Balancing Authority of Northern California

Regular Meeting of the Commissioners of BANC

2:00 P.M.
Wednesday, December 16, 2020
Telephonic Meeting Only

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 **December 16, 2020** at **2:00 p.m. The meeting will be telephonic only.**

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: 1-408-418-9388
Meeting number (access code): 126 636 9734
WebEx Meeting Link:
https://braunblaisingsmithwynne.my.webex.com/braunblaisingsmithwynne.my/j.php?MTID=m1ed638c81ef75bf013f0f1e27dcc413d

AGENDA

1 Call to Order.

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. Minutes of the Regular Commission Meeting & Strategic Planning Session held on November 18, 2020.

B. BANC Operator Report (November).

C. Compliance Officer Report (December).

D. PC Committee Chair Report (December).

E. General Manager's Report and Strategic Initiatives Update.

5 Regular Agenda Items – Discussion and Possible Action.

A. General Manager Updates

i. EIM Update.

1. Consider and Possibly Approve Resolution 20-12-08 *Approval of Balancing Authority of Northern California Energy Imbalance Market Settlement Allocations Manual for BANC EIM Phase 2 Operations.*

2. Consider and Possibly Approve Resolution 20-12-09 *Authorization of Amendment to Utilicast Contract for Extension of Services Related to Phase 2 of Energy Imbalance market Post Go-Live Support*.

ii. EDAM Update.

iii. BANC Summer Assessment Update.

iv. Strategic Planning Issues.

1. Status of Business Case for BANC OASIS.

B. Discussion of GM Status & Agreements.

6 Closed Session: Conference with legal counsel in anticipation of litigation pursuant to subdivision (c) of Cal. Gov't Code § 54956.9; one matter.

7 Adjournment.

Accessible Public Meetings - Upon request, BANC will provide written agenda materials in appropriate alternative formats, or disability-related modification or accommodation, including auxiliary aids or services, to enable individuals with disabilities to participate in public meetings. Please send a written request, including your name, mailing address, phone number and brief description of the requested materials and preferred alternative format or auxiliary aid or service at least 3 days before the meeting. Requests should be sent to: Kris Kirkegaard, 555 Capitol Mall, Suite 570, Sacramento, CA 95814 or to kirkegaard@braunlegal.com.

Balancing Authority of Northern California

Consent Agenda Items

A. **Minutes of the November 18, 2020 BANC Regular Meeting.**
B. **BANC Operator Report (November).**
C. **Compliance Officer Report (December).**
D. **PC Committee Chair Report (December).**
E. **General Manager's Report and Strategic Initiatives Update.**

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

November 18, 2020

On this date, a Regular Meeting of the Commissioners of the Balancing Authority of Northern California (BANC) and Strategic Planning Session was held telephonically.

Representatives Present:

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

Agency	Liaison(s)
Western Area Power Administration (WAPA)	Arun Sethi Brian Griess Jeanne Haas

1. Call to Order: Mr. Shetler reviewed attendance and confirmed that a quorum was present. Chair Beans called the meeting to order at 2:04 p.m.

2. Matters Subsequent to Posting the Agenda: Mr. Shetler noted that a proposed adjustment to the BANC Resource Sufficiency Test Approach document was expected to be discussed under the appropriate agenda item, but there were no changes to the agenda itself.

3. Public Comment: Chair Beans invited comments from the public and none were given.

4. Consent Agenda: Mr. McFall moved, Ms. Lewis seconded, and the participating Commissioners unanimously approved the Consent Agenda items comprised of: (A) Minutes of the Regular Commission Meeting & Strategic Planning Session held on October 28, 2020; (B) BANC Operator Report for October; (C) Compliance Officer Report for November; (D) PC Committee Chair Report for November; and (E) General Manager's Report and Strategic Initiatives Update.

5. Regular Agenda Items – Discussion and Possible Action:

   A. Mr. Shetler provided an update on EIM Phase 1 and shared that the EIM Entities have been holding discussions with CAISO trying to understand impacts of the fall heat wave to the EIM market, particularly focused around resource sufficiency and export curtailments. Conclusions and possible recommendations may be available by the end of the year. CAISO has released 3rd quarter calculated total EIM benefits estimated at $119 million, with BANC/SMUD's estimated benefit calculated at $8.7 million. BANC is

on track to go live with EIM Phase 2 on March 25, 2021 concurrent with TID. Three other entities (Public Service of New Mexico, LADWP, Northwestern) are expected to follow on April 1st. All major activities are generally on track. Resource Sufficiency will be discussed under the next item on the agenda. The Settlements Allocation manual is expected to be brought to the Commission at the December meeting, and Phase 2 testing and training is underway.

A Resource Sufficiency test approach and flex ramp grace period proposal has been developed by the EIM Phase 2 participants. Mr. Shetler provided a brief overview and invited Arun Sethi from WAPA to update the Commission on their requested changes to the BANC Resource Sufficiency Test Approach document contained in the packet. The redline changes to the document were presented for review and discussion. Ms. Bertolino thanked the EIM participants for their efforts in coming up with a compromise and stated for the record that Roseville expects to pay their fair share of costs. Mr. Braun then presented a proposed change to the resolution clarifying that further revisions to the document up for approval were made by the Commission based on comments received from WAPA. With no objections or further discussion from the members, Ms. Bertolino moved to approve the resolution as amended, Ms. Lewis seconded, and the participating Commissioners voted unanimously in favor of Resolution 20-11-11 *Approval of Balancing Authority of Northern California Energy Imbalance Market Resource Sufficiency Test Approach and Flex Ramp Grace Period.* Mr. Shetler also thanked the Commission and echoed Commissioner Bertolino's comments, stating that the members worked collaboratively to come up with an interim approach that would work for everyone, and he believed that a long-term solution was achievable in 2021.

Future requested Commission actions expected to be brought forth in the December through February timeframe include approval of the Settlement Allocations Manual, Risk Policy, an amendment to the BANC/SMUD EIM Services Agreement, and updated EIM Participation Agreements.

Regarding EDAM, Mr. Shetler shared that the EIM Entities filed joint comments on the Bundle 1 Issue Paper (Transmission, Resource Sufficiency, and Congestion Revenues), showing support with some caveats, on November 12, 2020. Comments primarily focused on ensuring an adequate Resource Sufficiency test, while providing clarifications on transmission approaches, the "voluntary" nature of EDAM, and on CAISO proposals for sharing transfer and congestion revenues. Once CAISO evaluates and reviews comments, the general expectation is that a revised proposal may be issued, potentially accompanied by a workshop in early Q1 2021. A Bundle 2 issue paper (GHG, Ancillary Services, Full Network Model Phase 2, EDAM Administrative Fee), originally anticipated in Q4 2020, is also anticipated in Q1 2021.

In response to the August/September heatwave, in addition to other developments in CA and within CAISO, BANC has spent some time reviewing its own Summer Assessment plan. BANC is looking at a more rigorous evaluation for 2021 focused on the following areas: Resources, Loads, Imports, and Sensitivities/Scenarios. Further discussion on the 2021 draft plan is anticipated at the December BANC Operating Committee meeting, with the goal of completing an initial analysis in Q1 and updating the Commission by the end of Q1 2021.

Mr. Shetler also briefly touched on two strategic planning issues. With respect to the Draft Business Case for BANC OASIS, a cost/benefit analysis has been initiated, and a Commission update is planned for the December meeting. Mr. Shetler has also been

providing regular updates to the TANC Commission. Regarding Strategic Initiatives, the 2019-20 Initiatives are considered complete. As no comments have been received on the Draft 2020-21 Strategic Initiatives, they are now considered accepted and Mr. Shetler will begin reporting out on them. At present, the BANC OASIS proposal has not been included in the 2020-21 Initiatives, pending further review and/or recommendations by the Commission.

B. Mr. Shetler confirmed that no further revisions were required to the 2020 BANC budget. He then walked through the proposed 2021 Annual Budget for BANC. Ms. Lewis moved, Mr. Hauser seconded, and the participating Commissioners voted unanimously in favor of Resolution 20-11-12 *Approval of 2021 Annual Budget for BANC.*

C. Mr. Shetler invited Ms. Kris Kirkegaard from BBSW to provide an overview of the proposed 2021 BANC Commission Meeting calendar. Mr. McFall moved, Ms. Bertolino seconded, and the participating Commissioners voted unanimously in favor of Resolution 20-11-10 *Resolution Setting the Regular Meeting Dates for 2021*.

The Commission adjourned at 2:51 p.m.

Minutes approved on December 16, 2020.

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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 November 2020

Operations:

- BA Operations: Normal
- Significant BA Issues: None
- NWPP Reserve Energy Activations
    - 1 contingency requiring activation of NWPP
    - 107 MW average generation lost
    - 107 MW maximum generation lost
    - Generating unit(s) and date(s) affected: CSG (Campbell), 11/13/2020
    - All recoveries within 5 minutes
- USF
    - 5 of 30 days with instances of USF mitigation procedure utilized
    - 1 day on Path 66
    - No operational impact on BANC
- BAAL Operation:
    - Maximum duration of BAAL exceedance: 9 Minutes
    - Number of BAAL exceedance >10 minutes: None
    - BAAL violation (BAAL exceedance >30 minutes): None
- Frequency Response (FR) Performance – Quarterly Metric:
    - 2020 Frequency Response Obligation (FRO): -14.7 MW/0.1Hz
    - Q3 Frequency Response Measure (FRM): -66.5 MW/0.1Hz
    - Q3 Number of Under-Performed Events: 0 out of 4
    - Q1~Q3 Frequency Response Measure (FRM): -37.8 MW/0.1Hz
    - Q1~Q3 Number of Under-Performed Events: 1 out of 12
    - 2021 Frequency Response Obligation (FRO): -15.5 MW/0.1Hz
-

Monthly Notes:

- No additional notes or impacts for November 2020

Compliance Officer Report
BANC Commission Meeting
December 2020

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.
- The compliance team is working on the details of a BA tagging adjacency issue that will be included on the next self-log submittal, which is due to WECC by January 31st. The self-log process is used by BANC to report low risk deviations from standards on a biannual basis to WECC. The draft self-log entry is being reviewed with BANC MCRC members and the final log will shared with the BANC Commission separately.

BANC MCRC:

- The next BANC MCRC meeting is scheduled to be held at 10:00 AM on Monday, December 7, 2020 via webinar.

PC Committee Chair Report
BANC Commission Meeting
December 2020

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 Issues:

- SMUD staff continue to work toward demonstrating compliance with PC-related NERC reliability standards.
  - FAC-002-2 Interconnection Studies – The draft FAC-002-2 report is being finalized for the SMUD Rancho Seco II solar power plant, which is scheduled to be in service by the end of this year.
  - PRC-026-1- Relay Performance During Stable Power Swings – Staff sent the finalized report to BANC PC participants on November 11, 2020.
  - TPL-001-4 - Transmission System Planning Performance – Report is completed and was distributed on November 13, 2020. RSAW to be completed by year's end.
  - RSAW – Various RSAWs are currently being updated as part of the annual self-certification process. The due date is January 31, 2021.

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

	PC Standard	Estimated % Complete	Notes
1	FAC-002-2 Interconnection Studies	90%	There is 3 new and materially modifying transmission facilities projects at the BANC area in years 2020-21. RS II in-service date is 12/31/20; 2 more in 2021 with in-service dates of 5/21 and 12/21.
2	FAC-010-3 SOL Methodology for Planning Horizon	100%	The finalized version was sent to BANC PC Participants on 10/15/20.
3	FAC-013-2 Transfer Capability for Near-Term Planning Horizon	100%	The finalized report was sent to BANC PC Participants on 10/9/20.

	PC Standard	Estimated % Complete	Notes
4	FAC-014-2 Establish and Communicate SOLs	100%	The finalized report was sent to BANC PC Participants on 11/03/20.
5	IRO-017-1 Outage Coordination	100%	Send out 2020 BANC PC annual assessment report to RC West on 11/10/20.
6	MOD-031-2 Demand and Energy Data	100%	2020 Loads and Resources supplement Data Request III sent to WECC at the end of March, 2020.
7	MOD-032-1 Data for Power System Modeling & Analysis		Ongoing activity.
8	MOD-033-1 System Model Validation		Data request received in August, 2020.
9	PRC-006-3 Underfrequency Load Shedding	100%	BANC PC Participant data was submitted to the WECC UFLSWG SILTP group. A revised study report from the latest study cycle is available from WECC UFLSWG.
10	PRC-010-2 Undervoltage Load Shedding	100%	Study has been completed. The report was finalized on 12/30/19.
11	PRC-012-2 Remedial Action Schemes	80%	New Standard to be effective on 1/1/21. Study Plan was finalized on 4/10/20. Working on performing studies for each RAS scheme.
12	PRC-023-4 Transmission Relay Loadability	100%	Finalized report was sent out to PC Participants on 7/31/20.
13	PRC-026-1 Relay Performance During Stable Power Swings	100%	Report was finalized after WECC issued the new 2020 WECC Underfrequency Load Shedding Program Assessment Report, and it was incorporated into the BANC 2020 PRC-026-1 report and distributed on 11/11/20.
14	TPL-001-4 Transmission System Planning Performance	100%	The finalized report was sent out to adjacent entities on 11/13/20.

	PC Standard	Estimated % Complete	Notes
15	TPL-007-4 R1 GMD	100%	Draft Agreement sent to Members to review on 5/31/20. Conference call on 6/4/20 with BANC PC participants to discuss the changes in Vulnerabilities Assessment Responsibilities Agreement for the new version of TPL-007-4. The final TPL-007-4 R1 Vulnerabilities Assessment Responsibilities Agreement" has been approved and posted on the BANC PC Member only website on 6/15/20.

GM Report
BANC Commission Meeting
December 16, 2020

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 on the same page on EIM issues from a POU perspective. We are routinely holding bi-weekly calls to provide updates and discuss issues. To date, we have collaborated with the other POUs on joint language to use in the EIM Entity agreement, on how to address market-based rate authority with DMM, potential common language for OATT revisions, and joint comments on the EIM governance issues. We have also used this forum to discuss POU positions regarding the EDAM development. On April 1, 2020, both SRP and Seattle City Light went live with EIM. Feedback is that the transitions were smooth with no major issues. Both LADWP and BANC – Phase 2 are on track for go-live 2021, with LADWP on 4/1/21 and BANC – Phase 2 on 3/25/21. We have also been using this forum to discuss potential 2020 heat wave impacts on EIM and EDAM design.

POU Western Markets Initiative

BANC continues to participate in this effort, which is being coordinated by APPA. The group will be stepping back and will take on a less formal role with occasional update conference calls, with the next call scheduled for December 9th.

Coronavirus Restrictions

With the increased restrictions on public gatherings and travel, BANC has moved to remote meeting attendance, both for our own internal member meetings as well as outside meetings for the foreseeable future. We will maintain this approach until public health authorities advise the restrictions can be relaxed. 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.

August and Labor Day Weekend Heat Wave

The Joint Agencies (CPUC, CEC, and CAISO) issued their root cause report from the August 2020 heat wave incidents in late September. Their conclusion is that there was no single root cause for the rotating outages, but rather several contributing factors, including:

1. The climate change-induced extreme heat storm across the western U.S. resulted in the demand for electricity exceeding the existing electricity resource planning targets. The existing resource planning processes are not designed to fully address an extreme heat storm like the one experienced in mid-August.
2. In transitioning to a reliable, clean and affordable resource mix, resource planning targets have not kept pace to lead to sufficient resources that can be relied upon to meet demand in the early evening hours. This makes balancing demand and supply more challenging. These challenges were amplified by the extreme heat storm.
3. Some practices in the day-ahead energy market exacerbated the supply challenges under highly stressed conditions.

There is also a recommendation that the agencies conduct a state-wide summer assessment on resource adequacy for 2021. It is not clear how this will impact the POUs in California. Staff has reached out to the other POU BAs and the CAISO on how we should proceed. BANC is moving forward with a modification to our normal summer assessment, which will be coordinated through both the Operations and Resource Committees. BANC is also participating in discussions initiated by the EIM Entities with the CAISO on analysis of the heat wave incidents.

Market Initiatives:

EIM Participation

The BANC EIM Phase 1 implementation effort was completed on April 3, 2019, with the successful go-live of BANC as the EIM Entity and SMUD as a Participating Resource. We are now monitoring EIM participation. CAISO quarterly benefit reports continue to show that BANC/SMUD is seeing benefits from the EIM participation, with the 3rd Quarter 2020 report showing gross benefits of $8.7 million.

With respect to BANC EIM Phase 2 effort, staff is coordinating with the Phase 2 participants and Utilicast to move forward with implementation. Discussions are essentially complete on metering and CAISO Department of Market Monitoring default energy bids. Individual participant software testing and training is ongoing. We have worked with CAISO to resolve some of the unique issues associated with the BANC structure, which currently all seem to meet our needs. The Business Practices were approved at the Commission meeting in October. The settlements allocation manual is in final review and editing and will be brought back to the EIM

and Legal Committees for final review in December and to the Commission for approval in December.

The issue of how to handle the Resource Sufficiency test (Balance and Flex Ramp tests) for EIM Phase 2 has been resolved and the proposal was approved by the Commission at the November meeting.

EDAM Participation

The EDAM Feasibility Assessment is complete. The CAISO issued an initial EDAM issues white paper on October 10, 2019 and held a stakeholder webinar on October 17. The CAISO requested comments on the issues white paper by November 22, with the EDAM Entities filing joint comments and BANC also filing supporting comments. It is expected that the CAISO will use 2020 and 2021 to conduct the formal stakeholder process, including development of a straw proposal for EDAM, followed by tariff filings at FERC. The CAISO is currently estimating that the earliest EDAM implementation would be in 2023 with a go live in spring 2024. The EDAM Entities (including BANC) were active participants in the first EDAM public stakeholder workshop on February 11-12, 2020. Stakeholder comments have been submitted and the EDAM Entities are in the process of digesting the comments to determine our approach going forward. The CAISO issued the initial Bundle 1 straw proposal on July 20th. The CAISO held a stakeholder meeting on July 27th and 29th, which BANC attended. Stakeholder comments on the Bundle 1 issues were filed on November 12th. The EIM Entities developed comments on the Bundle 1 straw proposal, to which BANC signed on. The EIM Entities also have continued to do outreach to the CA PTOs. In parallel, the EIM Entities are evaluating the impacts seen on EIM market operations from the August and September heat wave incidents to determine how these might also impact EDAM design. We have kicked off more detailed discussions both internally and with the CAISO to understand the heat wave impacts, what changes to EIM might be required, and how these might impact an EDAM design. It is expected that we will have some conclusions by the end of this year to early next year.

The EIM Governance Review Committee (GRC) issued its straw proposal on July 31, 2020. The recommendations are consistent with positions that BANC has supported in both the EIM group and POU group. BANC joined in comments filed on August 28 by both the EIM Entities and POU group, which were mainly supportive of the GRC proposal. The GRC is now finalizing its proposal for issuance by the end of 2020 to early 2021.

WAPA:

Market Engagement

We have included WAPA-SNR in our EIM Phase 2 planning efforts and WAPA-SNR is an active participant. The main discussions with WAPA-SNR have been around the

approach for use of WAPA-SNR transmission in EIM and how the deviation band will be handled in EIM. Also, we are working proactively with WAPA-SNR to assist them in their OATT and Rates processes for EIM.

WAPA-SNR and BANC have initiated routine 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 and CDWR to construct the SLTP. BANC met with WAPA and the other parties to fully understand the implications of having this new transmission project in the BANC BA/WAPA-SNR sub-BA. The SLTP developers (DATC) have withdrawn from the project and the Delta-Mendota Water Agency has issued an RFP for development of the project. It is our understanding that responses to the RFP have been received and are currently being evaluated. We will keep the Commission informed as more information becomes available.

WECC

WECC Board Meetings

The next MAC and Board meetings are on December 8-9, 2020, via webinar rather than in person due to COVID-19 concerns. I will attend as my calendar allows.

WECC initiated an event assessment of the recent August heat wave and CAISO load shedding incidents and intends to present its report to the WECC Board at the December meeting.

In addition, WECC has proposed a major change in its committee structure as a result of a process to improve stakeholder engagement. These changes include:

- Disbanding the current Operations and Market Interface Committees
- Create an Operations, Security, and Market Interface Committee and retain the Reliability Assessment Committee. These will now become the standing committees.
- Limit committee membership to those who want to actively participate
- Replace Joint Guidance Committee with Performance Review Committee staffed by the Board
- Disband all subgroups that are not involved in supporting a standing committee
- Develop metrics for committee project management and stakeholder engagement.

NWPP

Resource Adequacy Project

In light of the concerns raised last year regarding resource adequacy (RA) for the PNW entities, NWPP initiated a formal project to develop an RA program for the region. As a NWPP member, BANC has been providing funding for the initial phases of this effort. NWPP updated the participants on June 25th regarding the scope, schedule, and budget for the next phase of this effort (Phase 2B). Staff continues to engage in the Phase 2B effort, with active participation on the project design working groups and steering committee. It is expected that BANC will need to be prepared for a decision on joining the NWPP RA Program during the first half of 2021.

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, which will be performed during 2020.

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 initial report is due 1/1/21. The four POU BAs (BANC, IID, LADWP, and TID) are collaborating on positions and responses. In addition, we have done outreach to the CAISO, Pacificorp, NV Energy, and WAPA BA's in California to determine if there is benefit to all BAs coordinating on this effort. BANC filed comments with the agencies on 12/2/19. BANC stated that it supported the long-term goals of the State regarding GHG reductions. However, we also cautioned that the transition from the current mix of resources to the long-term resource mix needs to be done in an orderly manner to ensure that grid reliability and affordability can be maintained for the benefit of the end-use consumers. We also supported a "net zero" carbon approach to meeting the goals, at least on an interim basis. I attended the SB100 workshop on 2/24/2020 and participated on a BA reliability panel. Subsequent to the workshop, staff worked with the other POU BAs (LADWP, IID, and TID) regarding comments to the Joint Agencies. The Joint Agencies held an outreach meeting with the California BAs on August 25 to brief the BAs on the results of the Agencies initial analysis. This was followed by a public workshop on September 2. BANC coordinated with the POU BAs via CMUA and filed

joint comments on September 15. The Joint Agencies have finalized the SB100 report and provided a briefing to the CA BAs on November 30th and conducted a public workshop on the report on December 4th. BANC provided comments as part of the workshop.

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 have 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 goal was to have a set of actionable recommendations that could be presented to the December Western Governors meeting. However, it is now expected that it will be mid-2021 before we are ready for any possible recommendations.

Due to the retirement of the CAISO CEO and the departure of the BPA Administrator, WEIL found itself without leadership. BANC's General Manager was requested to provide interim coordination of the upcoming October meeting of WEIL, where a discussion of how to fill the leadership void was discussed. At this meeting the WEIL group requested the BANC General Manager along with the PGE CEO to continue on the WEIL steering committee for the next year. This included representing WEIL at the November 6, 2020, CREPC/WIRAB panel discussion on the WIRED issue.

Strategic Initiatives

An update of the 2020/2021 Strategic Initiatives is attached to this report.

BANC 2020/2021 Strategic Plan - Routine Initiatives December 2020 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	
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
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	Initiated periodic discussions on areas of collaboration
7 Medium	ASSETS	Evaluate joint options for resource needs for BA	Resource Committee	4th Qtr. 2021	
8 Low	MEMBER SERVICES	Identify and outreach to potential new BANC members	Jim Shetler	Ongoing	

BANC 2020/2021 Strategic Plan - Focused Initiatives December 2020 Update

No./Priority	Focus Area	Initiative	Responsibility	Target Due Date	Status
9 High	INDEPENDENCE	Manage implementation of EIM Phase 2 participation effort	Jim Shetler/SMUD	3/25/21	Routine EIM Committee Meetings being held
10 High		Manage EIM Phase 2 Going Forward	Jim Shetler/SMUD	Ongoing	
11 High		EDAM evaluation effort ~ CAISO Stakeholder Process ~ CAISO Tariff Development	 Jim Shetler/BBSW Jim Shetler/BBSW	 3rd Qtr. 2021 1st Qtr. 2022	Bundle 1 comments filed
12 Medium	OUTREACH	Evaluate opportunities to engage other entities in market development	Jim Shetler	Ongoing	Coordinating with SCL, SRP, LADWP, TID, & Tacoma
13 Medium		Regional Policy Issues: Monitor/ weigh-in where appropriate	Jim Shetler/Commission	Ongoing	Participating in WEIL effort on WIRED issues
14 High		Regionalization: ~Monitor CAISO GRC effort	 Jim Shetler/BBSW	 4th Qtr. 2021	 Tony Braun active on GRC. Draft proposals finalized
15 High		Coordinate with CA BAs on SB100 effort	Jim Shetler/BBSW	12/31/21	Participated/commented at 12/4 final report workshop
16 Medium	ASSETS	Evaluate resource criteria for BANC long-term needs	Jim S./Res. Com.	4th Qtr. 2021	
17 Medium	MEMBER SERVICES	Evaluate possible support to participants for EIM operations	Jim S.	Ongoing	Finalizing Participation Agreement Amendments

Balancing Authority of Northern California

Agenda Item 5A

1. **DRAFT BANC EIM Settlement Allocations Manual.**
2. **Resolution 20-12-08 *Approval of Balancing Authority of Northern California Energy Imbalance Market Settlement Allocations Manual for BANC EIM Phase 2 Operations*.**
3. **Utilicast EIM Post Go-Live Support and Analysis Proposal Letter.**
4. **Resolution 20-12-09 *Authorization of Amendment to Utilicast Contract for Extension of Services Related to Phase 2 of Energy Imbalance Market Post Go-Live Support*.**
5. **DRAFT BANC White Paper: Cost/Benefit Discussion BANC OATT/OASIS.**

12/08/20

To: **BANC Commission**

From: **BANC Counsel**

RE: **Approval of BANC EIM Phase 2 Settlements Allocation Manual**

BANC staff and Counsel are seeking Commission approval of the attached Balancing Authority of Northern California (BANC) Energy Imbalance Market (EIM) Settlements Allocation Manual (Manual) for BANC EIM Phase 2 operations. The Manual is a key component and an attachment (i.e., Attachment A) to the BANC EIM Business Practices (BP). The BP was approved by the Commission at the November 18, 2020 Commission Meeting by Commission Resolution 20-10-20.

The Manual is a comprehensive document which details every charge and credit that will be allocated to EIM Participants by BANC as the EIM Entity. More specifically, the Manual specifies how to allocate received California Independent System Operator (CAISO) (i.e., the EIM Market Operator) imbalance charges/payments to EIM Participants (Section 2.2), the expected timing of the allocation process (Section 2.3), the timing permitted by EIM Participants to dispute potential allocation issues with the EIM Entity (Section 2.4), and the process whereby this Manual can be changed (Section 2.5). On this latter point of disputes, it is intended that most will be resolved internally between BANC Settlements staff and the EIM Participant, however, to the extent a dispute cannot be directly resolved, there is a more formal process that will be followed in accordance with the Dispute Resolution provisions of the BP, which are found in BP Section 12.

An EIM Entity settlement allocation charge summary can be found in Section 5 of the Manual, while the detailed specific charge codes used by BANC are listed in Sections 8-44. To provide some scope and for convenience, we have attached the EIM Entity settlement allocation charge summary found in Section 5 as Attachment A to this memorandum.

The Manual is extremely technical and comprehensive and is the work product of months of the detailed and time consuming efforts of BANC technical staff and EIM Participant subject matter experts (SMEs). Largely, the Manual was developed by BANC staff and SMEs who formed a Settlements Working Group; however, the Manual has been carefully reviewed and approved by both the EIM Committee and the Legal Committee.

As a final note, we have removed the "Special Definitions" section (Section 2.2) from the version of the Manual being provided to the Commission for approval. While important, we are

attempting to ensure consistency and to avoid unnecessary duplication across the other BANC documents, including the BP itself. We do not deem this omission as material to this approval. Moreover, most of these definitions were already reviewed by the Legal Committee and EIM Committee prior to their removal. Nevertheless, a final list of definitions will be circulated both to the Legal Committee and EIM Committee prior to final publication of the Manual. If the Legal Committee believes any or all definitions should be approved, we will bring this final publication version of the Manual back to the Commission prior to finalizing and EIM Phase 2 go-live.

We therefore request Commission approval of the Manual in its substantially final form.

Attachment A

The allocation methodologies for each BANC charge code are summarized in the following table:

BANC Allocation Charge Code		Allocation Granularity	Allocation Basis	PTUD Suballocated to BANC
Precalculation	EIM Participant Cost Allocation	N/A	Set by BANC Commission	Yes
Precalculation	EIM Participant Fixed Cost Allocation	N/A	Evenly divided by number of EIM Participants	Yes
Precalculation	EIM Participant Tagging Precalculation	N/A	N/A	N/A
Precalculation	EIM Participant Load Ratio Share	N/A	Final EIM CAISO metered load value ratio share.	Yes
Precalculation	EIM Participant Load Base Schedule	N/A	(Scheds at T-40 plus net hourly tag scheds at T-57) * (1 - transmission loss factor)	No
Precalculation	EIM Participant Absolute Imbalance Ratio	N/A	Demand: ABS(5-min reported load aggregated hourly – hourly load Base Schedule) Generation: ABS(5 min gen meter hourly – hourly gen Base Schedules) Tags: ABS(tags at T-57 – 5 min sched ATF aggregated hourly) Sum of Demand, Generation and Tags	Yes
100*	BANC Balancing Account	Daily	BANC Daily Load Ratio Share	Yes
101*	BANC PTB Charge	Daily	Custom Allocated or by default, Daily Load Ratio Share.	Yes
102*	BANC Miscellaneous Charge	Daily	Custom Allocated	Yes
2999	BANC Charge Code 2999 Default Invoice Interest Payment	Monthly	EIM Participant Cost Allocation Ratio	Yes
3999	BANC Charge Code 3999 Default Invoice Interest Charge	Monthly	EIM Participant Cost Allocation Ratio	Yes
4564	GMC-EIM Transaction Charge	Hourly	EIM Participant Hourly Load and Intertie Absolute Imbalance Ratio	Yes
4575	BANC Charge Code 4575 Scheduling Coordinator Identification Charge	Monthly	EIM Participant Fixed Cost Allocation Ratio	Yes
5024	BANC Charge Code 5024 Invoice Late Payment Penalty	Daily	EIM Participant Cost Allocation Ratio	Yes
5025	BANC Charge Code 5025 Collateral Late Payment Penalty	Daily	EIM Participant Cost Allocation Ratio	Yes
5900	BANC Charge Code 5900 Shortfall Receipt Distribution	Daily	EIM Participant Cost Allocation Ratio	Yes
5901	BANC Charge Code 5901 Shortfall Receipt	Daily	EIM Participant Cost Allocation Ratio	Yes
5910	BANC Charge Code 5910 Shortfall Allocation	Daily	EIM Participant Cost Allocation Ratio	Yes
5912	BANC Charge Code 5912 Default Allocation	Daily	EIM Participant Cost Allocation Ratio	Yes
6045	Over-scheduling and Under-scheduling Charge	Hourly	Hourly by Over/Under Scheduled Quantity	Yes
6046	BANC Charge Code 6046 Over and Under Scheduling Allocation	Daily	EIM Participant Daily Load Ratio Share	Yes
6194	Spin Reserve Obligation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
6196	Spin Reserve Neutrality Allocation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
6294	Non- Spin Reserve Obligation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
6296	Non- Spin Reserve Neutrality Allocation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
66200	RT Bid Cost Recovery EIM Settlement	Daily	EIM Participant Daily Load Ratio Share	Yes

BANC Allocation Charge Code		Allocation Granularity	Allocation Basis	PTUD Suballocated to BANC
64600	FMM Instructed Imbalance Energy EIM Settlement	5 Minute	Allocate per participant specific FMM Intertie activity	No
64700	Real Time Instructed Imbalance Energy EIM Settlement	5 Minute	Allocate per participant specific RTM Intertie activity	No
64740	Real Time Unaccounted for Energy EIM Settlement	Hourly	First allocation to any member where meter data doesn't equal reported load and then second any remaining imbalance allocated to EIM Participant Hourly Load Ratio Share.	Yes
64750	Real Time Uninstructed Imbalance Energy EIM Settlement	Hourly	Allocated per member based on difference between reported load meter data and individually calculated load Base Schedule.	No
64770	Real Time Imbalance Energy Offset EIM	Hourly	EIM Participant Hourly Absolute Imbalance Ratio	Yes
6478	RT System Imbalance Energy Offset	Hourly	EIM Participant Hourly Load Ratio Share	Yes
66780	Real Time Bid Cost Recovery Allocation EIM	Hourly	EIM Participant Hourly Load Ratio Share	Yes
67740	Real Time Congestion Offset EIM	Hourly	EIM Participant Hourly Absolute Imbalance Ratio	Yes
69850	Real Time Marginal Losses Offset EIM	Hourly	EIM Participant Hourly Absolute Imbalance Ratio	Yes
7070	BANC Charge Code 7070 Flexible Ramp Forecast Movement Settlement	Hourly	EIM Participant Hourly Load and Intertie Absolute Imbalance Ratio	Yes
7076	BANC Charge Code 7076 Flexible Ramp Forecast Movement Allocation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
7077	BANC Charge Code 7077 Daily Flexible Ramp Up Uncertainty Award Allocation	Daily	EIM Participant Daily Load and Intertie Absolute Imbalance Ratio	Yes
7078	BANC Charge Code 7078 Monthly Flexible Ramp Up Uncertainty Award Allocation	Monthly	EIM Participant Monthly Load and Intertie Absolute Imbalance Ratio	Yes
7087	BANC Charge Code 7087 Daily Flexible Ramp Down Uncertainty Award Allocation	Daily	EIM Participant Daily Load and Intertie Absolute Imbalance Ratio	Yes
7088	BANC Charge Code 7088 Monthly Flexible Ramp Down Uncertainty Award Allocation	Monthly	EIM Participant Monthly Load and Intertie Absolute Imbalance Ratio	Yes
7989	BANC Charge Code 7989 Invoice Deviation Interest Distribution	Daily	EIM Participant Cost Allocation Ratio	Yes
7999	BANC Charge Code 7999 Invoice Deviation Interest Allocation	Daily	EIM Participant Cost Allocation Ratio	Yes

*BANC defined charge codes

BANC
EIM Settlement Allocations Manual

December 9, 2020

Version 1.00_Approval DRAFT

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1. BANC EIM Settlement Allocations Manual Overview

The California independent System Operator (CAISO) Energy Imbalance Market (EIM) allows Balancing Authority (BA) Areas (BAA) and transmission providers outside the CAISO BAA to efficiently and economically serve their imbalance energy needs through participation in the CAISO's real-time market.

As of April 2019, the Balancing Authority of Northern California (BANC) began "Phase 1" of participation in the CAISO EIM. Phase 1 involves a single Participating Resource Scheduling Coordinator (PRSC), the Sacramento Municipal Utility District (SMUD). In the Spring of 2021, additional participants inside the BANC BAA, including the Modesto Irrigation District, the Cities of Redding and Roseville and the Western Area Power Administration – Sierra Nevada Region (WAPA) will commence their participation under BANC EIM Phase 2. In its role as the EIM Entity for the BANC BAA, BANC will receive settlement charges and credits from the CAISO (EIM Market Operator) related to:

- The overall BA participation in the EIM,
- Imbalance charges related to tag volume changes after 57-minutes before the start of each hour, and
- Load imbalance charges related to difference in each BANC EIM Participant load from energy base scheduled to actual meter data submitted after the fact.

This BANC EIM Settlement Manual (Manual) documents the processes for BANC/EIM Entity to:

- Allocate received CAISO imbalance charges/payments to EIM Participants,
- Detail the expected timing of the allocation process,
- Detail the timing permitted by EIM Participants to dispute potential allocation issues with the EIM Entity, and
- Describe the process whereby this Manual can be changed.

2. BANC Settlement Process

2.1 *Special Definitions*

Capitalized terms not defined herein shall have the meaning(s) set forth in either the BANC EIM Business Practice (BP) or Market Operator ("MO" or "CAISO") Tariff and Business Practice Manuals.

[THIS SECTION IS WIP AND WILL BE INSERTED INTO A FUTURE VERSION]

2.2 *Allocation Process*

The BANC allocation process will be performed on BANC business working days. The allocation begins by the CAISO publishing settlement statements for BANC. CAISO only publishes settlement statements on CAISO defined working days. CAISO publishes statements late in the day and multiple statements are typically published on the first CAISO business day following holidays and weekends. For each Trade Date CAISO will publish an initial settlement statement several days after the day and then a series of scheduled resettlements over time. CAISO may invoke additional settlements other than the normal schedule to handle special circumstances. After the last day of every calendar month settlement is perform CAISO will produce a monthly settlement statement. The monthly statement is to calculate all monthly charges across the month. This unique process then results in every scheduling coordinator receiving two settlement statements when the last day of the month process, a daily and a monthly statement. For more information on the timing of CAISO settlement statements, please see the CAISO Business Practice Manual (BPM) for Settlements and Billing: https://bpmcm.caiso.com/Pages/BPMLibrary.aspx.

The BANC Settlement Analyst(s) will review each BANC settlement statement from CAISO for completeness and thereafter will allocate that statement in accordance with the expectations published in this manual. BANC will allocate each statement in a standalone process. This means that BANC EIM Participants will receive two allocations when the last Trade Date of the month is processed, one for the daily settlement and one for the monthly settlement. As such the allocation rules in this manual will be applied to all settlement allocations. If a charge does not show up on the CAISO statement, it will not be processed by the BANC Allocation process. The BANC Allocation process will always process BANC Charge Code 100 since it is a rounding charge code. BANC Charge Codes 101 will only process when there is a PTB found in the charge codes being processed for the current CAISO settlement statement. BANC Charge Code 102 will only process when BANC Settlement Analyst initiates the charge code.

After the allocation process has completed for a settlement, BANC Settlement Analyst will review the results for accuracy and then will approve the results. EIM Participants will not be able to view any results until the BANC Settlement Analyst has approved the results. The allocation process is generally expected to take approximately two business days to complete after CAISO publishes settlement statements. If BANC is unable to complete an allocation after three business days, the BANC Settlement Analyst with provide notification to the EIM Participants informing them of the delay and any information as to when they may be able to expect the allocation to be completed.

Although never expected, it is foreseen that an approved allocation result may need to be rescinded. For these rare unexpected occasions, the BANC Settlement Analyst will send a notification to the EIM Participants informing them that an allocation is being rescinded along with any information as to when they may be able to expect the allocation to be completed.

2.3 *Invoice Process*

On approximately the 10th of each of each month, BANC will invoice the EIM Participants for all net monthly incremental changes (both AR and AP) from all allocated settlements statements processed by BANC since the last BANC invoice issued the prior month. EIM participants will be invoiced from BANC's finance system. The BANC allocation solution will net all allocation incremental statement totals by EIM Participant and for the Trinity Public Utilities District (TPUD) since the last processed monthly invoice and will send the information to BANC Accounting for issuance. The BANC allocation software will produce an EIM Participant Monthly Invoice Summary PDF of the allocation results for each EIM Participant as displayed in Appendix G which will be provided with the invoice. Along with the EIM Participant Monthly Invoice Summary PDF, each EIM Participant will receive either a BANC AP or AR invoice statement. Samples of the AP and AR invoices are provided in Appendix G. In the event an EIM Participant has no monthly charge or credit for an invoice, BANC Accounting will still issue a BANC AR Invoice and the EIM Participant Monthly Invoice Summary PDF.

2.4 *Dispute Process*

2.4.1 Consistency between this BANC EIM Settlement Allocation Dispute Process and the BANC EIM Business Practice Section 12 (EIM Disputes)

This BANC EIM Settlement Allocation Dispute Process (ADP) provides the step-by-step details to be followed in a BANC EIM Settlement Allocation dispute with respect to application of the terms of this Manual. Unresolved disputes will be subject to Section 12 (EIM Disputes) of the BANC EIM Business Practices (BP), and nothing in this ADP shall be read inconsistent with the BP. Any conflicts between this ADP and the BP shall be construed in favor of the BP.

2.4.2 BANC/EIM Entity Settlement Allocation Disputes (fix numbering)

2.4.2.1 It is expected that the EIM Entity may encounter errors in settlement charges and/or issues resulting in an incorrect charge amount. To remedy settlement issues, the EIM Entity will use a settlement dispute process, described further herein. The EIM Entity may broadly encounter two types of settlement or allocation disputes:

2.4.2.1.1 An issue in the EIM Entity Settlement between itself and the CAISO.

2.4.2.1.2 An issue in the EIM Entity Settlement Allocation between itself and an EIM Participant.

2.4.2.2 An EIM Participant, which is a PRSC, will settle directly with the CAISO. A settlement dispute could arise through that process and the PRSC shall follow the applicable procedures in the Tariff. However, the EIM Entity would not be a party to that dispute and therefore is not expected to be engaged in the PRSC settlement dispute process.

2.4.3 Identification of an issue in the CAISO EIM Entity Settlement between itself and the CAISO

This section shall be read and understood within the context of Section 12.3 (Disputes between the MO and the EIM Entity) and Section 12.4 (Disputes Regarding MO Charges or Payments to the EIM Entity Raised by EIM Participants or BANC EIM Transmission Providers) of the BP.

2.4.3.1 The BANC Settlement Analyst will validate the Statements and Invoices produced for the EIM Entity by the CAISO. When issues are identified which require formal dispute with the CAISO, the EIM Entity will open a CIDI settlement dispute directly with the CAISO. While a CAISO CIDI settlement dispute is pending for a Trade Date, BANC will allocate the Trade Date's Settlement and Invoice amounts as published by the CAISO.

2.4.3.2 When a CIDI settlement dispute is accepted by the CAISO, the updated EIM Entity Settlement Allocation impacts will be reflected in the normal reprocessing of the Trade Date where the dispute occurred. The CAISO's dispute adjustments will be reflected in the CAISO's resettlement of the Trade Date where the dispute occurred; and the EIM Entity Settlement Allocation Adjustments will be reflected in the EIM Entity allocation processing of the resettled Trade Date. Any CIDI settlement disputes which are rejected by the CAISO will not result in any EIM Entity Settlement Allocation Adjustments.

2.4.4 Identification of an issue in the EIM Entity Settlement Allocation between itself and an EIM Participant.

This section shall be read and understood within the context of Section 12.5 (Disputes among and between the EIM Entity and EIM Participants or BANC EIM Transmission Providers) of the BP.

2.4.4.1 An EIM Participant may encounter EIM Entity Settlement Allocation error and/or issue resulting in an incorrect allocation amount. The EIM Participant will notify BANC Settlement Analyst of the allocation issue via email. The BANC Settlement Analyst will review/analyze the reported issue, then provide an accepted or rejected answer to the disputing party on or before CAISOs Dispute Submittal Deadline, within the timelines set forth in Section 6.4, below. If the allocation dispute is accepted, the BANC Settlement Analyst will stage the appropriate corrections for the next scheduled reprocessing of the disputed Trade Date. If the allocation dispute is rejected, no further action will be taken by the BANC Settlement Analyst unless further review is requested by the disputing party.

2.4.4.2 If the disputing party disagrees with the BANC dispute resolution, they are expected in good faith to continue to make every effort to resolve the disagreement with the BANC Settlement Analyst – providing additional evidence of the issue for example. If the disputing party remains unsatisfied with the BANC Settlement Analyst's decision, they can make an appeal to the EIM Committee prior to initiating any further Dispute Resolution under Section 12 (EIM Disputes) of the BP. This upwards appeal process to the EIM Committee should only be used when all other paths to resolution of the dispute have failed to reach an amicable settlement. The BANC Settlement Analyst will notify the General Manager that an EIM Entity Settlement Allocation dispute remains unresolved/unaccepted. The General Manager will determine if/when the EIM Committee will review the issue and provide the meeting date. The disputing party will prepare a presentation outlining the exact issue and their proposed resolution. The BANC Settlement Analyst may optionally prepare a presentation opposing the dispute. The EIM Committee will make a final determination of the allocation dispute's merits, by a simple majority vote of its members. In the event of a tie, the General Manager shall cast the deciding vote. The final dispute resolution option shall be provided in writing, if so requested. If the disputing party is still in disagreement, it may avail itself

of the provisions in Section 12.5 (Disputes among and between the EIM Entity and EIM Participants or BANC EIM Transmission Providers) of the BP.

2.4.4.3 In the event an allocation dispute brought by a BANC EIM Participant results in the discovery of a BANC EIM Entity settlement dispute with the CAISO, the BANC Settlement Analyst will open a CIDI settlement dispute and notify the disputing party that a dispute has been opened. The CIDI settlement dispute process will proceed as described in the section "EIM Entity Settlement between itself and the CAISO" above.

2.4.5 BANC EIM Settlement Allocation Dispute Timeline/Deadline

2.4.5.1 The EIM Entity and EIM Participants recognize that the EIM Entity Settlement Allocation dispute deadlines are necessarily aligned with the CAISO's dispute deadlines. Upon receipt of a dispute from an EIM Participant, the BANC Settlement Analyst must be allowed time to review the dispute and potentially open a corresponding dispute with the CAISO. The BANC Settlement Analyst must open the CIDI settlement dispute prior to the CAISO's dispute deadline for Trade Date.

2.4.5.2 Any EIM Participant allocation disputes which arrive after the Trade Date's EIM Participant's Dispute Submittal Deadline (see table in Section 6.4 below) will be rejected by the BANC Settlement Analyst and there shall be no dispute recourse for the disputing party.

2.4.5.3 In accordance with the current CAISO Settlement Business Practices, the CAISO allows ~22 business days (+22B) from the Statement Publication Date for an EIM Entity to file a dispute. The EIM Entity and the EIM Participants agree that an EIM Participant has ~12 of those 22 business days to open a dispute with BANC. This allows the BANC Settlement Analyst ~10 business days to analyze and file a corresponding dispute with the CAISO (if necessary). In developing the BANC dispute deadlines, the parties recognize that the EIM Entity Settlement Allocation results would be posted about 2 business days after the CAISO's Statement Publication date.

2.4.5.4 The BANC allocation dispute timeline is provided in the table below:

New Market Settlement Timeline as of Trade Date 1/1/21

CAISO Statement Publication Date	Statement Type	Disputes Allowed	BANC Settlements Processing Time	BANC Participant's Dispute Submittal Deadline[1]	CAISO's Dispute Submittal Deadline[2]
T+9B	Initial	All Data	2BD	T+21B	T+31B
T+70B	Recalculation	All Data	2BD	T+82B	T+92B
T+11M (T+234B)	Recalculation	Incremental Changes Only	2BD	T+246B	T+256B
T+21M (T+446B)	Recalculation	Incremental Changes Only	2BD	T+458B	T+468B
T+24M (T+512B)	Recalculation	No disputes	2BD	T+524B	T+534B

[1] BANC's Dispute Submittal Deadline is CAISO Statement Publication Date plus 12 business days

[2] From the CAISO Payment Calendar

2.5 *Change Management Process*

2.5.1 Purpose and Scope of this Section and Role of the BANC EIM Settlements Working Group

The purpose of this change management section is to establish a process to support changes to the allocations and charges set forth in this Manual. For the avoidance of doubt, any changes to allocations and charges shall, in addition to being done in accordance with this process, be based upon an adherence, to the extent practicable, to the principles of cost causation among the EIM Participants.

This process shall be generally overseen by the BANC EIM Settlements Working Group (WG). The WG is an informal group of settlements subject matter experts which provides support to the EIM Committee. Thus, the purpose of the WG is to provide EIM settlement expertise and general oversight and guidance with respect to the BANC EIM settlements process in support of the EIM Committee. The WG will select an individual to serve as the chair of the WG (WG Chair), who will serve in this role at the will of the other WG members until that individual either decides to step down or another person is selected by unanimous approval of the WG.

EIM Settlement Charges (Settlement Charge(s)) can relate to charges imposed on the EIM Entity by the CAISO as the EIM Market Operator or those Settlement Charges allocated pursuant to formulas developed by EIM Entity under the supervision of the WG and subsequently approved by the EIM Committee and/or the Commission. All charges imposed on EIM Participants by the EIM Entity related to participation in EIM are set forth and described in the Manual.

2.5.2 Drivers of BANC EIM Settlement Allocation Changes

The following represent drivers for changes related to the Manual. These include, but are not limited to:

2.5.2.1 Change(s) in the CAISO Settlement Charge(s).

2.5.2.2 New CAISO Settlement Charge.

2.5.2.3 EIM Participant or Commission-determined issue/dispute.

2.5.2.4 WG or EIM Committee requested change.

2.5.2.5 EIM Allocation formulation error or implementation error.

2.5.3 Proposing Changes to EIM Settlement Charges

Any WG member can propose a change to an EIM Settlement Charge (Settlement Charge). Changes that originate outside the WG (e.g., CAISO or EIM Committee-originated) would be brought forward by the WG Chair.

2.5.4 Work Group Change Management Process

The following step-by-step process will be generally followed by the WG when bringing forward a change to a Settlement Charge on its own initiative or in response to an external request.

2.5.4.1 Proposing party (Proponent) brings a Settlement Charge allocation change to the WG Chair, unless it is a change that originates outside the WG, in which case the WG Chair is the Proponent.

2.5.4.2 WG Chair reviews proposal, determines urgency, adds to next WG meeting agenda.

2.5.4.2.1 Urgent change requests could require an off-schedule meeting of the WG (via conference call).

2.5.4.3 Proponent provides written change proposal to WG members ahead of meeting.

2.5.4.4 Proponent presents change(s) to WG at subject WG meeting.

2.5.4.5 WG members who disagree with the change can make counter arguments or provide alternative approaches.

2.5.4.6 WG voting on change.

Proceeding with proposed changes to Settlement Charges shall first be determined by a vote of the WG in accordance with the following:

2.5.4.6.1 One vote per WG member.

2.5.4.6.2 Super majority vote by WG carries.

2.5.4.6.2.1 Notwithstanding the forgoing, to the extent a proposed change might impede or conflict with a federal obligation, such issues shall be described and discussed with the WG. To the extent these issues cannot be resolved by the WG expeditiously and the WG still believes a change is needed, the matter shall be turned over to the EIM Committee for further discussion and deliberation. The EIM Committee may consult the General Counsel and possibly submit the matter to the Commission for resolution, if necessary.

2.5.4.7 Disapproval by Vote

If change is denied by vote, no further action will be taken. Notwithstanding the foregoing, the WG may request that Proponent provide more analysis or supporting data for reconsideration.

2.5.4.8 Approval by Vote of WG and Referral to EIM Committee

In the event that a change is approved, the WG shall forward its recommendation, along with the following, to the EIM Committee for either information or for full consideration, along with:

2.5.4.8.1 The Effective Date for Change, including the following Information:

2.5.4.8.1.1 The Trade Date such change becomes effective.

2.5.4.8.1.2 Specific Implementation Date.

2.5.4.8.1.3 Any Retro-active remediation (e.g., Resettlement, etc.) needed for change or changes to software and/or settlement processes.

2.5.4.8.1.4 Any further information deemed relevant by the WG in support of the proposed change.

2.5.4.8.1.5 Whether the WG believes that the change requires BANC EIM Committee review and approval or is just being provided on an informational basis.

2.5.4.8.1.5.1 All changes, except those proposing minor non-substantive changes with no cost impacts, shall be reviewed by the EIM Committee in accordance with Section 5 (EIM Committee Engagement) below.

2.5.4.8.1.5.1.1 Urgent change requests may require an off-schedule meeting of the EIM Committee (e.g., teleconference).

2.5.4.9 Non-Substantive Corrections and Minor Changes

Notwithstanding the process set forth in this Section 4 (Work Group Change Management Process), changes brought forward by recommendation of the General Manager or upon recommendation to the General Manager by any other EIM Participant or WG member, which are either non-substantive corrections or other minor changes with no cost impacts, may be made by the General Manager without a formal process. Any such changes shall be communicated to the WG and reflected in the Manual as a minor, non-substantive changes as described in Section 7 (Change in Version History).

2.5.5 EIM Committee and Commission Engagement

2.5.5.1 Changes referred to by the WG which result in changes to cost allocation to any EIM Participant or among EIM Participants shall be reviewed by the General Counsel and, if so determined, provided to the Commission for review and approval.

2.5.5.1.1 Notwithstanding the foregoing, changes which have an annual monetary impact equal to or below the delegated contractual threshold of the General Manager, as set by the Commission, shall not require Commission approval; provided, however, such change shall require the unanimous approval of the EIM Committee.

2.5.5.2 Changes which do not require Commission approval and which are approved by the EIM Committee will be implemented consistent with this procedure.

2.5.6 Change Implementation

2.5.6.1 Changes which are approved consistent with Section 4 (Work Group Change Management Process) or Section 5 (EIM Committee Engagement) shall be reflected in

an update to the Manual, along with an appropriate change to the Version History as described in Section 7.0 (Change in Version History).

2.5.6.2 In addition to changes to the Manual, the General Manager, in coordination with the WG and/or the EIM Committee, shall initiate any further changes and/or testing required to implement the change, including, but not limited to ensuring the:

2.5.6.2.1 Settlement Software vendor is engaged to design/implement change.

2.5.6.2.2 BANC Settlement Analysts test change.

2.5.6.2.3 Change is implemented in BANC production software on the effective date.

2.5.7 Change in Version History

2.5.7.1 Any changes will be reflected through a change in the Manual's Version History. Minor, non-substantive changes will be reflected in 1/10th increments to the Version History (e.g., 1.1, 1.2, etc.). Substantive changes will be reflected as changes to the first digit (e.g., 1.0, 2.0, etc.).

3. Section Reserved for Future Use

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4. Charges, Determinants and Calculation Summary

This Manual defines all the charges and calculations used to calculate EIM Participants' EIM settlement. The source of these charges and credits originates with the market settlement statement and resettlements that BANC receives from CAISO. BANC will allocate all charges and credits received based on the defined formulas in this Manual.

Any determinant or charge that has a red font is from CAISO settlement statement. CAISO settlements do not use the published BPM name but have their own defined acronym. This Manual provides the statement translation for every CAISO determinant. CAISO determinants have a unique and complex set of subscripts that are defined by the CAISO Business Practice Manuals. All determinants, charges and subscripts that are in blue or gold font are defined by this Manual. Gold font calculations are for BANC monitoring and may not be available to EIM Participants.

All BANC allocation calculations are written with a bottom up approach. This means for a simple formula that is only price times quantity, the manual will list the quantity determinant, then the price determinant and then at the end, the charge code total that is the product of price times quantity. All BANC allocation formulas display in a blue or gold font.

4.1 *Calculation Subscripts*

The following calculation subscripts are used in the BANC allocation calculation formulas:

Time Subscripts:

m – Identifies a calendar month interval.

d – Identifies a daily interval.

h – Identifies an hourly interval.

c – Identifies a 15-minute time interval.

f – Identifies a 5-minute time interval.

All time intervals are in Pacific Prevailing Time zone.

A time subscript inherently assumes that all longer intervals are inclusive in the current interval. For example, the "h" interval also assumes for all hours of the day and month. The "f" interval assumes all intervals in the 15-minute interval, all hours, all days and months.

The time subscript will always be displayed as the last subscript in the series of subscripts so users can easily identify the time interval.

Entity and Asset Subscripts:

B – Identifies a determinant at the *BANC* level.

P – Identifies a determinant by *EIM Participant*.

Q – CAISO Intertie Resource ID LMP. The Intertie Resource ID LMP is the price used for settling imbalance volumes for BANC imports and exports.

R – Registered resource location (generator, load, tie).

The order of subscript display will always be listed in the preference listed in this section.

Tag Subscripts:

S – POR/POD Segment found on the tag used as the Intertie price cross reference in Appendix D. This will be null on Intratie tags.

G – GCA on the tag.

E – PSE on the tag.

C – Tag Code on the tag.

L – LCA on the tag.

x – Energy schedule ultimate source location.

y – Energy schedule ultimate sink location.

z – A tagged energy schedule name.

The order of subscript display will always be listed in the preference listed in this section.

4.2 *Calculation Superscripts*

Superscripts will be used as a reference to identify rounding requirements.

4.3 *Calculation Annotations*

The following formula annotations are used in this manual:

$\sum$ - Means sum across some characteristic. The following formula, $\sum_{Bd}(BNC\_PPT\_LD\_HR\_QTY_{Ph})$ means:

- $BNC\_PPT\_LD\_HR\_QTY_{Ph}$ – This is the BNC_PPT_LD_HR_QTY billing determinant is by BANC by hour.
- $\sum_{Bd}$ – This means to sum across the billing determinant by *BANC* across the entire day.

4.4 *Determinant Precision*

All determinants pulled from CAISO Settlement Statements will be displayed in the precision provided from CAISO except for charge amounts. Charge amounts will be rounded to the nearest cent in the interval displayed. Note CAISO does not round quantities or amounts; these values can have up to 9 decimals of precision. Although CAISO may indicate in the settlements configuration guide that a determinant may have a precision of 9 decimals, this Manual identifies that actual precision found in the settlement statements.

All determinants pulled from non-CAISO data will be displayed in the precision they are received from the source system.

All determinants will retain the precision of their preceding determinants except as noted where rounding is applied. Rounding will be annotated with a superscript and will identify the level of rounding precision.

All amounts allocated to participants will be rounded to the nearest cent per data interval. All amount rounding will be captured in the BANC Balancing Account and allocated to participants per the allocation defined in that section.

5. EIM Entity Settlement Allocation Charge Summary

The allocation methodologies for each BANC charge code are summarized in the following table:

BANC Allocation Charge Code		Allocation Granularity	Allocation Basis	PTUD Suballocated to BANC
Precalculation	EIM Participant Cost Allocation	N/A	Set by BANC Commission	Yes
Precalculation	EIM Participant Fixed Cost Allocation	N/A	Evenly divided by number of EIM Participants	Yes
Precalculation	EIM Participant Tagging Precalculation	N/A	N/A	N/A
Precalculation	EIM Participant Load Ratio Share	N/A	Final EIM CAISO metered load value ratio share.	Yes
Precalculation	EIM Participant Load Base Schedule	N/A	(Scheds at T-40 plus net hourly tag scheds at T-57) * (1 - transmission loss factor)	No
Precalculation	EIM Participant Absolute Imbalance Ratio	N/A	Demand: ABS(5-min reported load aggregated hourly – hourly load Base Schedule) Generation: ABS(5 min gen meter hourly – hourly gen Base Schedules) Tags: ABS(tags at T-57 – 5 min sched ATF aggregated hourly) Sum of Demand, Generation and Tags	Yes
100*	BANC Balancing Account	Daily	BANC Daily Load Ratio Share	Yes
101*	BANC PTB Charge	Daily	Custom Allocated or by default, Daily Load Ratio Share.	Yes
102*	BANC Miscellaneous Charge	Daily	Custom Allocated	Yes
2999	BANC Charge Code 2999 Default Invoice Interest Payment	Monthly	EIM Participant Cost Allocation Ratio	Yes
3999	BANC Charge Code 3999 Default Invoice Interest Charge	Monthly	EIM Participant Cost Allocation Ratio	Yes
4564	GMC-EIM Transaction Charge	Hourly	EIM Participant Hourly Load and Intertie Absolute Imbalance Ratio	Yes
4575	BANC Charge Code 4575 Scheduling Coordinator Identification Charge	Monthly	EIM Participant Fixed Cost Allocation Ratio	Yes
5024	BANC Charge Code 5024 Invoice Late Payment Penalty	Daily	EIM Participant Cost Allocation Ratio	Yes
5025	BANC Charge Code 5025 Collateral Late Payment Penalty	Daily	EIM Participant Cost Allocation Ratio	Yes
5900	BANC Charge Code 5900 Shortfall Receipt Distribution	Daily	EIM Participant Cost Allocation Ratio	Yes
5901	BANC Charge Code 5901 Shortfall Receipt	Daily	EIM Participant Cost Allocation Ratio	Yes
5910	BANC Charge Code 5910 Shortfall Allocation	Daily	EIM Participant Cost Allocation Ratio	Yes
5912	BANC Charge Code 5912 Default Allocation	Daily	EIM Participant Cost Allocation Ratio	Yes
6045	Over-scheduling and Under-scheduling Charge	Hourly	Hourly by Over/Under Scheduled Quantity	Yes
6046	BANC Charge Code 6046 Over and Under Scheduling Allocation	Daily	EIM Participant Daily Load Ratio Share	Yes
6194	Spin Reserve Obligation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
6196	Spin Reserve Neutrality Allocation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
6294	Non- Spin Reserve Obligation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
6296	Non- Spin Reserve Neutrality Allocation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
66200	RT Bid Cost Recovery EIM Settlement	Daily	EIM Participant Daily Load Ratio Share	Yes

BANC Allocation Charge Code		Allocation Granularity	Allocation Basis	PTUD Suballocated to BANC
64600	FMM Instructed Imbalance Energy EIM Settlement	5 Minute	Allocate per participant specific FMM Intertie activity	No
64700	Real Time Instructed Imbalance Energy EIM Settlement	5 Minute	Allocate per participant specific RTM Intertie activity	No
64740	Real Time Unaccounted for Energy EIM Settlement	Hourly	First allocation to any member where meter data doesn't equal reported load and then second any remaining imbalance allocated to EIM Participant Hourly Load Ratio Share.	Yes
64750	Real Time Uninstructed Imbalance Energy EIM Settlement	Hourly	Allocated per member based on difference between reported load meter data and individually calculated load Base Schedule.	No
64770	Real Time Imbalance Energy Offset EIM	Hourly	EIM Participant Hourly Absolute Imbalance Ratio	Yes
6478	RT System Imbalance Energy Offset	Hourly	EIM Participant Hourly Load Ratio Share	Yes
66780	Real Time Bid Cost Recovery Allocation EIM	Hourly	EIM Participant Hourly Load Ratio Share	Yes
67740	Real Time Congestion Offset EIM	Hourly	EIM Participant Hourly Absolute Imbalance Ratio	Yes
69850	Real Time Marginal Losses Offset EIM	Hourly	EIM Participant Hourly Absolute Imbalance Ratio	Yes
7070	BANC Charge Code 7070 Flexible Ramp Forecast Movement Settlement	Hourly	EIM Participant Hourly Load and Intertie Absolute Imbalance Ratio	Yes
7076	BANC Charge Code 7076 Flexible Ramp Forecast Movement Allocation	Hourly	EIM Participant Hourly Load Ratio Share	Yes
7077	BANC Charge Code 7077 Daily Flexible Ramp Up Uncertainty Award Allocation	Daily	EIM Participant Daily Load and Intertie Absolute Imbalance Ratio	Yes
7078	BANC Charge Code 7078 Monthly Flexible Ramp Up Uncertainty Award Allocation	Monthly	EIM Participant Monthly Load and Intertie Absolute Imbalance Ratio	Yes
7087	BANC Charge Code 7087 Daily Flexible Ramp Down Uncertainty Award Allocation	Daily	EIM Participant Daily Load and Intertie Absolute Imbalance Ratio	Yes
7088	BANC Charge Code 7088 Monthly Flexible Ramp Down Uncertainty Award Allocation	Monthly	EIM Participant Monthly Load and Intertie Absolute Imbalance Ratio	Yes
7989	BANC Charge Code 7989 Invoice Deviation Interest Distribution	Daily	EIM Participant Cost Allocation Ratio	Yes
7999	BANC Charge Code 7999 Invoice Deviation Interest Allocation	Daily	EIM Participant Cost Allocation Ratio	Yes

*BANC defined charge codes

6. EIM Entity Settlement Allocation Configuration

BANC will configure and maintain the settlement allocation solution. The solution will allocate CAISO charges and credits to EIM Participants based on the rules provided in this Manual. The allocation will be initiated with each settlement statement issued by CAISO and will be performed by Trade Date. CAISO resettles Trade Dates on a predetermined schedule and can add resettlements as their tariff dictates. BANC will fully allocate each first settlement from CAISO which will flow to the EIM Participant invoice. Thereafter with each CAISO resettlement statement, BANC will reallocate each resettled CAISO settlement statement whereby the difference in the allocations for each charge code will flow to the EIM Participant invoice.

6.1 *EIM Participants*

The solution will track the following information by *Trade Date*.

- *EIM Participant* name
- *EIM Participant* registered SCID with CAISO.
- *BANC* registered load location.
- *EIM Participant* scheduling points.

7. BANC Allocation Precalculation

A Precalculation is a predefined mathematical formula that is used across multiple charges. In lieu of redefining the formula in each charge, the formula is defined once and each charge that uses the formula will reference.

7.1 *EIM Participant Cost Allocation Precalculation*

There are several CAISO charges which will be allocated according the EIM Participant Cost Allocation Ratio. These EIM Participant Cost Allocation Ratios are determined and approved by the Commission early in each calendar year. This preprocess defines the determinant which will be used to hold the EIM Participant Cost Allocation Ratio for each EIM Participant. The new participant ratio values are deemed in effect by Trade Date until the Commission approves updated ratios. The total of all the EIM Participant Cost Allocation Ratios will equal 1 (one).

WAPA serves the TPUD load. TPUD will not be participating in the EIM. The Commission has agreed that any EIM charges and credits associated with TPUD will be subtracted from WAPA and will be reallocated to the other participants by BANC Accounting outside of this allocation process. To accommodate this requirement, the Cost Allocation for WAPA will be reduced by proportionally by percentage of their TPUD load compared to WAPA's total load and reallocated to separate determinants by charge code. WAPA will report both their total load that includes the TPUD load and will provide a separate TPUD load to the EIM Entity settlement allocation software for this allocation process.

The EIM Participant cost allocation percentage will be based on the approved percentage that is effective for the Trade Date being settled.

7.1.1 CAISO Determinants

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM

7.1.2 BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description
PPT_PRELMIN_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Preliminary Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the Commission and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date.
TPUD_DLY_LD_QTY$_{d}$	Decimal Daily 5 Decimals	**TPUD Daily Load Quantity** – The total daily megawatt-hour load for Trinity PUD in Prevailing Pacific Time Zone.

$PPT\_DLY\_LD\_QTY_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Daily Load Quantity** – the total daily megawatt-hour load for each EIM Participant in Prevailing Pacific Time Zone.
$COST\_ALLOC\_RATIO\_ADJ_{Pd}$	Decimal Daily 5 Decimal	**Cost Allocation Ratio Adjustment** – The daily cost allocation ratio adjust for participants based on the impact of removing TPUD daily load ratio from the participants load for the day.
$PPT\_COST\_ALLOC\_RATIO_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the Commission and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.

7.1.3 BANC Allocation Determinant

Determinants	UOM, Interval Length, Precision	Description

Formulas

Tags used in Base Schedules

7.1.4 The EIM Participant Cost Allocation Ratio is determined by the EIM Committee for a predetermine Trade Date range.

$PPT\_PRELIM\_COST\_ALLOC\_RATIO_{Pd}$[1] = The *BANC* approved cost allocation ratio by EIM Participant in effect for the Trade Date.

[1]Rounded to 5 decimal places.

7.1.5 Calculate the cost allocation adjustment ratio for each participant to adjust for TPUD's daily load. Note the only participant that has a reduction is WAPA and the amount of reduction will change daily based on TPUD's daily load compared to WAPA's daily load.

$COST\_ALLOC\_RATIO\_ADJ_{Pd}$[1] =
IF(P = WAPA
THEN
IF { $PPT\_DLY\_LD\_QTY_{Pd} = 0$
THEN 0
ELSE [1 – ($TPUD\_DLY\_LD\_QTY_{d}$ / $PPT\_DLY\_LD\_QTY_{Pd}$)]
}
ELSE 1
)

[1]Rounded to 5 decimal places.

7.1.6 Calculate the final cost allocation ratio for the TPUD impact.

$$PPT\_COST\_ALLOC\_RATIO_{Pd}{}^{1} = PPT\_PRELMIN\_COST\_ALLOC\_RATIO_{Pd} * COST\_ALLOC\_RATIO\_ADJ_{Pd}$$

[1]Rounded to 5 decimal places.

7.1.7 Calculate the TPUD cost allocation ratio. This ratio consists of the reduction in WAPA's load ratio share that was attributable to TPUD.

$$TPUD\_COST\_ALLOC\_RATIO_{Bd}{}^{1} =$$
IF { $PPT\_DLY\_LD\_QTY_{Pd} = 0$
THEN 0
ELSE [$(TPUD\_DLY\_LD\_QTY_{d} / PPT\_DLY\_LD\_QTY_{Pd}) * PPT\_PRELMIN\_COST\_ALLOC\_RATIO_{Pd}$]
}
where P = WAPA

[1]Rounded to 5 decimal places.

7.2 *EIM Participant Fixed Cost Allocation Precalculation*

There are EIM charges which will be divided equally across the EIM Participants. This pre-process determinant defines the allocation percentage that will be used for all EIM Participants. The allocation percentage will be equal to the number one divided by the number of EIM Participants for the Trade Date being settled.

7.2.1 CAISO Determinants

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM

7.2.2 BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description
$BNC\_DLY\_NUM\_MEM_{Bd}$	Integer Daily Integer	**BANC Daily Number of EIM Participants** - The number of *EIM Participants* for the *Trade Date.*

7.2.3 BANC Allocation Determinant

Determinants	UOM, Interval Length, Precision	Description
$PPT\_DLY\_LD\_QTY_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Daily Load Quantity** – the total daily megawatt-hour load for each EIM Participant in Prevailing Pacific Time Zone.

$TPUD\_DLY\_LD\_QTY_{d}$	Decimal Daily 5 Decimals	**TPUD Daily Load Quantity** – The total daily megawatt-hour load for Trinity PUD in Prevailing Pacific Time Zone.
$PPT\_FIXED\_COST\_ALLOC\_RATIO_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Fixed Cost Allocation Ratio** - The fixed cost allocation ratio for each EIM Participant by Trade Date.
$TPUD\_FIXED\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**TPUD Fixed Cost Allocation Ratio** - The fixed cost allocation ratio for TPUD by Trade Date.

Formulas

Tags used in Base Schedules

7.2.4 The EIM Participant Fix Cost Allocation Ratio evenly splits any value between all participants for a Trade Date. The proportional amount allocated by to WAPA will be reduced by the proportion of TPUD's load to WAPA's total. WAPA's reduction will be assigned to a TPUD specific determinant.

$PPT\_FIXED\_COST\_ALLOC\_RATIO_{Pd}$[1] =
(1 / $BNC\_DLY\_NUM\_MEM_{Bd}$) *
IF [P = WAPA,
THEN (
IF { $PPT\_DLY\_LD\_QTY_{Pd}$ = 0
THEN 0
ELSE [($PPT\_DLY\_LD\_QTY_{Pd}$ – $TPUD\_DLY\_LD\_QTY_{d}$) /
$PPT\_DLY\_LD\_QTY_{Pd}$]
}
ELSE 1
]

[1]Rounded to 5 decimal places.

7.2.5 The proportional percentage of WAPA's fixed cost allocation is assigned to TPUD based on TPUD's load ratio compared to WAPA's load.

$TPUD\_FIXED\_COST\_ALLOC\_RATIO_{Bd}$[1] =
(1 / $BNC\_DLY\_NUM\_MEM_{Bd}$) *
IF { $PPT\_DLY\_LD\_QTY_{Pd}$ = 0
THEN 0
ELSE ($TPUD\_DLY\_LD\_QTY_{d}$ / $PPT\_DLY\_LD\_QTY_{Pd}$)
}
where P = WAPA

[1]Rounded to 5 decimal places.

7.3 *EIM Participant Tagging Precalculation*

The EIM Participant Tagging Precalculation calculates all the determinants needed to support the BANC settlement statement allocation process.

Tag values at three specific time internals will needed to support the different charge allocations. All raw tag data will only be available to BANC staff and not EIM Participants. Only determinants that have a "P"

in the determine subscripts will be provided to EIM Participants. EIM Participants will only be able to view tag related determinants related to for their own company (i.e. the tag sources our sinks at a location identified to that EIM Participant). The three time intervals and descriptions are:

- Tagged Base Schedule - The values of all tags pending and approved that import, export and are within BANC BAA at 57 minutes before the start of the Real-Time hour. These schedule values will be referred to as Tagged Base Schedules. Tags importing, exporting and within BANC's BAA will be used to calculate participant load Base Schedules, imbalance charges, EIM Participant Measured Demand Ratio and administrative (GMC) charges.
- Tagged FMM Schedule – The value of all approved tags that import or export related to the BANC BAA at 37.5-minutes before the start of each 15-minute market interval. No imbalance charges will be calculated on Intratie schedules so they will not be saved determinants.
- Tagged Final Schedules – The final tag values for all tagged imports or export related to the BANC BAA. No imbalance charges will be calculated on BANC BAA Intratie schedules so they will not be saved determinants.

In addition to tags values at specific times, the allocation process will need to assign tag values to participants. Tags will be associated by their source and sink locations of the EIM Participants. The BANC allocation software will track all scheduling locations within BANC by EIM Participant. The following conventions will apply:

- BANC Import Schedules – Schedules will be identified as BANC imports when the tagged source location is not a location within the BANC BAA and the sink location is in the BANC BAA. The import schedule will be associated to the EIM Participant that is registered to the schedule's sink location.
- BANC Export Schedules – Schedules will be identified as BANC exports when the tagged sink location is not a location within the BANC BAA and the source location is in the BANC BAA. The export schedule will be associated to the EIM Participant that is registered to the schedule's source location.
- EIM Participant Intratie Schedules – These schedules will only be used for calculating participant load Base Schedules. The tag source location will be associated with the selling participant and the tag sink location will be associated to the buying participant.

A single schedule between EIM Participants will be counted as an export for one participant and an import for another participant.

7.3.1 CAISO Determinants

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM

7.3.2 BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description

PPT_5MIN_TAG_BASE_SCHD$_{RSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule** - A single 5-minute tagged Intertie or Intratie Base Schedule that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour. This determinant will only be available to BANC staff.
PPT_5MIN_TAG_FMM_SCHD$_{RSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged 15-Minute Market Schedule** - The 5-minute tagged Intertie energy schedule from BANC's scheduling system. This determinant will only be available to BANC staff.
PPT_5MIN_TAG_FNL_SCHD$_{RSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Final Schedule** - The final after the fact 5-minute tagged Intertie energy schedule from BANC's scheduling system. This determinant will only be available to BANC staff.

7.3.3 BANC Allocation Determinant

Determinants	UOM, Interval Length, Precision	Description
PPT_5MIN_TAG_BASE_SCHD_SNK$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule at a Sink** - The 5-minute tagged Base Schedule that sinks at an EIM Participant location that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour.
PPT_5MIN_TAG_BASE_SCHD_SRC$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule at a Source** - The 5-minute tagged Base Schedule that sources at an EIM Participant location that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour.
PPT_5MIN_TAG_FMM_BAA_IMP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged 15-Minute Market BAA Import Schedule** - The 5-minute tagged energy BAA Import schedule snapshot at 37.5 minutes before the start of the 15-market window that sinks at an EIM Participant's load or resource registered location and imports from outside of BANC.
PPT_5MIN_TAG_FMM_BAA_EXP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged 15-Minute Market BAA Export Schedule** - The 5-minute tagged energy BAA Export schedule snapshot at 37.5 minutes before the start of the 15-market window that sources at an EIM Participant's load or resource registered location and exports out of BANC.
PPT_5MIN_TAG_FNL_BAA_EXP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Final Balancing Authority Area Export Schedule** - The final after the fact 5-minute tagged energy schedule that sources at an EIM Participant's load or resource registered location and exports out of BANC.

PPT_5MIN_TAG_FNL_BAA_IMP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Final Balancing Authority Area Import Schedule** - The final after the fact 5-minute tagged energy schedule that sinks at an EIM Participant's load or resource registered location and imports into BANC.

Formulas

Tags used in Base Schedules

7.3.4 From BANC energy schedules, select all the pending and approved tagged schedules in the BAA as of 57 minutes before the start of the hour (T-57) that sink at locations within BANC. Each tagging location in BANC will be assigned to a single EIM Participant. The tags will be separated based on the sink location by EIM Participant. Each participant will be presented with the 5-minute, un-ramped schedules for all sink locations registered to the participant and will include the tag identifier:

PPT_5MIN_TAG_BASE_SCHD_SNK$_{PRSGECLxyzf}$[1] =
PPT_5MIN_TAG_BASE_SCHDRSGECLxyzf
where y (sink) = EIM Participant load or resource registered location.

[1]Rounded to 4 decimal places.

7.3.5 From BANC energy schedules, select all the pending and approved tagged schedules in the BAA as of 57 minutes before the start of the hour (T-57) that source from locations within BANC. Each tagging location in BANC will be assigned to a single EIM Participant. The tags will be separated based on the source location by EIM Participant. Each participant will be presented with the 5-minute, un-ramped schedules for all source locations registered to the participant and will include the tag identifier:

PPT_5MIN_TAG_BASE_SCHD_SRC$_{PRSGECLxyzf}$[1] = PPT_5MIN_TAG_BASE_SCHD$_{RSGECLxyzf}$
where x (source) = EIM Participant load or resource registered location.

[1]Rounded to 4 decimal places.

15-Minute Market Tagged Schedules

7.3.6 From BANC energy schedules, select all tagged schedules at 37.5 minutes before the start of each 15-minute market period that sink at locations within BANC. Each sink tagging location in BANC will be assigned to a single EIM Participant. Each EIM Participant will be presented with the 5-minute, unramped schedule snapshot for all sink locations registered to the participant and will include the tag identifier:

PPT_5MIN_TAG_FMM_BAA_IMP_SCHD$_{PRSGECLxyzf}$[1] = PPT_5MIN_TAG_FMM_RSCHD$_{RSGECLxyzf}$
where y = EIM Participant load or resource registered location.

[1]Rounded to 4 decimal places.

7.3.7 From BANC energy schedules, select all tagged schedules at 37.5 minutes before the start of each 15-minute market period that source at locations within BANC. Each source tagging location in BANC will be assigned to a single EIM Participant. Each EIM Participant will be presented with the 5-minute, unramped schedule snapshot for all source locations registered to the participant and will include the tag identifier:

PPT_5MIN_TAG_FMM_BAA_EXP_SCHD$_{PRSGECLxyzf}$[1] = PPT_5MIN_TAG_EXP_SCHD$_{RSGECLxyzf}$

where x = EIM Participant load or resource registered location.

[1]Rounded to 4 decimal places.

Final Tagged Schedules

7.3.8 From BANC energy schedules, select all final tagged schedules that sink in locations within BANC where the source location is outside of BANC. Each sink tagging source location in BANC will be assigned to a single EIM Participant. Each EIM Participant will be presented with the 5-minute, final, un-ramped schedules for all source locations registered to the participant and will include the tag identifier:

$PPT\_5MIN\_TAG\_FNL\_BAA\_IMP\_SCHD_{PRSGECLxyzf}^{1} = PPT\_5MIN\_TAG\_FNL\_SCHD_{RSGECLxyzf}$

where x = source location outside of BANC and y = EIM Participant load or resource registered location.

[1]Rounded to 4 decimal places.

7.3.9 From BANC energy schedules, select all final tagged schedules that source from locations within BANC where the sink location is outside of BANC. Each source tagging source location in BANC will be assigned to a single EIM Participant. Each EIM Participant will be presented with the 5-minute, final, un-ramped schedules for all source locations registered to the participant and will include the tag identifier:

$PPT\_5MIN\_TAG\_FNL\_BAA\_EXP\_SCHD_{PRSGECLxyzf}^{1} = PPT\_5MIN\_TAG\_FNL\_SCHD_{RSGECLxyzf}$

where x = EIM Participant load or resource registered location and y = sink location outside of BANC.

[1]Rounded to 4 decimal places.

7.4 *EIM Participant Load Ratio Share Precalculation*

EIM Entity Settlement Allocations will require hourly and daily load ratio share percentages for each EIM Participant. These EIM Participant load ratio share calculations will be based on the final EIM CAISO submitted metered value for each EIM Participant's load area (CLAP) and will not include any registered NGR load. A ratio will be calculated for each EIM Participant as the ratio of participant's (CLAP) metered load over the sum of all participant's CAISO submitted metered loads for the defined time interval. All submitted loads will include distribution losses but will not include transmission losses. The allocation formulas require daily and hourly load ratio share determinants.

WAPA serves the TPUD load. TPUD will not be participating in the EIM. The Commission has agreed that any EIM charges and credits estimated to be associated with TPUD will be subtracted from WAPA and will be reallocated to the other participants by BANC Accounting outside of this allocation process. To accommodate this requirement the Load Ratio Share allocations for WAPA will be reduced by proportionally by percentage of their TPUD load and reallocated to separate determinants by charge code. WAPA will report both their total load that includes TPUD and will provide to the EIM Entity settlement allocation software the hourly TPUD load.

7.4.1 CAISO Determinants

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM

BAResEntityDispatchIntervalMeteredQuantity$_{BrtuT'I'Q'M'AA'm'F'R'pPW'QS'd'Nz'VvHn'L'mdhcif}$ where $_{m}$' = 1 and t = 'Load'	MWh 5 Min 4 Decimals	Hourly settlement meter data submitted to *CAISO* in Channel ID = 1 by registered non-participating loads within *BANC*. This value is provided by *CAISO* as a negative value. Settlement allocation solution will convert the UDC_ID for this load into the *EIM Participant's* name.	BANC EESC Bill Determinant Statement: BA_5MIN_RSRC_METER_QTY	t = =RSRC_TYPE = 'LOAD' m' = CHANNEL_ID = '1' r = resource Id assigned to an EIM Participant	MSS Netting Pre-Calculation Version 5.8.

7.4.2 BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description
$TPUD\_HRLY\_LD\_QTY_{h}$	MWH Hourly 4 Decimals	**TPUD Hourly Load Quantity** – TPUD Hourly Load as reported by WAPA.
$TPUD\_HRLY\_LD\_CHECKED\_QTY_{h}$	MWH Hourly 4 Decimals	**TPUD Hourly Checked Load Quantity** – TPUD Hourly Load as reported by WAPA verified not to exceed the hourly load reported by WAPA to CAISO.
$BNC\_5MIN\_LD\_QTY_{Bf}$	MWh 5 Min TBD	**EIM Participant 5-Minute Load Quantity** - BANC will calculate a total BANC load that will be compared with the sum of all the EIM Participant load reported on the CAISO EESC billing determinant statement.
$BNC\_5MIN\_LD\_QTY\_THRESHOLD_{Bf}$	MWh 5 Min 3 Decimals	**EIM Participant 5-Minute Load Quantity Threshold** - A settlement user configurable value in megawatt hours that will be used to alarm when BANC's statement calculated total load from all EIM Participants differs by BANC's independently calculated load.

7.4.3 BANC Allocation Determinant

Determinants	UOM, Interval Length, Precision	Description
$PPT\_5MIN\_LD\_QTY_{Pf}$	MWH 5 Min 4 Decimals	**EIM Participant 5-Minute Load Quantity** - The EIM Participant 5-minute submitted load to CAISO.
$PPT\_HRLY\_LD\_QTY_{Ph}$	MWh Hourly 4 Decimals	**EIM Participant Hourly Load** Quantity - The total hourly megawatt-hour load for an EIM Participant.
$BNC\_HRLY\_LD\_QTY_{Bh}$	MWh Hourly 4 Decimals	**BANC Hourly Load Quantity** - The total hourly megawatt-hour load for all EIM Participants in the Prevailing Pacific Time Zone.
$PPT\_HRLY\_LRS_{Ph}$	Decimal Hourly 5 Decimals	**EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for an EIM Participant to the total hourly BANC load.
$TPUD\_HRLY\_LRS_{Bh}$	Decimal Hourly 5 Decimals	**TPUD Hourly Load Ratio Share** - The hourly percent in decimal of TPUD's load compared to the total hourly BANC load.

Determinants	UOM, Interval Length, Precision	Description
$PPT\_DLY\_LD\_QTY_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Daily Load Quantity** – The total daily megawatt-hour load for each EIM Participant in Prevailing Pacific Time Zone.
$TPUD\_DLY\_LD\_QTY_{d}$	Decimal Daily 5 Decimals	**TPUD Daily Load Quantity** – The total daily megawatt-hour load TPUD in Prevailing Pacific Time Zone.
$BNC\_DLY\_LD\_QTY_{Bd}$	Decimal Daily 4 Decimals	**BANC Daily Load Quantity** - The total daily megawatt-hour load for all EIM Participants in the Prevailing Pacific Time zone.
$PPT\_DLY\_LRS_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for an EIM Participant to the total daily BANC load in the Pacific Prevailing Time zone.
$TPUD\_DLY\_LRS_{Bd}$	Decimal Daily 5 Decimals	**TPUD Daily Load Ratio Share** - The daily percent in decimal of TPUD's load compared to the total daily BANC load.
$CAISO\_5MIN\_LD\_QTY_{Bf}$	MWh 5 Min 4 Decimals	**CAISO 5-Minute Load Quantity** - The total 5-minute load for BANC is summed from all EIM Participants from the CAISO billing determinants.
$BNC\_5MIN\_LD\_QTY\_DIFF_{Bf}$	MWh 5 Min 4 Decimals	**BANC 5-Minute Load Quantity Difference** -The total 5-minute megawatt-hour difference between the total BANC load summed up from EIM Participants CAISO settlement data compared to the calculated load by BANC.

Formulas

7.4.4 BANC allocations will use the BANC submitted meter data from the BANC EESC statement. CAISO displays load meter data as negative with up to four decimals of precision, so the calculation multiplies it by -1 to eliminate the negative values.

$PPT\_5MIN\_LD\_QTY_{Pf} = -1 *$ ($BAResEntityDispatchIntervalMeteredQuantity_{BrtuT'I'Q'M'AA'm'F'R'pPW'QS'd'Nz'VvHn'L'mdhcif}$ Where m' = 1 and t = 'Load' and r is assigned to an EIM Participant)

7.4.5 EIM Participant 5-minute submitted load meter data will be summed to hourly values.

$PPT\_HRLY\_LD\_QTY_{Ph} = \sum_{Ph}(PPT\_5MIN\_LD\_QTY_{Pf})$

7.4.6 Sum all the EIM Participant submitted hourly load meter data to a BANC hourly total.

$BNC\_HRLY\_LD\_QTY_{Bh} = \sum_{Bh}(PPT\_HRLY\_LD\_QTY_{Ph})$

7.4.7 Load the hourly load for TPUD.

$TPUD\_HRLY\_LD\_QTY_{h}$

7.4.8 Verify the TPUD reported hourly load does not exceed the load of the EIM Entity where it the load resides. This formula provides allocation protection if data is accidently submitted greater than the host EIM Participant.

$$TPUD\_HRLY\_LD\_CHECKED\_QTY_h = MIN(TPUD\_HRLY\_LD\_QTY_h , PPT\_HRLY\_LD\_QTY_{Ph})$$

where P = WAPA

Hourly Load Ratio Share

7.4.9 To calculate the EIM Participant hourly load ratio share, the participant's hourly load will be divided by the sum of all participant hourly load and the result will be rounded to five decimal places. Prior to calculating WAPA's Participant Load Ratio Share, TPUD's load will be removed from the hourly WAPA load to reduce their share proportional to account for TPUD's non-participation volume.

$$PPT\_HRLY\_LRS_{Ph}{}^{1} =$$

IF ($BNC\_HRLY\_LD\_QTY_{Bh} = 0$
THEN 0
ELSE
IF { P = WAPA
THEN [$(PPT\_HRLY\_LD\_QTY_{Ph} - TPUD\_HRLY\_LD\_CHECKED\_QTY_h) / BNC\_HRLY\_LD\_QTY_{Bh}$]
ELSE ($PPT\_HRLY\_LD\_QTY_{Ph} / BNC\_HRLY\_LD\_QTY_{Bh}$)]
}
)

[1]Rounded to 5 decimal places.

7.4.10 Calculate TPUD hourly load ratio share.

$$TPUD\_HRLY\_LRS_{Bh}{}^{1} =$$

IF [$BNC\_HRLY\_LD\_QTY_{Bh} = 0$
THEN 0
ELSE ($TPUD\_HRLY\_LD\_CHECKED\_QTY_h / BNC\_HRLY\_LD\_QTY_{Bh}$)
]

[1]Rounded to 5 decimal places.

Daily Load Ratio Share

7.4.11 To support the EIM Participant Daily Load Ratio Share, the hourly load values will be summed to daily values by participant so a daily load ratio share can be calculated.

$$PPT\_DLY\_LD\_QTY_{Pd} = \sum_{Pd}(PPT\_HRLY\_LD\_QTY_{Ph})$$

7.4.12 Calculate TPUD's total daily load for use in calculating their daily load ratio share.

$$TPUD\_DLY\_LD_d = \sum_d(TPUD\_HRLY\_LD\_CHECKED\_QTY_h)$$

7.4.13 To calculate the denominator for the daily load ratio share, sum the daily values of all participants into a daily BANC value.

$$BNC\_DLY\_LD\_QTY_{Bd} = \sum_{Bd}(PPT\_DLY\_LD\_QTY_{Pd})$$

7.4.14 To calculate the EIM Participant Daily Load Ratio Share, the participant's daily load will be divided by the sum of all participant daily load and the result will be rounded to five decimal places. Prior to calculating WAPA's Load Ratio Share, TPUD's load will be removed from the daily WAPA load to reduce their share proportional to account for TPUD's non-participation volume.

$PPT\_DLY\_LRS_{Pd}$[1] =
IF ($BNC\_DLY\_LD\_QTY_{Bd} = 0$
THEN 0
ELSE
IF { P = WAPA,
THEN [($PPT\_DLY\_LD\_QTY_{Pd} - TPUD\_DLY\_LD_{d}$) /
$BNC\_DLY\_LD\_QTY_{Bd}$]
ELSE ($PPT\_DLY\_LD\_QTY_{Pd} / BNC\_DLY\_LD\_QTY_{Bd}$)
}
)

[1]Rounded to 5 decimal places.

7.4.15 Calculate TPUD Daily Load Ratio Share.

$TPUD\_DLY\_LRS_{Bd}$[1] =
IF [$BNC\_HRLY\_LD\_QTY_{Bh} = 0$
THEN 0
ELSE ($TPUD\_DLY\_LD_{d} / BNC\_DLY\_LD\_QTY_{Bd}$)
]

[1]Rounded to 5 decimal places.

Allocations Monitoring

7.4.16 The following calculations will be performed to validate there are no significant volume discrepancies between CAISO and BANC calculations.

The total BANC load will be calculated by summing all the individual EIM Participant loads from the CAISO EESC billing determinant statement.

$CAISO\_5MIN\_LD\_QTY_{Bf} = \sum_{Bf} (PPT\_5MIN\_LD\_QTY_{Pf})$

7.4.17 For variance checking, BANC will calculate a load comparison difference from the total load from all the EIM Participants that is provided on the CAISO EESC settlement determinant statement to the load that is independently calculated by BANC on a 5-minute basis

$BNC\_5MIN\_LD\_QTY\_DIFF_{Bf} = CAISO\_5MIN\_LD\_QTY_{Bf} - BNC\_5MIN\_LD\_QTY_{Bf}$

7.4.18 The allocation solution will produce an exception report for any interval that meets the following conditions:

- $BNC\_5MIN\_LD\_QTY\_DIFF_{Bf} > BNC\_5MIN\_LD\_QTY\_THRESHOLD_{f}$
- $BNC\_5MIN\_LD\_QTY\_DIFF_{Bf} < BNC\_5MIN\_LD\_QTY\_THRESHOLD_{f}$

7.5 *EIM Participant Load Base Schedule Precalculation*

The load Base Schedule is a BANC mathematically calculated, hourly total energy supply prescheduled for each EIM Participant prior to the CAISO execution of the fifteen-minute and five-minute markets. The prescheduled supply can be provided by participant owned resources or scheduled into participant registered locations via approved and pending approved tagged energy scheduled at least 57 minutes before the start of the of the beginning of the hour when it is scheduled to flow. Likewise, energy scheduled out of any participant location prior to 57 minutes before the start of the beginning of the hour will reduce the participant's hourly Base Schedule volume.

The load Base Schedule is the market mechanism that identifies that a participant has scheduled energy to supply their non-participating load. The participant will only be billed imbalance energy on the difference between their final non-participating load and the load Base Schedule. EIM Participants will be charged their participant load LMP (CLAP) for any energy load imbalance based on the differences between their final 5-minute submitted non-participating meter volume and their hourly BANC calculated load Base Schedule volume.

One EIM Participant, WAPA, also supplies transmission losses for the California-Oregon Transmission Project (COTP) transmission line. The amount of transmission losses must be supplied by WAPA and not the overall CAISO market, must be included in WAPA's overall base scheduling supply, but cannot be counted to meet their non-participating load which does not include the additional transmission losses. CAISO's market solution will account for the losses of this line in the model even though they will be supplied by WAPA. WAPA will need to supply sufficient base scheduled energy to not only meet their non-participating load, participating pumping load, and exports, but also the losses on this line. This unique situation requires WAPA to provide an hourly COTP loss forecast to CAISO which BANC will retrieve from BSAP. BANC will reduce WAPA's hourly load Base Schedule by the forecasted COTP loses. WAPA will also need to provide to BANC the actual losses measured on this transmission line so they can be accounted for when UFE is allocated by BANC to EIM Participants.

To calculate each EIM Participant hourly load Base Schedule, BANC will:

- Sum all the final resource submitted hourly Base Schedules at T-40 before the start of the hour by EIM Participant,
- Sum the net hourly impact of all approved and pending approved tagged energy schedules that source and sink from each EIM Participant scheduling points registered with BANC at T-57 before the start of the hour,
- Add the sum of the hourly total resource Base Schedule to the sum of the net hourly tag schedules, then
- Will reduce the hourly values by the BANC registered transmission loss factor with CAISO.

The total result will be the EIM Participant's hourly load Base Schedule quantity in megawatt-hours.

7.5.1 CAISO Determinants

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BAResBaseScheduleEnergy$_{BrtuT'I'Q'M'R'W'F'S'VL'mdhcif}$	MWH 5 Min 2 Decimals	EIM Participant, CAISO registered resource final submitted and accepted Base	EIM Participant PRSC Bill Determinant Statement:	t = RSRC_TYPE = 'GEN'	Real Time Energy Pre-Calculation

		Schedule at T-40. The resource Base Schedule represents the forecast of the average hourly MWh output the resource is expected to produce for the upcoming hour. Although the submission to CAISO for this variable is hourly, CAISO displays this value in 5-minute intervals in MWh.	BA_5MIN_RSRC_BASE_ENGY_SCHD_QTY	r is assigned to an EIM Participant	Version 5.20 – Note this variable is listed as an input to this calculation, but CAISO doesn't define where it is sourced from).
BAResBaseLoadScheduleBrtuT'I'Q'M'AA'R'W'F'S'VL'pmdh	MWh Hourly 2 Decimals	The hourly final load Base Schedule calculated by CAISO for all of BANC's load. These values are displayed as a negative value. The hourly value should equal all the sum of all the resource Base Schedules in BANC plus the net of the ITIEs and ETIEs reduced by the BANC Transmission Loss Factor and the result multiplied by -1.	BANC EESC Bill Determinant Statement: BA_HRLY_RSRC_BASE_LOAD_SCHD_QTY		Real Time Uninstructed Imbalance Energy EIM Settlement CC 64750 (Version 5.1) – Note this variable is listed as an input to this calculation, but CAISO doesn't define where it is sourced from).

7.5.2 BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description
$BNC\_TX\_LOSS\_FCT_{Bd}$	Decimal N/A 4 Decimals	**BANC Transmission Loss Factor** - The BANC registered transmission loss factor in effect with CAISO for the Trade Date.
$BNC\_HRLY\_LD\_BASE\_SCHD\_DIFF\_THRES_{Bh}$	MWh Hourly 4 Decimals	**BANC Hourly Load Base Schedule Differential Threshold** - A settlement user configurable value in megawatt hours that will be used to alarm when CAISO's BANC statement calculated total load Base Schedule quantity differs from BANC's independently calculated load by this defined threshold per hour.
$HRLY\_COPT\_FCST\_LOSS\_QTY_{h}$	MWh Hourly 2 Decimals	**Hourly COPT Forecast Loss Quantity –** The hourly COPT forecasted loss quantity supplied by WAPA to CAISO and downloaded by BANC from BSAP.

7.5.3 BANC Allocation Determinants

Determinants	UOM, Interval Length, Precision	Description
PPT_5MIN_RSRC_BASE_SCHDPRf	MWh 5 Min 2 Decimals	**EIM Participant 5-Minute Resource Base Schedule** - EIM Participant generation resource 5-minute Base Schedule as presented in CAISO settlement statements to the EIM Participants.
PPT_5MIN_TOT_RSRC_BASE_SCHD$_{Pf}$	MWh 5 Minute 2 Decimals	**EIM Participant 5-Minute Total Resource Base Schedule** - Total EIM Participant 5-minute resource Base Schedule.
PPT_HRLY_TOT_RSRC_BASE_SCHD$_{Ph}$	MWh Hourly 2 Decimals	**EIM Participant Hourly Total Resource Base Schedule** - Total EIM Participant hourly resource Base Schedule.
PPT_5MIN_TAG_BASE_SCHD_SNK$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule at a Sink** - A single 5-minute tagged Base Schedule that sinks at an EIM Participant location that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour. This determinant is calculated in the EIM Participant Tagging Precalculation.
PPT_5MIN_TAG_BASE_SCHD_SRC$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule at a Source** - A single 5-minute tagged Base Schedule that sources at an EIM Participant location that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour. This determinant is calculated in the EIM Participant Tagging Precalculation.
PPT_5MIN_NET_TAG_BASE_SCHD$_{Ph}$	MWh 5 Minute 8 Decimals	**EIM Participant 5-Minute Net Tagged Base Schedule** - EIM Participant 5-minute total net tagged Base Schedule.
PPT_HRLY_NET_TAG_BASE_SCHD$_{Ph}$	MWh Hourly 8 Decimals	**EIM Participant Hourly Net Tagged Base Schedule** - EIM Participant hourly total net tagged Base Schedule.
PPT_5MIN_LD_BASE_SCHD$_{Pf}$	MWh 5 Minute 2 Decimals	**EIM Participant 5-Minute Load Base Schedule** - EIM Participant total 5-minute load Base Schedule rounded to two decimal places.
PPT_HRLY_COPT_FCST_LOSS_QTY$_{Ph}$	MWh Hourly 2 Decimals	**EIM Participant COPT Forecasted Loss Quantity** – The hourly COPT forecasted loss quantity by participant. The only participant that will have a non-zero result will be WAPA.
PPT_HRLY_LD_BASE_SCHD$_{Ph}$	MWh Hourly 2 Decimals	**EIM Participant Hourly Load Base Schedule** - EIM Participant total hourly load Base Schedule rounded to two decimal places.
BNC_HRLY_LD_BASE_SCHD$_{Bh}$	MWh Hourly 2 Decimals	**BANC Hourly Load Base Schedule** - The BANC total hourly load Base Schedule calculated by summing all EIM Participants' load Base Schedules.
CAISO_HRLY_LD_BASE_SCHD$_{Bh}$	MWh Hourly 2 Decimals	**CAISO Hourly Load Base Schedule** - The total CAISO hourly calculated BANC load Base Schedule.

$BNC\_HRLY\_LD\_BASE\_SCHD\_DIFF_{Bh}$	MWh Hourly 2 Decimals	**BANC Hourly Load Base Schedule Differential** – The hourly megawatt-hour difference between the CAISO calculated BANC load Base Schedule and BANC's calculation of the load Base Schedule from the sum of all EIM Participants.

Formulas

7.5.4 Obtain all final (T-40), submitted participant resource Base Schedules from PRSC Bill Determinant Statement. Provide each 5-minute schedule by EIM Participant, resource and 5-minute interval. This value is reported as a positive value by CAISO.

$PPT\_5MIN\_RSRC\_BASE\_SCHD_{PRf}$[1] = BAResBaseScheduleEnergy$_{BrtuT'I'Q'M'R'W'F'S'VL'mdhcif}$

where Resource type (t) = GEN and r is assigned to an EIM Participant

[1]Rounded to 4 decimal places.

7.5.5 Sum all final, submitted EIM Participant resource Base Schedules to a 5-minute schedule by participant:

$PPT\_5MIN\_TOT\_RSRC\_BASE\_SCHD_{Pf} = \sum_{Pf}(PPT\_5MIN\_RSRC\_BASE\_SCHD_{PRf})$

7.5.6 Sum all final, submitted participant resource Base Schedules to an hourly schedule by participant:

$PPT\_HRLY\_TOT\_RSRC\_BASE\_SCHD_{Ph} = \sum_{Ph}(PPT\_5MIN\_TOT\_RSRC\_BASE\_SCHD_{Pf})$

7.5.7 For each EIM Participant, sum all tagged Base Schedules sinking at their locations to 5-minute totals and subtract from that the sum of all tagged Base Schedule sourcing at their locations. Each EIM Participant will have a 5-minute net tagged Base Schedule volume.

$PPT\_5MIN\_NET\_TAG\_BASE\_SCHD_{Pf} = \sum_{Pf}(PPT\_5MIN\_TAG\_BASE\_SCHD\_SNK_{PRSGECLxyzf}) + [\ -1 * \sum_{Pf}(PPT\_5MIN\_TAG\_BASE\_SCHD\_SRC_{PRSGECLxyzf})\ ]$

7.5.8 For each EIM Participant, sum the 5-minute net tagged Base Schedules to an hourly volume.

$PPT\_HRLY\_NET\_TAG\_BASE\_SCHD_{Ph} = \sum_{Ph}(PPT\_5MIN\_NET\_TAG\_BASE\_SCHD_{Pf})$

7.5.9 Calculate the total 5-minute load Base Schedule for each EIM Participant by: 1) summing the total of all the final submitted 5-minute resource Base Schedules and net 5-minute sum of the net tagged schedules sourcing and sinking at their locations, and then 2) reducing the 5-minute totals by the BANC transmission loss factor that CAISO is using for the Trade Date.

$PPT\_5MIN\_LD\_BASE\_SCHD_{Pf}$[1] = [($PPT\_5MIN\_TOT\_RSRC\_BASE\_SCHD_{Pf}$ + $PPT\_5MIN\_NET\_TAG\_BASE\_SCHD_{Pf}$) * (1 – $BNC\_TX\_LOSS\_FCT_{Bd}$)]

[1]Rounded to 2 decimal places.

7.5.10 Retrieve the transmission loss forecast for the COPT transmission line.

$PPT\_HRLY\_COPT\_FCST\_LOSS\_QTY_{Ph}$ = IF[M=WAPA THEN ($HRLY\_COPT\_FCST\_LOSS\_QTY_{h}$) ELSE 0]

7.5.11 Calculate the total hourly load Base Schedule for each EIM Participant by the volumes of the 5-minute calculation and remove the COPT loss forecast included in WAPA's load Base Schedule.

$$PPT\_HRLY\_LD\_BASE\_SCHD_{Ph} = \sum_{Ph}(PPT\_5MIN\_LD\_BASE\_SCHD_{Pf}) - PPT\_HRLY\_COPT\_FCST\_LOSS\_QTY_{Ph}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

7.5.12 The following calculations will be performed to validate there are no significant volume discrepancies between CAISO and BANC calculations.

All EIM Participant hourly load Base schedules will be summed to the calculated CAISO load Base Schedule hourly total subject to tag rounding discrepancies.

BANC calculated total hourly load Base Schedule is equal to the sum of the EIM Participants' hourly load Base Schedules that was adjusted for transmission losses:

$$BNC\_HRLY\_LD\_BASE\_SCHD_{Bh} = \sum_{Bh}(PPT\_HRLY\_LD\_BASE\_SCHD_{Ph})$$

7.5.13 The CAISO calculated load Base Schedule adjusted for the BANC transmission loss factor from the BANC bill determinant statement:

$$CAISO\_HRLY\_LD\_BASE\_SCHD_{Bh} = BAResBaseLoadSchedule_{BrtuT'I'Q'M'AA'R'W'F'S'VL'pmdh}$$

7.5.14 The **BANC Hourly Load Base Schedule** difference will be calculated from the CAISO Hourly Load Base Schedule less the BANC Hourly Load Base Schedule. This calculation cannot be performed at the 5-minute level because CAISO only provides it at the hour.

$$BNC\_HRLY\_LD\_BASE\_SCHD\_DIFF_{Bh} = CAISO\_HRLY\_LD\_BASE\_SCHD_{Bh} - BNC\_HRLY\_LD\_BASE\_SCHD_{Bh}$$

7.5.15 The allocation solution will produce an exception report for review for any interval that meets the following conditions:

- $BNC\_HRLY\_LD\_BASE\_SCHD\_DIFF_{Bh} > BNC\_HRLY\_LD\_BASE\_SCHD\_DIFF\_THRES_{Bh}$
- $BNC\_HRLY\_LD\_BASE\_SCHD\_DIFF_{Bh} < -1 * BNC\_HRLY\_LD\_BASE\_SCHD\_DIFF\_THRES_{Bh}$

7.6 *EIM Participant Absolute Imbalance Ratio*

CAISO offset charge codes for energy, congestion and losses settle imbalance dollars that result from any difference between the model solution difference and the actual settled volume and price differences. The dollar imbalance is separated into energy, congestion and losses components in separate charge codes. Theoretically these dollar differences occur because CAISO's solution engine is calculating prices based on forecasted demand, expected generation demand and calculated losses and not actual results.

BANC will settle these differences to the EIM Participants based on their absolute volume difference as an hourly EIM Participant ratio share. The volume will be calculated as follows:

- Demand - The absolute volume difference of the actual 5-minute reported load aggregated hourly less the hourly load Base Schedule.
- Generation – The sum of all the absolute volume differences from the actual 5-minute reported generation meter data aggregated hourly less the hourly generation Base Schedules.
- Tags – The sum of the absolute volume difference from each BANC BAA Interchange schedule from EIM Participants importing or exporting energy. The absolute volume difference for each schedule will be difference between the tag schedule Base Schedule at 57 minutes before the start of the hour and the actual 5-minute schedule volume reported after the fact aggregated to an hourly value.

BANC will also use the load and Intertie absolute imbalance volumes to create an hourly ratio to allocate the CAISO EIM Administrative charge.

7.6.1 CAISO Determinants

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BAResEntityDispatchIntervalMeteredQuantity$_{BrtuT'I'Q'M'AA'm'F'R'p PW'QS'd'Nz'VvHn'L'mdhcif}$ where $_{m'}$ = 4 and t = 'Gen'	MWh 5 Min 4 Decimals	Metered quantity (in MWh) of generator resources reporting Settlement Quality Metered Data to the CAISO. Settlement allocation solution will convert the resource Id (r) for this resource into the *EIM Participant's* name.	EIM Participant PRSC Bill Determinant Statement: BA_5M_RSRC_METER_QTY	t = =RSRC_TYPE = 'Gen' m' = CHANNEL_ID = '4' r is a resource assigned to an EIM Participant	MSS Netting Pre-Calculation Version 5.8.

7.6.2 BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description

7.6.3 BANC Allocation Determinants

Determinants	UOM, Interval Length, Precision	Description
PPT_HRLY_LD_QTY$_{Ph}$	MWh Hourly 4 Decimals	**EIM Participant Hourly Load** Quantity - The total hourly megawatt-hour load for an EIM Participant. This determinant is defined in the *EIM Participant Load Ratio Share Precalculation*.

Determinants	UOM, Interval Length, Precision	Description
PPT_HRLY_LD_BASE_SCHD$_{Ph}$	MWh Hourly 2 Decimals	**EIM Participant Hourly Load Base Schedule** - EIM Participant total hourly load Base Schedule. This determinant is defined in the *EIM Participant Load Base Schedule Precalculation*.
PPT_HRLY_ABS_LD_IMB$_{Ph}$	MWH Hourly 2 Decimals	**EIM Participant Hourly Absolute Load Imbalance** – EIM Participant absolute load imbalance as the difference between the 5-minute reported meter load summed to the hour and the hourly calculated load Base Schedule. Rounded to two decimal places.
TPUD_HRLY_LD_CHECKED_QTY$_{h}$	MWH Hourly 4 Decimals	**Trinity PUD Hourly Checked Load Quantity** – Trinity Hourly Load as reported by WAPA verified not to exceed the hourly load reported by WAPA to CAISO.
TPUD_HRLY_ABS_LD_IMB$_{Bh}$	MWH Hourly 2 Decimals	**TPUD Participant Hourly Absolute Load Imbalance** – TPUD absolute load imbalance is the proportional portion of TPUD hourly load compared to WAPA's hourly load multiplied by the total hourly absolute load of WAPA. Rounded to two decimal places.
PPT_DLY_ABS_LD_IMB$_{Pd}$	MWH Daily 2 Decimals	**EIM Participant Daily Absolute Load Imbalance** – EIM Participant absolute hourly load imbalance summed to a daily value.
TPUD_DLY_ABS_LD_IMB$_{Bd}$	MWH Daily 2 Decimals	**BANC TPUD Daily Absolute Load Imbalance** – BANC TPUD absolute hourly load imbalance summed to a daily value.
TPUD_MNLY_ABS_LD_IMB$_{Bm}$	MWH Monthly 2 Decimals	**BANC TPUD Monthly Absolute Load Imbalance** – BANC TPUD absolute daily load imbalance summed to a monthly value.
PPT_5MIN_RSRC_QTY$_{PRf}$	MWH 5 Minute 4 Decimals	**EIM Participant 5-Minute Resource Meter Quantity** – The reported 5-minute generation resource meter data in channel 4 to CAISO.
PPT_HRLY_RSRC_QTY$_{PRh}$	MWH Hourly 4 Decimals	**EIM Participant Hourly Resource Meter Quantity** – The reported resource meter data summed to an hourly value.
PPT_5MIN_RSRC_BASE_SCHD$_{PRf}$	MWh 5 Min 2 Decimals	**EIM Participant 5-Minute Resource Base Schedule** - EIM Participant generation resource 5-minute Base Schedule as presented in CAISO settlement statements to the EIM Participants. This determinant is defined in the *EIM Participant Load Base Schedule Precalculation*.
PPT_HRLY_RSRC_BASE_SCHD$_{PRh}$	MWH Hourly 2 Decimals	**EIM Participant Hourly Resource Base Schedule** - EIM Participant generation resource 5-minute Base Schedule summed to an hourly value.
PPT_HRLY_ABS_RSRC_IMB$_{PRh}$	MWH Hourly 2 Decimals	**EIM Participant Hourly Absolute Resource Imbalance** – EIM Participant absolute generation imbalance by resource as

Determinants	UOM, Interval Length, Precision	Description
		the difference between the hourly reported meter data and the hourly submitted resource Base Schedule. Rounded to two decimal places.
PPT_HRLY_TOT_ABS_RSRC_IMB$_{Ph}$	MWH Hourly 2 Decimals	**EIM Participant Hourly Total Absolute Resource Imbalance** – Total EIM Participant hourly generation absolute resource imbalance.
PPT_5MIN_TAG_FNL_BAA_IMP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Final Balancing Authority Area Import Schedule** - The final after the fact 5-minute tagged energy schedule that sinks at an EIM Participant's load or resource registered location and imports into BANC.
PPT_HRLY_TAG_BAA_IMP_SCHD$_{PRSGECLxyzh}$	MWh Hourly 8 Decimals	**EIM Participant Hourly Tagged BAA Import Schedule** – A single hourly tagged BAA import schedule that sinks at the participant's load or one of their resources. *This determinant is calculated in the EIM Participant Tagging Precalculation.*
PPT_5MIN_TAG_BASE_SCHD_SNK$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule at a Sink** - A single 5-minute tagged Base Schedule that sinks at an EIM Participant location that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour. *This determinant is defined in the EIM Participant Load Base Schedule Precalculation.*
PPT_HRLY_TAG_BASE_SCHD_SNK$_{PRSGECLxyzh}$	MWh Hourly 8 Decimals	**EIM Participant Tagged Base Schedule at a Sink -** A single hourly tagged Base Schedule that sinks at an EIM Participant location that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour.
PPT_HRLY_TAG_BAA_IMP_ABS_IMB$_{PRGECLxyzh}$	MWh Hourly 8 Decimals	**EIM Participant Tagged BAA Import Absolute Imbalance** – A single hourly tagged BAA import schedule calculated absolute imbalance.
PPT_HRLY_TAG_BAA_EXP_SCHD$_{PRSGECLxyzh}$	MWh Hourly 8 Decimals	**EIM Participant Hourly Tagged BAA Export Schedule** - A single hourly tagged BAA export schedule that sources at the participant's load or one of their resources.
PPT_HRLY_TAG_BASE_SCHD_SRC$_{PRSGECLxyzh}$	MWh Hourly 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule at a Sink** - A single hourly tagged Base Schedule that sinks at an EIM Participant location that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour.

Determinants	UOM, Interval Length, Precision	Description
PPT_HRLY_TAG_BAA_EXP_ABS_IMB$_{PRSGECLxyzh}$	MWh Hourly 8 Decimals	**EIM Participant Hourly Tagged Export Absolute Imbalance** - A single hourly tagged BAA export schedule calculated absolute imbalance.
PPT_HRLY_TOT_TAG_ABS_IMB$_{Ph}$	MWh Hourly 8 Decimals	**EIM Participant Hourly Tagged Absolute Imbalance** – The total hourly Intertie tagged import and export absolute imbalance for a participant.
PPT_DLY_TOT_TAG_ABS_IMB$_{Pd}$	MWh Daily 8 Decimals	**EIM Participant Daily Tagged Absolute Imbalance** – The total daily Intertie tagged import and export absolute imbalance for a participant.
PPT_HRLY_LD_INTERTIE_ABS_IMB$_{Ph}$	MWh Hourly 8 Decimals	**EIM Participant Load and Intertie Hourly Absolute Imbalance** – The EIM Participant total hourly absolute imbalance from each load and BAA import/export tagged schedules.
BNC_HRLY_LD_INTERTIE_ABS_IMB$_{Bh}$	MWh Hourly 2 Decimals	**BANC Hourly Load and Intertie Absolute Imbalance** – The BANC total hourly absolute imbalance from each load and BAA import/export tagged schedules.
PPT_HRLY_ABS_LD_INTERTIE_IMB_RATIO$_{Ph}$	Decimal Hourly 5 Decimal	**EIM Participant Hourly Absolute Load and Intertie Imbalance Ratio** – The EIM Participant's hourly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
TPUD_HRLY_ABS_LD_INTERTIE_IMB_RATIO$_{Bh}$	Decimal Hourly 5 Decimal	**TPUD Hourly Absolute Load and Intertie Imbalance Ratio** – The TPUD hourly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals. Note TPUD has no Interties, but the imbalance ratio calculation does include them for the EIM Participants.
PPT_DLY_LD_INTERTIE_ABS_IMB$_{Pd}$	MWh Daily 2 Decimals	**EIM Participant Daily Absolute Load and Intertie Imbalance** - The EIM Participant total daily absolute imbalance from each load and BAA import/export tagged schedules.
BNC_DLY_LD_INTERTIE_ABS_IMB$_{Bd}$	MWh Daily 2 Decimals	**BANC Daily Load and Intertie Absolute Imbalance** – The BANC total daily absolute imbalance from each load and BAA import/export tagged schedules.
PPT_DLY_ABS_LD_INTERTIE_IMB_RATIO$_{Pd}$	Decimal Daily 5 Decimal	**EIM Participant Daily Absolute Load and Intertie Imbalance Ratio** – The EIM Participant's daily decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
TPUD_DLY_ABS_LD_INTERTIE_IMB_RATIO$_{Bd}$	Decimal Daily 5 Decimal	**TPUD Daily Absolute Load and Intertie Imbalance Ratio** – The TPUD daily decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals. Note TPUD has no Interties, but the

Determinants	UOM, Interval Length, Precision	Description
		imbalance ratio calculation does include them for the EIM Participants.
PPT_MNLY_LD_INTERTIE_ABS_IMB$_{Pm}$	MWh Monthly 2 Decimals	**EIM Participant Monthly Absolute Load and Intertie Imbalance** - The EIM Participant total monthly absolute imbalance from each load and BAA import/export tagged schedules.
BNC_MNLY_LD_INTERTIE_ABS_IMB$_{Bm}$	MWh Monthly 2 Decimals	**BANC Monthly Load and Intertie Absolute Imbalance** – The BANC total monthly absolute imbalance from each load and BAA import/export tagged schedules.
PPT_MNLY_ABS_LD_INTERTIE_IMB_RATIO$_{Pm}$	Decimal Monthly 5 Decimal	**EIM Participant Monthly Absolute Load and Intertie Imbalance Ratio** – The EIM Participant's Monthly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
TPUD_MNLY_ABS_LD_INTERTIE_IMB_RATIO$_{Bm}$	Decimal Monthly 5 Decimal	**TPUD Monthly Absolute Load and Intertie Imbalance Ratio** – The TPUD monthly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals. Note TPUD has no Interties, but the imbalance ratio calculation does include them for the EIM Participants.
PPT_HRLY_TOT_ABS_IMB$_{Ph}$	MWh Hourly 8 Decimals	**EIM Participant Total Hourly Absolute Imbalance** – The EIM Participant total hourly imbalance from each load, resource and BAA import/export tagged schedules.
BNC_HRLY_TOT_ABS_IMB$_{Bh}$	MWh Hourly 2 Decimals	**BANC Hourly Total Absolute Imbalance** – The BANC total hourly imbalance from each load, resource and BAA import/export tagged schedules.
PPT_HRLY_ABS_IMB_RATIO$_{Ph}$	Decimal Hourly 5 Decimal	**EIM Participant Hourly Absolute Imbalance Ratio** – The EIM Participant's hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.
TPUD_HRLY_ABS_IMB_RATIO$_{Bh}$	Decimal Hourly 5 Decimal	**TPUD Hourly Absolute Imbalance Ratio** – The TPUD hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.

Formulas

Hourly Load and Daily Imbalance

7.6.4 EIM Participant absolute load imbalance is the difference between their reported 5-minute reported load meter data summed to the hour less their calculated hourly load Base Schedule. The result is rounded to two decimal places based on the precision of the EIM Participant Hourly Load Base Schedule determinant.

The absolute load imbalance for WAPA will be reduced to the proportional load of WAPA without TPUD included. The remaining absolute imbalance related to TPUD will be assigned to BANC for later distribution.

$PPT\_HRLY\_ABS\_LD\_IMB_{Ph}$[1] = ABS($PPT\_HRLY\_LD\_QTY_{Ph}$ - $PPT\_HRLY\_LD\_BASE\_SCHD_{Ph}$) *
IF {P = WAPA
THEN [
IF ($PPT\_HRLY\_LD\_QTY_{Ph}$ = 0
THEN 0
ELSE [MAX { 0 , ($PPT\_HRLY\_LD\_QTY_{Ph}$ – $TPUD\_HRLY\_LD\_CHECKED\_QTY_{h}$) / $PPT\_HRLY\_LD\_QTY_{Ph}$ }]
)
]
ELSE 1
}

[1]Rounded to 2 decimal places.

7.6.5 Calculate TPUD assigned absolute load imbalance portion.

$TPUD\_HRLY\_ABS\_LD\_IMB_{Bh}$[1] = ABS($PPT\_HRLY\_LD\_QTY_{Ph}$ - $PPT\_HRLY\_LD\_BASE\_SCHD_{Ph}$) *
IF [$PPT\_HRLY\_LD\_QTY_{Ph}$ = 0
THEN 0
ELSE ($TPUD\_HRLY\_LD\_CHECKED\_QTY_{h}$ / $PPT\_HRLY\_LD\_QTY_{Ph}$)
]
where P = WAPA.

[1]Rounded to 2 decimal places.

7.6.6 Sum each participant's hourly load imbalance to a daily load imbalance.

$PPT\_DLY\_ABS\_LD\_IMB_{Pd} = \sum_{Pd} (PPT\_HRLY\_ABS\_LD\_IMB_{Ph})$

7.6.7 Sum TPUD's calculated prorate share of the hourly load imbalance to a daily load imbalance.

$TPUD\_DLY\_ABS\_LD\_IMB_{Bd} = \sum_{Bd} (TPUD\_HRLY\_ABS\_LD\_IMB_{Bh})$

7.6.8 Sum TPUD's calculated prorate share of the daily load imbalance to a monthly load imbalance.

$TPUD\_MNLY\_ABS\_LD\_IMB_{Bm} = \sum_{Bm} (TPUD\_DLY\_ABS\_LD\_IMB_{Bd})$

Hourly Resource Imbalance

7.6.9 The EIM Participant absolute generation imbalance is the total difference between all their reported 5-minute generation meter data reported in channel 4 summed to the hour less their hourly resource Base Schedule. Both the generation reported meter data and the resource Base Schedule is from each participant's CAISO PRSC determinant statement.

The final reported resource meter data is from the PRSC determinant statement. This value is a negatively reported value by CAISO. This value is positively reported by CAISO.

$PPT\_5MIN\_RSRC\_QTY_{PRf}$ =
$BAResEntityDispatchIntervalMeteredQuantity_{BrtuT'I'Q'M'AA'm'F'R'pPW'QS'd'Nz'VvHn'L'mdhcif}$ where $_{m'}$ = 4 and t = 'Gen'

7.6.10 The final reported resource meter data is summed by hour by resource.

$PPT\_HRLY\_RSRC\_QTY_{PRh} = \sum_{Rh}(PPT\_5MIN\_RSRC\_QTY_{PRf})$

7.6.11 Sum each resource's 5-minute Base Schedule to an hourly value. Although resource Base Schedules are submitted as hourly values, CAISO provides them on the statement in 5-minute MWh values, so they need to be summed to the hourly level for this calculation.

$PPT\_HRLY\_RSRC\_BASE\_SCHD_{PRh} = \sum_{PRh}(PPT\_5MIN\_RSRC\_BASE\_SCHD_{PRf})$

7.6.12 Each participant's generation resource absolute imbalance is calculated by taking the absolute result of their hourly resource meter data less the hourly resource Base Schedule quantity. The result is rounded to two decimal places based on the precision of the EIM Participant Hourly Resource Base Schedule determinant.

$PPT\_HRLY\_ABS\_RSRC\_IMB_{PRh}$[1] =
$ABS(PPT\_HRLY\_RSRC\_QTY_{PRh} - PPT\_HRLY\_RSRC\_BASE\_SCHD_{PRh})$

[1]Rounded to 2 decimal places.

7.6.13 Each participant total absolute generation resource imbalance is totaled by hour all their resource imbalance by hour.

$PPT\_HRLY\_TOT\_ABS\_RSRC\_IMB_{Ph} = \sum_{Ph}(PPT\_HRLY\_ABS\_RSRC\_IMB_{PRh})$

Hourly Intertie Imbalance

7.6.14 EIM Participant hourly absolute tag imbalance is the sum of the absolute difference between the summed hourly 5-minute final tag volume at 57 minutes before the start of the hour and the sum of the 5-minute tag volume reported after the fact for tags that source outside of the BANC BAA or sink outside of the BANC BAA. BANC BAA Intrachange schedules are excluded from this calculation.

Aggregate all BAA import schedules from 5-minute to hourly values by participant.

$PPT\_HRLY\_TAG\_BAA\_IMP\_SCHD_{PRSGECLxyzh} =$
$\sum_{PRGECLxyzh}(PPT\_5MIN\_TAG\_FNL\_BAA\_IMP\_SCHD_{PRSGECLxyzf})$

7.6.15 Identify the corresponding 5-minute Base Schedule for each of the import schedules and aggregate the schedule to hourly volumes. The 5-minute Base Schedule was previously defined in the EIM Participant Load Base Schedule Precalculation.

$$PPT\_HRLY\_TAG\_BASE\_SCHD\_SNK_{PRSGECLxyzh} = \sum_{PRGECLxyzh}(PPT\_5MIN\_TAG\_BASE\_SCHD\_SNK_{PRSGECLxyzf})$$

7.6.16 Calculate for each imported schedule that sinks at an EIM Participant's location the absolute hourly imbalance.

$$PPT\_HRLY\_TAG\_BAA\_IMP\_ABS\_IMB_{PRGECLxyzh} = ABS(PPT\_HRLY\_TAG\_BAA\_IMP\_SCHD_{PRSGECLxyzh} - PPT\_HRLY\_TAG\_BASE\_SCHD\_SNK_{PRSGECLxyzh})$$

7.6.17 Aggregate all BAA export schedules from 5-minute to hourly values by participant.

$$PPT\_HRLY\_TAG\_BAA\_EXP\_SCHD_{PRSGECLxyzh} = \sum_{PRGECLxyzh}(PPT\_5MIN\_TAG\_FNL\_BAA\_EXP\_SCHD_{PRSGECLxyzf})$$

7.6.18 Identify the corresponding 5-minute Base Schedule for each of the export schedules and aggregate the schedule to hourly volumes. The 5-minute Base Schedule was previously defined in the EIM Participant Load Base Schedule Precalculation.

$$PPT\_HRLY\_TAG\_BASE\_SCHD\_SRC_{PRSGECLxyzh} = \sum_{PRSGECLxyzh}(PPT\_5MIN\_TAG\_BASE\_SCHD\_SRC_{PRSGECLxyzf})$$

7.6.19 Calculate for each exported schedule that sources at an EIM Participant's location the absolute hourly imbalance.

$$PPT\_HRLY\_TAG\_BAA\_EXP\_ABS\_IMB_{PRSGECLxyzh} = ABS(PPT\_HRLY\_TAG\_BAA\_EXP\_SCHD_{PRSGECLxyzh} - PPT\_HRLY\_TAG\_BASE\_SCHD\_SRC_{PRSGECLxyzh})$$

7.6.20 Add up all the tag absolute imbalances by hour by participant.

$$PPT\_HRLY\_TOT\_TAG\_ABS\_IMB_{Ph} = \sum_{Ph}(PPT\_HRLY\_TAG\_BAA\_IMP\_ABS\_IMB_{PRGECLxyzh}) + \sum_{Ph}(PPT\_HRLY\_TAG\_BAA\_EXP\_ABS\_IMB_{PRSGECLxyzh})$$

7.6.21 Add up all the tag absolute imbalances by hour by participant.

$$PPT\_DLY\_TOT\_TAG\_ABS\_IMB_{Pd} = \sum_{Pd}(PPT\_HRLY\_TOT\_TAG\_ABS\_IMB_{Ph})$$

Load and Intertie Imbalance

7.6.22 Each participant's load and Intertie hourly absolute imbalance is the sum of the participant's absolute hourly load imbalance and the total absolute Interchange schedule imbalance. The result is rounded to two decimal places based on the precision of the EIM Participant Hourly Absolute Load Imbalance determinant.

$$PPT\_HRLY\_LD\_INTERTIE\_ABS\_IMB_{Ph}{}^{1} = PPT\_HRLY\_ABS\_LD\_IMB_{Ph} + PPT\_HRLY\_TOT\_TAG\_ABS\_IMB_{Ph}$$

[1]Rounded to 2 decimal places.

7.6.23 Add up participant and TPUD hourly imbalance to calculate a BANC wide hourly imbalance volume.

$$BNC\_HRLY\_LD\_INTERTIE\_ABS\_IMB_{Bh} = \sum_{Bh}(PPT\_HRLY\_LD\_INTERTIE\_ABS\_IMB_{Ph}) + TPUD\_HRLY\_ABS\_LD\_IMB_{Bh}$$

7.6.24 Calculate each participant hourly load and Intertie absolute imbalance ratio. The result is a decimal value by hour that determines the participant's obligation for allocation charges/credits.

$$PPT\_HRLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Ph}{}^{1} = PPT\_HRLY\_LD\_INTERTIE\_ABS\_IMB_{Ph} / BNC\_HRLY\_LD\_INTERTIE\_ABS\_IMB_{Bh}$$

[1]Rounded to 5 decimal places.

7.6.25 Calculate TPUD's hourly absolute imbalance ratio. The result is a decimal value by hour that determines the EIM Participant's obligation for allocation charges/credits.

$$TPUD\_HRLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bh}{}^{1} = TPUD\_HRLY\_ABS\_LD\_IMB_{Bh} / BNC\_HRLY\_LD\_INTERTIE\_ABS\_IMB_{Bh}$$

[1]Rounded to 5 decimal places.

7.6.26 Calculate each EIM Participant's daily load and Intertie imbalance.

$$PPT\_DLY\_LD\_INTERTIE\_ABS\_IMB_{Pd}{}^{1} = PPT\_DLY\_ABS\_LD\_IMB_{Pd} + PPT\_DLY\_TOT\_TAG\_ABS\_IMB_{Pd}$$

[1]Rounded to 2 decimal places.

7.6.27 Add up EIM Participant hourly imbalance to calculate a BANC wide hourly imbalance volume.

$$BNC\_DLY\_LD\_INTERTIE\_ABS\_IMB_{Bd} = \sum_{Bd}(PPT\_DLY\_LD\_INTERTIE\_ABS\_IMB_{Pd}) + TPUD\_DLY\_ABS\_LD\_IMB_{Bd}$$

7.6.28 Calculate each EIM Participant daily load and Intertie absolute imbalance ratio. The result is a decimal value by day that determines the participant's obligation for allocation charges/credits.

$$PPT\_DLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Pd}{}^{1} = PPT\_DLY\_LD\_INTERTIE\_ABS\_IMB_{Pd} / BNC\_DLY\_LD\_INTERTIE\_ABS\_IMB_{Bd}$$

[1]Rounded to 5 decimal places.

7.6.29 Calculate TPUD's daily absolute imbalance ratio. The result is a decimal value by day that determines the EIM Participant's obligation for allocation charges/credits.

$$TPUD\_DLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bd}{}^{1} = TPUD\_DLY\_ABS\_LD\_IMB_{Bd} / BNC\_DLY\_LD\_INTERTIE\_ABS\_IMB_{Bd}$$

[1]Rounded to 5 decimal places.

7.6.30 Calculate each EIM Participant's monthly load and Intertie imbalance.

$$PPT\_MNLY\_LD\_INTERTIE\_ABS\_IMB_{Pm}{}^{1} = \sum_{Pm}(PPT\_DLY\_LD\_INTERTIE\_ABS\_IMB_{Pd})$$

7.6.31 Add up EIM Participant daily imbalance to calculate a BANC wide monthly imbalance volume.

$$BNC\_MNLY\_LD\_INTERTIE\_ABS\_IMB_{Bm} = \sum_{Bm}(PPT\_MNLY\_LD\_INTERTIE\_ABS\_IMB_{Pm})$$

7.6.32 Calculate each EIM Participant monthly load and Intertie absolute imbalance ratio. The result is a decimal value by month that determines the EIM Participant's obligation for allocation charges/credits.

$$PPT\_MNLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Pm}{}^{1} = PPT\_MNLY\_LD\_INTERTIE\_ABS\_IMB_{Pm} / BNC\_MNLY\_LD\_INTERTIE\_ABS\_IMB_{Bm}$$

[1]Rounded to 5 decimal places.

7.6.33 Calculate TPUD's monthly absolute imbalance ratio. The result is a decimal value by hour that determines the EIM Participant's obligation for allocation charges/credits.

$$TPUD\_MNLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bm}{}^{1} = TPUD\_MNLY\_ABS\_LD\_IMB_{Bm} / BNC\_MNLY\_LD\_INTERTIE\_ABS\_IMB_{Bm}$$

[1]Rounded to 5 decimal places.

Participant Hourly Total Imbalance – Generation, Load and Interties

7.6.34 Each EIM Participant's total hourly absolute imbalance is the sum of the absolute hourly load imbalance, total absolute hourly generation imbalance and the total absolute Interchange schedule imbalance. The result is rounded to two decimal places based on the precision of the EIM Participant Hourly Absolute Load Imbalance and the Participant Hourly Total Absolute Resource Imbalance determinants.

$$PPT\_HRLY\_TOT\_ABS\_IMB_{Ph}{}^{1} = PPT\_HRLY\_ABS\_LD\_IMB_{Ph} + PPT\_HRLY\_TOT\_ABS\_RSRC\_IMB_{Ph} + PPT\_HRLY\_TOT\_TAG\_ABS\_IMB_{Ph}$$

[1]Rounded to 2 decimal places.

7.6.35 Add up EIM Participant hourly imbalance to calculate a BANC wide hourly imbalance volume. TPUD allocated load imbalance must be included to calculate the accurate total imbalance in BANC.

$$BNC\_HRLY\_TOT\_ABS\_IMB_{Bh} = \sum_{Bh}(PPT\_HRLY\_TOT\_ABS\_IMB_{Ph}) + TPUD\_HRLY\_ABS\_LD\_IMB_{Bh}$$

7.6.36 Calculate each EIM Participant hourly absolute imbalance ratio. The result is a decimal value by hour that determines the EIM Participant's obligation for allocation charges/credits.

$$PPT\_HRLY\_ABS\_IMB\_RATIO_{Ph}{}^{1} = PPT\_HRLY\_TOT\_ABS\_IMB_{Ph} / BNC\_HRLY\_TOT\_ABS\_IMB_{Bh}$$

[1]Rounded to 5 decimal places.

7.6.37 Calculate TPUD attributable imbalance ratio.

$$TPUD\_HRLY\_ABS\_IMB\_RATIO_{Bh}{}^{1} = TPUD\_HRLY\_ABS\_LD\_IMB_{Bh} / BNC\_HRLY\_TOT\_ABS\_IMB_{Bh}$$

[1]Rounded to 5 decimal places.

8. BANC Charge Code 100 - BANC Balancing Charge

The BANC Balancing Charge will allocate any rounding and allocation differences to EIM Participants on a daily load ratio share allocation.

CAISO does not round any charge codes or their daily statement total value. CAISO's monetary values have five decimals of precision including their statement Trade Date billing amount. CAISO only rounds monetary values to a cent on their weekly invoice total, otherwise they carry fractional cents throughout their settlement statements.

BANC will round all allocation amounts to the nearest cent so participants will not need to track fractional cents. For each CAISO settlement, BANC will take the CAISO Trade Date settlement statement total, round it to the nearest cent and then subtract all the BANC allocated charges for that settlement. Any remaining amount will be allocated on a daily load ratio share basis.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

8.1 *CAISO Determinants*

Determinants	UOM & Interval Length	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
$TRADE\_DATE_{Bd}$	$ Daily	The total settlement statement charge for BANC from CAISO. This value has up to five decimal places of precision.	BANC EESC Bill Determinant Statement: TRADE_DATE		Configuration File

8.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

8.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
$CAISO\_DLY\_STMT\_TOT_{Bd}$	$ Daily 9 Decimals	**CAISO Daily Statement Total** – The total dollar amount of the CAISO settlement statement to be allocated.
$BNC\_DLY\_ALLOC\_TOT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 101 Allocation Amount** – Total EIM Participant daily allocation of CAISO PTB charges across all charge codes.
$BNC\_MNLY\_2999\_ALLOC\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Total Monthly 2999 Allocation Amount** – Total EIM Participant monthly allocation of CAISO charge code 2999.
$BNC\_MNLY\_3999\_ALLOC\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Total Monthly 3999 Allocation Amount** – Total EIM Participant monthly allocation of CAISO charge code 3999.

Determinants	UOM & Interval Length	Description
$BNC\_DLY\_4564\_ALLOC\_AMT_{Bd}$	$ Monthly 2 Decimal	**BANC Total Daily 4564 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 4564.
$BNC\_DLY\_4575\_ALLOC\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Total Daily 4575 Allocation Amount** – Total EIM Participant monthly allocation of CAISO charge code 4575.
$BNC\_DLY\_5024\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5024 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5024.
$BNC\_DLY\_5025\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5025 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5025.
$BNC\_DLY\_5900\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5900 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5900.
$BNC\_DLY\_5901\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5901 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5901.
$BNC\_DLY\_5910\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5910 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5910.
$BNC\_DLY\_5912\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5912 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5912.
$BNC\_DLY\_6045\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6045 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6045.
$BNC\_DLY\_6046\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6046 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6046.
$BNC\_DLY\_6194\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6194 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6194.
$BNC\_DLY\_6196\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6196 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6196.
$BNC\_DLY\_6294\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6294 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6294.
$BNC\_DLY\_6296\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6296 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6296.
$BNC\_DLY\_64600\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64600 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64600.
$BNC\_DLY\_64700\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64700 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64700.
$BNC\_DLY\_64740\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64740 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64740.

Determinants	UOM & Interval Length	Description
BNC_DLY_64750_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64750 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64750.
BNC_DLY_64770_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64770 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64770.
BNC_DLY_6478_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6478 Allocated Amount** - The total CAISO charge code 6478 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_66200_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 66200 Allocated Amount** - The total CAISO charge code 66200 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_66780_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 66478 Allocated Amount** - The daily CAISO charge code 66478 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_67740_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 67740 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 67740.
BNC_DLY_69850_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 69850 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 698500.
BNC_DLY_7070_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7070 Allocated Amount** - The total CAISO charge code 7070 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_7076_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7076 Amount** - The total CAISO charge code 7076 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_7077_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7077 Amount** - The total CAISO charge code 7077 amount allocated to all EIM Participants for the Trade Date.
BNC_MNLY_7078_ALLOC_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7078 Allocated Amount** - The total CAISO charge code 7078 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_7087_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7087 Allocated Amount** - The total CAISO charge code 7087 amount allocated to all EIM Participants for the Trade Date.
BNC_MNLY_7088_ALLOC_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7088 Allocated Amount** - The total CAISO charge code 7088 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_7989_ALLOC_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC Daily 7989 Allocated Amount** - The total CAISO charge code 7989 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_7999_ALLOC_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC Daily 7999 Allocated Amount** - The total CAISO charge code 7999 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_100_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 100 Allocation Amount** – Total EIM Participant monthly allocation of CAISO charge code 4575.
PPT_DLY_LRS$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for an EIM Participant to the total daily BANC load in the Pacific

Determinants	UOM & Interval Length	Description
		Prevailing Time zone. This determinant is calculated in the Load Ratio Share Precalculation.
$BNC\_DLY\_BAL\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily Balancing Amount** – The total unallocated remainder after allocating all BANC charges. This value represents rounding allocation error.
$PPT\_DLY\_100\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 100 Amount** - EIM Participant daily allocation of CAISO charge code 100 rounded to two decimal places.
$TPUD\_DLY\_LRS_{Bd}$	Decimal Daily 5 Decimals	**TPUD Daily Load Ratio Share** - The daily percent in decimal of TPUD's load for compared to the total daily BANC load.
$TPUD\_MNLY\_100\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC TPUD Monthly 100 Amount** – The amount of the overall CAISO charge that is attributable to TPUD that will be help by BANC until it is reallocated to non-WAPA participants by BANC outside of this allocation process. Th result is rounded to two decimal places.
$BNC\_DLY\_100\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 100 Allocated Differential Amount** - The calculated daily difference between the entire daily CAISO settlement statement amount and the total of al allocations to EIM Participants

Formulas

8.4 The total CAISO settlement statement total for BANC.

$$CAISO\_DLY\_STMT\_TOT_{Bd} = TRADE\_DATE_{Bd}$$

where B = BANC

8.5 Sum all the allocation charge code totals to the EIM Participants related to statement. Monthly determinants will only have values when allocating the last day of the month.

$$\begin{aligned} BNC\_DLY\_ALLOC\_TOT_{Bd} = {} & BNC\_DLY\_101\_ALLOC\_AMT_{Bd} + \\ & BNC\_MNLY\_2999\_ALLOC\_AMT_{Bm} + \\ & BNC\_MNLY\_3999\_ALLOC\_AMT_{Bm} + \\ & BNC\_DLY\_4564\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_4575\_ALLOC\_AMT_{Bm} + \\ & BNC\_DLY\_5024\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5025\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5900\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5901\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5910\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5912\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_6045\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_6046\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_6194\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_6196\_ALLOC\_AMT_{Bd} + \end{aligned}$$

$BNC\_DLY\_6294\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_6296\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_64600\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_64700\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_64740\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_64750\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_64770\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_6478\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_66200\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_66780\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_67740\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_69850\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_7070\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_7076\_ALLOC\_AMT_{Bd}$ +
$BNC\_DLY\_7077\_ALLOC\_AMT_{Bd}$ +
$BNC\_MNLY\_7078\_ALLOC\_AMT_{Bm}$ +
$BNC\_DLY\_7087\_ALLOC\_AMT_{Bd}$ +
$BNC\_MNLY\_7088\_ALLOC\_AMT_{Bm}$ +
$BNC\_DLY\_7989\_ALLOC\_AMT_{Pd}$ +
$BNC\_DLY\_7999\_ALLOC\_AMT_{Pd}$

8.6 Calculate the BANC daily balancing amount for the current statement. The total CAISO settlement statement amount less all the allocated BANC charges to EIM Participants.

$BNC\_DLY\_BAL\_AMT_{Bd} = CAISO\_DLY\_STMT\_TOT_{Bd} - BNC\_DLY\_ALLOC\_TOT_{Bd}$

8.7 Allocate the imbalance to EIM Participants on a daily load ratio share and round the amount to two decimal places.

$PPT\_DLY\_100\_AMT_{Pd}$[1] = $BNC\_DLY\_BAL\_AMT_{Bd} * PPT\_DLY\_LRS_{Pd}$
[1]Rounded to 2 decimal places.

8.8 Allocate the portion of daily load ratio share estimated to TPUD to BANC.

$TPUD\_DLY\_100\_AMT_{Bd}$[1] = $BNC\_DLY\_BAL\_AMT_{Bd} * TPUD\_DLY\_LRS_{Bd}$
[1]Rounded to 2 decimal places.

Allocations Monitoring

8.9 Sum the total allocated balancing amount to all EIM Participants.

$BNC\_DLY\_100\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_100\_AMT_{Pd}) + TPUD\_DLY\_100\_AMT_{Bd}$

8.10 The total daily allocation to EIM Participants is summed to a daily total. This is only used as a reference for monitoring purposes.

$BNC\_DLY\_100\_ALLOC\_DIFF\_AMT_{Bd} = BNC\_DLY\_100\_AMT_{Bd} - BNC\_DLY\_BAL\_AMT_{Bd}$

9. BANC Charge Code 101 PTB Charge

CAISO Application

CAISO has the ability to add Pass Through Bills (PTBs) to many charge codes. These are miscellaneous adders that can appear at different intervals for different charges. These charges are only used when there is a dollar addition or subtraction that cannot be made by changes in the billing determinants. These are more commonly used for regulatory mandated adjustments where resettlement is either over burdensome or will not produce the financial outcome required. PTBs can be charges or credits and are uncommon.

BANC Application

BANC removes all PTBs charge determinants from each charge code. This is done so that there are no unexpected charge imbalances during allocations. All PTBs are processed in this BANC Charge Code. When a PTB appears, the BANC Settlement Analyst will analyze the PTB and determine if there were any related activity attributable to either a single EIM Participant or a group of EIM Participants. If the BANC Settlement Analyst is unable to discern any specific cause and effect relationship, the BANC Settlement Analyst will allow the PTB to be distributed based on the default allocation of Daily Load Ratio Share.

If the BANC Settlement Analyst determines any PTB is attributable to one or more participants, the BANC Settlement Analyst will manually allocate the PTB charges by uploading to the allocation solution specific dollar allocation amounts for the Trade Date for each participant. The allocation will indicate through a flag whether the allocation has been manually allocated.

Whenever a PTB initially occurs for a Trade Date settlement, the BANC Settlement Analyst will provide a notice to EIM Participants as to the reason for the PTB.

The portion of the charge code estimated to TPUD will be held by the EIM Entity and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

9.1 *CAISO Determinants*

Determinants	UOM & Interval Length	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM

9.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description
PPT_DLY_MANUAL_PTB_ALLOC_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily Manual PTB Allocation Amount** – A manually allocation amount as calculated by BANC staff.
TPUD_DLY_MANUAL_PTB_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**TPUD Daily Manual PTB Allocation Amount** – A manually allocation amount as calculated by BANC staff attributable to TPUD which will be held by BANC until it is distributed by BANC outside of this allocation process.

9.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_HRLY_6194_PTB_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6194 Amount** - The CAISO CC6194 charge amount to BANC on an hourly basis. This determinant is from charge code 6194.
CAISO_DLY_6194_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 6194 Amount** - The CAISO CC6194 charge amount to BANC summed to a daily value.
CAISO_HRLY_6294_PTB_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6294 PTB Amount** - The CAISO CC6294 PTB charge amount to BANC on an hourly basis. This determinant is from charge code 6294.
CAISO_DLY_6294_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 6294 Amount** - The CAISO CC6294 charge amount to BANC summed to a daily value.
CAISO_5MIN_64600_PTB_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64600 Pass Through Billing Amount** - A 5-minute interval amount when applicable related to CAISO Charge Code 64600.
CAISO_DLY_64600_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 64600 Amount** - The CAISO CC64600 charge amount to BANC summed to a daily value.
CAISO_5MIN_64700_PTB_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64700 Pass Through Billing Amount** - A 5-minute interval amount when applicable related to CAISO Charge Code 64700.
CAISO_DLY_64700_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 64700 Amount** - The CAISO CC64700 charge amount to BANC summed to a daily value.
CAISO_5MIN_64750_PTB_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64750 Pass Through Billing Amount** - A 5-minute interval amount when applicable related to CAISO Charge Code 64750. This determinant is from charge code 64750.
CAISO_DLY_64750_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 64750 Amount** - The CAISO CC64750 charge amount to BANC summed to a daily value.
CAISO_DLY_7070_PTB_AMT$_{Bh}$	$ 5 Minute 2 Decimal	**BANC 5-Minute 7070 Pass Through Billing Amount** - A 5-minute interval amount when applicable related to CAISO Charge Code 7070. This determinant is from charge code 7070.
CAISO_DLY_7070_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 7070 Amount** - The CAISO CC7070 charge amount to BANC summed to a daily value.
CAISO_DLY_7076_PTB_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**BANC 5 Minute 7076 Pass Through Bill Amount** - A 5-minute statement BANC PTB value when applicable related to CAISO Charge Code 7070. This determinant is from charge code 7076.
CAISO_DLY_7076_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 7076 Amount** - The CAISO CC7076 charge amount to BANC summed to a daily value.
CAISO_MNLY_4575_PTB_AMT$_{Bm}$	$ Monthly 2 Decimal	**CAISO Monthly 4575 PTB Amount** - The CAISO CC4575 PTB amount to BANC. This determinant is from charge code 4575.
CAISO_DLY_7077_PTB_AMT$_{Bd}$	$ Daily	**BANC Daily 7077 Pass Through Billing Amount** - A daily statement BANC PTB value when applicable

Determinants	UOM & Interval Length	Description
	2 Decimal	related to CAISO Charge Code 7077. This determinant is from charge code 7077.
CAISO_MNLY_7078_PTB_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7078 Pass Through Billing Amount** - A monthly statement BANC PTB value when applicable related to CAISO Charge Code 7078. This determinant is from charge code 7078.
CAISO_DLY_7087_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7087 Pass Through Bill Amount** - A daily statement BANC PTB value when applicable related to CAISO Charge Code 7087. This determinant is from charge code 7087.
CAISO_MNLY_7088_PTB_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7088 Pass Through Bill Amount** - A monthly statement BANC PTB value when applicable related to CAISO Charge Code 7088. This determinant is from charge code 7088.
BNC_DLY_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily PTB Amount** – The daily total of all PTBs received by BANC for this settlement.
BNC_DLY_PTB_MAN_ALLOC_FLAG$_{Bd}$	Integer Daily	**BANC Daily PTB Allocation Flag** – A daily flag of 1 or 0 to indicate when BANC has manually allocated the PTB amounts for the Trade Date. A value of 1 indicates there is a manual allocation by BANC staff.
PPT_DLY_LRS$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for an EIM Participant to the total daily BANC load in the Pacific Prevailing Time zone.
PPT_DLY_101_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 101 Amount** - EIM Participant daily allocation of CAISO PTB charges rounded to two decimal places.
TPUD_DLY_LRS$_{Bd}$	Decimal Daily 5 Decimals	**TPUD Daily Load Ratio Share** - The daily percent in decimal of TPUD's load for compared to the total daily BANC load.
TPUD_MNLY_101_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC TPUD Monthly 101 Amount** – The amount of the overall CAISO charge that is estimated to TPUD that will be help by BANC until it is reallocated to non-WAPA participants by BANC outside of this allocation process. Th result is rounded to two decimal places.
BNC_DLY_101_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 101 Amount** – Total EIM Participant daily allocation of CAISO PTB charges.
BNC_DLY_101_ALLOC_DIFF_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 101 Allocated Differential Amount** - The calculated daily difference between all CAISO PTB charges for the Trade Date and the total of all allocations to EIM Participants

Formulas

9.4 Sum the PTB for Charge Code 6194 to a daily total.

$$CAISO\_DLY\_6194\_PTB\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_6194\_PTB\_AMT_{Bh})$$

9.5 Sum the PTB for Charge Code 6294 to a daily total.

$CAISO\_DLY\_6294\_PTB\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_6294\_PTB\_AMT_{Bh})$

9.6 Sum the PTB for Charge Code 6294 to a daily total.

$CAISO\_DLY\_64600\_PTB\_AMT_{Bd} = \sum_{Bd}(CAISO\_5MIN\_64600\_PTB\_AMT_{Bf})$

9.7 Sum the PTB for Charge Code 6294 to a daily total.

$CAISO\_DLY\_64700\_PTB\_AMT_{Bd} = \sum_{Bd}(CAISO\_5MIN\_64700\_PTB\_AMT_{Bf})$

9.8 Sum the PTB for Charge Code 6294 to a daily total.

$CAISO\_DLY\_64750\_PTB\_AMT_{Bd} = \sum_{Bd}(CAISO\_5MIN\_64750\_PTB\_AMT_{Bf})$

9.9 Sum the PTB for Charge Code 6294 to a daily total.

$CAISO\_DLY\_7070\_PTB\_AMT_{Bd} = \sum_{Bd}(CAISO\_5MIN\_7070\_PTB\_AMT_{Bf})$

9.10 Sum the PTB for Charge Code 6294 to a daily total.

$CAISO\_DLY\_7076\_PTB\_AMT_{Bd} = \sum_{Bd}(CAISO\_5MIN\_7076\_PTB\_AMT_{Bf})$

9.11 The daily total of all PTBs for the Trade Date.

$$BNC\_DLY\_PTB\_AMT_{Bd} = CAISO\_MNLY\_4575\_PTB\_AMT_{Bm} + CAISO\_DLY\_6194\_PTB\_AMT_{Bd} + CAISO\_DLY\_6294\_PTB\_AMT_{Bd} + CAISO\_DLY\_64600\_PTB\_AMT_{Bd} + CAISO\_DLY\_64700\_PTB\_AMT_{Bd} + CAISO\_DLY\_64750\_PTB\_AMT_{Bd} + CAISO\_DLY\_7070\_PTB\_AMT_{Bd} + CAISO\_DLY\_7076\_PTB\_AMT_{Bd} + CAISO\_DLY\_7077\_PTB\_AMT_{Bd} + CAISO\_MNLY\_7078\_PTB\_AMT_{Bm} + CAISO\_DLY\_7087\_PTB\_AMT_{Bd} + CAISO\_MNLY\_7088\_PTB\_AMT_{Bm}$$

9.12 The allocation solution will import any manual allocations from the BANC Settlement Analyst and assign them to each EIM Participant.

$PPT\_DLY\_MANUAL\_PTB\_ALLOC\_AMT_{Pd}$

9.13 The allocation solution will set a manual allocation flag whenever the BANC Settlement Analyst provides a manual allocation override for this charge code. When the flag is equal to 1, then EIM Participants will know the amounts were manually allocated. A flag equal to zero indicates the default Daily Load Ratio Share allocation was used.

$$BNC\_DLY\_PTB\_MAN\_ALLOC\_FLAG_{Bd} = IF\{ [\sum_{Bd}(PPT\_DLY\_MANUAL\_PTB\_ALLOC\_AMT_{Pd}) + TPUD\_DLY\_MANUAL\_PTB\_ALLOC\_AMT_{Bd} = 0 \text{ THEN } 0 \text{ ELSE } 1$$

]

9.14 Allocate any PTB to EIM Participants.

$PPT\_DLY\_101\_AMT_{Pd}$[1] =
($PPT\_DLY\_MANUAL\_PTB\_ALLOC\_AMT_{Pd}$ * $BNC\_DLY\_PTB\_MAN\_ALLOC\_FLAG_{Bd}$) +
[(1 - $BNC\_DLY\_PTB\_MAN\_ALLOC\_FLAG_{Bd}$) * $BNC\_DLY\_PTB\_AMT_{Bd}$ *
$PPT\_DLY\_LRS_{Pd}$)]

[1]Rounded to 2 decimal places.

9.15 When the BANC Settlement Analyst determines there is a manual allocation of PTBs, the BANC Settlement Analyst will also need to import a manual allocation for TPUD.

$TPUD\_DLY\_MANUAL\_PTB\_ALLOC\_AMT_{Bd}$

9.16 Allocate PTB to TPUD.

$TPUD\_DLY\_101\_AMT_{Pd}$[1] =
($TPUD\_DLY\_MANUAL\_PTB\_ALLOC\_AMT_{Bd}$ * $BNC\_DLY\_PTB\_MAN\_ALLOC\_FLAG_{Bd}$) +
[(1 - $BNC\_DLY\_PTB\_MAN\_ALLOC\_FLAG_{Bd}$) * $BNC\_DLY\_PTB\_AMT_{Bd}$ *
$TPUD\_DLY\_LRS_{Bd}$)]

[1]Rounded to 2 decimal places.

Allocations Monitoring

9.17 The daily allocation is summed to a daily total.

$BNC\_DLY\_101\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_101\_AMT_{Pd}) + TPUD\_DLY\_101\_AMT_{Pd}$

9.18 The total daily difference between the charge the EIM Entity received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_101\_ALLOC\_DIFF\_AMT_{Bd} = BNC\_DLY\_PTB\_AMT_{Bd} - BNC\_DLY\_101\_ALLOC\_AMT_{Bd}$

10. BANC Charge Code 102 Miscellaneous Charge

CAISO Application

None.

BANC Application

There could be instances where BANC will need to charge or credit EIM Participants for a Trade Date. This BANC specific charge code will allow authorized charges and credits to be processed through the allocation solution to participant invoices.

Whenever the charge code is used, the BANC Settlement Analyst will provide a notice to EIM Participants as to the reason for the associated charge or credit.

The portion of the charge code estimated to TPUD will be held by the EIM Entity and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

10.1 *CAISO Determinants*

Determinants	UOM & Interval Length	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM

10.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description
$PPT\_DLY\_MISC\_ALLOC\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily Miscellaneous Allocation Amount** – A authorized BANC miscellaneous allocation amount.
$TPUD\_DLY\_MISC\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**TPUD Daily Miscellaneous Allocation Amount** – A authorized BANC miscellaneous allocation amount.

10.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
$PPT\_DLY\_102\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 102 Amount** - EIM Participant daily allocation of miscellaneous charges and/or credits rounded to two decimal places.
$TPUD\_DLY\_102\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 102 Amount** - BANC EIM TPUD daily allocation of miscellaneous charges and/or credits rounded to two decimal places.
$BNC\_DLY\_102\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 102 Amount** – Total EIM Participant daily allocation of miscellaneous charges.

Formulas

10.4 The allocation solution will import any miscellaneous allocations from the BANC Settlement Analyst and assign them to each EIM Participant.

$PPT\_DLY\_MISC\_ALLOC\_AMT_{Pd}$

10.5 The allocation will be rounded for the day to two decimals.

$PPT\_DLY\_102\_AMT_{Pd}^{1} = PPT\_DLY\_MISC\_ALLOC\_AMT_{Pd}$
[1]Rounded to 2 decimal places.

10.6 he allocation solution will import any miscellaneous allocations from the BANC Settlement Analyst and assign them to TPUD.

$TPUD\_DLY\_MISC\_ALLOC\_AMT_{Bd}$

10.7 The allocation for TPUD will be rounded for the day to two decimals.

$TPUD\_DLY\_102\_AMT_{Bd}^{1} = TPUD\_DLY\_MISC\_ALLOC\_AMT_{Bd}$
[1]Rounded to 2 decimal places.

Allocations Monitoring

10.8 The daily allocation is summed to a daily total.

$BNC\_DLY\_102\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_102\_AMT_{Pd}) + TPUD\_DLY\_102\_AMT_{Bd}$

11. BANC Charge Code 2999 Default Invoice Interest Payment

CAISO Application

Business Associates (as defined in the CAISO Tariff) who default on amounts due to the CAISO are charged interest on those unpaid amounts. The interest is charged monthly at the FERC published quarterly interest rate. The Scheduling Coordinator shall pay interest on the CASIO Clearing Account, together with any related transaction costs incurred by the CAISO. The CAISO shall apply all such interest payments on the Default Amount on a pro rata basis to CAISO Creditors in relation to amounts due in the order of the creation of such debts.

This monthly credit is paid on the last day of the month when it occurs.

There is a PTB amount in this charge code, but it represents the amount to be billed and is not a separate charge component.

BANC Application

When this charge appears, BANC will allocate the monthly charge using the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by the EIM Entity and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

11.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
DefaultInvoiceInterestPayment SettlementAmount$_{BmdV'U'U}$	$ Monthly 9 Decimal	CAISO Charge Code 2999 credit to BANC, prorated by Scheduling Coordinator, on a monthly basis for any interest paid to CAISO for Scheduling Coordinator late payments when applicable.	BANC EESC Bill Determinant Statement: BA_MTH_DFLT_INV_INT_PMT@AMOUNT		BPM Configuration Guide: Default Invoice Interest Payment CC2999 Version 5.0

11.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

11.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_MNLY_2999_AMT$_{Bm}$	$ Monthly 2 Decimal	**CAISO Monthly 2999 Amount** - The CAISO CC2999 credit amount to BANC.
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be

Determinants	UOM & Interval Length	Description
		defined annually by the Commission by EIM Participant, and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date. Refer to the EIM Participants Cost Allocation Precalculation.
$PPT\_MNLY\_2999\_AMT_{Pm}$	$ Monthly 2 Decimal	**EIM Participant Monthly 2999 Amount** - EIM Participant monthly allocation of CAISO charge code 2999 rounded to two decimal places.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**TPUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
$TPUD\_MNLY\_2999\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC TPUD Monthly 2999 Amount** – The amount of the overall CAISO charge that is estimated to TPUD that will be help by BANC until it is reallocated to non-WAPA participants by BANC outside of this allocation process. Th result is rounded to two decimal places.
$BNC\_MNLY\_2999\_ALLOC\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Total Monthly 2999 Allocation Amount** – Total EIM Participant monthly allocation of CAISO charge code 2999.
$BNC\_MNLY\_2999\_ALLOC\_DIFF\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 2999 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

11.4 The monthly credit to BANC for charge code 2999 on the last day of the month when applicable.

$$CAISO\_MNLY\_2999\_AMT_{Bm}{}^{1} = DefaultInvoiceInterestPaymentSettlementAmount_{BmdV'U'U}$$

[1]Rounded to 2 decimal places.

11.5 Allocate any monthly credit BANC received from CAISO in charge code 2999 to EIM Participants by each EIM Participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_MNLY\_2999\_AMT_{Pm}{}^{1} = CAISO\_MNLY\_2999\_AMT_{Bm} * PPT\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

11.6 The monthly cost allocation estimated to TPUD.

$$TPUD\_MNLY\_2999\_AMT_{Bm}{}^{1} = CAISO\_MNLY\_2999\_AMT_{Bm} * TPUD\_COST\_ALLOC\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

11.7 The monthly allocation on the last Trade Date of the month is summed to a daily total.

$$BNC\_MNLY\_2999\_ALLOC\_AMT_{Bm} = \sum_{Bm}(PPT\_MNLY\_2999\_AMT_{Pm}) + TPUD\_MNLY\_2999\_AMT_{Pm}$$

11.8 The total daily difference between the charge the EIM Entity received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_MNLY\_2999\_ALLOC\_DIFF\_AMT_{Bm} = CAISO\_MNLY\_2999\_AMT_{Bm} - BNC\_MNLY\_2999\_ALLOC\_AMT_{Bm}$$

12. BANC Charge Code 3999 Default Invoice Interest Charge

CAISO Application

Scheduling Coordinators who default on amounts due to the CAISO are charged interest on those unpaid amounts. The interest is charged monthly at the FERC published quarterly interest rate. The Scheduling Coordinator shall pay interest on the CASIO clearing account, together with any related transaction costs incurred by the CAISO. The CAISO shall apply all such interest payments on the default amount on a pro rata basis to CAISO Creditors in relation to amounts due in the order of the creation of such basis. This monthly charge code billed on the last day of the month bills Scheduling Coordinators for the interest due CAISO on the defaulted amount.

There is a potential PTB amount with this charge code.

There is a PTB amount in this charge code, but it represents the amount to be billed and is not a separate charge component.

BANC Application

When this charge appears, the EIM Entity will allocate the monthly charge using the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

12.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
DefaultInvoiceInterestChargeSettlementAmount$_{BJV'U'Um}$	$ Monthly 9 Decimal	CAISO Charge Code 3999 Charge to BANC for interest on defaulted invoice payments on a monthly basis	BANC EESC Bill Determinant Statement: BA_MTH_DFLT_INV_INT_CHARGE@AMOUNT		BPM Configuration Guide: Default Invoice Interest Charge CC3999 Version 5.0

12.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

12.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the Commission and it will be in effect by Trade Date until it is updated. All

Determinants	UOM & Interval Length	Description
		allocations including resettlements will use the allocation effect for that Trade date. Refer to the EIM Participants Cost Allocation Precalculation.
$CAISO\_MNLY\_3999\_AMT_{Bm}$	$ Monthly 2 Decimal	**CAISO Monthly 2999 Amount** - The CAISO CC3999 credit amount to BANC.
$PPT\_MNLY\_3999\_AMT_{Pm}$	$ Monthly 2 Decimal	**EIM Participant Monthly 3999 Amount** - EIM Participant monthly allocation of CAISO charge code 3999 rounded to two decimal places.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
$TPUD\_MNLY\_3999\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC TPUD Monthly 3999 Amount** – The amount of the overall CAISO charge that is estimated to TPUD that will be help by BANC until it is reallocated to non-WAPA participants by BANC outside of this allocation process. Th result is rounded to two decimal places.
$BNC\_MNLY\_3999\_ALLOC\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Total Monthly 3999 Allocation Amount** – Total EIM Participant monthly allocation of CAISO charge code 2999.
$BNC\_MNLY\_3999\_ALLOC\_DIFF\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 3999 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

12.4 The monthly charge to BANC for charge code 3999 on the last day of the month when applicable.

$$CAISO\_MNLY\_3999\_AMT_{Bm}{}^{1} = DefaultInvoiceInterestChargeSettlementAmount_{BJV'U'Um}$$

[1]Rounded to 2 decimal places.

12.5 Allocate any monthly charge BANC received from CAISO in charge code 3999 to EIM Participants by each EIM Participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_MNLY\_3999\_AMT_{Pm}{}^{1} = CAISO\_MNLY\_3999\_AMT_{Bm} * PPT\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

12.6 The monthly cost allocation estimated to TPUD.

$$TPUD\_MNLY\_3999\_AMT_{Bm}{}^{1} = CAISO\_MNLY\_3999\_AMT_{Bm} * TPUD\_COST\_ALLOC\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

12.7 The monthly allocation on the last Trade Date of the month is summed to a daily total.

$$BNC\_MNLY\_3999\_ALLOC\_AMT_{Bm} = \sum_{Bm}(PPT\_MNLY\_3999\_AMT_{Pm}) + TPUD\_MNLY\_3999\_AMT_{Bm}$$

12.8 The total daily difference between the charge BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_MNLY\_3999\_ALLOC\_DIFF\_AMT_{Bm} = CAISO\_MNLY\_3999\_AMT_{Bm} - BNC\_MNLY\_3999\_ALLOC\_AMT_{Bm}$$

13. BANC Charge Code 4564 GMC EIM Transaction Charge

CAISO Charge Application

The CAISO Charge Code 4564 charges EIM Participants an administrative charge based on market activity to recover the cost operating the market. CAISO collects this charge from three underlying components:

- System Operations Charge – CASIO charges Scheduling Coordinators for the absolute volume difference between their EIM Load Base Schedule and their submitted load meter data multiplied by the effective EIM GMC System Operations Charge rate published by CAISO for the Trade Date.
- Market Services Charge – CAISO charges Scheduling Coordinators the EIM GMC Market Services Charge Rate effective for the Trade Date multiplied by the absolute volume difference for each the resource and Intertie schedule between their hourly Base Scheduled volume and the 15-minute market volume, plus the absolute volume difference between the 15-minute market volume and the final reported tag or meter volume.
- PTB Charge Adjustment – CAISO has a miscellaneous adjustment they can use to charge or credit a Scheduling Coordinator if there is a dollar adjustment that is needed when changing determinants will not work. The use of this adjustment is seen as extremely rare.

There is a no PTB amount associated with this charge code.

The CAISO Systems Operations Charge and Market Services Charge rate codes can be found on CAISO's website at the following location:

CAISO.com > MARKET & OPERATIONS (tab) > Settlements (picklist selection) > Grid management charge (selection) > Grid management Charge Rates PDF file

BANC Charge Application

BANC will aggregate the 5-minute charge to an hourly value and will allocate the total via BANC Hourly Load and Interties Absolute Imbalance Ratio to each participant.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

13.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
$EIMAdministrativeCharge_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	This formula conforms to the tariff requirement to assess System Operations and Market Services charges up until an EIM Entity notifies CAISO of its intent to terminate participation in EIM at which point the only charge assessed up to the end of the notice period (when EIM	BANC EESC Bill Determinant Statement: BA_5M_GMC_EIM_TRANSACTION_CHG@AMOUNT		BPM Configuration Guide: GMC EIM Transaction Charge CC 4564 Version 5.3

		Entity SC is terminated in system) is the EIM Entity SC specific minimum EIM Administrative Charge			

13.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

13.3 *BANC Allocation Determinants*

Determinants	UOM, Interval Length, Precision	Description
CAISO_5MIN_4564_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 4564 Amount** - The CAISO 5-minute charge amount to BANC rounded to two decimal places.
CAISO_HRLY_4564_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 4564 Amount** - The CAISO 5-minute rounded charge amount to BANC summed to an aggregated hourly amount.
PPT_HRLY_ABS_LD_INTERTIE_IMB_RATIO$_{Ph}$	Decimal Hourly 5 Decimal	**EIM Participant Hourly Absolute Load and Intertie Imbalance Ratio** – The EIM Participant's hourly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
TPUD_HRLY_ABS_LD_INTERTIE_IMB_RATIO$_{Bh}$	Decimal Hourly 5 Decimal	**TPUD Hourly Absolute Load and Intertie Imbalance Ratio** – The TPUD hourly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
PPT_HRLY_4564_AMT$_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 4564 Amount** - EIM Participant hourly allocation of CAISO charge code 4564 rounded to two decimal places.
TPUD_HRLY_4564_AMT$_{Bh}$	$ Hourly 2 Decimal	**TPUD Hourly 4564 Amount** - BANC TPUD hourly estimate of CAISO charge code 4564 rounded to two decimal places.
PPT_DLY_4564_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 4564 Amount** - EIM Participant daily allocation of CAISO charge code 4564 rounded to two decimal places.
TPUD_DLY_4564_AMT$_{Bd}$	$ Daily 2 Decimal	**TPUD Daily 4564 Amount** - BANC TPUD daily estimate of CAISO charge code 4564 rounded to two decimal places.
BNC_HLY_4564_ALLOC_AMT$_{Bh}$	$ Hourly 2 Decimal	**BANC Total Hourly 4564 Allocation Amount** – Total EIM Participant hourly allocation of CAISO charge code 4564.
BNC_DLY_4564_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 4564 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 4564.
CAISO_DLY_4564_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Total Daily 4564 Amount** – The total daily charge from CAISO to BANC for charge code 4564.

Determinants	UOM, Interval Length, Precision	Description
$BNC\_HRLY\_4564\_ALLOC\_DIFF\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC Hourly 4564 Allocated Differential Amount** - The calculated hourly difference between the aggregated hourly CAISO rounded charge code to the hourly BANC allocation to its participants.
$BNC\_DLY\_4564\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Hourly 4564 Allocated Differential Amount** - The calculated daily difference between the aggregated daily CAISO rounded charge code to the daily BANC allocation to its participants.

Formulas

13.4 The total daily charge to BANC for charge code 4564.

$$CAISO\_5MIN\_4564\_AMT_{Bf}{}^{1} = EIMAdministrativeCharge_{BQ'mdhcif}$$

[1]Rounded to 2 decimal places.

13.5 Aggregate the CAISO 5-minute charge to an hourly total.

$$CAISO\_HRLY\_4564\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_4564\_AMT_{Bf})$$

13.6 Allocate any daily credit BANC received from CAISO in charge code 4575 to EIM Participants by hourly load/Intertie imbalance ratio share precalculation.

$$PPT\_HLY\_4564\_AMT_{Ph}{}^{1} = CAISO\_HRLY\_4564\_AMT_{Bh} * PPT\_HRLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Ph}$$

[1]Rounded to 2 decimal places.

13.7 Allocate any daily credit BANC received from CAISO in charge code 4575 to TPUD by hourly load/Intertie imbalance ratio share precalculation.

$$TPUD\_HLY\_4564\_AMT_{Bh}{}^{1} = CAISO\_HRLY\_4564\_AMT_{Bh} * TPUD\_HRLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bh}$$

[1]Rounded to 2 decimal places.

13.8 Sum the hourly allocated amount to a daily total for each EIM Participant.

$$PPT\_DLY\_4564\_AMT_{Pd} = \sum_{Bd}(PPT\_HRLY\_4564\_AMT_{Ph})$$

13.9 Sum the hourly allocated TPUD amount to a daily total.

$$TPUD\_DLY\_4564\_AMT_{Pd} = \sum_{Bd}(PPT\_HRLY\_4564\_AMT_{Ph})$$

Allocations Monitoring

13.10 The BANC hourly allocation to all EIM Participants is summed to an hourly.

$$BNC\_HRLY\_4564\_ALLOC\_AMT_{Bh} = \sum_{Bh}(PPT\_HRLY\_4564\_AMT_{Ph}) + TPUD\_HLY\_4564\_AMT_{Bh}$$

13.11 The daily allocation to all EIM Participants is summed to a BANC daily total. This total along with all other charges is subtracted from the daily settlement total and any difference is distributed in the BANC Balancing Charge code.

$$BNC\_DLY\_4564\_ALLOC\_AMT_{Bd} = \sum_{Bd}(BNC\_DLY\_4564\_AMT_{Bd}) + TPUD\_DLY\_4564\_AMT_{Pd}$$

13.12 The total CAISO daily charge to BANC.

$$CAISO\_DLY\_4564\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_4564\_AMT_{Bh})$$

13.13 The total hourly difference between the aggregated CAISO 5-minute charge to BANC and the total hourly allocated amount to EIM Participants is calculated and monitored.

$$BNC\_HRLY\_4564\_ALLOC\_DIFF\_AMT_{Bh} = CAISO\_HRLY\_4564\_AMT_{Bh} - BNC\_HRLY\_4564\_ALLOC\_AMT_{Bh}$$

13.14 The total daily difference between the CAISO total daily charge to BANC and the total daily allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_4564\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_4564\_AMT_{Bd} - BNC\_DLY\_4564\_ALLOC\_AMT_{Bm}$$

14. BANC Charge Code 4575 Scheduling Coordinator Identification Charge

CAISO Application

Monthly CAISO assesses each Scheduling Coordinator a fixed monthly service fee that covers Settlements, Metering and Client Relations functions in the ISO. This CAISO fee assessed to BANC on the last day of the month and will be allocated to EIM Participants on the same day via the EIM Participant Fixed Cost Allocation Precalculation.

There is a potential PTB amount with this charge code.

BANC Application

When this charge appears, BANC will allocate the monthly charge using the EIM Participant Fixed Cost Allocation Ratio Precalculation.

If a PTB appears in this charge code, it will be allocated in BANC Charge Code 101 PTB Charge.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

14.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
GMCSettlementsMeteringandClientRelationsSettlementAmount$_{Bm}$	$ Monthly 9 Decimal	CAISO Charge Code 4575 monthly charge to BANC on the last day of the month.	BANC EESC Bill Determinant Statement: BA_MTH_GMC_STLMTS_MTR_CLIENT_RELATIONS@SUB_SUBTOT_PREVIOUS_AMOUNT		BPM Configuration Guide: GMC – Scheduling Coordinator Identification (ID) Charge CC 4575 Version 5.0
PTBChargeAdjustmentGMCSettlementsMeteringandClientRelationsSettlementAmount$_{BJm}$	PTB adjustment variable for this Charge Code, amount per SC. ($)	PTB adjustment variable for this Charge Code, amount per SC. ($)	BANC EESC Bill Determinant Statement: PTB_BA_MTH_GMC_STLMTS_MTR_CLIENT_RELATIONS@PTB_SUBTOT_PREVIOUS_AMOUNT		BPM Configuration Guide: GMC – Scheduling Coordinator Identification (ID) Charge CC 4575 Version 5.0

14.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

14.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_MNLY_4575_PTB_AMT$_{Bm}$	$ Monthly 2 Decimal	**CAISO Monthly 4575 PTB Amount** - The CAISO CC4575 PTB amount to BANC.
CAISO_MNLY_4575_AMT$_{Bm}$	$ Monthly 2 Decimal	**CAISO Monthly 4575 Amount** - The CAISO CC4575 charge amount to BANC for the month.
PPT_PRELMIN_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Preliminary Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the BANC Commission and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date.
PPT_FIXED_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Fixed Cost Allocation Ratio** - The fixed cost allocation ratio for all EIM Participants by Trade Date.
PPT_DLY_4575_AMT$_{Pm}$	$ Monthly 2 Decimal	**EIM Participant Daily 4575 Amount** - EIM Participant daily allocation of CAISO charge code 4575 rounded to two decimal places.
TPUD_FIXED_COST_ALLOC_RATIO$_{Bd}$	Decimal Daily 5 Decimals	**TPUD Fixed Cost Allocation Ratio** - The fixed cost allocation ratio for TPUD by Trade Date.
TPUD_DLY_4575_AMT$_{Bm}$	$ Monthly 2 Decimal	**TPUD Daily 4575 Amount** - TPUD daily estimate of CAISO charge code 4575 rounded to two decimal places.
BNC_DLY_4575_ALLOC_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Total Daily 4575 Allocation Amount** – Total EIM Participant monthly allocation of CAISO charge code 4575.
BNC_DLY_4575_ALLOC_DIFF_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Daily 4575 Allocated Differential Amount** - The calculated daily difference between the CAISO rounded charge code to the total BANC allocation to its EIM Participants.

Formulas

14.4 The CAISO PTB determinant for this charge code will be processed in the BANC Charge Code 101, BANC PTB Allocation. Although unlikely, this guide will assume more than one can be given in a month.

$$CAISO\_MNLY\_4575\_PTB\_AMT_{Bm}{}^{1} = \sum_{Bm}(PTBChargeAdjustmentGMCSettlementsMeteringandClientRelationsSettlementAmount_{BJm})$$

[1]Rounded to 2 decimal places.

14.5 The total daily charge to BANC for charge code 6046.

$$CAISO\_MNLY\_4575\_AMT_{Bm}{}^{1} = GMCSettlementsMeteringandClientRelationsSettlementAmount_{Bm}$$

[1]Rounded to 2 decimal places.

14.6 Allocate any daily credit BANC received from CAISO in charge code 4575 to EIM Participants by daily load ratio share Precalculation.

$PPT\_DLY\_4575\_AMT_{Pm}$[1] = $CAISO\_DLY\_4575\_AMT_{Bm} * PPT\_FIXED\_COST\_ALLOC\_RATIO_{Pd}$

[1]Rounded to 2 decimal places.

14.7 Allocate any daily credit BANC received from CAISO in charge code 4575 to TPUD by daily load ratio share Precalculation.

$TPUD\_DLY\_4575\_AMT_{Bm}$[1] = $CAISO\_DLY\_4575\_AMT_{Bm} * TPUD\_FIXED\_COST\_ALLOC\_RATIO_{Bd}$

[1]Rounded to 2 decimal places.

Allocations Monitoring

14.8 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_4575\_ALLOC\_AMT_{Bm} = \sum_{Bm} (PPT\_DLY\_4575\_AMT_{Pm}) + TPUD\_DLY\_4575\_AMT_{Bm}$

14.9 The total daily difference between the charge BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_4575\_ALLOC\_DIFF\_AMT_{Bm} = CAISO\_DLY\_4575\_AMT_{Bm} - BNC\_DLY\_4575\_ALLOC\_AMT_{Bm}$

15. BANC Charge Code 5024 Invoice Late Payment Penalty

CAISO Application

The Invoice Late Payment Penalty will be assessed to Market Participants who are late in paying their invoices. This penalty applies to invoices that are governed by the ISO Tariff, except NERC/WECC invoice and invoices issued to bankrupt and inactive entities. This also excludes RMR invoices which are managed under unique contracts. This penalty is calculated as the greater of 2% of the invoiced amount or $1,000; not to exceed $20,000 per occurrence beginning with the third and subsequent occurrences in a rolling 12 month period.

There is a PTB amount in this charge code, but it represents the amount to be billed and is not a separate charge component.

EIM Entity/BANC Application

When this charge appears, the EIM Entity will allocate the daily charge using the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

15.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BAInvoiceLatePaymentPenalty SettlementAmount$_{BV'U'Ud}$	$ Daily 9 Decimal	CAISO Charge Code 5024 is a charge BANC could receive upon late paying CAISO invoices.	BANC EESC Bill Determinant Statement: BA_DAY_INV_LATE_PMT_PENALTY_STLMT@AMOUNT		BPM Configuration Guide: Invoice Late Payment Penalty CC 5024 Version 5.0

15.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

15.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the Commission and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the

Determinants	UOM & Interval Length	Description
		allocation effect for that Trade date. Refer to the EIM Participant Cost Allocation Precalculation.
$CAISO\_DLY\_5024\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 5024 Amount** - The CAISO CC5024 charge amount to BANC.
$PPT\_DLY\_5024\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 5024 Amount** - EIM Participant daily allocation of CAISO charge code 5024 rounded to two decimal places.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
$TPUD\_DLY\_5024\_AMT_{Dd}$	$ Daily 2 Decimal	**PUD Daily 5024 Amount** - TPUD daily estimate of CAISO charge code 5024 rounded to two decimal places.
$BNC\_DLY\_5024\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5024 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5024.
$BNC\_DLY\_5024\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 5024 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

15.4 A daily possible charge to BANC for charge code 5024 when applicable.

$$CAISO\_DLY\_5024\_AMT_{Bd}{}^{1} = BAInvoiceLatePaymentPenaltySettlementAmountBV'U'Ud$$

[1]Rounded to 2 decimal places.

15.5 Allocate any charge BANC received from CAISO in charge code 5024 to EIM Participants by each participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_DLY\_5024\_AMT_{Pd}{}^{1} = CAISO\_DLY\_5024\_AMT_{Bd} * PPT\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

15.6 The daily cost allocation estimated to TPUD.

$$TPUD\_DLY\_5024\_AMT_{Bd}{}^{1} = CAISO\_DLY\_5024\_AMT_{Bd} * TPUD\_COST\_ALLOC\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

15.7 The allocation is summed to a daily total.

$$BNC\_DLY\_5024\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_5024\_AMT_{Pd}) + TPUD\_DLY\_5024\_AMT_{Bd}$$

15.8 The total daily difference between the charge BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_5024\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_5024\_AMT_{Bd} - BNC\_DLY\_5024\_ALLOC\_AMT_{Bd}$$

16. BANC Charge Code 5025 Collateral Late Payment Penalty

CAISO Application

This penalty will be assessed to Scheduling Coordinators who fail to post collateral within the prescribed timeframe when requested by CAISO. This penalty is calculated as the greater of 2% of the additional financial security amount or $1,000; not to exceed $20,000 per occurrence beginning with the third and subsequent occurrences in a rolling 12 month period.

There is a PTB amount in this charge code, but it represents the amount to be billed and is not a separate charge component.

BANC Application

When this charge appears, the EIM Entity will allocate the daily charge using the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

16.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BACollateralLatePaymentPenaltySettlementAmount$_{Bv'd}$	$ Daily 9 Decimal	CAISO Charge Code 5025 is a charge BANC could receive upon late posting collateral to CAISO.	BANC EESC Bill Determinant Statement: BA_DAY_COLL_LATE_PMT_PENALTY_STLMT@AMOUNT		BPM Configuration Guide: Collateral Late Payment Penalty CC 5025 Version 5.0

16.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

16.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the Commission and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date. Refer to the EIM Participants Cost Allocation Precalculation.

Determinants	UOM & Interval Length	Description
$CAISO\_DLY\_5025\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 5025 Amount** - The CAISO CC5025 charge amount to BANC.
$PPT\_DLY\_5025\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 5025 Amount** - EIM Participant daily allocation of CAISO charge code 5054 rounded to two decimal places.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
$TPUD\_DLY\_5025\_AMT_{Bd}$	$ Daily 2 Decimal	**TPUD Daily 5025 Amount** - TPUD daily estimate of CAISO charge code 5054 rounded to two decimal places.
$BNC\_DLY\_5025\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5025 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5025.
$BNC\_DLY\_5025\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 5025 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

16.4 A daily possible charge to BANC for charge code 5025 when applicable.

$$CAISO\_DLY\_5025\_AMT_{Bd}{}^{1} = BACollateralLatePaymentPenaltySettlementAmount_{Bv'd}$$

[1]Rounded to 2 decimal places.

16.5 Allocate any charge BANC received from CAISO in charge code 5025 to EIM Participants by each participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_DLY\_5025\_AMT_{Pd}{}^{1} = CAISO\_DLY\_5025\_AMT_{Bd} * PPT\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

16.6 The daily cost allocation estimated to TPUD.

$$TPUD\_DLY\_5025\_AMT_{Bd}{}^{1} = CAISO\_DLY\_5025\_AMT_{Bd} * TPUD\_COST\_ALLOC\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

16.7 The allocation is summed to a daily total.

$$BNC\_DLY\_5025\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_5025\_AMT_{Pd}) + TPUD\_DLY\_5025\_AMT_{Bd}$$

16.8 The total daily difference between the charge BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_5025\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_5025\_AMT_{Bd} - BNC\_DLY\_5025\_ALLOC\_AMT_{Bd}$$

17. BANC Charge Code 5900 Shortfall Receipt Distribution

CAISO Application

When a CAISO debtor has made a shortfall payment, CAISO will calculate which Scheduling Coordinators will get credited from prior shortfalls any funds due in this charge code.

This charge code is extremely rare because CAISO requires credit and assurances to be posted by Scheduling Coordinators to insulate participants from any shortfall.

Although the CAISO BPM listed PTB determinants, these are only used in the calculation of the charge type. There are not PTB determinants that are in addition to the calculated charge amount.

BANC Application

When this charge appears, BANC will allocate the daily charge using the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

17.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BusinessAssociateShortfallReceiptDistributionSettlementAmount$_{BP'L}$	$ Daily 9 Decimal	CAISO Charge Code 5900 is a credit BANC could receive if BANC had been short paid during a prior invoice and the debtor has paid all or some of those funds. The distribution is by Bill Period (P') start and end along with the Invoice Run Number (L).	BANC EESC Bill Determinant Statement: BA_MTH_SHORTFALL_RCPT_DIST@AMOUNT		BPM Configuration Guide: Shortfall Receipt Distribution CC 5900 Version 5.0

17.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

17.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the Commission and it will be in effect by Trade Date until it is updated. All

Determinants	UOM & Interval Length	Description
		allocations including resettlements will use the allocation effect for that Trade date. Refer to the EIM Participants Cost Allocation Precalculation.
$CAISO\_DLY\_5900\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 5900 Amount** - The CAISO CC5900 charge amount to BANC.
$PPT\_DLY\_5900\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 5900 Amount** - EIM Participant allocation of CAISO charge code 5900 rounded to two decimal places.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
$TPUD\_DLY\_5900\_AMT_{Bd}$	$ Daily 2 Decimal	**TPUD Daily 5900 Amount** - TPUD estimate of CAISO charge code 5900 rounded to two decimal places.
$BNC\_DLY\_5900\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5900 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5900.
$BNC\_DLY\_5900\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 5900 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

17.4 A daily possible credit to BANC for charge code 5900 when applicable.

$$CAISO\_DLY\_5900\_AMT_{Bd}{}^{1} = BusinessAssociateShortfallReceiptDistributionSettlementAmount_{BP'L}$$

[1]Rounded to 2 decimal places.

17.5 Allocate any credit BANC received from CAISO in charge code 5900 to EIM Participants by each participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_DLY\_5900\_AMT_{Pd}{}^{1} = CAISO\_DLY\_5900\_AMT_{Bd} * PPT\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

17.6 The daily cost allocation estimated to TPUD.

$$TPUD\_DLY\_5900\_AMT_{Bd}{}^{1} = CAISO\_DLY\_5900\_AMT_{Bd} * TPUD\_COST\_ALLOC\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

17.7 The allocation is summed to a daily total.

$$BNC\_DLY\_5900\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_5900\_AMT_{Pd}) + TPUD\_DLY\_5900\_AMT_{Bd}$$

17.8 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_5900\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_5900\_AMT_{Bd} - BNC\_DLY\_5900\_ALLOC\_AMT_{Bd}$$

18. BANC Charge Code 5901 Shortfall Allocation Reversal

CAISO Application

Charge Code 5901 Shortfall Allocation Reversal reverses out each payment default amount that is allocated to ISO creditors through Charge Code 5910 Shortfall Allocation and remains unpaid by the defaulting Scheduling Coordinator. The subsequent allocation of these amounts will then occur in Charge Code 5912 Default Loss Allocation. This process is only used if a market participant is bankrupt or will default on the invoice on a long term basis.

Although the CAISO BPM lists a PTB determinant, this is only used in the calculation of the charge type. There are not a PTB determinant that are in addition to the calculated charge amount.

BANC Application

When this charge appears, BANC will allocate the daily charge using the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

18.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BusinessAssociateShortfallAllocationReversalAmount$_{BUU'L}$	$ Daily 9 Decimal	CAISO Charge Code 5901 is a credit BANC may receive that reverses out any shortfall allocation they were previously assessed by CAISO. This is only performed when there is permanent default by a Scheduling Coordinator and the shortfall will never be recovered. When this credit happens then CAISO will reassess the shortfall in CC5910 through a different allocation method.	BANC EESC Bill Determinant Statement: BA_SHORTFALL_ALLOC_REV@AMOUNT		BPM Configuration Guide: Shortfall Allocation Reversal CC 5901 Version 5.0

18.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

18.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
$PPT\_COST\_ALLOC\_RATIO_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the Commission and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date. Refer to the EIM Participant Cost Allocation Precalculation.
$CAISO\_DLY\_5901\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 5901 Amount** - The CAISO CC5901 credit amount to BANC.
$PPT\_DLY\_5901\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 5901 Amount** - EIM Participant allocation of CAISO charge code 5901 rounded to two decimal places.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
$TPUD\_DLY\_5901\_AMT_{Bd}$	$ Daily 2 Decimal	**TPUD Daily 5901 Amount** - TPUD estimate of CAISO charge code 5901 rounded to two decimal places.
$BNC\_DLY\_5901\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5901 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5901.
$BNC\_DLY\_5901\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 5901 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

18.4 A daily possible credit to BANC for charge code 5901 when applicable.

$CAISO\_DLY\_5901\_AMT_{Bd}{}^{1} = BusinessAssociateShortfallReceiptDistributionSettlementAmount_{BP'L}$

[1]Rounded to 2 decimal places.

18.5 Allocate any credit BANC received from CAISO in charge code 5901 to EIM Participants by each participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

$PPT\_DLY\_5901\_AMT_{Pd}{}^{1} = CAISO\_DLY\_5901\_AMT_{Bd} * PPT\_COST\_ALLOC\_RATIO_{Pd}$

[1]Rounded to 2 decimal places.

18.6 The daily cost allocation estimated to TPUD.

$TPUD\_DLY\_5901\_AMT_{Bd}{}^{1} = CAISO\_DLY\_5901\_AMT_{Bd} * TPUD\_COST\_ALLOC\_RATIO_{Bd}$

[1]Rounded to 2 decimal places.

Allocations Monitoring

18.7 The allocation is summed to a daily total.

$$BNC\_DLY\_5901\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_5901\_AMT_{Pd}) + TPUD\_DLY\_5901\_AMT_{Bd}$$

18.8 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_5901\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_5901\_AMT_{Bd} - BNC\_DLY\_5901\_ALLOC\_AMT_{Bd}$$

19. BANC Charge Code 5910 Shortfall Allocation

CAISO Application

This charge occurs from CAISO when a defaulting Scheduling Coordinator does not remit their full payment and there is insufficient funds in CAISO's clearing account to cover the shortfall. When a shortfall occurs, CAISO calculates the distribution shortfall for each Scheduling Coordinator and assess charges to cover the lack of funds. If the payments are remitted, the credit to Scheduling Coordinators occurs in Charge Code 5900.

Although the CAISO BPM listed PTB determinants, these are only used in the calculation of the charge type. There are not PTB determinants that are in addition to the calculated charge amount.

BANC Application

When this charge appears, BANC will allocate the daily charge using the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

19.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BusinessAssociateShortfallAllocationSettlementAmount$_{BUU'L}$	$ Daily 9 Decimal	CAISO Charge Code 5910 is a charge BANC may receive whenever a Scheduling Coordinator short pays a CAISO invoice and there is insufficient funds in CAISO's clearing account for CAISO to remit all owed payments. When a shortfall occurs, CAISO will calculate each Scheduling Coordinator's share and will charge each sufficient to cover the shortfall.	BANC EESC Bill Determinant Statement: BA_MTH_SHORTFALL_ALLOC@AMOUNT		BPM Configuration Guide: Shortfall Allocation Reversal CC5910 Version 5.3

19.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

19.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_DLY_5910_AMT$_{Bd}$	$ Daily	CAISO Daily 5910 Amount - The CAISO CC5910 credit amount to BANC.

Determinants	UOM & Interval Length	Description
	2 Decimal	
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the Commission and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date. Refer to the EIM Participants Cost Allocation Precalculation.
PPT_DLY_5910_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 5910 Amount** - EIM Participant allocation of CAISO charge code 5910 rounded to two decimal places.
TPUD_COST_ALLOC_RATIO$_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
TPUD_DLY_5910_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 5910 Amount** – The amount of the overall CAISO charge that is estimated to TPUD that will be help by BANC until it is reallocated to non-WAPA participants by BANC outside of this allocation process. Th result is rounded to two decimal places.
BNC_DLY_5910_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5910 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5910.
BNC_DLY_5910_ALLOC_DIFF_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 5910 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

19.4 A daily possible charge to BANC for charge code 5910 when applicable.

CAISO_DLY_5910_AMT$_{Bd}$[1] = BusinessAssociateShortfallAllocationSettlementAmount$_{BUU'L}$

[1]Rounded to 2 decimal places.

19.5 Allocate any charge BANC received from CAISO in charge code 5910 to EIM Participants by each participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

PPT_DLY_5910_AMT$_{Pd}$[1] = CAISO_DLY_5910_AMT$_{Bd}$ * PPT_COST_ALLOC_RATIO$_{Pd}$

[1]Rounded to 2 decimal places.

19.6 The daily cost allocation estimated to TPUD.

TPUD_DLY_5910_AMT$_{Bd}$[1] = CAISO_DLY_5910_AMT$_{Bd}$ * TPUD_COST_ALLOC_RATIO$_{Bd}$

[1]Rounded to 2 decimal places.

Allocations Monitoring

19.7 The allocation is summed to a daily total.

$$BNC\_DLY\_5910\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_5910\_AMT_{Pd}) + TPUD\_DLY\_5910\_AMT_{Bd}$$

19.8 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_5910\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_5910\_AMT_{Bd} - BNC\_DLY\_5910\_ALLOC\_AMT_{Bd}$$

20. BANC Charge Code 5912 Default Allocation

CAISO Application

This charge occurs from CAISO when a defaulting Scheduling Coordinator does not remit their full payment and there is insufficient funds in CAISO's clearing account to cover the shortfall. When a shortfall occurs, CAISO calculates the distribution shortfall for each Scheduling Coordinator and assess charges to cover the lack of funds. If the payments are remitted, the credit to Scheduling Coordinators occurs in Charge Code 5900.

Although the CAISO BPM listed PTB determinants, these are only used in the calculation of the charge type. There are not PTB determinants that are in addition to the calculated charge amount.

BANC Application

When this charge appears, BANC will allocate the daily charge using the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

20.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
DefaultLossBusinessAssociateActualDefaultLossPercentage$_{UU'B'L}$	$ Daily 9 Decimal	CAISO Charge Code 5912 is a charge BANC may receive whenever a CAISO deems a defaulting Scheduling Coordinator will not pay. When CAISO determines this situation has occurred, they revers the short pay in CC5901 and reallocate it in this charge code.	BANC EESC Bill Determinant Statement: DEFAULT_SC_SHORTFALL_ALLOC		BPM Configuration Guide: Shortfall Allocation Reversal CC5912 Version 5.0

20.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

20.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_DLY_5912_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 5912 Amount** - The CAISO CC5912 charge amount to BANC.
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per

Determinants	UOM & Interval Length	Description
	5 Decimals	participant. This percentages is expected to be defined annual by the Commission and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date. Refer to the EIM Participants Cost Allocation Precalculation.
$PPT\_DLY\_5912\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant 5912 Amount** - EIM Participant allocation of CAISO charge code 5912 rounded to two decimal places.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
$TPUD\_DLY\_5912\_AMT_{Bd}$	$ Monthly 2 Decimal	**BANC TPUD Daily 5912 Amount** – The amount of the overall CAISO charge that is estimated to TPUD that will be help by BANC until it is reallocated to non-WAPA participants by BANC outside of this allocation process. Th result is rounded to two decimal places.
$BNC\_DLY\_5912\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5912 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 5912.
$BNC\_DLY\_5912\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 5912 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

20.4 A daily possible charge to BANC for charge code 5912 when applicable.

$$CAISO\_DLY\_5912\_AMT_{Bd}{}^{1} = DefaultLossBusinessAssociateActualDefaultLossPercentage_{UU'B'L}$$

[1]Rounded to 2 decimal places.

20.5 Allocate any charge BANC received from CAISO in charge code 5912 to EIM Participants by each EIM Participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_DLY\_5912\_AMT_{Pd}{}^{1} = CAISO\_DLY\_5912\_AMT_{Bd} * PPT\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

20.6 The daily cost allocation estimated to TPUD.

$$TPUD\_DLY\_5912\_AMT_{Bd}{}^{1} = CAISO\_DLY\_5912\_AMT_{Bd} * TPUD\_COST\_ALLOC\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

20.7 The allocation is summed to a daily total.

$$BNC\_DLY\_5912\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_5912\_AMT_{Pd}) + TPUD\_DLY\_5912\_AMT_{Bd}$$

20.8 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_5912\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_5912\_AMT_{Bd} - BNC\_DLY\_5912\_ALLOC\_AMT_{Bd}$$

21. BANC Charge Code 6045 Over and Under Scheduling EIM Settlement

CAISO Application

On an hourly basis CAISO monitors that each EIM Entity provides sufficient generation to meet their forecasted load. An EIM Entity that provides too much generation in an hour, or too little, is seen as leaning on the market to resolve their capacity imbalance. The CAISO Over and Under Scheduling EIM Settlement charge code is used to financially disadvantage an EIM Entity that exceeds a given tolerance range. An EIM entity will avoid hourly penalties of this charge code provided they meet either of the following conditions:

1. The EIM Entity schedules generation and tie base schedules that when totaled are within one percent of CAISO Demand Forecast as provided at T-60 minutes prior to the start of each hour, or
2. When the EIM Entity total Base Schedules for an hour is not within one percent of the CAISO provided load forecast, then the actual reported meter load is within five percent of the total of all Base Schedules after it has been reduced by transmission losses.

When an EIM Entity fails to meet either criteria, and their uninstructed imbalance energy is at greater than 2 MWh, the EIM Entity will be charged as follows:

Overscheduling (Load Meter less than Load Base Schedule):

- When reported meter load data is more than 5% less, but not greater than 10% less than the EIM Entity's total load base schedule, then all uninstructed imbalance energy is charged a 25% LAP penalty price.
- When reported meter data is more than 10% less than the EIM Entities total load base schedule, then all uninstructed imbalance energy is charged at 50% LAP penalty price.

Under scheduling (Load Meter is greater than Load Base Schedule:

- When reported meter load data is more than 5% greater, but not larger than 10% greater than the EIM Entity's total load base schedule, then all uninstructed imbalance energy is charged a 25% LAP penalty price.
- When reported meter data is more than 10% greater than the EIM Entities total load base schedule, then all uninstructed imbalance energy is charged at 100% LAP penalty price.

Both over and under scheduling are not charged when the EIM Entity's LAP price is negative.

There is a no PTB amount with this charge code.

BANC Application

BANC will only calculate participant over and under scheduling charges when BANC is assessed this hourly charge code.

Whenever BANC is assessed an over scheduling charge, BANC will allocate the hourly charge to all EIM Participants that were over scheduled during that hour proportionally by each EIM Participant's positive uninstructed imbalance energy quantity compared to all participant's total positive uninstructed imbalance energy quantity. Participant's that are under scheduled will not be charged nor will they receive any credit.

Whenever BANC is assessed an under scheduling charge, BANC will allocate the hourly charge to all EIM Participants that were under scheduled during that hour proportionally by each EIM Participant's

negative uninstructed imbalance energy quantity compared to all EIM Participant's total negative uninstructed imbalance energy quantity. EIM Participant's that are over scheduled will not be charged nor will they receive any credit.

Any charges allocated to WAPA will be prorated between WAPA and TPUD based on the hourly load ratio between them. The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

21.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BAHourlyLAPOverUnderSchedulingAmount$_{BQ'AA'mdh}$	$ Hourly 9 Decimal	Total of under and over scheduling charges per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: BA_HRLY_EIM_BAA_APNODE_OVER_UNDER_SCHED_STLMT@AMOUNT		BPM Configuration Guide: Over and Under Scheduling EIM Settlement CC 6045 Version 5.2
BAHourlyLAPOverSchedulingAmount$_{BQ'AA'mdh}$	$ Hourly 9 Decimal	Over scheduling charges per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: EIM_HRLY_APNODE_OVER_SCHED@AMOUNT		BPM Configuration Guide: Over and Under Scheduling EIM Settlement CC 6045 Version 5.2
BAHourlyLAPUnderSchedulingAmount$_{BQ'AA'mdhA}$	$ Hourly 9 Decimal	Under scheduling charges per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: EIM_HRLY_APNODE_UNDER_SCHED@AMOUNT		BPM Configuration Guide: Over and Under Scheduling EIM Settlement CC 6045 Version 5.2

21.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

21.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_HRLY_6045_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6045 Amount** - The CAISO CC6045 charge amount to BANC on an hourly basis.

Determinants	UOM & Interval Length	Description
CAISO_HRLY_6045_OVER_SCHD_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6045 Over Scheduled Amount** - The CAISO CC6045 over schedule charge amount to BANC on an hourly basis.
CAISO_HRLY_6045_UNDER_SCHD_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6045 Under Scheduled Amount** - The CAISO CC6045 under schedule charge amount to BANC on an hourly basis.
PPT_HRLY_LOAD_UIE$_{Ph}$	MWh Hourly 4 Decimals	**EIM Participant Hourly Load Uninstructed Imbalance Energy Quantity** – The hourly uninstructed energy at an EIM Participant's load in MWh. This determinant is calculated in the uninstructed imbalance energy section.
PPT_HRLY_OVER_SCHD_QTY$_{Ph}$	MWh Hourly 4 Decimal	**EIM Participant Hourly Over Scheduled Quantity** – The EIM Participant's hourly over scheduled load quantity. The positive difference from reported load less the load Base Schedule.
BNC_HRLY_OVER_SCHD_QTY$_{Bh}$	MWh Hourly 4 Decimal	**BANC Total Hourly Over Scheduled Quantity** – BANC's total hourly over scheduled load quantity for all participants.
PPT_HRLY_LD_QTY$_{Ph}$	MWh Hourly 4 Decimals	**EIM Participant Hourly Load** Quantity - The total hourly megawatt-hour load for an EIM Participant. This determinant is defined in the *EIM Participant Load Ratio Share Precalculation*.
TPUD_HRLY_LD_CHECKED_QTY$_{h}$	MWH Hourly 4 Decimals	**Trinity PUD Hourly Checked Load Quantity** – Trinity Hourly Load as reported by WAPA verified not to exceed the hourly load reported by WAPA to CAISO.
PPT_HRLY_OVER_SCHD_AMT$_{Ph}$	$ Hourly 4 Decimal	**EIM Participant Hourly Over Scheduled Amount** – A EIM Participant's hourly allocated over schedule penalty amount.
TPUD_HRLY_OVER_SCHD_AMT$_{Bh}$	$ Hourly 4 Decimal	**TPUD Hourly Over Scheduled Amount** – TPUD's hourly estimated over schedule penalty amount.
PPT_HRLY_UNDER_SCHD_QTY$_{Ph}$	MWh Hourly 4 Decimal	**EIM Participant Hourly Under Scheduled Quantity** – The EIM Participant's hourly under scheduled load quantity. The negative difference from reported load less the load Base Schedule with the result multiplied by -1.
BNC_HRLY_UNDER_SCHD_QTY$_{Bh}$	MWh Hourly 4 Decimal	**BANC Total Hourly Under Scheduled Quantity** – BANC's total hourly under scheduled load quantity for all participants.
PPT_HRLY_UNDER_SCHD_AMT$_{Ph}$	$ Hourly 4 Decimal	**EIM Participant Hourly Under Scheduled Amount** – A EIM Participant's hourly allocated under schedule penalty amount.
TPUD_HRLY_UNDER_SCHD_AMT$_{Bh}$	$ Hourly 4 Decimal	**TPUD Hourly Under Scheduled Amount** – TPUD's hourly estimated under schedule penalty amount.
PPT_HRLY_6045_AMT$_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 6045 Amount** – A EIM Participant's allocated hourly over and under schedule penalty amount.
TPUD_HRLY_6045_AMT$_{Bh}$	$ Hourly 2 Decimal	**TPUD Hourly 6045 Amount** – TPUD estimated hourly over and under schedule penalty amount.

Determinants	UOM & Interval Length	Description
$PPT\_DLY\_6045\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 6045 Amount** - EIM Participant daily allocation of CAISO charge code 6045 rounded to two decimal places.
$TPUD\_DLY\_6045\_AMT_{Bd}$	$ Daily 2 Decimal	**TPUD Daily 6045 Amount** - TPUD daily estimated CAISO charge code 6045 rounded to two decimal places.
$BNC\_HRLY\_6045\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC Hourly Allocated 6045 Amount** – The allocated hourly over and under schedule penalty amount.
$BNC\_DLY\_6045\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6045 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6045.
$CAISO\_DLY\_6045\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 6045 Amount** – The CAISO total daily CC6045 Amount to BANC.
$BNC\_HRLY\_6045\_ALLOC\_DIFF\_AMT_{Bh}$	$ Daily 2 Decimal	**BANC Hourly 6045 Allocated Hourly Differential Amount** – The calculated hourly difference between the daily CAISO rounded charge code to the total BANC allocation to EIM Participants.
$BNC\_DLY\_6045\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6045 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its EIM Participants.

Formulas

21.4 The total hourly charge to BANC for charge code 6045.

$CAISO\_HRLY\_6045\_AMT_{Bh}{}^{1} = BAHourlyLAPOverUnderSchedulingAmount_{BQ'AA'mdh}$

[1]Rounded to 2 decimal places.

21.5 The hourly over scheduled charge to BANC for charge code 6045.

$CAISO\_HRLY\_6045\_OVER\_SCHD\_AMT_{Bh}{}^{1} = BAHourlyLAPOverSchedulingAmount_{BQ'AA'mdh}$

[1]Rounded to 2 decimal places.

21.6 The hourly under scheduled charge to BANC for charge code 6045.

$CAISO\_HRLY\_6045\_UNDER\_SCHD\_AMT_{Bh}{}^{1} = BAHourlyLAPUnderSchedulingAmount_{BQ'AA'mdhA}$

[1]Rounded to 2 decimal places.

21.7 Calculate the number of mega-watt hours each participant over scheduled by hour.

$PPT\_HRLY\_OVER\_SCHD\_QTY_{Ph} = Min(0,PPT\_HRLY\_LOAD\_UIE_{Ph}) * -1$

21.8 Sum the total number of over scheduled megawatt hours by hour for all the participants.

$BNC\_HRLY\_OVER\_SCHD\_QTY_{Bh} = \sum_{Bh}(PPT\_HRLY\_OVER\_SCHD\_QTY_{Ph})$

21.9 Allocate each participant's hourly over scheduling charge amount.

$PPT\_HRLY\_OVER\_SCHD\_AMT_{Ph}$[1] =
IF (CAISO_HRLY_6045_OVER_SCHD_AMT$_{Bh}$ = 0 OR BNC_HRLY_OVER_SCHD_QTY$_{Bh}$ = 0
THEN 0
ELSE (CAISO_HRLY_6045_OVER_SCHD_AMT$_{Bh}$ *
(PPT_HRLY_OVER_SCHD_QTY$_{Ph}$ / BNC_HRLY_OVER_SCHD_QTY$_{Bh}$) *
IF {P = WAPA AND PPT_HRLY_LD_QTY$_{Ph}$ ≠ 0
THEN [(PPT_HRLY_LD_QTY$_{Ph}$ – TPUD_HRLY_LD_CHECKED_QTY$_{h}$) /
PPT_HRLY_LD_QTY$_{Ph}$)]
ELSE 1
}
)

[1]Rounded to 2 decimal places.

21.10 Allocate any overscheduling amount that WAPA receives to TPUD.

$TPUD\_HRLY\_OVER\_SCHD\_AMT_{Bh}$[1] =
IF (CAISO_HRLY_6045_OVER_SCHD_AMT$_{Bh}$ = 0 OR BNC_HRLY_OVER_SCHD_QTY$_{Bh}$ =
0
THEN 0
ELSE (CAISO_HRLY_6045_OVER_SCHD_AMT$_{Bh}$ *
(PPT_HRLY_OVER_SCHD_QTY$_{Ph}$ / BNC_HRLY_OVER_SCHD_QTY$_{Bh}$) *
IF [PPT_HRLY_LD_QTY$_{Ph}$ = 0
THEN 0
ELSE (TPUD_HRLY_LD_CHECKED_QTY$_{h}$ / PPT_HRLY_LD_QTY$_{Ph}$)
]
where P = WAPA.

[1]Rounded to 2 decimal places.

21.11 Calculate the number of mega-watt hours each EIM Participant under scheduled by hour.

$PPT\_HRLY\_UNDER\_SCHD\_QTY_{Ph}$ = Max[0, (PPT_HRLY_LOAD_UIE$_{Ph}$)]

21.12 Sum the total number of under scheduled megawatt hours by hour for all the EIM Participants.

$BNC\_HRLY\_UNDER\_SCHD\_QTY_{Bh} = \sum_{Bh}(PPT\_HRLY\_UNDER\_SCHD\_QTY_{Ph})$

21.13 Allocate each EIM Participant's hourly over scheduling charge amount.

$PPT\_HRLY\_UNDER\_SCHD\_AMT_{Ph}$[1] =
IF (CAISO_HRLY_6045_UNDER_SCHD_AMT$_{Bh}$ = 0 OR
BNC_HRLY_UNDER_SCHD_QTY$_{Bh}$ = 0
THEN 0
ELSE (CAISO_HRLY_6045_UNDER_SCHD_AMT$_{Bh}$ *
(PPT_HRLY_UNDER_SCHD_QTY$_{Ph}$ / BNC_HRLY_UNDER_SCHD_QTY$_{Bh}$) *
IF {P = WAPA AND PPT_HRLY_LD_QTY$_{Ph}$ ≠ 0
THEN [(PPT_HRLY_LD_QTY$_{Ph}$ – TPUD_HRLY_LD_CHECKED_QTY$_{h}$) /
PPT_HRLY_LD_QTY$_{Ph}$)]
ELSE 1

}
)

[1]Rounded to 2 decimal places.

21.14 Allocate any overscheduling amount that WAPA receives to TPUD.

$TPUD\_HRLY\_UNDER\_SCHD\_AMT_{Bh}$[1] =
IF ($CAISO\_HRLY\_6045\_UNDER\_SCHD\_AMT_{Bh} = 0$ OR
$BNC\_HRLY\_UNDER\_SCHD\_QTY_{Bh} = 0$
THEN 0
ELSE ($CAISO\_HRLY\_6045\_UNDER\_SCHD\_AMT_{Bh}$ *
($PPT\_HRLY\_UNDER\_SCHD\_QTY_{Ph}$ / $BNC\_HRLY\_UNDER\_SCHD\_QTY_{Bh}$) *
IF [$PPT\_HRLY\_LD\_QTY_{Ph} = 0$
THEN 0
ELSE ($TPUD\_HRLY\_LD\_CHECKED\_QTY_{h}$ / $PPT\_HRLY\_LD\_QTY_{Ph}$)
]
where P = WAPA.

[1]Rounded to 2 decimal places.

21.15 Total each EIM Participant's hourly under and over scheduling allocated amount.

$PPT\_HRLY\_6045\_AMT_{Ph} = PPT\_HRLY\_OVER\_SCHD\_AMT_{Ph} + PPT\_HRLY\_UNDER\_SCHD\_AMT_{Ph}$

21.16 Total TPUD hourly under and over scheduling allocated amount.

$TPUD\_HRLY\_6045\_AMT_{Ph} = TPUD\_HRLY\_OVER\_SCHD\_AMT_{Bh} + TPUD\_HRLY\_UNDER\_SCHD\_AMT_{Bh}$

21.17 Sum the hourly allocate to a daily total for each EIM Participant.

$PPT\_DLY\_6045\_AMT_{Pd} = \sum_{Pd}(PPT\_HRLY\_6045\_AMT_{Ph})$

21.18 Sum the hourly allocate to a daily total for each EIM Participant.

$TPUD\_DLY\_6045\_AMT_{Bd} = \sum_{Bd}(TPUD\_HRLY\_6045\_AMT_{Bh})$

Allocations Monitoring

21.19 Total BANC allocation by hour to all EIM Participants.

$BNC\_HRLY\_6045\_AMT_{Bh} = \sum_{Bd}(PPT\_HRLY\_6045\_AMT_{Ph}) + TPUD\_HRLY\_6045\_AMT_{Ph}$

21.20 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_6045\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_6045\_AMT_{Bd}) + TPUD\_DLY\_6045\_AMT_{Bd}$

21.21 CAISO hourly charge to BANC summed to a daily amount.

$CAISO\_DLY\_6045\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_6045\_AMT_{Bh})$

21.22 The differential from CAISO's charge code to BANC's allocated amount by hour.

$BNC\_HRLY\_6045\_ALLOC\_DIFF\_AMT_{Bh} = CAISO\_HRLY\_6045\_AMT_{Bh} - BNC\_HRLY\_6045\_AMT_{Bh}$

21.23 The total daily difference between the charge BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_6045\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_6045\_AMT_{Bd} - BNC\_DLY\_6045\_ALLOC\_AMT_{Bd}$$

22. BANC Charge Code 6046 Over and Under Scheduling Allocation

CAISO Application

The total daily revenues collected for by CAISO for over scheduling and under scheduling under Charge Code 6045 are allocated to each balancing authority area (BAA) in the EIM area that was not subject to over scheduling or under scheduling assessment charges. CAISO distributed the credits across BAAs based on daily load ratio share.

There is a no PTB amount with this charge code.

BANC Application

Any funds received by BANC from CAISO from the other CAISO EESCs for being charged for over and under scheduling will be distributed to participants via EIM Participants Hourly Load Ratio Share Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

22.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMEntityBAOUSAllocationAmount$_{BQ'AA'md}$	$ Daily 9 Decimal	Total over and under scheduling allocation credit from CAISO in charge code 6046 on a daily basis.	BANC EESC Bill Determinant Statement: BA_DAILY_EIM_BAA_LAP_OUS_ALLOC@AMOUNT		BPM Configuration Guide: Over and Under Scheduling EIM Allocation CC 6046 Version 5.1

22.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

22.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_DLY_6046_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 6046 Amount** - The CAISO CC6046 charge amount to BANC on a daily basis.
PPT_DLY_LRS$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for an EIM Participant to the total daily BANC load in the Pacific Prevailing Time zone.
PPT_DLY_6046_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 6046 Amount** - EIM Participant daily allocation of CAISO charge code 6046 rounded to two decimal places.

Determinants	UOM & Interval Length	Description
$TPUD\_DLY\_LRS_{Bd}$	Decimal Daily 5 Decimals	**TPUD Daily Load Ratio Share** - The daily percent in decimal of TPUD's load for compared to the total daily BANC load.
$TPUD\_DLY\_6046\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 6046 Amount** - EIM Participant daily estimate of CAISO charge code 6046 rounded to two decimal places.
$BNC\_DLY\_6046\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6046 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6046.
$BNC\_DLY\_6046\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6046 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

22.4 The total daily charge to BANC for charge code 6046.

$$CAISO\_DLY\_6046\_AMT_{Bd}{}^{1} = EIMEntityBAOUSAllocationAmount_{BQ'AA'md}$$

[1]Rounded to 2 decimal places.

22.5 Allocate any daily credit BANC received from CAISO in charge code 6046 to EIM Participants by daily load ratio share Precalculation.

$$PPT\_DLY\_6046\_AMT_{Pd}{}^{1} = CAISO\_DLY\_6046\_AMT_{Bd} * PPT\_DLY\_LRS_{Pd}$$

[1]Rounded to 2 decimal places.

22.6 Allocate any daily credit BANC received to TPUD.

$$TPUD\_DLY\_6046\_AMT_{Bd}{}^{1} = CAISO\_DLY\_6046\_AMT_{Bd} * TPUD\_DLY\_LRS_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

22.7 The total daily allocation to EIM Participants is summed to a daily total.

$$BNC\_DLY\_6046\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_6046\_AMT_{Pd}) + TPUD\_DLY\_6046\_AMT_{Bd}$$

22.8 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_6046\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_6046\_AMT_{Bd} - BNC\_DLY\_6046\_ALLOC\_AMT_{Bd}$$

23. BANC Charge Code 6194 Hourly Spinning Reserve Obligation Settlement

CAISO Application

The Spinning Reserve Obligation Settlement charges CAISO Scheduling Coordinators by hour for the cost of its Spinning Reserve Obligation that was not self-provided by the Scheduling Coordinator in the Day Ahead and Real-Time markets. Although the EIM does not participate in CAISO's Day-Ahead Market (also referred to as the Integrated Forward Market) nor does the CAISO cover the obligation or costs of ancillary services in the EIM BAA, there can be obligations that result from imports from the EIM BAA to the CAISO BAA. These obligation costs are calculated and charged to the EESC by hour.

There is a potential PTB amount with this charge code.

BANC Application

BANC will allocate any charges for Spinning Reserve Obligation by hour to EIM Participants based on the EIM Participant Load Ratio Share Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

23.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
$SpinObligAmount_{Bmdh}$	$ Hourly 9 Decimal	Spinning Reserve Obligation charge amount (in $) due ISO for a given Business Associate and Trading Hour.	BANC EESC Bill Determinant Statement: BA_HRLY_SPIN_OBLIG@SUB_SUBTOT_NET_AMOUNT		BPM Configuration Guide: Spinning Reserve Obligation Settlement CC 6194 Version 5.2a
$PTBChargeAdjustmentObligationSpin_{BJmdh}$	$ Hourly 9 Decimal	Spinning Reserve Obligation PTB Charge Adjustment Amount (in $) for a given Business Associate and Trading Hour.	BANC EESC Bill Determinant Statement: PTB_BA_HRLY_SPIN_OBLIG@PTB_SUBTOT_NET_AMOUNT		BPM Configuration Guide: Spinning Reserve Obligation Settlement CC 6194 Version 5.2a

23.2 *23.2 BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

23.3 *23.3 BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
$CAISO\_HRLY\_6194\_PTB\_AMT_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6194 PTB Amount** - The CAISO CC6194 PTB charge amount to BANC on an hourly basis.
$CAISO\_HRLY\_6194\_AMT_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6194 Amount** - The CAISO CC6194 charge amount to BANC on an hourly basis.
$PPT\_HRLY\_LRS_{Ph}$	Decimal Hourly 5 Decimals	**EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for an EIM Participant to the total hourly BANC load.
$PPT\_HRLY\_6194\_AMT_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 6194 Amount** - EIM Participant hourly allocation of CAISO charge code 6194 rounded to two decimal places.
$TPUD\_HRLY\_LRS_{Bh}$	Decimal Hourly 5 Decimals	**TPUD Hourly Load Ratio Share** - The hourly percent in decimal of TPUD's load for compared to the total hourly BANC load.
$TPUD\_HRLY\_6194\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 6194 Amount** - BANC EIM TPUD hourly estimate of CAISO charge code 6194 rounded to two decimal places.
$PPT\_DLY\_6194\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 6194 Amount** - EIM Participant daily total allocation of CAISO charge code 6194.
$TPUD\_DLY\_6194\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 6194 Amount** - BANC EIM TPUD total daily estimate of CAISO charge code 6194.
$BNC\_DLY\_6194\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6194 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6194.
$CAISO\_DLY\_6194\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 6194 Amount** - The CAISO CC6194 charge to BANC summed to da daily value.
$BNC\_DLY\_6194\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6194 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

23.4 The CAISO PTB determinant for this charge code will be Processed in the BANC Charge Code 101, BANC PTB Allocation.

$$CAISO\_HRLY\_6194\_PTB\_AMT_{Bh}{}^{1} = \sum_{Bh}(PTBChargeAdjustmentObligationSpin_{BJmdh})$$

[1]Rounded to 2 decimal places.

23.5 The total hourly charge to BANC for charge code 6194.

$$CAISO\_HRLY\_6194\_AMT_{Bh}{}^{1} = SpinObligAmount_{Bmdh}$$

[1]Rounded to 2 decimal places.

23.6 These charges are allocated hourly to EIM Participants using the EIM Participant Load Ratio Share Precalculation.

$PPT\_HRLY\_6194\_AMT_{Ph}$[1] = $CAISO\_HRLY\_6194\_AMT_{Bh}$ * $PPT\_HRLY\_LRS_{Ph}$

[1]Rounded to 2 decimal places.

23.7 The hourly cost estimate associated with TPUD.

$TPUD\_HRLY\_6194\_AMT_{Bh}$[1] = $CAISO\_HRLY\_6194\_AMT_{Bh}$ * $TPUD\_HRLY\_LRS_{Bh}$

[1]Rounded to 2 decimal places.

23.8 The daily charge code total for each EIM Participant.

$PPT\_DLY\_6194\_AMT_{Pd} = \sum_{Pd}(PPT\_HRLY\_6194\_AMT_{Ph})$

23.9 Calculate the daily charge code total related to TPUD.

$TPUD\_DLY\_6194\_AMT_{Bd} = \sum_{Bd}(TPUD\_HRLY\_6194\_AMT_{Bh})$

Allocations Monitoring

23.10 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_6194\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_6194\_AMT_{Pd}) + TPUD\_DLY\_6194\_AMT_{BD}$

23.11 The total CAISO daily charge to BANC.

$CAISO\_DLY\_6194\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_6194\_AMT_{Bh})$

23.12 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_6194\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_6194\_AMT_{Bd} - BNC\_DLY\_6194\_ALLOC\_AMT_{Bd}$

24. BANC Charge Code 6196 Hourly Spinning Reserve Neutrality Allocation

CAISO Application

CAISO's Spinning Reserve Neutrality Allocation recovers from CAISO's Scheduling Coordinators the total Spinning Reserve Neutrality amount, in proportion to their positive Spinning reserve Obligation. The total Spinning Reserve Neutrality amount is calculated as the difference between the Spinning reserve Net Requirement at the Spinning reserve rate and the total revenue from the Spinning reserve charge to all the Scheduling Coordinators. There is no CAISO PTB with this charge code.

There is a no PTB amount with this charge code.

BANC Application

BANC will allocate charges for Spinning Reserve Neutrality Allocation by hour to EIM Participants based on the EIM Participant Load Ratio Share Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

24.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
$SpinNeutralityAmount_{Bmdh}$	$ Hourly 9 Decimal	Spinning Reserve Neutrality amount due ISO for Business Associate B for Trading Day d and Trading Hour h ($).	BANC EESC Bill Determinant Statement: BA_HRLY_SPIN_NTRL@AMOUNT		BPM Configuration Guide: Spinning Reserve Neutrality Obligation CC6196 Version 5.0b

24.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

24.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
$CAISO\_HRLY\_6196\_AMT_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6196 Amount** - The CAISO CC6196 charge amount to BANC on an hourly basis.
$PPT\_HRLY\_LRS_{Ph}$	Decimal Hourly 5 Decimals	**EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for an EIM Participant to the total hourly BANC load.

Determinants	UOM & Interval Length	Description
$PPT\_HRLY\_6196\_AMT_{h}$	$ Hourly 2 Decimal	**EIM Participant Daily 6196 Amount** - EIM Participant hourly allocation of CAISO charge code 6196 rounded to two decimal places.
$TPUD\_HRLY\_LRS_{Bh}$	Decimal Hourly 5 Decimals	**TPUD Hourly Load Ratio Share** - The hourly percent in decimal of TPUD's load for compared to the total hourly BANC load.
$TPUD\_HRLY\_6196\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 6196 Amount** - BANC EIM TPUD hourly estimate of CAISO charge code 6196 rounded to two decimal places.
$PPT\_DLY\_6196\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 6196 Amount** - EIM Participant daily total allocation of CAISO charge code 6196.
$TPUD\_DLY\_6196\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 6196 Amount** - BANC EIM TPUD total daily estimate of CAISO charge code 6196.
$BNC\_DLY\_6196\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6196 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6196.
$BNC\_DLY\_6196\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6196 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

24.4 The hourly charge to BANC for charge code 6196.

$$CAISO\_HRLY\_6196\_AMT_{Bh}{}^{1} = SpinObligAmount_{Bmdh}$$

[1]Rounded to 2 decimal places.

24.5 These charges are allocated hourly to EIM Participants using the EIM Participant Load Ratio Share Precalculation.

$$PPT\_HRLY\_6196\_AMT_{Ph}{}^{1} = CAISO\_HRLY\_6196\_AMT_{Bh} * PPT\_HRLY\_LRS_{Ph}$$

[1]Rounded to 2 decimal places.

24.6 The hourly cost estimate associated with TPUD.

$$TPUD\_HRLY\_6196\_AMT_{Bh}{}^{1} = CAISO\_HRLY\_6196\_AMT_{Bh} * TPUD\_HRLY\_LRS_{Bh}$$

[1]Rounded to 2 decimal places.

24.7 Calculate the daily charge code total for each EIM Participant.

$$PPT\_DLY\_6196\_AMT_{Pd} = \sum_{Pd}(PPT\_HRLY\_6196\_AMT_{Ph})$$

24.8 Calculate the daily charge code total related to TPUD.

$$TPUD\_DLY\_6196\_AMT_{BD} = \sum_{Bd}(TPUD\_HRLY\_6196\_AMT_{Bh})$$

Allocations Monitoring

24.9 The total daily allocation to EIM Participants is summed to a daily total.

$$BNC\_DLY\_6196\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DRLY\_6196\_AMT_{Pd}) + TPUD\_DLY\_6196\_AMT_{BD}$$

24.10 The total CAISO daily charge to BANC.

$$CAISO\_DLY\_6196\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_6196\_AMT_{Bh})$$

24.11 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_6196\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_6196\_AMT_{Bd} - BNC\_DLY\_6196\_ALLOC\_AMT_{Bd}$$

25. BANC Charge Code 6294 Hourly Non-Spinning Reserve Obligation Settlement

CAISO Application

The Spinning Reserve Obligation Settlement charges Scheduling Coordinators by hour for the cost of its Spinning Reserve Obligation that was not self-provided by the Scheduling Coordinator in the Day Ahead and Real-Time markets. Although the EIM Entity does not participate in CAISO's Day-Ahead Market (also referred to as the Integrated Forward Market) nor does the CAISO cover the obligation or costs of ancillary services in the EIM Entity BAA, there can be obligations that result from imports from the EIM BAA to the CAISO BAA. These obligation costs are calculated and charged to the EESC by hour.

There is a potential PTB amount with this charge code.

BANC Application

BANC will allocate charges for Spinning Reserve Obligation by hour to EIM Participants based on the EIM Participant Load Ratio Share Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

25.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
$NonSpinObligAmount_{Bmdh}$	$ Hourly 9 Decimal	Non-Spinning Reserve Obligation charge amount (in $) due ISO for a given Business Associate and Trading Hour.	BANC EESC Bill Determinant Statement: BA_HRLY_NSPN_OBLIG@SUB_SUBTOT_NET_AMOUNT		BPM Configuration Guide: Non Spinning Reserve Obligation Settlement CC 6294 Version 5.2a
$PTBChargeAdjustmentObligationNonSpin_{BJmdh}$	$ Hourly 9 Decimal	Non-Spinning Reserve Obligation PTB Charge Adjustment Amount (in $) for a given Business Associate and Trading Hour.	BANC EESC Bill Determinant Statement: PTB_BA_HRLY_NSPN_OBLIG@PTB_SUBTOT_NET_AMOUNT		BPM Configuration Guide: Non Spinning Reserve Obligation Settlement CC 6294 Version 5.2a

25.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

25.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
$CAISO\_HRLY\_6294\_PTB\_AMT_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6294 PTB Amount** - The CAISO CC6294 PTB charge amount to BANC on an hourly basis.
$CAISO\_HRLY\_6294\_AMT_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6294 Amount** - The CAISO CC6294 charge amount to BANC on an hourly basis.
$PPT\_HRLY\_LRS_{Ph}$	Decimal Hourly 5 Decimals	**EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for an EIM Participant to the total hourly BANC load.
$PPT\_HRLY\_6294\_AMT_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Daily 6294 Amount** - EIM Participant hourly allocation of CAISO charge code 6294 rounded to two decimal places.
$TPUD\_HRLY\_LRS_{Bh}$	Decimal Hourly 5 Decimals	**TPUD Hourly Load Ratio Share** - The hourly percent in decimal of TPUD's load for compared to the total hourly BANC load.
$TPUD\_HRLY\_6294\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 6294 Amount** - BANC EIM TPUD hourly estimate of CAISO charge code 6294 rounded to two decimal places.
$PPT\_DLY\_6294\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 6294 Amount** - EIM Participant daily total allocation of CAISO charge code 6294.
$TPUD\_DLY\_6294\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 6294 Amount** - BANC EIM TPUD total daily estimate of CAISO charge code 6294.
$BNC\_DLY\_6294\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6294 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6294.
$CAISO\_DLY\_6294\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 6294 Amount** - The CAISO CC6194 charge to BANC summed to da daily value.
$BNC\_DLY\_6294\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6294 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

25.4 The CAISO PTB determinant for this charge code will be Processed in the BANC Charge Code 101, BANC PTB Allocation.

$$CAISO\_HRLY\_6294\_PTB\_AMT_{Bh}{}^{1} = \sum_{Bh}(PTBChargeAdjustmentObligationNonSpin_{BJmdh})$$

[1]Rounded to 2 decimal places.

25.5 The total hourly charge to BANC for charge code 6294.

$$CAISO\_HRLY\_6294\_AMT_{Bh}{}^{1} = NonSpinObligAmount_{Bmdh}$$

[1]Rounded to 2 decimal places.

25.6 These charges are allocated hourly to EIM Participants using the EIM Participant Load Ratio Share Precalculation.

$PPT\_HRLY\_6294\_AMT_{Ph}$[1] = $CAISO\_HRLY\_6294\_AMT_{Bh}$ * $PPT\_HRLY\_LRS_{Ph}$

[1]Rounded to 2 decimal places.

25.7 The hourly cost allocation estimated to TPUD.

$TPUD\_HRLY\_6294\_AMT_{Bh}$[1] = $CAISO\_HRLY\_6294\_AMT_{Bh}$ * $TPUD\_HRLY\_LRS_{Bh}$

[1]Rounded to 2 decimal places.

25.8 Calculate the daily charge code total for each EIM Participant.

$PPT\_DLY\_6294\_AMT_{Pd} = \sum_{Pd} (PPT\_HRLY\_6294\_AMT_{Ph})$

25.9 Calculate the daily charge code total estimated to TPUD.

$TPUD\_DLY\_6294\_AMT_{BD} = \sum_{Bd} (TPUD\_HRLY\_6294\_AMT_{Bh})$

Allocations Monitoring

25.10 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_6294\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_HRLY\_6294\_AMT_{Ph})$

25.11 The total CAISO daily charge to BANC.

$CAISO\_DLY\_6294\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_6294\_AMT_{Bh})$

25.12 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_6294\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_6294\_AMT_{Bd} - BNC\_DLY\_6294\_ALLOC\_AMT_{Bd}$

26. BANC Charge Code 6296 Hourly Non-Spinning Reserve Neutrality Allocation

CAISO Application

CAISO's Non-Spinning Reserve Neutrality Allocation recovers from Scheduling Coordinators the total Non-Spinning Reserve Neutrality amount, in proportion to their positive Non-Spinning Reserve Obligation. The total Non-Spinning Reserve Neutrality amount is calculated as the difference between the Non-Spinning reserve Net Requirement at the Non-Spinning reserve rate and the total revenue from the Non-Spinning reserve charge to all the Scheduling Coordinators. There is no CAISO PTB with this charge code.

There is a no PTB amount with this charge code.

BANC Application

BANC will allocate charges for Non-Spinning Reserve Neutrality Allocation by hour to EIM Participants based on the EIM Participant Load Ratio Share Precalculation.

26.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
$NonSpinNeutralityAmount_{Bmdh}$	$ Hourly 9 Decimal	Non-Spinning Reserve Neutrality amount due ISO for Business Associate B for Trading Day d and Trading Hour h ($).	BANC EESC Bill Determinant Statement: BA_HRLY_NSPN_NTRL@AMOUNT		BPM Configuration Guide: Spinning Reserve Neutrality Obligation CC6296 Version 5.0b

26.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

26.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
$CAISO\_HRLY\_6296\_AMT_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6296 Amount** - The CAISO CC6296 charge amount to BANC on an hourly basis.
$PPT\_HRLY\_LRS_{Ph}$	Decimal Hourly 5 Decimals	**EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for an EIM Participant to the total hourly BANC load.
$PPT\_HRLY\_6296\_AMT_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Daily 6296 Amount** - EIM Participant hourly allocation of CAISO charge code 6196 rounded to two decimal places.

Determinants	UOM & Interval Length	Description
$TPUD\_HRLY\_LRS_{Bh}$	Decimal Hourly 5 Decimals	**TPUD Hourly Load Ratio Share** - The hourly percent in decimal of TPUD's load for compared to the total hourly BANC load.
$TPUD\_HRLY\_6296\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 6296 Amount** - BANC EIM TPUD hourly estimate of CAISO charge code 6296 rounded to two decimal places.
$PPT\_DLY\_6296\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 6296 Amount** - EIM Participant daily total allocation of CAISO charge code 6296.
$TPUD\_DLY\_6296\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 6296 Amount** - BANC EIM TPUD total daily estimate of CAISO charge code 6296.
$BNC\_DLY\_6296\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6296 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6296.
$BNC\_DLY\_6296\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6296 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 6296.
$BNC\_DLY\_6296\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6296 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

26.4 The hourly charge to BANC for charge code 6296.

$$CAISO\_HRLY\_6296\_AMT_{Bh}{}^{1} = NonSpinNeutralityAmount_{Bmdh}$$

[1]Rounded to 2 decimal places.

26.5 These charges are allocated hourly to EIM Participants using the EIM Participant Load Ratio Share Precalculation.

$$PPT\_HRLY\_6296\_AMT_{Ph}{}^{1} = CAISO\_HRLY\_6296\_AMT_{Bh} * PPT\_HRLY\_LRS_{Ph}$$

[1]Rounded to 2 decimal places.

26.6 The hourly cost allocation estimated to TPUD.

$$TPUD\_HRLY\_6296\_AMT_{Bh}{}^{1} = CAISO\_HRLY\_6296\_AMT_{Bh} * TPUD\_HRLY\_LRS_{Bh}$$

[1]Rounded to 2 decimal places.

26.7 Calculate the daily charge code total for each participant.

$$PPT\_DLY\_6296\_AMT_{Pd} = \sum_{Pd} (PPT\_HRLY\_6296\_AMT_{Ph})$$

26.8 Calculate the daily charge code total estimate for TPUD.

$$TPUD\_DLY\_6296\_AMT_{BD} = \sum_{Bd} (TPUD\_HRLY\_6296\_AMT_{Bh})$$

Allocations Monitoring

26.9 The total daily allocation to EIM Participants is summed to a daily total.

$$BNC\_DLY\_6296\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_6296\_AMT_{Pd}) + TPUD\_DLY\_6296\_AMT_{BD}$$

26.10 The total CAISO daily charge to BANC.

$$CAISO\_DLY\_6296\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_6296\_AMT_{Bh})$$

26.11 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_6296\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_6296\_AMT_{Bd} - BNC\_DLY\_6296\_ALLOC\_AMT_{Bd}$$

27. BANC Charge Code 64600 5 Minute FMM Instructed Imbalance Energy EIM Settlement

CAISO Application

In EIM, the CAISO will bill participating generation and participating load resources in Charge Code 64600 for any energy difference between their 15-minute market energy clearing and their hourly Base Schedules at the 15-minute market LMP. CAISO calculates all differences on a 5-minute interval. For generators that do not bid into the market, the 15-minute market solution will represent the resource's Base Schedule as adjusted by the BAA for manual dispatch. The resulting settlement charge amount is the calculated quantity difference multiplied by the 15-minute LMP for that resource. CAISO bills participating resources on the PRSC settlement statements.

CAISO will also bill Interchange tagging in Charge Code 64600 for any energy difference from the value of the Interchange of tags at 37.5 minutes prior to the start of each 15-minute market interval less the volume as seen in their accompanying Base Schedule multiplied by their 15-minute market LMP. CAISO bills Interchange tags on the EESC settlement statements.

CAISO bills Interchange tags on the EESC settlement statements based on tags aggregated together on predefined paths.

Non-participating load is not billed for any 15-minute market changes.

This charge code can have a 5-minute PTB to the Scheduling Coordinator.

BANC Application

BANC BAA will not have any registered non-participating generation resources and as such will not incur any 15-minute market clearing energy imbalance charges for resources.

BANC will be billed by CAISO for BANC tag Interchange volume changes but will not be billed for intra-change schedule changes. CAISO does not see any tags that source and sink within the BAA and see them as revenue neutral to the overall EIM.

BANC will bill all Interchange change tag volume differences from the T-37.5-minute snapshot less the volume used in the accompanying Base Schedule. BANC will multiply the schedule change by the CAISO interface FMM LMP and will bill the participant where the schedule is sourced or sink. The FMM LMP for each tag will be determined by a path segment on the tag. The allocations vendor will look for a predefined path segment on each tag and then based on the path found will use the LMP Interface Price that is cross referenced to that path segment. The LMP cross reference table is found in Appendix D – Intertie Tag LMP Cross Reference.

Schedules between participants within BANC, Intratie schedules, will not be settled for changes between the fifteen minute market and what they were in calculating a participant's Base Schedule. Although schedule changes in this time frame can impact which participant must cover imbalance, the participants collectively agreed that changes are rare and they will handle them as part of their bilateral settlement between EIM Participants. As for allocation neutrality of this charge code, this will have no impact on the charge or credit being billed by CAISO.

The total allocation of this charge code will be revenue neutral other than rounding differences

BANC will monitor for any PTB and will remove it from this charge allocation to allocate it in the BANC PTB Charge Code.

27.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMBASettlementIntervalFMMIIEAmount$_{Bmdhcif}$	$ 5 Minute 9 Decimal	The BA total FMM IIE Settlement Amount for all resources inside EIM Entity BAAs. ($) This value does not include the PTB interval amount.	BANC EESC Bill Determinant Statement: BA_5M_EIM_FMM_IIE_STLMT@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: FMM Instructed Imbalance Energy Settlement EIM Settlement CC 64600 Version 5.2
PTBChargeAdjustmentEIMBA5MFMMEnergyAmt$_{BJmdhcif}$	$ 5 Minute 9 Decimal	PTB settlement adjustment amount for this Charge Code	BANC EESC Bill Determinant Statement: PTB_BA_5M_EIM_FMM_IIE_STLMT_HIER@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: FMM Instructed Imbalance Energy Settlement EIM Settlement CC 64600 Version 5.2
FMMIntervalLMPPrice$_{BrtuT'I'M'mdhc}$	$ 15 Minute 9 Decimal	The FMM Interval Locational Marginal Price for Resource r. ($/MWh)	CAISO Determinant Statement: BA_15M_RSRC_FMM_LMP@PRICE		BPM Configuration Guide: FMM Instructed Imbalance Energy Settlement EIM Settlement CC 64600 Version 5.2

27.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

27.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_64600_PTB_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64600 Pass Through Billing Amount** - A 5-minute interval amount when applicable related to CAISO Charge Code 64600.

Determinants	UOM & Interval Length	Description
CAISO_5MIN_64600_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64600 Amount** - The CAISO CC 64600 charge amount to BANC rounded to two decimal places.
PPT_5MIN_TAG_FMM_BAA_IMP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged 15-Minute Market BAA Import Schedule** - The 5-minute tagged energy BAA Import schedule snapshot at T-37.5 minutes before the start of the 15-market window that sinks at an EIM Participant's load or resource registered location and imports from outside of BANC.
PPT_5MIN_TAG_BASE_SCHD_SNK$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule at a Sink** - The 5-minute tagged Base Schedule that sinks at an EIM Participant location that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour.
PPT_5MIN_INTERTIE_IMP_FMM_IMB$_{PSGPCLxyzf}$	MWh 5 Min 8 Decimals	**Participant 5 Minute Intertie Import FMM Imbalance** – The tagged schedule difference from FMM compared to the Base Schedule for an EIM Participant importing a schedule from outside of BANC sinking at the participant's registered location.
CAISO_15MIN_FMM_LMP$_{QSc}$	$/MWh 15 Minute 9 Decimals	**CAISO 15-Minute FMM LMP** – The 15-minute FMM published LMP price for all CAISO Intertie and resource locations in EIM. The price will be determined by the cross referenced tag segment in the tag and the lookup table in Appendix D.
PPT_5MIN_INTERTIE_IMP_FMM_AMT$_{PSGPCLxyzf}$	$ 5 Min 8 Decimals	**EIM Participant 5-Minute Intertie Import FMM Amount** – The total FMM charge for a schedule change from the FMM to the schedule Base Schedule.
PPT_5MIN_TAG_FMM_BAA_EXP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged 15-Minute Market BAA Export Schedule** - The 5-minute tagged energy BAA Export schedule snapshot at 37.5 minutes before the start of the 15-market window that sources at an EIM Participant's load or resource registered location and exports out of BANC.
PPT_5MIN_TAG_BASE_SCHD_SRC$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule at a Source** - The 5-minute tagged Base Schedule that sources at an EIM Participant location that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour.
PPT_5MIN_INTERTIE_EXP_FMM_IMB$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**Participant 5 Minute Intertie Export FMM Imbalance** – The tagged schedule difference from FMM compared to the

Determinants	UOM & Interval Length	Description
		Base Schedule for an EIM Participant exporting a schedule to outside of BANC sourcing at the participant's registered location.
$PPT\_5MIN\_INTERTIE\_EXP\_FMM\_AMT_{PRSGECLxyzf}$	$ 5 Min 8 Decimals	**EIM Participant 5-Minute Intertie EXPORT FMM Amount** – The total FMM charge for a schedule change from the FMM to the schedule Base Schedule.
$PPT\_5MIN\_64600\_AMT_{Pf}$	$ 5 Min 2 Decimal	**EIM Participant Hourly 64600 Amount** - EIM Participant 5-minute allocation of CAISO charge code 64600.
$PPT\_DLY\_64600\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Hourly 64600 Amount** - EIM Participant daily allocation of CAISO charge code 64600.
$BNC\_DLY\_64600\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64600 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64600.
$CAISO\_DLY\_64600\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 64600 Amount** - The CAISO CC 64600 charge amount to BANC summed to a daily value and rounded to two decimal places.
$BNC\_DLY\_64600\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 64600 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to EIM Participants.

Formulas

27.4 The CAISO PTB determinant for this charge code will be summed across the 5 minute intervals and will be allocated in the BANC PTB Charge Code.

$$CAISO\_5MIN\_64600\_PTB\_AMT_{Bf}{}^{1} = \sum_{Bf}(PTBChargeAdjustmentEIMBA5MFMMEnergyAmt_{BJmdhcif})$$

[1]Rounded to 2 decimal places.

27.5 The 5-minute charge to BANC for charge code 64600.

$$CAISO\_5MIN\_64600\_AMT_{Bf}{}^{1} = EIMBASettlementIntervalFMMIIEAmount_{Bmdhcif}$$

[1]Rounded to 2 decimal places.

Interchange Schedules

27.6 For every Intertie import schedule, calculate any FMM imbalance energy by subtracting from the FMM schedule the corresponding Base Schedule if it exists. Schedules which have no change in the FMM will not have any imbalance amounts due in this charge code.

$$PPT\_5MIN\_INTERTIE\_IMP\_FMM\_IMB_{PRSGPCLxyzf} = PPT\_5MIN\_TAG\_FMM\_BAA\_IMP\_SCHD_{PRSGECLxyzfL} - PPT\_5MIN\_TAG\_BASE\_SCHD\_SNK_{PRSGECLxyzf}$$

where z (Schedule ID) for $PPT\_5MIN\_TAG\_FMM\_BAA\_IMP\_SCHD_{PRSGECLxyzf}$ = z (Schedule ID) for $PPT\_5MIN\_TAG\_BASE\_SCHD\_SNK_{PRSGECLxyzf}$ and x is not a registered location within the BANC BAA.

27.7 Determine the 15-Minute Market LMP for every CAISO interface ID used by EIM Participants for Interties. These Intertie locations are defined in Appendix D.

$CAISO\_15MIN\_FMM\_LMP_{QSc}$ = $FMMIntervalLMPPrice_{BrtuT'I'M'mdhc}$
where r = CAISO Interface ID (Q)

27.8 Calculate the FMM market imbalance amount for each Intertie import schedule. The FMM LMP will be based on the CAISO Interface ID (Q) of the schedule. Each 5 minute imbalance schedule will be multiplied by the 15-minute LMP for that covers that interval. The result is multiplied by -1 since it is an import.

$PPT\_5MIN\_INTERTIE\_IMP\_FMM\_AMT_{PRSGECLxyzf}$[1] =
-1 * $PPT\_5MIN\_INTERTIE\_IMP\_FMM\_IMB_{PRSGECLxyz}$ * $CAISO\_15MIN\_FMM\_LMP_{QSc}$
where S (POR/POD Segment) of $PPT\_5MIN\_INTERTIE\_IMP\_FMM\_IMB_{PRSGECLxyz}$ = S (POR/POD Segment) of $CAISO\_15MIN\_FMM\_LMP_{QSc}$

[1]Rounded to 2 decimal places.

27.9 For every Intertie export schedule, calculate any FMM imbalance energy by subtracting from the FMM schedule the corresponding Base Schedule if it exists. Schedules which have no change in the FMM will not have any imbalance amounts due in this charge code.

$PPT\_5MIN\_INTERTIE\_EXP\_FMM\_IMB_{PRSGECLxyzf}$ =
$PPT\_5MIN\_TAG\_FMM\_BAA\_EXP\_SCHD_{PRSGECLxyzf}$ -
$PPT\_5MIN\_TAG\_BASE\_SCHD\_SRC_{PRSGECLxyzf}$
where z (Schedule ID) for $PPT\_5MIN\_TAG\_FMM\_BAA\_EXP\_SCHD_{PRSGECLxyzf}$ = z (Schedule ID) for $PPT\_5MIN\_TAG\_BASE\_SCHD\_SRC_{PRSGECLxyzf}$ and y is not a registered location within the BANC BAA.

27.10 Calculate the FMM market imbalance amount for each Intertie export schedule. The FMM LMP will be based on the CAISO Interface ID (Q) of the schedule. Each 5 minute imbalance schedule will be multiplied by the 15-minute LMP for that covers that interval.

$PPT\_5MIN\_INTERTIE\_EXP\_FMM\_AMT_{PRSGECLxyzf}$[1] =
$PPT\_5MIN\_INTERTIE\_EXP\_FMM\_IMB_{PRSGECLxyz}$ * $CAISO\_15MIN\_FMM\_LMP_{QSc}$
where S (POR/POD Segment) of $PPT\_5MIN\_INTERTIE\_EXP\_FMM\_IMB_{PRSGECLxyz}$ = S (POR/POD Segment) of $CAISO\_15MIN\_FMM\_LMP_{QSc}$

[1]Rounded to 2 decimal places.

27.11 Sum the total of all Intertie imbalance amounts by EIM Participant.

$PPT\_5MIN\_64600\_AMT_{Pf} = \sum_{Pf}(PPT\_5MIN\_INTERTIE\_IMP\_FMM\_AMT_{PRSGPELxyzf}) + \sum_{Pf}(PPT\_5MIN\_INTERTIE\_EXP\_FMM\_AMT_{PRSGECLxyzf})$

27.12 Sum each EIM Participant's 5-minute amounts to a daily total.

$PPT\_DLY\_64600\_AMT_{Pd} = \sum_{Pd}(PPT\_5MIN\_64600\_AMT_{Pf})$

Allocations Monitoring

27.13 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_64600\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_64600\_AMT_{Pd})S$

27.14 The total CAISO daily charge to BANC.

$CAISO\_DLY\_64600\_AMT_{Bd} = \sum_{Bd} (CAISO\_5MIN\_64600\_AMT_{Bf})$

27.15 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_64600\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_64600\_AMT_{Bd} - BNC\_DLY\_64600\_ALLOC\_AMT_{Bd}$

28. BANC Charge Code 64700 5 Minute Real Time Instructed Imbalance Energy EIM Settlement

CAISO Application

In EIM, the CAISO will bill participating generation and participating load resources in Charge Code 64700 for any energy difference between their 5-minute Real-Time market energy clearing and their 15-minute market clearing at the 5-minute Real-Time market LMP. CAISO calculates all differences on a 5-minute interval. For generators that do not bid into the market, the 5-minute Real-Time market solution will represent the resource's Base Schedule as adjusted by the BAA for manual dispatch. The resulting settlement charge amount is the calculated quantity difference multiplied by the 5-minute Real-Time LMP for that resource. CAISO bills participating resources on the PRSC settlement statements.

CAISO will also bill Interchange tagging in Charge Code 64700 for any energy difference from the final value of the Interchange of tags interval less the volume as seen in the Fifteen Minute Market solution multiplied by the 5-minute Real-Time Intertie market LMP. CAISO bills Interchange tags on the EESC settlement statements.

Non-participating load is not billed for any 5-minute market changes.

This charge code can have a 5-minute PTB to the Scheduling Coordinator.

BANC Application

The EIM Entity will not have any registered non-participating generation resources and as such will not incur any 5-minute Real-Time market clearing energy imbalance charges for such resources.

BANC will be billed by CAISO for BANC tag Interchange volume changes but will not be billed for Intrachange schedule changes. CAISO does not see any tags that source and sink within the BAA and see them as revenue neutral to the overall EIM.

BANC will bill all Interchange change tag volume differences from the final tag volume less the volume seen in the 15-minute market clearing. BANC will multiply the schedule change by the CAISO interface 5-minute RTM LMP and will bill the participant where the schedule is sourced or sank. The RTM LMP for each tag will be determined by a path segment on the tag. The allocations vendor will look for a predefined path segment on each tag and then based on the path found will use the LMP Interface Price that is cross referenced to that path segment. The LMP cross reference table is found in Append D – Intertie Tag LMP Cross Reference.

Schedules between EIM Participants within BANC, Intratie schedules, will not be settled for changes between the 5-minute Real-Time Market clearing and the volume seen in the fifteen minute market. Although schedule changes in this time frame can impact which EIM Participant must cover imbalance, the EIM Participants collectively agreed that changes are rare and they will handle them as part of their bilateral settlement between EIM Participants. As for allocation neutrality of this charge code, this will have no impact on the charge or credit being billed by CAISO.

The total allocation of this charge code will be revenue neutral other than rounding differences

BANC will monitor for any PTB and will remove it from this charge allocation to allocate it in the BANC PTB Charge Code.

28.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMSettlementIntervalIIEAmount$_{BrtQ'mdhcif}$	$ 5 Minute 9 Decimal	The BA total RTM IIE Settlement Amount for all resources inside EIM Entity BAAs. ($) This value does not include the PTB interval amount.	BANC EESC Bill Determinant Statement: BAA_5M_EIM_IIE @AMOUNT		BPM Configuration Guide: Real Time Instructed Imbalance Energy Settlement EIM Settlement CC 64700 Version 5.2
PTBChargeAdjustmentEIMSettlementIntervalIIEAmount$_{Bjmdhcif}$	$ 5 Minute 9 Decimal	Real Time Instructed Imbalance Energy Settlement Amount PTB Charge Adjustment Amount for Business Associate B, PTB Id J, Trading Hour h, and Settlement Interval i. $	BANC EESC Bill Determinant Statement: PTB_BA_5M_EIM_IIE_ADJ@AMOUNT		BPM Configuration Guide: Real Time Instructed Imbalance Energy Settlement EIM Settlement CC 64700 Version 5.2
SettlementIntervalRealTimeLMP$_{BrtuM'mdhcif}$	$ 5 Minute 9 Decimal	The RTM Interval Locational Marginal Price for Resource r. ($/MWh)	CAISO Determinant Statement: BA_5M_RSRC_RT_LMP@PRICE		BPM Configuration Guide: Real Time Instructed Imbalance Energy Settlement EIM Settlement CC 64700 Version 5.2

28.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

28.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_64700_PTB_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64700 Pass Through Billing Amount** - A 5-minute interval amount when applicable related to CAISO Charge Code 64700.
CAISO_5MIN_64700_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64700 Amount** - The CAISO CC 64700 charge amount to BANC rounded to two decimal places.
PPT_5MIN_TAG_FNL_BAA_IMP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Final Balancing Authority Area Import Schedule** - The final after the fact 5-minute tagged energy schedule that sinks at an EIM Participant's load or

Determinants	UOM & Interval Length	Description
		resource registered location and imports into BANC.
PPT_5MIN_TAG_FMM_BAA_IMP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged 15-Minute Market BAA Import Schedule** - The 5-minute tagged energy BAA Import schedule snapshot at 37.5 minutes before the start of the 15-market window that sinks at an EIM Participant's load or resource registered location and imports from outside of BANC.
PPT_5MIN_INTERTIE_IMP_RTM_IMB$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**Participant 5 Minute Intertie Import RTM Imbalance** – The tagged schedule difference from final schedule compared to the schedule in the FMM for an EIM Participant importing a schedule from outside of BANC sinking at the participant's registered location.
CAISO_5MIN_RTM_LMP$_{QSf}$	$/MWh 15 Minute 9 Decimals	**CAISO 5-Minute RTM LMP** – The 5-minute RTM published LMP price for all CAISO Intertie and resource locations in EIM. The price will be determined by the cross referenced tag segment in the tag and the lookup table in Appendix D.
PPT_5MIN_INTERTIE_IMP_RTM_AMT$_{PRSGECLxyzf}$	$ 5 Min 8 Decimals	**EIM Participant 5-Minute Intertie Import RTM Amount** – The total RTM charge for an import schedule change from the final schedule to the FMM schedule.
PPT_5MIN_TAG_FNL_BAA_EXP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Final Balancing Authority Area Export Schedule** - The final after the fact 5-minute tagged energy schedule that sources at an EIM Participant's load or resource registered location and exports out of BANC.
PPT_5MIN_TAG_FMM_BAA_EXP_SCHD$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged 15-Minute Market BAA Export Schedule** - The 5-minute tagged energy BAA Export schedule snapshot at 37.5 minutes before the start of the 15-market window that sources at an EIM Participant's load or resource registered location and exports out of BANC.
PPT_5MIN_INTERTIE_EXP_RTM_IMB$_{PRSGECLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Intertie Export RTM Amount** – The total RTM charge for an export schedule change from the final schedule to the FMM schedule.
PPT_5MIN_INTERTIE_EXP_RTM_AMT$_{PRSGECLxyzf}$	$ 5 Min 8 Decimals	**EIM Participant 5-Minute Intertie EXPORT RTM Amount** – The total RTM charge for an export schedule change from the final schedule to the FMM schedule.

Determinants	UOM & Interval Length	Description
$PPT\_5MIN\_64700\_AMT_{Pf}$	$ Hourly 2 Decimal	**EIM Participant Hourly 64700 Amount** - EIM Participant hourly allocation of CAISO charge code 64700.
$BNC\_DLY\_64700\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64700 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64700.
$CAISO\_DLY\_64700\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 64700 Amount** - The CAISO CC 64700 charge amount to BANC summed to a daily value and rounded to two decimal places.
$BNC\_DLY\_64700\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 64700 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

28.4 The CAISO PTB determinant for this charge code will be summed across the 5 minute intervals and will be allocated in the BANC PTB Charge Code.

$$CAISO\_5MIN\_64700\_PTB\_AMT_{Bf}{}^{1} = \sum_{Bf}(PTBChargeAdjustmentEIMSettlementIntervalIIEAmount_{Bjmdhcif})$$

[1]Rounded to 2 decimal places.

28.5 The 5-minute charge to BANC for charge code 64700. This 5-minute value will be used to check the total settlement allocation for accuracy. Any PTB amount is not included in this determinant.

$$CAISO\_5MIN\_64700\_AMT_{Bf}{}^{1} = EIMSettlementIntervalIIEAmountBrtQ'mdhcif$$

[1]Rounded to 2 decimal places.

Interchange Schedules

28.6 For every Intertie import schedule, calculate any RTM imbalance energy by subtracting the final RTM schedule from the corresponding FMM Schedule if it exists. Schedules which have no change will not have any imbalance amounts due in this charge code.

$$PPT\_5MIN\_INTERTIE\_IMP\_RTM\_IMB_{PRSGECLxyzf} = PPT\_5MIN\_TAG\_FNL\_BAA\_IMP\_SCHD_{PRSGECLxyzf} - PPT\_5MIN\_TAG\_FMM\_BAA\_IMP\_SCHD_{PRSGECLxyzf}$$

where z (Schedule ID) for $PPT\_5MIN\_TAG\_FNL\_BAA\_IMP\_SCHD_{PRSGECLxyzf}$ = z (Schedule ID) for $PPT\_5MIN\_TAG\_FMM\_BAA\_IMP\_SCHD_{PRSGECLxyzf}$ and x is not a registered location within the BANC BAA.

28.7 Determine the RTM CAISO interface ID used by EIM Participants for Interties. These Intertie locations are defined in Appendix D.

$$CAISO\_5MIN\_RTM\_LMP_{QSf} = SettlementIntervalRealTimeLMP_{BrtuM'mdhcif}$$

where r = CAISO Interface ID (Q)

28.8 Calculate the RTM market imbalance amount for each Intertie import schedule. The RTM LMP will be based on the CAISO Interface ID (Q) of the schedule. Each 5 minute imbalance schedule will be multiplied by the 5-minute LMP for that covers that interval. The result is multiplied by -1 since it is an import.

$PPT\_5MIN\_INTERTIE\_IMP\_RTM\_AMT_{PRSQGECLxyzf}$[1] =
-1 * $PPT\_5MIN\_INTERTIE\_IMP\_RTM\_IMB_{PRSQGECLxyz}$ * $CAISO\_5MIN\_RTM\_LMP_{Qf}$
where S (POR/POD Segment) of $PPT\_5MIN\_INTERTIE\_IMP\_RTM\_IMB_{PRSQGECLxyz}$ =
S (POR/POD Segment) of $CAISO\_15MIN\_FMM\_LMP_{QSf}$

[1]Rounded to 2 decimal places.

28.9 For every Intertie export schedule, calculate any RTM imbalance energy by subtracting the RTM schedule from the corresponding FMM Schedule if it exists. Schedules which have no change in the RTM will not have any imbalance amounts due in this charge code.

$PPT\_5MIN\_INTERTIE\_EXP\_RTM\_IMB_{PRSGECLxyzf}$ =
$PPT\_5MIN\_TAG\_FNL\_BAA\_EXP\_SCHD_{PRSGECLxyzf}$ -
$PPT\_5MIN\_TAG\_FMM\_BAA\_EXP\_SCHD_{PRSGECLxyzf}$
where z (Schedule ID) for $PPT\_5MIN\_TAG\_FNL\_BAA\_EXP\_SCHD_{PRSGECLxyzf}$ =
z (Schedule ID) for $PPT\_5MIN\_TAG\_FMM\_BAA\_EXP\_SCHD_{PRSGECLxyzf}$
and y is not a registered location within the BANC BAA.

28.10 Calculate the RTM market imbalance amount for each Intertie export schedule. The RTM LMP will be based on the CAISO Interface ID (Q) of the schedule. Each 5-minute imbalance schedule will be multiplied by the 5-minute LMP for that covers that interval.

$PPT\_5MIN\_INTERTIE\_EXP\_RTM\_AMT_{PRSGECLxyzf}$[1] =
$PPT\_5MIN\_INTERTIE\_EXP\_RTM\_IMB_{PRSGECLxyz}$ * $CAISO\_5MIN\_RTM\_LMP_{QSf}$
where S (POR/POD Segment) of $PPT\_5MIN\_INTERTIE\_IMP\_RTM\_IMB_{PRSQGECLxyz}$ =
S (POR/POD Segment) of $CAISO\_15MIN\_FMM\_LMP_{QSf}$

[1]Rounded to 2 decimal places.

28.11 Sum the total of all Intertie imbalance amounts by EIM Participant.

$PPT\_5MIN\_64700\_AMT_{Pf} = \sum_{Pf}(PPT\_5MIN\_INTERTIE\_IMP\_RTM\_AMT_{PRSGECLxyzf}) + \sum_{Pf}(PPT\_5MIN\_INTERTIE\_EXP\_RTM\_AMT_{PRSGECLxyzf})$

28.12 Sum each EIM Participant's 5 minute amounts to a daily total.

$PPT\_DLY\_64700\_AMT_{Pd} = \sum_{Pd}(PPT\_5MIN\_64700\_AMT_{Pf})$

Allocations Monitoring

28.13 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_64700\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_64700\_AMT_{Pd})$

28.14 The total CAISO daily charge to BANC.

$CAISO\_DLY\_64700\_AMT_{Bd} = \sum_{Bd}(CAISO\_5MIN\_64700\_AMT_{Bf})$

28.15 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_64700\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_64700\_AMT_{Bd} - BNC\_DLY\_64700\_ALLOC\_AMT_{Bd}$$

29. BANC Charge Code 64740 Hourly Real Time Unaccounted for Energy EIM Settlement

CAISO Application

The CAISO shall calculate and account for Unaccounted for Energy (UFE) for each settlement Interval by EIM balancing authority and shall settle UFE as part of the Real-Time Market Settlements. The UFE will be settled as Imbalance Energy at the applicable settlement interval locational marginal price calculated for each balancing area. UFE is attributable to meter measurement errors, Load profile errors, energy theft and distribution loss deviations. The resulting charge in EIM is billed to the EESC scheduling coordinator.

This charge does not have any PTB associated to it.

BANC Application

BANC will allocate any charges for Real Time Unaccounted for Energy EIM Settlement by hour to EIM Participants based on the EIM Participant Load Ratio Share Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

29.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BA_EIMBAA_SettlementInterval_UnaccountedforEnergy_SettlementAmount$_{BuQ'mdhcif}$	$ 5 Minute 9 Decimal	Real Time Unaccounted for Energy Settlement amount (in U.S. $).	BANC EESC Bill Determinant Statement: BA_5M_UDC_EIM_BAA_UFE@AMOUNT		BPM Configuration Guide: Real Time Uninstructed Unaccounted for Energy EIM Settlement CC 64740 Version 5.1
EIMBAASettlementIntervalUFEQuantity$_{uQ'mdhcif}$	MWh 5 Minute 9 Decimal	The Real-Time 5-Minute Unaccounted for Energy Quantity.	BANC EESC Bill Determinant Statement: UDC_5M_EIM_BAA_UFE@QUANTITY		BPM Configuration Guide: Real Time Uninstructed Unaccounted for Energy EIM Settlement CC 64740 Version 5.1
HourlyUFEUDCLMP$_{umdhcif}$	$ Hourly 5 Decimal	An output from the Real Time Price Pre-calculation. It is the specific UFE price applied to applicable UDC.	CAISO Bill Determinant Statement: UFE_HRLY_RTM_UDC@PRICE		BPM Configuration Guide: Real Time Uninstructed Unaccounted for Energy EIM

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
					Settlement CC 64740 Version 5.1
EIMBAASettlementIntervalActualTransmissionLoss$_{uT'Q'mdhcif}$	MWh 5 Minute 9 Decimal	The calculated quantity (in MWh) of actual transmission line and facility losses associated with Energy scheduled for EIM BAA. This is reported as a negative value.	BANC EESC Bill Determinant Statement: UDC_5M_ACTUAL_EIM_BAA_TRANS_LOSS@QUANTITY		BPM Configuration Guide: Real Time Uninstructed Unaccounted for Energy EIM Settlement CC 64740 Version 5.1

29.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

29.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_64740_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64740 Amount** - The CAISO CC 64740 charge amount to BANC rounded to two decimal places.
CAISO_HRLY_64740_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 64740 Amount** - The CAISO CC 64740 5-minute charge amount summed to an hourly amount.
PPT_HRLY_LRS$_{Ph}$	Decimal Hourly 5 Decimals	**EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for an EIM Participant to the total hourly BANC load.
PPT_HRLY_64740_AMT$_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 64740 Amount** - EIM Participant hourly allocation of CAISO charge code 64740.
TPUD_HRLY_LRS$_{Bh}$	Decimal Hourly 5 Decimals	**TPUD Hourly Load Ratio Share** - The hourly percent in decimal of TPUD's load for compared to the total hourly BANC load.
TPUD_HRLY_64740_AMT$_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 64740 Amount** - BANC TPUD hourly estimate of CAISO charge code 64740.
PPT_DLY_64740_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 64740 Amount** - EIM Participant daily allocation of CAISO charge code 64740.

Determinants	UOM & Interval Length	Description
$TPUD\_DLY\_64740\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 64740 Amount** - BANC TPUD daily estimate of CAISO charge code 64740.
$BNC\_DLY\_64740\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64740 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64740.
$BNC\_DLY\_64740\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 64740 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

29.4 The 5-minute charge to BANC for charge code 64740.

$$CAISO\_5MIN\_64740\_AMT_{Bf}{}^{1} = BA\_EIMBAA\_SettlementInterval\_UnaccountedforEnergy\_SettlementAmount_{BuQ'mdhcif}$$

[1]Rounded to 2 decimal places.

29.5 Sum the CAISO 5-minute charge to an hourly charge.

$$CAISO\_HRLY\_64740\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_64740\_AMT_{Bf})$$

29.6 These charges are allocated hourly to EIM Participants using the EIM Participant Load Ratio Share Precalculation.

$$PPT\_HRLY\_64740\_AMT_{Ph}{}^{1} = CAISO\_HRLY\_64740\_AMT_{Bh} * PPT\_HRLY\_LRS_{Ph}$$

[1]Rounded to 2 decimal places.

29.7 The hourly cost estimate associated with TPUD.

$$TPUD\_HRLY\_64740\_AMT_{Bh}{}^{1} = CAISO\_HRLY\_64740\_AMT_{Bh} * TPUD\_HRLY\_LRS_{Bh}$$

[1]Rounded to 2 decimal places.

29.8 Calculate the daily charge code total for each EIM Participant.

$$PPT\_DLY\_64740\_AMT_{Pd} = \sum_{Pd}(PPT\_HRLY\_64740\_AMT_{Ph})$$

29.9 Calculate the daily charge code total related to TPUD.

$$TPUD\_DLY\_64740\_AMT_{Bd} = \sum_{Bd}(TPUD\_HRLY\_64740\_AMT_{Bh})$$

Allocations Monitoring

29.10 The 5-minute UFE imbalance volume as calculated by CAISO will be defined to a determinant for reporting and monitoring.

$$BNC\_5MIN\_UFE\_QTY_{Bf} = EIMBAASettlementIntervalUFEQuantity_{uQ'mdhcif}$$

29.11 The 5-minute UFE imbalance price as calculated by CAISO will be defined to a determinant for reporting and monitoring.

$BNC\_5MIN\_UFE\_LMP_{Bf} = HourlyUFEUDCLMP_{umdhcif}$

29.12 The CAISO calculated BAA transmission losses by 5-minute interval. Losses display as a negative value by CAISO. This value is being set to a determinant for reporting and monitoring.

$BNC\_5MIN\_TX\_LOSS\_QTY_{Bf} = EIMBAASettlementIntervalActualTransmissionLoss_{uT'Q'mdhcif}$

29.13 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_64740\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_64740\_AMT_{Pd}) + TPUD\_DLY\_64740\_AMT_{BD}$

29.14 The total CAISO daily charge to BANC.

$CAISO\_DLY\_64740\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_64740\_AMT_{Bh})$

29.15 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_64740\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_64740\_AMT_{Bd} - BNC\_DLY\_64740\_ALLOC\_AMT_{Bd}$

30. BANC Charge Code 64750 Hourly Real Time Uninstructed Energy EIM Settlement

CAISO Application

In EIM, the CAISO will bill participating generation and participating load resources for any energy imbalance difference from the reported meter data to the dispatch from the 5-minute Real-Time Market solution. For generators that do not bid into the market, the 5-minute Real-Time Market solution will represent the resource's Base Schedule as adjusted in Real-Time by the BAA for manual dispatch. The resulting settlement charge amount is the calculated quantity difference multiplied by the 5-minute LMP for that resource. CAISO bills participating resources on the PRSC settlement statements.

CAISO will bill non-participating resources energy imbalance in the same manner that participating resources are billed except they will be billed on the EESC settlement statement.

CAISO will bill non non-participating BAA load energy imbalance for the quantity difference from the reported meter data to the CAISO calculated BAA load Base Schedule and then multiple the result by the calculated hourly load LMP (LAP) for the BAA. The BAA load Base Schedule is the total of all generation Base Schedules in the BAA plus the sum of the net BAA tagged Interchange based schedules with the result being reduced by a fixed transmission loss percentage. All non-participating load energy imbalance will be billed on the EESC settlement statement.

In EIM, Interchange tagging does not incur any uninstructed imbalance. CAISO uses the final tagged schedule volume to calculate the Real-Time instructed energy imbalance in charge code 64700.

This charge code can have a 5-minute PTB to the Scheduling Coordinator.

BANC Application

BANC BAA will not have any registered non-participating generation resources and as such will not incur any uninstructed imbalance energy charges for resources.

BANC BAA will receive a 5-minute uninstructed imbalance charge for each EIM Participant's load imbalance at each EIM Participant's CLAP. The load imbalance for each EIM Participant will result from the difference of the participant's reported load less a prorated assumed Base Schedule load by CAISO. CAISO calculate a load uninstructed imbalance energy charge by multiplying the load imbalance by each EIM Participant's CLAP. BANC has determined this method is inaccurate and will calculate an hourly load Base Schedule for each EIM Participant and will calculate the actual load imbalance. BANC will charge each EIM Participant for their imbalance at each participant's CLAP. This methodology will produce some neutrality discrepancies which will be allocated in BANC Charge Code 100.

BANC will monitor for any PTB and will remove it from this charge allocation to allocate it in the BANC PTB Charge Code.

30.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
PTBChargeAdjustmentEIMSettlementIntervalUIEAmount$_{BjQ'mdhcif}$	$ 5 Minute 9 Decimal	Real Time Uninstructed Imbalance Energy Settlement Amount PTB Charge Adjustment Amount for Business	BANC EESC Bill Determinant Statement: PTB_BA_5M_UIE@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Real Time Uninstructed Imbalance Energy EIM Settlement CC 64750 Version 5.1
EIMSettlementIntervalUIESettlementAmount$_{BrtuT'I'Q'M'mdhcif}$	$ 5 Minute 9 Decimal	Settlement Interval UIE Settlement Amount for resource r ($)	BANC EESC Bill Determinant Statement: BA_5M_RSRC_UIE@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Real Time Uninstructed Imbalance Energy EIM Settlement CC 64750 Version 5.1
HourlyRTMLAPPrice$_{AA'mdh}$	$ 5 Minute 9 Decimal	Hourly Real Time Market LAP Price for Apnode A.	CAISO Bill Determinant Statement: LAP_HRLY_RTM_LMP@PRICE		BPM Configuration Guide: Real Time Uninstructed Imbalance Energy EIM Settlement CC 64750 Version 5.1

30.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

30.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_64750_PTB_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64750 Pass Through Billing Amount** - A 5-minute interval amount when applicable related to CAISO Charge Code 64750.
CAISO_5MIN_64750_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64750 Amount** - The CAISO CC 64750 charge amount to BANC rounded to two decimal places.

Determinants	UOM & Interval Length	Description
CAISO_HRLY_64750_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 64750 Amount** - The CAISO CC 64750 5-minute charge amount summed to an hourly amount.
PPT_HRLY_LD_QTY$_{Ph}$	MWh Hourly 4 Decimals	**EIM Participant Hourly Load Quantity** - The total hourly megawatt-hour load for an EIM Participant. This determinant is calculated in the *EIM Participant Load Ratio Share Precalculation.*
PPT_HRLY_LD_BASE_SCHD$_{Ph}$	MWh Hourly 2 Decimals	**EIM Participant Hourly Load Base Schedule** - EIM Participant total hourly load Base Schedule rounded to two decimal places. This determinant is calculated in the *EIM Participant Load Base Schedule Precalculation.*
PPT_HRLY_LOAD_UIE$_{Ph}$	MWh Hourly 4 Decimals	**EIM Participant Hourly Load Uninstructed Imbalance Energy Quantity** – The hourly uninstructed energy at an EIM Participant's load in MWh.
PPT_HRLY_RTM_LAP_PRICE$_{Ph}$	$/MWh Hourly 9 Decimals	**EIM Participant Hourly Real Time Market Price** – The EIM Participant CAISO hourly load calculated LMP (CLAP).
PPT_HRLY_64750_AMT$_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 64750 Amount** - EIM Participant hourly allocation of CAISO charge code 64750.
PPT_DLY_64750_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 64750 Amount** - EIM Participant daily allocation of CAISO charge code 64750 rounded to two decimal places.
BNC_HRLY_64750_AMT$_{Bh}$	$ Hourly 2 Decimal	**BANC Hourly Allocated 64750 Amount** – The allocated hourly over and under schedule penalty amount.
BNC_DLY_64750_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64750 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64750.
BNC_DLY_64750_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64750 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64750.
CAISO_DLY_64750_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 64750 Amount** – The CAISO total daily CC6045 Amount to BANC.
BNC_HRLY_64750_ALLOC_DIFF_AMT$_{Bh}$	$ Daily 2 Decimal	**BANC Hourly 64750 Allocated Hourly Differential Amount** – The calculated hourly difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.
BNC_DLY_64750_ALLOC_DIFF_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 64750 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

30.4 The CAISO PTB determinant for this charge code will be summed across the 5-minute intervals and will be allocated in the BANC PTB Charge Code.

$CAISO\_5MIN\_64750\_PTB\_AMT_{Bf}^{1} = \sum_{Bf}(PTBChargeAdjustmentEIMSettlementIntervalUIEAmount_{BjQ'mdhcif})$

[1]Rounded to 2 decimal places.

30.5 The 5-minute charge to BANC for charge code 64750. This is the total charge code 5-minute total for all of the EIM Participants.

$CAISO\_5MIN\_64750\_AMT_{Bf}^{1} = EIMSettlementIntervalUIESettlementAmount_{BrtuT'I'Q'M'mdhcif}$

[1]Rounded to 2 decimal places.

30.6 The 5-minute charge BANC charge code 64750 will be summed to an hourly value so it can be compared to the total allocation by hour to all the EIM Participants.

$CAISO\_HRLY\_64750\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_64750\_AMT_{Bf})$

30.7 BANC will calculate each EIM Participant's load imbalance by taking the EIM Participants' 5-minute CASIO reported meter data summed to an hourly total and then will subtract from it their BANC calculated load Base Schedule.

$PPT\_HRLY\_LOAD\_UIE_{Ph} = PPT\_HRLY\_LD\_QTY_{Ph} - PPT\_HRLY\_LD\_BASE\_SCHD_{Ph}$

30.8 Each EIM Participant LMP price (CLAP) will be pulled from the CAISO settlement statements.

$PPT\_HRLY\_RTM\_LAP\_PRICE_{Ph} = HourlyRTMLAPPrice_{AA'mdh}$

where APN_ID (A) = EIM Participant's CLAP APNode

30.9 Each participant's hourly load imbalance amount is calculated using the EIM Participant's load price.

$PPT\_HRLY\_64750\_AMT_{Ph}^{1} = PPT\_HRLY\_LOAD\_UIE_{Ph} * PPT\_HRLY\_RTM\_LAP\_PRICE_{Ph}$

[1]Rounded to 2 decimal places.

30.10 Sum the hourly allocate to a daily total for each EIM Participant.

$PPT\_DLY\_64750\_AMT_{Pd} = \sum_{Bd}(PPT\_HRLY\_64750\_AMT_{Ph})$

Allocations Monitoring

30.11 Total BANC allocation by hour to all EIM Participants.

$BNC\_HRLY\_64750\_AMT_{Bh} = \sum_{Bh}(PPT\_DLY\_64750\_AMT_{Ph})$

30.12 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_64750\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_64750\_AMT_{Bd})$

30.13 CAISO hourly charge to BANC summed to a daily amount.

$CAISO\_DLY\_64750\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_64750\_AMT_{Bh})$

30.14 The differential from CAISO's charge code to BANC's allocated amount by hour.

$$BNC\_HRLY\_64750\_ALLOC\_DIFF\_AMT_{Bh} = CAISO\_HRLY\_64750\_AMT_{Bh} - BNC\_HRLY\_64750\_AMT_{Bh}$$

30.15 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_64750\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_64750\_AMT_{Bd} - BNC\_DLY\_6470\_ALLOC\_AMT_{Bd}$$

31. BANC Charge Code 64770 Hourly Real Time Imbalance Energy Offset EIM

CAISO Application

To the extent that the sum of the CAISO Settlement Amounts for EIM Financial Transfer, Greenhouse Gas Compensation, IIE, UIE, and UFE, less the RT Energy Congestion revenues computed within Real-Time Congestion Offset (from CC 67740) less the Real-Time Marginal Cost of Losses Offset (from CC 69850) and EIM Transfer Adjustment does not equal zero, the CAISO will assess Charges or make Payments in Real Time Imbalance Energy Offset (CC 64770) for the resulting differences to the EESC.

There is a no PTB amount with this charge code.

BANC Application

BANC will allocate the 5-minute CAISO charge code to the hourly amount and then will allocate it to EIM Participants on an Hourly EIM Participant Absolute Imbalance Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

31.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMEntityRealTimeImbalanceEnergyOffsetAllocationAmount$_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	Total Real Time Imbalance Energy Offset Settlement Amount for an EESC by Balancing Authority Area.	BANC EESC Bill Determinant Statement: BA_5M_RT_IMB_ENGY_OFFSET_EIM_ALLOC@AMOUNT		BPM Configuration Guide: Real Time Imbalance Energy Offset EIM CC 64770 Version 5.2

31.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

31.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_64770_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 64770 Amount** - The CAISO CC 64770 charge amount to BANC is summed to an hourly amount.
CAISO_HRLY_64770_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 64770 Amount** - The CAISO CC 64770 5-minute charge amount to BANC is summed to an hourly amount.
PPT_HRLY_ABS_IMB_RATIO$_{Ph}$	Decimal Hourly 5 Decimal	**EIM Participant Hourly Absolute Imbalance Ratio** – The EIM Participant's hourly decimal

Determinants	UOM & Interval Length	Description
		ratio of the imbalance allocation share. Rounded to 5 decimals.
$PPT\_HRLY\_64770\_AMT_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 64770 Amount** - EIM Participant hourly allocation of CAISO charge code 64770 rounded to two decimal places.
$TPUD\_HRLY\_ABS\_IMB\_RATIO_{Bh}$	Decimal Hourly 5 Decimal	**TPUD Hourly Absolute Imbalance Ratio** – The TPUD hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.
$TPUD\_HRLY\_64770\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 64770 Amount** - BANC TPUD hourly estimate of CAISO charge code 64770 rounded to two decimal places.
$PPT\_DLY\_64770\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 64770 Amount** - EIM Participant daily allocation of CAISO charge code 64770.
$TPUD\_DLY\_64770\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 64770 Amount** - BANC TPUD daily estimate of CAISO charge code 64770.
$BNC\_DLY\_64770\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64770 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 64770.
$CAISO\_DLY\_64770\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 64770 Amount** - The CAISO CC 64770 5-minute charge amount to BANC is summed to a daily amount.
$BNC\_DLY\_64770\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 64770 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to EIM Participants.

Formulas

31.4 The 5-minute charge to BANC for charge code 64770.

$CAISO\_5MIN\_64770\_AMT_{Bf}^{1}$ = EIMEntityRealTimeImbalanceEnergyOffsetAllocationAmountBQ'mdhcif

[1]Rounded to 2 decimal places.

31.5 The 5-minute charge is summed to an hourly amount.

$CAISO\_HRLY\_64770\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_64770\_AMT_{Bf})$

31.6 These charges are allocated hourly to EIM Participants using the EIM Participant Absolute Imbalance Ratio Precalculation.

$PPT\_HRLY\_64770\_AMT_{Ph}^{1} = CAISO\_HRLY\_64770\_AMT_{Bh} * PPT\_HRLY\_ABS\_IMB\_RATIO_{Ph}$

[1]Rounded to 2 decimal places.

31.7 Charges related to TPUD are estimated to be the load imbalance portion of WAPA's exposure. WAPA's load imbalance is prorata assigned to TPUD based on TPUD's load to WAPA's load ratio.

$TPUD\_HRLY\_64770\_AMT_{Bh}^{1} = CAISO\_HRLY\_64770\_AMT_{Bh} * TPUD\_HRLY\_ABS\_IMB\_RATIO_{Bh}$

[1]Rounded to 2 decimal places.

31.8 The participants hourly amounts are summed to a daily amount.

$PPT\_DLY\_64770\_AMT_{Pd} = \sum_{Pd} (PPT\_HRLY\_64770\_AMT_{Ph})$

31.9 The assigned estimate to TPUD is summed across the Trade Date.

$TPUD\_DLY\_64770\_AMT_{Bd} = \sum_{Pd} (TPUD\_HRLY\_64770\_AMT_{Bh})$

Allocations Monitoring

31.10 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_64770\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_64770\_AMT_{Pd}) + TPUD\_DLY\_64770\_AMT_{Bd}$

31.11 CAISO hourly charge to BANC summed to a daily amount.

$CAISO\_DLY\_64770\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_64770\_AMT_{Bh})$

31.12 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_64770\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_64770\_AMT_{Bh}) - BNC\_DLY\_64770\_ALLOC\_AMT_{Bd}$

32. BANC Charge Code 6478 Hourly Real Time System Imbalance Energy Offset

CAISO Application

CAISO uses this charge code to balance the Real-Time Market (5- and 15-minute markets) energy costs across their charge codes by BAA. To the extent that the sum of the Settlement Amounts for Instructed Imbalance Energy (IIE), Uninstructed Imbalance Energy (UIE), and Unaccounted for Energy (UFE), Greenhouse Gas Compensation, Real-Time Ancillary Services Imports Congestion and each EIM area Balancing Authority Area Neutrality, less the RT Energy Congestion revenues computed within Real-Time Congestion Offset, and less the Real-Time Marginal Cost of Losses Offset does not equal zero, the CAISO will assess Charges or make Payments in Real Time System Imbalance Energy Offset (CC 6478) for the resulting differences to all CAISO Scheduling Coordinators based on a pro rata share of their EIM Measured Demand by 5-minute interval.

There is no PTB determinant associated with this charge code.

BANC Application

These 5-minute amounts can be charges or credits to BANC. BANC will sum these 5-minute amounts to an hourly total and will allocate it to EIM Participants using the EIM Participant Load Ratio Share Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

32.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BASystemRealTimeImbalanceEnergyOffsetAllocationAmount$_{Bmdhcif}$	$ 5 Minute 9 Decimal	Allocation of Total System Real Time Instructed Imbalance Energy Settlement Amount for the EIM Area by Business Associate ID (B).	BANC EESC Bill Determinant Statement: BA_5M_SYS_RT_IMB_ENG_OFFSET_ALLOC@AMOUNT		BPM Configuration Guide: Real Time System Energy Offset CC 6478 Version 5.0

32.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

32.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_6478_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 6478 Amount** - The CAISO CC6478 charge amount to BANC on a 5-minute basis.

Determinants	UOM & Interval Length	Description
$CAISO\_HRLY\_6478\_AMT_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 6478 Amount** - The CAISO CC6478 charge amount to BANC summed to an hourly basis.
$PPT\_HRLY\_LRS_{Ph}$	Decimal Hourly 5 Decimals	**EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for an EIM Participant to the total hourly BANC load.
$PPT\_HRLY\_6478\_AMT_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 6478 Amount** - EIM Participant hourly allocation of CAISO charge code 6478 rounded to two decimal places.
$TPUD\_HRLY\_LRS_{Bh}$	Decimal Hourly 5 Decimal	**TPUD Hourly Load Ratio Share** - The hourly percent in decimal of TPUD's load compared to the total hourly BANC load.
$TPUD\_HRLY\_6478\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 6478 Amount** - BANC TPUD hourly estimate of CAISO charge code 6478 rounded to two decimal places.
$PPT\_DLY\_6478\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 6478 Amount** - EIM Participant daily allocation of CAISO charge code 6478 rounded.
$TPUD\_DLY\_6478\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 6478 Amount** - BANC TPUD daily estimate of CAISO charge code 6478.
$BNC\_DLY\_6478\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6478 Allocated Amount** - The total CAISO charge code 6478 amount allocated to all EIM Participants for the Trade Date.
$CAISO\_DLY\_6478\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 6478 Amount** - The CAISO CC 6478 5-minute charge amount to BANC is summed to a daily amount.
$BNC\_DLY\_6478\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6478 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

32.4 This is a 5-minute charge or credit that BANC receives in charge code 6478 to balance BANC's BAA charge codes

$CAISO\_5MIN\_6478\_AMT_{Bf}$[1] = $BASystemRealTimeImbalanceEnergyOffsetAllocationAmount_{Bmdhcif}$

[1]Rounded to 2 decimal places.

32.5 BANC will sum the 5-minute amounts to an hourly value that will be allocated to EIM Participants.

$CAISO\_HRLY\_6478\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_6478\_AMT_{Bf})$

32.6 These charges are allocated hourly to EIM Participants using the EIM Participant Load Ratio Share Precalculation.

$PPT\_HRLY\_6478\_AMT_{Ph}$[1] = $CAISO\_HRLY\_6478\_AMT_{Bh} * PPT\_HRLY\_LRS_{Ph}$

[1]Rounded to 2 decimal places.

32.7 Charges related to TPUD are estimated to be the load ratio share of WAPA's reported load. WAPA's load is prorata assigned to TPUD based on TPUD's load to WAPA's load ratio.

$TPUD\_HRLY\_6478\_AMT_{Bh}$[1] = $CAISO\_HRLY\_6478\_AMT_{Bh} * TPUD\_HRLY\_LRS_{Bh}$

[1]Rounded to 2 decimal places.

32.8 The participants hourly amounts are summed to a daily amount.

$PPT\_DLY\_6478\_AMT_{Pd} = \sum_{Pd}(PPT\_HRLY\_6478\_AMT_{Ph})$

32.9 The assigned estimate to TPUD is summed across the Trade Date.

$TPUD\_DLY\_6478\_AMT_{Bd} = \sum_{Pd}(TPUD\_HRLY\_6478\_AMT_{Bh})$

Allocations Monitoring

32.10 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_6478\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_6478\_AMT_{Pd}) + TPUD\_DLY\_6478\_AMT_{Bd}$

32.11 CAISO hourly charge to BANC summed to a daily amount.

$CAISO\_DLY\_6478\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_6478\_AMT_{Bh})$

32.12 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_6478\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_6478\_AMT_{Bh}) - BNC\_DLY\_6478\_ALLOC\_AMT_{Bd}$

33. BANC Charge Code 66200 Daily RTM Bid Cost Recovery EIM Settlement

CAISO Application

CAISO Charge Code CC 66200 Real-Time Market Bid Cost Recovery EIM Settlement applies over an EIM area. The calculation presents the Bid Cost Recovery Settlement for various Bid Cost Recovery Eligible Resources that are settled on a Resource basis. RTM Eligible Bid Costs and market revenues are netted across Trading Hours and Settlement Intervals of a Trading Day for a single RTM Uplift Payment by resource.

This charge code which represents a credit may be awarded to aggregated schedules seen by CAISO and as such BANC will need to allocate the proceeds to EIM Participants.

There is no PTB determinant associated with this charge code.

BANC Application

BANC will allocate this daily charge using the BANC Daily Load Ratio Share Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

33.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMTradingDayTotalRTMBCRUpliftAmount$_{BruT'I'Q'M'F'md}$	$ Daily 9 Decimal	Total RTM Bid Cost Recover Uplift Payment (in $) for MSS and Non-MSS entities, for resources in an EIM Balancing Authority Area on a given Trading Day.	BANC EESC Bill Determinant Statement: BAA_BA_DAY_RTM_BCR_EIM_STLMT@AMOUNT		BPM Configuration Guide: RTM Bid Cost Recovery EIM Settlement CC 66200 Version 5.2

33.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

33.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_DLY_66200_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 66200 Amount** - The CAISO CC66200 charge amount to BANC on a daily basis.
PPT_DLY_LRS$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for an EIM Participant to the total daily BANC load in the Pacific Prevailing Time zone.

Determinants	UOM & Interval Length	Description
$PPT\_DLY\_66200\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 66200 Amount** - EIM Participant daily allocation of CAISO charge code 66200 rounded to two decimal places.
$TPUD\_DLY\_LRS_{Bd}$	Decimal Daily 5 Decimals	**TPUD Daily Load Ratio Share** - The daily percent in decimal of TPUD's load for compared to the total daily BANC load.
$TPUD\_DLY\_66200\_AMT_{Bd}$	$ Daily 2 Decimal	**TPUD Daily 66200 Amount** – TPUD daily estimate of CAISO charge code 66200 rounded to two decimal places.
$TPUD\_DLY\_66200\_AMT_{Bd}$	$ Daily 2 Decimal	**TPUD Daily 66200 Amount** - TPUD daily estimate of CAISO charge code 66200 rounded to two decimal places.
$BNC\_DLY\_66200\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 66200 Allocated Amount** - The total CAISO charge code 66200 amount allocated to all EIM Participants for the Trade Date.
$BNC\_DLY\_66200\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 66200 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its EIM Participants.

Formulas

33.4 This is a daily credit that BANC may receive in charge code 66200.

$$CAISO\_DLY\_66200\_AMT_{Bd}^{1} = EIMTradingDayTotalRTMBCRUpliftAmount_{BruT'l'Q'M'F'md}$$

[1]Rounded to 2 decimal places.

33.5 These charges are allocated daily to EIM Participants using the BANC Daily Load Ratio Share Precalculation.

$$PPT\_DLY\_66200\_AMT_{Pd}^{1} = CAISO\_DLY\_66200\_AMT_{Bd}^{1} * PPT\_DLY\_LRS_{Pd}$$

[1]Rounded to 2 decimal places.

33.6 Allocate TPUD's portion of the charge code.

$$TPUD\_DLY\_66200\_AMT_{Bd}^{1} = CAISO\_DLY\_66200\_AMT_{Bd}^{1} * TPUD\_DLY\_LRS_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

33.7 The total amount to EIM Participants is summed to a daily total.

$$BNC\_DLY\_66200\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_HRLY\_66200\_AMT_{Pd})$$

33.8 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_66200\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_66200\_AMT_{Bd} - BNC\_DLY\_6d200\_ALLOC\_AMT_{Bd}$$

34. BANC Charge Code 66780 Hourly Real Time Bid Cost Recovery EIM Allocation

CAISO Application

CAISO Charge Code CC 66780 Real-Time Market Bid Cost Recovery EIM Settlement applies over an EIM area. The calculation presents the Bid Cost Recovery Settlement for various Bid Cost Recovery Eligible Resources that are settled on a Resource basis. This charge code collects the funds from Scheduling Coordinators on a 5-minute interval.

There is no PTB determinant associated with this charge code.

BANC Application

BANC will aggregate the 5-minute charges to an hourly aggregate value and will allocated the result to participants using the EIM Participant Load Ratio Share Precalculation.

34.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMEntityRTMUpliftAllocationAmount$_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	Total RTM BCR Uplift Amount (in $) allocated to the given EIM Balancing Authority Area and associated EIM Entity Business Associate.	BANC EESC Bill Determinant Statement: BAA_BA_5MIN_RTM_UPLIFT_ALLOC		BPM Configuration Guide: Real Time Bid Cost Recovery EIM Allocation CC 66780 Version 5.0

34.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

34.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_66780_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 66780 Amount** – The total uplift charge to BANC by 5-minute interval.
CAISO_HRLY_66780_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 66200 Amount** - The CAISO CC66478 charge to BANC summarized to an hourly amount.
PPT_HRLY_LRS$_{Ph}$	Decimal Hourly 5 Decimals	**EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for an EIM Participant to the total hourly BANC load.
TPUD_HRLY_LRS$_{Bh}$	Decimal Hourly 5 Decimals	**TPUD Hourly Load Ratio Share** - The hourly percent in decimal of TPUD's load for compared to the total hourly BANC load.

Determinants	UOM & Interval Length	Description
$PPT\_HRLY\_66780\_AMT_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 66478 Amount** - EIM Participant hourly allocation of CAISO charge code 66780 rounded to two decimal places.
$TPUD\_HRLY\_66780\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 66780 Amount** - The hourly estimate of CAISO Charge Code 66780 via hourly load ratio share to TPUD.
$PPT\_DLY\_66780\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 66780 Amount** - The daily allocation of CAISO Charge Code 66780 to each EIM Participant.
$TPUD\_DLY\_66780\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 66780 Amount** - The daily estimate of CAISO Charge Code 66780 to TPUD.
$BNC\_DLY\_66780\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 66478 Allocated Amount** - The daily CAISO charge code 66478 amount allocated to all EIM Participants for the Trade Date.
$CAISO\_DLY\_66780\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 66780 Amount** - The CAISO CC66780 charge amount to BANC aggregated to a daily amount. This is only used as a reference point.
$BNC\_DLY\_66780\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 66780 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

34.4 This is a daily credit that BANC may receive in charge code 66200.

$CAISO\_5MIN\_66780\_AMT_{Bf}^{1} = EIMEntityRTMUpliftAllocationAmount_{BQ'mdhcif}$

[1]Rounded to 2 decimal places.

34.5 BANC will sum the 5-minute amounts to an hourly value that will be allocated to EIM Participants.

$CAISO\_HRLY\_66780\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_66780\_AMT_{Bf})$

34.6 These charges are allocated hourly to EIM Participants using the EIM Participant Load Ratio Share Precalculation.

$PPT\_HRLY\_66780\_AMT_{Ph}^{1} = CAISO\_HRLY\_66780\_AMT_{Bh}^{1} * PPT\_HRLY\_LRS_{Ph}$

[1]Rounded to 2 decimal places.

34.7 Allocate the hourly BANC charge code 66780 amounts to TPUD via the hourly Load Ratio Share Precalculation.

$TPUD\_HRLY\_66780\_AMT_{Bh}^{1} = CAISO\_HRLY\_66780\_AMT_{Bh} * TPUD\_HRLY\_LRS_{Bh}$

[1]Rounded to 2 decimal places.

34.8 Sum the hourly allocations to a daily total for each EIM Participant.

$PPT\_DLY\_66780\_AMT_{Pd} = \sum_{Bd}(PPT\_HRLY\_66780\_AMT_{Ph})$

34.9 Sum the hourly allocations to a daily total for each EIM Participant.

$TPUD\_DLY\_66780\_AMT_{Bd} = \sum_{Bd} (TPUD\_HRLY\_66780\_AMT_{Bh})$

Allocations Monitoring

34.10 The total amount to EIM Participants is summed to a daily total.

$BNC\_DLY\_66780\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_HRLY\_66780\_AMT_{Ph})$

34.11 The CAISO charge code is summed to a daily total as a reference for BANC and its EIM Participants.

$CAISO\_DLY\_66780\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_66780\_AMT_{Bh})$

34.12 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_66780\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_66780\_AMT_{Bh}) - BNC\_DLY\_66780\_ALLOC\_AMT_{Bd}$

35. BANC Charge Code 67740 Hourly Real Time Congestion Offset EIM

CAISO Application

CAISO will calculate for each Balancing Area Authority (BAA) in the EIM Area, its RT Congestion Balancing Account or Offset. The RT Congestion Offset for each BAA is the sum for each BAA of the product of the contribution of that Balancing Authority Area's Transmission Constraints to the marginal Congestion component of the Locational Marginal Price at each resource location in the EIM Area and the imbalance energy, including Virtual Bids, at that resource location.

There is a no PTB amount with this charge code.

BANC Application

BANC will allocate the 5-minute CAISO charge code to the hourly amount and then will allocate it to EIM Participants on an Hourly EIM Participant Absolute Imbalance Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

35.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMEntitySCRTCongestionOffsetAllocation$_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	The Real-Time Congestion Offset amount per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: BA_5M_EIM_RT_CONG_OFFSET_ALLOC@AMOUNT		BPM Configuration Guide: Real Time Congestion Offset EIM CC 67740 Version 5.0

35.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

35.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_67740_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 67740 Amount** - The CAISO CC 67740 charge amount to BANC is summed to an hourly amount.
CAISO_HRLY_67740_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 67740 Amount** - The CAISO CC 67740 5-minute charge amount to BANC is summed to an hourly amount.
PPT_HRLY_ABS_IMB_RATIO$_{Ph}$	Decimal Hourly 5 Decimal	**EIM Participant Hourly Absolute Imbalance Ratio** – The EIM Participant's hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.

Determinants	UOM & Interval Length	Description
$PPT\_HRLY\_67740\_AMT_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 67740 Amount** - EIM Participant hourly allocation of CAISO charge code 67740 rounded to two decimal places.
$TPUD\_HRLY\_ABS\_IMB\_RATIO_{Bh}$	Decimal Hourly 5 Decimal	**TPUD Hourly Absolute Imbalance Ratio** – The TPUD hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.
$TPUD\_HRLY\_67740\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 67740 Amount** - BANC TPUD hourly estimate of CAISO charge code 67774 rounded to two decimal places.
$PPT\_DLY\_67740\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 64770 Amount** - EIM Participant daily allocation of CAISO charge code 64770.
$TPUD\_DLY\_67740\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 67740 Amount** - BANC TPUD daily estimate of CAISO charge code 67740.
$BNC\_DLY\_67740\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 67740 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 67740.
$CAISO\_DLY\_67740\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 67740 Amount** - The CAISO CC 67740 5-minute charge amount to BANC is summed to a daily amount.
$BNC\_DLY\_67740\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 67740 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

35.4 The 5-minute charge to BANC for charge code 67740.

$$CAISO\_5MIN\_67740\_AMT_{Bf}{}^{1} = EIMEntitySCRTCongestionOffsetAllocation_{BQ'mdhcif}$$

[1]Rounded to 2 decimal places.

35.5 The 5-minute charge is summed to an hourly amount.

$$CAISO\_HRLY\_67740\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_67740\_AMT_{Bf})$$

35.6 These charges are allocated hourly to EIM Participants using the EIM Participant Absolute Imbalance Ratio Precalculation.

$$PPT\_HRLY\_67740\_AMT_{Ph}{}^{1} = CAISO\_HRLY\_67740\_AMT_{Bh} * PPT\_HRLY\_ABS\_IMB\_RATIO_{Ph}$$

[1]Rounded to 2 decimal places.

35.7 Charges related to TPUD are estimated to be the load imbalance portion of WAPA's exposure. WAPA's load imbalance is prorata assigned to TPUD based on TPUD's load to WAPA's load ratio.

$$TPUD\_HRLY\_67740\_AMT_{Bh}{}^{1} = CAISO\_HRLY\_67740\_AMT_{Bh} * TPUD\_HRLY\_ABS\_IMB\_RATIO_{Bh}$$

[1]Rounded to 2 decimal places.

35.8 The EIM Participants hourly amounts are summed to a daily amount.

$PPT\_DLY\_67740\_AMT_{Pd} = \sum_{Pd} (PPT\_HRLY\_67740\_AMT_{Ph})$

35.9 The estimated allocation to TPUD is summed across the Trade Date.

$TPUD\_DLY\_67740\_AMT_{Bd} = \sum_{Pd} (TPUD\_HRLY\_67740\_AMT_{Bh})$

Allocations Monitoring

35.10 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_67740\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_67740\_AMT_{Pd}) + TPUD\_DLY\_67740\_AMT_{Bd}$

35.11 CAISO hourly charge to BANC summed to a daily amount.

$CAISO\_DLY\_67740\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_67740\_AMT_{Bh})$

35.12 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_67740\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_67740\_AMT_{Bh}) - BNC\_DLY\_67740\_ALLOC\_AMT_{Bd}$

36. BANC Charge Code 69850 Hourly Real Time Marginal Losses Offset EIM

CAISO Application

CAISO calculates, for each BAA in the EIM Area, the RT Marginal Losses Offset amount. The RT Marginal Losses Offset for each BAA is the sum of the product of (1) the contribution of that Balancing Authority Area's Transmission Constraints to the marginal Loss component of the Locational Marginal Price at each resource location in the EIM Area and (2) the imbalance energy, at that resource location.

This Charge Code CC 69850 implements the assignment of RT Marginal Losses Offset of an EIM BAA to its corresponding EIM Entity SC.

There is a no PTB amount with this charge code.

BANC Application

BANC will allocate the 5-minute CAISO charge code to the hourly amount and then will allocate it to EIM Participants on an Hourly EIM Participant Absolute Imbalance Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

36.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMEntitySCRTMarginalLossesOffsetAllocation$_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	The Real-Time Losses Offset amount per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: BA_EIM_ENTITY_BAA_RT_MARGINAL_LOSS@AMOUNT		BPM Configuration Guide: Real Time Marginal Losses Offset EIM CC 69850 Version 5.1

36.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

36.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_69850_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 69850 Amount** - The CAISO CC 67740 charge amount to BANC is summed to an hourly amount.
CAISO_HRLY_69850_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 69850 Amount** - The CAISO CC 67740 5-minute charge amount to BANC is summed to an hourly amount.

Determinants	UOM & Interval Length	Description
$PPT\_HRLY\_ABS\_IMB\_RATIO_{Ph}$	Decimal Hourly 5 Decimal	**EIM Participant Hourly Absolute Imbalance Ratio** – The EIM Participant's hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.
$PPT\_HRLY\_69850\_AMT_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 69850 Amount** - EIM Participant hourly allocation of CAISO charge code 69850 rounded to two decimal places.
$TPUD\_HRLY\_ABS\_IMB\_RATIO_{Bh}$	Decimal Hourly 5 Decimal	**TPUD Hourly Absolute Imbalance Ratio** – The TPUD hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.
$TPUD\_HRLY\_69850\_AMT_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 69850 Amount** - BANC TPUD hourly estimate of CAISO charge code 69850 rounded to two decimal places.
$PPT\_DLY\_69850\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 69850 Amount** - EIM Participant daily allocation of CAISO charge code 69850.
$TPUD\_DLY\_69850\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 69850 Amount** - BANC TPUD daily estimate of CAISO charge code 69850.
$BNC\_DLY\_69850\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 69850 Allocation Amount** – Total EIM Participant daily allocation of CAISO charge code 698500.
$CAISO\_DLY\_69850\_AMT_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 69850 Amount** - The CAISO CC 67740 5-minute charge amount to BANC is summed to a daily amount.
$BNC\_DLY\_69850\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 69850 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

36.4 The 5-minute charge to BANC for charge code 69850.

$$CAISO\_5MIN\_698500\_AMT_{Bf}{}^{1} = EIMEntitySCRTMarginalLossesOffsetAllocation_{BQ'mdhcif}$$

[1]Rounded to 2 decimal places.

36.5 The 5-minute charge is summed to an hourly amount.

$$CAISO\_HRLY\_69850\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_69850\_AMT_{Bf})$$

36.6 These charges are allocated hourly to EIM Participants using the EIM Participant Absolute Imbalance Ratio Precalculation.

$$PPT\_HRLY\_69850\_AMT_{Ph}{}^{1} = CAISO\_HRLY\_69850\_AMT_{Bh} * PPT\_HRLY\_ABS\_IMB\_RATIO_{Ph}$$

[1]Rounded to 2 decimal places.

36.7 Charges related to TPUD are estimated to be the load imbalance portion of WAPA's exposure. WAPA's load imbalance is prorata assigned to TPUD based on TPUD's load to WAPA's load ratio.

$$TPUD\_HRLY\_69850\_AMT_{Bh}{}^{1} = CAISO\_HRLY\_69850\_AMT_{Bh} * TPUD\_HRLY\_ABS\_IMB\_RATIO_{Bh}$$

[1]Rounded to 2 decimal places.

36.8 The participants hourly amounts are summed to a daily amount.

$PPT\_DLY\_69850\_AMT_{Pd} = \sum_{Pd} (PPT\_HRLY\_69850\_AMT_{Ph})$

36.9 The estimated allocation to TPUD is summed across the Trade Date.

$TPUD\_DLY\_69850\_AMT_{Bd} = \sum_{Pd} (TPUD\_HRLY\_69850\_AMT_{Bh})$

Allocations Monitoring

36.10 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_69850\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_69850\_AMT_{Pd}) + TPUD\_DLY\_69850\_AMT_{Bd}$

36.11 CAISO hourly charge to BANC summed to a daily amount.

$CAISO\_DLY\_69850\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_69850\_AMT_{Bh})$

36.12 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_69850\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_69850\_AMT_{Bh}) - BNC\_DLY\_69850\_ALLOC\_AMT_{Bd}$

37. BANC Charge Code 7070 Hourly Flexible Ramp Forecast Movement Settlement

CAISO Application

The CAISO flexible ramp construct pays resources and imports for the opportunity and capability for dispatchable ramp for changes in either anticipated demand (forecasted movement) or potential (uncertain) demand. There are separate charge codes to credit resources and to charge measured demand.

CASIO splits up the flexible ramp charge codes between forecasted ramp and ramp uncertainty

CAISO labels the anticipated change in demand from their forecast as Forecasted Ramp. In order to meet the changes in the next intervals, CAISO needs to make sure there is enough ramp available from online resources to meet the upcoming requirement. This is especially important when there are large changes in the overall load to serve such as the end of the day when solar generation is rapidly going offline.

This charge code pays resources and dispatchable imports for flexible forecasted ramp on a 5-minute basis. The amount collected by the resources is expected to compensate the resource for any out of merit dispatch costs.

CAISO also can have a 5-minute PTB in this charge code.

BANC Application

BANC will not be able to allocate credits based on CAISO's methodology since schedules are rolled up by path when submitted to CAISO. BANC will allocate this charge to EIM Participants on an hourly EIM Participant Absolute Load and Intertie Imbalance Ratio Precalculation. CAISO calculates these credits on a 5-minute interval that BANC will sum to an hourly value before they are allocated.

BANC will monitor for any PTB and will remove it from this charge allocation to allocate it in the BANC PTB Charge Code.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

37.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
Total5mFRForecastedMovementSettlementAmount$_{mdhcif}$	$ 5 Min 9 Decimal	Total Flex Ramp settlement amount for forecasted movement for the BANC ($).	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BA_FR_FCAST_MVMT_HIER@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Flexible Ramp Forecasted Movement Settlement CC 7070 Version 5.0
PTB_BAFRForecastedMovementChargeAdjustmentAmount$_{BJmdhcif}$	$ 5 Min 9 Decimal	Pass through bill for Flexible Forecast Movement	BANC EESC Bill Determinant Statement: BA_DAY_TOT_FC		BPM Configuration Guide: Flexible Ramp Forecasted

			AST_MVMT_STLMT@SUB_SUBTOT_CURRENT_AMOUNT		Movement Settlement CC 7070 Version 5.0

37.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

37.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_7070_PTB_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 7070 Pass Through Billing Amount** - A 5-minute interval amount when applicable related to CAISO Charge Code 7070.
CAISO_5MIN_7070_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO Hourly 7070 Amount -** The CAISO CC7070 5-minute charge amount to BANC.
CAISO_HRLY_7070_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 7070 Amount -** The CAISO CC7070 charge amount to BANC aggregated to an hourly amount.
CAISO_DLY_7070_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 7070 Amount** - The CAISO charge code 7070 charge amount to BANC aggregated to a daily amount. This is only used as a reference point.
PPT_HRLY_ABS_LD_INTERTIE_IMB_RATIO$_{Ph}$	Decimal Hourly 5 Decimal	**EIM Participant Hourly Absolute Load and Intertie Imbalance Ratio** – The EIM Participant's hourly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
TPUD_HRLY_ABS_LD_INTERTIE_IMB_RATIO$_{Bh}$	Decimal Hourly 5 Decimal	**TPUD Hourly Absolute Load and Intertie Imbalance Ratio** – The TPUD hourly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
PPT_HRLY_7070_AMT$_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 7070 Amount** - The hourly allocation of CAISO charge code 7070 via hourly measured demand to each EIM Participant.
TPUD_HRLY_7070_AMT$_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 7070 Amount** - The hourly estimate of CAISO charge code 7070 via hourly measured demand to TPUD.
PPT_DLY_7070_AMT$_{PD}$	$ Daily 2 Decimal	**EIM Participant Daily 7070 Amount** - The daily allocation of CAISO charge code 7070 summed from the hourly allocations by EIM Participant.
TPUD_DLY_7070_AMT$_{Ph}$	$ Daily 2 Decimal	**BANC TPUD Daily 7070 Amount** - The daily estimate of CAISO charge code 7070 summed from the hourly allocations to TPUD.
BNC_DLY_7070_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7070 Allocated Amount** - The total CAISO charge code 7070 amount allocated to all EIM Participants for the Trade Date.
BNC_DLY_7070_ALLOC_DIFF_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7070 Allocated Differential Amount** - The calculated daily difference between the summed 5-minute CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

37.4 The CAISO PTB determinant for this charge code will be summed across the 5 minute intervals and will be allocated in the BANC PTB Charge Code.

$CAISO\_5MIN\_7070\_PTB\_AMT_{Bf}^{1} = \sum_{Bf}(PTB\_BAFRForecastedMovementChargeAdjustmentAmount_{BJmdhcif})$

[1]Rounded to 2 decimal places.

37.5 The BANC charge code 7070 5-minute billed amounts from CAISO.

$CAISO\_5MIN\_7070\_AMT_{Bf}^{1} = Total5mFRForecastedMovementSettlementAmount_{mdhcif}$

[1]Rounded to 2 decimal places.

37.6 The 5-minute BANC charge code 7070 is aggregated to an hourly amount.

$CAISO\_HRLY\_7070\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_7070\_AMT_{Bf})$

37.7 Allocate the hourly BANC charge code 7070 amounts to the EIM Participants via the hourly Absolute Load and Intertie Imbalance Ratio Precalculation.

$PPT\_HRLY\_7070\_AMT_{Ph}^{1} = CAISO\_HRLY\_7070\_AMT_{Bh} * PPT\_HRLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Ph}$

[1]Rounded to 2 decimal places.

37.8 Allocate the hourly BANC charge code 7070 amounts to TPUD

$TPUD\_HRLY\_7070\_AMT_{Bh}^{1} = CAISO\_HRLY\_7070\_AMT_{Bh} * TPUD\_HRLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bh}$

[1]Rounded to 2 decimal places.

37.9 Sum the hourly allocations to a daily total for each EIM Participant.

$PPT\_DLY\_7070\_AMT_{Pd} = \sum_{Bd}(PPT\_HRLY\_7070\_AMT_{Ph})$

37.10 Sum the hourly allocations to a daily total for each EIM Participant.

$TPUD\_DLY\_7070\_AMT_{Bd} = \sum_{Bd}(TPUD\_HRLY\_7070\_AMT_{Bh})$

Allocations Monitoring

37.11 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_7070\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_7070\_AMT_{Pd}) + TPUD\_DLY\_7070\_AMT_{Bd}$

37.12 The CAISO charge code is summed to a daily total as a reference for BANC and EIM Participants.

$CAISO\_DLY\_7070\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_7070\_AMT_{Bh})$

37.13 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_7070\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7070\_AMT_{Bd} - BNC\_DLY\_7070\_ALLOC\_AMT_{Bd}$

38. BANC Charge Code 7076 Hourly Flexible Ramp Forecast Movement Allocation

CAISO Application

The CAISO flexible ramp construct pays resources and imports for the opportunity and capability for dispatchable ramp for changes in either anticipated demand (forecasted movement) or potential (uncertain) demand. There are separate charge codes to credit resources and to charge measured demand.

CASIO splits up the flexible ramp charge codes between forecasted ramp and ramp uncertainty

CAISO labels the anticipated change in demand from their forecast as Forecasted Ramp. In order to meet the changes in the next intervals, CAISO needs to make sure there is enough ramp available from online resources to meet the upcoming requirement. This is especially important when there are large changes in the overall load to serve such as the end of the day when solar generation is rapidly going offline.

This charge code collects from CAISO Scheduling Coordinators to pay resources and dispatchable imports for flexible forecasted ramp on a 5-minute basis. The CAISO charge code is settled on a 5-min measured demand ratio share.

CAISO also can have a 5-minute PTB in this charge code.

BANC Application

BANC will allocate this charge to EIM Participants on an hourly EIM Participant Load Ratio Share Precalculation.

BANC will monitor for any PTB and will remove it from this charge allocation to allocate it in the BANC PTB Charge Code.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

38.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BA5mFlexRampForecastMvmtAllocationAmount$_{Bmdhcif}$	$ 5 Min 9 Decimal	Total Flex Ramp settlement amount for forecasted movement for the BANC ($).	BANC EESC Bill Determinant Statement: BA_DAY_FR_FCAST_MVMT_ALLOC_STLMT_HIER_SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Internal - Flexible Ramp Forecasted Movement Allocation CC 7076 Version 5.0
PTBBAFRForecastedMovementAllocAdjustmentAmount$_{BJmdhcif}$	$ 5 Min 9 Decimal	Pass through bill for Flexible Forecast Movement Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BA_5MIN_FCAST_MVMT_ALLOC		BPM Configuration Guide: Internal - Flexible Ramp Forecasted Movement

					Allocation CC 7076 Version 5.0

38.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

38.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_5MIN_7076_PTB_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**BANC 5 Minute 7076 Pass Through Bill Amount** - A 5-minute statement BANC PTB value when applicable related to CAISO Charge Code 7070.
CAISO_5MIN_7076_AMT$_{Bf}$	$ 5 Minute 2 Decimal	**CAISO 5-Minute 7076 Amount** - The CAISO CC7076 charge amount to BANC.
CAISO_HRLY_7076_AMT$_{Bh}$	$ Hourly 2 Decimal	**CAISO Hourly 7076 Amount** - The CAISO CC7076 charge amount to BANC aggregated to an hourly amount.
PPT_HRLY_LRS$_{Ph}$	Decimal Hourly 5 Decimals	**EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for an EIM Participant to the total hourly BANC load.
TPUD_HRLY_LRS$_{Bh}$	Decimal Hourly 5 Decimals	**TPUD Hourly Load Ratio Share** - The hourly percent in decimal of TPUD's load for compared to the total hourly BANC load.
PPT_HRLY_7076_AMT$_{Ph}$	$ Hourly 2 Decimal	**EIM Participant Hourly 7076 Amount** - The hourly allocation of CAISO Charge Code 7076 via hourly load ratio share to each EIM Participant.
TPUD_HRLY_7076_AMT$_{Bh}$	$ Hourly 2 Decimal	**BANC TPUD Hourly 7076 Amount** - The hourly estimate of CAISO Charge Code 7076 via hourly load ratio share to TPUD.
PPT_DLY_7076_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 7076 Amount** - The daily allocation of CAISO Charge Code 7076 to each EIM Participant.
TPUD_DLY_7076_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 7076 Amount** - The daily estimate of CAISO Charge Code 7076 to TPUD.
BNC_DLY_7076_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7076 Amount** - The total CAISO charge code 7076 amount allocated to all EIM Participants for the Trade Date.
CAISO_DLY_7076_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 7076 Amount** - The CAISO CC7076 charge amount to BANC aggregated to a daily amount. This is only used as a reference point.
BNC_DLY_7076_ALLOC_DIFF_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7076 Allocated Differential Amount** - The calculated daily difference between the summed 5-minute CAISO rounded charge code to the total BANC allocation to EIM Participants.

Formulas

38.4 The CAISO PTB determinant for this charge code will be summed across the 5 minute intervals and will be allocated in the BANC PTB Charge Code.

$CAISO\_5MIN\_7076\_PTB\_AMT_{Bf}^{1} = \sum_{Bf}(PTBBAFRForecastedMovementAllocAdjustmentAmount_{BJmdhcif})$

[1]Rounded to 2 decimal places.

38.5 The BANC charge code 7076 5-minute billed amounts from CAISO.

$CAISO\_5MIN\_7076\_AMT_{Bf}^{1} = BA5mFlexRampForecastMvmtAllocationAmount_{Bmdhcif}$

[1]Rounded to 2 decimal places.

38.6 The 5-minute BANC charge code 7076 is aggregated to an hourly amount.

$CAISO\_HRLY\_7076\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_7076\_AMT_{Bf})$

38.7 Allocate the hourly BANC charge code 7076 amounts to the EIM Participants via the hourly Load Ratio Share Precalculation.

$PPT\_HRLY\_7076\_AMT_{Ph}^{1} = CAISO\_HRLY\_7076\_AMT_{Bh} * PPT\_HRLY\_LRS_{Ph}$

[1]Rounded to 2 decimal places.

38.8 Allocate the hourly BANC charge code 7076 amounts to TPUD via the hourly Load Ratio Share Precalculation.

$TPUD\_HRLY\_7076\_AMT_{Bh}^{1} = CAISO\_HRLY\_7076\_AMT_{Bh} * TPUD\_HRLY\_LRS_{Bh}$

[1]Rounded to 2 decimal places.

38.9 Sum the hourly allocations to a daily total for each EIM Participant.

$PPT\_DLY\_7076\_AMT_{Pd} = \sum_{Bd}(PPT\_HRLY\_7076\_AMT_{Ph})$

38.10 Sum the hourly allocations to a daily total for each EIM Participant.

$TPUD\_DLY\_7076\_AMT_{Bd} = \sum_{Bd}(TPUD\_HRLY\_7076\_AMT_{Bh})$

Allocations Monitoring

38.11 The total daily allocation to EIM Participants is summed to a daily total.

$BNC\_DLY\_7076\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_7076\_AMT_{Pd}) + TPUD\_DLY\_7076\_AMT_{Bd}$

38.12 The CAISO charge code is summed to a daily total as a reference for BANC and EIM Participants.

$CAISO\_DLY\_7076\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_7076\_AMT_{Bh})$

38.13 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$BNC\_DLY\_7076\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7076\_AMT_{Bd} - BNC\_DLY\_7076\_ALLOC\_AMT_{Bd}$

39. BANC Charge Code 7077 Daily Flexible Ramp Up Uncertainty Award Allocation

CAISO Application

The CAISO flexible ramp construct pays resources and imports for the opportunity and capability for dispatchable ramp for changes in either anticipated demand (forecasted movement) or potential (uncertain) demand. There are separate charge codes to credit resources and to charge measured demand.

CASIO splits up the flexible ramp charge codes between forecasted ramp and ramp uncertainty.

CAISO also plans for potential uncertainty in overall load to serve that results from forecast uncertainty. Since forecasted load to serve is an expectation and not a certainty, CAISO also dispatches resources in a manner to retain flexible ramping capability for potential upward and downward uncertainty. CAISO calculate the forecast uncertainty by analyzing loads and resources (especially renewal resources) against their historical performance and calculates both an upward and downward uncertainty confidence interval. Based on these results they calculate how much additional ramp needs to be reserved in both directions to meet these potential changes.

Daily, this CAISO charge code collects funds to reimburse resources and ITIEs that are dispatched for Flexible Ramp Up Uncertainty. On the last day of the month, CAISO will refund all the charges billed during the month in charge code 7077 in a separate monthly charge code 7078 and then will reallocate them across the month to participants using a different methodology in that same charge code.

CAISO also can have a daily PTB in this charge code.

BANC Application

BANC will allocate this charge every day of the month using the daily EIM Participant Absolute Load and Intertie Imbalance Ratio Precalculation. On the last day of the month, BANC will refund the entire prior month's billed amount in charge code 7077 and will reallocate it to participants using the EIM Participant Absolute Load and Intertie Imbalance Ratio Precalculation in BANC Charge Code 7078.

BANC will also monitor for any PTB and will remove it from this charge allocation and allocate it in the BANC PTB Charge Code.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

39.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BADailyCompleteFRUUncertaintyAllocationAmount$_{BQ'md}$	$ Daily 9 Decimal	FRU Uncertainty Charge (in $) allocated to BANC for the Trading Day.	BANC EESC Bill Determinant Statement: BA_DAY_FR_FCAST_MVMT_ALLOC_STLMT_HIER_SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Daily Flexible Ramp Up Uncertainty Award Allocation CC 7077 Version 5.1

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
PTBBAADayFRUUncertaintyAllocAmt$_{BJmd}$	$ Daily 9 Decimal	Pass through bill for Flexible Ramp Up Uncertainty Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BA_DAY_FCAST_MVMT_ALLOC_HIER @PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Daily Flexible Ramp Up Uncertainty Award Allocation CC 7077 Version 5.1

39.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

39.3 *BANC Allocation Determinants*

Determinants	UOM, Interval Length, Precision	Description
CAISO_DLY_7077_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7077 Pass Through Billing Amount** - A daily statement BANC PTB value when applicable related to CAISO Charge Code 7077.
CAISO_DLY_7077_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 7077 Amount** - The CAISO charge code 7077 charge amount to BANC rounded to two decimal places.
PPT_DLY_ABS_LD_INTERTIE_IMB_RATIO$_{Pd}$	Decimal Daily 5 Decimal	**EIM Participant Daily Absolute Load and Intertie Imbalance Ratio** – The EIM Participant's daily decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
TPUD_DLY_ABS_LD_INTERTIE_IMB_RATIO$_{Bd}$	Decimal Daily 5 Decimal	**TPUD Daily Absolute Load and Intertie Imbalance Ratio** – The TPUD daily decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals. Note TPUD has no Interties, but the imbalance ratio calculation does include them for the EIM Participants.
PPT_DLY_7077_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 7077 Amount** - The daily allocation of CAISO charge code 7077 via daily absolute load and Intertie imbalance ratio to each EIM Participant rounded to two decimal places.
TPUD_DLY_7077_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 7077 Amount** - The daily estimate of CAISO charge code 7077 to TPUD rounded to two decimal places.
BNC_DLY_7077_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7077 Amount** - The total CAISO charge code 7077 amount allocated to all EIM Participants for the Trade Date.

Determinants	UOM, Interval Length, Precision	Description
$BNC\_DLY\_7077\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7077 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

39.4 The CAISO PTB determinant for this charge code will be allocated in the BANC PTB Charge Code.

$$CAISO\_DLY\_7077\_PTB\_AMT_{Bd}^{1} = \sum_{Bd} (PTBBAADayFRUUncertaintyAllocAmt_{BJmd})$$

[1]Rounded to 2 decimal places.

39.5 The BANC charge code 7077 daily amount from CAISO will be rounded to two decimal places after any potential PTB is removed.

$$CAISO\_DLY\_7077\_AMT_{Bd}^{1} = BADailyCompleteFRUUncertaintyAllocationAmount_{BQ'md}$$

[1]Rounded to 2 decimal places.

39.6 Allocate the daily BANC charge code 7077 amount to the EIM Participants via the daily measured demand Precalculation.

$$PPT\_DLY\_7077\_AMT_{Pd}^{1} = CAISO\_DLY\_7077\_AMT_{Bd} * PPT\_DLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

39.7 Allocate the daily BANC charge code 7077 amount to the EIM Participants via the daily measured demand Precalculation.

$$TPUD\_DLY\_7077\_AMT_{Bd}^{1} = CAISO\_DLY\_7077\_AMT_{Bd} * TPUD\_DLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

39.8 The total daily allocation to EIM Participants is summed to a daily total.

$$BNC\_DLY\_7077\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_7077\_AMT_{Pd}) + TPUD\_DLY\_7077\_AMT_{Bd}$$

39.9 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_7077\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7077\_AMT_{Bd} - BNC\_DLY\_7077\_ALLOC\_AMT_{Bd}$$

40. BANC Charge Code 7078 Monthly Flexible Ramp Up Uncertainty Award Allocation

CAISO Application

The CAISO flexible ramp construct pays resources and imports for the opportunity and capability for dispatchable ramp for changes in either anticipated demand (forecasted movement) or potential (uncertain) demand. There are separate charge codes to credit resources and to charge measured demand.

CASIO splits up the flexible ramp charge codes between forecasted ramp and ramp uncertainty.

CAISO also plans for potential uncertainty in overall load to serve that results from forecast uncertainty. Since forecasted load to serve is an expectation and not a certainty, CAISO also dispatches resources in a manner to retain flexible ramping capability for potential upward and downward uncertainty. CAISO calculate the forecast uncertainty by analyzing loads and resources (especially renewal resources) against their historical performance and calculates both an upward and downward uncertainty confidence interval. Based on these results they calculate how much additional ramp needs to be reserved in both directions to meet these potential changes.

Daily, CAISO uses charge code 7077 to collects funds to reimburse resources and ITIEs that are dispatched for Flexible Ramp Up Uncertainty. On the last day of the month in charge code 7078, CAISO will refund all the charges billed during the month in charge code 7077 and will reallocate them across the month to participants based on an on-peak/off-peak methodology in the same charge code.

CAISO also can have a monthly PTB in this charge code.

BANC Application

BANC will also use monthly charge code 7078 to refund what each participant was billed in charge code 7077 across the month and then will reallocate the total monthly charge to EIM Participants based on the monthly EIM Participant Absolute Load and Intertie Imbalance Ratio Precalculation.

BANC will also monitor for any PTB and will remove it from this charge allocation and allocate it in the BANC PTB Charge Code.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

40.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BAMonthlyCompleteFRUUncertaintyAllocationAmount$_{BQ'm}$	$ Monthly 9 Decimal	FRU Uncertainty Allocation Amount (in $) assessed monthly to a BA of the BAA as the difference of the monthly FRU Allocation Amount for the designated Trading Month and the monthly	BANC EESC Bill Determinant Statement: BAA_MTH_FRU_UNCERT_ALLOC_STLMT_HIER@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Monthly Flexible Ramp Up Uncertainty Award Allocation CC 7078 Version 5.0

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
		total of the daily FRU Uncertainty Allocation Amounts over all Trading Days of the Trading Month.			
PTBBAAMonthFRUUncertaintyAllocationAmount$_{BJm}$	$ Monthly 9 Decimal	Pass through bill for Monthly Flexible Ramp Up Uncertainty Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BAA_MTH_FRU_UNCERT_ALLOC_HIER @PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Monthly Flexible Ramp Up Uncertainty Award Allocation CC 7078 Version 5.0

40.2 *BANC Provided Determinants*

Determinants	UOM & Interval Length	Description

40.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_MNLY_7078_PTB_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7078 Pass Through Billing Amount** - A monthly statement BANC PTB value when applicable related to CAISO Charge Code 7078.
CAISO_MNLY_7078_AMT$_{Bm}$	$ Monthly 2 Decimal	**CAISO Monthly7078 Amount** - The CAISO 7078 charge amount to BANC rounded to two decimal places. This amount include the full rebate of the daily charge codes 7077 for the month.
PPT_DLY_7077_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 7077 Amount** - The daily allocation of CAISO charge code 7077 via daily load ratio share to each EIM Participant rounded to two decimal places.
PPT_MNLY_7077_AMT$_{Pm}$	$ Monthly 2 Decimal	**EIM Participant Monthly 7077 Amount** – The total monthly allocation of CAISO charge code 7077 to each participant.
TPUD_DLY_7077_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC TPUD Daily 7077 Amount** - The daily estimate of CAISO charge code 7077 to TPUD.
TPUD_MNLY_7077_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC TPUD Monthly 7077 Amount** – The total monthly estimate of CAISO charge code 7077 to TPUD.
BNC_DLY_7077_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7077 Amount** - The total CAISO charge code 7077 amount allocated to all EIM Participants for the Trade Date.

Determinants	UOM & Interval Length	Description
PPT_MNLY_ABS_LD_INTERTIE_IMB_RATIO$_{Pm}$	Decimal Monthly 5 Decimal	**EIM Participant Monthly Absolute Load and Intertie Imbalance Ratio** – The EIM Participant's Monthly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
PPT_MNLY_7078_AMT$_{Pm}$	$ Monthly 2 Decimal	**EIM Participant Monthly 7078 Amount** - The monthly allocation of CAISO Charge Code 7078 to each EIM Participant.
TPUD_MNLY_ABS_LD_INTERTIE_IMB_RATIO$_{Bm}$	Decimal Monthly 5 Decimal	**TPUD Monthly Absolute Load and Intertie Imbalance Ratio** – The TPUD monthly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals. Note TPUD has no Interties, but the imbalance ratio calculation does include them for the EIM Participants.
TPUD_MNLY_7078_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC TPUD Monthly 7078 Amount** - The monthly estimate of CAISO Charge Code 7078 to TPUD.
BNC_MNLY_7078_ALLOC_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7078 Allocated Amount** - The total CAISO charge code 7078 amount allocated to all EIM Participants for the Trade Date.
BNC_MNLY_7078_ALLOC_DIFF_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7078 Allocated Differential Amount** - The calculated daily difference between the monthly CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

40.4 All the formulas in this charge code will only be executed on the last day of the month.

The charge code PTB will be allocated in the BANC PTB Charge Code.

CAISO_MNLY_7078_PTB_AMT$_{Bm}$[1] = $\sum_{Bm}$ (PTBBAAMonthFRUUncertaintyAllocationAmount$_{BJm}$)

[1]Rounded to 2 decimal places.

40.5 The BANC charge code 7078 daily amount from CAISO will be rounded to two decimal places after any potential PTB is removed.

CAISO_MNLY_7078_AMT$_{Bm}$[1] = BAMonthlyCompleteFRUUncertaintyAllocationAmount$_{BQ'm}$

[1]Rounded to 2 decimal places.

40.6 BANC will sum each participant's total charge code 7077 for the month to a single monthly amount. This amount will be credited back to each participant in this charge code when the last day of the month is settled.

PPT_MNLY_7077_AMT$_{Pm}$ = $\sum_{Mm}$(PPT_DLY_7077_AMT$_{Pd}$)

40.7 Sum the TPUD charge code 7077 across the month to a single monthly amount. This amount will be credited back to the TPUD charge holding account when the last day of the month is settled.

TPUD_MNLY_7077_AMT$_{Bm}$ = $\sum_{Bm}$(TPUD_DLY_7077_AMT$_{Pd}$)

40.8 The CAISO charge code 7078 consists of the net of the rebated monthly total for charge code 7077 plus the entire month's Flexible Ramp Up Uncertainty allocation. The charge to each EIM Participant is the sum of CAISO charge code 7078 plus the sum of all the allocated charges for charge code 7077 across the month less what each EIM Participant paid in charge code 7077 during the month.

$$PPT\_MNLY\_7078\_AMT_{Pm}{}^{1} = \{ [CAISO\_MNLY\_7078\_AMT_{Bm} + \sum_{Bm} (BNC\_DLY\_7077\_ALLOC\_AMT_{Bd})] * PPT\_MNLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Pm} \} - PPT\_MNLY\_7077\_AMT_{Pm}$$

[1]Rounded to 2 decimal places.

40.9 The charge for TPUD is the sum of CAISO charge code 7078 plus the sum of all the allocated charges for charge code 7077 across the month less what was allocated to TPUD in charge code 7077 during the month.

$$TPUD\_MNLY\_7078\_AMT_{Bm}{}^{1} = \{ [CAISO\_MNLY\_7078\_AMT_{Bm} + \sum_{Bm} (BNC\_DLY\_7077\_ALLOC\_AMT_{Bd})] * TPUD\_MNLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bm} \} - TPUD\_MNLY\_7077\_AMT_{Bm}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

40.10 On the last day of the month, the total monthly allocation to EIM Participants is summed to a total.

$$BNC\_MNLY\_7078\_ALLOC\_AMT_{Bm} = \sum_{Bm} (PPT\_MNLY\_7078\_AMT_{Pm}) + TPUD\_MNLY\_7078\_AMT_{Bm}$$

40.11 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_MNLY\_7078\_ALLOC\_DIFF\_AMT_{Bm} = CAISO\_MNLY\_7078\_AMT_{Bm} - BNC\_MNLY\_7078\_ALLOC\_AMT_{Bm}$$

41. BANC Charge Code 7087 Daily Flexible Ramp Down Uncertainty Award Allocation

CAISO Application

The CAISO flexible ramp construct pays resources and imports for the opportunity and capability for dispatchable ramp for changes in either anticipated demand (forecasted movement) or potential (uncertain) demand. There are separate charge codes to credit resources and to charge measured demand.

CASIO splits up the flexible ramp charge codes between forecasted ramp and ramp uncertainty.

CAISO also plans for potential uncertainty in overall load to serve that results from forecast uncertainty. Since forecasted load to serve is an expectation and not a certainty, CAISO also dispatches resources in a manner to retain flexible ramping capability for potential upward and downward uncertainty. CAISO calculate the forecast uncertainty by analyzing loads and resources (especially renewal resources) against their historical performance and calculates both an upward and downward uncertainty confidence interval. Based on these results they calculate how much additional ramp needs to be reserved in both directions to meet these potential changes.

Daily, this CAISO charge code collects funds to reimburse resources and ITIEs that are dispatched for Flexible Ramp Down Uncertainty. On the last day of the month, CAISO will refund all the charges billed during the month in charge code 7087 in a separate monthly charge code 7088 and then will reallocate them across the month to participants using a different methodology in that same charge code.

CAISO also can have a daily PTB in this charge code.

BANC Application

BANC will allocate this charge every day of the month using the daily EIM Participant Absolute Load and Intertie Imbalance Ratio Precalculation. On the last day of the month, BANC will refund the entire prior month's billed amount in charge code 7087 and will reallocate it to participants using the EIM Participant Absolute Load and Intertie Imbalance Ratio Precalculation in BANC Charge Code 7088.

BANC will also monitor for any PTB and will remove it from this charge allocation and allocate it in the BANC PTB Charge Code.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

41.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BADailyCompleteFRDUncertaintyAllocationAmount$_{BQ'md}$	$ Daily 9 Decimal	FRD Uncertainty Charge (in $) allocated to BANC for the Trading Day.	BANC EESC Bill Determinant Statement: BAA_DAY_FRD_UNCERT_ALLOC_STLMT_HIER@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Daily Flexible Ramp Down Uncertainty Award

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
					Allocation CC 7087 Version 5.1
PTBBAADayFRDUncertaintyAllocAmt$_{BJmd}$	$ Daily 9 Decimal	Pass through bill for Flexible Ramp Down Uncertainty Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BAA_DAY_FRD_UNCERT_ALLOC_HIER @PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Daily Flexible Ramp Down Uncertainty Award Allocation CC 7087 Version 5.1

41.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

41.3 *BANC Allocation Determinants*

Determinants	UOM, Interval Length, Precision	Description
CAISO_DLY_7087_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7087 Pass Through Bill Amount** - A daily statement BANC PTB value when applicable related to CAISO Charge Code 7087.
CAISO_DLY_7087_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 7087 Amount** - The CAISO CC7087 charge amount to BANC rounded to two decimal places.
PPT_DLY_ABS_LD_INTERTIE_IMB_RATIO$_{Pd}$	Decimal Daily 5 Decimal	**EIM Participant Daily Absolute Load and Intertie Imbalance Ratio** – The EIM Participant's daily decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.
TPUD_DLY_ABS_LD_INTERTIE_IMB_RATIO$_{Bd}$	Decimal Daily 5 Decimal	**TPUD Daily Absolute Load and Intertie Imbalance Ratio** – The TPUD daily decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals. Note TPUD has no Interties, but the imbalance ratio calculation does include them for the EIM Participants.
PPT_DLY_7087_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 7087 Amount** - The daily allocation of CAISO charge code 7087 via daily measured demand to each EIM Participant rounded to two decimal places.
TPUD_DLY_7087_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC TPUD Daily 7087 Amount** - The daily estimate of CAISO charge code 7087 to TPUD rounded to two decimal places.
BNC_DLY_7087_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7087 Allocated Amount** - The total CAISO charge code 7087 amount allocated to all EIM Participants for the Trade Date.

Determinants	UOM, Interval Length, Precision	Description
$BNC\_DLY\_7087\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7087 Allocated Differential Amount** - The calculated daily difference between the daily CAISO rounded charge code to the total BANC allocation to EIM Participants.

Formulas

41.4 The CAISO PTB determinant for this charge code will be allocated in the BANC PTB Charge Code.

$$CAISO\_DLY\_7087\_PTB\_AMT_{Bd}^{1} = \sum_{Bd}(PTBBAADayFRDUncertaintyAllocAmt_{BJmd})$$

[1]Rounded to 2 decimal places.

41.5 The BANC charge code 7087 daily amount from CAISO will be rounded to two decimal places after any potential PTB is removed.

$$CAISO\_DLY\_7087\_AMT_{Bd}^{1} = BADailyCompleteFRDUncertaintyAllocationAmount_{BQ'md}$$

[1]Rounded to 2 decimal places.

41.6 Allocate the daily BANC charge code 7087 amount to the EIM Participants via the daily measured demand Precalculation.

$$PPT\_DLY\_7087\_AMT_{Pd}^{1} = CAISO\_DLY\_7087\_AMT_{Bd} * PPT\_DLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

41.7 Allocate the daily BANC charge code 7087 amount to the EIM Participants via the daily measured demand Precalculation.

$$TPUD\_DLY\_7087\_AMT_{Bd}^{1} = CAISO\_DLY\_7087\_AMT_{Bd} * TPUD\_DLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

41.8 The total daily allocation to EIM Participants is summed to a daily total.

$$BNC\_DLY\_7087\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_7087\_AMT_{Pd}) + TPUD\_DLY\_7087\_AMT_{Bd}$$

41.9 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_7087\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7087\_AMT_{Bd} - BNC\_DLY\_7087\_ALLOC\_AMT_{Bd}$$

42. BANC Charge Code 7088 Monthly Flexible Ramp Down Uncertainty Award Allocation

CAISO Application

The CAISO flexible ramp construct pays resources and imports for the opportunity and capability for dispatchable ramp for changes in either anticipated demand (forecasted movement) or potential (uncertain) demand. There are separate charge codes to credit resources and to charge measured demand.

CASIO splits up the flexible ramp charge codes between forecasted ramp and ramp uncertainty.

CAISO also plans for potential uncertainty in overall load to serve that results from forecast uncertainty. Since forecasted load to serve is an expectation and not a certainty, CAISO also dispatches resources in a manner to retain flexible ramping capability for potential upward and downward uncertainty. CAISO calculate the forecast uncertainty by analyzing loads and resources (especially renewal resources) against their historical performance and calculates both an upward and downward uncertainty confidence interval. Based on these results they calculate how much additional ramp needs to be reserved in both directions to meet these potential changes.

Daily, CAISO uses charge code 7087 to collects funds to reimburse resources and ITIEs that are dispatched for Flexible Ramp Down Uncertainty. On the last day of the month in charge code 7088, CAISO will refund all the charges billed during the month in charge code 7078 and will reallocate them across the month to participants based on an on-peak/off-peak methodology in the same charge code.

CAISO also can have a monthly PTB in this charge code.

BANC Application

BANC will also use monthly charge code 7088 to refund what each participant was billed in charge code 7087 across the month and then will reallocate the total monthly charge to EIM Participants based on the monthly EIM Participant Absolute Load and Intertie Imbalance Ratio Precalculation.

BANC will also monitor for any PTB and will remove it from this charge allocation and allocate it in the BANC PTB Charge Code.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

42.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BAMonthlyCompleteFRDUncertaintyAllocationAmount$_{BQ'm}$	$ Monthly 9 Decimal	FRU Uncertainty Allocation Amount (in $) assessed monthly to a BA of the BAA as the difference of the monthly FRD Allocation Amount for the designated Trading Month and the monthly total of the daily FRD Uncertainty Allocation	BANC EESC Bill Determinant Statement: BAA_MTH_FRD_UNCERT_ALLOC_STLMT_HIER@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Monthly Flexible Ramp Down Uncertainty Award Allocation

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
		Amounts over all Trading Days of the Trading Month.			CC7088 Version 5.0
PTBBAAMonthFRDUncertaintyAllocationAmount$_{BJm}$	$ Monthly 9 Decimal	Pass through bill for Monthly Flexible Ramp Down Uncertainty Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BAA_MTH_FRD_UNCERT_ALLOC_HIER @PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Monthly Flexible Ramp Down Uncertainty Award Allocation CC7088 Version 5.0

42.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

42.3 *BANC Allocation Determinants*

Determinants	UOM, Interval Length, Precision	Description
CAISO_MNLY_7088_PTB_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7088 Pass Through Bill Amount** - A monthly statement BANC PTB value when applicable related to CAISO Charge Code 7088.
CAISO_MNLY_7088_AMT$_{Bm}$	$ Monthly 9 Decimal	**CAISO Monthly 7088 Amount** - The CAISO CC7088 charge amount to BANC rounded to two decimal places.
PPT_DLY_7087_AMT$_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 7087 Amount** - The daily allocation of CAISO charge code 7087 via daily measured demand to each EIM Participant rounded to two decimal places.
PPT_MNLY_7087_AMT$_{Pm}$	$ Monthly 2 Decimal	**EIM Participant Monthly 7087 Amount** – The total monthly allocation of CAISO charge code 7087 to the participant.
TPUD_DLY_7087_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC TPUD Daily 7087 Amount** - The daily estimate of CAISO charge code 7087 to TPUD.
TPUD_MNLY_7087_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC TPUD Monthly 7087 Amount** – The total monthly estimate of CAISO charge code 7087 to TPUD.
PPT_MNLY_ABS_LD_INTERTIE_IMB_RATIO$_{Pm}$	Decimal Monthly 5 Decimal	**EIM Participant Monthly Absolute Load and Intertie Imbalance Ratio** – The EIM Participant's Monthly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals.

Determinants	UOM, Interval Length, Precision	Description
$PPT\_MNLY\_7088\_AMT_{Pm}$	$ Monthly 2 Decimal	**EIM Participant Monthly 7088 Amount** - The monthly allocation of CAISO Charge Code 7088 via the monthly measured demand to each EIM Participant.
$TPUD\_MNLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bm}$	Decimal Monthly 5 Decimal	**TPUD Monthly Absolute Load and Intertie Imbalance Ratio** – The TPUD monthly decimal ratio of the load and Intertie imbalance allocation share. Rounded to 5 decimals. Note TPUD has no Interties, but the imbalance ratio calculation does include them for the EIM Participants.
$TPUD\_MNLY\_7088\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC TPUD Monthly 7088 Amount** - The monthly estimate of CAISO Charge Code 7088 to TPUD.
$BNC\_MNLY\_7088\_ALLOC\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7088 Allocated Amount** - The total CAISO charge code 7088 amount allocated to all EIM Participants for the Trade Date.
$BNC\_MNLY\_7088\_ALLOC\_DIFF\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7088 Allocated Differential Amount** - The calculated daily difference between the monthly CAISO rounded charge code to the total BANC allocation to EIM Participants.

Formulas

42.4 All the formulas in this charge code will only be executed on the last day of the month.

The charge code PTB will be allocated in the BANC PTB Charge Code.

$CAISO\_MNLY\_7088\_PTB\_AMT_{Bm}{}^{1} = \sum_{Bm}(PTBBAAMonthFRDUncertaintyAllocationAmount_{BJm})$
[1]Rounded to 2 decimal places.

42.5 The BANC charge code 7088 daily amount from CAISO will be rounded to two decimal places after any potential PTB is removed.

$CAISO\_MNLY\_7088\_AMT_{Bm}{}^{1} = BAMonthlyCompleteFRDUncertaintyAllocationAmount_{BQ'm}$
[1]Rounded to 2 decimal places.

42.6 BANC will sum each participant's total charge code 7087 for the month to a single monthly amount. This amount will be credited back to each EIM Participant in this charge code.

$PPT\_MNLY\_7087\_AMT_{Pm} = \sum_{Mm}(PPT\_DLY\_7087\_AMT_{Pd})$

42.7 Sum the TPUD charge code 7087 across the month to a single monthly amount. This amount will be credited back to the TPUD charge holding account when the last day of the month is settled.

$TPUD\_MNLY\_7087\_AMT_{Bm} = \sum_{Bm}(TPUD\_DLY\_7087\_AMT_{Pd})$

42.8 The CAISO charge code 7088 consists of the net of the rebated monthly total for charge code 7078 plus the entire month's Flexible Ramp Down Uncertainty allocation. The charge to each EIM Participant is the sum of CAISO charge code 7088 plus the sum of all the allocated charges for charge code 7087 across the month less what each EIM Participant paid in charge code 7087 during the month.

$$PPT\_MNLY\_7088\_AMT_{Pm}{}^{1} = \{ [CAISO\_MNLY\_7088\_AMT_{Bm} + \sum_{Bm} (BNC\_DLY\_7087\_ALLOC\_AMT_{Bd})] * PPT\_MNLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Pm} \} - PPT\_MNLY\_7087\_AMT_{Pm}$$

[1]Rounded to 2 decimal places.

42.9 The charge for TPUD is the sum of CAISO charge code 7088 plus the sum of all the allocated charges for charge code 7087 across the month less what was allocated to TPUD in charge code 7087 during the month.

$$TPUD\_MNLY\_7088\_AMT_{Bm}{}^{1} = \{ [CAISO\_MNLY\_7088\_AMT_{Bm} + \sum_{Bm} (BNC\_DLY\_7087\_ALLOC\_AMT_{Bd})] * TPUD\_MNLY\_ABS\_LD\_INTERTIE\_IMB\_RATIO_{Bm} \} - TPUD\_MNLY\_7087\_AMT_{Bm}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

42.10 On the last day of the month, the total monthly allocation to EIM Participants is summed to a total.

$$BNC\_MNLY\_7088\_ALLOC\_AMT_{Bm} = \sum_{Bm} (PPT\_MNLY\_7088\_AMT_{Pm}) + TPUD\_MNLY\_7088\_AMT_{Bm}$$

42.11 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_MNLY\_7088\_ALLOC\_DIFF\_AMT_{Bm} = CAISO\_MNLY\_7088\_AMT_{Bm} - BNC\_MNLY\_7088\_ALLOC\_AMT_{Bm}$$

43. BANC Charge Code 7989 Daily Invoice Deviation Interest Distribution

CAISO Application

Interest will be charged or paid to Market Participants receiving Invoice or Payment Advice through Charge Codes (7989 and 7999) in the CAISO Settlements system. Interest charged (CC7989) or paid (CC7999) will be calculated back to the due date of the initial Invoices. The FERC Annual Interest Rate in effect for each quarter will be used to calculate these amounts.

There is no PTB determinant associated with this charge code.

BANC Application

BANC will allocate this daily charge code to EIM Participants based on the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

43.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BADayInvoiceDeviationInterestDistributionAmount$_{BU'Umd}$	$ Daily 9 Decimal	Charge Code 7989 is the amount of interest due from a Scheduling Coordinator for the time difference between resettlement of Trade Dates and the original invoice for that date.	BANC EESC Bill Determinant Statement: BA_DAY_INV_DEV_INT_DIST@AMOUNT		BPM Configuration Guide: Invoice Deviation Interest and Allocation CC7989 and CC7999 Version 5.2c

43.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

43.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_DLY_7989_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 7989 Amount** - The CAISO CC7989 charge amount to BANC.
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the BANC Commission and it will be in effect by Trade Date until it is updated.

Determinants	UOM & Interval Length	Description
		All allocations including resettlements will use the allocation effect for that Trade date.
$PPT\_DLY\_7989\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 7989 Amount** - EIM Participant allocation of CAISO charge code 7989 rounded to two decimal places.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
$TPUD\_MNLY\_7989\_AMT_{Bd}$	$ Monthly 2 Decimal	**BANC TPUD Daily 7989 Amount** - BANC TPUD estimate of CAISO charge code 7989 rounded to two decimal places.
$BNC\_DLY\_7989\_ALLOC\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC Daily 7989 Allocated Amount** - The total CAISO charge code 7989 amount allocated to all EIM Participants for the Trade Date.
$BNC\_DLY\_7989\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7989 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to EIM Participants.

Formulas

43.4 A daily possible charge to BANC for charge code 7989 when applicable.

$$CAISO\_DLY\_7989\_AMT_{Bd}{}^{1} = BADayInvoiceDeviationInterestDistributionAmount_{BU'Umd}$$

[1]Rounded to 2 decimal places.

43.5 Allocate any charge BANC received from CAISO in charge code 7989 to EIM Participants by each participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_DLY\_7989\_AMT_{Pd}{}^{1} = CAISO\_DLY\_7989\_AMT_{Bd} * PPT\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

43.6 The monthly cost allocation estimated to TPUD.

$$TPUD\_DLY\_7989\_AMT_{Bd}{}^{1} = CAISO\_DLY\_7989\_AMT_{Bd} * TPUD\_COST\_ALLOC\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

43.7 The allocation is summed to a daily total.

$$BNC\_DLY\_7989\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_7989\_AMT_{Pd}) + TPUD\_DLY\_7989\_AMT_{Bd}$$

43.8 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_7989\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7989\_AMT_{Bd} - BNC\_DLY\_7989\_ALLOC\_AMT_{Bd}$$

44. BANC Charge Code 7999 Daily Invoice Deviation Interest Allocation

CAISO Application

Interest will be charged or paid to Market Participants receiving Invoice or Payment Advice through Charge Codes (7989 and 7999) in the CAISO Settlements system. Interest charged (CC7989) or paid (CC7999) will be calculated back to the due date of the initial Invoices. The FERC Annual Interest rate in effect for each quarter will be used to calculate these amounts.

There is no PTB determinant associated with this charge code.

BANC Application

BANC will allocate this daily charge code to participants based on the EIM Participant Cost Allocation Ratio Precalculation.

The portion of the charge code estimated to TPUD will be held by BANC and reallocated by BANC Accounting to non-WAPA participants outside of this allocation process.

44.1 *CAISO Determinants*

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BADayInvoiceDeviationInterestAllocationAmount$_{BU'Umd}$	$ Daily 9 Decimal	Charge Code 7999 is the amount of interest owed to a Scheduling Coordinator for the time difference between resettlement of Trade Dates and the original invoice for that date.	BANC EESC Bill Determinant Statement: BA_DAY_INV_DEV_INT_ALLOC@AMOUNT		BPM Configuration Guide: Invoice Deviation Interest and Allocation CC7989 and CC7999 Version 5.2c

44.2 *BANC Provided Determinants*

Determinants	UOM, Interval Length, Precision	Description

44.3 *BANC Allocation Determinants*

Determinants	UOM & Interval Length	Description
CAISO_DLY_7999_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 7999 Amount** - The CAISO CC7999 credit amount to BANC.
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annually by the BANC Commission by EIM BANC Participant, and it will be in effect by

Determinants	UOM & Interval Length	Description
		Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date. Refer to the EIM Participants Cost Allocation Precalculation.
$PPT\_DLY\_7999\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily 7999 Amount** - EIM Participant allocation of CAISO charge code 7999 rounded to two decimal places.
$TPUD\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**Trinity PUD Cost Allocation Ratio** – The ratio of WAPA's cost allocation that is attributable to TPUD load for the day. This determinant is associated with BANC.
$TPUD\_MNLY\_7999\_AMT_{Bd}$	$ Monthly 2 Decimal	**BANC TPUD Daily 7999 Amount** - BANC TPUD estimate of CAISO charge code 7999 rounded to two decimal places.
$BNC\_DLY\_7999\_ALLOC\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC Daily 7999 Allocated Amount** - The total CAISO charge code 7999 amount allocated to all EIM Participants for the Trade Date.
$BNC\_DLY\_7999\_ALLOC\_DIFF\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7999 Allocated Differential Amount** - The calculated difference between the CAISO rounded charge code to the total BANC allocation to its participants.

Formulas

44.4 A daily possible credit to BANC for charge code 7999 when applicable.

$$CAISO\_DLY\_7999\_AMT_{Bd}{}^{1} = BADayInvoiceDeviationInterestAllocationAmount_{BU'Umd}$$

[1]Rounded to 2 decimal places.

44.5 Allocate any credit BANC received from CAISO in charge code 7999 to EIM Participants by each participant's specific cost allocation ratio in the EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_DLY\_7999\_AMT_{Pd}{}^{1} = CAISO\_DLY\_7999\_AMT_{Bd} * PPT\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

44.6 The monthly cost allocation estimated to TPUD.

$$TPUD\_DLY\_7999\_AMT_{Bd}{}^{1} = CAISO\_DLY\_7999\_AMT_{Bd} * TPUD\_COST\_ALLOC\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

44.7 The allocation is summed to a daily total.

$$BNC\_DLY\_7999\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_7999\_AMT_{Pd}) + TPUD\_DLY\_7999\_AMT_{Bd}$$

44.8 The total daily difference between the credit BANC received and the allocated amount to EIM Participants is calculated and monitored.

$$BNC\_DLY\_7999\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7999\_AMT_{Bd} - BNC\_DLY\_7999\_ALLOC\_AMT_{Bd}$$

Appendix A – Monitoring Reports

Total Load Exception Report

This report will allow BANC Settlements to monitor the 5-minute load meter data submitted compared to the calculated expected load meter data from BANC. The report triggers on whether the threshold for an interval is exceeded. All intervals exceeding the threshold, positive or negative are displayed.

Report Structure – Columns

- Trade Date/Hour/Minute
- Settlement Type (T3, T12, T55, etc...)
- BNC_5MIN_LD_QTY - BANC 5 Minute Load Quantity (BANC Expected)
- CAISO_5MIN_LD_QTY – CAISO 5 Minute Load Quantity (CAISO Reported)
- BNC_5MIN_LD_QTY_DIFF – BANC 5 Minute Load Quantity Difference

Load Base Schedule Exception Report

This report will allow BANC Settlements to monitor when the CAISO calculated hourly load Base Schedule differs from the total BANC calculated load Base Schedule for all EIM Participants. The report triggers on whether the threshold for an interval is exceeded. All intervals exceeding the threshold, positive or negative are displayed.

Report Structure – Columns

- Trade Date/Hour
- Settlement Type (T3, T12, T55, etc...)
- BNC_HRLY_LD_BASE_SCHD – BANC Hourly Load Base Schedule (BANC Calculated)
- CAISO_HRLY_LD_BASE_SCHD – CAISO Hourly Load Base Schedule (CAISO Reported)
- BNC_HRLY_LD_BASE_SCHD_DIFF – BANC Hourly Load Base Schedule Difference

Daily Charge Code Allocation Differential Report

[TO BE DEFINED]

Appendix B – CAISO Settlement Statement Determinants

Bill determinants from the CAISO determinant file.

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
CAISO Bill Determinant Statement	BANC CC 64600	$FMMIntervalLMPPrice_{BrtuT'I'M'mdhc}$	$ 5 Minute 9 Decimal	The FMM Interval Locational Marginal Price for Resource r. ($/MWh)	CAISO Determinant Statement: BA_15M_RSRC_FMM_LMP@PRICE		BPM Configuration Guide: FMM Instructed Imbalance Energy Settlement EIM Settlement CC 64600 Version 5.2
CAISO Bill Determinant Statement	BANC CC 64700	$SettlementIntervalRealTimeLMP_{BrtuM'mdhcif}$	$ 5 Minute 9 Decimal	The RTM Interval Locational Marginal Price for Resource r. ($/MWh)	CAISO Determinant Statement: BA_5M_RSRC_RT_LMP@PRICE		BPM Configuration Guide: Real Time Instructed Imbalance Energy Settlement EIM Settlement CC 64700 Version 5.2
CAISO Bill Determinant Statement	BANC CC 64740	$HourlyUFEUDCLMP_{umdhcif}$	$ Hourly 5 Decimal	An output from the Real Time Price Pre-calculation. It is the specific UFE price applied to applicable UDC.	BANC EESC Bill Determinant Statement: UFE_HRLY_RTM_UDC@PRICE		BPM Configuration Guide: Real Time Uninstructed Unaccounted for Energy EIM Settlement CC 64740 Version 5.1
CAISO Bill Determinant Statement	BANC CC 64750	$HourlyRTMLAPPrice_{AA'mdh}$	$ 5 Minute 9 Decimal	Hourly Real Time Market LAP Price for Apnode A.	BANC EESC Bill Determinant Statement: LAP_HRLY_RTM_LMP@PRICE		BPM Configuration Guide: Real Time Uninstructed Imbalance Energy EIM Settlement CC 64750 Version 5.1

Bill Determinants from the PRSC bill determinant file.

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIM Participant PRSC Bill	EIM Participant Load Base Schedule Precalculation	$BAResBaseScheduleEnergy_{BrtuT'I'Q'M'R'W'F'S'VL'mdhcif}$	MWH 5 Min 2 Decimals	EIM Participant, CAISO registered resource final submitted and accepted Base Schedule at T-40. The resource Base Schedule represents the forecast of the average hourly MWh output the resource is	EIM Participant PRSC Bill Determinant Statement:	t = RSRC_TYPE = 'GEN'	Real Time Energy Pre-Calculation Version 5.20 – Note this variable is listed as an input to this

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
Determinant Statement				expected to produce for the upcoming hour. Although the submission to CAISO for this variable is hourly, CAISO displays this value in 5-minute intervals in MWh.	BA_5MIN_RSRC_BASE_ENGY_SCHD_QTY	r is assigned to an EIM Participant	calculation, but CAISO doesn't define where it is sourced from).
EIM Participant PRSC Bill Determinant Statement	EIM Participant Absolute Imbalance Ratio Precalculation	BAResEntityDispatchIntervalMetered Quantity$_{BrtuT'I'Q'M'AA'm'F'R'pPW'QS'd'Nz'Vv Hn'L'mdhcif}$ where $_{m'}$ = 4 and t = 'Gen'	MWh 5 Min 4 Decimals	Metered quantity (in MWh) of generator resources reporting Settlement Quality Metered Data to the CAISO. Settlement allocation solution will convert the resource Id (r) for this resource into the *EIM Participant's* name.	BANC PRSC Bill Determinant Statement: BA_5M_RSRC_METER_QTY	t = =RSRC_TYPE = 'Gen' m' = CHANNEL_ID = '4' r is a resource assigned to an EIM Participant	MSS Netting Pre-Calculation Version 5.8.

Bill determinants from the EESC bill determinant file.

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BANC EESC Bill Determinant Statement	BANC CC 100	TRADE_DATE$_{Bd}$	$ Daily	The total settlement statement charge for BANC from CAISO. This value has up to five decimal places of precision.	BANC EESC Bill Determinant Statement: TRADE_DATE		Configuration File
BANC EESC Bill Determinant Statement	EIM Participant Load Ratio Share Precalculation	BAResEntityDispatchIntervalMetered Quantity$_{BrtuT'I'Q'M'AA'm'F'R'pPW'QS'd'Nz'Vv Hn'L'mdhcif}$ where $_{m'}$ = 1 and t = 'Load'	MWh 5 Min 4 Decimals	Hourly settlement meter data submitted to *CAISO* in Channel ID = 1 by registered non-participating loads within *BANC*. This value is provided by *CAISO* as a negative value. Settlement allocation solution will convert the UDC_ID for this load into the *EIM Participant's* name.	BANC EESC Bill Determinant Statement: BA_5MIN_RSRC_METER_QTY	t = =RSRC_TYPE = 'LOAD' m' = CHANNEL_ID = '1' r = resource Id assigned to an EIM Participant	MSS Netting Pre-Calculation Version 5.8.
BANC EESC Bill	EIM Participant Load Base	BAResBaseLoadSchedule$_{BrtuT'I'Q'M'AA'R'W'F'S'VL'pmdh}$	MWh Hourly 2 Decimals	The hourly final load Base Schedule calculated by CAISO for all of BANC's load. These values are displayed as a negative value. The hourly value	BANC EESC Bill Determinant Statement:		Real Time Uninstructed Imbalance Energy EIM Settlement CC 64750

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
Determinant Statement	Schedule Precalculation			should equal all the sum of all the resource Base Schedules in BANC plus the net of the ITIEs and ETIEs reduced by the BANC Transmission Loss Factor and the result multiplied by -1.	BA_HRLY_RSRC_BASE_LOAD_SCHD_QTY		(Version 5.1) – Note this variable is listed as an input to this calculation, but CAISO doesn't define where it is sourced from).
BANC EESC Bill Determinant Statement	BANC CC 2999	DefaultInvoiceInterestPaymentSettlementAmount$_{BmdV'U'U}$	$ Monthly 9 Decimal	CAISO Charge Code 2999 credit to BANC, prorated by Scheduling Coordinator, on a monthly basis for any interest paid to CAISO for Scheduling Coordinator late payments when applicable.	BANC EESC Bill Determinant Statement: BA_MTH_DFLT_INV_INT_PMT@AMOUNT		BPM Configuration Guide: Default Invoice Interest Payment CC2999 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 399	DefaultInvoiceInterestChargeSettlementAmount$_{BJV'U'Um}$	$ Monthly 9 Decimal	CAISO Charge Code 3999 Charge to BANC for interest on defaulted invoice payments on a monthly basis	BANC EESC Bill Determinant Statement: BA_MTH_DFLT_INV_INT_CHARGE@AMOUNT		BPM Configuration Guide: Default Invoice Interest Charge CC3999 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 4564	EIMAdministrativeCharge$_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	This formula conforms to the tariff requirement to assess System Operations and Market Services charges up until an EIM Entity notifies CAISO of its intent to terminate participation in EIM at which point the only charge assessed up to the end of the notice period (when EIM Entity SC is terminated in system) is the EIM Entity SC specific minimum EIM Administrative Charge	BANC EESC Bill Determinant Statement: BA_5M_GMC_EIM_TRANSACTION_CHG@AMOUNT		BPM Configuration Guide: GMC EIM Transaction Charge CC 4564 Version 5.3
BANC EESC Bill Determinant Statement	BANC CC 4575	GMCSettlementsMeteringandClientRelationsSettlementAmount$_{Bm}$	$ Monthly 9 Decimal	CAISO Charge Code 4575 monthly charge to BANC on the last day of the month.	BANC EESC Bill Determinant Statement: BA_MTH_GMC_STLMTS_MTR_CLIENT_RELATIONS@SUB_SUBTOT_PREVIOUS_AMOUNT		BPM Configuration Guide: GMC – Scheduling Coordinator Identification (ID) Charge CC 4575 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 4575	PTBChargeAdjustmentGMCSettlementsMeteringandClientRelationsSettlementAmount$_{BJm}$	PTB adjustment variable for this Charge Code,	PTB adjustment variable for this Charge Code, amount per SC. ($)	BANC EESC Bill Determinant Statement: PTB_BA_MTH_GMC_STLMTS_MTR_CLIENT_RELATIONS@PTB_		BPM Configuration Guide: GMC – Scheduling Coordinator Identification (ID) Charge CC 4575 Version 5.0

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
			amount per SC. ($)		SUBTOT_PREVIOUS_AMOUNT		
BANC EESC Bill Determinant Statement	BANC CC 5024	BAInvoiceLatePaymentPenaltySettlementAmount$_{BV'U'Ud}$	$ Daily 9 Decimal	CAISO Charge Code 5024 is a charge BANC could receive upon late paying CAISO invoices.	BANC EESC Bill Determinant Statement: BA_DAY_INV_LATE_PMT_PENALTY_STLMT@AMOUNT		BPM Configuration Guide: Invoice Late Payment Penalty CC 5024 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 5025	BACollateralLatePaymentPenaltySettlementAmount$_{Bv'd}$	$ Daily 9 Decimal	CAISO Charge Code 5025 is a charge BANC could receive upon late posting collateral to CAISO.	BANC EESC Bill Determinant Statement: BA_DAY_COLL_LATE_PMT_PENALTY_STLMT@AMOUNT		BPM Configuration Guide: Collateral Late Payment Penalty CC 5025 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 5900	BusinessAssociateShortfallReceiptDistributionSettlementAmount$_{BP'L}$	$ Daily 9 Decimal	CAISO Charge Code 5900 is a credit BANC could receive if BANC had been short paid during a prior invoice and the debtor has paid all or some of those funds. The distribution is by Bill Period (P') start and end along with the Invoice Run Number (L).	BANC EESC Bill Determinant Statement: BA_MTH_SHORTFALL_RCPT_DIST@AMOUNT		BPM Configuration Guide: Shortfall Receipt Distribution CC 5900 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 5901	BusinessAssociateShortfallAllocationReversalAmount$_{BUU'L}$	$ Daily 9 Decimal	CAISO Charge Code 5901 is a credit BANC may receive that reverses out any shortfall allocation they were previously assessed by CAISO. This is only performed when there is permanent default by a Scheduling Coordinator and the shortfall will never be recovered. When this credit happens then CAISO will reassess the shortfall in CC5910 through a different allocation method.	BANC EESC Bill Determinant Statement: BA_SHORTFALL_ALLOC_REV@AMOUNT		BPM Configuration Guide: Shortfall Allocation Reversal CC 5901 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 5910	BusinessAssociateShortfallAllocationSettlementAmount$_{BUU'L}$	$ Daily 9 Decimal	CAISO Charge Code 5910 is a charge BANC may receive whenever a Scheduling Coordinator short pays a CAISO invoice and there is insufficient funds in CAISO's clearing account for CAISO to remit all owed payments. When a shortfall occurs, CAISO will calculate each Scheduling Coordinator's share and will charge each sufficient to cover the shortfall.	BANC EESC Bill Determinant Statement: BA_MTH_SHORTFALL_ALLOC@AMOUNT		BPM Configuration Guide: Shortfall Allocation Reversal CC5910 Version 5.3

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BANC EESC Bill Determinant Statement	BANC CC 5912	DefaultLossBusinessAssociateActual DefaultLossPercentage$_{UU'B'L}$	$ Daily 9 Decimal	CAISO Charge Code 5912 is a charge BANC may receive whenever a CAISO deems a defaulting Scheduling Coordinator will not pay. When CAISO determines this situation has occurred, they revers the short pay in CC5901 and reallocate it in this charge code.	BANC EESC Bill Determinant Statement: DEFAULT_SC_SHORTFALL_ALLOC		BPM Configuration Guide: Shortfall Allocation Reversal CC5912 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 6045	BAHourlyLAPOverUnderSchedulingAmount$_{BQ'AA'mdh}$	$ Hourly 9 Decimal	Total of under and over scheduling charges per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: BA_HRLY_EIM_BAA_APNODE_OVER_UNDER_SCHED_STLMT@AMOUNT		BPM Configuration Guide: Over and Under Scheduling EIM Settlement CC 6045 Version 5.2
BANC EESC Bill Determinant Statement	BANC CC 6045	BAHourlyLAPOverSchedulingAmount$_{BQ'AA'mdh}$	$ Hourly 9 Decimal	Over scheduling charges per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: EIM_HRLY_APNODE_OVER_SCHED@AMOUNT		BPM Configuration Guide: Over and Under Scheduling EIM Settlement CC 6045 Version 5.2
BANC EESC Bill Determinant Statement	BANC CC 6045	BAHourlyLAPUnderSchedulingAmount$_{BQ'AA'mdhA}$	$ Hourly 9 Decimal	Under scheduling charges per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: EIM_HRLY_APNODE_UNDER_SCHED@AMOUNT		BPM Configuration Guide: Over and Under Scheduling EIM Settlement CC 6045 Version 5.2
BANC EESC Bill Determinant Statement	BANC CC 6046	EIMEntityBAOUSAllocationAmount$_{BQ'AA'md}$	$ Daily 9 Decimal	Total over and under scheduling allocation credit from CAISO in charge code 6046 on a daily basis.	BANC EESC Bill Determinant Statement: BA_DAILY_EIM_BAA_LAP_OUS_ALLOC@AMOUNT		BPM Configuration Guide: Over and Under Scheduling EIM Allocation CC 6046 Version 5.1
BANC EESC Bill Determinant Statement	BANC CC 6194	SpinObligAmount$_{Bmdh}$	$ Hourly 9 Decimal	Spinning Reserve Obligation charge amount (in $) due ISO for a given Business Associate and Trading Hour.	BANC EESC Bill Determinant Statement: BA_HRLY_SPIN_OBLIG@SUB_SUBTOT_NET_AMOUNT		BPM Configuration Guide: Spinning Reserve Obligation Settlement CC 6194 Version 5.2a

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BANC EESC Bill Determinant Statement	BANC CC 6194	PTBChargeAdjustmentObligationSpin$_{BJmdh}$	$ Hourly 9 Decimal	Spinning Reserve Obligation PTB Charge Adjustment Amount (in $) for a given Business Associate and Trading Hour.	BANC EESC Bill Determinant Statement: PTB_BA_HRLY_SPIN_OBLIG@PTB_SUBTOT_NET_AMOUNT		BPM Configuration Guide: Spinning Reserve Obligation Settlement CC 6194 Version 5.2a
BANC EESC Bill Determinant Statement	BANC CC 6196	SpinNeutralityAmount$_{Bmdh}$	$ Hourly 9 Decimal	Spinning Reserve Neutrality amount due ISO for Business Associate B for Trading Day d and Trading Hour h ($).	BANC EESC Bill Determinant Statement: BA_HRLY_SPIN_NTRL@AMOUNT		BPM Configuration Guide: Spinning Reserve Neutrality Obligation CC6196 Version 5.0b
BANC EESC Bill Determinant Statement	BANC CC 6294	NonSpinObligAmount$_{Bmdh}$	$ Hourly 9 Decimal	Non-Spinning Reserve Obligation charge amount (in $) due ISO for a given Business Associate and Trading Hour.	BANC EESC Bill Determinant Statement: BA_HRLY_NSPN_OBLIG@SUB_SUBTOT_NET_AMOUNT		BPM Configuration Guide: Non Spinning Reserve Obligation Settlement CC 6294 Version 5.2a
BANC EESC Bill Determinant Statement	BANC CC 6294	PTBChargeAdjustmentObligationNonSpin$_{BJmdh}$	$ Hourly 9 Decimal	Non-Spinning Reserve Obligation PTB Charge Adjustment Amount (in $) for a given Business Associate and Trading Hour.	BANC EESC Bill Determinant Statement: PTB_BA_HRLY_NSPN_OBLIG@PTB_SUBTOT_NET_AMOUNT		BPM Configuration Guide: Non Spinning Reserve Obligation Settlement CC 6294 Version 5.2a
BANC EESC Bill Determinant Statement	BANC CC 6296	NonSpinNeutralityAmount$_{Bmdh}$	$ Hourly 9 Decimal	Non-Spinning Reserve Neutrality amount due ISO for Business Associate B for Trading Day d and Trading Hour h ($).	BANC EESC Bill Determinant Statement: BA_HRLY_NSPN_NTRL@AMOUNT		BPM Configuration Guide: Spinning Reserve Neutrality Obligation CC6296 Version 5.0b
BANC EESC Bill Determinant Statement	BANC CC 64600	EIMBASettlementIntervalFMMIIEAmount$_{Bmdhcif}$	$ 5 Minute 9 Decimal	The BA total FMM IIE Settlement Amount for all resources inside EIM Entity BAAs. ($) This value does not include the PTB interval amount.	BANC EESC Bill Determinant Statement: BA_5M_EIM_FMM_IIE_STLMT@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: FMM Instructed Imbalance Energy Settlement EIM Settlement CC 64600 Version 5.2
BANC EESC Bill Determinant Statement	BANC CC 64600	PTBChargeAdjustmentEIMBA5MFMMEnergyAmt$_{BJmdhcif}$	$ 5 Minute 9 Decimal	PTB settlement adjustment amount for this Charge Code	BANC EESC Bill Determinant Statement: PTB_BA_5M_EIM_FMM_IIE_STLMT_HIER@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: FMM Instructed Imbalance Energy Settlement EIM Settlement CC 64600 Version 5.2

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BANC EESC Bill Determinant Statement	BANC CC 64700	EIMSettlementIntervalIIEAmount$_{BrtQ'mdhcif}$	$ 5 Minute 9 Decimal	The BA total RTM IIE Settlement Amount for all resources inside EIM Entity BAAs. ($) This value does not include the PTB interval amount.	BANC EESC Bill Determinant Statement: BAA_5M_EIM_IIE@AMOUNT		BPM Configuration Guide: Real Time Instructed Imbalance Energy Settlement EIM Settlement CC 64700 Version 5.2
BANC EESC Bill Determinant Statement	BANC CC 64700	PTBChargeAdjustmentEIMSettlementIntervalIIEAmount$_{Bjmdhcif}$	$ 5 Minute 9 Decimal	Real Time Instructed Imbalance Energy Settlement Amount PTB Charge Adjustment Amount for Business Associate B, PTB Id J, Trading Hour h, and Settlement Interval i. $	BANC EESC Bill Determinant Statement: PTB_BA_5M_EIM_IIE_ADJ@AMOUNT		BPM Configuration Guide: Real Time Instructed Imbalance Energy Settlement EIM Settlement CC 64700 Version 5.2
BANC EESC Bill Determinant Statement	BANC CC 64740	BA_EIMBAA_SettlementInterval_UnaccountedforEnergy_SettlementAmount$_{BuQ'mdhcif}$	$ 5 Minute 9 Decimal	Real Time Unaccounted for Energy Settlement amount (in U.S. $).	BANC EESC Bill Determinant Statement: BA_5M_UDC_EIM_BAA_UFE@AMOUNT		BPM Configuration Guide: Real Time Uninstructed Unaccounted for Energy EIM Settlement CC 64740 Version 5.1
BANC EESC Bill Determinant Statement	BANC CC 64740	TieSettlementIntervalMeteredQuantity$_{rtuT'I'Q'M'm'F'W'S'VL'mdhcif}$	MWh 5 Minute 4 Decimal	Metered quantity (in MWh) of intra-ties, representing energy flow between MSS/UDC areas.	BANC EESC Bill Determinant Statement: TIE_5M_RSRC_METER_QTY	RSRC_TYPE = Meter Location, CHANNEL_ID = 1 (negative values) for exports and 4 (positive) for imports.	BPM Configuration Guide: MSS Netting Pre-Calculation Version 5.8
BANC EESC Bill Determinant Statement	BANC CC 64740	EIMBAASettlementIntervalActualTransmissionLoss$_{uT'Q'mdhcif}$	MWh 5 Minute 9 Decimal	The calculated quantity (in MWh) of actual transmission line and facility losses associated with energy scheduled for EIM BAA.	BANC EESC Bill Determinant Statement: UDC_5M_ACTUAL_EIM_BAA_TRANS_LOSS@QUANTITY		BPM Configuration Guide: Real Time Uninstructed Unaccounted for Energy EIM Settlement CC 64740 Version 5.1
BANC EESC Bill Determinant Statement	BANC CC 64750	EIMSettlementIntervalUIESettlementAmount$_{BrtuT'I'Q'M'mdhcif}$	$ 5 Minute 9 Decimal	Settlement Interval UIE Settlement Amount for resource r ($)	BANC EESC Bill Determinant Statement: BA_5M_RSRC_UIE@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Real Time Uninstructed Imbalance Energy EIM Settlement CC 64750 Version 5.1
BANC EESC Bill Determinant Statement	BANC CC 64750	PTBChargeAdjustmentEIMSettlementIntervalUIEAmount$_{BjQ'mdhcif}$	$ 5 Minute 9 Decimal	Real Time Uninstructed Imbalance Energy Settlement Amount PTB Charge Adjustment Amount for Business	BANC EESC Bill Determinant Statement: PTB_BA_5M_UIE@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Real Time Uninstructed Imbalance Energy EIM Settlement CC 64750 Version 5.1

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BANC EESC Bill Determinant Statement	BANC CC 64770	EIMEntityRealTimeImbalanceEnergyOffsetAllocationAmount$_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	Total Real Time Imbalance Energy Offset Settlement Amount for an EESC by Balancing Authority Area.	BANC EESC Bill Determinant Statement: BA_5M_RT_IMB_ENGY_OFFSET_EIM_ALLOC@AMOUNT		BPM Configuration Guide: Real Time Imbalance Energy Offset EIM CC 64770 Version 5.2
BANC EESC Bill Determinant Statement	BANC CC 6478	BASystemRealTimeImbalanceEnergyOffsetAllocationAmount$_{Bmdhcif}$	$ 5 Minute 9 Decimal	Allocation of Total System Real Time Instructed Imbalance Energy Settlement Amount for the EIM Area by Business Associate ID (B).	BANC EESC Bill Determinant Statement: BA_5M_SYS_RT_IMB_ENG_OFFSET_ALLOC@AMOUNT		BPM Configuration Guide: Real Time System Energy Offset CC 6478 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 66200	EIMTradingDayTotalRTMBCRUpliftAmount$_{BruT'I'Q'M'F'md}$	$ Daily 9 Decimal	Total RTM Bid Cost Recover Uplift Payment (in $) for MSS and Non-MSS entities, for resources in an EIM Balancing Authority Area on a given Trading Day.	BANC EESC Bill Determinant Statement: BAA_BA_DAY_RTM_BCR_EIM_STLMT@AMOUNT		BPM Configuration Guide: RTM Bid Cost Recovery EIM Settlement CC 66200 Version 5.2
BANC EESC Bill Determinant Statement	BANC CC 66780	EIMEntityRTMUpliftAllocationAmount$_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	Total RTM BCR Uplift Amount (in $) allocated to the given EIM Balancing Authority Area and associated EIM Entity Business Associate.	BANC EESC Bill Determinant Statement: BAA_BA_5MIN_RTM_UPLIFT_ALLOC		BPM Configuration Guide: Real Time Bid Cost Recovery EIM Allocation CC 66780 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 67740	EIMEntitySCRTCongestionOffsetAllocation$_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	The Real-Time Congestion Offset amount per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: BA_5M_EIM_RT_CONG_OFFSET_ALLOC@AMOUNT		BPM Configuration Guide: Real Time Congestion Offset EIM CC 67740 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 69850	EIMEntitySCRTMarginalLossesOffsetAllocation$_{BQ'mdhcif}$	$ 5 Minute 9 Decimal	The Real-Time Losses Offset amount per BAA and assigned to the relevant EIM Entity SC.	BANC EESC Bill Determinant Statement: BA_EIM_ENTITY_BAA_RT_MARGINAL_LOSS@AMOUNT		BPM Configuration Guide: Real Time Marginal Losses Offset EIM CC 69850 Version 5.1
BANC EESC Bill Determinant Statement	BANC CC 7070	Total5mFRForecastedMovementSettlementAmount$_{mdhcif}$	$ 5 Min 9 Decimal	Total Flex Ramp settlement amount for forecasted movement for the BANC ($).	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BA_FR_FCAST_MVMT_HIER@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Flexible Ramp Forecasted Movement Settlement CC 7070 Version 5.0

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BANC EESC Bill Determinant Statement	BANC CC 7070	PTB_BAFRForecastedMovementChargeAdjustmentAmount$_{BJmdhcif}$	$ 5 Min 9 Decimal	Pass through bill for Flexible Forecast Movement	BANC EESC Bill Determinant Statement: BA_DAY_TOT_FCAST_MVMT_STLMT@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Flexible Ramp Forecasted Movement Settlement CC 7070 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 7076	BA5mFlexRampForecastMvmtAllocationAmount$_{Bmdhcif}$	$ 5 Min 9 Decimal	Total Flex Ramp settlement amount for forecasted movement for the BANC ($).	BANC EESC Bill Determinant Statement: BA_5MIN_FR_FCAST_MVMT_ALLOC_STLMT		BPM Configuration Guide: Internal - Flexible Ramp Forecasted Movement Allocation CC 7076 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 7076	PTBBAFRForecastedMovementAllocAdjustmentAmount$_{BJmdhcif}$	$ 5 Min 9 Decimal	Pass through bill for Flexible Forecast Movement Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BA_5MIN_FCAST_MVMT_ALLOC		BPM Configuration Guide: Internal - Flexible Ramp Forecasted Movement Allocation CC 7076 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 7077	BADailyCompleteFRUUncertaintyAllocationAmount$_{BQ'md}$	$ Daily 9 Decimal	FRU Uncertainty Charge (in $) allocated to BANC for the Trading Day.	BANC EESC Bill Determinant Statement: BA_DAY_FR_FCAST_MVMT_ALLOC_STLMT_HIER_SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Daily Flexible Ramp Up Uncertainty Award Allocation CC 7077 Version 5.1
BANC EESC Bill Determinant Statement	BANC CC 7077	PTBBAADayFRUUncertaintyAllocAmt$_{BJmd}$	$ Daily 9 Decimal	Pass through bill for Flexible Ramp Up Uncertainty Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BA_DAY_FCAST_MVMT_ALLOC_HIER@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Daily Flexible Ramp Up Uncertainty Award Allocation CC 7077 Version 5.1
BANC EESC Bill Determinant Statement	BANC CC 7078	BAMonthlyCompleteFRUUncertaintyAllocationAmount$_{BQ'm}$	$ Monthly 9 Decimal	FRU Uncertainty Allocation Amount (in $) assessed monthly to a BA of the BAA as the difference of the monthly FRU Allocation Amount for the designated Trading Month and the monthly	BANC EESC Bill Determinant Statement: BAA_MTH_FRU_UNCERT_ALLOC_STLMT_		BPM Configuration Guide: Monthly Flexible Ramp Up Uncertainty Award

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
				total of the daily FRU Uncertainty Allocation Amounts over all Trading Days of the Trading Month.	HIER@SUB_SUBTOT_CURRENT_AMOUNT		Allocation CC 7078 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 7078	PTBBAAMonthFRUUncertaintyAllocationAmount$_{BJm}$	$ Monthly 9 Decimal	Pass through bill for Monthly Flexible Ramp Up Uncertainty Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BAA_MTH_FRU_UNCERT_ALLOC_HIER@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Monthly Flexible Ramp Up Uncertainty Award Allocation CC 7078 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 7087	BADailyCompleteFRDUncertaintyAllocationAmount$_{BQ'md}$	$ Daily 9 Decimal	FRD Uncertainty Charge (in $) allocated to BANC for the Trading Day.	BANC EESC Bill Determinant Statement: BAA_DAY_FRD_UNCERT_ALLOC_STLMT_HIER@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Daily Flexible Ramp Down Uncertainty Award Allocation CC 7087 Version 5.1
BANC EESC Bill Determinant Statement	BANC CC 7087	PTBBAADayFRDUncertaintyAllocAmt$_{BJmd}$	$ Daily 9 Decimal	Pass through bill for Flexible Ramp Down Uncertainty Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BAA_DAY_FRD_UNCERT_ALLOC_HIER@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Daily Flexible Ramp Down Uncertainty Award Allocation CC 7087 Version 5.1
BANC EESC Bill Determinant Statement	BANC CC 7088	BAMonthlyCompleteFRDUncertaintyAllocationAmount$_{BQ'm}$	$ Monthly 9 Decimal	FRU Uncertainty Allocation Amount (in $) assessed monthly to a BA of the BAA as the difference of the monthly FRD Allocation Amount for the designated Trading Month and the monthly total of the daily FRD Uncertainty Allocation Amounts over all Trading Days of the Trading Month.	BANC EESC Bill Determinant Statement: BAA_MTH_FRD_UNCERT_ALLOC_STLMT_HIER@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Monthly Flexible Ramp Down Uncertainty Award Allocation CC7088 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 7088	PTBBAAMonthFRDUncertaintyAllocationAmount$_{BJm}$	$ Monthly 9 Decimal	Pass through bill for Monthly Flexible Ramp Down Uncertainty Allocation.	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BAA_MTH_FRD_UNCERT_ALLOC_HIER@PTB_S		BPM Configuration Guide: Monthly Flexible Ramp Down Uncertainty Award Allocation CC7088 Version 5.0

CAISO Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
					UBTOT_CURRENT_AMOUNT		
BANC EESC Bill Determinant Statement	BANC CC 7989	BADayInvoiceDeviationInterestDistributionAmount$_{BU'Umd}$	$ Daily 9 Decimal	Charge Code 7989 is the amount of interest due from a Scheduling Coordinator for the time difference between resettlement of Trade Dates and the original invoice for that date.	BANC EESC Bill Determinant Statement: BA_DAY_INV_DEV_INT_DIST@AMOUNT		BPM Configuration Guide: Invoice Deviation Interest and Allocation CC7989 and CC7999 Version 5.2c
BANC EESC Bill Determinant Statement	BANC CC 7999	BADayInvoiceDeviationInterestAllocationAmount$_{BU'Umd}$	$ Daily 9 Decimal	Charge Code 7999 is the amount of interest owed to a Scheduling Coordinator for the time difference between resettlement of Trade Dates and the original invoice for that date.	BANC EESC Bill Determinant Statement: BA_DAY_INV_DEV_INT_ALLOC@AMOUNT		BPM Configuration Guide: Invoice Deviation Interest and Allocation CC7989 and CC7999 Version 5.2c

Appendix C – BANC Provided Determinants

BANC supplied determinants:

Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	Determinant Calculation Methodology
BANC Settlement Analyst	EIM Participants Cost Allocation Precalculation	$PPT\_COST\_ALLOC\_RATIO_{Pd}$	Decimal Daily 5 Decimals	**EIM Participant Cost Allocation Ratio** - The EIM Participant daily cost allocation ratio per participant. This percentages is expected to be defined annual by the BANC Commission and it will be in effect by Trade Date until it is updated. All allocations including resettlements will use the allocation effect for that Trade date.	Determined by the BANC Commission each year.
BANC Settlement Analyst	EIM Participant Fixed Cost Allocation Precalculation	$BNC\_DLY\_NUM\_MEM_{Bd}$	Integer Daily Integer	**BANC Daily Number of Participants** - The number of *EIM Participants* for the *Trade Date.*	Set by BANC Settlement Analyst based on the number of participants in BANC by Trade Date.
BANC BAA Tags	EIM Participant Tagging Precalculation	$PPT\_5MIN\_TAG\_BASE\_SCHD_{QSGPCLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Base Schedule** - A single 5-minute tagged Intertie or Intratie Base Schedule that is either approved or pending approval as seen by the BANC scheduling system at T-57 before the start of the next hour.	Power Settlements will receive all BANC BAA tags and will sort them based on these criteria.
BANC BAA Tags	EIM Participant Tagging Precalculation	$PPT\_5MIN\_TAG\_FMM\_SCHD_{QSGPCLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged 15-Minute Market Schedule** - The 5-minute tagged Intertie energy schedule from BANC's scheduling system.	Power Settlements will receive all BANC BAA tags and will sort them based on these criteria.
BANC BAA Tags	EIM Participant Tagging Precalculation	$PPT\_5MIN\_TAG\_FNL\_SCHD_{QSGPCLxyzf}$	MWh 5 Min 8 Decimals	**EIM Participant 5-Minute Tagged Final Schedule** - The final after the fact 5-minute tagged Intertie energy schedule from BANC's scheduling system.	Power Settlements will receive all BANC BAA tags and will sort them based on these criteria.
WAPA	EIM Participant Load Ratio Share Precalculation	$TPUD\_HRLY\_LD\_QTY_{h}$	MWH Hourly 4 Decimals	**Trinity PUD Hourly Load Quantity** – Trinity Hourly Load as reported by WAPA.	WAPA will provide hourly Trinity load to Power Settlements.
BANC BAA	EIM Participant Load Ratio Share Precalculation	$BNC\_5MIN\_LD\_QTY_{Bf}$	MWh 5 Min TBD	**EIM Participant 5-Minute Load Quantity** - BANC will calculate a total BANC load that will be compared with the sum of all the EIM Participant load reported on the CAISO EESC billing determinant statement.	The BANC BAA will provide Power Settlements with a total BAA load estimate from their EMS system to use a total BANC load proxy reference.
BANC Settlement Analyst	EIM Participant Load Ratio Share Precalculation	$BNC\_5MIN\_LD\_QTY\_THRESHOLD_{Bf}$	MWh 5 Min 3 Decimals	**EIM Participant 5-Minute Load Quantity Threshold** - A settlement user configurable value in megawatt hours that will be used to alarm when BANC's statement calculated total load from all EIM Participants differs by BANC's independently calculated load.	Determined by BANC Settlement Analyst for monitoring purposes only.

Determinant Source	BANC Charge Code Reference	Determinants	UOM, Interval Length, Precision	Description	Determinant Calculation Methodology
BANC Settlement Analyst	EIM Participant Load Base Schedule Precalculation	$BNC\_TX\_LOSS\_FCT_{Bd}$	Decimal N/A 4 Decimals	**BANC Transmission Loss Factor** - The BANC registered transmission loss factor in effect with CAISO for the Trade Date.	A fixed transmission loss factor determined by BANC Commission.
BANC Settlement Analyst	EIM Participant Load Base Schedule Precalculation	$BNC\_HRLY\_LD\_BASE\_SCHD\_DIFF\_THRES_{Bh}$	MWh Hourly 4 Decimals	**BANC Hourly Load Base Schedule Differential Threshold** - A settlement user configurable value in megawatt hours that will be used to alarm when CAISO's BANC statement calculated total load Base Schedule quantity differs from BANC's independently calculated load by this defined threshold per hour.	Determined by BANC Settlement Analyst for monitoring purposes only.
BANC Settlement Analyst	EIM Participant Load Base Schedule Precalculation	$HRLY\_COPT\_FCST\_LOSS\_QTY_{h}$	MWh Hourly 2 Decimals	**Hourly COPT Forecast Loss Quantity –** The hourly COPT forecasted loss quantity supplied by WAPA to CAISO and downloaded by BANC from BSAP.	Power Settlements will download from CAISO BSAP the hourly forecasted COPT losses.
BANC Settlement Analyst	BANC CC 101 PTB Charge	$PPT\_DLY\_MANUAL\_PTB\_ALLOC\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily Manual PTB Allocation Amount** – A manually allocation amount as calculated by BANC staff.	Determined by BANC Settlement Analyst.
BANC Settlement Analyst	BANC CC 101 PTB Charge	$BNC\_DLY\_PTB\_MAN\_ALLOC\_FLAG_{Bd}$	Integer Daily	**BANC Daily PTB Allocation Flag** – A daily flag of 1 or 0 to indicate when BANC has manually allocated the PTB amounts for the Trade Date. A value of 1 indicates there is a manual allocation by BANC staff.	Determined by BANC Settlement Analyst.
BANC Settlement Analyst	BANC CC 102 Miscellaneous Charge	$PPT\_DLY\_MISC\_ALLOC\_AMT_{Pd}$	$ Daily 2 Decimal	**EIM Participant Daily Miscellaneous Allocation Amount** – A authorized BANC miscellaneous allocation amount.	Determined by BANC Settlement Analyst.
BANC BAA	BANC CC 64740 Hourly Real Time Unaccounted for Energy EIM Settlement	$BNC\_DLY\_64740\_AMT\_ALLOC\_THRESHOLD_{Bd}$	$ Daily 2 Decimal	**BANC Daily Charge Code 64740 Amount Allocation Threshold** – A predefined BANC amount that sets a maximum allocation error threshold for monitoring purposes.	Power Settlements will receive all BANC BAA tags and will sort them based on these criteria.

Appendix D - CAISO BPM References

The following CAISO Settlement and Billing BPM Configuration Guides have been used in this document.

CAISO BPM Name	Charge Code	Version
MSS Netting Pre-Calculation	Precalculation	Version 5.8
Real Time Energy Pre-Calculation	Precalculation	Version 5.20
Default Invoice Interest Payment	CC 2999	Version 5.0
Default Invoice Interest Charge	CC 3999	Version 5.0
GMC EIM Transaction Charge	CC 4564	Version 5.3
Scheduling Coordinator Identification	CC 4575	Version 5.0
Invoice Late Payment Penalty	CC 5024	Version 5.0
Collateral Late Payment Penalty	CC 5025	Version 5.0
Shortfall Receipt Distribution	CC 5900	Version 5.0
Shortfall Allocation Reversal	CC 5901	Version 5.0
Shortfall Allocation	CC 5910	Version 5.3
Default Allocation	CC 5912	Version 5.1
Over and Under Scheduling EIM Settlement	CC 6045	Version 5.2
Over and Under Scheduling EIM Allocation	CC 6046	Version 5.0
Spinning Reserve Obligation Settlement	CC 6194	Version 5.2a
Spinning Reserve Neutrality Allocation	CC 6196	Version 5.0b
Non Spinning Reserve Obligation Settlement	CC 6294	Version 5.2a
Non Spinning Reserve Neutrality Amount	CC 6296	Version 5.0b
FMM Instructed Imbalance Energy Settlement EIM Settlement	CC 64600	Version 5.2
Real Time Instructed Imbalance Energy Settlement EIM Settlement	CC 64700	Version 5.2
Real Time Uninstructed Unaccounted for Energy EIM Settlement	CC 64740	Version 5.1
Real Time Uninstructed Imbalance Energy EIM Settlement	CC 64750	Version 5.1
Real Time Imbalance Energy Offset EIM	CC 64770	Version 5.2
Real Time System Energy Offset	CC 6478	Version 5.0
RTM Bid Cost Recovery EIM Settlement	CC 66200	Version 5.2
Real Time Bid Cost Recovery EIM Allocation	CC 66780	Version 5.0
Real Time Congestion Offset EIM	CC 67740	Version 5.0
Real Time Marginal Losses Offset EIM	CC 69850	Version 5.1
Flexible Ramp Forecasted Movement Settlement	CC 7070	Version 5.0
Internal - Flexible Ramp Forecasted Movement Allocation	CC 7076	Version 5.0
Daily Flexible Ramp Up Uncertainty Award Allocation	CC 7077	Version 5.1
Monthly Flexible Ramp Up Uncertainty Award Allocation	CC 7078	Version 5.0
Daily Flexible Ramp Down Uncertainty Award Allocation	CC 7087	Version 5.1
Monthly Flexible Ramp Down Uncertainty Award Allocation	CC 7088	Version 5.0
Invoice Deviation Interest and Allocation	CC 7989 & CC 7999	Version 5.2c

Appendix E – Intertie Tag LMP Cross Reference

The following table is used as an LMP price cross refence to define the Intertie price for Intertie tagged energy. These LMPs are needed to settle any Intertie tag volume changes between the tagged Base Schedule volume and the snapshot volume used in the 15-minute market (CC63600) and also any volume changes between the 15-minute market and the final tagged volume (CC64700).

Only Intertie tagged schedules will be assessed imbalance charges on volume changes.

The settlement allocations tool will evaluate every schedule to determine if the tag is an import or export to BANC. An import will be defined as a tag where the POR is not a BANC scheduling location whereas the POD is a BANC scheduling location. An export will be defined as a tag where the POR is defined as a BANC scheduling location whereas the POD is not. Schedules where both the POR and POD are scheduling locations within BANC is defined as a BANC Intratie and will not be settled for schedule imbalance in the fifteen and 5-minute market solutions. For a list of scheduling locations in BANC, please refer to Appendix E.

Direction	Path FROM:	Path TO:	Segment Acronym (subscript "S")	CAISO RES_ID (subscript "R")	CAISO TIE ID	Interface Resource ID LMP (CAISO SP) (subscript "Q")
IMPORT	CAPTAINJACK	TRY500	CAPTAINJACK-TRY500	BANC_TRCYCOTP_I_F_MIRROR	TRY500_M	DGAP_BPAT-APND
IMPORT	NP15	CTW230	NP15-CTW230	BANC_CTW230_I_F_MIRROR	CTW230_M	SMD5_ASR-APND
IMPORT	NP15	LAK230	NP15-LAK230	BANC_LAKE_I_F_MIRROR	LAKE_SMUD	SMD7_ASR-APND
IMPORT	NP15	LLL115	NP15-LLL115	BANC_LLL115_I_F_MIRROR	LLL115_M	SMD6_ASR-APND
IMPORT	NP15	RAN230	NP15-RAN230	BANC_RANCHOSECO_I_F_MIRROR	RANCHOSECO_SMUD	SMD1_ASR-APND
IMPORT	NP15	RDM230	NP15-RDM230	BANC_RDM230_I_F_MIRROR	RDM230_M	SMD4_ASR-APND
IMPORT	NP15	STANDIFORD	NP15-STANDIFORD	BANC_STANDIFORD_I_F_MIRROR	STANDIFORD_M	STANDFD2_1_N011
IMPORT	NP15	TRY500	NP15-TRY500	BANC_TRCYCOTP_I_F_MIRROR	TRY500_M	SMDG_ASR-APND
IMPORT	TESLA230	TRY230	TESLA230-TRY230	BANC_TESLA230_I_F_MIRROR	TESLA230_M	SMD9_ASR-APND
IMPORT	TESLA230	WESTLEY	TESLA230-WESTLEY	BANC_WESTLYTSLA_I_F_MIRROR	WESTLYTSLA_M	SMDB_ASR-APND
IMPORT	TRACYTEA	TRY500	TRACYTEA-TRY500	BANC_TRCYTEA_I_F_MIRROR	TRY500_M	SMD2_ASR-APND
IMPORT	RDM500	RDM230	RDM500-RDM230	BANC_RDM230_I_F_MIRROR	RDM230_M	SMD4_ASR-APND
IMPORT	WESTLEY	QUINTO230	WESTLEY-QUINTO230	BANC_WESTLYQNTO_I_F_MIRROR	WESTLYQNTO_M	SMDC_ASR-APND
IMPORT	CAPTAINJACK	ODA500	CAPTAINJACK-ODA500	BANC_ODA500_I_F	ODA500	DGAP_BPAT-APND
IMPORT	WESTLEY	WESTLEY	WESTLEY-WESTLEY	BANC_WESTLEY_TIDC_I_EIMBASE	WESTLEY	*ISO to Provide*
IMPORT	WESTLEY	TRY230	WESTLEY-TRY230	BANC_WESTLEY_TIDC_I_EIMBASE	WESTLEY	*ISO to Provide*
EXPORT	TRY500	CAPTAINJACK	TRY500-CAPTAINJACK	BANC_TRCYCOTP_E_F_MIRROR	TRY500_M	DGAP_BPAT-APND
EXPORT	CTW230	NP15	CTW230-NP15	BANC_CTW230_E_F_MIRROR	CTW230_M	CAPTJACK_5_N510
EXPORT	LAK230	NP15	LAK230-NP15	BANC_LAKE_E_F_MIRROR	LAKE_SMUD	CAPTJACK_5_N508
EXPORT	LLL115	NP15	LLL115-NP15	BANC_LLL115_E_F_MIRROR	LLL115_M	CAPTJACK_5_N509
EXPORT	RAN230	NP15	RAN230-NP15	BANC_RANCHOSECO_E_F_MIRROR	RANCHOSECO_SMUD	CAPTJACK_5_N507
EXPORT	RDM230	NP15	RDM230-NP15	BANC_RDM230_E_F_MIRROR	RDM230_M	CAPTJACK_5_N511
EXPORT	STANDIFORD	NP15	STANDIFORD-NP15	BANC_STANDIFORD_E_F_MIRROR	STANDIFORD_M	STANDFD2_1_N011
EXPORT	TRY500	NP15	TRY500-NP15	BANC_TRCYCOTP_E_F_MIRROR	TRY500_M	CAPTJACK_5_N015
EXPORT	TRY230	TESLA230	TRY230-TESLA230	BANC_TESLA230_E_F_MIRROR	TESLA230_M	CAPTJACK_5_N506
EXPORT	WESTLEY	TESLA230	WESTLEY-TESLA230	BANC_WESTLYTSLA_E_F_MIRROR	WESTLYTSLA_M	CAPTJACK_5_N504
EXPORT	TRY500	TRACYTEA	TRY500-TRACYTEA	BANC_TRCYTEA_E_F_MIRROR	TRY500_M	CAPTJACK_5_N513
EXPORT	RDM230	RDM500	RDM230-RDM500	BANC_RDM230_E_F_MIRROR	RDM230_M	CAPTJACK_5_N511
EXPORT	QUINTO230	WESTLEY	QUINTO230-WESTLEY	BANC_WESTLYQNTO_E_F_MIRROR	WESTLYQNTO_M	CAPTJACK_5_N003
EXPORT	WESTLEY	WESTLEY	WESTLEY-WESTLEY	BANC_WESTLEY_TIDC_E_EIMBASE	WESTLEY	*ISO to Provide*
EXPORT	TRY230	WESTLEY	TRY230-WESTLEY	BANC_WESTLEY_TIDC_E_EIMBASE	WESTLEY	*ISO to Provide*
EXPORT	ODA500	CAPTAINJACK	ODA500-CAPTAINJACK	BANC_ODA500_E_F	ODA500	DGAP_BPAT-APND

Appendix F – EIM Participant Configurations

EIM Participants

The following are the complete list of EIM Participants and their associated scheduling identifiers in CAISO:

Table E-1

EIM Participant	CAISO SCID
Modesto	CLAP_BANCMID-APND
Redding	CLAP_BANCRDNG-APND
Roseville	CLAP_BANCRSVL-APND
SMUD	CLAP_BANCSMUD-APND
WAPA	CLAP_BANCWASN-APND

EIM Participant Tagging Associations

BANC Tags will be associated to EIM Participants based on POR/POD EIM Participant association in Table E-2.

Table E-2

BANC Source/Sink Scheduling Locations	EIM Participant
REDDR1	Redding
SMUD.LOAD	SMUD
RSVL	Roseville
MID.SYSTEM	Modesto
LLNL	WAPA
CVPGen	WAPA
SMUD.GEN	SMUD

Tag Types

The Settlement Allocation solution will need to determine whether each BANC tag is an import, export, wheel or Intratie. To determine the type of tag, refer to Table E-2 and the subsequent descriptions provided in this appendix.

Table E-3

TYPE	SOURCE	SINK
IMPORT	Non-BANC Scheduling Location	Known BANC Scheduling Location
EXPORT	Known BANC Scheduling Location	Non-BANC Scheduling Location
WHEEL	Non-BANC Scheduling Location	Non-BANC Scheduling Location
INTRATIE	Known BANC Scheduling Location	Known BANC Scheduling Location

Import/Export Intertie Tags

To determine if a tag is an import or export to BANC the POR and POD locations on the tag will be evaluated. An import will be defined as any tag where the POR is not a BANC scheduling location whereas the POD is a BANC scheduling location. An export will be defined as a tag where the POR is defined as a BANC scheduling location whereas the POD is not. The EIM participant associated with the BANC Source/Sink Scheduling Location will be the responsible entity for settlement allocation purposes.

The following are the complete list of scheduling locations in BANC and the EIM Participant who is defined as the responsible settlement entity for the EIM Entity Settlement Allocation process.

Wheel Intertie Tags

Schedules where both the POR and POD are not defined as BANC scheduling locations in Table E-3 are excluded from all EIM Entity Settlement Allocations.

Intratie Tags

Schedules where both the POR and POD are defined as scheduling locations within BANC in Table E-3 are defined as a BANC Intratie schedules. These schedules will not be settled for any imbalance volumes but will be included in calculating each EIM Participant's load Base Schedule volumes. EIM Participant hourly load Base Schedules are calculated as the sum of all the participants hourly base scheduled generation plus any EIM Participant area imports at T-57 less any tagged EIM Participant area exports at T-57. The load Base Schedule calculations includes both import Intraties and Interties along with export Intraties and Interties. The EIM Participant associated with the POR scheduled on the tag will have their hourly load Base Schedule reduced by the volume of the tag while the EIM Participant associated with the POD on the tag will have their hourly load Base Schedule increased by the volume of the tag. To determine EIM Participant associations, refer to table E-3.

Appendix G – BANC EIM Participant Monthly Invoice Files

BANC EIM Participant Monthly Invoice Summary

For each BANC invoice, BANC settlement staff will provide a monthly PDF file that shows the total invoice amount along with which allocation results were aggregated into the monthly invoice.

BALANCING AUTHORITY OF NORTHERN CALIFORNIA

RELIABILITY • COLLABORATION • SUSTAINABILITY

EIM Participant Monthly Invoice Summary

<EIM Participant Name>

PowerSettlements Invoice ID: **<Power Settlement Invoice ID>**

Invoice Date	Description	Amount ($)
(mm/dd/yyyy)	EIM Imbalance Energy	<Net Total Amount>
	TOTAL DUE	**<Net Total Amount>**

Settlement Allocations contained in this invoice cycle:

Trade Date	Settlement Type	Allocation Date	Current Amount ($)	Previous Amount ($)	Net Amount ($)
<Trade Date>	<Settlement Type – T12, T55, T9M, T18 M…>	<Allocation Date>	<Net Amount from entire settlement allocation>	<Previous Amount from entire settlement allocation>	<Current Amount from entire settlement allocation>
<Trade Date>	<Settlement Type – T12, T55, T9M, T18 M…>	<Allocation Date>	<Net Amount from entire settlement allocation>	<Previous Amount from entire settlement allocation>	<Current Amount from entire settlement allocation>
<Trade Date>	<Settlement Type – T12, T55, T9M, T18 M…>	<Allocation Date>	<Net Amount from entire settlement allocation>	<Previous Amount from entire settlement allocation>	<Current Amount from entire settlement allocation>
<Trade Date>	<Settlement Type – T12, T55, T9M, T18 M…>	<Allocation Date>	<Net Amount from entire settlement allocation>	<Previous Amount from entire settlement allocation>	<Current Amount from entire settlement allocation>
<Trade Date>	<Settlement Type – T12, T55, T9M, T18 M…>	<Allocation Date>	<Net Amount from entire settlement allocation>	<Previous Amount from entire settlement allocation>	<Current Amount from entire settlement allocation>

A JOINT POWERS AUTHORITY BETWEEN

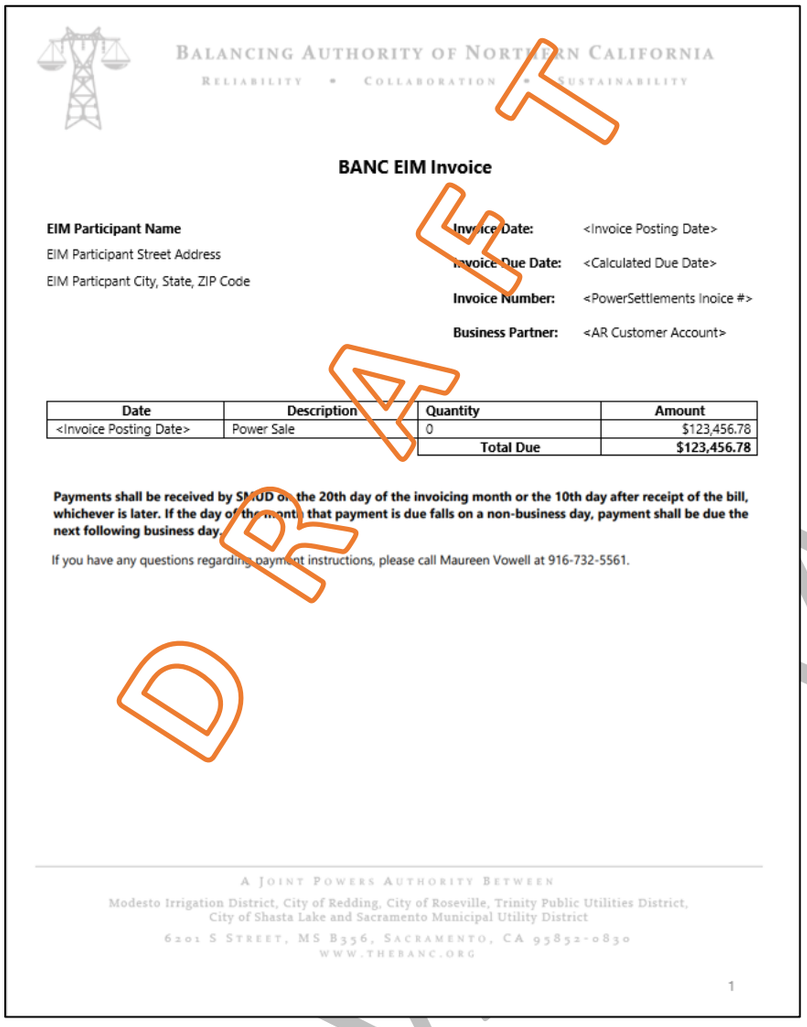
Modesto Irrigation District, City of Redding, City of Roseville, Trinity Public Utilities District, City of Shasta Lake and Sacramento Municipal Utility District

6201 S STREET, MS B356, SACRAMENTO, CA 95852-0830

WWW.THEBANC.ORG

1

BANC Accounts Receivable PDF File



BALANCING AUTHORITY OF NORTHERN CALIFORNIA

RELIABILITY • COLLABORATION • SUSTAINABILITY

BANC EIM Invoice

EIM Participant Name
EIM Participant Street Address
EIM Participant City, State, ZIP Code

Invoice Date: <Invoice Posting Date>
Invoice Due Date: <Calculated Due Date>
Invoice Number: <PowerSettlements Inoice #>
Business Partner: <AR Customer Account>

Date	Description	Quantity	Amount
<Invoice Posting Date>	Power Sale	0	$123,456.78
		Total Due	**$123,456.78**

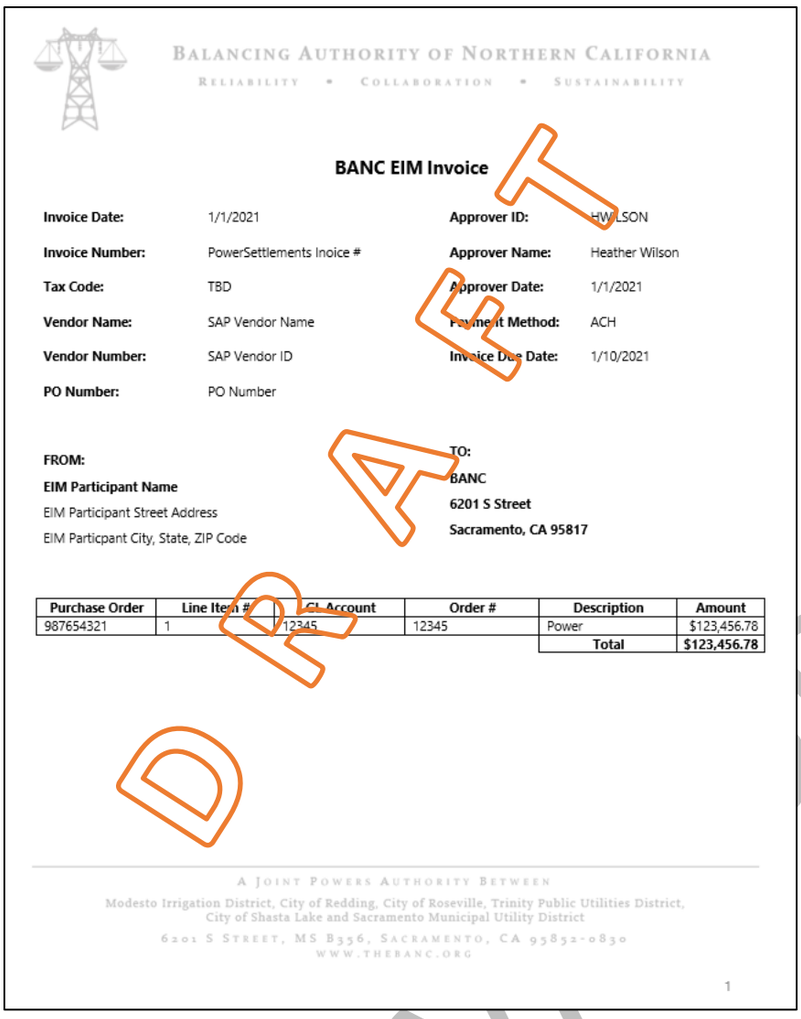
Payments shall be received by SMUD on the 20th day of the invoicing month or the 10th day after receipt of the bill, whichever is later. If the day of the month that payment is due falls on a non-business day, payment shall be due the next following business day.

If you have any questions regarding payment instructions, please call Maureen Vowell at 916-732-5561.

A JOINT POWERS AUTHORITY BETWEEN
Modesto Irrigation District, City of Redding, City of Roseville, Trinity Public Utilities District, City of Shasta Lake and Sacramento Municipal Utility District
6201 S STREET, MS B356, SACRAMENTO, CA 95852-0830
WWW.THEBANC.ORG

1

BANC Accounts Payable PDF File



BALANCING AUTHORITY OF NORTHERN CALIFORNIA

RELIABILITY • COLLABORATION • SUSTAINABILITY

BANC EIM Invoice

Invoice Date:	1/1/2021	**Approver ID:**	HWILSON
Invoice Number:	PowerSettlements Inoice #	**Approver Name:**	Heather Wilson
Tax Code:	TBD	**Approver Date:**	1/1/2021
Vendor Name:	SAP Vendor Name	**Payment Method:**	ACH
Vendor Number:	SAP Vendor ID	**Invoice Due Date:**	1/10/2021
PO Number:	PO Number		

FROM:
EIM Participant Name
EIM Participant Street Address
EIM Particpant City, State, ZIP Code

TO:
BANC
6201 S Street
Sacramento, CA 95817

Purchase Order	Line Item #	GL Account	Order #	Description	Amount
987654321	1	12345	12345	Power	$123,456.78
				Total	**$123,456.78**

A JOINT POWERS AUTHORITY BETWEEN
Modesto Irrigation District, City of Redding, City of Roseville, Trinity Public Utilities District, City of Shasta Lake and Sacramento Municipal Utility District
6201 S STREET, MS B356, SACRAMENTO, CA 95852-0830
WWW.THEBANC.ORG

1

Balancing Authority of Northern California
Resolution 20-12-08

APPROVAL OF BALANCING AUTHORITY OF NORTHERN CALIFORNIA ENERGY IMBALANCE MARKET SETTLEMENT ALLOCATIONS MANUAL FOR BANC EIM PHASE 2 OPERATIONS

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 is the Energy Imbalance Market ("EIM") Entity for the BANC EIM footprint; and

WHEREAS, BANC EIM Phase 1 successfully commenced operating in April of 2019; and

WHEREAS, subsequent to the operation of BANC EIM Phase 1, the Modesto Irrigation District, the City of Redding, the City of Roseville and the Western Area Power Administration – Sierra Nevada Region ("WAPA") determined that they desired to participate in EIM along with SMUD, referred to as "BANC EIM Phase 2"; and

WHEREAS, the participating members of BANC and WAPA have collaborated via the EIM Settlements Working Group, the EIM Committee and Legal Committee to develop the BANC EIM Settlement Allocations Manual ("Manual") that provides detailed descriptions, including the equations, for the charges and credits that will be allocated to EIM Participants by BANC as the EIM; and

WHEREAS, the Manual and its various appendices will serve as an attachment to the BANC EIM Business Practices, which were approved by Commission Resolution 20-10-20 for BANC EIM Phase 2 operations.

NOW THEREFORE, BE IT RESOLVED that the Commissioners of the Balancing Authority of Northern California hereby approve the Manual, including its various appendices, in substantially final form to that provided to the Commission;

PASSED AND ADOPTED by the Commissioners of the Balancing Authority of Northern California this 16th day of December 2020, by the following vote:

		Aye	No	Abstain	Absent
Modesto ID	James McFall				
City of Redding	Dan Beans				
City of Roseville	Michelle Bertolino				
City of Shasta Lake	James Takehara				
SMUD	Paul Lau				
TPUD	Paul Hauser				

_____
Dan Beans
Chair

_____
Attest by: C. Anthony Braun
Secretary

12/09/20

To: **BANC Commission**

From: **BANC Counsel**

RE: **Authorization of Amendment to Utilicast Contract for an Extension of Services Related to Phase 2 of Energy Imbalance Market Post Go-Live Support**

In January of 2019, the Balancing Authority of Northern California (BANC) Commission authorized the General Manager to enter into a contract with Utilicast, who was subsequently engaged to provide consulting services related to participation in the Energy Imbalance Market (EIM) and the proposed Enhanced Day Ahead Market (EDAM). The contract was broken into four (4) discreet tasks, and only authorization for tasks 1, 2 and 4 was requested and approved by Commission Resolution 19-01-14:

- Task #1: BANC/SMUD EIM Phase 2 Post Go-Live Support and Analysis
- Task #2: BANC EIM Phase 2 System and Process Gap Analysis and Implementation Plan
- Task #3: BANC EIM Phase 2 Project Implementation and Project Management support
- Task #4: CAISO Extended Day Ahead Market (EDAM) Support for BANC/SMUD

Task 3 was not approved, as it related to Phase 2 implementation. Subsequent to the Commission action in January of 2019, the Commission approved Task 3 by Commission Resolution 19-08-11 on August 21, 2019.

To date, Utilicast has provided these services and has now positioned BANC to implement Phase 2 of EIM on March 25, 2021. The support and efforts of Utilicast in both the BANC Phase 1 and Phase 2 EIM implementation efforts have been absolutely indispensable.

In discussions with Utilicast and the EIM Committee, it has become quite apparent that BANC will require ongoing support services from Utilicast for some limited period beyond our original termination date of April 30, 2021 to support BANC and the EIM Phase 2 Participants in the transition to EIM operations. Thus, we are proposing an amendment to our contract with Utilicast which would extend our support from between May 1, 2021 and September 30, 2021 and would entail an additional $129,000 in cost. These costs have been included in the BANC 2021 Budget under PA-5: EIM Participation, Utilicast Ramp Down, which has been approved by the Commission. The details and cost breakdown for this proposal can be found in "Attachment A" to this memorandum (BANC EIM Phase II Post Go-Live Support and Analysis).

As noted above, this proposed extension has been discussed with the EIM Committee, which fully supports the extension. Thus, we respectfully request Commission approval of this amendment in accordance with the attached resolution.

Utilicast

June 11, 2020

Jim Shetler
General Manager
Balancing Authority of Northern California
P.O. Box 15830 / MS D109
Sacramento, CA 95852-1830

Dear Jim:

Per our discussions, the BANC desires post-go-live support for the BANC EIM Phase II Implementation project. As a follow-up to that discussion, this letter details Utilicast's intent to provide Jeff Fruit in support of that request. This Agreement is intended to describe the potential scope of work we may provide to the BANC, and the fees and costs associated with extending our engagement. If the scope, duration, and cost components of this letter are agreeable, Utilicast proposes to amend the existing Consulting Services Agreement (CSA) to extend the end date and provide these services.

Scope of Work: Utilicast's proposed support includes the following consulting services to be provided to the BANC:

BANC EIM Phase II Post Go-Live Support and Analysis

- This task will be completed in the period between May 1, 2021 and approximately September 30, 2021.
- This task is estimated to require 550 hours to complete.
- Consultant will provide post go-live support and analysis for the on-going EIM Operations of the BANC EIM Entity, and its BANC EIM Participants.
- Consultant will provide day-to-day subject matter expertise, and expert analysis of BANC EIM Entity's, and BANC EIM Participants' EIM Market participation and results.
- Consultant will analyze and support resolution of issues which are observed by the consultant and/or assigned by the BANC leadership team.
- Consultant will aide in monitoring BANC BAA EIM Resource Sufficiency Test pass rates; including root cause analysis of test failures. Consultant will suggest, design, and help implement process improvements where appropriate.
- Consultant will assist the BANC Leadership with EIM results and market participation analysis. Consultant will prepare summary presentations using existing reports. Consultant will also suggest, design, and help implement additional reports where appropriate.
- Consultant will support BANC leadership in monitoring the performance of vendor provided EIM software solutions. Consultant will work to ensure timely software issue and defect remediation.

P.O. Box 38
Kirkland, WA 98083

tel: 866.243.2650
fax: 866.424.6132
www.utilicast.com

As-Needed Utilicast Subject Matter Expertise (SME) Allowance

- Consultant Subject Matter experts will be available to provide 50 hours of "as-needed" EIM Operations, Modeling, and Technical SME support.
- These hours allow for the inclusion of specialized Consultant Subject Matter Experts to aid in resolving post-go-live issues if needed.
- The hours will only be utilized if a need for expertise is required, and the expertise is outside of the assigned consultant's knowledge area.
- These hours would require approval by the BANC General Manager prior to any billable work being done.

Schedule of Services: The consulting hours requirement for consultant's support is expected to decrease over the life of this Statement of Work's contract period. Work is expected to be full-time in nature at the beginning of the period, and diminish to part-time, as-needed support at the end of the period. The table below summarizes the consultant utilization per month and estimated consulting hours for the Statement of Work contract period:

Month	Estimated Consultant Utilization	Estimated Hours
May 2021	100%	160
June 2021	75%	120
July 2021	75%	150
August 2021	50%	80
September 2021	25%	40
TOTAL		**550 Hours**

Total Statement of Work Cost Estimate: The cost estimate for the scope of work described above is presented in the table below. The estimated cost is for budgetary purposes. The BANC will only pay for time expended.

Task	Start	End	Total Hours	Rate	Total $
BANC EIM Phase II Post Go-Live Support and Analysis	5/1/2021	9/30/2021	550	$215/hr.	$ 118,250
As-Needed Utilicast Subject Matter Expertise (SME) Allowance	5/1/2021	9/30/2021	50	$215/hr.	$ 10,750
TOTALS			**600**		**$ 129,000**

Travel Expenses: Travel expenses are anticipated to be minimal for this Statement of Work. Travel expenses will be reimbursed as:

- Travel Expenses – When traveling within the BANC region, reimbursement at cost for lodging and mileage at the current federal mileage rate at the time of travel. If travel to/from outside the BANC region is required, reimbursement at cost of actual coach class air travel, lodging, ground transportation (rental car, cab, Uber, mileage) and parking.

- Meals & Incidentals – When traveling at BANC's request, Consultant resources will be reimbursed the current US General Services Administration (GSA) Per Diem rate for Meals and Incidentals for the city in which work is performed. This is anticipated to be primarily Redding, CA and Modesto, CA, but could include other locations.
- Receipts – Receipts will be provided for expenses over $25 except for mileage and the Meals & Incidentals Per Diem, which will be at the current rates described above in lieu of receipts.

We really appreciate the BANC and your consideration of Utilicast for this work extension. We highly value our relationship with the BANC, and appreciate your validation of that relationship through this request.

If you have any questions regarding our proposal, please contact me directly at (916) 458-1032.

Sincerely,

Jeff Fruit

Senior Consultant
Utilicast LLC

Balancing Authority of Northern California
Resolution 20-12-09

AUTHORIZATION OF AMENDMENT TO UTILICAST CONTRACT FOR EXTENSION OF SERVICES RELATED TO PHASE 2 OF ENERGY IMBALANCE MARKET POST GO-LIVE SUPPORT

WHEREAS, the Balancing Authority of Northern California ("BANC") has entered into a contract with Utilicast to, among other things, assist certain BANC members and the Western Area Power Administration – Sierra Nevada Region (collectively, "EIM Participants") to implement the California Independent System Operator ("CAISO") Energy Imbalance Market ("EIM") for their systems with BANC as the EIM Entity, referred to as "BANC EIM Phase 2"; and

WHEREAS, in BANC EIM Phase 1, only the Sacramento Municipal Utility District participated as a EIM Participating Resource with BANC as the EIM Entity; and

WHEREAS, for both Phase 1 and Phase 2, BANC and EIM Participants have relied upon Utilicast to support implementation, and, in the case of Phase 1, ongoing support services; and

WHEREAS, in discussion with EIM Participants through the BANC EIM Committee, it is recognized that the services of Utilicast are needed Post Go-Live for a period longer than what was initially anticipated, currently terminating on April 30, 2021; and

WHEREAS, Utilicast has proposed, and BANC agrees to, an extension from May 1, 2021 to September 30, 2021 to ensure ongoing support to BANC and EIM Participants during this critical operational phase of Phase 2;

NOW THEREFORE, BE IT RESOLVED that the Commissioners of the Balancing Authority of Northern California hereby authorize the General Manager to enter into an amended contract with Utilicast for an extension of services between May 1, 2021 and September 30, 2021, in an amount not to exceed $129,000.

PASSED AND ADOPTED by the Commissioners of the Balancing Authority of Northern California this 16th day of December 2020, by the following vote:

		Aye	No	Abstain	Absent
Modesto ID	James McFall				
City of Redding	Dan Beans				
City of Roseville	Michelle Bertolino				
City of Shasta Lake	James Takehara				
SMUD	Paul Lau				
TPUD	Paul Hauser				

_____
Dan Beans
Chair

_____
Attest by: C. Anthony Braun
Secretary

BANC WHITE PAPER
Cost/Benefit Discussion
BANC OATT/OASIS

INTRODUCTION

During the August 2020 BANC Strategic Planning session, the members discussed a proposal by the Sacramento Municipal Utility District (SMUD) regarding moving the Open Access Same-Time System (OASIS) services for the California-Oregon Transmission Project (COTP) from the Transmission Agency of Northern California (TANC) to the Balancing Authority of Norther California (BANC). SMUD believed there were potential savings in doing so and that housing the OASIS function, along with a BANC Open Access Transmission Tariff (OATT), at BANC for the members' COTP rights would better align transmission usage with the market focus that BANC is assuming for its members. This proposal was focused on the BANC members, but it was agreed that BANC should also consider an option to allow non-BANC members to include their COTP rights on the BANC OASIS. This does not necessarily mean they would participate under a common BANC OATT. The purpose of this white paper is to provide an initial discussion of the cost and benefits for BANC members to move to a BANC OATT/OASIS concept. Based upon member discussions, we can then decide on whether we should proceed with the concept, including an offering for non-BANC members.

COST DISCUSSION

BANC staff worked with SMUD, as the current OASIS provider for TANC as well as the BANC Operator, and BBSW, as regulatory/legal support, to develop an initial estimate of both the implementation and ongoing operating costs for a BANC OATT/OASIS. The assumptions used in this analysis include:

1. Implementation effort would initiate in September 2021 and require an estimated two (2) years, making "go live" in the fall of 2023, in alignment with a CAISO's proposed Extended Day Ahead Market (EDAM) schedule. Should EDAM not proceed, it would still provide a potential benefit in the CAISO Western Energy Imbalance Market (EIM), given Bonneville Power Administration's expected participation in EIM commencing in the Spring of 2022.
2. All BANC members with COTP rights will join the BANC OASIS (i.e. – Modesto, Redding, Roseville, and SMUD).
3. SMUD costs to provide the OASIS administrator service will be based upon fully loaded labor costs and estimated vendor support costs.
4. Costs will be allocated on an entitlement rights share basis (see Attachment A).
5. SMUD will be terminating OASIS administrator service to TANC in the future regardless of whether the other members participate in a BANC OATT/OASIS option. If this

proceeds, SMUD will continue to provide the services to TANC until the transition over to BANC. If BANC members choose not to proceed, SMUD will work with TANC to establish a reasonable transition period to change OASIS administration vendors.

6. For purposes of this initial evaluation, no contingency has been added to the estimates.

The following summarizes the estimates.

Implementation Costs

The estimated costs for implementation of the BANC OATT/OASIS are as follows:

- SMUD Grid Operations support for OASIS software and business information upgrades
  - 1 FTE for 2 years = $500,000
- Settlements group support = $50,000-75,000
- OATI vendor support = $100,000 – 200,000
- BBSW legal support for OATT development and OASIS setup
  - 150-200 labor hours = $60,000 – 80,000
- Total implementation costs = $710,000 – 855,000

Attachment B provides a draft member cost allocation breakdown for the implementation costs.

On-going Costs

The estimated ongoing costs of operation for the OATT/OASIS function are as follows:

- SMUD operations staff (3 FTEs) = $500,000 – 600,000
- Settlements group support = $85,000-100,000
- BANC OASIS annual Share OATI on-going costs = $150,000-$200,000
- OATI vendor annual change order costs = $15,000 – 40,000
- BBSW legal support (100 hours) = $40,000
- Total ongoing costs = $790,000 – 980,000/year

Attachment C provides a draft member cost allocation breakdown for the on-going costs.

BENEFITS DISCUSSION

In looking at the benefits of moving forward with creation of a BANC OATT/OASIS, we considered both quantitative and qualitative issues. The following summarizes this evaluation.

Qualitative Improvements

1. As BANC moves toward expansion into EIM and the potential creation of the EDAM, it is expected that COTP transmission rights will be used to support transactions in these markets. Having BANC, as the EIM/EDAM Entity, be the OASIS administrator and OATT holder for COTP transmission that would be used in these markets would align BANC with other EIM/EDAM Entities and better integrate our market participation efforts.
2. It is anticipated that the members as a whole will be able to reap better value in COTP transmission sales and market participation with consolidation under a single OATT structure. This assumes that the OATT Administrator is given the flexibility to adjust and

set prices in response to market conditions, with policies that are established by the BANC participants.

Quantitative Cost Savings

Evaluating what true dollar savings might be gained from this move is complicated by the following considerations:

1. BANC does not have detailed knowledge on how all TANC OASIS costs (i.e. consultant, legal, management) are allocated to the TANC participants.
2. The current SMUD charges for OASIS administrator services to TANC are not sustainable and are based upon charges that are below SMUD's fully loaded labor costs and do not include any vendor related software charges to provide the service. Thus, in establishing the costs for BANC to provide the OATT/OASIS service at fully loaded labor costs and accounting for vendor support, the result is an increase in the overall costs compared to the current charges for the OASIS Administrator services. Having said that, if SMUD were to continue providing the service for TANC (or should any other vendor provide these services), it would eventually have to be at the full cost level. Therefore, for this evaluation, we are assuming that this is a wash between the two options.

Areas for potential cost savings include:

1. The 2021 TANC Budget shows ~$350,000 in TANC OASIS Administrator/Consultant/Legal support which would not be needed for the BANC option. In addition, the WesTTrans OATI costs may be able to be saved through consolidation with SMUD's and TANC's charges into a single Transmission Service Provider (TSP) registration.
2. Members not participating through a BANC option, means that the share of OASIS costs that SMUD would be picking up for OATT/OASIS services would have to be borne by the other participants. Likewise, if the other members elect not to participate through a BANC OATT/OASIS, SMUD would continue with covering the full costs for maintaining its OATT/OASIS on their own.
3. Consolidation of compliance reporting work may also result in savings compared to separate SMUD and TANC TSP audits. It is not clear if the TANC TSP compliance costs are included in the TANC OASIS budget item noted above.

OTHER CONSIDERATIONS

As was discussed in the introduction, based upon the members' decision on whether we should proceed with a BANC OATT/OASIS approach we will also need to address how we would price an offering for non-BANC members. In addition, since TANC is considering issuing an RFP for OASIS services early next year, we will need to decide if we should be responding to that solicitation or not. It is also expected that the members will want to see the results of the TANC OASIS solicitation before making a final decision on the choice of OASIS administrator service supplier.

CONCLUSIONS

As we evaluated this option, it is expected that whether TANC PA5 participants go with SMUD charging at full cost recovery or go to a new third party supplier, the cost for OASIS administrator services is likely to increase significantly. It is also expected that as a group we would be better off sharing these costs together rather than splitting off separately.

From a non-cost perspective, we do believe that this BANC OATT/OASIS approach provides better alignment with the BANC's longer-term market engagement strategies, which will provide both OASIS Administration costs efficiencies and improved market results. The benefit of improved market results could be substantially more than the benefit of costs savings but are not evaluated herein. Should the Commission wish to proceed with this proposal, further analysis can be developed.

Attachment A – BANC Member COTP Entitlement Rights (MW)

MEMBER	TANC ENTITLEMENT RIGHTS	NON-TANC ENTITLEMENT RIGHTS	TOTAL ENTITLEMENT RIGHTS	% SHARE
MID	326.6827	0	326.6827	31.5
REDDING	116.8948	25.3696	142.2644	13.8
ROSEVILLE	29.3482	0	29.3482	2.8
SMUD	535.7297	2	537.7297	51.9
TOTAL	1008.6554	27.3696	1036.0250	100.0

Attachment B – Implementation Cost Allocation

MEMBER	% SHARE	FORECAST ALLOCATION
MID	31.5	$223,650-269,325
REDDING	13.8	$97,980-117,990
ROSEVILLE	2.8	$19,880-23,940
SMUD	51.9	$368,490-443,745
TOTAL	100.0	$710,000-855,000

Attachment C – On-going Cost Allocation

MEMBER	% SHARE	FORECAST COST ALLOCATION
MID	31.5	$248,850-308,700
REDDING	13.8	$109,020-135,240
ROSEVILLE	2.8	$22,120-27,440
SMUD	51.9	$410,010-508,620
TOTAL	100.0	$790,000-980,000