	See monthly Ops, PC, Compliance, & GM Reports
2 Medium		Maintain long-term succession plan and traits for General Manager	Jim Shetler/Commission	Ongoing as Necessary	Revisit 3rd Qtr. 2022
3 Medium	OUTREACH	Engage in industry forums (WECC, Peak, NWPPA, etc.)	Jim Shetler	Ongoing	Attend RC West, WECC Board, WEIL, & NWPP Exec. Forum meetings
4 Medium		Coordinate with other POU BAs (Ca and regionally)	Jim Shetler	Ongoing	Coordinating with SCL/SRP/LA/TP/TID on EIM/EDAM & SB100
5 Medium		Outreach to regulatory and legislative bodies on key issues	Jim Shetler/BBSW	Ongoing as Necessary	Participating in WEIL group outreach to West governors
6 Medium		More formal engagement with TID on BA/EIM/EDAM issues	Jim Shetler/BBSW	Ongoing	Continue periodic discussions on areas of collaboration
7 Medium	ASSETS	Evaluate establishing BANC criteria for RA resources	Resource Committee	4th Qtr. 2022	Developed SOW for consult. support & discussion at REC
8 Low	MEMBER SERVICES	Identify and outreach to potential new BANC members	Jim Shetler	Ongoing	

BANC 2021/2022 Strategic Plan - Focused Initiatives February 2022 Update

No./Priority	Focus Area	Initiative	Responsibility	Target Due Date	Status
9 High	INDEPENDENCE	Manage EIM Phase 2 Going Forward	Jim Shetler/SMUD	Ongoing	Manage Phase 2 operations including EIM, Tech Anal. & Settlements committees
10 High		EDAM evaluation effort ~ CAISO Stakeholder Process ~ CAISO Tariff Development	Jim Shetler/BBSW Jim Shetler/BBSW	Late 2021 - 2022 2022 - 2023	CAISO Stkhldr Proc. Initiated
11 Medium	OUTREACH	Evaluate opportunities to engage other entities in market development	Jim Shetler	Ongoing	Coordinating with SCL, SRP, LADWP, TID, & Tacoma
12 Medium		Regional Policy Issues: Monitor/ weigh-in where appropriate	Jim Shetler/Commission	Ongoing	Participating in WEIL effort on WIRED issues
13 High		Market Regionalization: ~Monitor ongoing discussions at WEIL & other venues	Jim Shetler/BBSW	4th Qtr. 2022	SPP Mkts+ Stkldr Mtgs 11/17 & 12/1
14 High		Coordinate with CA BAs on SB100 effort	Jim Shetler/BBSW	12/31/22	CEC issued report 3/15/21; Initiating coordination effort between CEC & BAAs
15 Medium	ASSETS	Evaluate resource criteria for BANC long-term needs ~ Issue solicitation for projects	Jim S./Res. Com.	4th Qtr. 2021	RFP psted 11/1; 7 responses received 12/3; Finalized short list
16 Medium	MEMBER SERVICES	Evaluate possible support to participants for EIM operations	Jim S.	Ongoing	

Balancing Authority of Northern California

Agenda Item 5A

1. **Resolution 22-02-02 *Approval of BANC Flex Ramp Approach and Product.***



BALANCING AUTHORITY OF NORTHERN CALIFORNIA

P.O. Box 15830 • D109 • SACRAMENTO • CA 95852 -1830

02/15/22

To: BANC Commission

From: BANC General Manager

RE: Approval of BANC Flex Ramp Approach and Product

At its meeting on September 22, 2021, the Commission approved Resolution 21-09-14 establishing the approach for allocating compensation between EIM participants for supporting the EIM Flex Ramp Test. This resolution also set December 1, 2021 as the “binding” date when payments would be imposed upon the participants. The period between the end of September 2021 and end of November 2021 was to be used by participants as a trial period to ensure the processes for calculating and settling EIM Flex Ramp Test support were properly established.

Subsequent to this approval, the EIM Technical and Settlements sub-committees had been evaluating an option proposed by the Western Area Power Administration – Sierra Nevada Region (WAPA) to use a Sub-Balancing Authority (Sub-BA) pooling arrangement for management of the EIM Flex Ramp Test and for developing a BANC EIM Flex Ramp Product, which is before the Commission today. This approach allows the participants in the WAPA Sub-BA to pool their EIM Flex Ramp Test requirements and resources. The other Sub-BA is that of the Sacramento Municipal Utility District (SMUD).

While it was generally agreed among the BANC EIM participants that this pooling approach would greatly reduce the incidence of individual participant EIM Flex Ramp Test failures, the teams also believed that more time was required to thoroughly review the proposal, define the implementing processes, and determine the need for any software updates to implement the proposal.

Therefore, the General Manager requested that the Commission approve Resolution 21-10-19, providing for an up to 90-day extension of the “binding” date (i.e., December 1, 2021) to allow staff and participants time to further assess and finalize the pooling approach. This process has recently been completed, and we are prepared for implementation.

According to the proposal, an SBA (WAPA or SMUD):

[W]ith a Flex Ramp requirement greater than its Flex Ramp capacity will be deemed to have purchased the shortfall capacity from the other SBA if the latter has excess Flex Ramp capacity. If each SBA has a Flex Ramp requirement greater than its Flex Ramp capacity, then both SBAs will be deemed to have failed the BANC Flex Ramp test. If each SBA has a Flex Ramp

A JOINT POWERS AUTHORITY AMONG

Modesto Irrigation District, City of Redding, City of Roseville, Trinity Public Utilities District,
City of Shasta Lake, and Sacramento Municipal Utility District



BALANCING AUTHORITY OF NORTHERN CALIFORNIA

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requirement lesser than its Flex Ramp capacity, then both SBAs will be deemed to have passed the BANC Flex Ramp test. In cases where both SBAs are deemed to have failed the BANC Flex Ramp test and where both SBAs are deemed to have passed the BANC Flex Ramp test then there shall be no assessment of a purchase and sale of Flex Ramp capacity between the SBAs nor between or among constituent BANC EIM Participants or LSEs in the WASN SBA. An SBA that is deemed to have purchased shortfall capacity from the other SBA can only be assessed a purchase of Flex Ramp capacity equivalent to the lower of the SBA's shortfall capacity MW and the other SBA's excess capacity MW.

Pricing is based upon selected California Independent System Operator Corporation Ancillary Services price indices and bounded by both a Price Floor of \$1.00/MW and a Price Ceiling of \$250/MW.

While prior discussions had proposed this as an attachment to the BANC EIM Business Practices, counsel would like additional time to determine where this proposal should best be integrated – EIM Business Practices, EIM Settlements Guide or both. We view this as an administrative issue. For now, however, in order to commence operations and settlements under the proposal, we request that the Commission approve the BANC EIM Flex Ramp Approach and Product, which is provided as Exhibit A to Resolution 22-02-02.

This final proposal has been developed by BANC staff and EIM participants and has received the concurrence of the EIM Committee. We are seeking Commission approval to commence implementation on March 1, 2022 and to incorporate into the appropriate documents as determined by counsel.

A JOINT POWERS AUTHORITY AMONG

Modesto Irrigation District, City of Redding, City of Roseville, Trinity Public Utilities District,
City of Shasta Lake, and Sacramento Municipal Utility District

**Balancing Authority of Northern California
Resolution 22-02-02**

APPROVAL OF BANC FLEX RAMP APPROACH AND PRODUCT

WHEREAS, the Balancing Authority of Northern California (“BANC”) was created by a Joint Powers Agreement to, among other things, acquire, construct, maintain, operate, and finance projects; and

WHEREAS, BANC serves as the Energy Imbalance Market (“EIM”) Entity for the BANC EIM footprint; and

WHEREAS, BANC EIM Phase 1 successfully commenced operating in April of 2019 with the Sacramento Municipal Utility District (“SMUD”) as the initial EIM Participant within the BANC Balancing Authority Area; and

WHEREAS, the Modesto Irrigation District, the City of Redding, the City of Roseville, and the Western Area Power Administration – Sierra Nevada Region (“WAPA”) began participating in EIM, referred to as “BANC EIM Phase 2”, on March 25, 2021; and

WHEREAS, participation in the EIM, operated by the California Independent System Operator (“CAISO”), requires that BANC, as the EIM Entity, pass certain hourly and sub-hourly Resource Sufficiency (“RS”) tests (“RS Tests”) conducted by the CAISO to ensure that participating Balancing Authority Areas do not lean on the EIM to serve their underlying load serving obligations; and

WHEREAS, the RS Tests include, among them, an RS flexibility test, or “Flex Test” to ensure sufficient upward and downward ramping capability by each EIM Entity to address forecast and resource variability in the real time market; and

WHEREAS, in recognition of the complexities and challenges of the Flex Test and BANC’s lack of operational history, the Commission, through Resolution 20-11-11, adopted a Grace Period whereby no costs associated with failures of the Flex Test by EIM Participants would be allocated; and

WHEREAS, the Commission, through Resolution 21-09-14 approved a proposed extension of the Grace Period for the allocation of Flex Test failure costs to EIM Participants to November 30, 2021; and

WHEREAS, the Commission, through Resolution 21-10-19 approved another 90-day extension of the Grace Period for the allocation of Flex Test failure costs to EIM Participants and directed BANC Staff to return for Commission approval of a formal proposal for proceeding with this issue before the end of that 90-day period; and

WHEREAS, the EIM Technical and Settlements sub-committees evaluated an option proposed by WAPA to use a Sub-Balancing Authority (“BA”) pooling arrangement for management of the EIM Flex Ramp Test and analysis showed that the proposed Sub-BA approach would greatly reduce the incidence of individual participant EIM Flex Ramp Test failures; and

WHEREAS the BANC EIM Flex Ramp Approach and Product, included as Exhibit A to this Resolution, was reviewed and accepted by the Technical and Settlements sub-committees, and concurred upon by the EIM Committee;

NOW THEREFORE, BE IT RESOLVED that the Commissioners of the Balancing Authority of Northern California hereby:

1. Approve attached Exhibit A, BANC EIM Flex Ramp Approach and Product.
2. Approve the commencement of operations and settlements under this proposal beginning March 1, 2022.
3. Direct BANC Counsel to incorporate the proposal into the appropriate BANC EIM documents.

**Balancing Authority of Northern California
Resolution 22-02-02**

PASSED AND ADOPTED by the Commissioners of the Balancing Authority of Northern California this 23rd day of February 2022, by the following vote:

		Aye	No	Abstain	Absent
Modesto ID	James McFall				
City of Redding	Nathan Aronson				
City of Roseville	Todd White				
City of Shasta Lake	James Takehara				
SMUD	Paul Lau				
TPUD	Paul Hauser				

James McFall
Chair

Attest by: C. Anthony Braun
Secretary

BANC Flex Ramp Product

BANC Flex Ramp Sub BA Approach:

Under the alternative approach, BANC will determine Flex Ramp requirement and Flex Ramp capacity at the Sub-Balancing Authority (SBA) level, i.e., with SMUD as one SBA and WASN as the other SBA. In this case, WASN SBA's Flex Ramp requirement and Flex Ramp capacity will be determined from its constituent BANC EIM Participants' (City of Redding, City of Roseville, MID, and WAPA) loads taken in aggregate and EIM resources ramp capacities taken in aggregate. Individually, each BANC Participant will make all reasonable efforts to supply adequate Flex Ramp capacity in every EIM market hour.

An SBA with a Flex Ramp requirement greater than its Flex Ramp capacity will be deemed to have purchased the shortfall capacity from the other SBA if the latter has excess Flex Ramp capacity. If each SBA has a Flex Ramp requirement greater than its Flex Ramp capacity, then both SBAs will be deemed to have failed the BANC Flex Ramp test. If each SBA has a Flex Ramp requirement lesser than its Flex Ramp capacity, then both SBAs will be deemed to have passed the BANC Flex Ramp test. In cases where both SBAs are deemed to have failed the BANC Flex Ramp test and where both SBAs are deemed to have passed the BANC Flex Ramp test then there shall be no assessment of a purchase and sale of Flex Ramp capacity between the SBAs nor between or among constituent BANC EIM Participants or LSEs in the WASN SBA. An SBA that is deemed to have purchased shortfall capacity from the other SBA can only be assessed a purchase of Flex Ramp capacity equivalent to the lower of the SBA's shortfall capacity MW and the other SBA's excess capacity MW.

BANC Participant Flex Ramp Capacity:

BANC will take advantage of an CAISO CMRI System report to determine each EIM Participant's Flex Up/Down Capacity MWs in each hour. The after the fact report presents each EIM Generator's Upward and Downward capacity for each 15-min interval of a given hour. The report can be found on the following path (CMRI System access required):

- CAISO Market Portal >> CMRI >> Real-Time [Tab] >> Resource Ramp Capacity [Report]

For each hour, each SBA's Flex Up/Down capacity will be determined from this report.

- The report presents Up and Down ramp capacities separately. BANC will calculate each EIM Participant's Flex Up and Down Capacities separately – using the separately reported up/down ramp capacity values.
- BANC will use the T-40 (binding) report output for each hour.
- BANC will use the 4th 15-min interval's values. The report presents values for each 15-min interval of the target hour. BANC RS Work Group agreed that the 4th interval would be an appropriate proxy for the hourly ramp capacity since it would be the capacity provided over the greatest period of time for the hour.
- BANC will sum the 4th interval ramp capacities across each of the EIM Participant's generators to determine each Participant's Flex Up/Down Capacity for the hour.

Therefore, the BANC EIM Flex Up/Down Capacity Calculations are:

$$BEP_FLX_UP_CAP_{HOURLY, BEP} = \sum_{BEP's\ Gens} RAMP\ UP\ CAPACITY_{Interval\ 4}$$

$$BEP_FLX_DOWN_CAP_{HOURLY, BEP} = \sum_{BEP's\ Gens} RAMP\ DOWN\ CAPACITY_{Interval\ 4}$$

Exhibit A to Resolution 22-02-02

Where:

$RAMP_UP_CAPACITY_{Interval\ 4}$ = An EIM PR Generator’s Ramp Up Capacity from the ISO CMRI “Resource Ramp Capacity” Report.

$RAMP_DOWN_CAPACITY_{Interval\ 4}$ = An EIM PR Generator’s Ramp DOWN Capacity from the ISO CMRI “Resource Ramp Capacity” Report.

NOTE: “BEP” = BANC EIM Participant; and “HOUR” is the target hour; “Interval 4” refers to the 4th 15-min interval.

And the SBA EIM Flex Up/Down Capacity Calculations are:

$$SBA_FLX_UP_CAP_{HOUR, SBA} = \sum_{SBA's\ BEPs} BEP_FLX_UP_CAP_{HOUR, BEP}$$

$$SBA_FLX_DOWN_CAP_{HOUR, SBA} = \sum_{SBA's\ BEPs} BEP_FLX_DOWN_CAP_{HOUR, BEP}$$

Where:

$BEP_FLX_UP_CAP_{HOUR, BEP}$ = The calculated Flex Ramp Up Capacity for the BEP for the hour.

$BEP_FLX_DOWN_CAP_{HOUR, BEP}$ = The calculated Flex Ramp Down Capacity for the BEP for the hour.

NOTE: “SBA” = either SMUD or WASN. SMUD’s BEP is itself; and WASN’s BEPs are City of Redding, City of Roseville, MID, and WAPA.

SBA Flex Ramp Requirement

After the CAISO’s T-40 minutes RS Flex Ramp Up/Down Test is executed, the CAISO publishes the binding BANC Flex Up/Down Requirement MWs in the CMRI Report: Flexible Ramp Requirements Inputs. The BANC seeks to use those BANC Flex Ramp Up/Down Requirement values as inputs for determining each BANC EIM Participant’s Flex Ramp Up/Down Requirement MWs in a look-back report process.

In an after the fact calculation, BANC will create a ratio for each EIM Participant of its EIM Load Forecast over the sum of all EIM Participant’s Load Forecasts. Thus, each EIM Participant will have a ratio which can be applied to the CAISO’s Flex Ramp Up/Down Requirement for the BANC/EIM Entity BAA to determine each Participant’s Requirement.

To calculate each SBA’s Flex Up/Down Requirement MW:

1. Calculate each EIM Participant’s Hourly EIM Flex Ramp requirement load forecast ratio as:

$$BEP_FLX_REQ_RATIO_{HOUR, BEP} = BEP_LOAD_FORECAST_{HOUR, BEP} / BANC_LOAD_FORECAST_{HOUR}$$

Where:

$BEP_LOAD_FORECAST_{HOUR, BEP}$ = The BEP’s ISO EIM Load Forecast which is in effect at T-40.

$BANC_LOAD_FORECAST_{HOUR}$ = SUM [$BEP_LOAD_FORECAST_{HOUR, BEP}$]

NOTE: “BEP” = BANC EIM PARTICIPANT; and “HOUR” is the target hour.

2. Use each EIM Participant’s Hourly EIM Flex Ramp requirement load forecast ratio to allocate the CAISO’s total BANC Flex Up and Flex Down Requirement MWs for each hour.

$$BEP_FLX_UP_REQ_{HOUR, BEP} = BEP_FLX_REQ_RATIO_{HOUR, BEP} * BANC_FLX_UP_REQ_{HOUR}$$

$$BEP_FLX_DOWN_REQ_{HOUR, BEP} = BEP_FLX_REQ_RATIO_{HOUR, BEP} * BANC_FLX_DOWN_REQ_{HOUR}$$

Exhibit A to Resolution 22-02-02

Where:

$BANC_FLX_UP_REQ_{HOUR}$ = The ISO's BANC EIM Flex Ramp Up Requirement for hour at T-40 test as reported in the ISO CMRI Report: Flexible Ramp Requirements Inputs.

$BANC_FLX_DOWN_REQ_{HOUR}$ = The ISO's BANC EIM Flex Ramp Down Requirement for hour at T-40 test as reported in the ISO CMRI Report: Flexible Ramp Requirements Inputs.

3. Use each EIM Participant's Flex Up and Flex Down Requirement MWs to calculate the SBA's total Flex Up and Flex Down Requirement MWs for each hour.

$$SBA_FLX_UP_REQ_{HOUR, SBA} = \sum_{SBA's\ BEPs} BEP_FLX_UP_REQ_{HOUR, BEP}$$

$$SBA_FLX_DOWN_REQ_{HOUR, SBA} = \sum_{SBA's\ BEPs} BEP_FLX_DOWN_REQ_{HOUR, BEP}$$

Where:

$BEP_FLX_UP_REQ_{HOUR, BEP}$ = The calculated Flex Ramp Up Requirement MW for the BEP for the hour.

$BEP_FLX_DOWN_REQ_{HOUR, BEP}$ = The calculated Flex Ramp Down Requirement MW for the BEP for the hour.

NOTE: "SBA" = either SMUD or WASN. SMUD's BEP is itself; and WASN's BEP's are City of Redding, City of Roseville, MID, and WAPA.

After the fact SBA Flex Ramp Supplier(s)

In each hour, an SBA with excess Flex Ramp capacity will be deemed a BANC Flex Ramp "supplier" (Supplier) for the hour. After the fact, when there is an SBA shown to be deficient Flex Ramp capacity, then the SBA that is regarded as a BANC Flex Ramp supplier will be deemed to have sold a portion of their excess to the deficient SBA.

An SBA's Flex Ramp capacity excess and shortfall shall be calculated as follows:

$$SBA_FLX_UP_EXCESS_{HOUR, SBA} = \max[(SBA_FLX_UP_CAP_{HOUR, SBA} - SBA_FLX_UP_REQ_{HOUR, SBA}), 0]$$

$$SBA_FLX_UP_SHORTFALL_{HOUR, SBA} = \min[(SBA_FLX_UP_CAP_{HOUR, SBA} - SBA_FLX_UP_REQ_{HOUR, SBA}), 0]$$

$$SBA_FLX_DOWN_EXCESS_{HOUR, SBA} = \max[(SBA_FLX_DOWN_CAP_{HOUR, SBA} - SBA_FLX_DOWN_REQ_{HOUR, SBA}), 0]$$

$$SBA_FLX_DOWN_SHORTFALL_{HOUR, SBA} = \min[(SBA_FLX_DOWN_CAP_{HOUR, SBA} - SBA_FLX_DOWN_REQ_{HOUR, SBA}), 0]$$

Flex Ramp Up capacity purchase and sale MWs shall be calculated as follows:

$$SBA_FLX_UP_PURCHASE_{HOUR, SMUD} = - \min[\text{abs}(SBA_FLX_UP_SHORTFALL_{HOUR, SMUD}), SBA_FLX_UP_EXCESS_{HOUR, WASN}]$$

$$SBA_FLX_UP_SALE_{HOUR, WASN} = \min[\text{abs}(SBA_FLX_UP_SHORTFALL_{HOUR, SMUD}), SBA_FLX_UP_EXCESS_{HOUR, WASN}]$$

Exhibit A to Resolution 22-02-02

$$SBA_FLX_UP_PURCHASE_{HOUR, WASN} = - \min[\text{abs}(SBA_FLX_UP_SHORTFALL_{HOUR, WASN}), \\ SBA_FLX_UP_EXCESS_{HOUR, SMUD}]$$

$$SBA_FLX_UP_SALE_{HOUR, SMUD} = \min[\text{abs}(SBA_FLX_UP_SHORTFALL_{HOUR, WASN}), \\ SBA_FLX_UP_EXCESS_{HOUR, SMUD}]$$

Flex Ramp Down capacity purchase and sale MWs shall be calculated as follows:

$$SBA_FLX_DOWN_PURCHASE_{HOUR, SMUD} = - \min[\text{abs}(SBA_FLX_DOWN_SHORTFALL_{HOUR, SMUD}), \\ SBA_FLX_DOWN_EXCESS_{HOUR, WASN}]$$

$$SBA_FLX_DOWN_SALE_{HOUR, WASN} = \min[\text{abs}(SBA_FLX_DOWN_SHORTFALL_{HOUR, SMUD}), \\ SBA_FLX_DOWN_EXCESS_{HOUR, WASN}]$$

$$SBA_FLX_DOWN_PURCHASE_{HOUR, WASN} = - \min[\text{abs}(SBA_FLX_DOWN_SHORTFALL_{HOUR, WASN}), \\ SBA_FLX_DOWN_EXCESS_{HOUR, SMUD}]$$

$$SBA_FLX_DOWN_SALE_{HOUR, SMUD} = \min[\text{abs}(SBA_FLX_DOWN_SHORTFALL_{HOUR, WASN}), \\ SBA_FLX_DOWN_EXCESS_{HOUR, SMUD}]$$

If both SBAs have excess Flex Ramp capacity for the hour, then there shall be no sale of Flex Ramp capacity by either SBA. If both SBAs have deficient Flex Ramp capacity for the hour, then there shall be no purchase of Flex Ramp capacity by either SBA.

BANC Flex Ramp Settlement Price

The price at which a SBA's excess Flex Ramp Capacity (as a Supplier) is deemed to be sold to the other SBA which is short will be set by the following CAISO published price indices:

- Flex Up Capacity Price = CAISO Day Ahead Hourly Reg Up Price for AS Region "AS_NP26_EXP" + CAISO Day Ahead Hourly Reg Up Price for AS Region "AS_CAISO_EXP"
- Flex Down Capacity Price = CAISO Day Ahead Hourly Reg Down Price for AS Region "AS_NP26_EXP" + CAISO Day Ahead Hourly Reg Down Price for AS Region "AS_CAISO_EXP"

****Note:** The Day-Ahead "AS Clearing Prices" are published on the CAISO's public OASIS website. CAISO Market Portal >> OASIS >> Prices [Tab] >> Ancillary Services Prices [Submenu Item] >> AS Clearing Prices [Report]

The BANC Participants will apply a price floor and a price ceiling to the published ISO prices in order to remove some extreme results:

- Price Floor: The price used for BANC Flex Ramp settlement will not fall below \$1.00/MW. If the published price for a test interval is less than \$1.00/MW, BANC Participants will substitute a fixed \$1.00/MW price.
- Price Ceiling: The price used for BANC Flex Ramp settlement will not be greater than \$250.00/MW. If the published price for a test interval is greater than \$250.00/MW, BANC Participants will substitute a fixed \$250.00/MW price.

$$FLX_UP_SETTLEMENT_PR_{HOUR} = \min(\max(DA_RU_PR_{HOUR}, PRC_FLOOR), PRC_CEILING)$$

Exhibit A to Resolution 22-02-02

$$FLX_DOWN_SETTLEMENT_PRC_{HOUR} = \min(\max(DA_RD_PRC_{HOUR}, PRC_FLOOR), PRC_CEILING)$$

Where:

$$DA_RU_PRC_{HOUR} = CAISO \text{ Day Ahead Hourly Reg Up Price for AS Region "AS_NP26_EXP"} + CAISO \text{ Day Ahead Hourly Reg Up Price for AS Region "AS_CAISO_EXP"}$$

$$DA_RD_PRC_{HOUR} = CAISO \text{ Day Ahead Hourly Reg Down Price for AS Region "AS_NP26_EXP"} + CAISO \text{ Day Ahead Hourly Reg Down Price for AS Region "AS_CAISO_EXP"}$$

$$PRC_FLOOR = \text{Price Floor} = \$1.00/MW$$

$$PRC_CEILING = \text{Price Ceiling} = \$250.00/MW$$

WASN SBA Sub-Allocation

When WASN sells Flex Ramp Capacity, the revenue for the sale shall be allocated to WASN constituent BANC EIM Participants or LSEs ("BEPs") that have Flex Ramp Capacity excess, i.e., the BEP's resources total ramp capacity is greater than the BEP's Flex Ramp requirement. When WASN purchases Flex Ramp Capacity, the charge for the purchase shall be allocated to WASN constituent BANC EIM Participants or LSEs ("BEPs") that have Flex Ramp Capacity shortfall, i.e., the BEP's resources total ramp capacity is less than the BEP's Flex Ramp requirement.

The SBA's Flex Ramp Capacity sale MW is allocated pro-rata based on the BEP's Flex Ramp Capacity excess. The SBA's Flex Ramp Capacity purchase MW is allocated pro-rata based on the BEP's Flex Ramp Capacity shortfall.

1. The Flex Ramp capacity excess and shortfall of each BANC EIM Participant under either SBA shall be calculated as follows:

$$BEP_FLX_UP_EXCESS_{HOUR, BEP} = \max[(BEP_FLX_UP_CAP_{HOUR, BEP} - BEP_FLX_UP_REQ_{HOUR, BEP}), 0]$$

$$BEP_FLX_UP_SHORTFALL_{HOUR, BEP} = \min[(BEP_FLX_UP_CAP_{HOUR, BEP} - BEP_FLX_UP_REQ_{HOUR, BEP}), 0]$$

$$BEP_FLX_DOWN_EXCESS_{HOUR, BEP} = \max[(BEP_FLX_DOWN_CAP_{HOUR, BEP} - BEP_FLX_DOWN_REQ_{HOUR, BEP}), 0]$$

$$BEP_FLX_DOWN_SHORTFALL_{HOUR, BEP} = \min[(BEP_FLX_DOWN_CAP_{HOUR, BEP} - BEP_FLX_DOWN_REQ_{HOUR, BEP}), 0]$$

2. The total gross SBA Flex Ramp capacity excess and total gross SBA Flex Ramp capacity shortfall are needed for the calculation of ratio shares for each constituent BANC EIM Participant for their share of the sale or purchase of Flex Ramp capacity.

$$SBA_FLX_UP_EXCESS_GROSS_TOTAL_{HOUR, SBA} = \sum_{SBA'S\ BEP'S} BEP_FLX_UP_EXCESS_{HOUR, BEP}$$

$$SBA_FLX_DOWN_EXCESS_GROSS_TOTAL_{HOUR, SBA} = \sum_{SBA'S\ BEP'S} BEP_FLX_DOWN_EXCESS_{HOUR, BEP}$$

$$SBA_FLX_UP_SHORTFALL_GROSS_TOTAL_{HOUR, SBA} = \sum_{SBA'S\ BEP'S} BEP_FLX_UP_SHORTFALL_{HOUR, BEP}$$

Exhibit A to Resolution 22-02-02

$$SBA_FLX_DOWN_SHORTFALL_GROSS_TOTAL_{HOUR, SBA} = \sum_{SBA's\ BEP's} BEP_FLX_DOWN_SHORTFALL_{HOUR, BEP}$$

3. Each EIM Participant's ratio share of the SBA's total gross Flex Ramp capacity excess and total gross Flex Ramp capacity shortfall are calculated as follows:

$$BEP_FLX_UP_EXCESS_RATIO_{HOUR, BEP} = BEP_FLX_UP_EXCESS_{HOUR, BEP} / SBA_FLX_UP_EXCESS_GROSS_TOTAL_{HOUR, SBA}$$

$$BEP_FLX_DOWN_EXCESS_RATIO_{HOUR, BEP} = BEP_FLX_DOWN_EXCESS_{HOUR, BEP} / SBA_FLX_DOWN_EXCESS_GROSS_TOTAL_{HOUR, SBA}$$

$$BEP_FLX_UP_SHORTFALL_RATIO_{HOUR, BEP} = BEP_FLX_UP_SHORTFALL_{HOUR, BEP} / SBA_FLX_UP_SHORTFALL_GROSS_TOTAL_{HOUR, SBA}$$

$$BEP_FLX_DOWN_SHORTFALL_RATIO_{HOUR, BEP} = BEP_FLX_DOWN_SHORTFALL_{HOUR, BEP} / SBA_FLX_DOWN_SHORTFALL_GROSS_TOTAL_{HOUR, SBA}$$

Note: The ratios are zero if the total gross SBA Flex Ramp capacity excess is equal to zero or if the total gross SBA Flex Ramp capacity shortfall is equal to zero.

4. Each EIM Participant's share of the SBA's sale of Flex Ramp capacity and the SBA's purchase of Flex Ramp capacity are calculated as follows:

$$BEP_FLX_UP_SALE_{HOUR, BEP} = BEP_FLX_UP_EXCESS_RATIO_{HOUR, BEP} * SBA_FLX_UP_SALE_{HOUR, SBA}$$

$$BEP_FLX_DOWN_SALE_{HOUR, BEP} = BEP_FLX_DOWN_EXCESS_RATIO_{HOUR, BEP} * SBA_FLX_DOWN_SALE_{HOUR, SBA}$$

$$BEP_FLX_UP_PURCHASE_{HOUR, BEP} = BEP_FLX_UP_SHORTFALL_RATIO_{HOUR, BEP} * SBA_FLX_UP_PURCHASE_{HOUR, SBA}$$

$$BEP_FLX_DOWN_PURCHASE_{HOUR, BEP} = BEP_FLX_DOWN_SHORTFALL_RATIO_{HOUR, BEP} * SBA_FLX_DOWN_PURCHASE_{HOUR, SBA}$$

NOTE: "SBA" = either SMUD or WASN. SMUD's BEP is itself; and WASN's BEP's are City of Redding, City of Roseville, MID, and WAPA

The settlement price of the BEP's share of the SBA's sale or purchase of Flex Ramp Capacity is the same as the price at which Flex Ramp Capacity is sold between the SBAs. This price is determined as described in "BANC Flex Ramp Settlement Price."

The foregoing is consistent with WAPA's Rate Schedule CV-SSP2 (SCHEDULE OF RATE FOR SALE OF SURPLUS PRODUCTS) Component 3, which will be applicable for the allocation of charges or credits that is assessed to the WASN SBA under this BANC Flex Ramp Test settlement. The allocation process is consistent with Component 3 (language below) requirement to pass charges or credits through directly to the relevant customers in the same manner WAPA-SN is charged or credited to the extent possible.

Exhibit A to Resolution 22-02-02

Component 3: Any charges or credits from the Host Balancing Authority (HBA) applied to WAPA-SN for providing this service will be passed through directly to the relevant customer in the same manner WAPA-SN is charged or credited to the extent possible. If the HBA's costs or credits cannot be passed through to the relevant customer in the same manner WAPA-SN is charged or credited, the charges or credits will be passed through using Component 1 of the formula rate.¹

BANC Flex Ramp Test – Exceptional Circumstances:

Several specific circumstance may arise in the CAISO's Flex Ramp data or market execution which require special treatment by the BANC EIM Entity when calculating each BANC EIM Participant's Flex Ramp results:

- EIM Market Failure or other CAISO driven data issues: In rare instances, the EIM Market may fail to find a feasible solution, or other CAISO data issues may result in the CAISO's Flex Ramp, Gen Capacity, or Load Forecast data to be unavailable or unrepresentative of the interval's actual results. In these cases, BANC EIM Entity will deem all BANC Participants or SBAs to have 'passed' the BANC Flex Ramp Test; and all EIM Participants or SBAs will have zero MW excess Flex Ramp Capacity.
- BANC Participant or SBA excess Flex Ramp capacity is less than shortfall Flex Ramp capacity: In rare cases, the total excess Flex Ramp capacity MWs held by Suppliers may be less than the total shortfall Flex Ramp capacity MWs. In these cases, the deemed sale of excess capacity will be capped at the total excess Flex Ramp capacity. No EIM Participant or SBA "Supplier" will be deemed to have supplied more Flex Ramp capacity than the excess they have for that interval.

BANC Will Not Support Settlement of Pre-Purchase of BANC Flex Ramp Capacity

BANC has decided it will not formally support the Settlement of pre-purchased Flex Ramp Capacity. This does not preclude the EIM Participants from developing a bilaterally settled BANC Flex Ramp capacity product. BANC recognizes that the complexity and cost of tracking and settling pre-purchased BANC Flex Ramp capacity will be greater than the benefit of providing this service.

Invoicing Process:

BANC Settlements will calculate BANC Flex Ramp settlement for the previous month based on data from the Monthly Flex Ramp report published to the Accellion site.

BANC Settlements will post the monthly calculation spreadsheet to the Accellion site when completed.

The BANC Flex Ramp Product monthly settlement will be added as a line item to each Participant's Monthly BANC EIM Suballocation Invoice.

Participants will be able to download the monthly calculation spreadsheet (Excel file) from the Accellion site as back up for the BANC Flex Ramp charge/credit.

¹ NOTE: For purposes of the BANC Flex Ramp Product, charges or credits to the relevant EIM participating WAPA customer will be invoiced by BANC Settlements as noted in the "invoicing Process" section of this document.