BANC
EIM Settlement Allocations Manual

June 8, 2020

Version Draft 0.86

Table of Contents

1. BANC Settlement Allocations Manual Overview

[To be added]

NOTE: *This Manual is subject to further additions and edits and is provided as a discussion draft only. Furthermore, BANC will be working with EIM Participants to develop a change management process for this Manual to ensure BANC Commission oversight of any changes to substantive rates or allocations by the BANC EIM Entity. Change management will be added as Appendix E to this Manual.*

2. BANC Settlement Allocations Process

[To be added]

3. Charges, Determinants and Calculation Summary

This BANC EIM Settlement Allocation Manual (Manual) defines all the charges and calculations used to calculate BANC 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 BANC 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.

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 fifteen-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.

M – Identifies a determinant by *BANC EIM Participant*.

Q – CAISO Intertie ID.

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:

x – Energy schedule source location.

y – Energy schedule sink location.

z – A tagged energy schedule id.

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

Calculation Superscripts

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

Calculation Annotations

The following formula annotations are used in this manual:

∑ - 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.

Determinant Precision

All determinants pulled from CAISO Settlement Statements will be displayed in the precision provided from CAISO expect 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.

Generally, 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.

4. Acronyms and Definitions

The following acronyms are defined for this manual:

BANC – Balancing Authority of Northern California. table represents the complete list of

Commission - The governing body of BANC, established under the BANC Joint Powers Agreement, as that agreement may be amended from time-to-time. charges that are allocated to the BANC.

"BANC MEM" or "MEM" – As used in settlement allocation calculations, represents an EIM Participant.

Base Schedule –

BP – The Business Practices adopted by BANC for the operation of EIM in the EIM Entity footprint.

CAISO -

CAISO's Business Practice Manual –

CAISO BPM Settlements Configuration Guide -

CLAP –

Commission - The BANC Commission, which serves as the governing body of BANC, as established under the BANC Joint Powers Agreement, as that agreement may be amended from time-to-time. charges that are allocated to the BANC.

EIM –

EIM Entity – BANC is the EIM Entity for EIM Participants.

EIM GMC Market Services Charge –

EIM GMC Systems Operations –

EIM Participant - An entity which has executed the EIM Participation Agreement with BANC. For purposes of allocation calculations, EIM Participant is represented by "BANC MEM" or "MEM" in any EIM settlement allocation calculation *superscript*. EIM Participant is represented by the capitalized letter "M" in any EIM settlement allocation calculation formula *subscript*.

EIM Participation Agreement - The agreement between BANC, as the EIM Entity, and each EIM Participant, which that establishes respective rights, obligations, and procedures related to EIM participation within the BANC BAA, as that agreement may be amended from time-to-time.

ELAP –

ETSR –

IIE – Instructed Imbalance Energy

LMP -

Measured Demand -

NGR -

Pacific Prevailing Time (PPT)

Pass Through Bill (PTB) – This commonly found *CAISO* Market Settlements term is used through *CAISO' Market Settlements Business Practice Manuals* and refers to a charge or credit that is applied in a charge code to a *Scheduling Coordinator* when adjustments to bill determinants are unable to accomplish the required adjustment.

Resource ID -

Scheduling Coordinator (SC) –

SCID -

Trade Date –

Uninstructed Imbalance Energy –

UFE – Unaccounted for energy.

UOM – Unit of Measure

5. BANC Settlement Allocation Charge Summary

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

BANC Allocation Charge Code		Allocation Based on
Precalculation	BANC EIM Participant Cost Allocation	Set by BANC Commission
Precalculation	BANC EIM Participant Fixed Cost Allocation	Evenly divided by number of BANC EIM Participants
Precalculation	BANC EIM Participant Tagging Precalculation	N/A
Precalculation	BANC EIM Participant Load Ratio Share	Final EIM CAISO metered load value ratio share.
Precalculation	BANC EIM Participant Load Base Schedule	(Scheds at T-40 plus net hourly tag scheds at T-57(* (1 - transmission loss factor)
Precalculation	BANC EIM Participant Measured Demand	Reported load plus exports from BAA ratio share.
Precalculation	BANC EIM Participant Absolute Imbalance Ratio	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
100*	BANC Balancing Account	BANC Daily Load Ratio Share
101*	BANC PTB Charge	Custom Allocated or by default, Daily Load Ratio Share.
102*	BANC Miscellaneous Charge	Custom Allocated
2999	BANC Charge Code 2999 Default Invoice Interest Payment	BANC Cost Allocation Ratio
3999	BANC Charge Code 3999 Default Invoice Interest Charge	BANC Cost Allocation Ratio
4564	GMC-EIM Transaction Charge	BANC EIM Participant Absolute Imbalance Ratio
4575	BANC Charge Code 4575 Scheduling Coordinator Identification Charge	BANC EIM Participant Fixed Cost Allocation Ratio
5024	BANC Charge Code 5024 Invoice Late Payment Penalty	BANC Cost Allocation Ratio
5025	BANC Charge Code 5025 Collateral Late Payment Penalty	BANC Cost Allocation Ratio
5900	BANC Charge Code 5900 Shortfall Receipt Distribution	BANC Cost Allocation Ratio
5901	BANC Charge Code 5901 Shortfall Receipt	BANC Cost Allocation Ratio
5910	BANC Charge Code 5910 Shortfall Allocation	BANC Cost Allocation Ratio
5912	BANC Charge Code 5912 Default Allocation	BANC Cost Allocation Ratio
6045	Over-scheduling and Under-scheduling Charge	Hourly by Over/Under Scheduled Quantity
6046	BANC Charge Code 6046 Over and Under Scheduling Allocation	BANC Daily Load Ratio Share
6194	Spin Reserve Obligation	BANC Hourly Load Ratio Share
6196	Spin Reserve Neutrality Allocation	BANC Hourly Load Ratio Share
6294	Non- Spin Reserve Obligation	BANC Hourly Load Ratio Share
6296	Non- Spin Reserve Neutrality Allocation	BANC Hourly Load Ratio Share
64600	FMM Instructed Imbalance Energy EIM Settlement	EIM Energy Pre-calc; Allocate per Participant specific Interchange activity

64700	Real Time Instructed Imbalance Energy EIM Settlement	EIM Energy Pre-calc; Allocate per Participant specific Interchange activity
64740	Real Time Unaccounted for Energy EIM Settlement	Allocated first to reported load meter error with remaining amount allocated hourly load ratio share.
64750	Real Time Uninstructed Imbalance Energy EIM Settlement	EIM Energy Pre-calc; Allocate per Participant specific Load UIE
64770	Real Time Imbalance Energy Offset EIM	BANC EIM Participant Absolute Imbalance Ratio
6478	RT System Imbalance Energy Offset	BANC Hourly Load Ratio Share
67740	Real Time Congestion Offset EIM	BANC EIM Participant Absolute Imbalance Ratio
69850	Real Time Marginal Losses Offset EIM	BANC EIM Participant Absolute Imbalance Ratio
7070	BANC Charge Code 7070 Flexible Ramp Forecast Movement Settlement	BANC Hourly Measured Demand
7076	BANC Charge Code 7076 Flexible Ramp Forecast Movement Allocation	BANC Hourly Measured Demand
7077	BANC Charge Code 7077 Daily Flexible Ramp Up Uncertainty Award Allocation	BANC Daily Measured Demand
7078	BANC Charge Code 7078 Monthly Flexible Ramp Up Uncertainty Award Allocation	BANC Monthly Measured Demand
7087	BANC Charge Code 7087 Daily Flexible Ramp Down Uncertainty Award Allocation	BANC Daily Measured Demand
7088	BANC Charge Code 7088 Monthly Flexible Ramp Down Uncertainty Award Allocation	BANC Monthly Measured Demand
7989	BANC Charge Code 7989 Invoice Deviation Interest Distribution	BANC Cost Allocation Ratio
7999	BANC Charge Code 7999 Invoice Deviation Interest Allocation	BANC Cost Allocation Ratio
66200	RT Bid Cost Recovery EIM Settlement	BANC Daily Load Ratio Share
66780	Real Time Bid Cost Recovery Allocation EIM	BANC Daily Load Ratio Share

*BANC defined charge codes

6. BANC Settlement Allocation Configuration

BANC will configure and maintain the settlement allocation solution. The solution will allocate *CAISO* charges and credits to *BANC 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 BANC 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 BANC EIM Participant invoice.

BANC EIM Participants

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

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

Miscellaneous Settings

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 BANC EIM Participants Cost Allocation Precalculation

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

The BANC 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
$PPT\_COST\_ALLOC\_RATIO_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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.

7.1.3. BANC Allocation Determinant

Determinants	UOM, Interval Length, Precision	Description

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

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

[1]Rounded to 5 decimal places.

7.2. BANC EIM Participant Fixed Cost Allocation Precalculation

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

7.2.3. BANC Allocation Determinant

Determinants	UOM, Interval Length, Precision	Description
$BNC\_PPT\_FIXED\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Fixed Cost Allocation Ratio** - The fixed cost allocation ratio for all BANC EIM Participants by Trade Date.

7.2.4. The BANC EIM Participant Fix Cost Allocation Ratio evenly splits any value between all participants for a Trade Date.

$$BNC\_PPT\_FIXED\_COST\_ALLOC\_RATIO_{Bd}[1] = 1 / BNC\_DLY\_NUM\_MEM_{Bd}$$

[1]Rounded to 5 decimal places.

7.3. BANC EIM Participant Tagging Precalculation

The BANC 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. 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 BANC 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. These approved tags will be used to calculate imbalance charges and administrative (GMC) charges. No imbalance charges will be calculated on BANC BAA 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 BANC EIM Participants. The BANC allocation software will track all scheduling locations within BANC by 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 BANC 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 BANC EIM Participant that is registered to the schedule's source location.
- BANC EIM Participant Intratie Schedules – These schedule 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 BANC 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$_{Qxyzf}$	MWh 5 Min 8 Decimals	**BANC 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.

PPT_5MIN_TAG_FMM_SCHD$_{Qxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged 15-Minute Market Schedule** - The 5-minute tagged intertie energy schedule from BANC's scheduling system.
PPT_5MIN_TAG_FNL_SCHD$_{Qxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Final Schedule** - The final after the fact 5-minute tagged intertie energy schedule from BANC's scheduling system.

7.3.3 BANC Allocation Determinant

Determinants	UOM, Interval Length, Precision	Description
PPT_5MIN_TAG_BASE_SCHD_SNK$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Base Schedule at a Sink** - The 5-minute tagged Base Schedule that sinks at a BANC 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$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Base Schedule at a Source** - The 5-minute tagged Base Schedule that sources at a BANC 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$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC 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 a BANC EIM Participant's load or resource registered location and imports from outside of BANC.
PPT_5MIN_TAG_FMM_BAA_EXP_SCHD$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC 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 a BANC EIM Participant's load or resource registered location and exports out of BANC.
PPT_5MIN_TAG_FNL_BAA_EXP_SCHD$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Final Balancing Authority Area Export Schedule** - The final after the fact 5-minute tagged energy schedule that sources at a BANC EIM Participant's load or resource registered location and exports out of BANC.

$PPT\_5MIN\_TAG\_FNL\_BAA\_IMP\_SCHD_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Final Balancing Authority Area Import Schedule** - The final after the fact 5-minute tagged energy schedule that sinks at a BANC 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 BANC EIM Participant. The tags will be separated based on the sink location by BANC 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:

$$PPT\_5MIN\_TAG\_BASE\_SCHD\_SNK_{PQxyzf}{}^{1} = PPT\_5MIN\_TAG\_BASE\_SCHD_{Qxyzf}$$

where y (sink) = BANC 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 BANC EIM Participant. The tags will be separated based on the source location by BANC 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:

$$PPT\_5MIN\_TAG\_BASE\_SCHD\_SRC_{PQxyzf}{}^{1} = PPT\_5MIN\_TAG\_BASE\_SCHD_{Qxyzf}$$

where x (source) = BANC 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 BANC EIM Participant. Each 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:

$$PPT\_5MIN\_TAG\_FMM\_BAA\_IMP\_SCHD_{PQxyzf}{}^{1} = PPT\_5MIN\_TAG\_FMM\_SCHD_{Qxyzf}$$

where y = BANC 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 BANC EIM Participant. Each 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:

$PPT\_5MIN\_TAG\_FMM\_BAA\_EXP\_SCHD_{PQxyzf}$[1] = $PPT\_5MIN\_TAG\_EXP\_SCHD_{xyzf}$

where x = BANC 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 BANC EIM Participant. Each 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:

$PPT\_5MIN\_TAG\_FNL\_BAA\_IMP\_SCHD_{PQxyzf}$ = $PPT\_5MIN\_TAG\_FNL\_SCHD_{Qxyzf}$

where x = source location outside of BANC
and y = BANC 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 BANC EIM Participant. Each 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:

$PPT\_5MIN\_TAG\_FNL\_BAA\_EXP\_SCHD_{PQxyzf}$ = $PPT\_5MIN\_TAG\_FNL\_SCHD_{Qxyzf}$

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

[1]Rounded to 4 decimal places.

7.4. BANC EIM Participant Load Ratio Share Precalculation

BANC settlement allocations will require hourly and daily load ratio share percentages for each BANC EIM Participant. These BANC load ratio share calculations will be based on the final EIM CAISO submitted metered value for each BANC EIM Participant's load area (CLAP) and will not include any registered NGR load. A ratio will be calculated for each BANC EIM Participant as the ratio of participant's (CLAP) metered load over the sum of all participant's (ELAP) 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.

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 *BANC 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 a BANC EIM Participant	MSS Netting Pre-Calculation Version 5.8.

7.4.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description
BNC_5MIN_LD_QTY$_{Bf}$	MWh 5 Min TBD	**BANC EIM Participant 5-Minute Load Quantity** - BANC will calculate a total BANC load that will be compared with the sum of all the BANC EIM Participant load reported on the CAISO EESC billing determinant statement.
BNC_5MIN_LD_QTY_THRESHOLD$_{Bf}$	MWh 5 Min 3 Decimals	**BANC 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 BANC 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	**BANC EIM Participant 5-Minute Load Quantity** - The BANC EIM Participant 5-minute submitted load to CAISO.
PPT_HRLY_LD_QTY$_{Ph}$	MWh Hourly 4 Decimals	**BANC EIM Participant Hourly Load** Quantity - The total hourly megawatt-hour load for a BANC EIM Participant.
BNC_HRLY_LD_QTY$_{Bh}$	MWh Hourly 4 Decimals	**BANC Hourly Load Quantity** - The total hourly megawatt-hour load for all BANC EIM Participants in the Prevailing Pacific Time Zone.

$PPT\_HRLY\_LRS_{Ph}$	Decimal Hourly 5 Decimals	**BANC EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for a BANC EIM Participant to the total hourly BANC load.
$PPT\_DLY\_LD\_QTY_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Daily Load Quantity** – the total daily megawatt-hour load for each BANC EIM Participant 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 BANC EIM Participants in the Prevailing Pacific Time zone.
$PPT\_DLY\_LRS_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for a BANC EIM Participant to the total daily BANC load in the Pacific Prevailing Time zone.
$CAISO\_5MIN\_LD\_QTY_{Bf}$	MWh 5 Min 4 Decimals	**CAISO 5-Minute Load Quantity** - The total 5-minute load for BANC is summed from all BANC 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 BANC 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 a BANC EIM Participant)

7.4.5. BANC 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 BANC 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. To calculate the BANC 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.

$$PPT\_HRLY\_LRS_{Ph}{}^{1} = PPT\_HRLY\_LD\_QTY_{Ph} / BNC\_HRLY\_LD\_QTY_{Bh}$$

[1]Rounded to 5 decimal places.

7.4.8. To support the BANC 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.

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

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

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

7.4.10. To calculate the BANC 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.

$PPT\_DLY\_LRS_{Pd}[1] = PPT\_DLY\_LD\_QTY_{Pd} / BNC\_DLY\_LD\_QTY_{Bd}$

[1]Rounded to 5 decimal places.

Allocations Monitoring

7.4.11. 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 BANC EIM Participant loads from the CAISO EESC billing determinant statement.

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

7.4.12. For variance checking, BANC will calculate a load comparison difference from the total load from all the BANC 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

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

7.4.13. 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. BANC EIM Participant Load Base Schedule Precalculation

The Load Base Schedule is a BANC mathematically calculated, hourly total energy supply prescheduled for each BANC 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. BANC 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 participant of BANC, WAPA also supplies transmission losses for the COPT 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 COPT loss forecast to CAISO which BANC will retrieve from BSAP. BANC will reduce WAPA's hourly load base schedule by the forecasted COPT 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 its participants.

To calculate each BANC 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 BANC EIM Participant,
- Sum the net hourly impact of all approved and pending approved tagged energy schedules that source and sink from each BANC 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 BANC 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	BANC 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 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.	BANC EIM Participant PRSC Bill Determinant Statement: BA_5MIN_RSRC_BASE_ENGY_SCHD_QTY	t = RSRC_TYPE = 'GEN' r is assigned to a BANC EIM Participant	Real Time Energy Pre-Calculation Version 5.20 – Note this variable is listed as an input to this calculation, but CAISO doesn't define where it is sourced from).

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 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	**BANC EIM Participant 5-Minute Resource Base Schedule** - BANC EIM Participant generation resource 5-minute base schedule as presented in CAISO settlement statements to the BANC EIM Participants.
PPT_5MIN_TOT_RSRC_BASE_SCHD$_{Pf}$	MWh 5 Minute 2 Decimals	**BANC EIM Participant 5-Minute Total Resource Base Schedule** - Total BANC EIM Participant 5-minute resource base schedule.

PPT_HRLY_TOT_RSRC_BASE_SCHD$_{Ph}$	MWh Hourly 2 Decimals	**BANC EIM Participant Hourly Total Resource Base Schedule** - Total BANC EIM Participant hourly resource base schedule.
PPT_5MIN_TAG_BASE_SCHD_SNK$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Base Schedule at a Sink** - A single 5-minute tagged Base Schedule that sinks at a BANC 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 BANC EIM Participant Tagging Precalculation.
PPT_5MIN_TAG_BASE_SCHD_SRC$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Base Schedule at a Source** - A single 5-minute tagged Base Schedule that sources at a BANC 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 BANC EIM Participant Tagging Precalculation.
PPT_5MIN_NET_TAG_BASE_SCHD$_{Ph}$	MWh 5 Minute 8 Decimals	**BANC EIM Participant 5-Minute Net Tagged Base Schedule** - BANC EIM Participant 5-minute total net tagged base schedule.
PPT_HRLY_NET_TAG_BASE_SCHD$_{Ph}$	MWh Hourly 8 Decimals	**BANC EIM Participant Hourly Net Tagged Base Schedule** - BANC EIM Participant hourly total net tagged base schedule.
PPT_5MIN_LD_BASE_SCHD$_{Pf}$	MWh 5 Minute 2 Decimals	**BANC EIM Participant 5-Minue Load Base Schedule** - BANC EIM Participant total 5-minute load Base Schedule rounded to two decimal places.
PPT_HRLY_COPT_FCST_LOSS_QTY$_{Ph}$	MWh Hourly 2 Decimals	**BANC 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	**BANC EIM Participant Hourly Load Base Schedule** - BANC 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 BANC 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 BANC 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 participant, resource and 5-minute interval:

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

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

[1]Rounded to 4 decimal places.

7.5.5. Sum all final, submitted 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 BANC 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 participant will have a 5-minute net tagged base schedule volume.

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

7.5.8. For each BANC 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 BANC 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.

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

[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 BANC 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 BANC 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 BANC 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 hourly BANC load Base Schedule difference will be calculated from the hourly CAISO BANC calculated load Base schedule less the hourly BANC calculated 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. BANC EIM Participant Measured Demand Precalculation

Measured demand is a common allocation methodology used across organized electric markets to distribute charge amounts. This methodology calculates each company's reported load plus their actual scheduled exports and defines it as Measured Demand. Using each companies' Measured Demand, charges are prorated across all companies by in an energy market by the ratio of a company's measured demand to the sum of all company measured demand for the specified time interval. BANC will use this methodology with a slight difference. BANC will use both the participant's load plus any export of any schedule related to their registered locations out of the BANC BAA. The BANC EIM Participant does not need to be the scheduler, but the schedule must originate from one of their BANC registered resource or load locations. This methodology allows BANC to charge and credit participants for business activity related to their load and only schedules that leave the BANC BAA. Each participant will be responsible to

determine whether these charges are credits are applicable to companies that are doing business with them and charge or collect the funds from them independently from BANC.

To calculate each BANC EIM Participant's Measured Demand, BANC will:

- Sum by hour the participant's CAISO reported load meter data, plus
- Sum of all schedules by hour that export BANC that source at a BANC EIM Participant's registered load and resource locations.

7.6.1. CAISO Determinants

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

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_5MIN_TAG_FNL_BAA_EXP_SCHD$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Balancing Authority Area Export Schedule** - The final after the fact summed hourly tagged energy schedule that sources at a BANC EIM Participant's load or resource registered location and exports out of BANC. *This determinant is calculated in the BANC EIM Participant Tagging Precalculation.*
PPT_HRLY_TAG_FNL_BAA_EXP_TOT_SCHD$_{Ph}$	MWh 5 Min 8 Decimals	**BANC EIM Participant Tagged Final BAA Export Total Schedule** – The hourly sum of all tagged exports from a participant that leave the BANC BAA.
PPT_HRLY_LD_QTY$_{Ph}$	MWh Hourly 4 Decimal	**Participant Hourly Load Quantity** - The total hourly megawatt-hour load for a BANC EIM Participant. *Calculated in BANC EIM Participant Load Ratio Share Percentages Precalculation*.
PPT_HRLY_TAG_BAA_EXP_TOT_SCHD$_{Ph}$	MWh Hourly 8 Decimals	**BANC EIM Participant Hourly Tagged Balancing Authority Area Export Total Schedule** - BANC EIM Participant hourly total BANC export schedule.
PPT_HRLY_MSRD_DMD$_{Ph}$	MWh Hourly 4 Decimals	**BANC EIM Participant Hourly Measured Demand** - The hourly total measured demand by BANC EIM Participant in MWh. Rounded to 4 decimal places.
PPT_HLRY_MSRD_DMD_RATIO$_{Ph}$	Decimal Hourly	**BANC EIM Participant Hourly Measured Demand Ratio** - The hourly decimal ratio of a

	5 Decimal	BANC EIM Participant's Measured Demand to all of BANC's Measured Demand.
$PPT\_DLY\_MSRD\_DMD_{Pd}$	MWh Daily 4 Decimals	**BANC EIM Participant Daily Measured Demand** - The daily total measured demand by BANC EIM Participant in MWh.
$PPT\_DLY\_MSRD\_DMD\_RATIO_{Pd}$	Decimal Daily 5 Decimals	**BANC Daily Measured Demand Ratio** - The daily decimal ratio of a BANC EIM Participant's Measured Demand to all of BANC's Measured Demand rounded to 5 decimal places.
$PPT\_MNLY\_MSRD\_DMD_{Pm}$	MWh Monthly 4 Decimals	**BANC EIM Participant Monthly Measured Demand** - The monthly total measured demand by BANC EIM Participant in MWh.
$PPT\_MNLY\_MSRD\_DMD\_RATIO_{Pm}$	Decimal Monthly 5 Decimals	**BANC EIM Participant Monthly Measured Demand Ratio** - The monthly decimal ratio of a BANC EIM Participant's Measured Demand to all of BANC's Measured Demand.

Formulas

7.6.4. The measured demand calculations needs to identify all final tagged energy schedules that leave BANC. The first step is to filter out all final tagged schedules in BANC for the Trade Date where the sink location on the tag is outside of BANC. These schedules are calculated in the BANC EIM Participant Tagging Precalculation. These 5-minute after the fact schedules contribute to BANC's BAA net interchange. Each schedule thereafter will be assigned to a BANC EIM Participant based on which participant owns the tag source location and summed to an hourly value.

$$PPT\_HRLY\_TAG\_FNL\_BAA\_EXP\_TOT\_SCHD_{Ph} = \sum_{Ph} (PPT\_5MIN\_TAG\_FNL\_BAA\_EXP\_SCHD_{PQxyzf})$$

7.6.5. Participant hourly measured demand is calculated by summing the hourly participant exports with the hourly participant load calculated from the BANC EIM Participant Load Ration Share Percentages Precalculation. This calculation will be rounded to 4 decimal places since that is all the precision the Participant Hourly Load Quantity has.

$$PPT\_HRLY\_MSRD\_DMD_{Ph}{}^{1} = PPT\_HRLY\_LD\_QTY_{Ph} + PPT\_HRLY\_TAG\_BAA\_EXP\_TOT\_SCHD_{Ph}$$

[1]Rounded to 4 decimal places.

7.6.6. Each participant's hourly measured demand is calculated by dividing the participant's measured demand by the sum of all participant measured demand.

$$PPT\_HRLY\_MSRD\_DMD\_RATIO_{Ph}{}^{1} = PPT\_HRLY\_MSRD\_DMD_{Ph} / \sum_{Bh} (PPT\_HRLY\_MSRD\_DMD_{Ph})$$

[1]Rounded to 5 decimal places.

7.6.7. Participant daily measured demand is calculated by summing the participant's hourly measured demand across the Trade Date.

$PPT\_DLY\_MSRD\_DMD_{Pd} = \sum_{Pd} (PPT\_HRLY\_MSRD\_DMD_{Ph})$

7.6.8. Each participant's daily measured demand is calculated by dividing the participant's measured demand by the sum of all participant measured demand.

$$PPT\_DLY\_MSRD\_DMD\_RATIO_{Pd}[1] = PPT\_DLY\_MSRD\_DMD_{Pd} / \sum_{Bd} (PPT\_DLY\_MSRD\_DMD_{Pd})$$

[1]Rounded to 5 decimal places.

7.6.9. Participant monthly measured demand is calculated by summing the participant's daily measured demand across the calendar Month. This mechanism for allocating charges can only be used on the last day of the month when the entire month's daily measured demand volumes are known. Calculating this variable across a month could result in different values being available from different planned settlement statement intervals. When this calculation is performed, it will always use the daily measured demand from the same planned settlement statement type (T12, T55, …) across the month. If CAISO ever resettles a single date and all the same planned statement intervals will not be settled, BANC will use the best and last values for each day.

$PPT\_MNLY\_MSRD\_DMD_{Pm} = \sum_{Pm} (PPT\_DLY\_MSRD\_DMD_{Pd})$

7.6.10. Each participant's monthly measured demand is calculated by dividing the participant's measured demand by the sum of all participant measured demand.

$$PPT\_MNLY\_MSRD\_DMD\_RATIO_{Mm}[1] = PPT\_MNLY\_MSRD\_DMD_{Pm} / \sum_{Bm}(PPT\_MNLY\_MSRD\_DMD_{Pm})$$

[1]Rounded to 5 decimal places.

7.7. BANC 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 BANC EIM Participants based on their absolute volume difference as an hourly BANC 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 BANC 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.

7.7.1. 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 $_{m'}$ = 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 *BANC EIM Participant's* name.	BANC 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 a BANC EIM Participant	MSS Netting Pre-Calculation Version 5.8.

7.7.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description

7.7.3 BANC Allocation Determinants

Determinants	UOM, Interval Length, Precision	Description
PPT_HRLY_LD_QTY$_{Ph}$	MWh Hourly 4 Decimals	**BANC EIM Participant Hourly Load** Quantity - The total hourly megawatt-hour load for a BANC EIM Participant. This determinant is defined in the *BANC EIM Participant Load Ratio Share Precalculation*.
PPT_HRLY_LD_BASE_SCHD$_{Ph}$	MWh Hourly 2 Decimals	**BANC EIM Participant Hourly Load Base Schedule** - BANC EIM Participant total hourly load Base Schedule. This determinant is defined in the *BANC EIM Participant Load Base Schedule Precalculation*.

PPT_HRLY_ABS_LD_IMB$_{Ph}$	MWH Hourly 2 Decimals	**BANC EIM Participant Hourly Absolute Load Imbalance** – BANC 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.
PPT_5MIN_RSRC_QTY$_{PRf}$	MWH 5 Minute 4 Decimals	**BANC 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	**BANC 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	**BANC EIM Participant 5-Minute Resource Base Schedule** - BANC EIM Participant generation resource 5-minute base schedule as presented in CAISO settlement statements to the BANC EIM Participants. This determinant is defined in the *BANC EIM Participant Load Base Schedule Precalculation*.
PPT_HRLY_RSRC_BASE_SCHD$_{PRh}$	MWH Hourly 2 Decimals	**BANC EIM Participant Hourly Resource Base Schedule** - BANC EIM Participant generation resource 5-minute base schedule summed to an hourly value.
PPT_HRLY_ABS_RSRC_IMB$_{PRh}$	MWH Hourly 2 Decimals	**BANC EIM Participant Hourly Absolute Resource Imbalance** – BANC EIM Participant absolute generation imbalance by resource as 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	**BANC EIM Participant Hourly Total Absolute Resource Imbalance** – Total BANC EIM Participant hourly generation absolute resource imbalance.
PPT_5MIN_TAG_FNL_BAA_IMP_SCHD$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Final Balancing Authority Area Import Schedule** - The final after the fact 5-minute tagged energy schedule that sinks at a BANC EIM Participant's load or resource registered location and imports into BANC.
PPT_HRLY_TAG_BAA_IMP_SCHD$_{Pxyzh}$	MWh Hourly 8 Decimals	**BANC 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 BANC EIM Participant Tagging Precalculation.*
PPT_5MIN_TAG_BASE_SCHD_SNK$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Base Schedule at a Sink** - A single 5-minute tagged Base Schedule that sinks at a BANC 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 BANC EIM Participant Load Base Schedule Precalculation.*
PPT_HRLY_TAG_BASE_SCHD_SNK$_{Pxyzh}$	MWh Hourly 8 Decimals	**BANC EIM Participant Tagged Base Schedule at a Sink -** A single hourly tagged Base Schedule that sinks at a BANC 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$_{Pxyzh}$	MWh Hourly 8 Decimals	**BANC EIM Participant Tagged BAA Import Absolute Imbalance** – A single hourly tagged BAA import schedule calculated absolute imbalance.
PPT_HRLY_TAG_BAA_EXP_SCHD$_{Pxyzh}$	MWh Hourly 8 Decimals	**BANC 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$_{Pxyzh}$	MWh Hourly 8 Decimals	**BANC EIM Participant 5-Minute Tagged Base Schedule at a Sink** - A single hourly tagged Base Schedule that sinks at a BANC 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_EXP_ABS_IMB$_{Pxyzh}$	MWh Hourly 8 Decimals	**BANC 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	**BANC EIM Participant Hourly Tagged Absolute Imbalance** – The total hourly intertie tagged import and export absolute imbalance for a participant.
PPT_HRLY_LD_INTERTIE_ABS_IMB$_{Ph}$	MWh Hourly 8 Decimals	**BANC EIM Participant Load and Intertie Hourly Absolute Imbalance** – The BANC 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	**BANC EIM Participant Hourly Absolute Load and Intertie Imbalance Ratio** – The BANC EIM Participant's hourly decimal ratio of the load and intertie imbalance allocation share. Rounded to 5 decimals.
PPT_HRLY_TOT_ABS_IMB$_{Ph}$	MWh Hourly 8 Decimals	**BANC EIM Participant Total Hourly Absolute Imbalance** – The BANC 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	**BANC EIM Participant Hourly Absolute Imbalance Ratio** – The BANC EIM Participant's hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.

Formulas

Hourly Load Imbalance

7.7.4. BANC 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 Participant Hourly Load Base Schedule determinant.

$$PPT\_HRLY\_ABS\_LD\_IMB_{Ph}{}^{1} = ABS(PPT\_HRLY\_LD\_QTY_{Ph} - PPT\_HRLY\_LD\_BASE\_SCHD_{Ph})$$

[1]Rounded to 2 decimal places.

Hourly Resource Imbalance

7.7.5. The BANC 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.

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

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

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

7.7.7. 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.

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

7.7.8. 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 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.

7.7.9. 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

7.7.10. BANC 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 intra-change schedules are excluded from this calculation.

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

$$PPT\_HRLY\_TAG\_BAA\_IMP\_SCHD_{Pxyzh} = \sum_{Pxyzh}(PPT\_5MIN\_TAG\_FNL\_BAA\_IMP\_SCHD_{PQxyzf})$$

7.7.11. 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 BANC EIM Participant Load Base Schedule Precalculation.

$$PPT\_HRLY\_TAG\_BASE\_SCHD\_SNK_{Pxyzh} = \sum_{Pxyzh}(PPT\_5MIN\_TAG\_BASE\_SCHD\_SNK_{PQxyzf})$$

7.7.12. Calculate for each imported schedule that sinks at a BANC EIM Participant's location the absolute hourly imbalance.

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

7.7.13. Identify all final schedules that source at a BANC EIM Participant's registered load or resource location that sink outside of the BANC BAA. This determinant ($PPT\_5MIN\_TAG\_BAA\_EXP\_SCHD_{Mxyzf}$) was previously defined in the BANC EIM Participant Measured Demand Precalculation. Aggregate all exported schedules from 5-minute to hourly values.

$$PPT\_HRLY\_TAG\_BAA\_EXP\_SCHD_{Pxyzh} = \sum_{Pxyzh}(PPT\_5MIN\_TAG\_BAA\_EXP\_SCHD_{Pxyzf})$$

7.7.14. 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 BANC EIM Participant Load Base Schedule Precalculation.

$$PPT\_HRLY\_TAG\_BASE\_SCHD\_SRC_{Pxyzh} = \sum_{Pxyzh}(PPT\_5MIN\_TAG\_BASE\_SCHD\_SRC_{PQxyzf})$$

7.7.15. Calculate for each exported schedule that sources at a BANC EIM Participant's location the absolute hourly imbalance.

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

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

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

Load and Intertie Imbalance

7.7.17. 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 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.

7.7.18. Add up participant hourly imbalance to calculate a BANC wide hourly imbalance volume.

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

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

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

[1]Rounded to 5 decimal places.

Participant Hourly Total Imbalance – Generation, Load and Interties

7.7.20. Each 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 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.

7.7.21. Add up participant hourly imbalance to calculate a BANC wide hourly imbalance volume.

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

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

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

[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 BANC 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 daily load ratio share basis.

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 BANC 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 BANC 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 BANC EIM Participant monthly allocation of CAISO charge code 2999.

BNC_DLY_4564_ALLOC_AMT$_{Bd}$	$ Monthly 2 Decimal	**BANC Total Daily 4564 Allocation Amount** – Total BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC EIM Participant daily allocation of CAISO charge code 64740.

BNC_DLY_64750_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64750 Allocation Amount** – Total BANC 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 BANC 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 BANC 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 BANC 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 BANC EIM Participants for the Trade Date.
BNC_DLY_67740_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 67740 Allocation Amount** – Total BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC 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 BANC EIM Participants for the Trade Date.
BNC_DLY_100_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 100 Allocation Amount** – Total BANC EIM Participant monthly allocation of CAISO charge code 4575.
PPT_DLY_LRS$_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for a BANC EIM Participant to the total daily BANC load in the Pacific

		Prevailing Time zone. This determinant is calculated in the Load Ratio Share Precalculation.
$PPT\_DLY\_100\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 100 Amount** - BANC EIM Participant daily allocation of CAISO charge code 100 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 BANC 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 BANC EIM Participants related to statement. Monthly determinants will only have values when allocating the last day of the month.

$$\begin{aligned} BNC\_DLY\_ALLOC\_TOT_{Bd} = {} & BNC\_DLY\_101\_ALLOC\_AMT_{Bd} + \\ & BNC\_MNLY\_2999\_ALLOC\_AMT_{Bm} + \\ & BNC\_MNLY\_3999\_ALLOC\_AMT_{Bm} + \\ & BNC\_DLY\_4564\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_4575\_ALLOC\_AMT_{Bm} + \\ & BNC\_DLY\_5024\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5025\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_7070\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5900\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5901\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5910\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_5912\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_6046\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_6194\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_6196\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_6294\_ALLOC\_AMT_{Bd} + \\ & BNC\_DLY\_6296\_ALLOC\_AMT_{Bd} + \end{aligned}$$

$BNC\_DLY\_64600\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_64700\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_64740\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_64750\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_64770\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_6478\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_66200\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_66780\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_67740\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_69850\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_7070\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_7076\_ALLOC\_AMT_{Bd}$ +

$BNC\_DLY\_7077\_ALLOC\_AMT_{Bd}$ +

$BNC\_MNLY\_7078\_ALLOC\_AMT_{Bm}$ +

$BNC\_DLY\_7087\_ALLOC\_AMT_{Bd}$ +

$BNC\_MNLY\_7088\_ALLOC\_AMT_{Bm}$ +

$BNC\_DLY\_7989\_ALLOC\_AMT_{Pd}$ +

$BNC\_DLY\_7999\_ALLOC\_AMT_{Pd}$

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 participants.

$$BNC\_DLY\_100\_AMT_{Bd} = CAISO\_DLY\_STMT\_TOT_{Bd} - BNC\_DLY\_ALLOC\_TOT_{Bd}$$

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

$$PPT\_DLY\_100\_AMT_{Pd}{}^{1} = BNC\_DLY\_100\_AMT_{Bd} * PPT\_DLY\_LRS_{Pd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

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

$$BNC\_DLY\_100\_ALLOC\_DIFF\_AMT_{Bd} = BNC\_DLY\_100\_AMT_{Bd} - \sum_{Bd}(PPT\_DLY\_100\_AMT_{Pd})$$

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, BANC settlement staff will analyze the PTB and determine if there were any related activity attributable to either a single BANC EIM Participant or a group of BANC EIM Participants. If the staff is unable to discern any specific cause and effect relationship, BANC staff will allow the PTB to be distributed based on the default allocation of Daily Load Ratio Share.

If BANC staff determines any PTB is attributable to one or more participants, BANC staff 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, BANC staff will provide a notice to BANC EIM Participants as to the reason for the PTB.

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	**BANC EIM Participant Daily Manual PTB Allocation Amount** – A manually allocation amount as calculated by BANC staff.
$BNC\_DLY\_PTB\_MAN\_ALLOC\_FLAG_{Bd}$	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.

9.3. BANC Allocation Determinants

Determinants	UOM & Interval Length	Description
BNC_DLY_PTB_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily PTB Amount** – The daily total of all PTBs received by BANC for this settlement.
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 2999.
CAISO_HRLY_6194_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_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_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_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_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_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_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_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. 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.

$PPT\_DLY\_LRS_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for a BANC EIM Participant to the total daily BANC load in the Pacific Prevailing Time zone.
$PPT\_DLY\_101\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 101 Amount** - BANC EIM Participant daily allocation of CAISO PTB charges rounded to two decimal places.
$BNC\_DLY\_101\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 101 Amount** – Total BANC 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 the all CAISO PTB charges for the Trade Date and the total of all allocations to BANC EIM Participants

Formulas

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

$$BNC\_DLY\_PTB\_AMT_{Bd} = CAISO\_MNLY\_4575\_PTB\_AMT_{Bm} + \sum_{Bd}(CAISO\_HRLY\_6194\_AMT_{Bh}) + \sum_{Bd}(CAISO\_HRLY\_6294\_PTB\_AMT_{Bh}) + \sum_{Bd}(CAISO\_5MIN\_64600\_PTB\_AMT_{Bf}) + \sum_{Bd}(CAISO\_5MIN\_64700\_PTB\_AMT_{Bf}) + \sum_{Bd}(CAISO\_5MIN\_64750\_PTB\_AMT_{Bf}) + \sum_{Bd}(CAISO\_DLY\_7070\_PTB\_AMT_{Bh}) + \sum_{Bd}(CAISO\_DLY\_7076\_PTB\_AMT_{Bf}) + CAISO\_DLY\_7077\_PTB\_AMT_{Bd} + CAISO\_MNLY\_7078\_PTB\_AMT_{Bm} + CAISO\_DLY\_7087\_PTB\_AMT_{Bd} + CAISO\_MNLY\_7088\_PTB\_AMT_{Bm}$$

9.5. The allocation solution will import any manual allocations from BANC staff and assign them to each participant.

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

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

$$BNC\_DLY\_PTB\_MAN\_ALLOC\_FLAG_{Bd}$$

9.7. Allocate any PTB to participants.

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

[1]Rounded to 2 decimal places.

Allocations Monitoring

9.8. The daily allocation is summed to a daily total.

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

9.9. The total daily difference between the charge BANC received and the allocated amount to BANC 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 BANC 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, BANC staff will provide a notice to BANC EIM Participants as to the reason for the associated charge or credit.

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	**BANC EIM Participant 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	**BANC EIM Participant Daily 102 Amount** - BANC EIM Participant 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 BANC EIM Participant daily allocation of miscellaneous charges.

Formulas

10.4 The allocation solution will import any miscellaneous allocations from BANC staff 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.

Allocations Monitoring

10.6. The daily allocation is summed to a daily total.

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

11. BANC Charge Code 2999 Default Invoice Interest Payment

CAISO Application

Business Associates 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 BANC Cost Allocation Ratio Precalculation.

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
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Cost Allocation Ratio** - The BANC EIM Participant daily cost allocation ratio per participant. This percentage is expected to be defined annually 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. Refer to the

		BANC EIM Participants Cost Allocation Precalculation.
CAISO_MNLY_2999_AMT$_{Bm}$	$ Monthly 2 Decimal	**CAISO Monthly 2999 Amount** - The CAISO CC2999 credit amount to BANC.
PPT_MNLY_2999_AMT$_{Pm}$	$ Monthly 2 Decimal	**BANC EIM Participant Monthly 2999 Amount** - BANC EIM Participant monthly allocation of CAISO charge code 2999 rounded to two decimal places.
BNC_MNLY_2999_ALLOC_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Total Monthly 2999 Allocation Amount** – Total BANC 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 BANC EIM Participants by each participant's specific cost allocation ratio in the BANC 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.

Allocations Monitoring

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

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

11.7. The total daily difference between the charge BANC received and the allocated amount to BANC 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

CAISO 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 CAISO 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, BANC will allocate the monthly charge using the BANC Cost Allocation Ratio Precalculation.

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	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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. Refer to the BANC 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	**BANC EIM Participant Monthly 3999 Amount** - BANC EIM Participant monthly allocation of CAISO charge code 3999 rounded to two decimal places.
$BNC\_MNLY\_3999\_ALLOC\_AMT_{Bm}$	$ Monthly 2 Decimal	**BANC Total Monthly 3999 Allocation Amount** – Total BANC 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 BANC EIM Participants by each participant's specific cost allocation ratio in the BANC 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.

Allocations Monitoring

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

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

12.7. The total daily difference between the charge BANC received and the allocated amount to BANC 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 follow 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.

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	**BANC EIM Participant Hourly Absolute Load and Intertie Imbalance Ratio** – The BANC EIM Participant's hourly decimal ratio of the load and intertie imbalance allocation share. Rounded to 5 decimals.
PPT_HRLY_4564_AMT$_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 4564 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 4564 rounded to two decimal places.
PPT_DLY_4564_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 4564 Amount** - BANC EIM Participant daily allocation 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 BANC 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 BANC 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.
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	**BANC Hourly 4564 Allocated Differential Amount** - The calculated daily difference

	2 Decimal	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 BANC EIM Participants by hourly load 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. Sum the hourly allocate to a daily total for each BANC EIM Participant.

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

Allocations Monitoring

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

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

13.9. The daily allocation to all BANC 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.

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

13.10. The total CAISO daily charge to BANC.

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

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

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

13.12. The total daily difference between the CAISO total daily charge to BANC and the total daily allocated amount to BANC 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 BANC EIM Participants on the same day via the BANC 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 BANC 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.

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.
$BNC\_PPT\_FIXED\_COST\_ALLOC\_RATIO_{Bd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Fixed Cost Allocation Ratio** - The fixed cost allocation ratio for all BANC EIM Participants by Trade Date.
$PPT\_DLY\_4575\_AMT_{Pm}$	$ Monthly 2 Decimal	**BANC EIM Participant Daily 4575 Amount** - BANC EIM Participant daily allocation 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 BANC 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 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 BANC EIM Participants by daily load ratio share Precalculation.

$$PPT\_DLY\_4575\_AMT_{Pm}{}^{1} = CAISO\_DLY\_4575\_AMT_{Bm} * BNC\_PPT\_FIXED\_COST\_ALLOC\_RATIO_{Bd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

14.7. The total daily allocation to BANC EIM Participants is summed to a daily total.

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

14.8. The total daily difference between the charge BANC received and the allocated amount to BANC 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.

BANC Application

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

15.1. CAISO Determinants

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

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	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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. Refer to the

		BANC EIM Participants 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	**BANC EIM Participant Daily 5024 Amount** - BANC EIM Participant daily allocation 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 BANC 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 BANC EIM Participants by each participant's specific cost allocation ratio in the BANC 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.

Allocations Monitoring

15.6. The allocation is summed to a daily total.

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

15.7. The total daily difference between the charge BANC received and the allocated amount to BANC 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 CAISO 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, BANC will allocate the daily charge using the BANC Cost Allocation Ratio Precalculation.

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	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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. Refer to the BANC EIM Participants Cost Allocation Precalculation.
CAISO_DLY_5025_AMT$_{Bd}$	$ Daily	**CAISO Daily 5025 Amount** - The CAISO CC5025 charge amount to BANC.

	2 Decimal	
$PPT\_DLY\_5025\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 5025 Amount** - BANC EIM Participant daily allocation 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 BANC 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 BANC EIM Participants by each participant's specific cost allocation ratio in the BANC 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.

Allocations Monitoring

16.6. The allocation is summed to a daily total.

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

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

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

18. 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 BANC Cost Allocation Ratio Precalculation.

18.1. 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

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	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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. Refer to the

		BANC 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	**BANC EIM Participant Daily 5900 Amount** - BANC EIM Participant allocation 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 BANC 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

18.4. 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.

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

Allocations Monitoring

18.6. The allocation is summed to a daily total.

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

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

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

19. 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 BANC Cost Allocation Ratio Precalculation.

19.1. 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

19.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description

19.3. BANC Allocation Determinants

Determinants	UOM & Interval Length	Description

$PPT\_COST\_ALLOC\_RATIO_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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. Refer to the BANC EIM Participants 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	**BANC EIM Participant Daily 5901 Amount** - BANC EIM Participant allocation 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 BANC 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

19.4. 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.

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

Allocations Monitoring

19.6. The allocation is summed to a daily total.

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

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

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

20. 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 BANC Cost Allocation Ratio Precalculation.

20.1. 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

20.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description

20.3. BANC Allocation Determinants

Determinants	UOM & Interval Length	Description

$PPT\_COST\_ALLOC\_RATIO_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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. Refer to the BANC EIM Participants Cost Allocation Precalculation.
$CAISO\_DLY\_5910\_AMT_{Bd}$	$ Daily 2 Decimal	CAISO Daily 5910 Amount - The CAISO CC5910 credit amount to BANC.
$PPT\_DLY\_5910\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 5910 Amount** - BANC EIM Participant allocation of CAISO charge code 5910 rounded to two decimal places.
$BNC\_DLY\_5910\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5910 Allocation Amount** – Total BANC 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

20.4. 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.

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

Allocations Monitoring

20.6. The allocation is summed to a daily total.

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

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

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

21. 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 BANC Cost Allocation Ratio Precalculation.

21.1. 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

21.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description

21.3. BANC Allocation Determinants

Determinants	UOM & Interval Length	Description
PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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. Refer to the

		BANC EIM Participants Cost Allocation Precalculation.
CAISO_DLY_5912_AMT$_{Bd}$	$ Daily 2 Decimal	**CAISO Daily 5912 Amount** - The CAISO CC5912 charge amount to BANC.
PPT_DLY_5912_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant 5912 Amount** - BANC EIM Participant allocation of CAISO charge code 5912 rounded to two decimal places.
BNC_DLY_5912_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 5912 Allocation Amount** – Total BANC 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

21.4. 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.

21.5. Allocate any charge BANC received from CAISO in charge code 5912 to BANC EIM Participants by each participant's specific cost allocation ratio in the BANC 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.

Allocations Monitoring

21.6. The allocation is summed to a daily total.

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

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

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

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

CAISO Application

The energy imbalance market (EIM) allows balancing authorities and transmission providers outside the ISO balancing authority area to efficiently serve their imbalance energy needs through participation in the ISO's real-time market. While EIM provides opportunities for EIM entities and EIM participating resources within each EIM entity balancing authority area to support each other for optimal management of imbalance energy, each EIM entity must continue to manage imbalance energy without relying on other EIM entities or the ISO. To ensure the EIM real-time horizon has sufficient resources to meet forecast demand, each EIM entity must provide balanced load, supply, and interchange base schedules. The demand included in an EIM entity's base schedules is not required to match its actual demand, but demand scheduled inaccurately creates an energy imbalance obligation served by other participants.

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 financial 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:

- When reported meter load data is more than 5% greater, but not greater than 10% of 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 50% LAP penalty price.

Under scheduling:

- When reported meter load data is more than 5% less, but not larger than 10% less of 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 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 BANC EIM Participants that were over scheduled during that hour proportionally by each participant's positive uninstructed energy imbalance quantity compared to all participant's total positive uninstructed energy imbalance 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 BANC EIM Participants that were under scheduled during that hour proportionally by each participant's negative uninstructed energy imbalance quantity compared to all participant's total negative uninstructed energy imbalance quantity. Participant's that are over scheduled will not be charged nor will they receive any credit.

22.1. 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$_{BQ'AA'mdh}$	$ 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

22.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

22.3. 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.
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	**BANC EIM Participant Hourly Load Uninstructed Imbalance Energy Quantity** – The hourly uninstructed energy at a BANC EIM Participant's load in MWh. This determinant is calculated in BAM
PPT_HRLY_OVER_SCHD_QTY$_{Ph}$	MWh Hourly 4 Decimal	**BANC EIM Participant Hourly Over Scheduled Quantity** – The BANC 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_OVER_SCHD_AMT$_{Ph}$	$ Hourly 4 Decimal	**BANC EIM Participant Hourly Over Scheduled Amount** – A BANC EIM Participant's hourly allocated over schedule penalty amount.
PPT_HRLY_UNDER_SCHD_QTY$_{Ph}$	MWh Hourly 4 Decimal	**BANC EIM Participant Hourly Under Scheduled Quantity** – The BANC 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	**BANC EIM Participant Hourly Under Scheduled Amount** – A BANC EIM Participant's hourly allocated under schedule penalty amount.
PPT_HRLY_6045_AMT$_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 6045 Amount** – A BANC EIM Participant's allocated hourly over and under schedule penalty amount.

$PPT\_DLY\_6045\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 6045 Amount** - BANC EIM Participant daily allocation of 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 BANC 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 its 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 participants.

Formulas

22.4. 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.

22.5. 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.

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

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

[1]Rounded to 2 decimal places.

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

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

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

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

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

$$PPT\_HRLY\_OVER\_SCHD\_AMT_{Ph}{}^{1} = CAISO\_HRLY\_6045\_OVER\_SCHD\_AMT_{Bh} * (PPT\_HRLY\_OVER\_SCHD\_QTY_{Ph} / BNC\_HRLY\_OVER\_SCHD\_QTY_{Bh})$$

[1]Rounded to 2 decimal places.

22.10. Calculate the number of mega-watt hours each participant under scheduled by hour.

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

22.11. Sum the total number of under scheduled megawatt hours by hour for all the participants.

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

22.12. Allocate each participant's hourly under scheduling charge amount.

$PPT\_HRLY\_UNDER\_SCHD\_AMT_{Ph}$[1] $= CAISO\_HRLY\_6045\_UNDER\_SCHD\_AMT_{Bh} *$
$(PPT\_HRLY\_UNDER\_SCHD\_QTY_{Ph} / BNC\_HRLY\_UNDER\_SCHD\_QTY_{Bh})$

[1]Rounded to 2 decimal places.

22.13. Total each participant's hourly under and over scheduling allocated amount.

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

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

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

Allocations Monitoring

22.15. Total BANC allocation by hour to all participants.

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

22.16. The total daily allocation to BANC EIM Participants is summed to a daily total.

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

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

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

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

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

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

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

23. 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 EIM EESC Scheduling Coordinators for being charged for over and under scheduling will be distributed to participants BANC EIM Participants Hourly Load Ratio Share Precalculation.

23.1. 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

23.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

23.3. 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	**BANC EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for a BANC EIM Participant to the total daily BANC load in the Pacific Prevailing Time zone.
PPT_DLY_6046_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 6046 Amount** - BANC EIM Participant daily allocation 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 BANC 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

23.4. 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.

23.5. Allocate any daily credit BANC received from CAISO in charge code 6046 to BANC 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.

Allocations Monitoring

23.6. The total daily allocation to BANC EIM Participants is summed to a daily total.

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

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

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

24. 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 BANC Scheduling Coordinator 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 BANC EIM Participants based on the BANC Hourly Load Ratio Share Precalculation.

24.1 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

24.2 BANC Provided Determinants

Determinants	UOM & Interval Length	Description

24.3 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	**BANC EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for a BANC EIM Participant to the total hourly BANC load.
$PPT\_HRLY\_6194\_AMT_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Daily 6194 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 6194 rounded to two decimal places.
$BNC\_DLY\_6194\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6194 Allocation Amount** – Total BANC EIM Participant daily allocation of CAISO charge code 6194.
$BNC\_DLY\_6194\_ALLOC\_DIFF\_AMT_{Bd}$	$ 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

24.4. 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.

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

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

[1]Rounded to 2 decimal places.

24.6. These charges are allocated hourly to BANC EIM Participants using the BANC Hourly Load Ratio Share Precalculation.

$$PPT\_HRLY\_6194\_AMT_{Ph}{}^{1} = CAISO\_HRLY\_6194\_AMT_{Bh} * PPT\_HRLY\_LRSP_{h}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

24.7. The total daily allocation to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_6194\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_HRLY\_6194\_AMT_{Ph})$$

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

$$BNC\_DLY\_6194\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_6194\_AMT_{Bh}) - BNC\_DLY\_6194\_ALLOC\_AMT_{Bd}$$

25. 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 BANC EIM Participants based on the BANC Hourly Load Ratio Share Precalculation.

25.1. 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

25.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

25.3. 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	**BANC EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for a BANC EIM Participant to the total hourly BANC load.
$PPT\_HRLY\_6196\_AMT_{h}$	$ Hourly 2 Decimal	**BANC EIM Participant Daily 6196 Amount** - BANC EIM Participant hourly allocation of

		CAISO charge code 6196 rounded to two decimal places.
$BNC\_DLY\_6196\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6196 Allocation Amount** – Total BANC 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

25.4. The hourly charge to BANC for charge code 6196.

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

[1]Rounded to 2 decimal places.

25.5. These charges are allocated hourly to BANC EIM Participants using the BANC Hourly 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.

Allocations Monitoring

25.6. The total daily allocation to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_6196\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_HRLY\_6196\_AMT_{Ph})$$

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

$$BNC\_DLY\_6196\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_6196\_AMT_{Bh}) - BNC\_DLY\_6196\_ALLOC\_AMT_{Bd}$$

26. BANC Charge Code 6294 Hourly Non-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 BANC Scheduling Coordinator 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 BANC EIM Participants based on the BANC Hourly 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
$NonSpinObligAmount_{Bmdh}$	$ 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

26.2 BANC Provided Determinants

Determinants	UOM & Interval Length	Description

26.3. 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	**BANC EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for a BANC EIM Participant to the total hourly BANC load.
$PPT\_HRLY\_6294\_AMT_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Daily 6294 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 6294 rounded to two decimal places.
$BNC\_DLY\_6294\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6294 Allocation Amount** – Total BANC EIM Participant daily allocation of CAISO charge code 6294.
$BNC\_DLY\_6294\_ALLOC\_DIFF\_AMT_{Bd}$	$ 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

26.4. 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.

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

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

[1]Rounded to 2 decimal places.

26.6. These charges are allocated hourly to BANC EIM Participants using the BANC Hourly 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.

Allocations Monitoring

26.7. The total daily allocation to BANC EIM Participants is summed to a daily total.

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

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

$$BNC\_DLY\_6294\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_6294\_AMT_{Bh}) - BNC\_DLY\_6294\_ALLOC\_AMT_{Bd}$$

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

CAISO Application

CAISO's Non-Spinning Reserve Neutrality Allocation recovers from CAISO's 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 BANC EIM Participants based on the BANC Hourly Load Ratio Share Precalculation.

27.1. 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

27.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

27.3. 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	**BANC EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for a BANC EIM Participant to the total hourly BANC load.
$PPT\_HRLY\_6296\_AMT_{Ph}$	$ Hourly	**BANC EIM Participant Daily 6296 Amount** - BANC EIM Participant hourly allocation of

	2 Decimal	CAISO charge code 6196 rounded to two decimal places.
$BNC\_DLY\_6296\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 6296 Allocation Amount** – Total BANC 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

27.4. The hourly charge to BANC for charge code 6296.

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

[1]Rounded to 2 decimal places.

27.5. These charges are allocated hourly to BANC EIM Participants using the BANC Hourly 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.

Allocations Monitoring

27.6. The total daily allocation to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_6296\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_HRLY\_6296\_AMT_{Ph})$$

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

$$BNC\_DLY\_6296\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_6296\_AMT_{Bh}) - BNC\_DLY\_6296\_ALLOC\_AMT_{Bd}$$

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

CAISO Application

In EIM 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.

In EIM, CAISO will 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.

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 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.

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 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
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$_{BrtuT'I'M'mdhc}$	$ 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

28.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

28.3. 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.

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$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC 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 a BANC EIM Participant's load or resource registered location and imports from outside of BANC.
PPT_5MIN_TAG_BASE_SCHD_SNK$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Base Schedule at a Sink** - The 5-minute tagged Base Schedule that sinks at a BANC 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$_{PQxyzf}$	MWh 5 Min 8 Decimals	**Participant 5 Minute Intertie Import FMM Imbalance** – The tagged schedule difference from FMM compared to the Base Schedule for a BANC EIM Participant importing a schedule from outside of BANC sinking at the participant's registered location.
CAISO_15MIN_FMM_LMP$_{PQc}$	$/MWh 15 Minute 9 Decimals	**CAISO 15-Minute FMM LMP** – The 15-minute FMM published LMP price for all CAISO intertie and resource locations in EIM. The price will be either be either at a participants' default location (m) or will be at a CAISO ID (Q).
PPT_5MIN_INTERTIE_IMP_FMM_AMT$_{PQxyzf}$	$ 5 Min 8 Decimals	**BANC 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$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC 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 a BANC EIM Participant's load or resource registered location and exports out of BANC.
PPT_5MIN_TAG_BASE_SCHD_SRC$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Base Schedule at a Source** - The 5-minute tagged Base Schedule that sources at a BANC 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$_{PQxyzf}$	MWh 5 Min 8 Decimals	**Participant 5 Minute Intertie Export FMM Imbalance** – The tagged schedule difference from FMM compared to the Base Schedule for a BANC EIM Participant exporting a schedule to outside of BANC sourcing at the participant's registered location.
PPT_5MIN_64600_AMT$_{Pf}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 64600 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 64600.
BNC_DLY_64600_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64600 Allocation Amount** – Total BANC EIM Participant daily allocation of CAISO charge code 64600.
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 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.

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

[1]Rounded to 2 decimal places.

28.5. 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

28.6. 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.

$$PPT\_5MIN\_INTERTIE\_IMP\_FMM\_IMB_{PQxyzf} = PPT\_5MIN\_TAG\_FMM\_BAA\_IMP\_SCHDP_{PQxyzf} - PPT\_5MIN\_TAG\_BASE\_SCHD\_SNK_{PQxyzf}$$

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

28.7. Determine the 15-Minute Market LMP for every generation resource and CAISO interface ID used by BANC EIM Participants.

$$CAISO\_15MIN\_FMM\_LMP_{Qc} = FMMIntervalLMPPrice_{BrtuT'I'M'mdhc}$$

where r = CAISO Interface ID (Q)

28.8. 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.

$$PPT\_5MIN\_INTERTIE\_IMP\_FMM\_AMT_{PQxyzf}{}^{1} = -1 * PPT\_5MIN\_INTERTIE\_IMP\_FMM\_IMB_{PQxyz} * CAISO\_15MIN\_FMM\_LMP_{Qc}$$

[1]Rounded to 2 decimal places.

28.9. 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.

$$PPT\_5MIN\_INTERTIE\_EXP\_FMM\_IMB_{PQxyzf} = PPT\_5MIN\_TAG\_FMM\_BAA\_EXP\_SCHD_{PQxyzf} - PPT\_5MIN\_TAG\_BASE\_SCHD\_SRC_{PQxyzf}$$

where z (Schedule ID) for $PPT\_5MIN\_TAG\_FMM\_BAA\_EXP\_SCHD_{PQxyzf}$ = z (Schedule ID) for $PPT\_5MIN\_TAG\_BASE\_SCHD\_SRC_{PQxyzf}$ and y is <u>not</u> a registered location within the BANC BAA.

28.10. 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.

$$PPT\_5MIN\_INTERTIE\_EXP\_FMM\_AMT_{PQxyzf}{}^{1} = PPT\_5MIN\_INTERTIE\_EXP\_FMM\_IMB_{PQxyz} * CAISO\_15MIN\_FMM\_LMP_{Qc}$$

[1]Rounded to 2 decimal places.

28.11. Sum the total of all intertie imbalance amounts by participant.

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

<u>Allocations Monitoring</u>

28.12. The total daily allocation to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_64600\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_5MIN\_64600\_AMT_{Pf})$$

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

$$BNC\_DLY\_64600\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd}(CAISO\_5MIN\_64600\_AMT_{Bf}) - BNC\_DLY\_64600\_ALLOC\_AMT_{Bd}$$

29. BANC Charge Code 64700 5 Minute Real Time Instructed Imbalance Energy EIM Settlement

CAISO Application

In EIM 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.

In EIM, CAISO will 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

BANC BAA 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 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 sink.

Schedules between 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 participant must cover imbalance, the participants collectively agreed that changes are rare and they will handle them as part of their bilateral settlement between 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.

29.1. 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

29.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

29.3. 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.
$PPT\_5MIN\_TAG\_FNL\_BAA\_IMP\_SCHD_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Final Balancing Authority Area Import Schedule** - The final after the fact 5-minute tagged energy schedule that

		sinks at a BANC EIM Participant's load or resource registered location and imports into BANC.
PPT_5MIN_TAG_FMM_BAA_IMP_SCHD$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC 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 a BANC EIM Participant's load or resource registered location and imports from outside of BANC.
PPT_5MIN_INTERTIE_IMP_RTM_IMB$_{PQxyzf}$	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 a BANC EIM Participant importing a schedule from outside of BANC sinking at the participant's registered location.
CAISO_5MIN_RTM_LMP$_{PQf}$	$/MWh 15 Minute 9 Decimals	**CAISO 5-Minute RTM LMP** – The 5-minute RTM published LMP price for all CAISO intertie and resource locations in EIM. The price will be either be either at a participants' default location (m) or will be at a CAISO ID (Q).
PPT_5MIN_INTERTIE_IMP_RTM_AMT$_{PQxyzf}$	$ 5 Min 8 Decimals	**BANC 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$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC EIM Participant 5-Minute Tagged Final Balancing Authority Area Export Schedule** - The final after the fact 5-minute tagged energy schedule that sources at a BANC EIM Participant's load or resource registered location and exports out of BANC.
PPT_5MIN_TAG_FMM_BAA_EXP_SCHD$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC 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 a BANC EIM Participant's load or resource registered location and exports out of BANC.
PPT_5MIN_INTERTIE_EXP_RTM_IMB$_{PQxyzf}$	MWh 5 Min 8 Decimals	**BANC 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.

$PPT\_5MIN\_64700\_AMT_{Pf}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 64700 Amount** - BANC 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 BANC EIM Participant daily allocation of CAISO charge code 64700.
$BNC\_DLY\_64700\_ALLOC\_DIFF\_AMT_{Bd}$	$ 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

29.4. 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.

29.5. 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

29.6. 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.

$$PPT\_5MIN\_INTERTIE\_IMP\_RTM\_IMB_{PQxyzf}$$
$$= PPT\_5MIN\_TAG\_FNL\_BAA\_IMP\_SCHD_{PQxyzf} - PPT\_5MIN\_TAG\_FMM\_BAA\_IMP\_SCHD_{PQxyzf}$$

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

29.7. Determine the RTM CAISO interface ID LMPs used by BANC EIM Participants.

$$CAISO\_5MIN\_RTM\_LMP_{Qf} = SettlementIntervalRealTimeLMP_{BrtuM'mdhcif}$$

where r = CAISO Interface ID (Q)

29.8. 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.

$PPT\_5MIN\_INTERTIE\_IMP\_RTM\_AMT_{PQxyzf}$[1] = -1 * $PPT\_5MIN\_INTERTIE\_IMP\_RTM\_IMB_{PQxyz}$ * $CAISO\_5MIN\_RTM\_LMP_{Qf}$

[1]Rounded to 2 decimal places.

29.9. 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.

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

29.10. 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.

$PPT\_5MIN\_INTERTIE\_EXP\_RTM\_AMT_{PQxyzf}$[1] = $PPT\_5MIN\_INTERTIE\_EXP\_RTM\_IMB_{PQxyz}$ * $CAISO\_5MIN\_RTM\_LMP_{Qf}$

[1]Rounded to 2 decimal places.

29.11. Sum the total of all intertie imbalance amounts by participant.

$PPT\_5MIN\_64700\_AMT_{Pf}$ = $\sum_{Pf}(PPT\_5MIN\_INTERTIE\_IMP\_RTM\_AMT_{PQxyzf})$ + $\sum_{Pf}(PPT\_5MIN\_INTERTIE\_EXP\_RTM\_AMT_{PQxyzf})$

Allocations Monitoring

29.12. The total daily allocation to BANC EIM Participants is summed to a daily total.

$BNC\_DLY\_64700\_ALLOC\_AMT_{Bd}$ = $\sum_{Bd}(PPT\_5MIN\_64700\_AMT_{Pf})$

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

$BNC\_DLY\_64700\_ALLOC\_DIFF\_AMT_{Bd}$ = $\sum_{Bd}(CAISO\_5MIN\_64700\_AMT_{Bf})$ - $BNC\_DLY\_64700\_ALLOC\_AMT_{Bd}$

30. 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

To support this BANC Charge Code, BANC EIM Participants will upload all intra-tie hourly checkout quantities to the BANC settlement allocation tool. BANC will use these uploaded values to validate that the interchange hourly values match what was submitted from both BANC EIM Participants. BANC will use the intertie quantities along with participant submitted intertie and generation meter data to calculate a total gross load quantity for each participant inclusive of transmission losses.

One participant of BANC, WAPA also supplies transmission losses for the COPT 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 provide to BANC the actual losses measured on this transmission line so that these losses can be accounted for when UFE is allocated by BANC to its participants. In this UFE calculation or WAPA, their gross load will need to be reduced by their reported actual COPT losses. Thereafter these same losses need to be removed from CAISO's reported BANC transmission losses before they are allocated to participants by load ratio share.

BANC BAA will receive a 5-minute UFE imbalance charge for all of BANC BAA load. BANC will allocate this charge as follows:

1. BANC will sum by participant by hour all their submitted resource generation meter data.
2. BANC will sum by participant by hour all their submitted intertie meter imports and exports into a net intertie hourly volume.
3. BANC will sum by participant by hour all their submitted intratie meter imports and exports into a net intratie hourly volume.
4. BANC will calculate an hourly gross load for each participant by summing generation, intertie and intratie volumes by hour. This value will include transmission losses.
5. BANC will reduce WAPA's load calculated gross load by their reported actual losses for COPT.
6. BANC will adjust CAISO's reported transmission losses by WAPA's to remove the reported COPT actual losses.

7. BANC will prorata allocate the remaining CAISO calculated transmission losses to participants by hour based on a ratio of their calculated load.
8. BANC will calculate by participant by hour an hourly net load which is their gross load and adding to it the calculated transmission losses which is provided as a negative value.
9. BANC will calculate each participant's hourly UFE quantity by taking the participant calculated net load and subtracting from it the participant's reported meter data to CAISO summed to an hourly value.
10. BANC will charge each participant for their UFE quantity multiplied by the UFE LMP provided by CAISO.
11. BANC will then take the CAISO UFE charge and subtract from it all the participant UFE charge amounts. Any remaining amount will be allocated to each participant based on the Hourly Load Ratio Share Precalculation.
12. Each participant's charge will be the hourly sum of their UFE calculated amount plus their Hourly Load Ratio Share portion of any remaining charge code amount.

30.1. 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. $).	BANC EESC Bill Determinant Statement: BA_5M_UDC_EIM_BAA_UFE@AMOUNT		BPM Configuration Guide: Real Time Uninstructed Unaccounted for Energy EIM Settlement CC 64740 Version 5.1
HourlyUFEUDCLMP$_{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 Settlement CC 64740 Version 5.1
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

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

30.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description
PPT_HRLY_INTRATIE_RSRC_IMP_MTR_QTY$_{PRh}$	MWh Hourly 8 Decimal	**BANC EIM Participant Intra-Tie Resource Meter Quantity** – An intra-tie meter quantity reported by a BANC EIM Participant. These values display as positive values.
PPT_HRLY_INTRATIE_RSRC_EXP_MTR_QTY$_{PRh}$	MWh Hourly 8 Decimal	**BANC EIM Participant Intra-Tie Resource Meter Quantity** – An intra-tie meter quantity reported by a BANC EIM Participant. These values display as negative values.
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.
HRLY_COPT_ACT_LOSS_QTY$_{h}$	MWh Hourly 2 Decimals	**Hourly COPT Actual Loss Quantity –** The hourly COPT actual losses as reported by WAPA to BANC.

30.3. 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_RSRC_QTY$_{PRh}$	MWH Hourly 4 Decimals	**BANC EIM Participant Hourly Resource Meter Quantity** – The reported resource meter data summed to an hourly value. This value is calculated in the *BANC EIM Participant Absolute Ratio Precalculation*.
PPT_HRLY_RSRC_TOTAL_QTY$_{Ph}$	MWH Hourly 4 Decimals	**BANC EIM Participant Hourly Resource Total Quantity** – The mega-watt hour total of all a participant's generation for an hour.

PPT_HRLY_INTRATIE_TOTAL_IMP_QTY$_{Ph}$	MWh Hourly 8 Decimal	**BANC EIM Participant Intra-Tie Total Import Meter Quantity** – The hourly import total of a participant's intra-tie meters. These values display as positive values.
PPT_HRLY_INTRATIE_TOTAL_EXP_QTYP$_{Ph}$	MWh Hourly 8 Decimal	**BANC EIM Participant Intra-Tie Total Export Meter Quantity** – The hourly export total of a participant's intra-tie meters. These values display as negative values.
PPT_HRLY_INTRATIE_NET_QTY$_{Ph}$	MWh Hourly 8 Decimal	**BANC EIM Participant Intra-Tie Total Net Import/Export Meter Quantity** – The hourly sum of the participant's import and export intra-tie meters. A positive value represents an import and a negative value represents an export.
PPT_5MIN_INTERTIE_RSRC_IMP_MTR_QTY$_{PRh}$	MWh 5 Minute 4 Decimal	**BANC EIM Participant 5-Minute Intertie Resource Import Meter Quantity** – A participant's import intertie meter quantity as reported to CAISO on a 5-minute basis. This is a positive value.
PPT_HRLY_INTERTIE_TOTAL_IMP_QTY$_{Ph}$	MWh Hourly 4 Decimal	**BANC EIM Participant Hourly Intertie Total Import Quantity** – The sum of the participant's 5-minute import intertie meter quantity as reported to CAISO sum to an hourly interval. This is a positive value.
PPT_5MIN_INTERTIE_RSRC_EXP_MTR_QTY$_{PRf}$	MWh 5 Minute 4 Decimal	**BANC EIM Participant 5-Minute Intertie Resource Export Meter Quantity** – A participant's export intertie meter quantity as reported to CAISO on a 5-minute basis. This is a negative value.
PPT_HRLY_INTERTIE_TOTAL_EXP_QTY$_{Ph}$	MWh Hourly 4 Decimal	**BANC EIM Participant Hourly Intertie Total Export Quantity** – The sum of the participant's 5-minute export intertie meter quantity as reported to CAISO sum to an hourly interval. This is a negative value.
PPT_HRLY_INTERTIE_NET_QTY$_{Ph}$	MWh Hourly 4 Decimal	**BANC EIM Participant Intertie Total Net Import/Export Meter Quantity** – The hourly sum of the participant's import and export intertie meters. A positive value represents an import and a negative value represents an export.
PPT_HRLY_COPT_ACT_LOSS_QTY$_{Ph}$	MWh Hourly 2 Decimals	**BANC EIM Participant COPT Actual Loss Quantity** – The hourly COPT actual loss quantity by participant. The only participant that will have a non-zero result will be WAPA.
PPT_HRLY_CALC_GROSS_LD_QTY$_{Ph}$	MWh Hourly 8 Decimal	**BANC EIM Participant Hourly Calculated Gross Load Quantity** – The hourly calculated participant load based on the

		sum of their generation, intertie and intratie meters. The result includes transmission losses.
BNC_HRLY_CALC_GROSS_LD_QTY$_{Bh}$	MWh Hourly 8 Decimal	**BANC Hourly Calculated Gross Load Quantity** – The hourly calculated BANC load based on the sum of their generation, intertie and intratie meters. The result includes transmission losses.
BANC_5MIN_TX_LOSS_QTY$_{Bf}$	MWh 5 Minute 9 Decimal	**BANC 5-Minute Transmission Loss Quantity** – The CAISO calculated Real-Time transmission losses for the BANC BAA.
BNC_HRLY_TX_LOSS_QTY$_{Bh}$	MWh Hourly 9 Decimal	**BANC Hourly Transmission Loss Quantity** – The CAISO calculated Real-Time transmission losses for the BANC BAA summed to an hourly interval.
PPT_HRLY_TX_LOSS_QTY$_{Ph}$	MWh Hourly 8 Decimal	**BANC EIM Participant Hourly Transmission Loss Quantity** - BANC EIM Participant prorata share of transmission losses by hour. Rounded to 8 decimal places.
PPT_HRLY_CALC_NET_LD_QTY$_{Ph}$	MWh Hourly 8 Decimal	**BANC EIM Participant Hourly Calculated Net Load Quantity** – The hourly calculated participant load based on the sum of their generation, intertie and intratie meters less the hourly allocated transmission losses.
BNC_HRLY_UFE_LMP$_{Bh}$	$ Hourly 5 Decimal	**BANC Hourly UFE LMP** - The CAISO provided LMP for use in calculating UFE for BANC.
PPT_HRLY_UFE_QTY$_{Ph}$	MWh Hourly 8 Decimal	**BANC EIM Participant Hourly UFE Quantity** - A BANC EIM Participant's UFE quantity by taking the calculated load from generation, intratie and intertie meters less transmission losses and then subtract from the total the participant CAISO submitted load data.
PPT_HRLY_UFE_AMT$_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant UFE Amount** - The dollar value of a BANC EIM Participant's hourly UFE.
BNC_HRLY_UFE_AMT$_{Bh}$	$ Hourly 2 Decimal	**BANC Hourly UFE Amount** - The total CAISO UFE Charge Amount less the allocated UFE amounts charged to participants. This value represents any remaining amount that needs to be collected from participants.
PPT_HRLY_LRS$_{Ph}$	Decimal Hourly 5 Decimals	**BANC EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for a BANC EIM Participant to the total hourly BANC load.
PPT_HRLY_UFE_IMB_AMT$_{Ph}$	$ Hourly	**BANC EIM Participant Hourly UFE Imbalance Amount** - The Load Ratio

	2 Decimal	Share of any remaining UFE imbalance amount to a participant.
$PPT\_HRLY\_64740\_AMT_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 64740 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 64740.
$BNC\_INTRATIE\_HRLY\_MTR\_DIFF_{BRh}$	MWh Hourly 8 Decimal	**BANC Intratie Hourly Meter Difference** - The hourly reported meter difference of an intratie reported by two participants.
$BNC\_DLY\_64740\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64740 Allocation Amount** – Total BANC 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

30.4. The 5-minute charge to BANC for charge code 64740. This 5-minute value will be used to check the total settlement allocation for accuracy after any potential PTB is removed.

$$CAISO\_5MIN\_64740\_AMT_{Bf}{}^{1} = BA\_EIMBAA\_SettlementInterval\_UnaccountedforEnergy\_SettlementAmount_{BuQ'mdhcif}$$

[1]Rounded to 2 decimal places.

30.5. Sum the CAISO 5-minute charge to an hourly charge.

$$CAISO\_HRLY\_64740\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_64740\_AMT_{Bf})$$

30.6. By participant, sum all generation resource meter data to an hourly quantity.

$$PPT\_HRLY\_RSRC\_TOTAL\_QTY_{Ph} = \sum_{Ph}(PPT\_HRLY\_RSRC\_QTY_{PRh})$$

30.7. Calculated each participant total reported import intra-tie meter quantity by summing up the participant's intra-tie import meter data by hour. Imports are displayed as positive values. These meters will be tracked by the submitting participant. Each intra-tie meter will be reported on by two participants. The volume should be equal except for the sign convention.

$$PPT\_HRLY\_INTRATIE\_TOTAL\_IMP\_QTY_{Ph} = \sum_{Ph}(PPT\_HRLY\_INTRATIE\_RSRC\_IMP\_MTR\_QTY_{PRh})$$

30.8. Calculated each participant total reported export intra-tie meter quantity by summing up the participant's intra-tie export meter data by hour. Exports are displayed as negative values.

$$PPT\_HRLY\_INTRATIE\_TOTAL\_EXP\_QTY_{Ph} = \sum_{Ph}(PPT\_HRLY\_INTRATIE\_RSRC\_EXP\_MTR\_QTY_{PRh})$$

30.9. Sum each participant's total, net reported intra-tie meter data. A positive hourly value represents a net import for the hour whereas a negative hourly value represents a net export for the hour.

$PPT\_HRLY\_INTRATIE\_NET\_QTY_{Ph} = PPT\_HRLY\_INTRATIE\_TOTAL\_IMP\_QTY_{Ph} + PPT\_HRLY\_INTRATIE\_TOTAL\_EXP\_QTY_{Ph}$

30.10. Obtain inter-tie import meter day from the CAISO EESC statement and assign to each participant based on their registered meter location.

$PPT\_5MIN\_INTERTIE\_RSRC\_IMP\_MTR\_QTY_{PRh} =$ $TieSettlementIntervalMeteredQuantity_{rtuT'I'Q'M'm'F'W'S'VL'mdhcif}$ where m' (CHANNEL_ID) = 4 (import) and r (RSRD_ID) = tie resource meter location registered to a BANC EIM Participant.

30.11. Sum the 5-minute intertie imports by location to an hourly quantity.

$PPT\_HRLY\_INTERTIE\_TOTAL\_IMP\_QTY_{Ph} = \sum_{Ph}(PPT\_5MIN\_INTERTIE\_IMP\_MTR\_QTY_{PRf})$

30.12. Obtain inter-tie export meter day from the CAISO EESC statement and assign to each participant based on their registered meter location.

$PPT\_5MIN\_INTERTIE\_RSRC\_EXP\_MTR\_QTY_{PRf} =$ $TieSettlementIntervalMeteredQuantity_{rtuT'I'Q'M'm'F'W'S'VL'mdhcif}$ where m' (CHANNEL_ID) = 1 (export) and r (RSRD_ID) = tie resource meter location registered to a BANC EIM Participant.

30.13. Sum the 5-minute intertie exports by location to an hourly quantity.

$PPT\_HRLY\_INTERTIE\_TOTAL\_EXP\_QTY_{Ph} = \sum_{Ph}(PPT\_5MIN\_INTERTIE\_EXP\_MTR\_QTY_{PRf})$

30.14. Sum each participant's total, net reported inter-tie meter data. A positive hourly value represents a net import for the hour whereas a negative hourly value represents a net export for the hour.

$PPT\_HRLY\_INTERTIE\_NET\_QTY_{Ph} = PPT\_HRLY\_INTERTIE\_TOTAL\_IMP\_QTY_{Ph} + PPT\_HRLY\_INTERTIE\_TOTAL\_EXP\_QTY_{Ph}$

30.15. Retrieve the COPT transmission loss actual quantity.

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

30.16. Calculated each participant's load from generation, inter-ties and intra-ties.

$PPT\_HRLY\_CALC\_GROSS\_LD\_QTY_{Ph} = PPT\_HRLY\_RSRC\_TOTAL\_QTY_{Ph} + PPT\_HRLY\_INTRATIE\_NET\_QTY_{Ph} + PPT\_HRLY\_INTERTIE\_NET\_QTY_{Ph} - PPT\_HRLY\_COPT\_ACT\_LOSS\_QTY_{Ph}$

30.17. BANC calculated total gross load quantity by hour without transmission losses excluded.

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

30.18. CAISO calculated BAA transmission losses by 5-minute interval. Losses display as a negative value by CAISO.

$BANC\_5MIN\_TX\_LOSS\_QTY_{Bf} = EIMBAASettlementIntervalActualTransmissionLoss_{uT'Q'mdhcif}$

30.19. CAISO calculated BANC transmission losses summed to an hourly interval reduced by the WAPA reported actual COPT transmission losses.

$BNC\_HRLY\_TX\_LOSS\_QTY_{Bh} = \sum_{Bh}(BANC\_5MIN\_TX\_LOSS\_QTY_{Bf}) - HRLY\_COPT\_ACT\_LOSS\_QTY_{h}$

30.20. Calculate each participant's area prorata share of CAISO's calculated transmission losses. The hourly losses are split by calculated load ratio share.

$PPT\_HRLY\_TX\_LOSS\_QTY_{Ph}[1] = BNC\_HRLY\_TX\_LOSS\_QTY_{Bh} * (PPT\_HRLY\_CALC\_GROSS\_LD\_QTY_{Ph} / BNC\_HRLY\_CALC\_GROSS\_LD\_QTY_{Bh})$

[1]Rounded to 4 decimal places.

30.21. Participant calculated net load. This is equal to the participant's calculated load less each participant's prorata share of CAISO hourly calculated losses.

$PPT\_HRLY\_CALC\_NET\_LD\_QTY_{Ph} = BNC\_HRLY\_CALC\_GROSS\_LD\_QTY_{Bh} + PPT\_HRLY\_TX\_LOSS\_QTY_{Ph}$

30.22. The hourly LMP price as published by CAISO on the EESC settlement statement.

$BNC\_HRLY\_UFE\_LMP_{Bh} = HourlyUFEUDCLMP_{umdhcif}$

30.23. The hourly quantity difference between a participant's calculated net load and their CAISO reported load calculated as the participant's UFE quantity.

$PPT\_HRLY\_UFE\_QTY_{Ph} = PPT\_HRLY\_CALC\_NET\_LD\_QTY_{Ph} - PPT\_HRLY\_LD\_QTY_{Ph}$

30.24. Each participant is charged for their UFE by multiplying their UFE quantity by the CAISO hourly UFE LMP.

$PPT\_HRLY\_UFE\_AMT_{Ph}[1] = PPT\_HRLY\_UFE\_QTY_{Ph} * BNC\_HRLY\_UFE\_LMP_{Bh}$

[1]Rounded to 2 decimal places.

30.25. The total participant UFE amount is summed across BANC by hour.

$BNC\_HRLY\_UFE\_AMT_{Bh} = \sum_{Bh}(PPT\_HRLY\_UFE\_AMT_{Ph})$

30.26. Any remaining UFE amount will be calculated by subtracting the total hourly UFE amount to participants from the total hourly CAISO UFE charge.

$BNC\_HRLY\_UFE\_AMT_{Bh} = CAISO\_HRLY\_64740\_AMT_{Bh} - BNC\_HRLY\_UFE\_AMT_{Bh}$

30.27. The remaining UFE amount, if any, will be distributed to participants based on an Hourly Load Ratio Share Precalculation.

$PPT\_HRLY\_UFE\_IMB\_AMT_{Ph}[1] = BNC\_HRLY\_UFE\_AMT_{Bh} * PPT\_HRLY\_LRS_{Ph}$

[1]Rounded to 2 decimal places.

30.28. Each participant's total UFE charge amount is the sum of the hourly UFE amount and the UFE imbalance amount.

$$PPT\_HRLY\_64740\_AMT_{Ph} = BNC\_HRLY\_UFE\_AMT_{Bh} + PPT\_HRLY\_UFE\_IMB\_AMT_{Ph}$$

Allocations Monitoring

30.29. The sum of all the participant's hourly intra-tie meter data should equal zero. Hourly BANC settlements will need to monitory that hourly net intra-tie meter data sums to zero.

$$PPT\_HRLY\_INTRATIE\_NET\_QTY_{Ph}$$

30.30. When intra-tie hourly meter data does not equal zero, then meter data submitted for each tie needs to be checked to ensure they are zero.

$$BNC\_INTRATIE\_HRLY\_MTR\_DIFF_{BRh} = PPT\_HRLY\_INTRATIE\_RSRC\_IMP\_MTR\_QTY_{PRh} + PPT\_HRLY\_INTRATIE\_RSRC\_EXP\_MTR\_QTY_{PRh}$$

where R = Meter Intra-Tie and h = hour. Note the participant will be different.

30.31. The total daily allocation to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_64740\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_HRLY\_64740\_AMT_{Ph})$$

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

$$BNC\_DLY\_64740\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_64740\_AMT_{Bh}) - BNC\_DLY\_64740\_ALLOC\_AMT_{Bd}$$

31. BANC Charge Code 64750 Hourly Real Time Uninstructed Energy EIM Settlement

CAISO Application

In EIM 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 energy imbalance charges for resources.

BANC BAA will receive a 5-minute uninstructed imbalance charge for each BANC EIM Participant's load imbalance at each participant's CLAP. The load imbalance for each 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 participant's CLAP. BANC has determined this method is inaccurate and will calculate an hourly load Base Schedule for each participant and will calculate the actual load imbalance. BANC will charge each 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.

31.1. 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

31.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

31.3. 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.
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	**BANC EIM Participant Hourly Load Quantity** - The total hourly megawatt-hour load for a BANC EIM Participant. This determinant is

		calculated in the *BANC EIM Participant Load Ratio Share Precalculation.*
PPT_HRLY_LD_BASE_SCHD$_{Ph}$	MWh Hourly 2 Decimals	**BANC EIM Participant Hourly Load Base Schedule** - BANC EIM Participant total hourly load Base Schedule rounded to two decimal places. This determinant is calculated in the *BANC EIM Participant Load Base Schedule Precalculation.*
PPT_HRLY_LOAD_UIE$_{Ph}$	MWh Hourly 4 Decimals	**BANC EIM Participant Hourly Load Uninstructed Imbalance Energy Quantity** – The hourly uninstructed energy at a BANC EIM Participant's load in MWh.
PPT_HRLY_RTM_LAP_PRICE$_{Ph}$	$/MWh Hourly 9 Decimals	**BANC EIM Participant Hourly Real Time Market Price** – The BANC EIM Participant CAISO hourly load calculated LMP (CLAP).
PPT_HRLY_64750_AMT$_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 64750 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 64750.
PPT_DLY_64750_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 64750 Amount** - BANC 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 BANC 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 BANC 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

31.4. 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.

31.5. The 5-minute charge to BANC for charge code 64750. This is the total charge code 5-minute total for all the participants.

$CAISO\_5MIN\_64750\_AMT_{Bf}^{1} = EIMSettlementIntervalUIESettlementAmount_{BrtuT'I'Q'M'mdhcif}$

[1]Rounded to 2 decimal places.

31.6. 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 participants.

$CAISO\_HRLY\_64750\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_64750\_AMT_{Bf})$

31.7. BANC will calculate each participant's load imbalance by taking the participants' 5-minute CASIO reported meter data summed to an hourly total and then will subtract from it their BANC calculated load base schedule.

$PPT\_HRLY\_LOAD\_UIE_{Ph} = PPT\_HRLY\_LD\_QTY_{Ph} - PPT\_HRLY\_LD\_BASE\_SCHD_{Ph}$

31.8. Each BANC 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) = BANC EIM Participant's CLAP APNode

31.9. Each participant's hourly load imbalance amount is calculated using the 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.

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

$PPT\_DLY\_64750\_AMT_{Pd} = \sum_{Bd}(PPT\_HRLY\_64750\_AMT_{Ph})$

Allocations Monitoring

31.11. Total BANC allocation by hour to all participants.

$BNC\_HRLY\_64750\_AMT_{Bh} = \sum_{Bh}(PPT\_HRLY\_64750\_AMT_{Ph})$

31.12. The total daily allocation to BANC EIM Participants is summed to a daily total.

$BNC\_DLY\_64750\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_DLY\_64750\_AMT_{Bd})$

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

$CAISO\_DLY\_64750\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_64750\_AMT_{Bh})$

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

$BNC\_HRLY\_64750\_ALLOC\_DIFF\_AMT_{Bh} = CAISO\_HRLY\_64750\_AMT_{Bh} - BNC\_HRLY\_64750\_AMT_{Bh}$

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

$BNC\_DLY\_64750\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_64750\_AMT_{Bd} - BNC\_DLY\_6470\_ALLOC\_AMT_{Bd}$

32. 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 EIM Entity Scheduling Coordinator.

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 BANC EIM Participants on an Hourly BANC EIM Participant Absolute Imbalance Ratio Precalculation.

32.1. CAISO Determinants

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMEntityRealTimeImbalanceEnergyOffsetAllocationAmount$_{B}$ Q'mdhcif	$ 5 Minute 9 Decimal	Total Real Time Imbalance Energy Offset Settlement Amount for an EIM Entity Scheduling Coordinator 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

32.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

32.3. 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	**BANC EIM Participant Hourly Absolute Imbalance Ratio** – The BANC EIM Participant's

	5 Decimal	hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.
$PPT\_HRLY\_64770\_AMT_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 64770 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 64770 rounded to two decimal places.
$BNC\_DLY\_64770\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 64770 Allocation Amount** – Total BANC EIM Participant daily allocation of CAISO charge code 64770.
$BNC\_DLY\_64770\_ALLOC\_DIFF\_AMT_{Bd}$	$ 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 its participants.

Formulas

32.4. The 5-minute charge to BANC for charge code 64770.

$CAISO\_5MIN\_64770\_AMT_{Bf}$[1] = EIMEntityRealTimeImbalanceEnergyOffsetAllocationAmountBQ'mdhcif

[1]Rounded to 2 decimal places.

32.5. The 5-minute charge is summed to an hourly amount.

$CAISO\_HRLY\_64770\_AMT_{Bh} = \sum_{Bh} (CAISO\_5MIN\_64770\_AMT_{Bf})$

32.6. These charges are allocated hourly to BANC EIM Participants using the BANC 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.

Allocations Monitoring

32.7. The total daily allocation to BANC EIM Participants is summed to a daily total.

$BNC\_DLY\_64770\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_HRLY\_64770\_AMT_{Ph})$

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

$BNC\_DLY\_64770\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd} (CAISO\_HRLY\_64770\_AMT_{Bh}) - BNC\_DLY\_64770\_ALLOC\_AMT_{Bd}$

33. 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 BANC EIM Participants using the BANC Hourly Load Ratio Share Precalculation.

33.1 CAISO Determinants

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
BASystemRealTimeImbalanceEnergyOffsetAllocationAmount$_{B}$ mdhcif	$ 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

33.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

33.3. 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.

$CAISO\_HRLY\_6478\_AMT_{Bh}$	$ 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	**BANC EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for a BANC EIM Participant to the total hourly BANC load.
$PPT\_HRLY\_6478\_AMT_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Daily 6478 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 6478 rounded to two decimal places.
$BNC\_DLY\_6478\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 6478 Allocated Amount** - The total CAISO charge code 6478 amount allocated to all BANC EIM Participants for the Trade Date.
$BNC\_DLY\_6478\_ALLOC\_DIFF\_AMT_{Bd}$	$ 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

33.4. 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.

33.5. BANC will sum the 5-minute amounts to an hourly value that will be allocated to BANC EIM Participants.

$$CAISO\_HRLY\_6478\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_6478\_AMT_{Bf})$$

33.6. These charges are allocated hourly to BANC EIM Participants using the BANC Hourly 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.

Allocations Monitoring

33.7. The total daily allocation to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_6478\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_HRLY\_6478\_AMT_{Ph})$$

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

$$BNC\_DLY\_6478\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_6478\_AMT_{Bh}) - BNC\_DLY\_6478\_ALLOC\_AMT_{Bd}$$

34. 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 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.

34.1. 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

34.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

34.3. 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	**BANC EIM Participant Daily Load Ratio Share** - The daily percent in decimal of load for a BANC EIM Participant to the total daily BANC load in the Pacific Prevailing Time zone.

$PPT\_DLY\_66200\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 66200 Amount** - BANC EIM Participant hourly allocation 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 BANC 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 participants.

Formulas

34.4. This is a daily credit that BANC may receive in charge code 66200.

$$CAISO\_DLY\_66200\_AMT_{Bd}{}^{1} = EIMTradingDayTotalRTMBCRUpliftAmount_{BruT'I'Q'M'F'md}$$

[1]Rounded to 2 decimal places.

34.5. These charges are allocated daily to BANC 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.

Allocations Monitoring

34.6. The total amount to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_66200\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_HRLY\_66200\_AMT_{Pd})$$

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

$$BNC\_DLY\_66200\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_66200\_AMT_{Bd} - BNC\_DLY\_6d200\_ALLOC\_AMT_{Bd}$$

35. 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 BANC Hourly Load Ratio Share Precalculation.

35.1. 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

35.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

35.3. 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	**BANC EIM Participant Hourly Load Ratio Share** - The hourly percent in decimal of load for a BANC EIM Participant to the total hourly BANC load.

$PPT\_HRLY\_66780\_AMT_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 66478 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 66780 rounded to two decimal places.
$BNC\_DLY\_66780\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Daily 66478 Allocated Amount** - The daily CAISO charge code 66478 amount allocated to all BANC EIM Participants for the Trade Date.
$BNC\_DLY\_66780\_ALLOC\_DIFF\_AMT_{Bd}$	$ 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

35.4. 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.

35.5. BANC will sum the 5-minute amounts to an hourly value that will be allocated to BANC EIM Participants.

$$CAISO\_HRLY\_66780\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_66780\_AMT_{Bf})$$

35.6. These charges are allocated hourly to BANC EIM Participants using the BANC Hourly 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.

Allocations Monitoring

35.7. The total amount to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_66780\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_HRLY\_66780\_AMT_{Ph})$$

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

$$BNC\_DLY\_66780\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_66780\_AMT_{Bh}) - BNC\_DLY\_66780\_ALLOC\_AMT_{Bd}$$

36. 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 BANC EIM Participants on an Hourly BANC EIM Participant Absolute Imbalance Ratio Precalculation.

36.1. 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

36.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

36.3. 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	**BANC EIM Participant Hourly Absolute Imbalance Ratio** – The BANC EIM Participant's hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.

$PPT\_HRLY\_67740\_AMT_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 67740 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 67740 rounded to two decimal places.
$BNC\_DLY\_67740\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 67740 Allocation Amount** – Total BANC EIM Participant daily allocation of CAISO charge code 67740.
$BNC\_DLY\_67740\_ALLOC\_DIFF\_AMT_{Bd}$	$ 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

36.4. 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.

36.5. The 5-minute charge is summed to an hourly amount.

$$CAISO\_HRLY\_67740\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_67740\_AMT_{Bf})$$

36.6. These charges are allocated hourly to BANC EIM Participants using the BANC 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.

Allocations Monitoring

36.7. The total daily allocation to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_67740\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_HRLY\_67740\_AMT_{Ph})$$

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

$$BNC\_DLY\_67740\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_67740\_AMT_{Bh}) - BNC\_DLY\_67740\_ALLOC\_AMT_{Bd}$$

37. 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 BANC EIM Participants on an Hourly BANC EIM Participant Absolute Imbalance Ratio Precalculation.

37.1. CAISO Determinants

Determinants	UOM, Interval Length, Precision	Description	CAISO Statement Bill Determinant Name	CAISO Bill Determinant Attributes	CAISO BPM
EIMEntitySCRTMarginalLosses OffsetAllocation$_{BQ'mdhcif}$	$ 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

37.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

37.3. 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.
PPT_HRLY_ABS_IMB_RATIO$_{Ph}$	Decimal Hourly 5 Decimal	**BANC EIM Participant Hourly Absolute Imbalance Ratio** – The BANC EIM Participant's

		hourly decimal ratio of the imbalance allocation share. Rounded to 5 decimals.
$PPT\_HRLY\_69850\_AMT_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 69850 Amount** - BANC EIM Participant hourly allocation of CAISO charge code 69850 rounded to two decimal places.
$BNC\_DLY\_69850\_ALLOC\_AMT_{Bd}$	$ Daily 2 Decimal	**BANC Total Daily 69850 Allocation Amount** – Total BANC EIM Participant daily allocation of CAISO charge code 698500.
$BNC\_DLY\_69850\_ALLOC\_DIFF\_AMT_{Bd}$	$ 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

37.4. 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.

37.5. The 5-minute charge is summed to an hourly amount.

$$CAISO\_HRLY\_69850\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_69850\_AMT_{Bf})$$

37.6. These charges are allocated hourly to BANC EIM Participants using the BANC 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.

Allocations Monitoring

37.7. The total daily allocation to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_69850\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_HRLY\_69850\_AMT_{Ph})$$

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

$$BNC\_DLY\_69850\_ALLOC\_DIFF\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_69850\_AMT_{Bh}) - BNC\_DLY\_69850\_ALLOC\_AMT_{Bd}$$

38. BANC Charge Code 7070 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 BANC EIM Participants on an hourly BANC Measured Demand Ratio Share 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.

38.1. 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:		BPM Configuration Guide: Flexible

			BA_DAY_TOT_FCAST_MVMT_STLMT@SUB_SUBTOT_CURRENT_AMOUNT		Ramp Forecasted Movement Settlement CC 7070 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_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_HLRY_MSRD_DMD_RATIO$_{Ph}$	Decimal Hourly 5 Decimal	**BANC EIM Participant Hourly Measured Demand Ratio** - The hourly decimal ratio of a BANC EIM Participant's Measured Demand to all of BANC's Measured Demand. Defined in the BANC EIM Participant Measured Demand Precalculation.
PPT_HRLY_7070_AMT$_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 7070 Amount** - The hourly allocation of CAISO charge code 7070 via hourly measured demand to each BANC EIM Participant.
BNC_DLY_7070_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7070 Allocated Amount** - The total CAISO charge code 7070 amount allocated to all BANC 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

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.

$CAISO\_5MIN\_7070\_PTB\_AMT_{Bf}$[1] = $\sum_{Bf}$(PTB_BAFRForecastedMovementChargeAdjustmentAmount$_{BJmdhcif}$)

[1]Rounded to 2 decimal places.

38.5. 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.

38.6. The 5-minute BANC charge code 7070 is aggregated to an hourly amount.

$CAISO\_HRLY\_7070\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_7070\_AMT_{Bf})$

38.7. Allocate the hourly BANC charge code 7070 amounts to the BANC EIM Participants via the hourly measured demand Precalculation.

$PPT\_HRLY\_7070\_AMT_{Ph}$[1] = $CAISO\_HRLY\_7070\_AMT_{Bh} * PPT\_HLRY\_MSRD\_DMD\_RATIO_{Ph}$

[1]Rounded to 2 decimal places.

38.8. The CAISO charge code is summed to a daily total as a reference for BANC and its participants.

$CAISO\_DLY\_7070\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_7070\_AMT_{Bh})$

Allocations Monitoring

38.9. The total daily allocation to BANC EIM Participants is summed to a daily total.

$BNC\_DLY\_7070\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_HRLY\_7070\_AMT_{Ph})$

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

$BNC\_DLY\_7070\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7070\_AMT_{Bd} - BNC\_DLY\_7070\_ALLOC\_AMT_{Bd}$

39. BANC Charge Code 7076 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 BANC EIM Participants on an hourly BANC Measured Demand Ratio Precalculation.

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

39.1. 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 ($).	BANC EESC Bill Determinant Statement: BA_5MIN_FR_FCAST_MVMT_ALLOC_STLMT		BPM Configuration Guide: Internal - Flexible Ramp Forecasted Movement Allocation CC 7076 Version 5.0
PTBBAFRForecastedMovementAllocAdjustmentAmount$_{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

39.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

39.3. 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.
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.
PPT_HLRY_MSRD_DMD_RATIO$_{Ph}$	Decimal Hourly 5 Decimal	**BANC EIM Participant Hourly Measured Demand Ratio** - The hourly decimal ratio of a BANC EIM Participant's Measured Demand to all of BANC's Measured Demand. Defined in the BANC EIM Participant Measured Demand Precalculation.
PPT_HRLY_7076_AMT$_{Ph}$	$ Hourly 2 Decimal	**BANC EIM Participant Hourly 7076 Amount** - The hourly allocation of CAISO Charge Code 7076 via hourly measured demand to each BANC EIM Participant.
BNC_DLY_7076_ALLOC_AMT$_{Bd}$	$ Daily 2 Decimal	**BANC Daily 7076 Amount** - The total CAISO charge code 7076 amount allocated to all BANC EIM Participants for the Trade Date.
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 its participants.

Formulas

39.4. 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.

39.5. The BANC charge code 7076 5-minute billed amounts from CAISO.

$$CAISO\_5MIN\_7076\_AMT_{Bf}{}^{1} = BA5mFlexRampForecastMvmtAllocationAmount_{Bmdhcif} - \sum_{Bf}(PTBBAFRForecastedMovementAllocAdjustmentAmount_{BJmdhcif})$$

[1]Rounded to 2 decimal places.

39.6. The 5-minute BANC charge code 7076 is aggregated to an hourly amount.

$$CAISO\_HRLY\_7076\_AMT_{Bh} = \sum_{Bh}(CAISO\_5MIN\_7076\_AMT_{Bf})$$

39.7. Allocate the hourly BANC charge code 7076 amounts to the BANC EIM Participants via the hourly measured demand Precalculation.

$$PPT\_HRLY\_7076\_AMT_{Ph}{}^{1} = CAISO\_HRLY\_7076\_AMT_{Bh} * PPT\_HLRY\_MSRD\_DMD\_RATIO_{Ph}$$

[1]Rounded to 2 decimal places.

39.8. The CAISO charge code is summed to a daily total as a reference for BANC and its participants.

$$CAISO\_DLY\_7076\_AMT_{Bd} = \sum_{Bd}(CAISO\_HRLY\_7076\_AMT_{Bh})$$

Allocations Monitoring

39.9. The total daily allocation to BANC EIM Participants is summed to a daily total.

$$BNC\_DLY\_7076\_ALLOC\_AMT_{Bd} = \sum_{Bd}(PPT\_HRLY\_7076\_AMT_{Ph})$$

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

$$BNC\_DLY\_7076\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7076\_AMT_{Bd} - BNC\_DLY\_7076\_ALLOC\_AMT_{Bd}$$

40. 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 BANC Measured Demand Ratio methodology. 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 monthly BANC Measured Demand 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.

40.1. 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

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

40.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description

40.3. 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_MSRD_DMD_RATIO$_{Pd}$	Decimal Daily 5 Decimal	**BANC Daily Measured Demand Ratio** - The daily decimal ratio of a BANC EIM Participant's Measured Demand to all of BANC's Measured Demand rounded to 5 decimal places.
PPT_DLY_7077_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 7077 Amount** - The daily allocation of CAISO charge code 7077 via daily measured demand to each BANC EIM Participant 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 BANC EIM Participants for the Trade Date.
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

40.4. 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.

40.5. 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.

40.6. Allocate the daily BANC charge code 7077 amount to the BANC EIM Participants via the daily measured demand Precalculation.

$PPT\_DLY\_7077\_AMT_{Pd}^{1} = CAISO\_DLY\_7077\_AMT_{Bd} * PPT\_DLY\_MSRD\_DMD\_RATIO_{Pd}$

[1]Rounded to 2 decimal places.

Allocations Monitoring

40.7. The total daily allocation to BANC EIM Participants is summed to a daily total.

$BNC\_DLY\_7077\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_7077\_AMT_{Pd})$

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

$BNC\_DLY\_7077\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7077\_AMT_{Bd} - BNC\_DLY\_7077\_ALLOC\_AMT_{Bd}$

41. 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 participants based on the monthly BANC Measured Demand Ratio methodology.

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

41.1. 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

		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

41.2. BANC Provided Determinants

Determinants	UOM & Interval Length	Description

41.3. 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	**BANC EIM Participant Daily 7077 Amount** - The daily allocation of CAISO charge code 7077 via daily measured demand to each BANC EIM Participant rounded to two decimal places.
PPT_MNLY_7077_AMT$_{Pm}$	$ Monthly 2 Decimal	**BANC EIM Participant Monthly 7077 Amount** – The total monthly allocation of CAISO charge code 7077 to the participant.
PPT_MNLY_MSRD_DMD_RATIO$_{Pm}$	Decimal Monthly 5 Decimal	**BANC EIM Participant Monthly Measured Demand Ratio** - The monthly decimal ratio of a BANC EIM Participant's Measured Demand to all of BANC's Measured Demand.
PPT_MNLY_7078_AMT$_{Pm}$	$ Monthly 2 Decimal	**BANC EIM Participant Monthly 7078 Amount** - The monthly allocation of CAISO Charge Code 7078 via the monthly measured demand to each BANC EIM Participant.
BNC_MNLY_7078_ALLOC_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7078 Allocated Amount** - The total CAISO charge code 7078 amount allocated to all BANC 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

41.4. 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.

41.5. 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.

41.6. 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.

$$PPT\_MNLY\_7077\_AMT_{Pm} = \sum_{Mm}(PPT\_DLY\_7077\_AMT_{Pd})$$

41.7. The CAISO charge code 7078, which consists of the net of the rebated monthly total of charge code 7077 plus the entire month's Flexible Ramp Up Uncertainty Allocation proration, is allocated to BANC EIM Participants by BANC EIM Participant Monthly Measured Demand Ratio. The final charge to each participant is the monthly allocation plus their rebate of BANC's allocation of 7077 for the month.

$$PPT\_MNLY\_7078\_AMT_{Pm}{}^{1} = (CAISO\_MNLY\_7078\_AMT_{Bm} * PPT\_MNLY\_MSRD\_DMD\_RATIO_{Pm}) - PPT\_MNLY\_7077\_AMT_{Pm}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

41.8. On the last day of the month, the total monthly allocation to BANC EIM Participants is summed to a total.

$$BNC\_MNLY\_7078\_ALLOC\_AMT_{Bm} = \sum_{Bm} (PPT\_MNLY\_7078\_AMT_{Pm})$$

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

$$BNC\_MNLY\_7078\_ALLOC\_DIFF\_AMT_{Bm} = CAISO\_MNLY\_7078\_AMT_{Bm} - BNC\_MNLY\_7078\_ALLOC\_AMT_{Bm}$$

42. 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 BANC Measured Demand Ratio methodology. 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 monthly BANC Measured Demand Ratio methodology 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.

42.1. 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 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

42.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description

42.3. 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_MSRD_DMD_RATIO$_{Pd}$	Decimal Daily 5 Decimal	**BANC Daily Measured Demand Ratio** - The daily decimal ratio of a BANC EIM Participant's Measured Demand to all of BANC's Measured Demand rounded to 5 decimal places.
PPT_DLY_7087_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 7087 Amount** - The daily allocation of CAISO charge code 7087 via daily measured demand to each BANC EIM Participant 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 BANC EIM Participants for the Trade Date.
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 its participants.

Formulas

42.4. 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.

42.5. 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.

42.6. Allocate the daily BANC charge code 7087 amount to the BANC EIM Participants via the daily measured demand Precalculation.

$PPT\_DLY\_7087\_AMT_{Pd}^{1} = CAISO\_DLY\_7087\_AMT_{Bd} * PPT\_DLY\_MSRD\_DMD\_RATIO_{Pd}$

[1]Rounded to 2 decimal places.

Allocations Monitoring

42.7. The total daily allocation to BANC EIM Participants is summed to a daily total.

$BNC\_DLY\_7087\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_7087\_AMT_{Pd})$

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

$BNC\_DLY\_7087\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7087\_AMT_{Bd} - BNC\_DLY\_7087\_ALLOC\_AMT_{Bd}$

43. 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 participants based on the monthly BANC Measured Demand 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.

43.1. 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 CC7088 Version 5.0

		Amounts over all Trading Days of the Trading Month.			
PTBBAAMonthFRDUncertainty AllocationAmount$_{BJm}$	$ 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

43.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description

43.3. 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	**BANC EIM Participant Daily 7087 Amount** - The daily allocation of CAISO charge code 7087 via daily measured demand to each BANC EIM Participant rounded to two decimal places.
PPT_MNLY_7087_AMT$_{Pm}$	$ Monthly 2 Decimal	**BANC EIM Participant Monthly 7087 Amount** – The total monthly allocation of CAISO charge code 7087 to the participant.
PPT_MNLY_MSRD_DMD_RATIO$_{Pm}$	Decimal Monthly 5 Decimal	**BANC EIM Participant Monthly Measured Demand Ratio** - The monthly decimal ratio of a BANC EIM Participant's Measured Demand to all of BANC's Measured Demand.
PPT_MNLY_7088_AMT$_{Pm}$	$ Monthly 2 Decimal	**BANC EIM Participant Monthly 7088 Amount** - The monthly allocation of CAISO Charge Code 7088 via the monthly measured demand to each BANC EIM Participant.
BNC_MNLY_7088_ALLOC_AMT$_{Bm}$	$ Monthly 2 Decimal	**BANC Monthly 7088 Allocated Amount** - The total CAISO charge code 7088 amount allocated to all BANC 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 its participants.

Formulas

43.4. 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.

43.5. 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.

43.6. 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 participant in this charge code.

$$PPT\_MNLY\_7087\_AMT_{Pm} = \sum_{Mm}(PPT\_DLY\_7087\_AMT_{Pd})$$

43.7. The CAISO charge code 7088, which consists of the net of the rebated monthly total of charge code 7087 plus the entire month's Flexible Ramp Down Uncertainty Allocation proration, is allocated to BANC EIM Participants by BANC EIM Participant Monthly Measured Demand Ratio. The final charge to each participant is the monthly allocation plus their rebate of BANC's allocation of 7087 for the month.

$$PPT\_MNLY\_7088\_AMT_{Pm}{}^{1} = (CAISO\_MNLY\_7088\_AMT_{Bm} * PPT\_MNLY\_MSRD\_DMD\_RATIO_{Pm}) - PPT\_MNLY\_7087\_AMT_{Pm}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

43.8. On the last day of the month, the total monthly allocation to BANC EIM Participants is summed to a total.

$$BNC\_MNLY\_7088\_ALLOC\_AMT_{Bm} = \sum_{Bm}(PPT\_MNLY\_7088\_AMT_{Pm})$$

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

$$BNC\_MNLY\_7088\_ALLOC\_DIFF\_AMT_{Bmd} = CAISO\_MNLY\_7088\_AMT_{Bm} - BNC\_MNLY\_7088\_ALLOC\_AMT_{Bm}$$

44. BANC Charge Code 7989 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 participants based on the BANC EIM Participant Cost Allocation Ratio Precalculation.

44.1. 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

44.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description
BNC_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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.

44.3. 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.

$PPT\_DLY\_7989\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 7989 Amount** - BANC EIM Participant allocation 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 BANC 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 its participants.

Formulas

44.4. 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.

44.5. Allocate any charge BANC received from CAISO in charge code 7989 to BANC EIM Participants by each participant's specific cost allocation ratio in the BANC EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_DLY\_7989\_AMT_{Pd}{}^{1} = CAISO\_DLY\_7989\_AMT_{Bd} * BNC\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

44.6. The allocation is summed to a daily total.

$$BNC\_DLY\_7989\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_7989\_AMT_{Pd})$$

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

$$BNC\_DLY\_7989\_ALLOC\_DIFF\_AMT_{Bd} = CAISO\_DLY\_7989\_AMT_{Bd} - BNC\_DLY\_7989\_ALLOC\_AMT_{Bd}$$

45. BANC Charge Code 7999 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 BANC EIM Participant Cost Allocation Ratio Precalculation.

45.1. 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

45.2. BANC Provided Determinants

Determinants	UOM, Interval Length, Precision	Description
BNC_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Cost Allocation Ratio** - The BANC EIM Participant daily cost allocation ratio per participant. This percentage is expected to be defined annually 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.

45.3. 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.

$PPT\_DLY\_7999\_AMT_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily 7999 Amount** - BANC EIM Participant allocation 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 BANC 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

45.4. 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.

45.5. Allocate any credit BANC received from CAISO in charge code 7999 to BANC EIM Participants by each participant's specific cost allocation ratio in the BANC EIM Participants Cost Allocation Ratio Precalculation.

$$PPT\_DLY\_7999\_AMT_{Pd}{}^{1} = CAISO\_DLY\_7999\_AMT_{Bd} * BNC\_COST\_ALLOC\_RATIO_{Pd}$$

[1]Rounded to 2 decimal places.

Allocations Monitoring

45.6. The allocation is summed to a daily total.

$$BNC\_DLY\_7999\_ALLOC\_AMT_{Bd} = \sum_{Bd} (PPT\_DLY\_7999\_AMT_{Pd})$$

45.7. The total daily difference between the credit BANC received and the allocated amount to BANC 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 the 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

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

BANC EIM Participant PRSC Bill Determinant Statement	BANC EIM Participant Load Base Schedule Precalculation	$BAResBaseScheduleEnergy_{BrtuT'I'Q'M'R'W'F'S'VL'mdhcif}$	MWH 5 Min 2 Decimals	BANC 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 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.	BANC EIM Participant PRSC Bill Determinant Statement: BA_5MIN_RSRC_BASE_ENGY_SCHD_QTY	t = RSRC_TYPE = 'GEN' r is assigned to a BANC EIM Participant	Real Time Energy Pre-Calculation Version 5.20 – Note this variable is listed as an input to this calculation, but CAISO doesn't define where it is sourced from).
BANC EIM Participant PRSC Bill Determinant Statement	BANC EIM Participant Absolute Imbalance Ratio Precalculation	$BAResEntityDispatchIntervalMeteredQuantity_{BrtuT'I'Q'M'AA'm'F'R'pPW'QS'd'Nz'VvHn'L'mdhcif}$ 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 *BANC 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 a BANC 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	BANC EIM Participant Load Ratio Share Precalculation	$BAResEntityDispatchIntervalMeteredQuantity_{BrtuT'I'Q'M'AA'm'F'R'pPW'QS'd'Nz'VvHn'L'mdhcif}$ 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 *BANC 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 a BANC EIM Participant	MSS Netting Pre-Calculation Version 5.8.
BANC EESC Bill Determinant Statement	BANC 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

	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, 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

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
BANC EESC Bill Determinant Statement	BANC CC 5912	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	BANC EESC Bill Determinant Statement: DEFAULT_SC_SHORTFALL_ALLOC		BPM Configuration Guide: Shortfall Allocation Reversal CC5912 Version 5.0

				the short pay in CC5901 and reallocate it in this charge code.			
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$_{BQ'AA'mdh}$	$ 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 $) due ISO for a given Business Associate and Trading Hour.	BANC EESC Bill Determinant Statement: BA_HRLY_SPIN_OBLIG@SUB_SUBTOT_NET_AMOUNT		BPM Configuration Guide: Spinning Reserve Obligation Settlement CC 6194 Version 5.2a
BANC EESC Bill Determinant Statement	BANC CC 6194	PTBChargeAdjustmentObligationSpin$_{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:		BPM Configuration Guide: Spinning Reserve Neutrality

					BA_HRLY_SPIN_NTRL@AMOUNT		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
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
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 EIM Entity Scheduling Coordinator 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 ($).	BANC EESC Bill Determinant Statement: PTB_CHG_ADJ_BA_FR_FCAST_MVMT_HIER@PTB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Flexible Ramp Forecasted Movement Settlement CC 7070 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 7070	PTB_BAFRForecastedMovementChargeAdjustmentAmount$_{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 $) assessed monthly to a BA of the BAA as the difference of the monthly FRU Allocation Amount for the designated Trading Month and the monthly total of the daily FRU Uncertainty Allocation Amounts over all Trading Days of the Trading Month.	BANC EESC Bill Determinant Statement: BAA_MTH_FRU_UNCERT_ALLOC_STLMT_HIER@SUB_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Monthly Flexible Ramp Up Uncertainty Award Allocation CC 7078 Version 5.0
BANC EESC Bill Determinant Statement	BANC CC 7078	PTBBAAMonthFRUUncertaintyAllocationAmount$_{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_SUBTOT_CURRENT_AMOUNT		BPM Configuration Guide: Monthly Flexible Ramp Down Uncertainty Award Allocation CC7088 Version 5.0
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 Group	BANC EIM Participants Cost Allocation Precalculation	PPT_COST_ALLOC_RATIO$_{Pd}$	Decimal Daily 5 Decimals	**BANC EIM Participant Cost Allocation Ratio** - The BANC 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 Group	BANC EIM Participant Fixed Cost Allocation Precalculation	BNC_DLY_NUM_MEM$_{Bd}$	Integer Daily Integer	**BANC Daily Number of Participants** - The number of *BANC EIM Participants* for the *Trade Date.*	Set by BANC Settlement Group based on the number of participants in BANC by Trade Date.
BANC BAA Tags	BANC EIM Participant Tagging Precalculation	PPT_5MIN_TAG_BASE_SCHD$_{Qxyzf}$	MWh 5 Min 8 Decimals	**BANC 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 this criteria.
BANC BAA Tags	BANC EIM Participant Tagging Precalculation	PPT_5MIN_TAG_FMM_SCHD$_{Qxyzf}$	MWh 5 Min 8 Decimals	**BANC 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 this criteria.
BANC BAA Tags	BANC EIM Participant Tagging Precalculation	PPT_5MIN_TAG_FNL_SCHD$_{Qxyzf}$	MWh 5 Min 8 Decimals	**BANC 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 this criteria.
BANC BAA	BANC EIM Participant Load Ratio Share Precalculation	BNC_5MIN_LD_QTY$_{Bf}$	MWh 5 Min TBD	**BANC EIM Participant 5-Minute Load Quantity** - BANC will calculate a total BANC load that will be compared with the sum of all the BANC 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 Group	BANC EIM Participant Load Ratio Share Precalculation	BNC_5MIN_LD_QTY_THRESHOLD$_{Bf}$	MWh 5 Min 3 Decimals	**BANC 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	Determined by BANC Settlement Group for monitoring purposes only.

				from all BANC EIM Participants differs by BANC's independently calculated load.	
BANC Settlement Group	BANC 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 Group	BANC 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 Group for monitoring purposes only.
BANC Settlement Group	BANC CC 101 PTB Charge	PPT_DLY_MANUAL_PTB_ALLOC_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily Manual PTB Allocation Amount** – A manually allocation amount as calculated by BANC staff.	Determined by BANC Settlement Group.
BANC Settlement Group	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 Group.
BANC Settlement Group	BANC CC 102 Miscellaneous Charge	PPT_DLY_MISC_ALLOC_AMT$_{Pd}$	$ Daily 2 Decimal	**BANC EIM Participant Daily Miscellaneous Allocation Amount** – A authorized BANC miscellaneous allocation amount.	Determined by BANC Settlement Group.
BANC BAA	BANC CC 64740 Hourly Real Time Unaccounted for Energy EIM Settlement	PPT_HRLY_INTRATIE_RSRC_IMP_MTR_QTY$_{PRh}$	MWh Hourly 8 Decimal	**BANC EIM Participant Intra-Tie Resource Meter Quantity** – An intra-tie meter quantity reported by a BANC EIM Participant. These values display as positive values.	Power Settlements will receive all BANC BAA tags and will sort them based on this criteria.
BANC BAA	BANC CC 64740 Hourly Real Time Unaccounted for Energy EIM Settlement	PPT_HRLY_INTRATIE_RSRC_EXP_MTR_QTY$_{PRh}$	MWh Hourly 8 Decimal	**BANC EIM Participant Intra-Tie Resource Meter Quantity** – An intra-tie meter quantity reported by a BANC EIM Participant. These values display as negative values.	Power Settlements will receive all BANC BAA tags and will sort them based on this criteria.
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 this 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 – Change Management

[To be added]