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NCPA Appendix B

CAISO Settlements Summary

This document is the Appendix B to the Amended and Restated Scheduling Coordination Program Agreement (SCPA). It provides a detailed explanation of how NCPA estimates and allocates to Members charges and credits received from the California ISO. **Unless defined in SCPA Appendix D, all terms in this Appendix B with initial capitalization shall have the same meaning as those contained in Section 1 of the Amended and Restated Scheduling Coordination Program Agreement.**

Table of Contents

Overview

This document is the Appendix B to the Amended and Restated NCPA Scheduling Coordinator Program Agreement (SCPA). It provides a detailed explanation of how NCPA estimates and allocates to Members and non-Member Project Participants charges and credits received from the California Independent System Operator (CAISO). Unless defined in SCPA Appendix D, all terms in this Appendix B with initial capitalization shall have the same meaning as those contained in Section 1 of the Amended and Restated Scheduling Coordination Program Agreement.

Purpose

The purpose of this document is to describe NCPA's ESP and Pool Allocations of CAISO charges and payments in a format that lends itself as a desktop reference.

Background

NCPA's scheduling and settlements software systems refer to each internal account as belonging to an Energy Service Provider (ESP). An ESP represents a separately modeled company or business entity that is set up at NCPA as an independent, self-balancing account for which NCPA schedules and settles with the CAISO. Because various ESPs can schedule for the same Delivery Point, Schedules sent to the CAISO are aggregated by Delivery Point or Resource. Many CAISO charges are allocated based on a location or Balancing Authority Area ("Control Area") basis; therefore, charges and payments that apply to the NCPA Scheduling Coordinator (NCPA SC) must be disaggregated and allocated to the individual ESPs.

Special CAISO Settlements for the NCPA Metered Subsystem Aggregation

The following describes the equations used by the CAISO and NCPA to calculate various data used as either CAISO inputs or billing determinants for specific CAISO settlement charges to the Metered Subsystem Aggregation (MSSA), which are provided special treatment under the NCPA and Santa Clara MSS Agreements. In some cases, the CAISO does not have sufficient information from the normal scheduling templates, the Meter Data (examples include Gross Demand, Net Metered Demand, and Schedules for CLAP), and other sources of data on which to base these calculations. The CAISO finds it more efficient to allow NCPA to perform the calculations and submit the data. Where indicated, NCPA provides the missing information in the form of pseudo Meter Load Points ("Recorder IDs") as are mentioned below.

Data/Load Point NCPA NAME (CAISO NAME)	Description	Calculation	Notes
CLAP_SANCLA_NCPA (CLAPSANCLANCPA) (NCPA calculates and submits at T+8B1 and as needed)	• A Custom Load Aggregation Point (CLAP) created for the purpose of settling Metered Demand associated with ETC deliveries to the Santa Clara City Gate Meter, separate from other MSSA Demand.	Sum of Grizzly, SOT, and MSR deliveries to Load	• NCPA SC must receive communication from Santa Clara with regard to the amount of ETC power to report to the CAISO that is in balance with the Real Time Market sources of the ETC delivery. • Santa Clara has several ETC s that can deliver power to the City Gate Meter.
CLAP_PLUMAS_NCPA (CLAPPLUMASNCPA) (NCPA calculates and submits at T+8B and as needed)	• A CLAP created for the purpose of settling Metered Demand associated with Transmission Ownership Rights (TOR) deliveries to Plumas Sierra REA at Marble Substation, separate from other MSSA Demand.	Marble Final TOR scheduled Imports	• Special treatment of Marble Imports to the Plumas CLAP, as well as all equations treating Marble Imports as a deduction when calculating Net Demand and Marble Exports as an increase when calculating Net Demand, depend on the terms of this TOR as being schedulable only by Plumas • NCPA must arrange coordination and communication with Plumas Sierra and its suppliers of the TOR Energy at Marble to report to the CAISO an amount of CLAP_PLUMAS_NCPA that is in balance with the Real Time Market

[1] B = Business Day

Data/Load Point NCPA NAME (CAISO NAME)	Description	Calculation	Notes
			sources of the TOR delivery. • All scheduled Marble Imports add to CLAP Demand, without regard to any scheduled Exports that might also exist. For example, we do not net scheduled Marble Imports with Exports; we count all Marble Imports toward CLAP Demand.
CLAP_ SOT_NCPA (CLAPSOTPNCPA) (NCPA calculates and submits at T+8B and as needed)	• A CLAP created for the purpose of settling Metered Demand associated with South of Tesla (SOT) ETC deliveries to the NCPA Pool cities, separate from other MSSA Demand.	Sum of SOT deliveries to Load	• NCPA must report to the CAISO an amount of CLAP_ SOT_NCPA that is in balance with the Real Time Market sources of the SOT delivery.
NCPA_TOT_GROSS (NCPATOTGROSS) MSSA Demand (NCPA calculates at T+1B, T+8B, T+47B and as needed)	• NCPA estimates at T+1 using SCADA data. If SCADA is not available, sum (Day Ahead Final Schedules for MLAP and CLAP)).	Metered Demand + metered City Generation + metered Marble (validate and push to SQMD at T+2, if valid)	• Used to determine MLAP_NCPA_NCPA • Metered Marble = + Marble Imports – Marble Exports.

Data/Load Point NCPA NAME (CAISO NAME)	Description	Calculation	Notes
MLAP_NCPA_NCPA (MLAPNCPAGROSS) MSSA LAP Demand (MLAP) (NCPA calculates and submits. Depending upon SAVEE validation results, either SQMD or sum(Day Ahead Final Energy Schedules for MLAP and CLAP at T+8B and as needed)	• Non-ETC/Non-TOR MSSA Demand • This is not associated with any of the CLAPs.	MSSA Demand – CLAP_SANCLA_NCPA – CLAP_PLUMAS_NCPA – CLAP_ SOT_NCPA	•
MLAP_NCPA_NCPA_ HVNET (MLAPNCPAHVNET) (CAISO calculates for T+3B; NCPA calculates and submits at T+8B, 48B and as needed)	• High Voltage WAC Take Out Point used to identify Lodi's metered White Slough water treatment and Load served via NCPA's High Voltage facilities.	See charge code 0382	• CAISO will estimate this quantity for the Initial ISO Settlement Statement. • NCPA will calculate and submit for all Recalculation ISO Settlement Statements.
MLAP_NCPA_NCPA_ LVNET (MLAPNCPALVNET) (CAISO calculates for T+3B; NCPA calculates and submits at T+8B, 48B and as needed)	• Take Out Point used for logical meter calculation of NCPA's Net Demand (Pool and Santa Clara) served via NCPA's Low Voltage facilities.	See charge code 0383	• CAISO will estimate this quantity for the Initial ISO Settlement Statement. • NCPA will calculate and submit for all Recalculation ISO Settlement Statements.
MLAP_NCPA_NCPA_ SVPNET (MLAPNCPASVPNET) (CAISO calculates for T+3B; NCPA calculates and submits at T+8B, 48B and as needed)	• Take Out Point used for logical meter calculation of Santa Clara's Net Demand served via Santa Clara's High Voltage facilities.	See charge code 0382	• CAISO will estimate this quantity for the Initial ISO Settlement Statement. • NCPA will calculate and submit for all Recalculation ISO Settlement Statements.

Data/Load Point NCPA NAME (CAISO NAME)	Description	Calculation	Notes
MSSA Non-PTO Net Metered Demand	MSSA Net Metered Demand – Net Grizzly Energy	(MSSA Demand – metered City Generation – Marble Imports + Marble Exports) - Inter-SC Trades In from Grizzly + Inter-SC Trades Out from Grizzly – RT Grizzly Delivery	• Not explicitly sent to the CAISO. • Calculated by the CAISO as the sum of MLAP_NCPA_NCPA_HVNET, MLAP_NCPA_NCPA_LVNET, MLAP_NCPA_NCPA_SVPNET for each hour.
MSSA Non-PTO Net Measured Demand (used as an ESP estimate quantity or allocation basis for many charge codes)	This is Net Demand, which is Demand - City Generation - Marble Imports - Inter-SC Trades In from Grizzly + Inter-SC Trades Out from Grizzly - RT Grizzly Delivery + ESP Final Export Schedule	MSSA Demand – metered City Generation –Metered Marble Imports – Inter-SC Trades In from Grizzly + Inter-SC Trades Out from Grizzly – RT Grizzly Delivery + ESP Final Export Schedule	• Effective 10/1/2011 There is a slight distinction between MSSA Non-PTO Net *Metered* Demand and MSSA Non-PTO net *Measured* Demand: • Non-PTO Net *Metered* Demand involves Exports only at Marble. • Non-PTO Net *Measured* Demand involves all Exports from the MSSA.

Data/Load Point NCPA NAME (CAISO NAME)	Description	Calculation	Notes
NCPA_MSS_TRADE_ DAPREFERRED (NCPATRADEDA) (NCPA calculates and submits at T+8B and as needed)	• Represents the values mentioned in the Metered Subsystem Aggregation Agreement (MSSA Agreement) Schedule 19, also known as the "net Interchange between the MSSA and the CAISO" or "MSSA Load Following Deviation Energy Formula". • Calculated based on NCPA's Day Ahead Preferred Energy Schedules, and is used by the CAISO to calculate the DA CAISO Sale by the MSSA.	• If the Net Interchange is a net Import, the sign is positive. • If the Net Interchange is a net Export, the sign is negative.	• See charge codes 1407 and 2407 ESP estimate for detailed equation and notes.
NCPA_MSS_TRADE_RT (NCPATRADERT) (NCPA calculates and submits at T+8B and as needed)	• The actual Net Interchange between the NCPA MSSA and the CAISO. • This value is used in the calculation of deviation penalties as described in MSSA Agreement Schedule 19.	• See charge codes 1407 and 2407 ESP estimate for detailed equation and notes.	
COLVIL_2_ISOREG (COLVIL2ISOREG) (NCPA calculates and submits at T+8B and as needed)	• NCPA calculates the Regulation Energy provided in Real Time and sends that to the CAISO after-the-fact.	•	
NCPA_2_ADSTOT (NCPA2ADSTOT) (NCPA calculates and submits at T+8B and as needed)	• Calculated incremental Instructed Energy from ADS instructions supplied by MSSA Load Following Generators.	• The CAISO is supposed to use NCPA's value to confirm their own calculation, to catch and avoid settlements disputes that would arise if their calculation is not accurate.	

Data/Load Point NCPA NAME (CAISO NAME)	Description	Calculation	Notes
NCPA_2_NCPA (NCPA2NCPA) (CAISO Calculates; download at T+5B, 9B, 49B)	• The logical Net Interchange between CAISO (PG&E and SPP) and NCPA MSSA. • The calculation is used for the UFE determination only.		• Effective 4/1/2009, in-area UFE should always be zero for the MSSA.

Note: In the below equations, the term 'Metered' refers to quantities that may be physically metered, or quantities that are the result of a logical meter calculation. 'Metered', therefore, refers to a quantity that represents actual flows and not scheduled flows.

MSSA MRTU Portfolio Deviation Compliance

For more information about this, refer to the *Metered Subsystem Aggregation Agreement Schedule 19* (posted on the NCPA website), which describes the MSSA Load Following Deviation Compliance equation.

ESP vs. NCPA Pool Settlement Allocations

Some ESP accounts are in the NCPA MSSA while some ESP accounts are settled separate from the MSSA. MSSA ESPs include:

- NCPA Pool
- Santa Clara
- NCPA jointly-owned Projects (i.e., Geo and Hydro)
- Santa Clara's share of the NCPA jointly-owned Projects
- TID's and Roseville's share of the jointly-owned Projects

Non-MSSA ESPs include the following Participating Generator Agreement (PGA) Resources:

- Richmond Landfill Generating Facility
- Santa Cruz Landfill Generating Facility
- Keller Canyon Landfill Generating Facility
- OxMountain Landfill Generating Facility
- Butte County Landfill Generating Facility
- Johnson Canyon Landfill Generating Facility
- San Joaquin Landfill Generating Facility
- Gridley PV Solar Generating Facilities
- Lodi Energy Center (LEC)

There are no ESP accounts for individual Members of the NCPA Pool. NCPA does not schedule each Pool Member as a self-balancing entity. Instead, NCPA schedules the entire Pool as a self-balancing entity. Allocation of CAISO charges to the individual Pool Members is done through a separate process.

A few CAISO charges are allocated to the NCPA MSSA based on the MSSA staying in balance in Real Time. To facilitate the allocation of these charges, NCPA has identified the MSSA ESPs as belonging to one of three Real Time Balancing Groups:

1. Santa Clara's Loads and Generators
2. NCPA Pool and the Pool portion of the jointly-owned Projects and TID's share of the Projects
3. Roseville's shares of the jointly-owned Projects

1. General Principle

The general principle is that CAISO charges and payments are allocated between ESPs either by

a) directly calculating the actual cost for each ESP, when possible, or

b) using an allocator that results in each ESP receiving its cost-causation/payment-entitlement amount.

1.1. Estimates

Many CAISO charges and payments can be estimated by direct calculation based on the Final Energy Schedules in NCPA's scheduling system for each ESP, available Public Market Information (PMI), and Meter Data.

The primary purpose of performing ESP estimates is to use them as a projected cost of NCPA's CAISO-liability as well as a settlement allocator for CAISO settlement charges. A separate liability amount is billed to NCPA Members in the monthly Pre-Bill and trued-up with actual charges/payments in a subsequent All Resources Bill (ARB).

For example,

	Example	Estimate Principle	Allocation Principle
1	A Generator is jointly-owned by several ESPs who sell DA Spin to the CAISO	Calculated based on each ESP's DA Spin Awards	Directly allocated to each ESP based on Spin Bids in the Day Ahead Market
2	CAISO charges and payments are allocated to the NCPA SC based on Demand or Measured Demand	Often not possible to estimate accurately	NCPA can accurately allocate based on the same determinants the CAISO uses when allocating them to the NCPA SC versus all the other SC's in the Balancing Authority Area
3	CAISO Ancillary Service costs	Calculated based on each ESP's WECC Ancillary Service Obligation using each ESP's	The ESP estimate is used as the basis for allocating the actual costs received from

	Example	Estimate Principle	Allocation Principle
		Load and other determinants as a basis	the CAISO
4	CAISO reruns past days' settlements and issues (Prior Period Adjustments) as a manual line entry on the ISO Invoice	Cannot estimate	Allocated to each ESP using the original allocation of costs/payments, by charge code as the allocation basis

ESP estimates are performed on a per- Settlement Interval basis. Depending upon the CAISO charge resolution and other factors, the Settlement Interval could be five-minutes, ten-minutes, fifteen-minutes, hourly, daily, or monthly (see charge code descriptions for a breakdown of ESP estimate resolution as well as ESP and Pool Allocation resolutions).

1.2. Validations

NCPA performs a series of validations to determine any billing disputes that may arise with the CAISO. Validations are performed at two levels:

1.2.1. Per charge code: the amount on the ISO settlement statement will be compared with NCPA's ESP estimate amount.

1.2.2. Per NCPA-selected bill determinants for each charge code: various quantities provided in the ISO settlement statement bill determinant file that are used within a particular charge code calculation will be compared with NCPA's quantity for that data element.

1.2.3. Both validation processes are performed to ensure the accuracy of invoices received from the CAISO and protect NCPA Members and non-Member Project Participants from unjust costs.

2. Standard Allocation Formula

All charges and payments from or to the CAISO are allocated using the same standard allocation formula:

Result = ESP Estimate + ((|ESP Estimate| / sum (|ESP Estimate|) * (Statement - sum (ESP Estimate)))

Where

- *Result* is the final allocation of the charge or payment to each ESP.
- *ESP estimate* is NCPA's direct calculation for each ESP of the particular charge or payment. If a charge or payment cannot be directly calculated, and if the charges to each ESP always have the same sign (positive or negative), then any appropriate allocation basis can be substituted for the ESP estimate, and the result will be a simple proportionate ratio. If the ESP estimate can be positive for some ESP's and

negative for other ESP's in the same interval, then an accurate ESP estimate is essential for the allocation formula to produce a fair result to all ESP's.

- *Statement* is the amount to be allocated from the ISO settlement statement.

2.1. Default Allocations

Section 1.1 above describes how ESP estimates are used to form the basis for allocation. There are rare circumstances, however, when ESP estimates do not correspond to CAISO Settlement Interval data. Under these exceptions, default allocations must be utilized to accurately allocate specific, defined settlement charges or payments based on defined business rules. A few examples of such exceptions include:

- An ESP estimate is not produced for the same Settlement Interval a charge/payment is present on the ISO settlement statement (the allocation must have a corresponding ESP estimate in the same Settlement Interval).
- The ISO settlement statement amount is not equal to zero while the corresponding quantity and price are zero (the allocation must have a quantity and price associated with an amount).
- The DA City Demand drops below a user-defined tolerance in Real Time for any Pool Member (*see section 2.2 for more details*).

Note: Not all charge codes require a default allocation. For those that do, the default allocation has been defined under the specific charge code description later in this document. General exceptions are listed here.

2.1.1. General Default Exceptions

	Default Allocation	**Affects…**
1	If an ESP estimate is not produced for a Settlement Interval, the associated ESP allocation must use the default allocator defined for that charge code.	Any charge code
1a	If an ESP estimate is not produced for a Settlement Interval and a default allocator has not been defined for that charge code, the associated ESP allocation must use Project Entitlement Percentage for Generation and Participation Share for Import/Export.	Any charge code without a default allocation previously defined

	Default Allocation	Affects…
1b	If an ISO settlement statement amount exists without a corresponding ESP estimate for LEC for a given Settlement Interval and a default allocator has not been defined for that charge code, then the associated ESP allocation must allocate based on Generation Entitlement Share.	Any charge code associated with the Lodi Energy Center resource without a default allocation previously defined
2	If a non-zero ISO settlement statement amount exists while the billable quantity and price are both zero for the same interval, the billable quantity must be set to 1.0, and the ESP estimate price calculated as amount / billable quantity for the ESP allocation basis.	Charge code 6470 for over-lapping and offsetting Standard Ramping Energy and Optimal Energy quantities
3	In the event a City experiences a drop in Demand due to electrical outage, the default allocation described in section 2.2 will produce proxy DA Demand Schedule quantities for all applicable hours of the affected operating day.	Charge codes 6011, 6475, 1407, 9919, 9920

2.2. Default Billing Determinants

A default allocation will produce a proxy Demand Schedule for the Day Ahead only in the event a City experiences a drop in Demand due to an electrical outage (see charge code 6011 for the high level default allocation rule).

2.2.1. The DA Load cost allocation rule in each hour is:

$$\text{Load Cost}_{m} = \text{AllocationFactor}_{hm} * (\sum \text{DA City Demand Forecast}_{hm} * \text{DA\_DLAP\_LMP}_{h})$$

Where: $\text{AllocationFactor}_{hm} = \text{RT Demand}_{hm} / \sum(\text{RT Demand}_{h})$

h = hour
m = member

2.2.2. Prior to deriving the allocation factor for each Pool Member a one-sided test is performed to determine if City Demand was unusually low and could have caused an over-forecast of actual Demand. If actual Demand is substantially lower than what could have been reasonably predicted, then there could be a misallocation of DA Load costs. When such an event occurs, actual Demand is replaced with the DA City

Demand Forecast prior to deriving the allocation factors. The test for this condition is as follows:

If RT $Demand_{hm}$ / DA City Demand $Forecast_{hm}$ < $Test\_DemandFcst\_Ratio_{m}$.

Note: prior to developing the $Test\_DemandFcst\_Ratio_{m}$ for Plumas, the DA ESP Preferred Generation Energy Schedule for High Sierra must first be subtracted from the Demand for Plumas.

3. Unit Energy Allocation (UEA) Process

NCPA assumes that all validated CAISO incremental Instructions are delivered. NCPA also calculates the amount of Regulation Energy that is provided explicitly in Real Time, which is accounted for by the CAISO and NCPA as Instructed Energy. Therefore all categories of power deliveries to the CAISO that are incremental to NCPA's MSSA needs are deemed delivered, except charge code 6475 (Uninstructed Imbalance Energy), and are calculated as described below.

Note: Resource *Capacity* Ownership does not necessarily mean the same as *Project* Ownership. While they are generally the same, it is possible for an individual Resource's Capacity to be adjusted in certain hours or certain days upon agreement between the Project Owners, for the purpose of accommodating different Project Owners' need for Energy from a particular Resource. Resource Capacity Ownership is scheduled each day and hour for each ESP and each Resource.

These direct calculations result in an ESP estimate. These ESP Estimates are then used as the allocation basis for allocating the actual charges from the CAISO.

3.1. Calculate Instructions and Regulation Energy (charge code 6470 Instructed Energy) based upon NCPA-CAISO negotiated *Valid Dispatch Matrix for Compliance*.

3.2. Calculate Metered Energy other than Instructions and Regulation Energy.

3.2.1. Allocate Metered Energy in order to meet Load.

3.2.2. Subtract Instructions and Regulation Energy from the Meter Data, resulting in Energy that is being used to meet MSSA Demand. The instructions that are being subtracted are those that provide incremental or decremental Energy to the CAISO, such as Spin, Non Spin, Supplemental and Exceptional Dispatch as well as Regulation Up and Regulation Down. Load Following is also considered an instruction; however these will not be subtracted. Load Following is ignored since the effect of those is manifest in the resulting Resource metered quantity, and will be recognized in the Energy allocations below.

3.2.3. Check that the Resource provided sufficient Energy to at least meet CAISO Instructions.

3.2.3.1. If sufficient Energy has been provided, go to step 3.2.4.

3.2.3.2. If sufficient Energy has not been provided, under the philosophy that we meet CAISO Instructions first and Demand second, prorate available Metered Energy to those who have positive net Instructed Energy and skip allocation steps 1 through 10 because there is no Energy to meet Demand or perform real-time portfolio balancing .

3.2.4. Allocate Energy to meet Demand based upon the following regions:

Region	Formula
Extra Energy Region Meter > UEA Allocation Schedule + Load Follow Up Capacity	Extra Energy = max(0, Meter - (UEA Allocation Schedule + Load Follow Up Capacity))
Load Following Up Region Meter > UEA Allocation Schedule up to (UEA Allocation Schedule + Load Follow Up Capacity)	Load Following Up Energy = min(max(0 , Meter - UEA Allocation Schedule), Load Follow Up Capacity)
Load Following Down Displacement Meter < UEA Allocation Schedule maxed at Load Follow Down Capacity	Load Following Down Displacement = min(max(0 , UEA Allocation Schedule - Meter), Load Follow Down Capacity)
Additional Displacement Meter < UEA Allocation Schedule – Load Follow Down Capacity	Additional Displacement = max(0 ,(UEA Allocation Schedule - Load Follow Down Capacity) - Meter)

Notes:

- UEA Allocation Schedule = The Internal Final Schedule or, if one does not exist, the Day Ahead Market Energy Schedule.
- Load Following Down Energy = Load Follow Down Capacity - Load Following Down Displacement.
- It is possible that a Joint Owner of a Resource can only take their Power in the form of an Export from the CAISO. Interchange Schedules must be rounded or truncated to the whole MW; however, we want the Joint Owner to get the full value of their Project Entitlement Percentage in the Resource. In this case, the Joint Owner cannot take their Project Entitlement Percentage as a Schedule, but they can settle the fractional remainder as Uninstructed Energy.

3.2.5. If the total UEA Allocation Schedule quantity is 5 MW or more, check that each Joint Owner 's UEA Allocation Schedule is within 1 MW of their Project Entitlement Percentage of the total Day Ahead Schedule.

3.2.5.1. If the quantity is within 1 MW, then set the UEA Allocation Schedule used in the remaining allocation steps to Project Entitlement Percentage, including the fractional part.

Note: Effective Trade Date July 1, 2013, Collierville is excluded from this step.

3.2.5.1.1. If the quantity is not within 1 MW, then make no adjustment to the UEA Allocation Schedule.

Note: This is common. NCPA routinely schedules Energy without following exact Project Entitlement Percentages for the Simple Cycle Turbines, where the fuel accounting tracks the final Metered Energy allocations.

3.2.6. Allocation Steps for each Resource (performed separately)

3.2.6.1. Allocate UEA Allocation Schedule plus Extra Energy using as the allocation basis and Allocation Limit the following (stated in order of priority):

Allocation Step	Description	Allocation Basis	Allocation Limit
1	Water Release Schedules exist	Water Release Schedule	No limit
	No Water Release Schedules	Available Capacity (defined the same as the Allocation Limit) Limited by the greater of the Capacity or Energy Schedule, where the Energy Schedule is the UEA Allocation Schedule.	Available Capacity = max(0, (max(Capacity Schedule, UEA Allocation Schedule) - non Ancillary Service Instructions - Ancillary Service Bid – Load Follow Capacity))
2	Remaining unallocated UEA Allocation Schedule plus Extra Energy to fill up all available Capacity if Metered Energy was not fully allocated in Step 1	Available Capacity (defined the same as the Allocation Limit)	Available Capacity = max(0, (max(Capacity Schedule, UEA Allocation Schedule) – non Ancillary Service Instructions - Ancillary Service Bid – Load Follow Capacity - amount allocated in Step 1))

Allocation Step	Description	Allocation Basis	Allocation Limit
3	Remaining unallocated UEA Allocation Schedule plus Extra Energy to fill up the Capacity that was bid as Ancillary Service to the CAISO	Unused Ancillary Service Capacity (defined the same as for the limit) This provides for payment for Energy on the same basis as the allocation of No Pay for generating into the Capacity sold to the CAISO.	Unused Ancillary Service Capacity = max(0, (Ancillary Service Bid – Ancillary Service Instructions)) *Note*: Ancillary Service Instructions include Spin, Non Spin, Regulation Up, and Exceptional Dispatch Instructions. Exceptional Dispatch is not necessarily against Ancillary Service Bids, however it is included here under the expectation there will be no corresponding No Pay.
4	Remaining unallocated UEA Allocation Schedule plus Extra Energy	Project Entitlement Percentage	No limit
5	Load Following Up Energy	Scheduled Load Follow Up Capacity	No limit
6	Load Following Down Displacement	Scheduled Load Follow Down Capacity	Scheduled Load Follow Down Capacity = min(Scheduled Load Follow Down Capacity, UEA Allocation Schedule)
7	Additional Displacement	Same Allocation basis as Step 1	Only done for Owners with overall positive Energy allocated so far, i.e., NCPA won't let this allocation result in an overall negative Metered Energy for any Owner

Note: At this point the allocation of Metered Energy (other than Instructions and Regulation Energy) for each Resource has been determined except for a few adjustments:

Metered Energy (other than Instructions and Regulation Energy) =

Sum of (allocation Steps 1 through 5) - Step 6 - Step 7

Allocation Step	Description	Adjustment	Notes
The following allocation steps are to adjust this allocation to ensure that no Owner is allocated less than zero when decremental Instructed Energy is taken into account, and to do Load Following adjustments so that each Owner's total portfolio will be balanced as closely as possible.			
8	Minimum Unit Operation Adjustment	For each Owner, -(min (Allocation of Metered Energy including Instructions & Regulation Energy, 0))	Add this adjustment to the allocation of Metered Energy, including Instructions & Regulation Energy, for each Owner with a negative allocation
		Total the minimum adjustments that were made, and reduce the remaining Owner's allocations of Energy by this amount, prorated by UEA Allocation Schedule	This adjustment may have to be done repeatedly until allocation of Metered Energy is positive for every Owner
After allocation Steps 1 through 8 have been completed for all Resources, do the following adjustments to the allocation of DVR and Collierville Load Following Energy based on the resulting amount of over- and under-generation for the RT Balancing Groups (total portfolios of NCPA Pool, Santa Clara and Roseville).			
9	Portfolio Load Following Energy Adjustment	If any Owner has: • a net positive portfolio balance (over-generating), but • another is net negative (under-generating), and • one Owner has been allocated Load Following Energy from either Resource and • the other(s) have remaining room within their Load Following Capacity of the same Resource, Transfer the Load Following	• If two Operating Entities have scheduled Load Following Capacity on both Resources, this Energy adjustment will be based initially on the weighted average of the Load Following Energy proportions of the two Resources, but will transfer Energy from either Resource if necessary. • This adjustment will also be limited so that the transfer will not bring the total allocation of Energy on the Resource to less than zero

Allocation Step	Description	Adjustment	Notes
		Energy to the Operating Entities that are under-generating to achieve as close as possible a balanced portfolio for every Operating Entity.	for any Operating Entity.
10	Portfolio Balance Energy Adjustment	• Same as Step 9 for Collierville Energy that meets Load or scheduled Deliveries, without regard to any Load Following Capacity that has been scheduled. • Deliveries From are done pro rata based on the allocation so far of Collierville Energy after Instructed Energy. • Receipts are done pro rata based on need. • This adjustment will also be limited so that the transfer will not bring the total allocation of Energy on the Resource to less than zero for any Operating Entity.	• This adjustment applies to every Operating Entity of Collierville. • This final Load Following adjustment recognizes if Collierville was used to meet the Load of any Collierville Operating Entity, the Energy and the water should be allocated to whose Load and/or scheduled Deliveries were met in Real Time, regardless of the way Collierville was scheduled. • This adjustment will not affect the allocation of Energy that met CAISO Instructions, only the allocation of Energy that meets Load and scheduled Deliveries.
In Summary:	Final allocation of Metered Energy (including Instructions and Regulation Energy)	• Sum of (allocation Steps 1 through 5) less Step 6 less Step 7 plus sum of (Steps 8 through 10) plus Instructed and Regulation Energy Where • Allocation Steps 8 through 10 can be positive or negative, And where • Instructed and Regulation Energy can be	• There is special treatment for DVR Energy. All DVR Energy is allocated to Santa Clara despite any Load Following adjustments above. If DVR Load Following Energy is allocated to the NCPA Pool, or if Santa Clara reduces DVR to take Load Following Energy from the NCPA Pool, that exchange is implemented by posting RT ESP Load Following Trades

Allocation Step	Description	Adjustment	Notes
		positive or negative, depending on whether the Energy is incremental or decremental.	between Santa Clara and NCPA Pool.

3.2.7. Determine Uninstructed Energy per Operating Entity (posted as ESP estimates of charge codes 6470 and 6475.

3.2.8. For each Operating Entity and Resource,

Uninstructed Energy (UIE) = Allocation of Metered Energy other than Instructions & Regulation Energy - DA Market Energy Schedule

4. Imbalance Energy Settlement for ESP Trades (ESP and Pool Level)

4.1. ESP Trades are deliveries of power between entities that are within the NCPA SC portfolio and are not scheduled with the CAISO; similar to the concept of a Bilateral Trade between two Scheduling Coordinators where there is no Inter-SC Trade involved. Any entity can arrange to "purchase" power from another and decide not to schedule the delivery via an Inter-SC Trade.

4.1.1. Because of the agreement between the Generator and the Load, the Generator generates more and settles with the CAISO, and the Load settles with the CAISO.

4.1.2. When there is a negotiated price for the power, the settlement involved is commonly called a "settlement for differences", and should a Bilateral Trade be arranged without an Inter-SC Trade, that contract would be called a "contract for differences". The Load pays the Generator the difference between the Generator's settlement with the CAISO and the contract price.

4.2. There are good reasons to *not* enter into a Bilateral Trade without an Inter-SC Trade with a Counterparty that is not within the NCPA SC portfolio, particularly for the purchaser. A bilateral receipt of power without an Inter-SC Trade would cause the Receiver of the Trade to owe the CAISO for its Load with no offsetting Resource (the Inter-SC Trade In), and would therefore significantly raise the Receiver's collateral requirements with the CAISO.

4.3. ESP Trades are used for a Variety of Purposes

4.3.1. Internal Balancing Between Generation and Load

One use of ESP Trades is as an internal balancing mechanism. Schedules of various Generation Projects are recorded on different accounts than the Load they serve, and the ESP Trades between those accounts keeps each one in balance. These Trades do not have an explicit price or settlement associated with them.

4.3.2. Between Two MSSA Entities

ESP Trades are also used to deliver power between two MSSA entities, such as Santa Clara and the NCPA Pool. These Trades can be done in the Day Ahead or Real Time Market. The ESP Trade Schedules are solely for the purpose of internal Energy accounting, but as demonstrated below, when there is an explicit settlement it must be done in a consistent manner with CAISO settlements. The reason that ESP Trades can be scheduled for two MSSA entities in the Real Time Market is their effect is entirely internal to the MSSA; they are invisible to the CAISO. They affect the balance of each entity internal to the MSSA, but have no effect on the balance of the MSSA as a whole.

4.3.3. Between a non-MSSA Entity and an MSSA Entity

ESP Trades are used to deliver power between a non-MSSA entity and an MSSA entity within the NCPA SC portfolio. For example, we use ESP Trades to deliver the output of the Landfill Generators, which are not in the MSSA, to the NCPA Pool in the MSSA, keeping both accounts in balance. The separate Generation and Load Schedules are reported to the CAISO, but the ESP Trades are not reported to the CAISO. As described above, these generally do not have an explicit price associated with them. An example of an ESP Trade that could have a negotiated price is to deliver power from the NCPA Pool to a Load that is in the NCPA portfolio but not in the MSSA.

When one entity within the NCPA SC portfolio is outside the MSSA and the other is inside the MSSA, we can only schedule ESP Trades in the Day Ahead timeframe. The reason for this restriction is that the MSSA compliance deviation equation takes into account any non-MSSA Generation and Load within the NCPA portfolio, but does so by recognizing the associated Day Ahead Generation and Load Schedules, not the Trade. NCPA cannot schedule ESP Trades between a non-MSSA and an MSSA entity in Real Time because it would violate the Real Time balancing requirement of the MSSA itself.

4.3.4. Load Following Trade

ESP Trades are used to accomplish Load Following in Real Time when the NCPA Pool is taking Load Following Energy from Santa Clara's DVR plant. This type of Trade can send power from DVR to the NCPA Pool, and can send power from NCPA Pool to Santa Clara, to provide Load Following for the NCPA Pool. This type of Trade is called an ESP Load Following Trade In or ESP Load Following Trade Out (depending upon the direction of the Trade.

When there is an Energy settlement under MRTU for ESP Trades, the settlement is done on an hourly basis using DA LMP for DA ESP Trades. RT ESP Trades are settled using the Real Time LMP, regardless if the Trade is scheduled for the hour, or if it is a five-minute Load Following Trade.

4.3.5. DA ESP Trades

DA ESP Trades between different Operating Entities, such as Santa Clara and the NCPA Pool, may or may not have an explicit settlement.

4.3.5.1. If there is no negotiated price for the Trade then,

Sender	Receiver	Notes
Settles with CAISO for the increased Generation at the Resource-Specific Price	Settles with the CAISO for the Load purchased	In this case, the Delivery Point of the Trade for settlements purposes is inconsequential, since there is no explicit settlement for the Trade. The Trade is simply a mechanism to keep each entity's account in balance.

The ESP Trades scheduled between the Projects and NCPA Pool, such as from NCPA Hydro to NCPA Pool or from Santa Clara Generation to Santa Clara, are Trades without an explicit settlement.

4.3.5.2. There may be a negotiated price for the Trade that is different than the price paid by the Load or paid to the Generator. Costs will be paid by the different entities, depending upon the Delivery Point of the ESP Trade.

Delivery Point	Payer of Costs	Notes
Generator	Load pays all of Congestion and Losses	
Trading Hub	Generator and Load share the cost of Congestion and Losses	This could have an intermediate price between the Generator and the LAP
MSS LAP	Generator pays all of the Congestion and Losses	

4.3.5.3. The negotiated price could be something other than a fixed price quantity. For example, the price could be based on a Price Index. If a price is associated with an ESP Trade, then the location of the Trade must also be specified.

4.3.5.4. Once the price in any interval is determined, the generalized form of the settlement for an ESP Trade is the following:

Sender	Receiver	Notes
Paid (Trade price – DA LMP at the Trade Location) by the Receiver	Pays (Trade price – DA LMP at the Trade Location) to the Sender	Contract for differences
Paid Resource-Specific DA LMP by the CAISO for the	Pays DA LMP at the LAP for their Load to the CAISO	Normal settlement for the Generation and Load

Sender	Receiver	Notes
Generation		
Pays Generation Cost		

Example 1

Trade price = $80	Generation Cost = $75
LMP at the LAP = $70	Resource-Specific Price = $66

Delivery Point of the ESP Trade is at the Generator. In this case, the settlement would be:

Sender	Receiver	Notes
Paid $14 by the Receiver	Pays $14 to the Sender	Contract for differences
Paid $66 by the CAISO for the Generation	Pays $70 for their Load to the CAISO	Normal settlement for the Generation and Load
Pays Generation Cost, $75		
Net Profit = $5 ($80 for the Trade less $75 cost)	Net Cost = $84 (includes $4 for Congestion and Losses of the ESP Trade)	

4.3.6. Day Ahead Settlement of ESP Trades within the NCPA Pool

If there is no negotiated price associated with the ESP Trade, then there is no explicit settlement within the NCPA Pool.

4.3.6.1. If an ESP Trade has a negotiated price, then the location of the Trade must also be specified. For example, the Trade could be for a fixed price, $80, at the LAP. Perhaps the Trade might be at a Generator location at an Index-based price. In either case, based on the price and location of the Trade, the Receiver of the power pays to the Sender the difference between the contract price and the CAISO Day Ahead price at the location of the Trade, which can be positive or negative. The difference must then be allocated within the NCPA Pool.

4.3.6.2. The appropriate allocation basis for most DA ESP Trade differences when there is a negotiated price in the contract that is different than the CAISO LMP at the location of the Trade would be the current Commission approved Budget methodology. It is possible to allocate directly to the Owners of a specific Generator when making a unit commitment type of sale.

4.3.7. RT ESP Trades

The settlement between ESPs works exactly the same as described above whether the NCPA Pool is the Sender or the Receiver. The only difference is the price used in the settlement.

The following is the Real Time settlement between ESPs:

Sender	Receiver	Notes
Paid (Trade price – Real Time LMP at the Trade Location) by the Receiver	Pays (Trade price – Real Time LMP at the Trade Location) to the Sender	Contract for differences
Paid Real Time LMP at the Generator by the CAISO for the Generation	Pays Real Time LMP at the LAP for their Load to the CAISO	Normal settlement for the Generation and Load
Pays Generation Cost		

4.3.8. Real Time Settlement of ESP Trades within the NCPA Pool

An ESP Trade arranged after the Day Ahead Market is closed is settled with respect to the CAISO Real Time LMP at the location of the Trade. Similar to a Trade in the Day Ahead Market, the Receiver of the power pays to the Sender the difference between the contract price and the CAISO Real Time LMP at the location of the Trade, which can be positive or negative. The difference must then be allocated within the NCPA Pool.

4.3.8.1. The allocation of the difference within the NCPA Pool depends on the purpose of the Trade:

Purpose of Trade	Allocation Basis
Purchase of power to replace another source after the Day Ahead Market is closed	Current Commission-approved Budget methodology
Sale to another ESP within the NCPA SC Portfolio	
Sale of unit commitment	Owners of the specific Generator
Sale and purchase of Load Following Energy between the NCPA Pool and Santa Clara	Pooling Agreement Schedule 8.03 Load Following Costs and Allocations

5. Ancillary Service No Pay

No Pay applies in each applicable Settlement Interval to Spinning Reserve, Non Spinning Reserve, Regulation Up, Regulation Down, and Flexible Ramping for either self-provided or awarded Ancillary Services. There are four aspects of No Pay:

5.1. Undispatchable Capacity

Capacity awarded may not be available as Operating Reserve in Real Time due to outages and ramp rate constraints.

5.2. Undelivered Capacity

This is undelivered Energy from available Capacity in Real Time. If the Resource is dispatched for Energy from an Ancillary Service, but does not deliver at least 90% of the Expected Energy as recorded on the Meter, or if a System Resource (Intertie Schedule) declines an Instruction, then No Pay applies to the quantity of undelivered Ancillary Service.

5.3. Unavailable Capacity

Capacity may not be available due to the Resource generating too much Energy, cutting into the Capacity that was supposed to be held open for Operating Reserves.

As of May 1, 2013, No Pay also applies to Regulation Up Awards, Regulation Up Mileage Awards Regulation Down Awards, and Regulation Down Mileage Awards.

5.4. Regulation Outage

Regulation Capacity that is not available due to a Regulation Outage. While a Regulation Outage does not necessarily indicate the Resource is offline, it does indicate the Resource is unable to follow the CAISO's AGC signal above 50% accuracy during a specific timeframe.

6. Settlement for Instructed and Uninstructed Energy for Generating Facilities with Participating Generator Agreements (PGA)

For the purpose of settlement allocation of Instructed and Uninstructed Energy, generating facilities with PGAs are identified as those Resources that are both scheduled by NCPA and not included in Schedule 14 of the Metered Sub System Aggregator Agreement. PGA Resources will be subject to rules for allocation of Instructed Imbalance Energy as described in sections "FMM Instructed Imbalance Energy (IIE) Settlement - Charge Code 6460 for PGA Resources", "Real Time Instructed Imbalance Energy (IIE) Settlement - Charge Code 6470 for PGA Resources", and "Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for PGA Resources".

7. Settlement for Instructed and Uninstructed Energy for MSSA Resources

The NCPA Pool is operated in a balanced manner under NCPA's MSSA Agreement. NCPA purchases Energy in the bilateral Market to supplement its Generation, using Pool Member Project Entitlement Percentages, and schedules any power purchases that have been made directly by Pool Members. Each Pool Member is responsible for its own costs of Generation and

for its settlements for Energy provided by counterparties in accordance with each Pool Member's power purchase or sale contracts.

7.1. Day Ahead Schedules must be transacted through the CAISO's Day Ahead Market (IFM) and are settled using the Day Ahead LMP, which reflects the price of any scheduled Energy at its Delivery Point with regard to Energy, Congestion and Losses.

7.2. Awards for bids in the Fifteen Minute Market (FMM) after the IFM and prior to any Real Time Dispatch Instructions will be subject to settlement compensated at the applicable Resource-Specific FMM LMP.

7.3. Real Time Dispatch Instructions from the CAISO to a specific Generator, where the Energy is intended to be delivered directly to the CAISO, or under conditions when a plant trips, will be subject to settlement compensated at the applicable Resource-Specific Real Time LMP.

7.4. Within the NCPA Pool, all post-DA Market Energy Schedules, except that listed in Section 7.8, will be settled at the DA LMP. This includes Uninstructed Energy and Load Following Energy associated with the NCPA Pool's Load, Imports and Exports, and the NCPA Pool share of NCPA Projects. This also includes the settlement of FMM and any Real Time Imports/Exports. Energy delivered to the CAISO in Real Time, will continue to be settled at the CAISO's Real Time LMP.

7.5. There is no settlement for ESP Trades except for the contract for differences based upon the location and the LMP of the Market it is scheduled in. See ESP Trades Section above.

7.6. When NCPA Load Follows, or substitutes one Resource for another in Real Time, those changes from the Day Ahead Energy Schedule are generally settled as Uninstructed Energy. MSS Load Following Energy is explicitly classified and settled as a form of Instructed Energy. Because of the MSSA's Deviation Band, there is the expectation within the MSSA that the positive and negative deviations and Load Following Energy will offset one another. Therefore the MSSA as a whole is only subject to the Real Time LMP for the net of all deviations, which is normally within the 3% band.

7.6.1. The result will be a difference between the dollars settled for Instructed and Uninstructed Energy within the NCPA Pool, and the corresponding Pool settlement with the CAISO. The amount of this difference will be relatively small due to NCPA's MSSA operation within the Deviation Band for the NCPA Pool (independently balanced from Santa Clara) results in offsetting deviations, both positive and negative. For NCPA to maintain revenue neutrality with the CAISO, this difference must then be allocated as an uplift charge/payment on all MWhs scheduled with the CAISO by the NCPA Pool that might be subject to Uninstructed Energy, MSSA Generation, Load, Imports and Exports.

Due to the difference in categorization of Real Time obligations between the CAISO and NCPA, NCPA cannot directly verify or allocate the quantities presented in charge codes 6470 and 6475. NCPA can confirm that the total quantity for each Resource in these charge codes agrees with the total difference between Meter and Day Ahead Schedule. Once that check is satisfied, the total difference can be allocated between

the Joint Owners following NCPA's own categorization of Instructed and Uninstructed Energy.

7.7. Incremental obligations on the MSSA's Resources by the CAISO in Real Time due to a bid to provide a specific Ancillary Service or Optimal Energy are allocated to the Owners according to their bids. An Exceptional Dispatch is allocated by Project Entitlement Percentage.

7.8. ESP *SOLUTION*

Step	NCPA Charge Code 9919 Estimate Description	Notes
1	Calculate RTD Imbalance Energy as Meter less DA Schedule less FMM_SUPP for each Resource per Settlement Interval.	FMM_Supp is the difference between each OE's FMM Schedule and Day Ahead Energy Schedule and can be either incremental or decremental energy to the awarded DA Schedule.
2	Calculate Instructed Imbalance Energy for each ESP resource per Settlement Interval based on NCPA's own categorization of MSSA Instructed Energy, including Spinning Reserve, Non Spinning Reserve, RTD Supplemental Energy, Regulation Up and Regulation Down. Although not associated with MSSA Energy, Standard Ramping Energy must be accounted for because of the way it is settled by the CAISO at $0/MWh.	Standard Ramping Energy (SRE) is the 20-minute linear ramping energy associated with hourly energy schedule changes for each resource. SRE is allocated to each OE based on its proportionate share of Uninstructed Energy from the UEA process for each 5-minute interval. Inclusion of Standard Ramping Energy in charge code 9919 is necessary in order to calculate accurate real time settlement prices.
3	Calculate Uninstructed Imbalance Energy as Imbalance Energy less RTD Instructed Imbalance Energy.	UIE = Meter – DA Schedule – IIE – FMM_Supp – Std Ramp_Energy; Therefore, charge code 9919 = UIE + IIE + Std Ramp Energy = Meter – DA Schedule – FMM_Supp
4	9919 = the sum of steps 2 and 3 above.	This results in quantities associated with RTD Instructed Energy and Uninstructed Imbalance Energy.

Step	NCPA Charge Code 9919 Allocation Description	Notes
1	NCPA will sum for each Resource the CAISO settlements of charge codes 6470 and 6475, and then allocate that Energy in accordance with NCPA's own categorization of Instructed and Uninstructed Energy using the NCPA charge code 9919 ESP estimate.	
2	The price of the resulting combined payment/ charge will be the weighted average of 6470 and 6475 prices per Settlement Interval charged by the CAISO, except Standard Ramping Energy. Standard Ramping Energy, consistent with CAISO tariff, is settled at $0.	• Pool9919 price = sum (6470 Amount, 6475 Amount)/sum (6470 Billable quantity, 6475 Billable quantity) • Standard Ramping Energy is allocated pro-rata to each applicable ESP based on UEA.

7.9. Pool Solution

After spreading the total CAISO Energy settlement as described above, the Pool Allocation is disaggregated back into its component parts:

- Pool6470 for Instructed Energy
- Pool6475 for Uninstructed Energy

The following formulas apply:

Resource Type	NCPA Formula
Load Imports and Exports	• Instructed Energy = 0; therefore, Pool6470MWh = Pool9919MWh
MSSA Generation	• Pool6470MWh = NCPA calculation of Instructed Energy by Resource by Market done by NCPA's Unit Energy Allocation (UEA)(see *UEA section above*) • Pool6475MWh = Pool9919MWh – Pool6470MWh
Energy Settlement	• Pool6470MWh * Pool9919Price (see above) • Pool6475MWh * DA LMP
Default Allocation	• If DA City Demand for any Pool Member is less than the Tolerance, then 9919 Allocator for Load for that Pool Member must be set to DA City Demand Forecast.

7.9.1. Pool Members are made whole for the difference between the Pool settlement at DA LMP in NCPA charge code 9919 and the CAISO settlement at Real Time LMP in charge codes 6371, 6470 and 6475 through an hourly Pool Uplift settlement amount. Special exceptions will be made for Pool Member-specific situations that are not related to normal Load Following activities.

7.9.2. The uplift settlement will be accounted for in NCPA charge code 9920 as follows:

Pool 9920 Uplift = (Pool6475MWh + Pool6371MWh) * (Pool9919Price – DA LMP)

Where Pool6475MW = Pool9919MWh – Pool6470MWh

7.9.3. The 9920 Uplift amount will be allocated to Pool Members according to the *sum of the absolute values* of the MWh quantities of the following:

- Pool Member Metered Load
  - If DA City Demand for any Pool Member is less than the Tolerance, then 9920 Allocator for Load for that Pool Member is set to DA City Demand Forecast.
- Pool Member's share of Metered Generation, where Metered Generation refers to the Energy allocation determined by UEA (see UEA Section above).
- Pool Member's share of Final Import and Export Schedules.
- Pool Member's participation in Real Time ESP Trades and Real Time Inter-SC Trades.

Note: The 9920 Uplift amount is calculated on an hourly basis effective Trade Day April 1, 2009 – May 31, 2012; ten-minute basis effective June 1, 2012 – March 31, 2014; and five minute basis effective April 1, 2014 going forward.

8. CAISO Settlement Charges due to Net Negative Uninstructed Deviations (NNUD)

8.1. Similar to other Scheduling Coordinators that operate within the CAISO's Balancing Authority Area, several CAISO settlement charges are allocated to NCPA based upon its Net Negative Uninstructed Deviations (NNUD). Net Negative Uninstructed Deviation is a negative Energy quantity that represents a Scheduling Coordinator's excess Load and Exports in comparison to total Generation and Imports on a portfolio basis for each Settlement Interval.

8.2. NNUD is derived from each Scheduling Coordinator's Uninstructed Imbalance Energy (UIE) where UIE represents Energy deviations between a Resource's awarded DA Market Energy Schedule and its associated Metered Energy less any FMM and RTD Instructed Energy. NNUD further represents the quantity of Energy, if any, that a Scheduling Coordinator is 'leaning' on the CAISO to provide its Imbalance Energy in Real Time. To the extent that the CAISO is required to procure incremental non-economic Energy in Real Time to meet unscheduled Demand or interrupted scheduled Supply due to an outage or derated

Transmission line, then the CAISO will allocate the associated Energy costs to those Scheduling Coordinators based on their respective share of NNUD.

8.3. UIE is calculated by the CAISO for each Scheduling Coordinator according to the MWh Energy deviations between a Resources's[2] awarded DA Market Energy Schedule and the associated Metered Energy less any FMM and RTD Instructed Energy.

8.3.1. NNUD is determined as:

NNUD Calculation	**Notes**
Effective Trade Date: 5/1/2014	
Min(0, sum(6475 billable quantity + Load Following Instructed Energy Up - Load Following Instructed Energy Down + RT ESP Trade In - RT ESP Trade Out + ESP Load Following Trade In - ESP Load Following Trade Out	
Effective Trade Date: 5/1/2012 – 4/30/2014	
Min (0, sum (CC6475 Billable quantity Uninstructed Imbalance Energy + Load Following Instructed Energy Up - Load Following Instructed Energy Down + RT ESP Trade In - RT ESP Trade Out + ESP Load Following Trade In – ESP Load Following Trade Out + negative HASP Operational Adjustment Import for non-ETC Resources))	• To align NCPA's calculation with the CAISO's it is no longer calculated as an absolute value beginning Trade Date May 1, 2012.
Effective Trade Date: 4/1/2009 – 4/30/2012	
Abs((min (0, sum (CC6475 Billable quantity Uninstructed Imbalance Energy	•

[2] The term 'Resource' here is intended to generically represent Demand, Import or Export System Resource Schedule, and/or generating Resource that are associated with a Scheduling Coordinator.

NNUD Calculation	Notes
+ Load Following Instructed Energy Up - Load Following Instructed Energy Down + RT ESP Trade In - RT ESP Trade Out + ESP Load Following Trade In – ESP Load Following Trade Out + negative HASP Operational Adjustment Import for non-ETC Resources))))	

Note here, however, that the CAISO does not give credit for Inter-SC Trades. If increased RT Load is met with a RT Inter-SC Trade of Energy, the increased Load will add to NNUD.

The CAISO also includes NCPA's Load Following Instructed Energy to net against UIE. The netting of deviations and Load Following Instructed Energy acts to offset NCPA's overall portfolio deviation.

Internally, any NNUD will be calculated by NCPA and allocated to each RT Balancing Group in proportion to the ESP's contribution to NNUD. RT ESP Trades will be accounted for to offset any deficit or surplus Energy deviations.

1. NNUD is calculated per RT Balancing Group.
2. NNUD is calculated for each Settlement Interval.
3. NNUD is calculated for NCPA SC portfolio as a whole.
4. The ESP estimate will be reduced by the proportion of RT Balancing Group to NCPA SC portfolio.

9. ESP Estimates with Netting among RT Balancing Groups

9.1. Some CAISO allocations are based upon the absolute value of the sum of some billing determinants, where that billing determinant could include both positive and negative elements that net together to produce a smaller result. The CAISO billing determinant is the absolute value of that smaller amount.

For Example,

Example	Description	Detailed Description
1	abs(net(Uninstructed Energy))	• Any RT Balancing Group can have Schedules and Meter Data of different types that result in a combination of both positive and negative UIE quantities.

Example	Description	Detailed Description
		• The sum of those quantities results in the net UIE for the RT Balancing Group, and the absolute value of that net amount is the CAISO billing determinant.
2	net sale and purchase of an Ancillary Service	• A RT Balancing Group with Load also has an obligation to procure Ancillary Service. • If that RT Balancing Group self-provides with its own generators, it will incur both positive and negative Ancillary Service. • The net of those amounts is the net amount of Ancillary Service by type, which could be either positive or negative, and the billing determinant is the sum of the absolute values of Ancillary Service by type.
3	Net Negative Uninstructed Deviation abs(min(0,net(UE)))	• Each RT Balancing Group only includes Net Negative Uninstructed Deviation, however • The NCPA SC portfolio nets all UIE prior to determining the negative portion that is subject to the CAISO charge.

9.2. NCPA calculates the net amount of such a billing determinant by RT Balancing Group. For example, NCPA Pool and its related generator ESPs make up one RT Balancing Group, while Santa Clara and Santa Clara Generation make up another RT Balancing Group. NCPA calculates the net value for each, and then takes the absolute value to get an ESP estimate for each RT Balancing Group.

This provides a good basis for allocating any CAISO charge based on this billing determinant, but the quantity of the sum of the values for all the ESPs is too high to use to validate the actual charge from the CAISO. The CAISO treats the NCPA SC portfolio as a whole, and to the extent there is additional netting possible between the various RT Balancing Groups, that does need to be taken into account when validating the CAISO charge amount. What is needed is an ESP estimate that is good for allocation purposes, but also sums to an amount that is directly comparable to the actual charge from the CAISO.

9.2.1. In this case, the billing determinant for the NCPA SC portfolio as a whole is calculated, and then the individual RT Balancing Group estimates are prorated by the ratio of the NCPA SC estimate to the sum of the RT Balancing Group estimates.

For example, if the NCPA SC estimate is 60% of the RT Balancing Group total, each RT Balancing Group estimate would be reduced by 60% of the ESP estimate originally calculated for each RT Balancing Group by itself. This preserves the relative

proportions of the ESP estimates between RT Balancing Groups to use as a good allocator of the CAISO charge, but also creates RT Balancing Group estimates, which when summed should match the actual charge from the CAISO.

9.2.2. Example 1 (Allocating Deviations, Uninstructed Energy):

1. Initial RT Balancing Group Estimates = abs(sum(UE)) for each RT Balancing Group
2. NCPA SC Portfolio estimate = abs(sum(UE)) for the entire NCPA SC portfolio
3. Final RT Balancing Group Estimates = Initial RT Balancing Group Estimates * (NCPA SC Portfolio estimate / sum(Initial RT Balancing Group estimates))

9.2.3. Example 2 (allocating Market Usage Forward Energy):

1. Balancing Group Estimate = Calculate Market Usage Forward Energy estimate by Balancing Group for each hour (summing all resources and all ESPs per Balancing Group)
2. Market Usage Forward Energy SC Estimate = Calculate Market Usage Forward Energy by NCPA SC for each hour (summing all Resources, all ESPs, all RT Balancing Groups)
3. Allocate Balancing Group estimate using Market Usage Forward Energy SC estimate as the allocator:

   Allocated Balancing Group Estimate = Market Usage Forward Energy SC estimate * Balancing Group estimate/sum of Balancing Group estimate

10. Operational Adjustments of Intertie Transactions

10.1. Intertie transactions are scheduled in the Day Ahead and Fifteen Minute Markets (FMM). Additionally, NCPA has the right to make further changes, increases or decreases, to some Intertie Schedules after the Fifteen Minute Market has closed. Finally, the CAISO may partially or fully curtail an Intertie transaction due to Real Time Transmission constraints.

10.2. The Intertie transactions that are scheduled with the CAISO in the Day Ahead Market are settled at the Day Ahead LMP in charge code 6011, and incremental amounts scheduled in the Fifteen Minute Market are settled at the FMM LMP in charge code 6460.

10.3. Changes to an Intertie Schedule after the Fifteen Minute Market has closed, increases or decreases on NCPA's part (with notification to the CAISO by way of submission of self scheduled Energy) and partial or full curtailments by the CAISO, are called Operational Adjustments..

10.4. Operational Adjustments, calculated as Final Intertie Schedule – FMM Intertie Schedule, are positive when they are increases to the FMM Intertie Schedule, and negative when they are decreases to the FMM Intertie Schedule.

11. Allocation of Costs Associated with City Generation

11.1. Except for the CT1 project or new generation per agreement, City Generation for Pool Allocations is shared between the Project Owners and the host city (50% to each).

11.2. For the CT1 project 100% of Generation will be applied to the host city's Net Meter Demand. Applicable savings from avoided CAISO charges will be shared to CT1 Project Owner based on Generation Entitlement Share as a transfer of savings from the host city to the Project Owners.

Access Charge Group

High Voltage Wheeling Settlement - Charge Code 0382

1. Charge Code Description

   High Voltage Wheeling allocations are assessed at each High Voltage Scheduling Point and Take-Out Point where Energy exits the CAISO Balancing Authority Area. The High Voltage Wheeling allocation is assessed against the combination of scheduled High and Low Voltage and Real Time Gross Exports (excluding amounts exempted due to CRR pre-payment and ETCs) for High and Low Voltage Scheduling Points. Wheel quantities for Take-Out Points, however, are submitted directly to the CAISO by the NCPA SC and are charged the Wheeling Rate associated with the TAC Area in which the Take-Out Point physically resides (PG&E TAC Area).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
ESP Non-PTO Net Metered Demand: • (-1) * (ESP Net Metered Demand - Inter-SC Trade In at Grizzly + Inter-SC Trade Out at Grizzly - RT Grizzly Delivery) High Voltage Export Wheeling • ((-1) * (ESP Final Export Schedule - Marble Exports))	ESP Estimate	City Net Measured Demand
Notes:	• Effective 10/1/2011, CAISO will estimate NCPA's Non-PTO Net Metered Demand for the Initial T+3B ISO Settlement Statement. NCPA will calculate and submit for all Recalculated ISO Settlement Statements. • CAISO assesses on MWh exiting Grid, i.e. - RT Interchange and non-PTO Load. • Measured Demand includes Exports. • Applicable ETC is Santa Clara's Grizzly. • Marble has special treatment; scheduled Imports reduce and scheduled Exports increase Net Demand. As such, Marble Exports are included when NCPA calculates non-PTO Wheeling, and not when the CAISO calculates Export Wheeling. NCPA believes this treatment depends on the use of a CRN when tagging and scheduling Marble Exports, to prevent the CAISO from duplicating the Wheeling charge when they calculate Export Wheeling. • Inter-SC Trades from Grizzly include Day Ahead and Real Time transactions.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Beginning 1/1/2012: Daily	Wheeling	Balancing Group
			Prior to 2012: Monthly		

Low Voltage Wheeling Settlement - Charge Code 0383

1. Charge Code Description

Low Voltage Wheeling allocations are assessed at each Low Voltage Scheduling Point and Take-Out Point where Energy exits the CAISO Balancing Authority Area. The Low Voltage Wheeling allocation is assessed against the combination of scheduled Low Voltage Real Time Gross Exports (excluding amounts exempted due to CRR pre-payment and Existing Transmission Contracts (ETCs)) for Low Voltage Scheduling Points and Take-out Points. Low Voltage Wheeling quantities for Take-Out Points are submitted directly to the CAISO as one monthly aggregate value by the NCPA SC and are charged at the Utility-Specific Low Voltage Wheeling Rate associated with the PTO holding the Ownership or Entitlement at such point.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
-1 * (ESP Non-PTO Net Metered Demand - Santa Clara High Voltage Demand - Lodi White Slough Demand)	ESP Estimate	City Net Demand - Lodi White Slough
Notes:	• Effective 10/1/2011, CAISO will estimate NCPA's Non-PTO Net Metered Demand for the Initial T+3B ISO Settlement Statement. NCPA will calculate and submit for all Recalculated ISO Settlement Statements. • City Generation for Pool Allocations is shared between the Owners and the host city (50% to each). • CAISO assesses on non-PTO Load. Santa Clara's Load served by the SSS-East and SSS-West lines and Lodi White Slough is not subject to Low Voltage Wheeling. • Applicable ETC is Santa Clara's Grizzly. • Marble has special treatment; Imports reduce and Exports increase Net Demand.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Beginning 1/1/2012: Daily	Wheeling	Balancing Group
			Prior to 2012: Monthly		

Ancillary Services Charge Group

Black Start Capability - Charge Code 1101

1. Charge Code Description

   Black Start is an Ancillary Service that consists of dispatched Energy using self-started equipment following a system blackout. The CAISO has the discretion to procure Black Start as needed and may establish agreements with eligible Generators for the provision of Black Start services.

   NCPA is not contracted with the CAISO for Black Start*; however, the contract capability costs are allocated under this charge code.*

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 10/1/2004		
(-1) * ESP Measured Demand	ESP Estimate	ESP Estimate by city
Notes:		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Hourly	Black Start	Balancing Group

Supplemental Reactive Energy Allocation - Charge Code 1303

1. Charge Code Description

   In such events where the CAISO needs additional Reactive Energy in Real Time, the CAISO selects Generating Resources based upon their Real Time Energy Bids; subject to any Locational requirements the CAISO will select the Generating Resource with the highest decremental Real Time Energy Bid to reduce MW output by such amount as is necessary to achieve the Instructed MVar Reactive Energy production. The CAISO will pay the Scheduling Coordinator for that Generating Resource the lost opportunity cost resulting from the reduction of MW output.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2004		
(-1) * ESP Measured Demand	ESP Estimate	ESP Estimate by city
Notes:		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
All	MVar	Five Minutes	Hourly	Voltage Support	Control Area
Effective Trade Date: 10/1/2004 – 4/30/2014					
All	MVar	Hourly	Hourly	Voltage Support	Control Area

Ancillary Service Upward Neutrality Allocation - Charge Code 6090

1. Charge Code Description

   Any difference between total net Ancillary Service Requirements and total Ancillary Service Obligations results in the need for a Neutrality adjustment. This charge code recovers from all Scheduling Coordinators the total Upward (Spin, Non Spin, and Regulation Up) Ancillary Service Neutrality amount, in proportion to the Scheduling Coordinator's positive Upward Ancillary Service Obligation.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
max(0, sum(6196 Billable quantity, 6296 Billable quantity, 6596 Billable quantity))	ESP Estimate	ESP Estimate
Notes:	• Cost difference between procurement cost of the three upward Ancillary Services (Spin, Non Spin, and Regulation Up) and the cost of the Upward Requirements used by CAISO in all three Markets spread to all ESPs based on calculated Ancillary Service Obligation. • This can be a payment if Procurement costs are less than Requirement costs.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Hourly	Ancillary Service	Balancing Group

Day Ahead Spinning Reserve Capacity Settlement - Charge Code 6100

1. Charge Code Description

This charge code pays Scheduling Coordinators for awarded Spinning Reserve in the Day Ahead Market. Spinning Reserve is awarded to Spin-Certified Generating Resources, Participating Load Resources, Metered Subsystems, Intertie generating Dynamic Resources, and Import Intertie Resources. The DA Spin Award is paid at the Spinning Reserve Ancillary Service marginal price (ASMP) of the relevant Day Ahead Trading Hour for the Resource.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
DA ESP Spin Award	ESP Estimate	Project Entitlement Percentage
Notes:	• Does not include Self Provision of Ancillary Services.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MW	Hourly	Hourly	Ancillary Service	Location

No Pay Spinning Reserve Settlement - Charge Code 6124

1. Charge Code Description

This charge code rescinds payments for Day Ahead, Real Time Spin Awards in the event the Resource awarded Spin Capacity does not fulfill the requirements associated with that payment. The No Pay Spinning Reserve Price used is calculated as the weighted average of the Spinning Reserve Ancillary Service marginal prices (ASMPs) across all Markets.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Final ESP Spin Award	ESP Estimate	Project Entitlement Percentage
Notes:	• This No Pay charge only applies to Ancillary Service Awards. • Self Provided Spinning Reserve is settled in a separate Ancillary Service Obligation charge code and is settled net of Effective Self Provided Ancillary Service (which is net of any applicable No Pay quantities).	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MW	Hourly	Hourly	Ancillary Service	Location

Real Time Spinning Reserve Capacity Settlement - Charge Code 6170

1. Charge Code Description

This charge code pays Scheduling Coordinators for awarded Spinning Reserve in the Real Time Market. Spinning Reserve is awarded to Spin-Certified Generating Resources, Participating Load Resources, Metered Subsystems, Dynamic Resources, and Import Intertie Resources. The RT Spin Award is paid at the Spinning Reserve Ancillary Service marginal price (ASMP) of the commitment interval of the relevant Trading Hour for the Resource.

Quantities used in this charge code are incremental with respect to the Day Ahead Market.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Sum of 4 intervals (1/4 * Final ESP Spin Award * Spin Price)	ESP Estimate	Project Entitlement Percentage
Notes:	• CAISO is moving towards 15 minute settlements. Real Time Ancillary Services are the first products NCPA will begin calculating as a 15 minute product as of May 1, 2013. • Ancillary Services are a 15 minute product. The amounts must be calculated for each 15 minute period and then summed for the hour. • Does not include Self Provision of Ancillary Services • 3-tier allocation: 1) use RT Bids if present, else use DA Bids, else use Project Entitlement Percentage	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2013					
Real Time	MWh	Fifteen Minute	Fifteen Minute	Ancillary Service	Location
Effective Trade Dates: 4/1/2009 - 4/30/2013					
Real Time	MWh	Hourly	Hourly	Ancillary Service	Location

Spinning Reserve Obligation Settlement - Charge Code 6194

1. Charge Code Description

   This charge code charges each Scheduling Coordinator for the cost of its Spinning Reserve Obligation that was not self provided in the Day Ahead and Real Time Markets. The rate associated with this charge is calculated based upon the cost of Spinning Reserve procured to meet the Spinning Reserve Requirements and cost of any Regulation Up substitution procured to meet the Spinning Reserve Requirements not covered by the Scheduling Coordinator.

2. Charge Code Implementation

<table>
<tr><th colspan="2">ESP Estimate</th><th>ESP Allocation Basis</th><th>Pool Allocation Basis</th></tr>
<tr><td colspan="4">Effective Trade Date: 10/1/2014</td></tr>
<tr><td colspan="2">Balancing Group Spin Obligation
- DA ESP Self Provision Spin Award
- Inter-SC Spin Trade In
+ Inter-SC Spin Trade Out</td><td>ESP Estimate</td><td>ESP Estimate by city</td></tr>
<tr><td>Balancing Group Spin Obligation</td><td colspan="3">Balancing Group Operating Reserve Requirement * Real Time Spin Operating Reserve Requirement Ratio</td></tr>
<tr><td>Balancing Group Operating Reserve Requirement</td><td colspan="3">ESP Metered Demand * Demand Reserve Percent Requirement + (Exports – Imports) * Intertie Reserve Percent Requirement</td></tr>
<tr><td>Real Time Spin Operating Reserve Requirement Ratio</td><td colspan="3">((Final CAISO Spin Requirement/ (Final CAISO Spin Requirement + Final CAISO Non Spin Requirement))</td></tr>
<tr><td>Notes:</td><td colspan="3">• Total (Balancing Group Spin Obligation less DA ESP Self Provision Spin Award) must be >= 0 at the SC level, or an SC's hourly self provided Spin Capacity is capped at the SC's hourly Spin Obligation.
• Demand Reserve Percent Requirement is set to .06.
• Intertie Reserve Percent Requirement is set to .03.
• A Balancing Group may self provide Spin Capacity for any portion of its Spin Obligation.
• A Balancing Group may self provide Spin Capacity in excess of its Spin Obligation.
• The calculation includes an adjustment to allocate any excess self provision subject to another Balancing Group's available Spin Obligation.
• If more than one Balancing Group has excess self provision, any self provision quantity in excess of a Balancing Group's Spin Obligation will be allocated pro-rata between Balancing Groups subject to available Spin Obligation.
• Includes all Firm, Non Firm and Unit Contingent Imports and Exports.
• Estimates for Pool Members must be similarly calculated.</td></tr>
<tr><td colspan="4">Effective Trade Date: 10/1/2012 - 9/30/2014</td></tr>
</table>

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Roseville's portion of the Hydro Demand must be included in the ESP estimate.	Roseville's portion of the Hydro Demand must be included in the ESP Allocation.	Truckee's portion of the Western Base Resource Demand must be included in the Pool Allocation.
Effective Trade Date: 4/1/2009 – 9/30/2014		
(Real Time Spin Operating Reserve Requirement Ratio * Operating Reserve Requirement) - DA ESP Qualified Self Provision Spin Award + Inter-SC Spin Trade Out - Inter-SC Spin Trade In	ESP Estimate	ESP Estimate by city

Real Time Spin Operating Reserve Requirement Ratio	((Final CAISO Spin Requirement/ (Final CAISO Spin Requirement + Final CAISO Non Spin Requirement))
DA ESP Qualified Self Provision Spin Award	DA ESP Self Provision Spin Award – No Pay Spinning Reserve Self Provision
Operating Reserve Requirement	(.05 * ESP Hydro Demand) + (.07 * ESP Thermal Demand) + Final ESP Non Firm Import
ESP Hydro Demand	max(0, min (ESP Operating Reserve Base Demand, ESP Hydro Generation))
ESP Thermal Demand	ESP Operating Reserve Base Demand - ESP Hydro Demand
ESP Operating Reserve Base Demand	ESP Demand + Final ESP Firm Export Schedule – Final ESP Firm Import Schedule
Notes:	• No Pay Self Provision is defaulted to zero for estimating purposes. • RT Inter-SC Spin Trade In/Out accounts for any ESP-specific Inter-SC Trades of Spinning Reserves. • Calculated for all ESPs per RT Balancing Group • Firm and Non Firm Imports/Exports do not include Unit Contingent Imports/ Exports

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Hourly	Ancillary Service	Balancing Group

Spinning Reserve Neutrality Allocation - Charge Code 6196

1. Charge Code Description

   This charge code recovers from Scheduling Coordinators the total Spinning Reserve Neutrality amount, in proportion to their positive SC Spin 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. The Inter-SC Trades used within the SC Spin Obligation charge must also be removed to estimate Spinning Reserve Neutrality accurately.

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2014			
Max (0, Balancing Group Operating Reserve Requirement * Real Time Spin Operating Reserve Requirement Ratio)		ESP Estimate	ESP Estimate by city
Real Time Spin Operating Reserve Requirement Ratio	((Final CAISO Spin Requirement/ (Final CAISO Spin Requirement + Final CAISO Non Spin Requirement))		
Effective Trade Date: 10/1/2012 – 9/30/2014			
Max(0, Real Time Spin Operating Reserve Requirement Ratio * Operating Reserve Requirement)		ESP Estimate	ESP Estimate by city
Effective Trade Date: 4/1/2009 – 9/30/2012			
Real Time Spin Operating Reserve Requirement Ratio * Operating Reserve Requirement		ESP Estimate	ESP Estimate by city
Notes:			

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Hourly	Ancillary Service	Balancing Group

Day Ahead Non Spinning Reserve Capacity Settlement - Charge Code 6200

1. Charge Code Description

This charge code pays Scheduling Coordinators for awarded Non Spinning Reserve in the Day Ahead Market. Non Spinning Reserve is awarded to Non Spin-Certified Generating Resources, Participating Load Resources, Metered Subsystems, Dynamic Resources, and Import Intertie Resources. The DA Non Spin Award is paid at the Non Spinning Reserve Ancillary Service marginal price (ASMP) of the relevant Day Ahead Trading Hour for the Resource.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
DA ESP Non Spin Award	ESP Estimate	Project Entitlement Percentage
Notes:	• Does not include Self Provision, which is separately settled in charge code 6294 as negative Ancillary Service Obligation.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MW	Hourly	Hourly	Ancillary Service	Location

No Pay Non Spinning Reserve Settlement - Charge Code 6224

1. Charge Code Description

This charge code rescinds payments for Day Ahead, Real Time Non Spinning Reserve Awards in the event the Resource awarded Non Spinning Reserve does not fulfill the requirements associated with that payment. The No Pay Non Spinning Reserve Price used is calculated as the weighted average of the Non Spinning Reserve Ancillary Service marginal prices (ASMPs) across all Markets.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Final ESP Non Spin Award	ESP Estimate	Project Entitlement Percentage
Notes:	• This No Pay charge only applies to Ancillary Service Awards. • Self Provided Non Spinning Reserve is deducted from qualified Self Provision quantities in charge code 6294.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MW	Hourly	Hourly	Ancillary Service	Location

Real Time Non Spinning Reserve Capacity Settlement - Charge Code 6270

1. Charge Code Description

This charge code pays Scheduling Coordinators for awarded Non Spinning Reserve in the Real Time Market. Non Spinning Reserve is awarded to Non Spin-Certified Generating Resources, Participating Load Resources, Metered Subsystems, Dynamic Resources, and Import Intertie Resources. The RT Non Spin Award is paid at the Non Spinning Reserve Ancillary Service marginal price (ASMP) of the commitment interval of the relevant Trading Hour for the Resource.

Quantities used in this charge code are incremental with respect to the Day Ahead Market.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Sum of 4 intervals (1/4 * Final ESP Non Spin Award * Non Spin Price)	ESP Estimate	Project Entitlement Percentage
Notes:	• CAISO is moving towards 15 minute settlements. Real Time Ancillary Services are the first products NCPA will begin calculating as a 15 minute product as of May 1, 2013. • Ancillary Services are a 15 minute product. The amounts must be calculated for each 15 minute period and then summed for the hour. • Does not include Self Provision. • 3-tier allocation: 1) use RT Bids if present, else use DA Bids, else use Project Entitlement Percentage.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2013					
Real Time	MWh	Fifteen Minute	Fifteen Minute	Ancillary Service	Location
Effective Trade Dates: 4/1/2009 – 4/30/2013					
Real Time	MWh	Hourly	Hourly	Ancillary Service	Location

Non Spinning Reserve Obligation Settlement - Charge Code 6294

1. Charge Code Description

   This charge code charges Scheduling Coordinators for the cost of its SC Non Spin Obligation that was not self provided by the Scheduling Coordinator in the Day Ahead and Real Time Markets. The rate associated with this charge is calculated based upon the cost of Non Spinning Reserve procured to meet the Non Spinning Reserve Requirements and cost of any Regulation Up substitution procured to meet the Non Spinning Reserve Requirements not covered by the Scheduling Coordinator.

2. Charge Code Implementation

<table>
<tr><th colspan="2">ESP Estimate</th><th>ESP Allocation Basis</th><th>Pool Allocation Basis</th></tr>
<tr><td colspan="4">Effective Trade Date: 10/1/2014</td></tr>
<tr><td colspan="2">Balancing Group Non Spin Obligation
- DA ESP Self Provision Non Spin Award
- Inter-SC Non Spin Trade In
+ Inter-SC Non Spin Trade Out</td><td>ESP Estimate</td><td>ESP Estimate by city</td></tr>
<tr><td colspan="2">Balancing Group Non Spin Obligation</td><td colspan="2">Balancing Group Operating Reserve Requirement * Real Time Non Spin Operating Reserve Requirement Ratio</td></tr>
<tr><td colspan="2">Balancing Group Operating Reserve Requirement</td><td colspan="2">ESP Metered Demand * Demand Reserve Percent Requirement + (Exports – Imports) * Intertie Reserve Percent Requirement</td></tr>
<tr><td colspan="2">Real Time Non Spin Operating Reserve Requirement Ratio</td><td colspan="2">((Final CAISO Spin Requirement/ (Final CAISO Spin Requirement
+ Final CAISO Non Spin Requirement))</td></tr>
<tr><td>Notes:</td><td colspan="3">• Total (Balancing Group Non Spin Obligation less DA ESP Self Provision Non Spin Award) must be >= 0 at the SC level, or an SC's hourly self provided Non Spin Capacity is capped at the SC's hourly Non Spin Obligation.
• Demand Reserve Percent Requirement is set to .06.
• Intertie Reserve Percent Requirement is set to .03.
• A Balancing Group may self provide Spin Capacity for any portion of its Spin Obligation.
• A Balancing Group may self provide Non Spin Capacity in excess of its Non Spin Obligation.
• The calculation includes an adjustment to allocate any excess self provision subject to another Balancing Group's available Non Spin Obligation.
• If more than one Balancing Group has excess self provision, any self provision quantity in excess of a Balancing Group's Non Spin Obligation will be allocated pro-rata between Balancing Groups subject to available Non Spin Obligation.
• Includes all Firm, Non Firm and Unit Contingent Imports and Exports.</td></tr>
</table>

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
• Estimates for Pool Members must be similarly calculated.		
Effective Trade Date: 10/1/2012 – 9/30/2014		
Roseville's portion of the Hydro Demand must be included in the ESP estimate	Roseville's portion of the Hydro Demand must be included in the ESP Allocation.	Truckee's portion of the Western Base Resource Demand must be included in the Pool Allocation.
Effective Trade Date: 4/1/2009 – 9/30/2014		
(Real Time Non Spin Operating Reserve Requirement Ratio * Operating Reserve Requirement) - DA ESP Qualified Self Provision Non Spin Award + Inter-SC Non Spin Trade Out - Inter-SC Non Spin Trade In	ESP Estimate	ESP Estimate by city

Real Time Non Spin Operating Reserve Requirement Ratio	((Final CAISO Spin Requirement/ (Final CAISO Spin Requirement + Final CAISO Non Spin Requirement))
DA ESP Qualified Self Provision Non Spin Award	DA ESP Self Provision Non Spin Award – No Pay Non Spinning Reserve Self Provision
Operating Reserve Requirement	(.05 * ESP Hydro Demand) + (.07 * ESP Thermal Demand) + Final ESP Non Firm Import
ESP Hydro Demand	max(0, min (ESP Operating Reserve Base Demand, ESP Hydro Generation))
ESP Thermal Demand	ESP Operating Reserve Base Demand - ESP Hydro Demand
ESP Operating Reserve Base Demand	ESP Demand + Final ESP Firm Export Schedule – Final ESP Firm Import Schedule
Notes:	• No Pay Self Provision is defaulted to zero for estimating purposes. • Inter-SC Non Spin Trade In/Out accounts for any ESP-specific Inter-SC Trades In or Out of Non Spinning Reserves. • Calculated for all ESPs per RT Balancing Group. • Firm and Non Firm Imports/Exports do not include Unit Contingent Imports/Exports.

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Hourly	Ancillary Service	Balancing Group

Non Spinning Reserve Neutrality Allocation - Charge Code 6296

1. Charge Code Description

   This charge code recovers from Scheduling Coordinator 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. The Inter-SC Trades used within the SC Non Spin Obligation charge must also be removed to estimate Non Spinning Reserve Neutrality accurately.

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2014			
Max (0, Balancing Group Operating Reserve Requirement * Real Time Non Spin Operating Reserve Requirement Ratio)		ESP Estimate	ESP Estimate by city
Real Time Non Spin Operating Reserve Requirement Ratio	((Final CAISO Spin Requirement/ (Final CAISO Spin Requirement + Final CAISO Non Spin Requirement))		
Effective Trade Date: 10/1/2012 – 9/30/2014			
Max (0, Real Time Non Spin Operating Reserve Requirement Ratio * Operating Reserve Requirement)		ESP Estimate	ESP Estimate by city
Notes:			
Effective Trade Date: 4/1/2009 – 9/30/2012			
Real Time Non Spin Operating Reserve Requirement Ratio * Operating Reserve Requirement		ESP Estimate	ESP Estimate by city

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Hourly	Ancillary Service	Balancing Group

Day Ahead Regulation Up Capacity Settlement - Charge Code 6500

1. Charge Code Description

This charge code pays Scheduling Coordinators for awarded Regulation Up in the Day Ahead Market. Regulation Up is awarded to Regulation-Certified Generating Resources and Dynamic Resources with Automatic Generation Control (AGC). The DA Regulation Up Award is paid at the Regulation Up Ancillary Service marginal price (ASMP) of the relevant Day Ahead Trading Hour for the Resource.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
DA ESP Regulation Up Award	ESP Estimate	Project Entitlement Percentage
Notes:	• Does not include Self Provision, which is settled separately in charge code 6594 as negative Regulation Up Obligation.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MW	Hourly	Hourly	Ancillary Service	Location

No Pay Regulation Up Settlement - Charge Code 6524

1. Charge Code Description

This charge code rescinds payments for DA and RT Regulation Up Awards in the event the Resource awarded Regulation Up does not fulfill the requirements associated with that payment. The No Pay Regulation Up Price used is calculated as the weighted average of the Regulation Up Ancillary Service marginal prices (ASMPs) across the Day Ahead and Real Time Markets.

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009			
Final ESP Regulation Up Award		ESP Estimate	Project Entitlement Percentage
Notes:	• This No Pay charge only applies to undelivered or unavailable Regulation awarded through Capacity Bids in the Day Ahead Market. • Supplemental Energy Bids are subject to being converted to Regulation Up or Regulation Down at the discretion of the CAISO. • 3-tier allocation: 1) use RT Bids if present, else use DA Bids, else use Project Entitlement Percentage.		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MW	Hourly	Hourly	Ancillary Service	Location

Real Time Regulation Up Capacity Settlement - Charge Code 6570

1. Charge Code Description

This charge code pays Scheduling Coordinators for awarded Regulation Up in the Real Time Market. Regulation Up is awarded to Regulation-Certified Generating Resources and Dynamic Resources with Automatic Generation Control (AGC). The RT Regulation Up Award is paid at the Regulation Up Ancillary Service marginal price (ASMP) of the commitment interval of the relevant Trading Hour for the Resource.

Quantities used in this charge code are incremental with respect to the Day Ahead Market.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Sum of 4 intervals (1/4 * Final ESP Regulation Up Award * Regulation Up Price)	ESP Estimate	Project Entitlement Percentage
Notes:	• CAISO is moving towards 15 minute settlements. Real Time Ancillary Services are the first products NCPA will begin calculating as a 15 minute product as of May 1, 2013. • Ancillary Services are a 15 minute product. The amounts must be calculated for each 15 minute period and then summed for the hour. • Does not include Self Provision of Ancillary Service. • Supplemental Energy Bids are subject to being converted to Regulation Up or Regulation Down at the discretion of the CAISO. • Award is presented as hourly in TABS. • 3-tier allocation: 1) use RT Bids if present, else use DA Bids, else use Project Entitlement Percentage.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2013					
Real Time	MWh	Fifteen Minute	Fifteen Minute	Ancillary Service	Location
Effective Trade Dates: 4/1/2009 – 4/30/2013					
Real Time	MWh	Hourly	Hourly	Ancillary Service	Location

Regulation Up Obligation Settlement - Charge Code 6594

1. Charge Code Description

   This charge code charges Scheduling Coordinators for the cost of its SC Regulation Up Obligation that was not self provided by the Scheduling Coordinator in the Day Ahead and Real Time Markets. The Regulation Up Rate is calculated as the ratio of total Regulation Up cost for all Markets and Regulation Up net procurement.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Regulation Up Demand Obligation + Inter-SC Regulation Up Trade Out - Inter-SC Regulation Up Trade In - DA ESP Qualified Self Provision Regulation Up Award	ESP Estimate	ESP Estimate by city
Regulation Up Demand Obligation	(max(RT CAISO Regulation Up Requirement, DA CAISO Regulation Up Requirements) / ISO Actual Load) * ESP Demand	
DA ESP Qualified Self Provision Regulation Up Award	DA ESP Self Provision Regulation Up Award – No Pay Regulation Up Self Provision	
Effective Trade Date: 10/1/2014		
Notes:	• No Pay Self Provision is defaulted to zero for estimating purposes.	
Effective Trade Date: 4/1/2009 – 9/30/2014		
Notes:	• No Pay Self Provision is defaulted to zero for estimating purposes. • Can be negative (i.e. - CAISO payment if ESP has over self provided).	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Hourly	Ancillary Service	Balancing Group

Regulation Up Neutrality Allocation - Charge Code 6596

1. Charge Code Description

This charge code recovers from Scheduling Coordinators the total Regulation Up Neutrality amount, in proportion to their positive SC Regulation Up Obligation. The total Regulation Up Neutrality amount is calculated as the difference between the Regulation Up Net Requirement at the Regulation Up Rate and the total revenue from the Regulation Up charge to all the Scheduling Coordinators. The Inter-SC Trades used within the SC Regulation Up Obligation charge must also be removed to estimate Regulation Up Neutrality accurately.

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009			
Regulation Up Demand Obligation ~~((DA CAISO Regulation Up Requirement/ISO Actual Load)~~ ~~* ESP Demand)~~		ESP Estimate	ESP Estimate by city
Regulation Up Demand Obligation	(max(RT CAISO Regulation Up Requirement, DA CAISO Regulation Up Requirements) / ISO Actual Load) * ESP Demand		
EXCEPTION:	If DA CAISO Regulation Up Requirement is null, then Final CAISO Regulation Up Requirement/ISO Actual Load		
Notes:	•		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Hourly	Ancillary Service	Balancing Group

Day Ahead Regulation Down Capacity Settlement - Charge Code 6600

1. Charge Code Description

This charge code pays Scheduling Coordinators for awarded Regulation Down in the Day Ahead Market. Regulation Down is awarded to Regulation-Certified Generating Resources and Dynamic Resources with Automatic Generation Control (AGC). The DA Regulation Down Award is paid at the DA Regulation Down Ancillary Service marginal price (ASMP) of the relevant Day Ahead Trading Hour for the Resource.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
DA ESP Regulation Down Award	ESP Estimate	Project Entitlement Percentage
Notes:	• Does not include Self Provision.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MW	Hourly	Hourly	Ancillary Service	Location

No Pay Regulation Down Settlement - Charge Code 6624

1. Charge Code Description

This charge code rescinds payments for DA and RT Regulation Down Awards in the event the Resource awarded Regulation Down does not fulfill the requirements associated with that payment. The No Pay Regulation Down Price used is calculated as the weighted average of the Regulation Down Ancillary Service marginal prices (ASMPs) across the Day Ahead and Real Time Markets.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Final ESP Regulation Down Award	ESP Estimate	Project Entitlement Percentage
Notes:	• This No Pay charge only applies to undelivered or unavailable Regulation awarded through Capacity Bids in the Day Ahead Market. • Supplemental Energy Bids are subject to being converted to Regulation Up or Regulation Down at the discretion of the CAISO. • 3-tier allocation: 1) use RT Bids if present, else use DA Bids, else use Project Entitlement Percentage.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MW	Hourly	Hourly	Ancillary Service	Location

Real Time Regulation Down Capacity Settlement - Charge Code 6670

1. Charge Code Description

This charge code pays Scheduling Coordinators for awarded Regulation Down in the Real Time Market. Regulation Down is awarded to Regulation-Certified Generating Resources and Dynamic Resources with Automatic Generation Control (AGC). The RT Regulation Down Award is paid at the Regulation Down Ancillary Service marginal price (ASMP) of the commitment interval of the relevant Trading Hour for the Resource.

Quantities used in this charge code are incremental with respect to the Day Ahead Market.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Sum of 4 intervals (1/4 * Final ESP Regulation Down Award * Regulation Down Price)	ESP Estimate	Project Entitlement Percentage
Notes:	• CAISO is moving towards 15 minute settlements. Real Time Ancillary Services are the first products NCPA will begin calculating as a 15 minute product as of May 1, 2013. • Ancillary Services are a 15 minute product. The amounts must be calculated for each 15 minute period and then summed for the hour. • Does not include Self Provision of Ancillary Service. • Supplemental Energy Bids are subject to being converted to Regulation Up or Regulation Down at the discretion of the CAISO. • Award is presented as hourly in TABS. • 3-tier allocation: 1) use RT Bids if present, else use DA Bids, else use Project Entitlement Percentage.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2013					
Real Time	MWh	Fifteen Minute	Fifteen Minute	Ancillary Service	Location
Effective Trade Dates: 4/1/2009 – 4/30/2013					
Real Time	MWh	Hourly	Hourly	Ancillary Service	Location

Regulation Down Obligation Settlement - Charge Code 6694

1. Charge Code Description

   This charge code charges Scheduling Coordinators for the cost of its SC Regulation Down Obligation that was not self provided by the Scheduling Coordinator in the Day Ahead and Real Time Markets. The Regulation Down Rate is calculated as the ratio of total Regulation Down cost for all Markets and Regulation Down Net Procurement.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Regulation Down Demand Obligation + Inter-SC Regulation Down Trade Out - Inter-SC Regulation Down Trade In - DA ESP Qualified Self Provision Regulation Down Award	ESP Estimate	ESP Estimate by city
Regulation Down Demand Obligation	(max(RT CAISO Regulation Down Requirement, DA CAISO Regulation Down Requirement)/ISO Actual Load) * ESP Demand	
DA ESP Qualified Self Provision Regulation Down Award	DA ESP Self Provision Regulation Down Award – No Pay Regulation Down Self Provision	
Effective Trade Date: 10/1/2014		
Notes:	• No Pay Self Provision is defaulted to zero for estimating purposes.	
Effective Trade Date: 4/1/2009 – 9/30/2014		
Notes:	• No Pay Self Provision is defaulted to zero for estimating purposes. • Can be negative (i.e. - CAISO payment if ESP has over self provided).	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Hourly	Ancillary Service	Balancing Group

Regulation Down Neutrality Allocation - Charge Code 6696

1. Charge Code Description

   This charge code recovers from Scheduling Coordinators the total Regulation Down Neutrality amount, in proportion to their positive SC Regulation Down Obligation. The total Regulation Down Neutrality amount is calculated as the difference between the Regulation Down Net Requirement at the Regulation Down Rate and the total revenue from the Regulation Down charge to all the Scheduling Coordinators. The Inter-SC Trades used within the SC Regulation Down Obligation charge must also be removed to estimate Regulation Down Neutrality accurately.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Regulation Down Demand Obligation ~~((DA CAISO Regulation Down Requirement/ISO Actual Load) * ESP Demand)~~	ESP Estimate	ESP Estimate by city

Regulation Down Demand Obligation	(max(RT CAISO Regulation Down Requirement, DA CAISO Regulation Down Requirement)/ISO Actual Load) * ESP Demand
EXCEPTION:	If DA CAISO Regulation Down Requirement is null, then Final CAISO Regulation Down Requirement/ISO Actual Load
Notes:	•

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Hourly	Ancillary Service	Balancing Group

Flexible Ramp Up Capacity No Pay Charge - Charge Code 7024

1. Charge Code Description

This charge code rescinds the Flexible Ramping Capacity payments to the extent that the Resource awarded Flexible Ramping Capacity in charge code 7056 is not able to deliver the awarded Capacity. The Flexible Ramp Up Capacity No Pay Charge is the product of the undelivered Flexible Ramp Up Capacity and the hourly Flexible Ramping Constraint price. The hourly Flexible Ramping Constraint price is the weighted average of the four fifteen-minute Flexible Ramp Up Constraint Derived Price.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2011 – 10/31/2016		
RT ESP Flex Ramp Up Capacity Award	ESP Estimate	UEA Energy
Notes:	• Calculated by Resource by ESP. • No Pay is allocated to those ESPs who received a payment in charge code 7050.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014 - 10/31/2016					
Real Time	MWh	Five Minutes	Five Minutes	Ancillary Service	Location
Effective Trade Date: 5/1/2013 – 4/30/2014					
Real Time	MWh	Fifteen Minutes	Fifteen Minutes	Ancillary Service	Location
Effective Trade Dates: 11/1/2011 – 4/30/2013					
Real Time	MWh	Ten Minutes	Ten Minutes	Ancillary Service	Location

Flexible Ramp Up Capacity Payment - Charge Code 7050

1. Charge Code Description

This charge code provides a payment to Resources that resolve the flexible ramping constraint and are awarded Flexible Ramping Capacity as part of the CAISO's market optimization for the Real Time Unit Commitment or Pre-Dispatch process (RTPD), and the Real Time Dispatch (RTD) process. This constraint addresses certain reliability and operational issues observed in the CAISO's operation of the grid. Allocation of costs associated with this product is covered in charge code 7056.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2011 – 10/31/2016		
(ESP Bid Share) / Sum (ESP Bids) * Flex Ramp Up Capacity Award where Energy Type = SUPP	ESP Estimate	• ESP Estimate If no ESP Estimate exists, Project Entitlement Percentage
Notes:	• Allocated first on submitted Real Time Bids of RT Supplemental Energy. • For hours where no Real Time Bids of RT Supplemental Energy exist, allocated among Operating Entities based on Project Entitlement Percentage. • This can result in a payment or a charge, although in most cases, it will be a payment.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2013 - 10/31/2016					
Real Time	MWh	Fifteen Minute	Fifteen Minute	Ancillary Service	Location
Effective Trade Dates: 11/1/2011 – 4/30/2013					
Real Time	MWh	Ten Minute	Ten Minute	Ancillary Service	Location

Flexible Ramp Cost Allocation - Charge Code 7056

1. Charge Code Description

   This charge code accounts for the costs associated with the payments to Resources that resolve the flexible ramping constraint in the Fifteen Minute Market and are awarded Flexible Ramping Capacity as part of the CAISO's market optimization for the Real Time Unit Commitment or Pre-Dispatch process (RTPD), and the Real Time Dispatch (RTD) process. Associated payments are covered in charge code 7050. Costs are allocated 75 percent to Measured Demand without exemption to the Demand quantities and 25 percent to Generating Resources that produce negative Uninstructed Imbalance Energy as well as Interties that produce negative Operational Adjustment quantities.

2. Charge Code Implementation

<table>
<tr><th>ESP Estimate</th><th>ESP Allocation Basis</th><th>Pool Allocation Basis</th></tr>
<tr><td colspan="3">Effective Trade Date: 11/1/2012 – 10/31/2016</td></tr>
<tr><td>Generation:
• negative Uninstructed Imbalance Energy
Imports:
• negative Operational Adjustment Import
Demand:
• (-1) * Measured Demand</td><td>ESP Estimate</td><td>Generation:
• Generation Entitlement Share
Imports:
• Participation Share
Demand:
• City Measured Demand</td></tr>
<tr><td>negative Uninstructed Imbalance Energy</td><td colspan="2">Abs(Min(0, UIE)) by ESP</td></tr>
<tr><td colspan="3">UIE for MSSA Resources</td></tr>
<tr><td>6475 billable quantity</td><td colspan="2">See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for MSSA Resources section for details.</td></tr>
<tr><td colspan="3">UIE for PGA Resources</td></tr>
<tr><td>6475 billable quantity</td><td colspan="2">See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for Participating Generator Agreement (PGA) Resources section for details.</td></tr>
<tr><td colspan="3">Effective Trade Date: 5/1/2014 – 10/31/2016</td></tr>
<tr><td colspan="2">negative Operational Adjustment Import</td><td>Abs (Min (0,
(ESP Final Import Schedule
- ESP FMM Import Schedule))</td></tr>
<tr><td>Notes:</td><td colspan="2">• Calculated for each five minute interval and summed for the hour.</td></tr>
</table>

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
	• Calculated by Resource by ESP. • Settlement Interval Imbalance Energy Difference must be allocated to any ESP that uses the Resource for the applicable interval in proportion to its respective share of UEA. • The proportion of UEA is calculated as the sum of abs UEA-allocated (Metered Energy, net Regulation Energy, Uninstructed Energy). • See section 10 above for more details regarding negative Real Time Operational Adjustments.	
Effective Trade Date: 11/1/2012 – 4/30/2014		
negative Real Time Operational Adjustment Import	Abs (Min (0, (ESP Final Import Schedule - DA ESP Import Energy) + HASP OA Import))	
Notes:	• Calculated for each ten minute interval and summed for the hour. • Calculated by Resource by ESP. • Settlement Interval Imbalance Energy Difference must be allocated to any ESP that uses the Resource for the applicable interval in proportion to its respective share of UEA. • The proportion of UEA is calculated as the sum of abs UEA-allocated (Metered Energy, net Regulation Energy, Uninstructed Energy). • See section 10 above for more details regarding negative Real Time Operational Adjustments.	
Effective Trade Dates 11/1/2011 – 10/31/2012		
(-1) * ESP Measured Demand	ESP Estimate	ESP Estimate by city

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014 – 10/31/2016					
Real Time	MWh	Five Minutes	Hour	Ancillary Service	Location
Effective Trade Date: 11/1/2012 – 4/30/2014					
Real Time	MWh	Ten Minutes	Hour	Ancillary Service	Location
Effective Trade Dates 11/1/2011 – 10/31/2012					
Real Time	MWh	Ten Minutes	Hour	Ancillary Service	Control Area & Location

Monthly Flex Ramp Up Supply Cost Allocation Reversal - Charge Code 7057

1. Charge Code Description

This charge code sums the daily Flexible Ramp Supply costs in charge code 7056 to a monthly total and then reverses them. The monthly total Flexible Ramp Supply costs will then be reallocated in charge code 7058 based upon monthly gross negative supply deviations.

The costs associated with such compensation net of rescinded amounts are allocated twenty-five percent to daily gross negative supply deviations and seventy-five percent to hourly Measured Demand, which consists of Metered Load and Exports. At the end of each month, the costs allocated to daily gross negative supply deviations will be reversed and re-allocated to monthly gross negative supply deviations.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2012 – 10/31/2016		
sum (7056 Supply Amount)	ESP Estimate	Generation: • Generation Entitlement Share Imports: • Participation Share
Notes:	• 7056 Supply Amount includes Uninstructed Imbalance Energy and Operational Adjustment Imports. • Calculated by Resource by ESP for each ten minute interval, then summed to a monthly value. • See section 10 above for more details regarding operational adjustments. • See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for MSSA Resources section for details. • See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for Participating Generator Agreement (PGA) Resources section for details.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MW	Month	Month	Ancillary Service	Location

Monthly Flex Ramp Up Supply Cost Allocation - Charge Code 7058

1. Charge Code Description

This charge code reallocates the monthly total Flexible Ramp Supply costs reversed in charge code 7057 to suppliers based upon monthly gross negative supply deviations.

The costs associated with such compensation net of rescinded amounts are allocated twenty-five percent to daily gross negative supply deviations and seventy-five percent to hourly Measured Demand, which consists of Metered Load and Exports. At the end of each month, the costs allocated to daily gross negative supply deviations will be reversed and re-allocated to monthly gross negative supply deviations.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2012 – 10/31/2016		
abs(negative Uninstructed Imbalance Energy) + abs(negative Operational Adjustment Import)	ESP Estimate	Generation: • Generation Entitlement Share Imports: • Participation Share
Notes:	• See calculation for Charge Code 7056 above for more details. • Calculated by Resource by ESP. • Calculated for each ten minute interval then summed to a monthly value.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MW	Month	Month	Ancillary Service	Location

Flexible Ramp Forecasted Movement Settlement - Charge Code 7070

1. Charge Code Description

This charge code will generate the Flexible Ramping Product (FRP) forecasted movement assessment that goes into RTM Net Amount pre-calculation for BCR contribution as well as the flexible ramp forecasted movement assessment inclusive of rescission that gets allocated in charge code 7076 – Flexible Ramp Forecast Movement Allocation.

The ISO will financially settle FRP in the fifteen-minute market and the five-minute market, with rescission of payments applied to resources with Uninstructed Imbalance Energy (UIE) or Operational Adjustment (OA) amounts, positive or negative, which impose on reserved FRP capacity awards. Settlement and allocation of FRP costs will happen on a daily basis for forecasted movement portion and uncertainty award portion. At the end of the month, the uncertainty award allocation will be reversed and will be re-allocated based on the month's net UIE or OA values.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
RT Flexible Ramp Forecasted Movement Award - Uninstructed Imbalance Energy	ESP Estimate	Generation Entitlement Share
RT Flexible Ramp Forecasted Movement Award	FMM Flexible Ramp Forecasted Movement Award + RTD Flexible Ramp Forecasted Movement Award	
UIE for MSSA Resources		
6475 billable quantity	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for MSSA Resources section for details.	
UIE for PGA Resources		
6475 billable quantity	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for Participating Generator Agreement (PGA) Resources section for details.	
Notes:	• Calculated by Resource by ESP by Settlement Interval.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Five Minutes	Five Minutes	Flexible Ramp	Location

Flexible Ramp Up Uncertainty Capacity Settlement - Charge Code 7071

1. Charge Code Description

This charge code calculates the Flexible Ramp Up Uncertainty Award settlement to those Generators that resolve the uncertainty movement.

The ISO will financially settle FRP in the fifteen-minute market and the five-minute market, with rescission of payments applied to resources with Uninstructed Imbalance Energy (UIE) or Operational Adjustment (OA) amounts, positive or negative, which impose on reserved FRP capacity awards. Settlement and allocation of FRP costs will happen on a daily basis for forecasted movement portion and uncertainty award portion. At the end of the month, the uncertainty award allocation will be reversed and will be re-allocated based on the month's net UIE or OA values.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
(ESP Share * FMM Flexible Ramp Up Uncertainty Capacity Award + (ESP Share * RTD Flexible Ramp Up Uncertainty Capacity Quantity) - max(0, (ESP Uninstructed Imbalance Energy + ESP Operational Adjustment))	ESP Estimate	Generation: • Generation Entitlement Share Imports/Exports: • Participation Share
ESP Share	ESP Share must be set to one of the following: 1. Bid Share if Bids exist 2. Generation Entitlement Share (Generation) 3. Participation Share (Imports / Exports)	
RTD Flexible Ramp Up Uncertainty Capacity Quantity	RTD Flexible Ramp Up Uncertainty Capacity Award - FMM Flexible Ramp Up Uncertainty Capacity Award	
UIE for MSSA Resources 6475 billable quantity	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for MSSA Resources section for details.	
UIE for PGA Resources 6475 billable quantity	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for Participating Generator Agreement (PGA) Resources section for details.	

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Notes:	• Calculated by Resource by ESP by Settlement Interval • ESP Flexible Ramp Capacity Award is allocated to applicable ESP in proportion its real-time energy quantity bid share.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Five Minutes	Five Minutes	Flexible Ramp	Location

Flexible Ramp Forecasted Movement Allocation - Charge Code 7076

1. Charge Code Description

Charge code 7076 will assess the Residual Forecasted Movement Settlement Amount calculated in charge code 7070 to metered CAISO Demand in proportion to its share of the total metered CAISO Demand for each Settlement Interval.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
ESP Metered Demand	ESP Estimate	City Metered Demand
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Five Minutes	Five Minutes	Flexible Ramp	Control Area

Daily Flexible Ramp Up Uncertainty Award Allocation - Charge Code 7077 for MSSA Resources

1. Charge Code Description

This Charge code allocates the charges associated with the total Flexible Ramp Up Uncertainty capacity award settlement amounts to those Resources that contribute to the uncertainty movement that are paid in association with charge code 7071.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
min(0,ESP Uninstructed Imbalance Energy + ESP Uncertainty Movement Quantity + ESP Operational Adjustment)	ESP Estimate	Net Negative Uninstructed Deviation by City
ESP Uninstructed Imbalance Energy	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for MSSA Resources section for details.	
Notes:	• ESP Uncertainty Movement Quantity will be retrieved from the CAISO CMRI (Customer Market Results Interface). • Prior to being an input to the ESP Estimate, the ESP Uncertainty Movement Quantity is allocated based on UEA. • UIE is first calculated for each MSS Resource by ESP and then netted across each Operating Entity's portfolio for each 5-minute interval. • The CAISO aggregates the MSSA and PGA inputs into one Control Area based settlement.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Daily	Daily	Flexible Ramp	Location/ Control Area

Daily Flexible Ramp Up Uncertainty Award Allocation - Charge Code 7077 for PGA Resources

1. Charge Code Description

This Charge code allocates the charges associated with the total Flexible Ramp Up Uncertainty capacity award settlement amounts that are paid in association with charge code 7071.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
min(0, ESP Uninstructed Imbalance Energy + ESP Uncertainty Movement Quantity)	ESP Estimate	Generation: • Generation Entitlement Share Imports/Exports: • Participation Share
ESP Uninstructed Imbalance Energy	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for Participating Generator Agreement (PGA) Resources section for details.	
Notes:	• ESP Uncertainty Movement Quantity will be retrieved from the CAISO CMRI (Customer Market Results Interface). • Prior to being an input to the ESP Estimate, the ESP Uncertainty Movement Quantity is allocated based on UEA. • UIE is calculated for each PGA Resource by ESP. • The CAISO aggregates the MSSA and PGA inputs into one Control Area based settlement.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Daily	Daily	Flexible Ramp	Location/ Control Area

Monthly Flexible Ramp Up Uncertainty Award Allocation - Charge Code 7078 for MSSA Resources

1. Charge Code Description

This Charge code allocates the charges associated with the total Flexible Ramp Up Uncertainty capacity award settlement amounts that are paid in association with charge code 7071. The allocation will be on a monthly basis and result in the resettlement of the daily charges already calculated with charge code 7077 (Daily Flexible Ramp Up Uncertainty Award Allocation), with separate monthly allocation amounts determined for the Peak Flexible Ramp Hours and Off-Peak Flexible Ramp Hours of the Trading Month.

2. Charge Code Implementation

ESP Estimate	**ESP Allocation Basis**	**Pool Allocation Basis**
Effective Trade Date: 11/1/2016		
min(0,ESP Uninstructed Imbalance Energy + ESP Uncertainty Movement Quantity + ESP Operational Adjustment)	ESP Estimate	Net Negative Uninstructed Deviation by City
ESP Uninstructed Imbalance Energy	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for MSSA Resources section for details.	
Notes:	• ESP Uncertainty Movement Quantity will be retrieved from the CAISO CMRI (Customer Market Results Interface). • Prior to being an input to the ESP Estimate, the ESP Uncertainty Movement Quantity is allocated based on UEA. • UIE is first calculated for each MSS Resource by ESP and then netted across each Operating Entity's portfolio for each 5-minute interval. • The CAISO aggregates the MSSA and PGA inputs into one Control Area based settlement.	

2.1. General Information:

Applicable CAISO Market	**Unit of Measure**	**ESP Estimate Resolution**	**Allocation Resolution**	**NCPA Settlements Administrative Cost**	**Allocation By**
Real Time	**MWh**	**Monthly**	**Monthly**	**Flexible Ramp**	**Location/ Control Area**

Monthly Flexible Ramp Up Uncertainty Award Allocation - Charge Code 7078 for PGA Resources

1. Charge Code Description

This Charge code allocates the charges associated with the total Flexible Ramp Up Uncertainty capacity award settlement amounts that are paid in association with charge code 7071. The allocation will be on a monthly basis and result in the resettlement of the daily charges already calculated with charge code 7077 (Daily Flexible Ramp Up Uncertainty Award Allocation), with separate monthly allocation amounts determined for the Peak Flexible Ramp Hours and Off-Peak Flexible Ramp Hours of the Trading Month.

2. Charge Code Implementation

ESP Estimate	**ESP Allocation Basis**	**Pool Allocation Basis**
Effective Trade Date: 11/1/2016		
min(0, ESP Uninstructed Imbalance Energy + ESP Uncertainty Movement Quantity)	ESP Estimate	Generation: • Generation Entitlement Share Imports/Exports: • Participation Share
ESP Uninstructed Imbalance Energy	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for Participating Generator Agreement (PGA) Resources section for details.	
Notes:	• ESP Uncertainty Movement Quantity will be retrieved from the CAISO CMRI (Customer Market Results Interface). • Prior to being an input to the ESP Estimate, the ESP Uncertainty Movement Quantity is allocated based on UEA. • UIE is calculated for each PGA Resource by ESP. • The CAISO aggregates the MSSA and PGA inputs into one Control Area based settlement.	

2.1. General Information:

Applicable CAISO Market	**Unit of Measure**	**ESP Estimate Resolution**	**Allocation Resolution**	**NCPA Settlements Administrative Cost**	**Allocation By**
Real Time	**MWh**	**Monthly**	**Monthly**	**Flexible Ramp**	**Location/ Control Area**

Flexible Ramp Down Uncertainty Capacity Settlement - Charge Code 7081

1. Charge Code Description

This charge code calculates the Flexible Ramp Down Uncertainty Award settlement.

The ISO will financially settle FRP in the fifteen-minute market and the five-minute market, with rescission of payments applied to resources with Uninstructed Imbalance Energy (UIE) or Operational Adjustment (OA) amounts, positive or negative, which impose on reserved FRP capacity awards. Settlement and allocation of FRP costs will happen on a daily basis for forecasted movement portion and uncertainty award portion. At the end of the month, the uncertainty award allocation will be reversed and will be re-allocated based on the month's net UIE or OA values.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
(ESP Share * FMM Flexible Ramp Down Uncertainty Capacity Award + (ESP Share * RTD Flexible Ramp Down Uncertainty Capacity Quantity) - min (0, (ESP Uninstructed Imbalance Energy + ESP Operational Adjustment))	ESP Estimate	Generation: • Generation Entitlement Share Imports/Exports: • Participation Share
ESP Share	Bid Share if bids exist; otherwise Generation Entitlement Share or Participation Share	
RTD Flexible Ramp Down Uncertainty Capacity Quantity	RTD Flexible Ramp Down Uncertainty Capacity Award - FMM Flexible Ramp Down Uncertainty Capacity Award	
Notes:	• Calculated by Resource by ESP by Settlement Interval.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Five Minutes	Five Minutes	Flexible Ramp	Location

Daily Flexible Ramp Down Uncertainty Award Allocation - Charge Code 7087 for MSSA Resources

1. Charge Code Description

This Charge code allocates the charges associated with the total Flexible Ramp Down Uncertainty capacity award settlement amounts that are paid in association with charge code 7081.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
max(0,ESP Uninstructed Imbalance Energy + ESP Uncertainty Movement Quantity + ESP Operational Adjustment)	ESP Estimate	Net Negative Uninstructed Deviation by City
ESP Uninstructed Imbalance Energy	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for MSSA Resources section for details.	
Notes:	• ESP Uncertainty Movement Quantity will be retrieved from the CAISO CMRI (Customer Market Results Interface). • Prior to being an input to the ESP Estimate, the ESP Uncertainty Movement Quantity is allocated based on UEA. • UIE is first calculated for each MSS Resource by ESP and then netted across each Operating Entity's portfolio for each 5-minute interval. • The CAISO aggregates the MSSA and PGA inputs into one Control Area based settlement.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Daily	Daily	Flexible Ramp	Location/ Control Area

Daily Flexible Ramp Down Uncertainty Award Allocation - Charge Code 7087 for PGA Resources

1. Charge Code Description

This Charge code allocates the charges associated with the total Flexible Ramp Down Uncertainty capacity award settlement amounts that are paid in association with charge code 7081.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
max(0, ESP Uninstructed Imbalance Energy + ESP Uncertainty Movement Quantity)	ESP Estimate	Generation: • Generation Entitlement Share Imports/Exports: • Participation Share
ESP Uninstructed Imbalance Energy	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for Participating Generator Agreement (PGA) Resources section for details.	
Notes:	• ESP Uncertainty Movement Quantity will be retrieved from the CAISO CMRI (Customer Market Results Interface). • Prior to being an input to the ESP Estimate, the ESP Uncertainty Movement Quantity is allocated based on UEA. • UIE is calculated for each PGA Resource by ESP. • The CAISO aggregates the MSSA and PGA inputs into one Control Area based settlement.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Daily	Daily	Flexible Ramp	Location/ Control Area

Monthly Flexible Ramp Down Uncertainty Award Allocation - Charge Code 7088 For MSSA Resources

1. Charge Code Description

This Charge code allocates the charges associated with the total Flexible Ramp Down Uncertainty capacity award settlement amounts that are paid in association with charge code 7081. The allocation will be on a monthly basis and result in the resettlement of the daily charges already calculated with charge code 7087 (Daily Flexible Ramp Down Uncertainty Award Allocation), with separate monthly allocation amounts determined for the Peak Flexible Ramp Hours and Off-Peak Flexible Ramp Hours of the Trading Month.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
max(0,ESP Uninstructed Imbalance Energy + ESP Uncertainty Movement Quantity + ESP Operational Adjustment)	ESP Estimate	Net Negative Uninstructed Deviation by City
ESP Uninstructed Imbalance Energy	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for MSSA Resources section for details.	
Notes:	• ESP Uncertainty Movement Quantity will be retrieved from the CAISO CMRI (Customer Market Results Interface). • Prior to being an input to the ESP Estimate, the ESP Uncertainty Movement Quantity is allocated based on UEA. • UIE is first calculated for each MSS Resource by ESP and then netted across each Operating Entity's portfolio for each 5-minute interval. • The CAISO aggregates the MSSA and PGA inputs into one Control Area based settlement.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Monthly	Monthly	Flexible Ramp	Location/ Control Area

Monthly Flexible Ramp Down Uncertainty Award Allocation - Charge Code 7088 for PGA Resources

1. Charge Code Description

This Charge code allocates the charges associated with the total Flexible Ramp Down Uncertainty capacity award settlement amounts that are paid in association with charge code 7081. The allocation will be on a monthly basis and result in the resettlement of the daily charges already calculated with charge code 7087 (Daily Flexible Ramp Down Uncertainty Award Allocation), with separate monthly allocation amounts determined for the Peak Flexible Ramp Hours and Off-Peak Flexible Ramp Hours of the Trading Month.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2016		
max(0, ESP Uninstructed Imbalance Energy + ESP Uncertainty Movement Quantity)	ESP Estimate	Generation: • Generation Entitlement Share Imports/Exports: Participation Share
ESP Uninstructed Imbalance Energy	See Real Time Uninstructed Imbalance Energy (UIE) Settlement – Charge Code 6475 for Participating Generator Agreement (PGA) Resources section for details.	
Notes:	• ESP Uncertainty Movement Quantity will be retrieved from the CAISO CMRI (Customer Market Results Interface). • Prior to being an input to the ESP Estimate, the ESP Uncertainty Movement Quantity is allocated based on UEA. • UIE is calculated for each PGA Resource by ESP. • The CAISO aggregates the MSSA and PGA inputs into one Control Area based settlement.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Monthly	Monthly	Flexible Ramp	Location/ Control Area

Regulation Up Mileage Settlement - Charge Code 7251

1. Charge Code Description

This charge code settles the quantity of frequency Regulation Up service provided by a Resource when the Resource is accurately following a control signal from the CAISO. The service is monitored and converted into instructed mileage of Regulation Up service by the CAISO systems. The instructed mileage is then paid using a mileage clearing price after being adjusted for performance accuracy.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2013		
DA ESP Regulation Up Mileage Award + RT ESP Regulation Up Mileage Award	ESP Estimate	Generation Entitlement Share
Notes:	• RT Regulation Up Awards received through charge code 6570 are used as a proxy for the RT ESP Regulation Up Mileage Award. • Calculated for each fifteen minute interval and summed for the hour. • Allocated in proportion to each applicable ESP's Regulation Up Award for Regulation Up Capacity settled in charge code 6500. • RT ESP Regulation Up Mileage Award is divided between the Day Ahead Market and Real Time Market in proportion to the DA and RT Awards. • Mileage Settlement includes adjustment for Regulation Up performance accuracy. NCPA will initially use 1.00 as a default performance accuracy measure.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead & Real Time	MW	Fifteen Minute	Fifteen Minute	Ancillary Service	Location

Regulation Up Mileage Allocation - Charge Code 7256

1. Charge Code Description

   This charge code allocates the quantity of frequency Regulation Up service costs provided by regulating Resources following a control signal from the CAISO. The service is monitored and converted into instructed mileage of Regulation Up service by the CAISO systems. The mileage costs are allocated using a calculated mileage rate.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2013		
Regulation Up Demand Obligation	ESP Estimate	Metered Demand
Notes:	• Refer to charge code 6594 for Regulation Up Demand Obligation calculation detail.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead & Real Time	MW	Hourly	Hourly	Ancillary Service	Control Area

Regulation Down Mileage Settlement - Charge Code 7261

1. Charge Code Description

This charge code settles the quantity of frequency Regulation Down service provided by a Resource when the Resource is accurately following a control signal from the CAISO. The service is monitored and converted into instructed mileage of Regulation Down service by the CAISO systems. The instructed mileage is then paid using a mileage clearing price after being adjusted for performance accuracy.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2013		
DA ESP Regulation Down Mileage Award + RT ESP Regulation Down Mileage Award	ESP Estimate	Generation Entitlement Share
Notes:	• RT Regulation Down Awards received through charge code 6670 are used as a proxy for the RT ESP Regulation Down Mileage Award. • Calculated for each fifteen minute interval and summed for the hour. • Allocated in proportion to each applicable ESP's Regulation Down Award for Regulation Down Capacity settled in charge code 6600. • RT ESP Regulation Down Mileage Award is divided between the Day Ahead Market and Real Time Market in proportion to the DA and RT Awards. • Mileage Settlement includes adjustment for Regulation Down performance accuracy. NCPA will initially use 1.00 as a default performance accuracy measure.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead & Real Time	MW	Fifteen Minute	Fifteen Minute	Ancillary Service	Location

Regulation Down Mileage Allocation - Charge Code 7266

1. Charge Code Description

   This charge code allocates the quantity of frequency Regulation Down service costs provided by regulating Resources following a control signal from the CAISO. The service is monitored and converted into instructed mileage of Regulation Down service by the CAISO systems. The mileage costs are allocated using a calculated mileage rate.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2013		
Regulation Down Demand Obligation	ESP Estimate	Metered Demand
Notes:	• Refer to charge code 6694 for Regulation Down Demand Obligation calculation detail.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead & Real Time	MW	Hourly	Hourly	Ancillary Service	Control Area

Cost Recovery Charge Group

Emissions Cost Recovery - Charge Code 0591

1. Charge Code Description

This Charge code collects the monthly emissions charge to the SCs and places it in a trustee account to later be paid out in charge code 0691 – Emissions Cost Payment

Emissions eligible Resources have up to one (1) year to submit NOx Emissions Cost invoices to the CAISO for reimbursement. After verifying these Emission Cost charges, the CAISO will pay these charges from the Emission Trust Account fund, via charge code 0691 – Emissions Cost Payment. To cover these costs the CAISO collects on an ongoing basis Emission charges on all Metered Demand within the CAISO Control Area and RT Gross Exports to other in-state Balancing Authority Areas, except for MSS entities that select not to participate in the Emissions Cost Recovery program. A Load-following MSS entity that elects not to participate in the Emissions Cost Recovery program will be assessed an Emissions Cost Recovery charge based on the MSS's Net Negative Uninstructed Deviation adjusted for any Load Following Energy.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2004		
ESP Net Negative Uninstructed Deviation	ESP Estimate	City Net Measured Demand
Notes:	• Per MSSA 12.15, if NCPA SC elects not to charge for Emissions costs, CAISO allocation will be based upon Net Negative Uninstructed Deviations (Refer to the section related to CAISO Settlement Charges due to Net Negative Uninstructed Deviations above for more details).	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Ten Minute	Monthly	Financial Adjustment	Balancing Group

RUC and RTM Bid Cost Recovery Settlement - Charge Code 6620

1. Charge Code Description

This charge code accounts for Bid Cost Recovery settlement for the RUC and Real Time Markets. Bid Cost Recovery (BCR) is the process by which the CAISO ensures Scheduling Coordinators are able to recover Start Up Costs (SUC), Minimum Load Costs (MLC), and Bid Costs.

Bid Cost Recovery uplift payment for NCPA (which has elected a "Gross" settlement with CAISO and has non-Metered Subsystem Resources and Metered Subsystem Resources) is calculated on a Resource basis by summing Start Up, Minimum Load, and Bid Costs from the Real Time Market and netting the total with Market revenues. If a shortfall exists, the Scheduling Coordinator receives a Bid Cost Recovery payment under this charge code.

Eligibility for BCR related to Start Up and Minimum Load Costs applies only to those Resources that are committed by the CAISO. Scheduling Coordinators shall receive an RUC and RTM BCR Uplift Payment for a Bid Cost Recovery Eligible Resource, if the net of all RUC and RTM Bid Cost shortfalls and surpluses over a Trading Day is positive.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
UEA Energy for the specific Resource with 6620 Statement Quantity	ESP Estimate	Project Entitlement Percentage
Notes:	• For applicable Resources, will receive BCR for the Real Time Market related to Start Up Costs and Emissions, and Energy Bids greater than the LMP.	
Effective Trade Dates: 4/1/2009 – 4/30/2014		
UEA Energy	ESP Estimate	Project Entitlement Percentage
Notes:	• For applicable Resources, will receive BCR for Day Ahead and Real Time Markets related to Start Up Costs and Emissions, and Energy Bids greater than the LMP.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 5/1/2014					
All	MWh	Five Minutes	Daily	Financial Adjustment	Location
Effective Trade Dates: 4/1/2009 – 4/30/2014					
All	MWh	Ten Minutes	Daily	Financial Adjustment	Location

IFM Bid Cost Recovery Settlement - Charge Code 6630

1. Charge Code Description

This charge code accounts for Bid Cost Recovery settlement for the Day Ahead Market. Bid Cost Recovery (BCR) is the process by which the CAISO ensures Scheduling Coordinators are able to recover Start Up Costs (SUC), Minimum Load Costs (MLC), and Bid Costs.

Bid Cost Recovery uplift payment for NCPA (which has elected a "Gross" settlement with CAISO and has non-Metered Subsystem Resources and Metered Subsystem Resources) is calculated on a Resource basis by summing Start Up, Minimum Load, and Bid Costs from the Day Ahead Market and netting the total with Market revenues. If a shortfall exists, the Scheduling Coordinator receives a Bid Cost Recovery payment under this charge code.

Eligibility for BCR related to Start Up and Minimum Load Costs applies only to those Resources that are committed by the CAISO. Scheduling Coordinators shall receive an IFM Unrecovered Bid Cost Uplift Payment for a Bid Cost Recovery Eligible Resource, if the net of all IFM Bid Cost shortfalls and surpluses over a Trading Day is positive.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
UEA Energy for the specific Resource with 6630 Statement Quantity	ESP Estimate	Project Entitlement Percentage
Notes:	• For applicable Resources, will receive BCR for the Day Ahead Market related to Start Up Costs and Emissions, and Energy Bids greater than the LMP.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
All	MWh	Hourly	Daily	Financial Adjustment	Location

IFM Bid Cost Recovery Tier 1 Allocation - Charge Code 6636

1. Charge Code Description

   This charge code accounts for the **first tier** of the allocation for IFM Bid Cost Recovery (BCR). Both tiers are described as follows:

   Tier 1: allocated to Scheduling Coordinators in proportion to their Load plus Exports in excess of their Day Ahead Self Scheduled Generation and Imports, adjusted by any applicable Inter-SC Trades of DA Load Uplift Obligations.

   The IFM Bid Cost Uplift rate will not exceed the ratio of the CAISO Hourly Net IFM Bid Cost uplift amount divided by the sum of all hourly Generation scheduled in the Day Ahead Schedules and IFM Upward Ancillary Service Awards for all Scheduling Coordinators from CAISO-committed Bid Cost Recovery eligible Resources in that Trading Hour.

   Tier 2 (see charge code 6637): Scheduling Coordinators who are also a Metered Subsystem Aggregator are charged for an amount equal to any remaining CAISO Hourly Net IFM Bid Cost uplift amount for the Trading Hour in proportion to their MSS Net Measured Demand less the valid, balanced portion of MSS Demand served by TOR Self Schedules.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(max(0,(ESP Scheduled Demand + DA ESP Export Self Provision Energy + DA Load Uplift Obligation Inter-SC Trade In - DA Load Uplift Obligation Inter-SC Trade Out - non-NCPA Pool Balancing Group DA ESP Trade In + non-NCPA Pool Balancing Group DA ESP Trade Out - DA ESP Trade In + DA ESP Trade Out) - (DA ESP Preferred Self Provision Generation Energy Schedule + DA ESP Import Self Provision Energy)))	ESP Estimate	• Same as ESP Allocation Basis, based on each Pool Member's proportionate share of the Third Party Schedules, Scheduled Load, and Participation Share. • DA Load Uplift Obligation Inter-SC Trades based on Optimized Western Base Resource Percentage.

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Notes:	• Calculated for all ESPs per RT Balancing Group. • DA ESP Trades are those between Santa Clara and NCPA Pool. • Non-NCPA Pool RT Balancing Group ESP Trades explicitly refer to ESP Trades of DA IFM Energy by non-MSSA Resources (i.e. PGA Resources). • The max (0, SC Portfolio Quantity) must be in place when summing all RT Balancing Groups together. A value of 0 implies that the SC is net long supply and is not subject to Tier 1 BCR allocation for the settlement period.		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Hourly	Financial Adjustment	Balancing Group

IFM Bid Cost Recovery Tier 2 Allocation - Charge Code 6637

1. Charge Code Description

This charge code accounts for the **second tier** of the allocation for IFM Bid Cost Recovery. Both tiers are described as follows:

Tier 1 (see charge code 6636): allocated to Scheduling Coordinators in proportion to their Load plus Exports in excess of their DA Self Scheduled Generation and Imports, adjusted by any applicable Inter-SC Trades of DA Load Uplift Obligations.

The IFM Bid Cost Uplift rate will not exceed the ratio of the CAISO Hourly Net IFM Bid Cost uplift amount divided by the sum of all hourly Generation scheduled in the Day Ahead Schedules and IFM Upward Ancillary Service Awards for all Scheduling Coordinators from CAISO-committed Bid Cost Recovery eligible Resources in that Trading Hour.

Tier 2: Scheduling Coordinators who are also a Metered Subsystem Aggregator are charged for an amount equal to any remaining CAISO Hourly Net IFM Bid Cost uplift amount for the Trading Hour in proportion to their MSS Net Measured Demand.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2011		
(-1) * ESP Non-PTO Net Measured Demand - valid TOR Schedule	ESP Estimate	City Net Measured Demand
Notes:	•	
Effective Trade Dates 4/1/2009 – 9/30/2011		
(-1) * ESP Net Measured Demand	ESP Estimate	ESP Estimate by city

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Hourly	Financial Adjustment	Balancing Group

Real Time Bid Cost Recovery Allocation - Charge Code 6678

1. Charge Code Description

   This charge code allocates the total amount of CAISO total Real Time Market Bid Uplift Costs.

   For Scheduling Coordinators who are also a Metered Subsystem Aggregator, the allocation will be in proportion to their Net Negative Uninstructed Deviation with Load Following Energy included in the netting (Refer to the section related to CAISO Settlement Charges due to Net Negative Uninstructed Deviations above for more details).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
MSSA Resources: • ESP Net Negative Uninstructed Deviation	ESP Estimate	City Measured Demand
Notes:	• PGA Resources (LEC and Landfills) are exempt from this charge code. • Calculated for all ESPs per RT Balancing Group. • Refer to the section related to CAISO Settlement Charges due to Net Negative Uninstructed Deviations above for more details.	
MSSA Resources: ***ESP Default Allocation***	***Pool Default Allocation***	
ESP Measured Demand	N/A	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Hourly	Financial Adjustment	Balancing Group
Effective Trade Dates: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Hourly	Financial Adjustment	Balancing Group

Day Ahead Energy, Congestion, Losses Charge Group

Day Ahead Energy, Congestion, and Losses Settlement - Charge Code 6011

1. Charge Code Description

   This charge code settles Day Ahead Schedules by paying for Supply and charging for Demand based upon the Locational Marginal Price (LMP) at Resource locations for each hour. This charge code computes Congestion credits to designated Scheduling Coordinators of ETC/TOR contracts by making reversals of Congestion charges and payments for the valid and balanced portion of ETC/TOR Self Schedules.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
Generation: • DA ESP Preferred Generation Energy Schedule per Resource Demand: • (-1) * Sum of DA Demand by LAP Imports: • DA ESP Import Energy Exports: • (-1) * DA ESP Export Energy ETCs/TORs Credit Reversal (*amount only*): • (-1) * Schedule Quantity * [Sink MCC - Source MCC] for each hourly Congestion reversal amount	ESP Estimate	Load: • DA City Demand where DA City Demand = Pool DA Load Schedule * city's pro rata share of Pool Metered Demand Generation/Imports/ Exports/Trades: • Project Entitlement Percentage or Participation Share
Notes:	• MSSA rules apply; due to election of gross Energy Settlement, MLAP settles at the Default LAP, Load settles at the CLAP LMP and Generation settles at DA LMP. • This settlement amount is inclusive of Congestion and Loss Credits for valid, balanced Sinks and Sources associated with TORs and Congestion Credits for ETCs. • MCC is the Marginal Cost of Congestion. • Schedule Quantity = min(max contract entitlement quantity, DA ESP Import Energy or DA ESP Export Energy). • Congestion Reversal for Grizzly uses the Source at NP15 Trading Hub and Sink of Santa Clara LAP. • The Schedule Quantity will be the same for each leg of a CRN Chain.	

ESP Default Allocation	***Pool Default Allocation***
*6011 allocator must be allocated to "SNCL (*ESP*)" for any transactions at "SNCL_1501"*	*If* DA City Demand *for any* Pool Member *is less than the Tolerance, then 6011 allocator for* Load *for that* Pool Member *must be set to* DA City Demand Forecast

2.1. General Information:

Applicable CAISO Market	**Unit of Measure**	**ESP Estimate Resolution**	**Allocation Resolution**	**NCPA Settlements Administrative Cost**	**Allocation By**
Day Ahead	MWh	Hourly	Hourly	Energy	Location

Congestion Revenue Rights Hourly Settlement - Charge Code 6700

1. Charge Code Description

Congestion Revenue Rights (CRRs) are financial instruments that give the Holder the right to receive a share of the total Congestion revenue attributable to a given Trading Hour of the Day Ahead Market. This charge code settles with Congestion Revenue Rights Holders for all their valid CRR holdings for each Trading Hour.

Note: A CRR is valid for a Trading Hour based on its start and end dates and its Time of Use (on peak or off peak hour classification). For a given Trading Hour, the funds available from the Day Ahead Market and CRR charges may not be enough to make full CRR payments. In this situation, both the payments and charges receive equal pro rata allocation. This pro rata allocation results in deferral of payments and charges, which are then tracked for subsequent true-up in the monthly clearing process (charge code 6728 below).

Due to the nature of payments and charges for CRRs (see *Note* above), NCPA will allocate charge codes 6700 and 6728 as follows:

Step	Allocation Step	Equation	Notes
1	Create CRR Load Ratio Shares by Quarter and Time of Use based upon 2007 CRR Ownership	CRR Load Shares$_{MQP}$ = sum(Load)$_{MQP}$/sum(Load)$_{MQ}$	R = Resource M = Member Q = Quarter/Month P = Time of Use
2	Derive max CRR Award Allocation for each Pool Member by Quarter and Time of Use	Max CRR$_{MQP}$ = Awarded CRR$_{QP}$ * CRR Load Shares$_{MQP}$	Awarded CRRs are categorized into 2 categories: 1. NCPA owned Sourced CRR 2. Non-NCPA owned Sourced CRR
3	Allocate NCPA owned Sourced CRR Shares per Pool Member	a. NCPA owned Sourced CRR Shares$_{RMQP}$ = min(Project Entitlement Percentage * Awarded NCPA owned Sourced CRR Shares$_{QP}$, max CRR$_{MQP}$) b. NCPA owned Sourced CRR Shares = NCPA owned Sourced CRR Shares$_{RMQP}$/ Awarded NCPA owned Sourced CRR Shares$_{QP}$	
4	Calculate remaining max CRR	Remaining CRR$_{MQP}$ = max CRR$_{MQP}$	If result is negative,

	Award Allocation for each Pool Member	- NCPA owned Sourced CRR $Shares_{RMQP}$	reduce step 3 proportionately
5	Calculate non-NCPA owned Sourced CRR Shares	Non-NCPA owned Sourced CRR Shares = Remaining CRR_{MQP} / sum(Remaining CRR_{QP})	

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
SinkMCC * SinkMW – SourceMCC * SourceMW based on Time of Use	100% to NCPA Pool	(see steps outlined in *Section 1* above)
Notes:	• Santa Clara is a separate BA and will receive its own settlement charges (separate from NCPA SC). • NCPA settlements for CRRs will only be for NCPA Pool and it is a static number allocated on an annual basis. • SinkMCC refers to the PGAE Default LAP DA LMP. • SourceMCC refers to DA LMPs.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	Dollars	Hourly	Hourly	CRR	Entitlement

Congestion Revenue Rights Balancing Account - Charge Code 6790

1. Charge Code Description

The CRR Balancing Account (CRRBA) is used by the CAISO as an internal tracking account that offsets the CRR Payments and CRR Charges to achieve neutrality at the end of each month. At the end of each month, any surplus or deficit in the CRRBA is allocated to Measured Demand excluding the valid and balanced portion of TOR/ETC/CVR Self-Schedules for which IFM and RTM Congestion credits were provided.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * (ESP Measured Demand – CLAP Demand)	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Daily	CRR	Control Area

Congestion Revenue Rights Balancing Account Accrued Interest Allocation - Charge Code 6791

1. Charge Code Description

The CRR Balancing Account (CRRBA) is used by the CAISO as an internal tracking account that offsets the CRR Payments and CRR Charges to achieve neutrality at the end of each month. At the end of each month, interest that has accrued on this account is allocated to Measured Demand excluding the valid and balanced portion of TOR/ETC/CVR Self-Schedules for which IFM and RTM Congestion credits were provided.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 12/1/2009		
(-1) * (ESP Measured Demand – CLAP Demand)	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Daily	CRR	Control Area

Congestion Revenue Rights Auction Transaction Settlement - Charge Code 6798

1. Charge Code Description

This charge code settles the transaction amounts per Scheduling Coordinator for each Congestion Revenue Rights (CRR) Auction. For Reversed Auctioned CRR Transactions, the CRR Holder will be paid in charge code 6798, but will be charged the same amount in charge code 6799, with a net effect of zero. This mechanism allows CAISO to collect the auction proceeds that will be used to cover the collateral for holding the negatively-valued CRRs.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
N/A	N/A	6700 Amount related to Reversed Auctioned CRR Transactions in proportion to allocated 6700 Amount by CRR ID
Notes:	• Applicable when participating in CRR Auction. • Monthly auctions settled at the end of the applicable Trade Month. • Yearly auction settled quarterly at the end of each Quarter. • CRR ID is defined as unique source-sink location.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	Dollars	N/A	Daily	CRR	Location

Congestion Revenue Rights Auction Transaction Settlement - Charge Code 6799

1. Charge Code Description

This charge code settles the transaction amounts per Scheduling Coordinator for each Congestion Revenue Rights (CRR) Auction related to negatively Reversed Auctioned CRR Transactions. For Reversed Auctioned CRR Transactions, the CRR Holder will be paid in charge code 6798, but will be charged the same amount in charge code 6799, with a net effect of zero. This mechanism allows CAISO to collect the auction proceeds that will be used to cover the collateral for holding the negatively-valued CRRs.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2010		
N/A	N/A	(-1) * 6798 Pool Allocation Amount by CRR ID
Notes:	• Applicable when participating in Reverse Auctioned CRR Transactions. • Monthly auctions settled at the end of the applicable Trade Month. • Yearly auction settled quarterly at the end of each Quarter. • CRR ID is defined as unique source-sink location.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	Dollars	N/A	Daily	CRR	Location

IFM Marginal Losses Surplus Credit Allocation - Charge Code 6947

1. Charge Code Description

   This charge code rebates any Marginal Loss Surplus (MLS) in the hourly Energy charges within the Day Ahead Market to Scheduling Coordinators. The Marginal Loss Surplus amount, if any, is allocated pro rata to Scheduling Coordinators based upon their Measured Demand in the CAISO Balancing Authority Area.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * ESP Measured Demand	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Hourly	Losses	Balancing Group

FERC Fee Charge Group

FERC Fee for Over/Under Recovery Settlement - Charge Code 0525

1. Charge Code Description

   If the FERC Annual Charges assessed against the CAISO for transactions on the CAISO Controlled Grid during any year exceed or fall short of funds collected by the CAISO (charge codes 0550 and 0551) by a range of 10% or less, the CAISO will issue an adjustment to the FERC Annual Charge Recovery Rate in this charge code.

   Active Scheduling Coordinators will either be charged or receive a credit based upon the percentage of each active Scheduling Coordinator's Measured Demand and Exports during the relevant year.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * sum((ESP Measured Demand – CLAP Demand))	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Yearly	Yearly	FERC Fee	Balancing Group

FERC Fee for Over/Under Recovery Settlement - Charge Code 0550/0551

1. Charge Code Description

Scheduling Coordinators are charged based upon Measured Demand, initially using an estimated rate, to cover FERC's likely annual bill to the CAISO. This fee may later be revised if FERC's annual bill to the CAISO is more than +/- 10% of the fees collected for a year.

Scheduling Coordinators may elect to pay the FERC Fee either on a monthly or annual basis.

Charge code 0550 is for the monthly election while charge code 0551 is for the annual election.

As of January 1, 2012, NCPA has chosen to pay the FERC Fee *monthly in charge code 0550 rather than annually as was previous practice.*

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 1/1/2012	**Charge Code 0550** (monthly)	
(-1) * (ESP Measured Demand – CLAP Demand)	ESP Estimate	ESP Estimate by city
Effective Trade Dates 4/1/2009 - 12/31/2011	**Charge Code 0551** (yearly)	
(-1) * (ESP Measured Demand – CLAP Demand)	ESP Estimate	ESP Estimate by city
Notes:	• As of January 1, 2012, NCPA has chosen to pay the FERC Fee monthly in charge code 0550 rather than annually as was previous practice.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Monthly	FERC Fee	Balancing Group

Financial Adjustments Charge Group

Default Invoice Interest Payment - Charge Code 2999

1. Charge Code Description

   This charge code allocates interest charges paid by Scheduling Coordinators who previously defaulted on an invoice to Scheduling Coordinators not paid previously due to the default on a pro rata basis.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
ESP not previously paid during the Bill Period	ESP Measured Demand	City Measured Demand
Notes:	• It is assumed, that any previous payment shortfall would have been allocated by ESP Measured Demand, so this would also be allocated on ESP Measured Demand.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	Dollars	Monthly	Monthly	Financial Adjustment	Control Area

Enforcement Protocol (EP) Penalty Allocation - Charge Code 1592

1. Charge Code Description

This charge code credits Scheduling Coordinators for all Market Participants they represent that were not charged Enforcement Protocol (EP) Penalties during the year. The allocation is by the prorate share of the GMC paid by each Scheduling Coordinator to the total GMC paid by all Scheduling Coordinators.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
N/A	1592 ISO Statement Amount * (ESP GMC Allocation Amount/NCPA GMC Allocation Amount)	(e Basis)
Notes:	• ESP GMC Allocation Amount is the sum of all GMC Allocation Amounts per ESP during the Enforcement Protocol Penalty Period. • NCPA GMC Allocation Amount is the sum of all ESP GMC Allocation Amounts during Enforcement Protocol Penalty Period.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	Dollars	N/A	Monthly	Financial Adjustment	Balancing Group

Daily Rounding Adjustment - Charge Code 4989

1. Charge Code Description

This charge code charges/credits Scheduling Coordinators for the difference between *daily* charges and credits due to rounding.

Regardless if the net imbalance is positive or negative as a result of the rounding error, revenues/charges are allocated to or collected from Scheduling Coordinators pro rata based upon their share of the total CAISO Measured Demand.

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009			
(-1) * ESP Measured Demand		ESP Estimate	ESP Estimate by city
Notes:	• Calculated for each five minutes and summed for the day.		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
All	MWh	Five Minutes	Daily	Financial Adjustment	Balancing Group
Effective Trade Date: 4/1/2009 – 4/30/2014					
All	MWh	Hourly	Daily	Financial Adjustment	Balancing Group

Monthly Rounding Adjustment - Charge Code 4999

1. Charge Code Description

   This charge code charges/credits Scheduling Coordinators for the difference between *monthly* charges and credits due to rounding.

   Regardless if the net Imbalance is positive or negative as a result of the rounding error, revenues/charges are allocated to or collected from Scheduling Coordinators pro rata based upon their share of the total CAISO Measured Demand.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * ESP Measured Demand	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Monthly	Monthly	Financial Adjustment	Balancing Group

FERC Mandated Interest on Re-Runs - Charge Code 5999

1. Charge Code Description

   FERC Mandated Interest on reruns is the interest charge/payment on under/over payment as a result of a rerun where the CAISO was ordered to calculate and distribute interest to Scheduling Coordinators affected by the rerun.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * ESP Measured Demand	ESP Estimate	ESP Estimate by city
Notes:	• This is a reasonable allocation as long as interest is small and rare. • The allocation basis will be revisited if the interest amount becomes significant.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Rerun	MWh	Hourly	Monthly	Financial Adjustment	Balancing Group

NERC/WECC Reliability Charge - Charge Code 6490

1. Charge Code Description

   This charge code is for the costs associated with NERC/WECC reliability and is billed annually.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * sum(ESP Demand)	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Yearly	Yearly	Financial Adjustment	Balancing Group

Peak Reliability Coordinator Charge - Charge Code 6496

1. Charge Code Description

   This charge code is for the costs associated with Reliability Coordinator Charges that are invoiced to the CAISO by Peak Reliability ("Peak") on behalf of itself for the cost of providing reliability coordination for the WECC Interconnection. Peak Reliability Coordinator Charges are FERC-approved amounts that provide funding for the statutory-related functions performed by Peak. Each SC's responsibility for Peak Reliability Coordinator Charges is based on its calculated NERC/WECC Metered Demand.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 1/1/2014		
(-1) * sum(ESP Demand)	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Yearly	Yearly	Financial Adjustment	Balancing Group

Transferred Frequency Response Cost Allocation - Charge Code 7597

1. Charge Code Description

This charge code accounts for the costs associated with Transferred Frequency Response (TFR) costs that are invoiced to the CAISO by an external Balancing Authority Area entity (the TFR provider). Each SC shall be obligated to pay the CAISO all of the Transferred Frequency Response Charges it is invoiced by the CAISO in accordance with the applicable provisions of the CAISO tariff. Each SC's responsibility for Transferred Frequency Response Charges is based on its calculated NERC/WECC Metered Demand.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 1/1/2015		
(-1) * sum(ESP Demand)	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Yearly	Yearly	Financial Adjustment	Balancing Group

Invoice Deviation Interest Distribution - Charge Code 7989

1. Charge Code Description

This charge code accounts for interest *payments* to Scheduling Coordinators. Semi-monthly invoicing was introduced with the CAISO implementation of Payment Acceleration on November 1, 2009.

The CAISO's application of interest ensures that the time value of money is properly accounted for when Market Participants initially are overcharged or undercharged due to estimated Meter Data, updates to SQMD Meter Data, and price adjustments on invoices generated semi-monthly at T+7B.

For the period November 2009 through September 2011, interest is based upon invoice deviations for each Trading Month between each Initial ISO Settlement Statement (T+7B[3]) and Recalculation ISO Settlement Statement (T+38B), as well as between Recalculation ISO Settlement Statement (T+38B) and Recalculation ISO Settlement Statement (T+76B), Recalculation ISO Settlement Statement (T+76B) and Recalculated T+18 Month, and Recalculated T+18 Month and Recalculated T+35 Month, and so on.

Beginning October 2011 and thereafter, interest is calculated weekly based on the difference between corresponding T+12B and T+3B ISO Settlement Statements included in the associated weekly invoice. The due dates in T+3B and T+12B defines the number of applicable days in which interest applies. The calculation of interest for Recalculation ISO Settlement Statements will be determined monthly and the applicable interest amount will be calculated back to the corresponding due dates on the Initial invoice.

NCPA allocates the associated invoice deviation payment amounts in Charge Code 7989 to the applicable Balancing Groups who were initially over-charged or under-paid by the CAISO.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2012		
(Difference between the weekly Recalc 1 Invoice Amount and weekly Initial Invoice Amounts) * number of days between Invoice Due Dates * daily FERC Interest Rate by ESP	ESP Estimate	Participation Share
Notes:	• Sum of ESP Interest Amount < 0 is categorized in charge code 7989.	
Effective Trade Date: 10/1/2011 – 9/30/2012		

[3] "T" = Trade Date; "B" = Business Day

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Min (0, Difference between the weekly Recalc 1 Invoice Amount and weekly Initial Invoice Amounts) * number of days between Invoice Due Dates * daily FERC Interest Rate	ESP Estimate	ESP Allocation by city
Notes:	• Interest amounts will also apply to invoice deviations associated with the Recalc 2 & Recalc 1 invoices, Recalc 3 & Recalc 2 invoices, Recalc 4 & Recalc3 invoices, ETC. • Interest charged or paid on all recalculated statements will be calculated for interest amounts back to the due date of the initial invoices. • The CAISO will calculate the invoice deviation interest for the T+12B on a weekly basis. • Invoice deviation interest charges associated with recalculated invoices are calculated on a monthly basis.	
Effective Trade Date: 11/1/2009 – 9/30/2011		
Min (0, Difference between the daily Recalc 1 Invoice Amount and the sum of daily Initial Invoice Amounts) * number of days between Invoice Due Dates * FERC Quarterly Interest Rate	ESP Estimate	ESP Allocation by city
Notes:	• If the number of days between invoice due dates crosses quarters, multiple interest rates may apply. • Calculation is also relevant between the Recalc 2 & Recalc 1 invoices, and Recalc 3 & Recalc 2 invoices, Recalc4 and Recalc3 invoices, etc. • Number of days between invoice Due Dates between Recalc 1 and Initial are counted back to the 1st semi-monthly Initial invoice Due Date.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 10/1/2012					
All	Dollars	Hourly	Hourly	Financial Adjustment	Control Area
Effective Trade Date: 11/1/2009 – 9/30/2012					
All	Dollars	Recalc - Initial: Weekly	Recalc - Initial: Weekly	Financial Adjustment	Balancing Group
		Recalc - Recalc: Monthly	Recalc - Recalc: Monthly		

Invoice Deviation Interest Allocation - Charge Code 7999

1. Charge Code Description

This charge code accounts for interest charges to Scheduling Coordinators. Semi-monthly invoicing was introduced with the CAISO implementation of Payment Acceleration on November 1, 2009.

The CAISO's application of interest ensures that the time value of money is properly accounted for when Market Participants initially are overcharged or undercharged due to estimated Meter Data, updates to SQMD Meter Data, and price adjustments on Invoices generated semi-monthly at T+7B.

For the period November 2009 through September 2011, interest is based upon invoice deviations for each Trading Month between each Initial ISO Settlement Statement (T+7B) and Recalculation ISO Settlement Statement (T+38B), as well as between Recalculation ISO Settlement Statement (T+38B) and Recalculation ISO Settlement Statement (T+76B), Recalculation ISO Settlement Statement (T+76B) and Recalculated T+18 Month, and Recalculated T+18 Month and Recalculated T+35 Month, ETC.

Beginning October 2011 and thereafter, interest is calculated weekly based on the difference between corresponding T+12B and T+3B ISO Settlement Statements included in the associated weekly invoice. The due dates in T+3B and T+12B defines the number of applicable days in which interest applies. The calculation of interest for recalculated statements will be determined monthly and the applicable interest amount will be calculated back to the corresponding due dates on the initial invoice.

NCPA allocates the associated invoice deviation interest charges in Charge Code 7999 to the applicable Balancing Groups who were initially under-charged or over-paid by the CAISO.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2012		
(Difference between the weekly Recalc 1 Invoice Amount and the Initial weekly Invoice Amounts) * number of days between Invoice Due Dates * daily FERC Interest Rate by ESP	ESP Estimate	Participation Share
Notes:	• Sum of ESP Interest Amount > 0 is categorized in charge code 7999	
Effective Trade Date: 10/1/2011 – 9/30/2012		
Max (0,Difference between the weekly Recalc 1 Invoice Amount and the Initial weekly Invoice Amounts) * number of days between Invoice Due Dates	ESP Estimate	ESP Allocation by city

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
* daily FERC Interest Rate			
Notes:	• Interest amounts will also apply to invoice deviations associated with the Recalc 2 & Recalc 1 Invoices, Recalc 3 & Recalc 2 Invoices, Recalc 4 & Recalc3 Invoices, ETC. • Interest charged or paid on all recalculated statements will be calculated for interest amounts back to the due date of the initial Invoices. • The CAISO will calculate the invoice deviation interest for the T+12B on a weekly basis. • Invoice deviation interest charges associated with recalculated invoices are calculated on a monthly basis.		
Effective Trade Date: 11/1/2009 – 9/30/2011			
Max (0,Difference between the Recalc 1 Invoice Amount and the sum of semi-monthly Initial Invoice Amounts) * number of days between Invoice Due Dates * FERC Quarterly Interest Rate		ESP Estimate	ESP Allocation by city
Notes:	• If the number of days between invoice due dates crosses quarters, multiple interest rates may apply. • Calculation is also relevant between the Recalc 2 & Recalc 1 Invoices, and Recalc 3 & Recalc 2 Invoices. • Number of days between Invoice Due Dates between Recalc 1 and Initial are counted back to the 1st semi-monthly Initial Invoice Due Date.		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 10/1/2012					
All	Dollars	Hourly	Hourly	Financial Adjustment	Control Area
Effective Trade Date: 11/1/2009 – 9/30/2012					
All	Dollars	Recalc - Initial: Weekly	Recalc - Initial: Weekly	Financial Adjustment	Balancing Group
		Recalc - Recalc: Monthly	Recalc - Recalc: Monthly		

Generator Interconnection Process Forfeited Deposit Allocation - Charge Code 8526

1. Charge Code Description

This charge code allocates forfeited deposit amounts made during the various stages of the Generator Interconnection Process to Scheduling Coordinators that paid GMC during the calendar year. The allocation is by the prorate share of the GMC paid by each Scheduling Coordinator to the total GMC paid by all Scheduling Coordinators. The allocation will occur at the end of each calendar year once the amounts have been approved by FERC.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Calendar Date 9/27/2010		
N/A	8526 Statement Amount * (ESP GMC Allocation Amount/NCPA GMC Allocation Amount)	(see ESP Allocation Basis)
Notes:	• ESP GMC Allocation Amount is the sum of all GMC Allocation Amounts per ESP during the CAISO specified time period. • NCPA GMC Allocation Amount is the sum of all ESP GMC Allocation Amounts during the CAISO specified time period.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	Dollars	N/A	Yearly	Financial Adjustment	Balancing Group

Neutrality Adjustment - Charge Code 8989

1. Charge Code Description

   This charge code charges/credits Scheduling Coordinators for both charges and allocations of a Neutrality or Good Faith Negotiation (GFN) settlement on an hourly or daily basis.

   Allocations are based upon each Scheduling Coordinator's pro rata share of the total CAISO Measured Demand for the Settlement Interval.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * ESP Measured Demand	ESP Estimate	ESP Estimate by city
Notes:	• Implemented Calendar Date 6/26/2013 retroactively to April 2009.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
N/A	MWh	Daily	Daily	Financial Adjustment	Balancing Group

Neutrality Adjustment - Charge Code 8999

1. Charge Code Description

   This charge code charges/credits Scheduling Coordinators for both charges and allocations of a Neutrality or Good Faith Negotiation (GFN) settlement on a monthly basis.

   Allocations are based upon each Scheduling Coordinator's pro rata share of the total CAISO Measured Demand for the Settlement Interval.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * ESP Measured Demand	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 1/1/2013					
N/A	MW	Monthly	Monthly	Financial Adjustment	Balancing Group
Effective 4/1/2009 – 12/31/2012					
N/A	MW	Daily	Daily	Financial Adjustment	Balancing Group
		Trade Month October 2012 only: Monthly	Trade Month October 2012 only: Monthly		

NCPA Neutrality Adjustment – NCPA Charge Code 9999

1. Charge Code Description

   This NCPA charge code charges Members for charges of deviations between the CAISO Invoice amounts allocated to NCPA Members and the sum of all allocated ISO Settlement Statement amounts for the same billing month that cannot otherwise be accounted for within a CAISO charge code (i.e., rounding, discrepancies awaiting resolution through an ISO dispute, ETC.).

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 1/1/2010			
(-1) * ESP Measured Demand		ESP Estimate	ESP Estimate by city
Notes:	•		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
N/A	MWm	Monthly	Monthly	Financial Adjustment	Control Area

CAISO Grid Management Charge (GMC) Charge Group

GMC Inter-Scheduling Coordinator Trade Transaction Fee - Charge Code 4512

1. Charge Code Description

   This charge code contains the activities associated with accepting, processing, and validating Day Ahead and Fifteen Minute Market (FMM) Inter-SC Trade (IST) Schedules. A Schedule in this context is any IST submitted to and accepted by the CAISO and is considered *valid and matched*.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
total count of (DA Inter-SC Trade In, DA Inter-SC Trade Out, FMM Inter-SC Trade In, FMM Inter-SC Trade Out, DA Inter-SC Non Spin Trade In, DA Inter-SC Non Spin Trade Out, DA Inter-SC Regulation Down Trade In, DA Inter-SC Regulation Down Trade Out, DA Inter-SC Regulation Up Trade In, DA Inter-SC Regulation Up Trade Out, DA Inter-SC Spin Trade In, DA Inter-SC Spin Trade Out, DA Load Uplift Obligation Inter-SC Trade In, DA Load Uplift Obligation Inter-SC Trade Out, FMM Inter-SC Non Spin Trade In, FMM Inter-SC Non Spin Trade Out, FMM Inter-SC Regulation Down Trade In, FMM Inter-SC Regulation Down Trade Out, FMM Inter-SC Regulation Up Trade In, FMM Inter-SC Regulation Up Trade Out, FMM Inter-SC Spin Trade In, FMM Inter-SC Spin Trade Out)	ESP Estimate	Each hour: • Proportionate Participation Share of each Inter-SC Trade In and Inter-SC Trade Out each non-zero hour that they participate in. • Generation: Project Entitlement Percentage

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Notes:	• Hourly IST Schedule costs are shared among Members for ISTs that have the common attributes: Trade Direction, Counter Party SC, Receiver ESP, IST Type, Market Type, & Delivery Point. • This applies to both sides of an Inter-SC Trade. • This applies to Physical, Converted, and Financial Trades.		
Effective Trade Date: 1/1/2012 – 4/30/2014			
total count of (DA Inter-SC Trade In, DA Inter-SC Trade Out, HASP Inter-SC Trade In, HASP Inter-SC Trade Out, DA Inter-SC Non Spin Trade In, DA Inter-SC Non Spin Trade Out, DA Inter-SC Regulation Down Trade In, DA Inter-SC Regulation Down Trade Out, DA Inter-SC Regulation Up Trade In, DA Inter-SC Regulation Up Trade Out, DA Inter-SC Spin Trade In, DA Inter-SC Spin Trade Out, DA Load Uplift Obligation Inter-SC Trade In, DA Load Uplift Obligation Inter-SC Trade Out)		ESP Estimate	Each hour: • Proportionate Participation Share of each Inter-SC Trade In and Inter-SC Trade Out each non-zero hour that they participate in. • Generation: Project Entitlement Percentage
Notes:	• Hourly IST Schedule costs are shared among Members for ISTs that have the common attributes: Trade Direction, Counter Party SC, Receiver ESP, IST Type, Market Type, & Delivery Point. • This applies to both sides of an Inter-SC Trade. • This applies to Physical, Converted, and Financial Trades.		
Effective Trade Dates 10/1/2010 – 12/31/2011			
total of count (DA Inter-SC Trade In, DA Inter-SC Trade Out, RT Inter-SC Trade In, RT Inter-SC Trade Out,		ESP Estimate	Each hour: • Proportionate Participation Share of each Inter-SC Trade In and Inter-SC Trade Out each non-zero hour that they participate in.

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
DA Load Uplift Obligation Trade In, DA Load Uplift Obligation Trade Out)			• Generation: Project Entitlement Percentage
Notes:	• Hourly IST Schedule costs are shared among Members for ISTs that have the common attributes: Trade Direction, Counter Party SC, Receiver ESP, IST Type, Market Type, & Delivery Point.		
Effective Trade Dates 4/1/2009 – 9/30/2010			
total of count (DA Inter-SC Trade In, DA Inter-SC Trade Out, RT Inter-SC Trade In, RT Inter-SC Trade Out)		ESP Estimate	Each hour: • Proportionate Participation Share of each Inter-SC Trade In and Inter-SC Trade Out each non-zero hour that they participate in. • Generation: Project Entitlement Percentage

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Day Ahead & FMM	Count	Daily	Daily	GMC	Location
Effective Trade Date: 3/1/2012 – 4/30/2014					
Day Ahead & HASP	Count	Daily	Daily	GMC	Location
Effective Trade Dates: 4/1/2009 – 2/28/2012					
Day Ahead & HASP	Count	Daily	Daily	GMC	Control Area

GMC Bid Transaction Fee - Charge Code 4515

1. Charge Code Description

   This charge code is designed to recover a portion of the costs the CAISO incurs during the execution of the Day Ahead and Real Time Markets. As such, this charge code will apply a fee per Bid Segment to each Scheduling Coordinator Resource's final Clean Bids, Self Schedules and Self Provisions. In addition, the credit amounts recovered through this charge code will be applied against the revenue requirements for Market Service Charges (charge code 4560).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Regulating Resources: Effective Trade Date: 5/1/2013		
See Estimates and Allocations below for both MSSA and PGA Resources – no change		
Notes:	• Resources certified for Regulation will begin submitting Regulation Mileage Bids, which will add to the count of ESP Bids. • Regulation Up and Regulation Down Bids will become two-part Bids and count as 2: one for the Capacity Bid and one for the Regulation Mileage Bid.	
MSSA Resources: Effective Trade Date: 1/1/2012		
(ESP Bid Share /Sum (ESP Bids)) * count of Bid Segment Where ESP Bid Share = the number of actual Bids submitted per Product	(ESP Bid Share /Sum (ESP Bids)	Load: • City Metered Demand Generation: • Project Entitlement Percentage
Notes:	• Calculated by Resource by ESP per Bid Segment per applicable product type and market. • Bids for Interties include DA and RT in one Bid; therefore 1 = 2.	
PGA Resources: Effective Trade Date: 5/1/2012		
Schedule Share % * count of Bid Segment Where Schedule Share % = DA ESP Market Energy Schedule / Sum of DA ESP Market Energy Schedule	Schedule Share % * count of Bid Segment	Generation Entitlement Share

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Notes:	• Schedule Share % will always be equal to Generation Entitlement Share except under the circumstance that one or more Project Participants elect to submit Bids to Self Schedule the Resource. • DA ESP Market Energy Schedule is the allocated portion of Self Schedule and DA Market Energy Schedule.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	Count	Hourly	Daily	GMC	Location

GMC CRR Transaction Fee - Charge Code 4516

1. Charge Code Description

This charge code is designed to recover a portion of the costs the CAISO incurs when running the CRR Auctions. As such, this charge code will apply a fee per Bid/nomination fee to each Scheduling Coordinator's submitted CRR Bids, where a Bid to a particular CRR Auction (defined by the combination of a season or a month with a time-of-use period, either on peak or off peak) is defined by a CRR source location, a CRR sink location, and a MW amount. In addition, the credit amounts recovered through this charge code will be applied against the revenue requirements for CRR Service Charges (charge code 4562).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 1/1/2012		
total count of CRR Bids per CRR Auction + total count of CRR Nominations per CRR Allocation Market by Sink/Source	100% to NCPA Pool	City Metered Demand
Notes:	• Santa Clara is a separate BA and will receive its own settlement charges (separate from NCPA SC).	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	Count	Monthly	Monthly	GMC	Entitlement

GMC Market Services Charge - Charge Code 4560

1. Charge Code Description

This charge code is designed to recover costs the CAISO incurs for implementing and running the markets. Since Supply Bids and Demand Bids use equivalent market services and impose equivalent costs on the CAISO, the Market Services Charge will be assessed to each Scheduling Coordinator based upon gross awarded Energy Schedules (MWh), Ancillary Service Capacity (MW), and specific dispatch instructions (MWh) of Generation, Imports, Load, and Exports in the CAISO's Day Ahead and Real Time Markets.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
Max (0, Abs (DA ESP Preferred Generation Energy Schedule) + Abs (DA Demand by LAP) + Abs (DA ESP Export Energy) + Abs (DA ESP Import Energy) - Abs (valid TOR Schedule) + Abs (ESP FMM Instructed Energy Schedule) + Abs (ESP Real Time Instructed Energy Schedule[1, 2]) + Abs (ESP Ancillary Services Schedule)	ESP Estimate	Load: • DA City Demand Generation: • Project Entitlement Percentage Import / Export: • Participation Share

Valid TOR Schedule	min(ESP Final Import Schedule at Marble, Plumas CLAP meter) for each hour
ESP FMM Instructed Energy Schedule	6460 IIE Billable Quantity - ESP FMM Load Following Self Schedule
ESP FMM Load Following Self Schedule	FMM Intertie Schedule - DA Final Intertie Schedule
[1]MSSA Resources ESP Real Time Instructed Energy Schedule	Subset of RTD Optimal Energy from FMM and RTD Instructed Energy
[2]PGA Resources ESP Real Time Instructed Energy Schedule	RTD Optimal Energy + RTD SLIC Rerate Energy + RTD Minimum Load Instruction

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
ESP Ancillary Services Schedule	DA Spin Award + DA Self Provision Spin Award + DA Non Spin Award + DA Self Provision Non Spin Award + DA Regulation Up Award + DA Self Provision Regulation Up Award + DA Regulation Down Award + DA Self Provision Regulation Down Award + RT Spin Award + RT Non Spin Award + RT Regulation Up Award + RT Regulation Down Award)		
Notes:	• Calculated by Resource by hour for each ESP. • ESP FMM Load Following Self Schedule only applies to Intertie Self Schedules (Imports and Exports) and is a 5-minute product (divide by 12). • RT Ancillary Service Awards are 15-minute products and need to be divided by 4.		
Effective Trade Dates: 1/1/2012 – 4/30/2014			
Max (0, Abs (DA ESP Preferred Generation Energy Schedule) + Abs (DA Demand by LAP) + Abs (DA ESP Export Energy) + Abs (DA ESP Import Energy) - Abs (valid TOR Schedule) + Abs (HASP GMC ESP Export Energy Schedule) + Abs (HASP GMC ESP Import Energy Schedule) + Abs (ESP Real Time Instructed Energy Schedule) + Abs (ESP Ancillary Services Schedule)		ESP Estimate	Load: • DA City Demand Generation: • Project Entitlement Percentage Import / Export: • Participation Share
HASP GMC ESP Export Energy Schedule	Abs (HASP ESP Export Energy - (HASP ESP LF Export Energy Schedule - DA ESP Export Energy))		
HASP GMC ESP Import	Abs (HASP ESP Import Energy		

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Energy Schedule	- (HASP ESP LF Import Energy Schedule - DA ESP Import Energy))		
ESP Real Time Instructed Energy Schedule	Abs (Optimal Energy + SLIC Rerate Energy + Minimum Load Instruction + ESP RT Energy Self Schedule)		
ESP Ancillary Services Schedule	DA Spin Award + DA Self Provision Spin Award + DA Non Spin Award + DA Self Provision Non Spin Award + DA Regulation Up Award + DA Self Provision Regulation Up Award + DA Regulation Down Award + DA Self Provision Regulation Down Award + RT Spin Award + RT Non Spin Award + RT Regulation Up Award + RT Regulation Down Award)		
Notes:	• Calculated by Resource by hour for each ESP. • Valid TOR Schedule = min(ESP Final Import Schedule at Marble, Plumas CLAP meter) for each hour. • HASP ESP Export/Import Energy is the incremental Hour Ahead Energy that results from the Day Ahead Schedule. • RT Ancillary Service Awards are 15-minute products and need to be divided by 4.		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MW, MWh	Hourly	Daily	GMC	Location

GMC System Operations Charge - Charge Code 4561

1. Charge Code Description

This charge code is designed to recover costs the CAISO incurs for running the grid in Real Time. As such, this charge code will be applied to each Scheduling Coordinator's gross absolute value of actual Real Time Settlement Interval Energy flow (MWh).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 1/1/2012		
abs (Final ESP Import Energy) + abs (Final ESP Export Energy) + abs (Metered Generation) + abs (MSS Demand) - abs (valid TOR Schedule)	ESP Estimate	ESP Estimate by city
Notes:	• Calculated hourly and summed for the day. • Calculated by Resource by Settlement Interval for each ESP. • valid TOR Schedule = min(ESP Final Import Schedule at Marble, Plumas CLAP meter)	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Hourly	Daily	GMC	Location

GMC CRR Services Charge - Charge Code 4562

1. Charge Code Description

This charge code is designed to recover costs the CAISO incurs for running the CRR Auctions. As such, this charge code will be applied to each Scheduling Coordinator's total MW holdings of CRRs that are applicable to each hour based upon the Scheduling Coordinator's Daily Financial Node CRR Quantity.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 1/1/2012		
net CRR Quantity * number of applicable hours for each day as determined by the Time of Use	100% to NCPA Pool	(see steps outlined in *Charge Code 6700, Section 1*)
Notes:	• Santa Clara is a separate BA and will receive its own settlement charges (separate from NCPA SC). • NCPA settlements for CRRs will only be for NCPA Pool.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MW	Hourly	Daily	GMC	Entitlement

GMC Transmission Ownership Rights Charge - Charge Code 4563

1. Charge Code Description

   This charge code is designed to recover costs the CAISO incurs for implementing and running the markets and well as the grid in Real Time on behalf of Transmission Owners.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 1/1/2012		
absolute value of valid TOR Schedule	ESP Estimate	valid TOR Schedule
Valid TOR Schedule	min(ESP Final Import Schedule at Marble, Plumas CLAP meter)	
Notes:	• This charge will be allocated to Plumas-Sierra as it is the only TOR owner within NCPA. • Accordingly, Plumas' eligible TOR quantities are not subject GMC charges in charge codes 4560 and 4561.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Hourly	Daily	GMC	Control Area

GMC Scheduling Coordinator ID Charge - Charge Code 4575

1. Charge Code Description

   This charge code is a flat per month charge to Scheduling Coordinators who accrue settlement charges/credits during a Trade Month, excluding exemptions. Included in this charge are costs associated with Settlements, Metering, and Client Relations functions within the CAISO. These costs come primarily from software and debt service, with another large portion coming from direct and indirect labor.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
the current rate published by the CAISO	ESP Estimate	ESP Estimate by city
Notes:	• Currently set at $1000.00.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	Dollars	Monthly	Monthly	GMC	Control Area

HASP-Real Time Settlement Charge Group

Intermittent Resources Forecasting Service Fee - Charge Code 0701

1. Charge Code Description

   This charge code charges Business Associates for each eligible Intermittent Resource for the daily generation forecasts provided by an external Forecast Service Provider based on a FERC approved forecasted service rate per MWh based on actual Metered Generation.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 6/20/2013		
Metered Generation * Forecasting Service Rate	ESP Estimate	Project Entitlement Percentage
Notes:	• This currently affects only the Gridley-BART PV Solar project. • The Forecasting Service Rate is currently set to $0.10/MWh.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 6/20/2013					
Real Time	MWh	Hour	Monthly	Energy	Location

Intermittent Resources Net Deviation Settlement - Charge Code 0711

1. Charge Code Description

This charge code accounts for the net Uninstructed Imbalance Energy (UIE) deviations for eligible Participating Intermittent Resources (PIR). Eligibility is determined on an hourly basis; eligible Resources must have an Energy Schedule that is equal to the Energy Forecast for the Settlement Interval. If the Energy Schedule is not equal to the Energy Forecast for a given Settlement Interval, the UIE is settled like all other Resources in charge code 6475.

This charge code can be either a payment or a charge based upon the Monthly PIR Net Deviation Quantity. A negative quantity indicates the PIR under-scheduled as compared to their schedule on a net basis for the Trading Month resulting in a charge. A positive quantity indicates the PIR over-generated as compared to their Schedule on a net basis for the Trading Month resulting in a payment.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 6/20/2013		
-1 * (Metered Generation – RT Energy Self Schedule)	ESP Estimate	Project Entitlement Percentage
Notes:	• This currently affects only the Gridley-BART PV Solar project. • Calculated each hour and summed over the month.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 6/20/2013					
Real Time	MWh	Monthly	Monthly	Energy	Location

Intermittent Resources Net Deviation Allocation - Charge Code 0721

1. Charge Code Description

This charge code calculates the net monthly difference between the amounts accrued for eligible Participating Intermittent Resources in both charge code 6475 Real Time Uninstructed Imbalance Energy Settlement and charge code 6486 Real Time Excess Cost for Instructed Energy Allocation, then allocates the net monthly difference to all Scheduling Coordinators with Net Negative Uninstructed Deviations in the corresponding Trading Month.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
ESP Net Negative Uninstructed Deviation	ESP Estimate	City Measured Demand
Notes:	• Calculated for all ESPs per RT Balancing Group. • Refer to the section related to CAISO Settlement Charges due to Net Negative Uninstructed Deviations above for more details.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 4/1/2009					
Real Time	MWh	Monthly	Monthly	Energy	Balancing Group

Intermittent Resources Net Deviation Reversal - Charge Code 0722

1. Charge Code Description

This charge code reverses the amounts calculated for Participating Intermittent Resources (PIR) in charge codes 6475 (Real Time Uninstructed Imbalance Energy Settlement) and 6486 (Real Time Excess Cost for Instructed Energy Allocation).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 6/20/2013		
-1 * (6475 PIR amount + 6486 PIR amount)	ESP Estimate	Project Entitlement Percentage
Notes:	• Calculated by Intermittent Resource by ESP. • This currently affects only the Gridley-BART PV Solar project.	
	Effective Trade Dates: 6/20/2013 – 4/30/2014	
	• A PIR Forecast Test must be performed each hour for Intermittent Resources as follows: • the HASP Self Schedule must equal the ISO PIR HA Forecast for the same hour	
	• If PIR Forecast Test is 'true' UIE for Intermittent Resources in charge codes 6475 and 6486 must be reversed by calculating charge code 0722.	
	• If PIR Forecast Test is 'false' UIE for Intermittent Resources charge code 0722 must not be calculated.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 6/20/2013					
Real Time	Amount Only	Monthly	Monthly	Energy	Location

Monthly Intermittent Resource Export Energy Settlement - Charge Code 0751

1. Charge Code Description

   This charge code is designed to reimburse CAISO customers for the uplift costs incurred on behalf of the Participating Intermittent Resource (PIR) Export Energy. The reimbursement will be allocated to Scheduling Coordinators with Net Negative Deviations proportionately in Monthly Intermittent Resource Export Energy Allocation (Charge Code 0752).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 6/20/2013		
-1 * (Metered Generation – RT Energy Self Schedule)	ESP Estimate	Project Entitlement Percentage
Notes:	• Calculated by PIR Resource by ESP. • This currently affects only the Gridley-BART PV Solar project. • This charge code could be a charge or payment. • Those Intermittent Resources which export PIR Energy are determined by contract and will have a PTB PIR Export Percentage. • Only those Intermittent Resources which have a PTB PIR Export Percentage will be assessed in this charge code.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 6/20/2013					
Real Time	MWh	Monthly	Monthly	Energy	Location

Monthly Participating Intermittent Resources Export Energy Allocation - Charge Code 0752

1. Charge Code Description

Participating Intermittent Resources (PIR) have the right to export Energy and will be assessed a monthly charge in charge code 0751. Charge code 0752, then, is designed to reimburse CAISO customers for the uplift costs incurred on behalf of the PIR Export Energy and it will be allocated to Scheduling Coordinators with Net Negative Uninstructed Deviations in the corresponding Trading Month.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
ESP Net Negative Uninstructed Deviation	ESP Estimate	City Measured Demand
Notes:	• Calculated for all ESPs per RT Balancing Group. • Refer to the section related to CAISO Settlement Charges due to Net Negative Uninstructed Deviations above for more details.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 4/1/2009					
Real Time	MWh	Monthly	Monthly	Energy	Balancing Group

Black Start Energy Allocation - Charge Code 1353

1. Charge Code Description

   Black Start is an Ancillary Service that consists of dispatched Energy using self-started equipment following a system blackout. In the event that Black Start is required, costs incurred are allocated under this charge code based upon Measured Demand excluding RT Exports.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2011		
(-1) * ESP Non-PTO Net Measured Demand - valid TOR Schedule	ESP Estimate	City Net Measured Demand
Notes:	•	
Effective Trade Dates 4/1/2009 – 9/30/2011		
(-1) * ESP Net Measured Demand	ESP Estimate	ESP Estimate by city

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Hourly	Energy	Balancing Group

Metered Subsystem Positive Deviation Penalty Settlement - Charge Code 1407

1. Charge Code Description

   If Metered Generation and Imports into a Metered Subsystem (MSS) exceed the Metered Demand and Exports from, as well as the Energy expected to be delivered by the MSS by more than the MSS Deviation Band, then the payment for excess Energy outside of the MSS Deviation Band is rescinded. This rescinded amount is the Metered Subsystem Positive Deviation Penalty Settlement charge.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
max(0 , ESP Imbalance Energy – ESP Band) where ESP Band = .03*(ESP Metered Demand)	ESP Estimate	City Metered Demand
ESP Imbalance Energy	Calculated for each ESP as max(0 , sum(ESP Demand) + (sum(City Generation) * Compliance Fixed Loss Factor) + sum(MSSA Internal Generation) + RT NCPA MSS Trade + sum(Regulation Down Energy) - sum(Instructed Imbalance Energy) - sum(Regulation Up Energy) - DA CAISO Sale)	
RT NCPA MSS Trade	Calculated for each ESP as sum(ESP Final Import Schedule, excluding Marble Imports) * (1-Compliance Fixed Loss Factor) + sum(ESP Final Import Schedule at Marble) + sum(RT ESP Trade In) + sum(RT Inter-SC Trade In) + sum(RT Bilateral Trade In)	+ sum(MSS External Generation) + RT Grizzly Delivery - sum(MSS External Demand) - sum(ESP Final Export Schedule) - sum(RT ESP Trade Out) - sum(Final Bilateral Trade Out) - sum(RT Inter-SC Trade Out)

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
DA CAISO Sale	Calculated for each ESP as DA ESP Market Energy Schedule for MSSA Internal Generation * (1- Compliance Fixed Loss Factor) + DA ESP Market Energy Schedule for City Generation - DA MSS Scheduled Demand + DA Preferred NCPA MSS Trade		
DA Preferred NCPA MSS Trade	Calculated for each ESP as sum(DA ESP Preferred Import Energy, excluding Marble Imports) * (1- Compliance Fixed Loss Factor) + sum(DA ESP Preferred Import Energy, for Marble) + sum(DA ESP Preferred Bilateral Trade In) + sum(MSS External Generation) + sum(DA ESP Trade In)	+ sum(DA Inter-SC Trade In) - sum(DA ESP Preferred Export Energy) - sum(DA ESP Trade Out) - sum(MSS External Demand) - sum(DA ESP Preferred Bilateral Trade Out) - sum(DA Inter-SC Trade Out)	
Notes:	• As of 5/1/2014, Instructed Imbalance Energy includes both FMM Instructed Imbalance Energy and RTD Instructed Imbalance Energy. • Compliance Fixed Loss Factor must be set to 2 percent. • Refer to Schedule 19 of the Metered Subsystem Aggregation Agreement for more details.		

ESP Default Allocation	***Pool Default Allocation***
• *If an ESP Allocation Basis is not available in a given ten-minute interval, 1407 allocator must be allocated using the sum of the ten-minute basis in that hour.* • *If an Amount remains after running default allocation Tier 1, 1407 allocator must be set to ESP Measured Demand.*	*If DA City Demand for any Pool Member is less than the Tolerance, then 1407 allocator for Load for that Pool Member is set to DA City Demand Forecast.*

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
All	MWh	Five Minutes	Five Minutes	Penalty	Balancing Group
Effective Trade Dates: 4/1/2009 – 4/30/2014					
All	MWh	Ten Minutes	Ten Minutes	Penalty	Balancing Group

Metered Subsystem Negative Deviation Penalty Settlement - Charge Code 2407

1. Charge Code Description

If Metered Generation and Imports into a Metered Subsystem are insufficient to meet the Metered Demand and Exports from the Metered Subsystem as well as the Energy expected to be delivered by less than the Metered Subsystem Deviation Band, then an additional charge for the Imbalance Energy that serves the excess Metered Subsystem Demand is applied. The additional charge is the Metered Subsystem Negative Deviation Penalty Settlement charge.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
min(0 , ESP Imbalance Energy – ESP Band) where ESP Band = .03*(ESP Metered Demand)	ESP Estimate	City Metered Demand
Notes:	• See Charge Code 1407 above for the detailed ESP Imbalance Energy equation. • Refer to Schedule 19 of the Metered Subsystem Aggregation Agreement for more details.	
ESP Default Allocation		***Pool Default Allocation***
• *If an ESP Allocation Basis is not available in a given ten-minute interval, 2407 allocator must be allocated using the sum of the ten-minute basis in that hour.* • *If an Amount remains after running default allocation Tier 1, 2407 allocator must be set to ESP Measured Demand.*		*If DA City Demand for any Pool Member is less than the Tolerance, then 2407 allocator for Load for that Pool Member is set to DA City Demand Forecast.*

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
All	MWh	Five Minutes	Five Minutes	Penalty	Balancing Group
Effective Trade Dates: 4/1/2009 – 4/30/2014					
All	MWh	Ten Minutes	Ten Minutes	Penalty	Balancing Group

Energy Exchange Program (EEP) Neutrality Adjustment - Charge Code 1487

1. Charge Code Description

   This charge code is used to achieve Market Neutrality after the completion of an Energy Exchange. Scheduling Coordinators with Net Negative Uninstructed Deviation for a particular Real Time Settlement Interval are charged during a recalculation of the Trade date in question. These adjustments may appear on any statement where the CAISO decides to post rerun adjustments.

   Refer to the section related to *CAISO Settlement Charges due to* Net Negative Uninstructed Deviations above for more details.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
ESP Net Negative Uninstructed Deviation	ESP Estimate	City Measured Demand
Notes:	• Calculated for all ESPs per RT Balancing Group. • Refer to the section related to CAISO Settlement Charges due to Net Negative Uninstructed Deviations above for more details.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Ten Minutes	Ten Minutes	Financial Adjustment	Balancing Group

Over and Under Scheduling EIM Allocation – Charge Code 6046

1. Charge Code Description

   The total daily revenues collected for over scheduling and under scheduling under Charge Code 6045 – Over and Under Scheduling EIM Settlement will be allocated to each Balancing Authority Area (BAA) in the EIM area that was not subject to over scheduling or under scheduling assessment. Revenues are allocated within the EIM Area based upon Metered Demand. This allocation pertains to NCPA because NCPA is within the CAISO BAA.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2014		
ESP Metered Demand	ESP Estimate	City Metered Demand
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Daily	Daily	Financial Adjustment	Location

Intertie Schedules Decline Charges Allocation - Charge Code 6457

1. Charge Code Description

   In line with the CAISO Tariff, this charge code provides Scheduling Coordinators with a credit as their share of the total of all Decline Monthly Charges – Imports and Decline Monthly Charges – Exports for the applicable Trading Month. The payment credits are allocated in proportion to each Scheduling Coordinator's Measured CAISO Demand (in MWh) relative to the total Measured CAISO Demand for the CAISO Balancing Authority Area during the Trading Month.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * (ESP Measured Demand – valid TOR Schedule)	ESP Estimate	City Measured Demand - valid TOR Schedule
Valid TOR Schedule	• min(ESP Final Import Schedule at Marble, Plumas CLAP meter)	
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Monthly	Monthly	Energy	Control Area

FMM Instructed Imbalance Energy (IIE) Settlement - Charge Code 6460 for Participating Generator (PGA) Resources

1. Charge Code Description

This charge code is based upon the calculated Energy expected to be produced or consumed as a result of responding to Fifteen Minute Market (FMM) Dispatch Instructions. Expected Energy is the total Energy expected to be generated or consumed by a resource and includes the Energy awarded from the Integrated Forward Market. FMM Instructed Imbalance Energy (IIE) is the difference between FMM Expected Energy and the applicable DA Energy Schedule for each Resource. FMM Instructed Imbalance Energy consists of one or more of the following types of Energy:

- FMM Optimal Energy
- FMM Incremental & Decremental System Exceptional Dispatch Energy (Test Energy, AS Test Energy, System Emergency, TMODEL Energy, and NonTMODEL Energy)
- FMM Minimum Load Energy
- FMM SLIC Rerate Energy

Note: Optimal Energy is economic Energy that is dispatched from a submitted Energy Bid curve and/or Ancillary Service Capacity. It is calculated as any remaining IIE after subtracting SLIC Rerate Energy, Exceptional Dispatch Energy, and Minimum Load Energy.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
6460 IIE Billable Quantity + 6460 Exceptional Billable Quantity	ESP Estimate	Generation Entitlement Share
6460 IIE Billable Quantity	FMM Optimal Energy + FMM Minimum Load Energy + FMM SLIC Rerate Energy	
6460 Exceptional Billable Quantity	+ Incremental FMM System Exceptional Dispatch Energy + Decremental FMM System Exceptional Dispatch Energy	
FMM System Exceptional Dispatch Energy	FMM Exceptional Dispatch Energy + FMM System Emergency + FMM Transmission Model Exception Dispatch Energy + FMM Non Transmission Model Exception Dispatch Energy + FMM AS Test Energy + FMM Test Energy	

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Notes:	• Calculated by Resource by ESP by Settlement Interval by IIE Type. • The CAISO categorizes Standard Ramping Energy as part of FMM Expected Energy results. For implementation, Standard Ramping Energy ('SRE') must be filtered out to avoid unnecessary differences between ESP Estimates and ISO Statements.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
FMM	MWh	Five Minutes	Five Minutes	Energy	Location

FMM Instructed Imbalance Energy (IIE) Settlement - Charge Code 6460 for MSSA Resources

1. Charge Code Description

This charge code is based upon the calculated Energy expected to be produced or consumed as a result of responding to Fifteen Minute Market (FMM) Dispatch Instructions as indicated in the Unit Energy Allocation (UEA) section above. FMM Instructed Imbalance Energy consists of one or more of the following components:

- FMM Optimal Energy
- FMM Incremental & Decremental System Exceptional Dispatch Energy (Test Energy, AS Test Energy, System Emergency, TMODEL Energy, and NonTMODEL Energy)
- FMM Minimum Load Energy
- FMM SLIC Rerate Energy

Note: Optimal Energy is dispatched from FMM Energy and/or Ancillary Service Capacity (Spin or Non Spin) Bids.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
FMM Energy Schedule - Day Ahead Final Generation Schedule	Calculated directly by NCPA NADS application for each ESP	Project Entitlement Percentage
Notes:	• Allocated to each ESP or OE based on bid share. • If no bid exists, awarded, valid FMM_SUPP is allocated among applicable OEs based on Project Entitlement Percentage. • FMM and DA Schedules are 15-minutes and hourly, respectively. Divide both types of schedules by 12 to settle on a 5 minute basis. • HASP Reversal: DA Import/Export Schedules reduced prior to the HASP availability and without a corresponding e-tag. This doesn't apply to DA ETC and TOR Self Schedule.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
FMM	MWh	Five Minutes	Five Minutes	Energy	Location

Real Time Instructed Imbalance Energy (IIE) Settlement - Charge Code 6470 for Participating Generator (PGA) Resources

1. Charge Code Description

This charge code is based upon the calculated Energy expected to be produced or consumed as a result of responding to Real Time Dispatch (RTD) Instructions. Expected Energy is the total Energy expected to be generated or consumed by a Resource and includes the Energy awarded from the Integrated Forward Market. RTD Instructed Imbalance Energy (IIE) is the difference between total Expected Energy and the applicable DA Energy Schedule for each Resource. RTD Instructed Imbalance Energy consists of one or more of the following types of Energy:

- RTD Optimal Energy
- Ramping Energy Deviation
- Residual Imbalance Energy
- RTD Incremental & Decremental System Exceptional Dispatch Energy (includes TOR & ETC Energy, Transmission Emergency Energy, Test Energy, AS Test Energy, System Emergency, TMODEL Energy, and NonTMODEL Energy)
- Regulation Energy
- Standard Ramping Energy
- RTD Minimum Load Energy
- RTD SLIC Rerate Energy

Note: Optimal Energy is economic Energy that is dispatched from a submitted Energy Bid curve and/or Ancillary Service Capacity. It is calculated as any remaining IIE after subtracting Ramping Energy Deviation, Standard Ramping Energy, Residual Imbalance Energy, SLIC Rerate Energy, RT Energy Self Schedule, Exceptional Dispatch Energy, and Minimum Load Energy.

Any remaining Imbalance Energy quantities, that otherwise would be categorized as Uninstructed Imbalance Energy, that fall within the range of any Regulation Up Awards or Regulation Down Awards is categorized as a form of IIE.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
6470 IIE Billable Quantity + 6470 Exceptional Billable Quantity + Regulation Energy + Standard Ramping Energy	ESP Estimate	Generation Entitlement Share

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
6470 IIE Billable Quantity	RTD Optimal Energy + Ramping Energy Deviation + Residual Imbalance Energy + RTD Minimum Load Energy + RTD SLIC Rerate Energy	
6470 Exceptional Billable Quantity	+ Incremental RTD System Exceptional Dispatch Energy + Decremental RTD System Exceptional Dispatch Energy	
RTD System Exceptional Dispatch Energy	RTD Exceptional Dispatch Energy + RTD Test Energy + RTD Non Transmission Model Exception Dispatch Energy + RTD AS Test Energy + RTD System Emergency	
Regulation Energy	Calculated for each Settlement Interval as follows: • If Settlement Interval Imbalance Energy Difference >= 0, min((Regulation Up Self Provision + Regulation Up Awards), Settlement Interval Imbalance Energy Difference) • If Settlement Interval Imbalance Energy Difference < 0, max (-1 * (Regulation Down Self Provision + Regulation Down Award), Settlement Interval Imbalance Energy Difference)	
Settlement Interval Imbalance Energy Difference	(Metered Generation) - DA Final Generation Schedule - 6470 IIE Billable Quantity - 6470 Exceptional Billable Quantity - 6460 FMM Exceptional Billable Quantity - 6460 FMM IIE Billable Quantity - Standard Ramping Energy	
Notes:	• Metered Generation and DA Final Generation Schedule must be divided by 12. • Regulation Up Award = DA ESP Regulation Up Award + sum(Final ESP Regulation Up Award) • Regulation Down Award = DA ESP Regulation Down Award + sum(Final ESP Regulation Down Award)	

<table>
<tr><th colspan="2">ESP Estimate</th><th>ESP Allocation Basis</th><th>Pool Allocation Basis</th></tr>
<tr><td colspan="2"></td><td colspan="2">• Calculated by Resource by ESP by Settlement Interval by IIE Type.</td></tr>
<tr><td colspan="4">Effective Trade Date: 5/1/2012 – 4/30/2014</td></tr>
<tr><td colspan="2">Optimal Energy
+ Standard Ramping Energy
+ Ramping Energy Deviation
+ SLIC Rerate Energy
+ Residual Imbalance Energy
+ RT Energy Self Schedule
+ Incremental System Exceptional Dispatch Energy
+ Decremental System Exceptional Dispatch Energy
+ Real Time Minimum Load Energy
+ 6470 Regulation Billable quantity</td><td>ESP Estimate</td><td>Generation Entitlement Share</td></tr>
<tr><td rowspan="2">Notes:</td><td colspan="3">Regulation Energy must be calculated for each Settlement Interval as follows:
• If Settlement Interval Imbalance Energy Difference > 0
Regulation Up Energy = min((Regulation Up Award /6), Settlement Interval Imbalance Energy Difference)
• If Settlement Interval Imbalance Energy Difference < 0
Regulation Down Energy = max((-1* Regulation Down Award), Settlement Interval Imbalance Energy Difference)</td></tr>
<tr><td>System Exceptional Dispatch Energy =
Exceptional Dispatch Energy
+ Pretest Energy
+ Non Transmission Model Exception Dispatch Energy
+ AS Test Energy
+ System Emergency</td><td colspan="2">Settlement Interval Imbalance Energy Difference =
(Metered Generation /6)
- (DA Final Generation Schedule /6)
- Optimal Energy
- Standard Ramping Energy
- Ramping Energy Deviation
- SLIC Rerate Energy
- Residual Imbalance Energy
- RT Energy Self Schedule
- System Exceptional Dispatch Energy
- Real Time Minimum Load Energy
- Load Following Energy</td></tr>
</table>

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
	• Regulation Up Award = DA ESP Regulation Up Award + .25 * sum(Final ESP Regulation Up Award) • Regulation Down Award = DA ESP Regulation Down Award + .25 * sum(Final ESP Regulation Down Award)	
	• Calculated by Resource by ESP by Settlement Interval by IIE Type. • Effective 5/1/2012: Non-retroactive implementation for PGA Resources.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Energy	Location
Effective Trade Date: 5/1/2012 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Energy	Location

Real Time Instructed Imbalance Energy (IIE) Settlement - Charge Code 6470 for MSSA Resources

1. Charge Code Description

This charge code is based upon the calculated Energy expected to be produced or consumed as a result of responding to Real Time Dispatch (RTD) Instructions as indicated in the Unit Energy Allocation (UEA) section above. RTD Instructed Imbalance Energy consists of one or more of the following components:

- RTD Optimal Energy (includes Emergency Energy)
- Ramping Energy Deviation
- Residual Imbalance Energy
- RTD Minimum Load Energy
- RTD SLIC Rerate Energy
- RTD Incremental & Decremental Exceptional Dispatch Energy
- Regulation Energy
- Metered Subsystem Load Following Energy
- Standard Ramping Energy
- Operational Adjustments

Note: Optimal Energy is dispatched from Real Time Energy and/or Ancillary Service Capacity (Spin or Non Spin) Bids.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
Spinning Reserve Energy + Non Spinning Reserve Energy + Regulation Up Energy - Regulation Down Energy + Incremental Supplemental Energy - Decremental Supplemental Energy + RTD Exceptional Energy + RTD Load Following Up Energy + RTD Load Following Down Energy + Operational Adjustment Import + (-1 * Operational Adjustment Export) + Standard Ramp Quantity	Calculated directly by NCPA and summed into 9919	(see Settlement for Instructed and Uninstructed Energy section above)
Operational Adjustment Import	ESP Final Import Schedule - ESP FMM Import Schedule	

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Operational Adjustment Export	ESP Final Export Schedule - ESP FMM Export Schedule	
Notes:	• See Section 10 above for more details on Operational Adjustments.	
Effective Trade Date: 4/1/2009 – 4/30/2014		
Spinning Reserve Energy + Non Spinning Reserve Energy + Regulation Up Energy - Regulation Down Energy + Incremental Supplemental Energy - Decremental Supplemental Energy + Exceptional Energy + Load Following Up Energy - Load Following Down Energy + Real Time Operational Adjustment Import + (-1) * Real Time Operational Adjustment Export + Standard Ramp Quantity	sum for each Resource the CAISO settlements of 6470 Billable quantity and 6475 Billable quantity into NCPA charge code 9919	(see Settlement for Instructed and Uninstructed Energy section above)
Notes:	• See Section 10 above for more details on Operational Adjustments.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Energy	Location
Effective Trade Date: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Energy	Location

Real Time Unaccounted for Energy (UFE) Settlement - Charge Code 6474

1. Charge Code Description

For each Settlement Interval, the CAISO determines Unaccounted for Energy (UFE) based on Meter Data and allocates the cost of the UFE to Scheduling Coordinators (SCs). The allocation is based on their metered CAISO Demand within each Utility Service Area of a Utility Distribution Company (UDC). UFE is the quantity of Energy that represents the difference between the net Energy delivered into a UDC Service Area and the total net-metered Demand (with respect to Generation) within the UDC Service Area, after accounting for the effects of Transmission Losses within the UDC Service Area.

Note: The NCPA MSSA is its own UDC.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
ESP Measured Demand/sum(ESP Measured Demand) * UFE Quantity	ESP Estimate	City Measured Demand
UFE Quantity	Metered Generation + Net Interchange Energy - MSS Demand	
Notes:	• Prior to 5/1/2014, Metered Generation must be divided by 6. After 5/1/2014, Metered Generation must be divided by 12. • NCPA separates UFE by MSSA vs. non-MSSA (PG&E) locations. • UFE charges are expected to be $0. • Generating Resources 'OXMTN_6_LNDFIL', 'GRNVLY_7_SCLAND', and 'RICHMN_7_BAYENV' are not included in the UFE calculation.	
ESP Default Allocation		***Pool Default Allocation***
ESP Measured Demand		*N/A*

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Energy	Location
Effective Trade Date: 4/1/2009 – 4/30/2014					

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Hourly	Hourly	Energy	Location

Real Time Uninstructed Imbalance Energy (UIE) Settlement - Charge Code 6475 for Participating Generator Agreement (PGA) Resources

1. Charge Code Description

   This charge code accounts for the payment or charge for Uninstructed Imbalance Energy (UIE) associated with a Resource. Uninstructed Imbalance Energy accounts for deviations' from a Resource's Instructed Imbalance Energy (IIE).

   Note: Any change of a Resource's output which is not in precise accord with the CAISO's intentions are considered Uninstructed.

2. Charge Code Implementation

   2.1. Charge Code Implementation (Charge Code 6475):

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
Settlement Interval Imbalance Energy Difference – Regulation Energy)	ESP Estimate	Generation Entitlement Share
Settlement Interval Imbalance Energy Difference	Metered Generation - DA Final Generation Schedule - 6470 IIE Billable Quantity - 6470 Exceptional Billable Quantity - 6460 IIE Billable Quantity - 6460 Exceptional Billable Quantity - Standard Ramping Energy	
Regulation Energy	Calculated for each Settlement Interval as follows: • If Settlement Interval Imbalance Energy Difference >= 0, min((Regulation Up Self Provision + Regulation Up Awards), Settlement Interval Imbalance Energy Difference) • If Settlement Interval Imbalance Energy Difference < 0, max (-1 * (Regulation Down Self Provision + Regulation Down Award), Settlement Interval Imbalance Energy Difference)	

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Notes:	• DA Generation and Metered Generation divide by 12. • Regulation Up Award = DA ESP Regulation Up Award + sum(Final ESP Regulation Up Award) • Regulation Down Award = DA ESP Regulation Down Award + sum(Final ESP Regulation Down Award)	
	• Calculated by Resource by ESP by Settlement Interval by UIE Type. • For more information see Settlement for Instructed and Uninstructed Energy for PGA Resources section above	
Effective Trade Date: 5/1/2012 – 4/30/2014		

1. UIE =
Settlement Interval Imbalance Energy Difference
– Regulation Energy)
2. UIE1:
If UIE >= 0 then
UIE1 =
min(UIE, (-1) * min(0, Optimal Energy
+ Real Time Minimum Load Energy
+ Ramping Energy Deviation
+ SLIC Rerate Energy
+ RT Energy Self Schedule
+ Residual Imbalance Energy
+ Incremental System Exceptional Dispatch Energy))
If UIE < 0 then
UIE1 =
Max(UIE, (-1) * max(0, Optimal Energy
+ Real Time Minimum Load Energy
+ Ramping Energy Deviation
+ SLIC Rerate Energy
+ RT Energy Self Schedule
+ Residual Imbalance Energy
+ Incremental System Exceptional Dispatch Energy))
	ESP Estimate	Generation Entitlement Share

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
3. UIE2 = UIE – UIE1			
Notes:	System Exceptional Dispatch Energy = Exceptional Dispatch Energy + Pretest Energy + Non Transmission Model Exception Dispatch Energy + AS Test Energy + System Emergency	Settlement Interval Imbalance Energy Difference = (Metered Generation /6) - (DA Final Generation Schedule /6) - Optimal Energy - Standard Ramping Energy - Ramping Energy Deviation - SLIC Rerate Energy - Residual Imbalance Energy - RT Energy Self Schedule - System Exceptional Dispatch Energy - Real Time Minimum Load Energy - Load Following Energy	
	• Calculated by Resource by ESP by Settlement Interval by UIE Type. • For more information see Settlement for Instructed and Uninstructed Energy for PGA Resources section above. • Effective 5/1/2012: Non-retroactive implementation for PGA Resources.		

2.2. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Energy	Location
Effective Trade Date: 5/1/2012 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Energy	Location

Real Time Uninstructed Imbalance Energy (UIE) Settlement - Charge Code 6475 for MSSA Resources

1. Charge Code Description

This charge code accounts for the payment or charge for Uninstructed Imbalance Energy (UIE) associated with a Resource. Uninstructed Imbalance Energy accounts for deviations' from a Resource's Instructed Imbalance Energy (IIE).

Note: Any change of a Resource's output which is not in precise accord with the CAISO's intentions are considered Uninstructed.

1.1. NCPA Exceptions

See *Pool Settlement for Instructed and* Uninstructed Energy *for* MSSA Resource*s section* above.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
Generation: Metered Generation - DA Final Generation Schedule - 6470 Billable Quantity - 6460 Billable Quantity Demand: -1* (ESP Metered Demand - DA Load Schedule	Calculated directly by NCPA and summed into 9919	Pool9919MWh - Pool6470MWh
Notes:	• For more information see Settlement of Instructed and Uninstructed Energy for MSSA Resources section above. • Metered Generation is determined by UEA and described in the UEA section above.	
Effective Trade Date: 4/1/2009 – 4/30/2014		
Generation: • (Metered Generation – DA Final Schedule for Generation – 6470 Billable quantity) Demand: • -1* (ESP Metered Demand – DA Final	Calculated directly by NCPA and summed into 9919	Pool6475MWh = Pool9919MWh - Pool6470MWh

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Schedule for Load)		
Notes:	• For more information see Settlement of Instructed and Uninstructed Energy for MSSA Resources Section above. • Metered Generation is determined by UEA described in Section 3 above.	

ESP Default Allocation	***Pool Default Allocation***
N/A	*If DA City Demand for any Pool Member is less than the Tolerance, then 6475 allocator for DA Load Schedule for that Pool Member must be set to DA City Demand Forecast.*

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Energy	Location
Effective Trade Date: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Energy	Location

Real Time Imbalance Energy Offset Settlement - Charge Code 6477

1. Charge Code Description

This charge code provides Neutrality for FMM and RTD Instructed Imbalance Energy (IIE), Uninstructed Imbalance Energy (UIE), and Unaccounted for Energy (UFE), factoring in the Loss credits and charges to Transmission Ownership Rights (TOR) holders. This charge allocates the Real Time Imbalance Energy Offset amounts to all Scheduling Coordinators based on a pro rata share of their Measured Demand excluding the valid and balanced Demand quantity from contract Self Schedules for which Day Ahead and/or Real Time TOR Loss credits were provided for the relevant Settlement Interval.

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2011			
(-1) * ESP Non-PTO Net Measured Demand		ESP Estimate	City Net Measured Demand
Notes:	• Neutrality for FMM and RTD Instructed Imbalance Energy (IIE), Uninstructed Imbalance Energy (UIE), Unaccounted for Energy (UFE), including Marginal Losses. • This offset is exclusive of the FMM/RT Congestion Cost offset covered in charge code 6774. • FMM is effective Trade Date 5/1/2014.		
Effective Trade Dates 4/1/2009 – 9/30/2011			
(-1) * ESP Net Measured Demand		ESP Estimate	ESP Estimate by city

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Energy	Balancing Group
Effective Trade Date: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Energy	Balancing Group

Real Time System Imbalance Energy Offset - Charge Code 6478

1. Charge Code Description

To the extent that the sum of the Settlement Amounts for Instructed Imbalance Energy, Uninstructed Imbalance Energy, and Unaccounted For Energy, Greenhouse Gas Compensation, Real Time AS Imports Congestion, Day Ahead Virtual Award Settlements in Real Time, and each EIM area Balancing Authority Area Neutrality, less the Real Time 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 this charge code for the resulting differences to all Scheduling Coordinators based on a pro rata share of their EIM Measured Demand.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 11/1/2014		
ESP Measured Demand	ESP Estimate	City Measured Demand
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Five Minutes	Five Minutes	Energy	Balancing Group

Excess Cost Neutrality Allocation - Charge Code 6480

1. Charge Code Description

This charge code is the Tier 2 allocation of Excess Costs and allocates the portion of Excess Cost Payments that is in excess of the Net Negative Uninstructed Imbalance Energy (UIE) quantity collected for that Settlement Interval.

If the total quantity of Energy procured in charge code 6482 is greater than the quantity of Net Negative Uninstructed Imbalance Energy (UIE), only the portion of Excess Costs up to the Net Negative UIE is allocated in charge code 6486, the remaining amount is recovered by Measured Demand excluding Demand served through Transmission rights in this charge code.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2011		
(-1) * ESP Non-PTO Net Measured Demand - valid TOR Schedule	ESP Estimate	City Net Measured Demand
Notes:	•	
Effective Trade Dates 4/1/2009 – 9/30/2011		
(-1) * ESP Net Measured Demand	ESP Estimate	ESP Estimate by city

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Financial Adjustment	Balancing Group
Effective Trade Date: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Financial Adjustment	Balancing Group

Real Time Excess Cost for Instructed Energy Settlement - Charge Code 6482

1. Charge Code Description

This charge code accounts for the payment due to a Resource for an incremental Exceptional Dispatch for Instructed Imbalance Energy (Out of Market Energy) in the Fifteen Minute and Real Time Markets for costs in excess of the Resource-Specific FMM Interval LMP or Settlement Interval Real Time LMP.

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014			
sum of 6470 Billable quantity and 6460 billable quantity associated with Exceptional Dispatch for SYSEMR or TEMR exceptional type		ESP Estimate	Project Entitlement Percentage
Notes:	• Only applicable for eligible Instructed *Incremental* Energy. • Eligible Instructed *Decremental* Energy is settled in charge codes 6460 and 6470.		
Effective Trade Date: 4/1/2009 – 4/30/2014			
6470 Billable quantity associated with Exceptional Dispatch for SYSEMR or TEMR exceptional type		ESP Estimate	Project Entitlement Percentage
Notes:	• Only applicable for eligible Instructed *Incremental* Energy. • Eligible Instructed *Decremental* Energy is settled in charge code 6470.		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Financial Adjustment	Location
Effective Trade Date: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Financial Adjustment	Location

Real Time Excess Cost for Instructed Energy Allocation - Charge Code 6486

1. Charge Code Description

Excess Costs are allocated in two Tiers based upon total Net Negative Uninstructed Deviation Energy and Measured Demand, excluding Demand served through Transmission Ownership Rights (TORs). This charge code is the Tier 1 allocation and allocates the Excess Cost Payments to Scheduling Coordinators based upon the lesser of:

a) the pro rata share of Excess Cost Payments based on the ratio of each Scheduling Coordinator's Net Negative Uninstructed Imbalance Energy (UIE) to the total CAISO Net Negative UIE, or

b) the product of the Scheduling Coordinator's Net Negative UIE and a weighted average price for that Dispatch interval.

Resources that have Energy Bids available in the Real Time Market but are not dispatched by CAISO for that interval are exempt from this charge to the extent their Energy Bid quantity covers their Net Negative UIE.

Refer to the section related to CAISO Settlement Charges due to Net Negative Uninstructed Deviations above for more details.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
ESP Net Negative Uninstructed Deviation	ESP Estimate	City Measured Demand
Notes:	• Calculated for all ESPs per RT Balancing Group. • Refer to the section related to CAISO Settlement Charges due to Net Negative Uninstructed Deviations above for more details.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Financial Adjustment	Balancing Group
Effective Trade Date: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Financial Adjustment	Balancing Group

Exceptional Dispatch Uplift Settlement - Charge Code 6488

1. Charge Code Description

   This charge code accounts for the Excess Cost Payment (Uplift) above the Resource-Specific Real Time LMP up to the Bid Price for Exceptional Dispatches that are used to mitigate or resolve Congestion as a result of Transmission-related modeling limitations in the Full Network Model (FNM).

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014			
sum of 6470 Billable quantity and 6460 billable quantity associated with Exceptional Dispatch for TMODEL exceptional type		ESP Estimate	(ESP Estimate by city)
Effective Trade Date: 4/1/2009 – 4/30/2014			
6470 Billable quantity associated with Exceptional Dispatch for TMODEL exceptional type		ESP Estimate	(ESP Estimate by city)
Notes:	• Applicable to Resources with and without Bids.		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Financial Adjustment	Location
Effective Trade Date 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Financial Adjustment	Location

Real Time Congestion Offset - Charge Code 6774

1. Charge Code Description

This charge code allocates the Real Time Energy and Ancillary Service Congestion revenues net the Real Time Market Congestion Credit settlement amount to Scheduling Coordinators based upon their Measured Demand, excluding ETC or TOR Self Schedules for which a Real Time Congestion Credit was provided.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2011		
(-1) * (ESP Non-PTO Net Measured Demand – CLAP Demand)	ESP Estimate	City Net Measured Demand – CLAP Demand
Notes:	• ESP Non-PTO Net Measured Demand = ESP Net Measured Demand - Net Grizzly Energy • This is either a payment or charge allocation for net RT Congestion revenues.	
Effective Trade Dates 8/27/2009 – 9/30/2011		
(-1) * (ESP Net Measured Demand – CLAP Demand)	ESP Estimate	ESP Estimate by city
Effective Trade Date: 4/1/2009 - 8/26/2009		
(-1) * (ESP Net Measured Demand)	ESP Estimate	ESP Estimate by city

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Date: 5/1/2014					
Real Time	MWh	Five Minutes	Hourly	Financial Adjustment	Balancing Group
Effective Trade Date: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Hourly	Financial Adjustment	Balancing Group

Real Time Market Congestion Credit Settlement - Charge Code 6788

1. Charge Code Description

   This charge code computes the Congestion credits (which can be positive or negative) to the designated Billing Scheduling Coordinators of ETC/TORs for valid and balanced Self Schedules post-Day Ahead Market. The post-Day Ahead Self Schedule considers the TOR and ETC Schedule change, including changes submitted to the Fifteen Minute Market and closer to the Real Time Market where allowed by the contract.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
DA ETC/TOR Source Schedule - min(MSS Demand, Final ETC/TOR Source Schedule) - (DA ETC/TOR Sink Schedule - min(MSS Demand, Final ETC/TOR Sink Schedule))	ESP Estimate	ESP Estimate
Notes:	• Only applicable to post-Day Ahead valid and balanced Sink and Source ETC/TOR Schedules. • Post-Day Ahead Schedules are incremental to the Day Ahead Schedule.	
Effective Trade Date: 4/1/2009 – 4/30/2014		
((Final ETC/TOR Source Schedule - DA ETC/TOR Source Schedule) * RT MCC Source) - ((Final ETC/TOR Sink Schedule - DA ETC/TOR Sink Schedule) * RT MCC Sink)	ESP Estimate	ESP Estimate
Notes:	• Only applicable to post-Day Ahead valid and balanced Sink and Source ETC/TOR Schedules. • Post-Day Ahead Schedules are incremental to the Day Ahead Schedule. • Pool Allocation will need modification if NCPA Pool Schedules to Pool SOT.	

ESP Default Allocation	***Pool Default Allocation***
ESP Measured Demand	*N/A*

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 5/1/2014					
Real Time	Dollars	Five Minutes	Hourly	Financial Adjustment	Entitlement
Effective Trade Dates: 4/1/2009 – 4/30/2014					
Real Time	Dollars	Ten Minutes	Hourly	Financial Adjustment	Entitlement

Transmission Loss Obligation Charge for Real Time Schedules Under Control Agreements - Charge Code 6976

1. Charge Code Description

This charge code accounts for supplemental Transmission Losses applied to Energy Imports or Exports over Transmission Lines adjacent to the CAISO Balancing Authority Area, yet within the jurisdiction of CAISO control. Operating agreements for the purpose of collection and allocation of contractual line Losses have been in existence prior to the creation of the CAISO.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
(-1) * (ESP Final Export Schedule or ESP Final Import Schedule) * Fixed Loss Factor	ESP Estimate	Participation Share
Notes:	• Initial implementation must be filtered to only show MOENKOPI. • Only applicable to Interchange Schedules across specific CAISO Tiepoints with such Control Agreements (ex. FCORNR_5_PSUEDO, MOENKO_5_PSUEDO, SYLMAR_2_NOB.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Losses	Location
Effective Trade Dates: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Losses	Location

Allocation of Transmission Loss Obligation Charge for Real Time Schedules Under Control Agreements - Charge Code 6977

1. Charge Code Description

   This charge code allocates the Settlement Interval Loss charges collected in charge code 6976 based upon a Scheduling Coordinator's percentage of Balancing Authority Area Measured Demand (excluding Losses).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2011		
(-1) * ESP Non-PTO Net Measured Demand - valid TOR Schedule	ESP Estimate	City Net Measured Demand
Notes:		
Effective Trade Dates 4/1/2009 – 9/30/2011		
(-1) * ESP Net Measured Demand	ESP Estimate	ESP Estimate by city
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Effective Trade Dates: 5/1/2014					
Real Time	MWh	Five Minutes	Five Minutes	Losses	Balancing Group
Effective Trade Dates: 4/1/2009 – 4/30/2014					
Real Time	MWh	Ten Minutes	Ten Minutes	Losses	Balancing Group

Real Time Marginal Losses Offset - Charge Code 6985

1. Charge Code Description

The Real Time Marginal Losses Offset for each Balancing Authority Area (BAA) is the sum for each BAA of the product of 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 the Imbalance Energy, at that Resource location.

This charge code will be allocated to the relevant EIM Entity SC in charge code 68950 for EIM Area BAAs, and for the CAISO BAA in this charge code 6895. The Real Time Marginal Losses Offset amount for CAISO BAA shall be allocated to Measured Demand, excluding Demand associated with TOR Self-Schedules for which IFM and RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules were provided.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2014		
(-1) * ESP Non-PTO Net Measured Demand	ESP Estimate	City Net Measured Demand
Notes:		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Real Time	MWh	Five Minutes	Five Minutes	Energy	Balancing Group

Inter-SC Trades Charge Group

Day Ahead Inter-SC Trades Settlement - Charge Code 6301

1. Charge Code Description

This charge code accounts for Energy Trades between Scheduling Coordinator in the Day Ahead Market. An Inter-SC Trade (IST) of Energy is an Energy quantity traded from one Scheduling Coordinator to another Scheduling Coordinator. The Location of an Inter-SC Trade of Energy can be a PNode, a Default Load Aggregation Point (LAP), or an Existing Zone (EZ) Generation Hub. Valid Physical Trades are settled at the LMP at the PNode. Converted Physical Trades (CPTs), which are Physical Trades or portions of Physical Trades that are not validated after the close of the Day Ahead Market, are settled at the relevant Existing Zone (EZ) Generation Hub Price.

An Inter-SC Trade (IST) involves two Scheduling Coordinators (SCs): the "From" SC and the "To" SC.

The "From" SC is charged the product of the valid quantity of the "From" Inter-SC Trade and the LMP at the appropriate PNode, EZ Generation Hub, or Default LAP.

The "To" SC is paid the product of the valid quantity of the "To" Inter-SC Trade and the LMP at the appropriate PNode, EZ Generation Hub, or Default LAP.

Inter-SC Trades of Energy are settled on an hourly basis at the DA LMP or LAP of the location of the Trade.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009		
+ DA Inter-SC Trade In - DA Inter-SC Trade Out	ESP Estimate	Current Commission-approved Budget Methodology Percentage or Participation Share
Notes:	• Each Schedule is priced separately at the DA LMP or DA LAP.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Hourly	Trade	Location & Counterparty

FMM Inter-SC Trades Settlement - Charge Code 6371

1. Charge Code Description

This charge code accounts for Energy Trades between Scheduling Coordinators submitted during the Fifteen Minute Market (FMM). An Inter-SC Trade (IST) of Energy is an Energy quantity (MWh) traded from one Scheduling Coordinator to another Scheduling Coordinator. The Location of an Inter-SC Trade of Energy can be a PNode, a Default Load Aggregation Point (LAP), or an Existing Zone (EZ) Generation Hub. Valid Physical Trades are settled at the LMP at the PNode. Converted Physical Trades (CPTs), which are Physical Trades or portions of Physical Trades that are not validated after the close of the Fifteen Minute Market, are settled at the relevant Existing Zone (EZ) Generation Hub Price.

An Inter-SC Trade (IST) involves two Scheduling Coordinators (SCs): the "From" SC and the "To" SC. The "From" SC is charged the same amount that the "To" SC is paid.

Inter-SC Trades of Energy are settled on an hourly basis at the simple average of the four FMM interval LMPs.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 5/1/2014		
+ FMM Inter-SC Trade In - FMM Inter-SC Trade Out	ESP Estimate	Current Commission-approved Budget Methodology Percentage or Participation Share
Notes:	• Each Schedule is priced separately at the simple average of the four FMM interval LMPs at the relevant Pnode or LAP.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
FMM	MWh	Hourly	Hourly	Trade	Location & Counterparty

Resource Adequacy Charge Group

Monthly Resource Adequacy Availability Incentive Mechanism Settlement - Charge Code 8830

1. Charge Code Description

   This charge code is part of the CAISO's incentive mechanism for Resource Adequacy (RA) Resources that meet their bidding obligation and provide energy bids to the Market. The Resource Adequacy Availability Incentive Mechanism (RAAIM) establishes a monthly standard that RA Resources are expected to perform. RA Resources that fail to meet the threshold are subject to penalty (charge code 8830), while RA Resources that exceed the threshold may receive a payment (charge code 8831).

   Resource Adequacy Capacity is determined within three types: Generic RA, Flexible RA and Capacity Procurement Mechanism* (CPM) RA. The monthly performance of an RA Resource is measured by the Availability of the resource in the CAISO Market. Availability is calculated based on a resource's submission of bids to meet their RA bidding obligation on designated assessment hours.

   *Resource Adequacy Availability Incentive Mechanism (RAAIM) replaces the Standard Capacity Product (SCP).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 6/1/2016 **CPM: Financially binding as of 6/1/2016; RAAIM: Financially binding effective 8/1/2016.**		
Monthly RAAIM Obligation Quantity * max (0, (Availability Standard Percentage – Tolerance Band) – Monthly Assessment Availability Quantity / Monthly Assessment Bid Obligation Quantity)	ESP Estimate	Allocated pro rata to participants who designated the Resource for RA Capacity

Monthly RAAIM Obligation Quantity	• Generic Availability Quantity + Flexible Availability Quantity
Notes:	• Calculated for each supply Resource by ESP subject to RAAIM. • Availability Standard Percentage = 96.5%.

	• Tolerance Band = 2% below Availability Standard Percentage. • Capacity for Load Following MSS is exempt. • Capacity from MSSA scheduled resources sold outside of Load Following MSS is subject to this charge code. • Each RA category has the following assessment profile: ○ Generic RA: System and Local capacity to be economically bid or self scheduled non-holiday weekdays HE14-18 April to October; HE17-21 November to March. ○ Flexible RA for Base Resources (Category 1) economically bid HE6-22 each day. ○ Flexible RA for Peak Resources (Category 2) economically bid HE16-20 each day. ○ Flexible RA for Super-Peak Resources (Category 3) economically bid non-holiday weekdays HE16-20.

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Monthly	Monthly	Resource Adequacy	Location

Monthly Resource Adequacy Availability Incentive Mechanism Allocation - Charge Code 8831

1. Charge Code Description

   This charge code part of the CAISO's incentive mechanism for Resource Adequacy (RA) Resources that meet their bidding obligation and provide energy bids to the Market. The Resource Adequacy Availability Incentive Mechanism (RAAIM) establishes a monthly standard that RA Resources are expected to perform. RA Resources that fail to meet the threshold are subject to penalty (charge code 8830), while RA Resources that exceed the threshold may receive a payment (charge code 8831).

   Resource Adequacy Capacity is determined within three types: Generic RA, Flexible RA and Capacity Procurement Mechanism (CPM) RA. The monthly performance of an RA Resource is measured by the Availability of the resource in the CAISO Market. Availability is calculated based on a resource's submission of bids to meet their RA bidding obligation on designated assessment hours.

   *Resource Adequacy Availability Incentive Mechanism (RAAIM) replaces the Standard Capacity Product (SCP).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 6/1/2016 **CPM: Financially binding as of 6/1/2016; RAAIM: Financially binding effective 8/1/2016.**		
Monthly RAAIM Obligation Quantity * max(0, Monthly Assessment Availability Quantity / Monthly Assessment Bid Obligation Quantity – (Availability Standard Percentage + Tolerance Band))	ESP Estimate	Allocated pro rata to participants who designated the Resource for RA Capacity
Monthly RAAIM Obligation Quantity	• Generic Availability Quantity + Flexible Availability Quantity	
Notes:	• Calculated by Resource by ESP. • Availability Standard Percentage = 96.5%. • Tolerance Band = 2% above Availability Standard Percentage. • Capacity claimed and reserved for Load Following MSS is exempt.	

	• Capacity sold outside of Load Following MSS is subject to this charge code. • Each RA category has the following assessment profile: o Generic RA: non-holiday weekdays HE14-18 April to October; HE17-21 November to March. o Flexible RA for Base Resources (Category 1) economically bid HE6-22 each day. o Flexible RA for Peak Resources (Category 2) economically bid HE16-20 each day. o Flexible RA for Super-Peak Resources (Category 3)economically bid non-holiday weekdays HE16-20.

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Monthly	Monthly	Resource Adequacy	Location

Annual Resource Adequacy Availability Incentive Mechanism Neutrality - Charge Code 8835

1. Charge Code Description

This charge code part of the CAISO's incentive mechanism for Resource Adequacy (RA) Resources that meet their bidding obligation and provide energy bids to the Market. The Resource Adequacy Availability Incentive Mechanism (RAAIM) establishes a monthly standard that RA Resources are expected to perform. RA Resources that fail to meet the threshold are subject to penalty (charge code 8830), while RA Resources that exceed the threshold may receive a payment (charge code 8831).

Any Non-Availability charge funds that are not distributed to RA Resources eligible to receive Availability Incentive Payments in a month will be added to the funds available for Availability Incentive Payments in the next month and will continue to roll over to the successive month until paid out or December 31st, at which time the funds will be distributed to Load Serving Entities based on their load ratio share for the year.

*Resource Adequacy Availability Incentive Mechanism (RAAIM) replaces the Standard Capacity Product (SCP).

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 6/1/2016 **CPM: Financially binding as of 6/1/2016; RAAIM: Financially binding as of 8/1/2016.**		
(-1) * ESP Demand	ESP Estimate	City Demand
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Monthly	Yearly	Resource Adequacy	Control Area

Monthly Capacity Procurement Mechanism (CPM) Significant Event Allocation - Charge Code 7873

3. Charge Code Description

This charge code accounts for the CAISO's procurement of Capacity in response to a significant event that has caused or threatened to cause a failure to meet Reliability Criteria. Costs will be allocated to all Scheduling Coordinators for LSEs that serve Load, excluding Load served by Transmission Ownership Rights (TOR), in the TAC Area(s) in which the event occurred.

4. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2011 – 5/31/16		
(-1) * (ESP Metered Demand – valid TOR Schedule)	ESP Estimate	Pool Metered Demand - valid TOR Schedule
Notes:	• Where valid TOR Schedule = min(ESP Final Import Schedule at Marble, Plumas CLAP meter)	

4.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Daily	Monthly	Resource Adequacy	Control Area

Monthly Capacity Procurement Mechanism (CPM) Exceptional Dispatch Allocation - Charge Code 7881

1. Charge Code Description

This charge code accounts for the CAISO's procurement of Capacity in response to an exceptional dispatch that has caused or threatened to cause a failure to meet Reliability Criteria. Costs will be allocated to all Scheduling Coordinators for LSEs that serve Load, excluding Load served by Transmission Ownership Rights (TOR), in the TAC Area(s) in which the exceptional dispatch occurred.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2011 – 5/31/16		
(-1) * (ESP Metered Demand – valid TOR Schedule)	ESP Estimate	Pool Metered Demand - valid TOR Schedule
Notes:	• Where valid TOR Schedule = min(ESP Final Import Schedule at Marble, Plumas CLAP meter)	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Daily	Monthly	Resource Adequacy	Control Area

Monthly CPM Capacity At Risk Of Retirement Allocation - Charge Code 7883

1. Charge Code Description

   This charge code accounts for the CAISO's procurement of Capacity associated with 'capacity at risk' designation by the CAISO that has caused or threatened to cause a failure to meet Reliability Criteria. Costs will be allocated to all Scheduling Coordinators for LSEs that serve Load, excluding Load served by Transmission Ownership Rights (TOR), in the TAC Area(s) where the 'Capacity at risk' designation occurred.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2011 – 5/31/16		
(-1) * (ESP Metered Demand – valid TOR Schedule)	ESP Estimate	Pool Metered Demand - valid TOR Schedule
Notes:	• Where valid TOR Schedule = min(ESP Final Import Schedule at Marble, Plumas CLAP meter)	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Daily	Monthly	Resource Adequacy	Control Area

Monthly Resource Adequacy Standard Capacity Product Allocation - Charge Code 8820

1. Charge Code Description

   This charge code accounts for the CAISO's allocation of the non availability charges collected from Resource Adequacy (RA) Resources which fail to meet the CAISO-defined Availability Standard. The funds collected are allocated to RA Resources that exceed the Availability Standard plus a tolerance band of 2.5%.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2010 – 5/31/16		
Max (0, RA Monthly Availability - Resource Adequacy Capacity * (Resource Availability Standard + .025)) * SCP Non Exempt Flag	ESP Estimate	Project Entitlement Percentage
Notes:	• Calculated by ESP	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MW	Daily	Monthly	Resource Adequacy	Location

Monthly NRSS Resource Adequacy Standard Capacity Product Allocation - Charge Code 8821

1. Charge Code Description

   This charge code accounts for the CAISO's allocation of the non availability charges collected from non-Resource-Specific System (NRSS) Resources with Resource Adequacy (RA) Capacity which fail to meet the CAISO-defined Availability Standard. The funds collected are allocated to those NRSS RA Resources that exceed the Availability Standard plus a tolerance band of 2.5%.

2. Charge Code Implementation

ESP Estimate		ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2010 – 5/31/16			
Non-Exempt Local Capacity		ESP Estimate	ESP Estimate
Notes:	•		

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MW	Daily	Monthly	Resource Adequacy	Location

Monthly Resource Adequacy Standard Capacity Product Settlement - Charge Code 8824

1. Charge Code Description

This charge code accounts for the CAISO's non availability charges to any Resource Adequacy (RA) Resources which fail to meet the CAISO-defined Availability Standard minus the tolerance band of 2.5%. The funds collected are then allocated to RA Resources that exceed the Availability Standard plus a tolerance band of 2.5% in charge code 8820.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2010 – 5/31/16		
Max (0, Resource Adequacy Capacity * (Resource Availability Standard - .025) - RA Monthly Availability) * SCP Non Exempt Flag	ESP Estimate	Project Entitlement Percentage
Notes:	• Calculated by ESP.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MW	Daily	Monthly	Resource Adequacy	Location

Monthly NRSS Resource Adequacy Standard Capacity Product Settlement - Charge Code 8825

1. Charge Code Description

This charge code accounts for the CAISO's non availability charges to any non-Resource-Specific System (NRSS) Resources with Resource Adequacy (RA) Capacity which fail to meet the CAISO-defined Availability Standard minus the tolerance band of 2.5%. The funds collected are then allocated to RA Resources that exceed the Availability Standard plus a tolerance band of 2.5% in charge code 8821.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2010 – 5/31/16		
Non-Exempt Local Capacity	ESP Estimate	ESP Estimate
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MW	Daily	Monthly	Resource Adequacy	Location

Monthly Resource Adequacy Standard Capacity Product Neutrality Allocation - Charge Code 8826

1. Charge Code Description

   This charge code accounts for the CAISO's allocation of any surplus in the non availability charges collected from Resource Adequacy (RA) Resources which fail to meet the CAISO-defined Availability Standard minus the tolerance band of 2.5%. Surplus funds are put into Real Time Neutrality and allocated to Demand.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2010 – 5/31/16		
(-1) ESP Demand	ESP Estimate	City Demand
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Hourly	Monthly	Resource Adequacy	Control Area

Monthly NRSS Resource Adequacy Standard Capacity Product Neutrality Allocation - Charge Code 8827

1. Charge Code Description

This charge code accounts for the CAISO's allocation of any surplus in the non availability charges collected from non-Resource-Specific System (NRSS) Resources with Resource Adequacy (RA) Capacity which fail to meet the CAISO-defined Availability Standard minus the tolerance band of 2.5%. Surplus funds are put into Real Time Neutrality and allocated to Demand.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 10/1/2010 – 5/31/16		
(-1) ESP Demand	ESP Estimate	City Demand
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Hourly	Monthly	Resource Adequacy	Control Area

Retired Charge Codes

Charge codes in this section were once implemented and are now retired; however still appear on ISO Recalculation Settlement Statements.

GMC for Core Reliability Services Non-Coincident Peak Settlement - Charge Code 4501

1. Charge Code Description

   This charge code is determined on a Gross basis considering the hours ending between **7 and 22**. The monthly non-coincident peak (NCP) Load quantity is identified as the hour within a Trading Month that has the highest Metered Demand quantity (excluding Export quantities) for a Scheduling Coordinator. A Scheduling Coordinator's NCP Demand reflects the burden that the entity places on the operation of the Transmission system.

   If the highest Metered Demand *occurs during peak hours, no charge will be reflected in charge code 4502 (see below).*

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 12/31/2011		
Determine time of NCPA Coincident Peak Demand in a month. If Coincident Peak Demand occurs during On Peak Hours, Estimate = ESP Demand at the time of the NCPA Coincident Peak, else 0	ESP Estimate	ESP Estimate by city
Notes:	• This gives the appropriate Load diversity benefit at the time of the NCPA coincident peak. • On Peak Hours are HE 7-22 for all days.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MW	Monthly	Monthly	GMC	Balancing Group

GMC for Core Reliability Services Non-Coincident Off Peak Settlement - Charge Code 4502

1. Charge Code Description

This charge code is determined on a Gross basis considering the hours ending between **23 and 6**. The monthly Non-Coincident Off Peak (NCOP) Load quantity is identified as the hour within in a Trading Month that has the highest Metered Demand quantity (excluding Export quantities) for a Scheduling Coordinator. A Scheduling Coordinator's NCOP Demand reflects the burden that the entity places on the operation of the Transmission system.

If the highest Metered Demand *occurs during off peak hours, no charge will be reflected in charge code 4501 (see above).*

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 12/31/2011		
Determine time of NCPA Coincident Peak Demand in a month. If Coincident Peak Demand occurs during off peak Hours, ESP Estimate = ESP Demand at the time of the NCPA Coincident Peak, else 0	ESP Estimate	ESP Estimate by city
Notes:	• This gives the appropriate Load diversity benefit at the time of the NCPA coincident peak. • Off peak hours are HE 23-6 for all days.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MW	Monthly	Monthly	GMC	Balancing Group

GMC for Core Reliability Services Export Energy Settlement - Charge Code 4503

1. Charge Code Description

This charge code is calculated as the Scheduling Coordinator's Exports from the CAISO Controlled Grid which reflect the burden that the Scheduling Coordinator has placed on the operation of the Transmission System. The quantity associated with this charge is calculated as the sum of Gross Export Real Time Flow for applicable System Resources for a Scheduling Coordinator for all Settlement Intervals within a Trading Month.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 12/31/2011		
(-1) * ESP Final Export Schedule	ESP Estimate	ESP Estimate
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Daily	GMC	Balancing Group

GMC for Energy Transmission Services (ETS) Net Energy Withdrawals Settlement - Charge Code 4505

1. Charge Code Description

This charge code is calculated as the monthly Metered CAISO Demand plus Export Schedules, which represents total flows on the Transmission system. The Energy and Transmission Services Net Energy is based on the sum of the Metered CAISO Demand and Export Schedules for a Scheduling Coordinator in a given Trading Hour, for a Trading Day, of Trading Month.

Metered CAISO Demand is the actual Metered value for a Scheduling Coordinator's Load Resources. Export Schedules are calculated as the sum of all the Deemed Delivered Energy quantity for specific Export Schedules.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 12/31/2011		
(-1) * (ESP Measured Demand – valid TOR Schedule) Where valid TOR Schedule = min(ESP Final Import Schedule at Marble, Plumas CLAP meter)	ESP Estimate	ESP Estimate by city
Notes:	• Imports include Day Ahead Interchange Schedules and any Real Time adjustments. • Plumas may be reduced by a Congestion offset based upon its CRN. • TOR = Plumas. • Valid TOR means a balanced Sink/Source Schedule. • Eligible TOR Schedule is the maximum TOR/ETC eligibility, which is seasonal.	

ESP Default Allocation	***Pool Default Allocation***
N/A	*4505 allocator must be allocated 100% to Plumas for* Pool Allocation Basis

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Daily	GMC	Balancing Group

GMC for Energy Transmission Services (ETS) Deviations Settlement - Charge Code 4506

1. Charge Code Description

   In order to reflect a Scheduling Coordinator's impact on the Transmission Grid, this charge code is calculated based upon the absolute value of net Uninstructed Imbalance Energy Deviations by Settlement Interval.

   The absolute value of net Uninstructed Deviations by Settlement Interval is the difference between actual Metered or Deemed Delivered Energy and Real Time Dispatch Instructions. Allowing netting permits Scheduling Coordinators to Load Follow, which reduces inadvertent flows and imbalances on the Transmission Grid. The costs of managing the Balancing Authority Area will be higher to the extent that entities cause inadvertent flows that must be managed in Real Time.

   Even though NCPA will no longer settle RT ESP Trades as Deviation Energy after MRTU implementation, it is appropriate to include such Trades here because their purpose is to match the deviation of one ESP against the off-setting deviation of another ESP; for example, Generation delivered from one to serve the Load of another. Since the offsetting deviations of each will be factored out of the billable quantity of this charge for NCPA the SC as a whole, including the RT ESP Trades in this charge code makes the ESP estimate more accurate, both individually and collectively.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 12/31/2011		
abs(sum(6475 Billable quantity + Load Following Instructed Energy Up - Load Following Instructed Energy Down + RT ESP Trade In - RT ESP Trade Out + ESP Load Following Trade In – ESP Load Following Trade Out))	ESP Estimate	Load: • City Demand Generation: • Project Entitlement Percentage Imports/Exports/ESP Trades: • Participation Share

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Notes:	• Calculated for all ESPs per RT Balancing Group. • Netting must be done on a 10-minute basis and then summed for the hour. • See sections 6.4 and 7 above for more detail. • Instructed Energy includes Load Following Up and Down Instructions. However, NCPA does not deem Load Following Energy to be delivered to the CAISO. • To the extent NCPA moves the generators to follow load, the deviation on the generation is used to offset the deviations on the Load, including any Energy covered by the Load Following Instructions. • If NCPA were to leave the Load Following Instructed Energy in the Instructed Energy term that is subtracted from generation, we have taken that Energy and provided it to the CAISO. • Therefore, Load Following Instructions are backed out of the Instructed Energy term, so that NCPA's full Generation deviations offset its Load deviations. • (+ Load Following Instructed Energy Up – Load Following Instructed Energy Down) accomplishes backing out the Load Following Instructed Energy from the 6475 billable quantity. This way NCPA will not be paying the GMC on Load Following Instructions, which are designed to follow Load.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Ten Minute	Daily	GMC	Balancing Group

GMC for Energy Transmission Services (ETS) for Transmission Ownership Rights (TOR) Energy Exports Settlement - Charge Code 4508

1. Charge Code Description

This charge code is applied to the Scheduling Coordinator's overall Demand quantity (Energy Exports and Loads) for which the Scheduling Coordinator exercises and schedules Transmission Ownership Rights (TORs) in association with Energy Export and Load Schedules that have not been exempted from the GMC calculation. This applies to transactions at Marble.

The TOR-associated portions of the Energy Export and Demand Schedules are summed by Settlement Interval for each Trading Hour of a Trading Day. For each Demand Schedule, the Schedule's TOR-associated Energy is represented as the Measured Demand quantity for the Energy Export or Participating Load Resource associated with the Schedule. The Measured Demand quantity is limited to the minimum of

the Resource's contract-specified TOR quantity and

the Resource's TOR-associated Schedule quantity after all Schedules concerning the TOR contract has been adjusted to obtain a balance between contract-associated source and sink Energy.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 12/31/2011		
min(ESP Final Import Schedule at Marble, Plumas CLAP meter)	ESP Estimate allocated 100% to NCPA Pool	ESP Estimate allocated 100% to the city of Plumas
Notes:	• Applied to only the valid and balanced Sink/Source TOR.	
ESP Default Allocation	***Pool Default Allocation***	
N/A	*4508 allocator must be allocated 100% to Plumas for Pool Allocation Basis*	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Daily	GMC	Location

GMC for Forward Scheduling Settlement - Charge Code 4511

1. Charge Code Description

This charge code contains the activities associated with accepting, processing, and validating Day Ahead Schedule transactions, HASP Schedules, and Real Time adjustments to Day Ahead Interchange Schedules. The transactions included in this context are the components of a Schedule that are processed, validated, accepted, and awarded by Day Ahead IFM or HASP. The components include Ancillary Service Bids, Energy Bids, and Schedules.

2. Charge Code Implementation

<table>
<tr><th>ESP Estimate</th><th>ESP Allocation Basis</th><th>Pool Allocation Basis</th></tr>
<tr><td colspan="3">Effective Trade Dates 4/1/2009 – 12/31/2011</td></tr>
<tr><td>Count of the following non-zero CAISO DA and HASP Schedules:
• DA Self Provision Generation
• DA Ancillary Service Awards
• DA Ancillary Service Self Provision
• DA Import Self Schedule
• DA Export Self Schedule
• MSS Scheduled Load
• HASP Generation Self Schedule</td><td>ESP Estimate</td><td>Each hour:
Load:
• Count = 1/n
where n is the number of Pool Members scheduling at the same Load Point plus their proportionate share of each Import and Export each non-zero hour that they participate in
Generation:
• Project Entitlement Percentage</td></tr>
<tr><td>Ratio of ESP Estimate to the sum of ESP Estimate;
Where the following commodities are used:</td><td colspan="2">• DA ESP Preferred Self Provision Generation Energy Schedule
• DA Spin Award
• DA Self Provision Spin Award
• DA Non Spin Award
• DA Self Provision Non Spin Award
• DA Regulation Up Award
• DA Self Provision Regulation Up Award
• DA Regulation Down Award
• DA Self Provision Regulation Down Award
• MSS Scheduled Load
• DA ESP Export Self Provision Energy
• DA ESP Import Self Provision Energy
• HASP Preferred Self Provision Generation Schedule</td></tr>
<tr><td>Notes:</td><td colspan="2">Schedules are defined by the following set of attributes:
• Operating Date
• Hour
• Commodity (i.e., Energy, Spin, Non Spin, Regulation Up, Regulation</td></tr>
</table>

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
	• Location • Interchange ID (to reflect a unique DA Import and/or Export Resource)	Down) • ProvTypeName (i.e., Self Provision, Award) • ESP

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead & HASP	Count	Daily	Daily	GMC	Location

GMC for Market Usage Ancillary Service Settlement - Charge Code 4534

1. Charge Code Description

This charge code is based upon the purchases and sales of Ancillary Service in the Day Ahead, HASP, or Real Time Markets. The Market Usage charge for each Scheduling Coordinator is calculated as the absolute value of Ancillary Service Obligation plus sales by Trade Hour.

Self Provision nets against Ancillary Service Obligation to produce a net obligation that might be positive or negative, and the absolute value of that is included in this charge. A sale of Ancillary Service from a Resource that bids to sell is also included.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 12/31/2011		
abs(6194 Billable quantity) + abs(6294 Billable quantity) + abs(6594 Billable quantity) + abs(6694 Billable quantity) + abs(6100 Billable quantity) + abs(6200 Billable quantity) + abs(6500 Billable quantity) + abs(6600 Billable quantity) + .25 * (sum(6170 Billable quantity, 6270 Billable quantity, 6570 Billable quantity, 6670 Billable quantity))	ESP Estimate	Load: • City Demand Generation: • Project Entitlement Percentage
Notes:	• Ancillary Service Obligations are netted by type (Spinning Reserve, Non Spinning Reserve, Regulation Up and Regulation Down). • Charge is netted for all ESPs per RT Balancing Group.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Daily	GMC	Balancing Group

GMC for Market Usage Instructed Energy Settlement - Charge Code 4535

1. Charge Code Description

This charge code is based upon the absolute value of Instructed Imbalance Energy by Resource; which is the absolute value sum of CAISO Instructed Energy quantities by Resource per Settlement Interval in the Real Time Market.

Instructed Energy quantities are limited to: HASP Energy, Optimal Energy, Standard Ramping Energy, Ramping Energy Deviation, Real Time Self Schedules, Residual Imbalance Energy, Exceptional Dispatch, and Real Time and HASP Operational Adjustments.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 12/31/2011		
sum for the hour(abs(net(10-minute 6470 Billable quantity + HASP OA Import/6 + (-1) * HASP OA Export/6)))	ESP Estimate	Load: • City Demand Generation: • Project Entitlement Percentage
Notes:	• Netting must be done on a ten-minute basis by Resource and then the absolute values are summed for the hour • Refer to charge code 6470 ESP Estimate for details about that portion of the equation	

ESP Default Allocation	***Pool Default Allocation***
Project Entitlement Percentage	*4535 allocator must utilize the* Day Ahead Schedule *in the event the Real Time Schedule quantity is zero*

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Hourly	Daily	GMC	Load: Control Area Generation: Location

GMC for Market Usage Uninstructed Energy Settlement - Charge Code 4536

1. Charge Code Description

This charge code is based upon the absolute value of net portfolio deviations by Settlement Interval for the CAISO to recover costs associated with needing to purchase Imbalance Energy resulting from a Scheduling Coordinator not following Load accurately.

Even though NCPA will no longer settle RT ESP Trades as Deviation Energy after MRTU implementation, it is appropriate to include such Trades here because their purpose is to match the deviation of one ESP against the off-setting deviation of another ESP; for example, Generation delivered from one to serve the Load of another. Since the offsetting deviations of each will be factored out of the billable quantity of this charge for the NCPA SC portfolio, including the RT ESP Trades in this charge code makes the ESP Estimate more accurate, both individually and collectively.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 12/31/2011		
4506 Billable quantity	ESP Estimate	Load: • City Demand Generation: • Project Entitlement Percentage Imports/Exports/ESP Trades: • Participation Share
Notes:	• Calculated for all ESPs per RT Balancing Group. • Netting must be done on a 10-minute basis and then summed for the hour. • See *sections 6.4 and 7* above for more detail.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
All	MWh	Ten Minute	Daily	GMC	Balancing Group

GMC for Market Usage Forward Energy Settlement - Charge Code 4537

1. Charge Code Description

   This charge code is based upon the greater of Day Ahead Supply Schedules or Day Ahead Demand Schedules for each hour in the Day Ahead Market to reflect a Scheduling Coordinator's impact on the maintenance, monitoring, operation, and performance of the Day Ahead Market.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 6/1/2010 – 12/31/2011		
max (abs (sum of DA ESP Market Energy Schedule + sum of DA ESP Import Energy), abs(sum of DA Scheduled Load + sum of DA ESP Export Energy)) by OE Balancing Group	OE Balancing Group Estimate	OE Balancing Group Estimate is the allocator for each Pool Member Where Pool Member Estimate for each Balancing Group = max(abs(DA City Demand + DA City Export Energy), abs(DA City Generation + DA City Import Energy))
Notes:	• Calculated as maximum of absolute value sum of OE Balancing Group Supply or absolute value sum of OE Balancing Group Demand by OE Balancing Group. • Does not include Inter-SC Trades of Energy. • See section 7.2.3 for more details.	
Effective 4/1/2009 - 5/31/2010		
abs ((DA Scheduled Load + DA ESP Export Energy + DA ESP Trade Out) - (DA ESP Market Energy Schedule + DA ESP Import Energy + DA ESP Trade In) - DA Inter-SC Trade In + DA Inter-SC Trade Out)	ESP Estimate	Load: • DA City Demand Generation: • Project Entitlement Percentage Import / Export / ESP Trade: • Participation Share
Notes:	• Netting among ESPs per RT Balancing Group. • CAISO includes both APN and Physical Trades in this charge.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
Day Ahead	MWh	Hourly	Daily	GMC	Balancing Group

HASP Energy, Congestion, and Losses Pre-dispatched Settlement - Charge Code 6051

1. Charge Code Description

This charge code accounts for HASP Intertie Schedules and any associated Operational Adjustments by Scheduling Coordinator, where those Energy Schedules are hourly pre-dispatched at Non-Dynamic System Resources (Import and/or Export Resources) by paying for Supply and charging for Demand based upon the HASP Intertie LMP at the Resource locations for each hour.

NCPA will not generally schedule in the HASP, which is essentially limited to hourly pre-dispatched non-Dynamic System Resources (i.e. Interchange Schedules). However, it is relevant to create an ESP estimate for this charge code due to CAISO's business practice of buying back Energy reflected in charge code 6011 to relieve Congestion.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates: 4/1/2009 – 4/30/2014		
Imports: • HASP ESP Import Energy – DA ESP Import Energy + HASP OA Import Exports: • (-1) * (HASP ESP Export Energy – DA ESP Export Energy + HASP OA Export)	ESP Estimate	Participation Share of ESP Estimate
Notes:	• NCPA should not receive any charges/payments in this charge code due to curtailments from DA IFM. • The Hourly HASP LMP is the simple average of the four 15-minute HASP LMPs associated with the Resource or Delivery Point. • See Section 8 above for more details on Operational Adjustments.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
HASP/Real Time	MWh	Hourly	Hourly	Energy	Location

HASP Inter-SC Trades Settlement - Charge Code 6351

1. Charge Code Description

This charge code accounts for Energy Trades between Scheduling Coordinators submitted during the HASP. An Inter-SC Trade (IST) of Energy is an Energy quantity (MWh) traded from one Scheduling Coordinator to another Scheduling Coordinator. The Location of an Inter-SC Trade of Energy can be a PNode, a Default Load Aggregation Point (LAP), or an Existing Zone (EZ) Generation Hub. Valid Physical Trades are settled at the LMP at the PNode. Converted Physical Trades (CPTs), which are Physical Trades or portions of Physical Trades that are not validated after the close of the Real Time Market, are settled at the relevant Existing Zone (EZ) Generation Hub Price.

An Inter-SC Trade (IST) involves two Scheduling Coordinators (SCs): the "From" SC and the "To" SC.

The "From" SC is charged the product of the valid quantity of the "From" Inter-SC Trade and the LMP at the appropriate PNode, EZ Generation Hub, or Default LAP.

The "To" SC is paid the product of the valid quantity of the "To" Inter-SC Trade and the LMP at the appropriate PNode, EZ Generation Hub, or Default LAP.

Inter-SC Trades of Energy are settled on an hourly basis at the simple average of the Real Time LMP or LAP of the Trade.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Date: 4/1/2009 – 4/30/2014		
+ HASP Inter-SC Trade In - HASP Inter-SC Trade Out	ESP Estimate	Current Commission-approved Budget Methodology Percentage or Participation Share
Notes:	• Each Schedule is priced separately at the Real Time LMP or Real Time LAP.	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
HASP/Real Time	MWh	Hourly	Hourly	Trade	Location & Counterparty

Monthly Significant Event Interim Capacity Procurement Methodology (ICPM) Settlement/Allocation - Charge Code 7870

1. Charge Code Description

   This charge code accounts for the CAISO's procurement of Local Capacity when a significant event caused or threatened to cause a failure to meet Reliability Criteria. Costs will be allocated to all Scheduling Coordinators for LSEs that serve Load in the TAC Area(s) in which the event occurred.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 3/31/2011		
Load ratio share for the given event period	ESP Estimate	N/A
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Monthly	Monthly	Resource Adequacy	Control Area

Monthly Significant Event Interim Capacity Procurement Methodology (ICPM) Settlement/Allocation - Charge Code 7879

1. Charge Code Description

   This charge code accounts for the CAISO's procurement of Local Capacity when a significant event caused or threatened to cause a failure to meet Reliability Criteria. Costs will be allocated to all Scheduling Coordinators for LSEs that serve Load in the TAC Area(s) in which the event occurred.

2. Charge Code Implementation

ESP Estimate	ESP Allocation Basis	Pool Allocation Basis
Effective Trade Dates 4/1/2009 – 3/31/2011		
(-1) ESP Measured Demand	ESP Estimate	N/A
Notes:	•	

2.1. General Information:

Applicable CAISO Market	Unit of Measure	ESP Estimate Resolution	Allocation Resolution	NCPA Settlements Administrative Cost	Allocation By
ALL	MWh	Monthly	Monthly	Resource Adequacy	Control Area