Settlements and Billing

Configuration Guide: Regulation Up Neutrality Allocation

**CC 6596**

Version 5.1

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# Purpose of Document

The purpose of this document is to capture the business and functional requirements for the MRTU SaMC Regulation Up Neutrality Allocation.

# Introduction

## Background

The CAISO will procure the Ancillary Services, Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve in the Day Ahead Integrated Forward Market (IFM) and procure incrementally as needed in the Real-Time Market (RTM). Ancillary Services (AS) are procured simultaneously with Energy bids to meet Regulation and Operating Reserve Requirements, using submitted Ancillary Service bids. IFM is performed for each hour of the next Trading Day. The The Fifteen Minute Market performs AS procurement, if needed, at 15-minutes intervals for the current hour and next Trading Hour. The AS awards published for the first 15-minutes interval of the time horizon are binding, the rest are advisory. The AS pricing and Settlement will be based on Ancillary Service Marginal Price (ASMP), which are calculated for each AS region for each market time interval for each market.

The AS procurement cost is the payment for AS Awarded bids in the Day Ahead IFM and RTM. This Charge Code is part of the family of Charge Codes for payment to Scheduling Coordinators (SCs) for Awarded Ancillary Services Capacity bids: (1) Regulation Up, (2) Regulation Down, (3) Spinning Reserve, and (4) Non-Spinning Reserve.

The fundamental concepts of Settlement methodology for allocation of AS procurement cost to scheduling coordinators are as follows:

* The AS procurement cost allocation for all AS commodity types is hourly, system-wide, and across IFM and Real-Time markets
* The cost of procuring the AS by the CAISO on behalf of the demand will be allocated to the demand using a system wide user rate. The user rate is the average cost of procuring a type of AS in both the Forward and Real-Time Market for the whole CAISO system
* The rate for each AS incorporates the No Pay/Non Compliance Capacity and the No Pay/Non Compliance Charge to reflect the ultimate average AS cost
* The rate for each AS reflects an average AS substitution to capture the cascaded AS procurement as it is performed optimally in each AS market. For example, Settlements reflects that multiple service types are procured and substituted simultaneously during IFM optimization
* A difference between total net AS Requirements and total AS Obligations results in a neutrality adjustment for each Scheduling Coordinator for each of the Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve AS types.
* The difference between total AS Procurement and total AS Requirements over all Spinning, Non-Spinning and Regulation Up Ancillary Services results in a single Upward neutrality adjustment for all these services.
* Ancillary Services awards from Intertie Resources are charged explicitly for the Marginal Cost of Congestion on the relevant inter-tie interface at the relevant Shadow Price. The cost of AS Congestion Charges is not recovered through the AS cost allocation, but is settled in the RT Congestion Offset, CC 6774.

By design, the AS settlement methodology has the following property: If the total AS Procurement matches the total AS Requirements, and if the AS Requirement matches the total AS Obligation for each AS, the AS Cost Allocation is neutral.

By reflecting AS substitution in the AS Rates, this AS Settlement methodology eliminates any neutrality loss due to AS substitution and results in an equitable AS Cost Allocation to Scheduling Coordinators’ that self-provide AS, since there is no AS substitution among self-provided AS.

This Charge Code deals with Regulation Up Neutrality Allocation.

## Description

The Regulation Up Neutrality Allocation recovers from Scheduling Coordinators the total Regulation Up Neutrality amount, in proportion to their positive 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.

# Charge Code Requirements

## Business Rules

| Bus Req ID | Business Rule |
| --- | --- |
| 1.0 | The Regulation Up Neutrality Allocation amount shall be calculated by hour by Scheduling Coordinator. |
| 1.1 | For each Scheduling Coordinator, the Regulation Up Neutrality Allocation amount shall be calculated by allocating the total Regulation Up Neutrality amount between Scheduling Coordinators in proportion to the positive Regulation Up Obligation for each Scheduling Coordinator. |
| 1.2 | The total Regulation Up Neutrality amount shall be 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. |
| 2.0 | The PTB logic will not be directly applied in CC6596. Instead, PTB amounts will be included in and propagated from their predecessor Charge Codes. |

## Predecessor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Ancillary Services Pre-calculation |
| Regulation Up Obligation Settlement (CC 6594) |

## Successor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Ancillary Service Upward Neutrality Allocation (CC 6090) |

## Inputs – External Systems

| Row # | Variable Name | Description |
| --- | --- | --- |

## Inputs - Predecessor Charge Codes or Pre-calculations

| Row # | Variable Name | Predecessor Charge Code/  Pre-calc Configuration |
| --- | --- | --- |
| 1 | CAISOHourlyTotalRegUpEQSP Q’mdh | Ancillary Services Pre-calculation |
| 2 | RegUpObligNoTradeMW BQ’mdh | Ancillary Services Pre-calculation |
| 3 | RegUpRatemdh | Regulation Up Obligation Settlement (CC 6594) |
| 4 | TotalRTRegUpReq **Q’**mdh | Ancillary Services Pre-calculation  Total Real-Time Regulation Up Requirement for Trading Day *d* andTrading Hour *h* **(MW)** |

## CAISO Formula

### RegUpNeutralityAmount BQ’mdh =

{CAISOHourlyTotalRegUpNeutralityAmount Q’mdh\*

[Max (0, RegUpObligNoTradeMW BQ’mdh) /

CAISOHourlyTotalPosRegUpObligNoTradeQty Q’mdh)

Where CAISOHourlyTotalRegUpNeutralityAmount *Q’*mdh =

RegUpRatemdh \* { [ Max(0, TotalRTRegUpReq **Q’**mdh – CAISOHourlyTotalRegUpEQSP Q’mdh)] – CAISOHourlyTotalRegUpObligationNoTradeQuantity Q’mdh + CAISOHourlyTotalRegUpEQSP Q’mdh}

Where CAISOHourlyTotalRegUpObligationNoTradeQuantity *Q’*mdh =

RegUpObligNoTradeMW BQ’mdh

Where CAISOHourlyTotalPosRegUpObligNoTradeQty *Q’*mdh =

Max ( 0, RegUpObligNoTradeMW BQ’mdh)

NOTE: CAISOHourlyTotalRegUpNeutralitySettlementAmount mdh is calculated as part of the reporting structure and will not be configured as an individual charge type.

Note: The above changes reflect what is in Configuration. New output variables were simply created to contain existing formulas.

## Outputs

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| Output Req ID | Name | Description |
| --- | --- | --- |
|  | In addition, all inputs are required to be accessible for review by analysts and report on Settlement Statements. | N/A |
| 1 | RegUpNeutralityAmount BQ’mdh | Regulation Up Neutrality amount due ISO for Business Associate *B* for Trading Day *d* and Trading Hour *h* **($)** |
| 2 | CAISOHourlyTotalRegUpObligationNoTradeQuantity Q’mdh | Sum of RegUpObligNoTradeMW over all Business Associates. |
| 3 | CAISOHourlyTotalPosRegUpObligNoTradeQty Q’mdh | CAISO Total sum of all positive RegUpObligNoTradeMW. |
| 4 | CAISOHourlyTotalRegUpNeutralityAmount *Q’*mdh | CAISO Hourly total Regulation Up Neutrality amount for Trading Day *d* and Trading Hour *h* **($)** |

# Charge Code Effective Date

| Charge Code/  Pre-calc Name | Document Version | Effective Start Date | Effective End Date | Version Update Type |
| --- | --- | --- | --- | --- |
| Regulation Up Neutrality Allocation (CC 6596) | 5.0 | 04/01/09 | 4/30/14 | Documentation Edits Only |
| Regulation Up Neutrality Allocation (CC 6596) | 5.0a | 05/01/14 | 10/31/18 | Documentation Edits Only |
| Regulation Up Neutrality Allocation (CC 6596) | 5.0b | 11/1/18 | 4/30/2026 | Documentation Edits Only |
| Regulation Up Neutrality Allocation (CC 6596) | 5.1 | 5/1/2026 | Open | Configuration Updates |