Settlements & Billing

Configuration Guide: Real Time Congestion – AS Regulation Up Import Settlement

**CC 6755**

Version 5.4

Table of Contents

1. Purpose of Document 3

2. Introduction 3

2.1 Background 3

2.2 Description 3

3. Charge Code Requirements 3

3.1 Business Rules 4

3.2 Predecessor Charge Codes 4

3.3 Successor Charge Codes 4

3.4 Inputs – External Systems 6

3.5 Inputs - Predecessor Charge Codes or Pre-calculations 6

3.6 CAISO Formula 6

3.7 Outputs 7

4. Charge Code Effective Dates 8

# Purpose of Document

The purpose of this document is to capture the requirements and design specification for a Charge Code in one document.

# Introduction

## Background

Suppliers of awarded Ancillary Services (AS) in the Real-Time market (RTM) are paid the Ancillary Service Marginal Price (ASMP) for the Real-Time Market at the relevant interties. However, because AS capacity imports and Energy schedules compete for transmission capacity at interties, the suppliers of awarded Real-Time AS capacity imports will also be charged Congestion Costs based on applicable Shadow Prices at binding intertie constraints associated with the resources.

This Charge Code is part of the family of Charge Codes for settling Real-Time AS Congestion costs emanating from the following AS product awards: (1) Regulation Up Import, (2) Regulation Down Import, (3) Spinning Reserve Import, and (4) Non-spinning Reserve Import.

The Congestion revenues coming from:

Real Time AS Imports from all Ancillary Services from congested interties

less the RTM Congestion credits to ETC/TOR (settled in CC 6788 – RTM Congestion Credit Settlement) shall be settled in 6774, Real Time Congestion Offset, which allocates to Measured Demand excluding the metered demand associated with the valid and balanced portion of ETC/TOR Self-Schedules.

## Description

This Charge Code applies to Dynamic System Resources and Non-Dynamic System Resources for Regulation Up import capacity whenever Congestion is present in the import direction over the intertie constraint associated with the resource, on an hourly basis at the resource level. The Settlement Amount is the summed products of (a) hourly simple average of the Award and non-contract eligible QSP MW hourly import capacity of Real Time Regulation Up AS and the (b) negative of hourly simple average of 15-minute import direction Shadow Prices for the intertie constraint associated with the resource for the Trading Hour.

# Charge Code Requirements

## Business Rules

| Bus Req ID | Business Rule |
| --- | --- |
| 1.0 | The resource specific ITC congestion cost received from IFM/RTM shall be used to calculate ITC congestion charge and credit for Non-Dynamic System Resources and Dynamic System Resources who receive AS awards in IFM and the 15-minute market. |
| 1.1 | The Congestion Charge for Regulation Up import at a Dynamic or Non-Dynamic System Resource per hour is the product of (a) hourly simple average of the awarded MW and non-contract eligible QSP hourly capacity of Real Time Regulation Up AS and the (b) negative of hourly simple average of 15-minute import direction Shadow Prices for the intertie constraint associated with the resource for the Trading Hour. |
| 1.2 | The charge per BA per Trading Hour h is the sum of all the congestion charges for Regulation Up import at its Dynamic System Resources for the hour. |
| 1.3 | If congestion is present in the export direction, Real Time AS Regulation Up Importers will not be paid nor charged for the counter-flows over the applicable intertie constraint. (Fact) |
| 1.4 | Non-contract eligible QSP is the portion of QSP scheduled under contracts but beyond the available rights capacity. (Fact) |
| 1.5 | AS qualified self-provision using ETC/TOR contracts, particularly incremental RT Regulation Up QSP (compared to the Day-Ahead QSP) that are within the remaining capacity entitlement of such contract shall not be charged for congestion. (Fact) |
| 1.6 | For adjustments to the Charge Code that cannot be accomplished by correction of upstream data inputs/recalculation or operator override Pass Through Bill Charge logic will be applied. |

## Predecessor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Ancillary Services Pre-Calculation |
| ETC/TOR/CVR Quantity Pre-Calculation |

## Successor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| CC 6774 – Real Time Congestion Offset |

## Inputs – External Systems

| Row # | Variable Name | Description |
| --- | --- | --- |
| 1 | PTBChargeAdjustmentRTCongestionRegUpAmount **BJmdh** | Pass Through Bill (PTB) amount for this Charge Code |
| 2 | FMMIntervalResourceRTRegUpImportShadowPrice rtmdhc | Real Time Shadow Price for Intertie resource. The marginal value of relieving particular intertie constraint(s) (associated with the resource) for congestion in the import direction. ($/MW). These import shadow prices usually come in as negative values. |

## Inputs - Predecessor Charge Codes or Pre-calculations

| Row # | Variable Name | Predecessor Charge Code/  Pre-calc Configuration |
| --- | --- | --- |
| 1 | RTRegUpAwardBrtQ’F’S’mdhc | Ancillary Services Pre-Calculation |
| 2 | RTRegUpNonContractEligibleQSP BrtF’S’mdh | ETC/TOR/CVR Quantity Pre-Calculation |

## CAISO Formula

Assumption: In the formulas below, Awarded Import Regulation Up Bid Capacities are positive.

The RT congestion Regulation Up amount

RTCongestionRegUpAmount BrtF’S’mdh=

(RTRegUpAwardCongestionAmount BrtF’S’mdh

+ RTRegUpQSPCongestionAmount BrtF’S’mdh)

WhereRTRegUpAwardCongestionAmountBrtF’S’mdh*=*

(-1)\* (SUM(Q’,c) 0.25\*RTRegUpAward BrtQ’F’S’mdh ) \* FMMIntervalResourceRTRegUpImportShadowPricertmdhc

Note: This formula will be configured such that the fifteen (15) minute Ancillary Service capacity (MW) quantities will be converted to hourly quantities. Then, standard frequency conversion within this equation will achieve the intended multiplication of the simple average of the fifteen (15) minute Shadow Prices at the applicable Scheduling Point for the applicable Trading Hour against these quantities.

Where RTRegUpQSPCongestionAmountBrtF’S’mdh*=*

((-1) \* RTRegUpNonContractEligibleQSP BrtF’S’mdh \* FMMIntervalResourceRTRegUpImportShadowPricertmdhc )

Note: Standard frequency conversion within this equation will achieve the intended multiplication of the simple average of the fifteen (15) minute Shadow Prices at the applicable Scheduling Point for the applicable Trading Hour against the Self-Provided Ancillary Service

The RT Congestion Charge per Tading Hour h for each Business Associate B for Regulation Up

BAHourlyRTCongestionRegUpAmount Bmdh=

** RTCongestionRegUpAmount BrtF’S’mdh

Note: This is provided as part of reporting structure and is not configured as an individual charge type.

The CAISO total RT congestion revenue from Regulation Up for Trading Hour h

CAISOHourlyTotalRTCongestionRegUpAmount mdh =

** BAHourlyRTCongestionRegUpAmount Bmdh

Note: This is provided as part of reporting structure and is not configured as an individual charge type.

## Outputs

| Output Req ID | Name | Description |
| --- | --- | --- |
|  | In addition to any outputs listed below, all inputs shall be included as outputs. |  |
| 1 | RTCongestionRegUpAmount BrtF’S’mdh | The Real Time Congestion Charge |
| 2 | BAHourlyRTCongestionRegUpAmount Bmdh | The Real Time Congestion Charge This is provided as part of reporting structure and is not configured as an individual charge type. This is shown as a reporting BD in the BD matrix file. |
| 3 | CAISOHourlyTotalRTCongestionRegUpAmount mdh | The CAISO total RT Congestion revenue from Regulation Up imports.  This is provided as part of reporting structure and is not configured as an individual charge type. This is shown as a reporting BD in the BD matrix file. |
| 4 | RTRegUpAwardCongestionAmount BrtF’S’mdh | BA RT Congestion Amount for Awarded Regulation Up Imports |
| 5 | RTRegUpQSPCongestionAmount BrtF’S’mdh | BA RT Congestion Amount for QSP Regulation Up Imports. This charge includes ETC/TOR contract usage beyond the rights capacity. |

# Charge Code Effective Dates

| Charge Code/  Pre-calc Name | Document Version | Effective Start Date | Effective End Date | Update Version Type |
| --- | --- | --- | --- | --- |
| CC 6755 –Real Time Congestion - AS Regulation Up Import Settlement | 5.0 | 04/01/09 | 04/30/2014 | Documentation Edits Only |
| CC 6755 –Real Time Congestion - AS Regulation Up Import Settlement | 5.1 | 05/01/2014 | 6/30/15 | Configuration Edits |
| CC 6755 –Real Time Congestion - AS Regulation Up Import Settlement | 5.2 | 07/01/2015 | 12/31/19 | Configuration Edits |
| CC 6755 –Real Time Congestion - AS Regulation Up Import Settlement | 5.2.5 | 01/01/2020 | 10/31/2021 | Configuration Edits |
| CC 6755 –Real Time Congestion - AS Regulation Up Import Settlement | 5.3 | 11/01/2021 | 10/31/21 | Configuration Edits |
| CC 6755 –Real Time Congestion - AS Regulation Up Import Settlement | 5.3.0a | 11/01/2021 | 4/30/2026 | Documentation Edits Only |
| CC 6755 –Real Time Congestion - AS Regulation Up Import Settlement | 5.4 | 5/1/2026 | Open | Configuration Edits |