Settlements & Billing

 Real Time Congestion – AS Non-Spinning Reserve Import Settlement

Version 5.4

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# Purpose of Document

The purpose of this document is to capture the requirements and design specification for a SaMC 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 (CC 6715, CC 6725, CC 6755, and CC 6765),
* less the CAISO net 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 Non-Spinning Reserve 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 Non-Spinning Reserve 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 Non-Spinning Reserve import at a Dynamic System 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 Non-Spinning Reserve AS and the (b) negative of hourly simple average of15-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 Non-Spinning Reserve import at its Dynamic System Resources for the hour. |
| 1.3 | If Congestion is present in the export direction, Real Time AS Non-Spin 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 Non-Spin 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 | FMMIntervalResourceRTNonSpinImportShadowPrice 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. |
| 2 | PTBChargeAdjustmentRTCongestionNonSpinAmount BJmdh | Pass through Bill (PTB) amount for this charge code  |

## Inputs - Predecessor Charge Codes or Pre-calculations

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

##

## CAISO Formulas

The RT congestion Non-Spin amount

RTCongestionNonSpinAmount BrtF’S’mdh= (RTNonSpinAwardCongestionAmount BrtF’S’mdh

+ RTNonSpinQSPCongestionAmount BrtF’S’mdh)

Where RTNonSpinAwardCongestionAmount BrtF’S’mdh =

(-1)\* (SUM (Q’,c) 0.25\*RTNonSpinAward BrtQ’F’S’mdhc)\* FMMIntervalResourceRTNonSpinImportShadowPrice rtmdhc

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 RTNonSpinQSPCongestionAmount BrtF’S’mdh =

( (-1) \*RTNonSpinNonContractEligibleQSP BrtF’S’mdh \* FMMIntervalResourceRTNonSpinImportShadowPrice rtmdhc)

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 Trading Hour **h** for each Business Associate **B** for Non-Spin

 BAHourlyRTCongestionNonSpinAmount Bmdh=

** RTCongestionNonSpinAmount 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 Non-Spin for Trading Hour **h**

CAISOHourlyTotalRTCongestionNonSpinAmount mdh =

 ** BAHourlyRTCongestionNonSpinAmount Bmdh

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

## Outputs

| Output ID | Name | Description |
| --- | --- | --- |
|  | In addition to any outputs listed below, all inputs shall be included as outputs. |  |
| 1 | RTCongestionNonSpinAmount BrtF’S’mdh | The Real Time Congestion Charge  |
| 2 | BAHourlyRTCongestionNonSpinAmount 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 | CAISOHourlyTotalRTCongestionNonSpinAmount mdh | The CAISO total RT Congestion revenue from Non-Spin 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 | RTNonSpinAwardCongestionAmount BrtF’S’mdh | BA RT Congestion Amount for Awarded Non-Spinning Reserve Imports  |
| 5 | RTNonSpinQSPCongestionAmount BrtF’S’mdh | BA RT Congestion Amount for QSP Non-Spinning Reserve 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 6725 – Real Time Congestion - AS Non-Spinning Reserve Import Settlement | 5.0 | 04/01/09 | 4/30/2014 | Documentation Edits Only |
| CC 6725 – Real Time Congestion - AS Non-Spinning Reserve Import Settlement | 5.1 | 05/01/2014 | 6/30/15 | Configuration and Documentation Edits |
| CC 6725 – Real Time Congestion - AS Non-Spinning Reserve Import Settlement | 5.2 | 07/01/2015 | 12/31/19 | Configuration Edits |
| CC 6725 – Real Time Congestion - AS Non-Spinning Reserve Import Settlement | 5.2.5 | 01/01/2020 | 10/31/2021 | Configuration Edits |
| CC 6725 – Real Time Congestion - AS Non-Spinning Reserve Import Settlement | 5.3 | 11/01/2021 | 10/31/21 | Configuration Edits |
| CC 6725 – Real Time Congestion - AS Non-Spinning Reserve Import Settlement | 5.3.0a | 11/01/2021 | 4/30/2026 | Documentation Edits Only |
| CC 6725 – Real Time Congestion - AS Non-Spinning Reserve Import Settlement | 5.4 | 5/1/2026 | Open | Configuration Edits |