Settlements & Billing

Configuration Guide: Day Ahead Congestion- AS Non-Spinning Reserve Import Settlement

CC 6720

Version 5.5

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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 Day Ahead market (DAM) are paid the Ancillary Service Marginal Price (ASMP) for the Day Ahead market at the relevant interties. However, because AS capacity imports and Energy schedules compete for transmission capacity at interties, the suppliers of awarded Day Ahead AS capacity imports are also 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 Day Ahead 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.

To the extent an Ancillary Service procured in the IFM from a System Resource becomes undispatchable due to an intertie transmission derate, in rescinding the Ancillary Service capacity payment, the CAISO shall credit back to the Scheduling Coordinator Congestion Charge assessed pursuant to Section 11 of the CAISO Tariff, but at the higher of the Day-Ahead and simple average of the fifteen (15) minute Real-Time Shadow Prices on the corresponding intertie. The keyword “lower” in the Tariff is replaced here with “higher” to account for the usual sign of the shadow prices - these are usually negative values, and thus preserve the intent of the FERC order.

The Billable Quantity that will be refunded shall be limited to the Undispatchable Capacity that was due to a transmission derate.

## Description

CC 6720 Day Ahead Congestion – AS Non-Spinning Reserve Import Settlement will perform the calculations necessary to implement the business rules identified in the Business Rules section below.

# Charge Code Requirements

## Business Rules

| Bus Req ID | Business Rule |
| --- | --- |
| 1.0 | The Congestion Charge for Non-Spinning Reserve import at a System Resource per hour is the product of (a) the awarded MW plus non-contract eligible QSP hourly capacity of Day-Ahead Non-Spinning Reserve AS and the (b) negative of Day-Ahead import direction Shadow Price for the resource for the Trading Hour. |
| 1.1 | The charge per BA per hour h is the sum of all the congestion charges for Non-Spinning Reserve import at its System Resources for the hour. |
| 1.2 | If Congestion is present in the export direction, Day Ahead AS Non-Spin Importers will not be paid nor charged for the counter-flows over the applicable intertie constraint. (Fact) |
| 1.3 | Non-contract eligible QSP is the portion of QSP scheduled under contracts but beyond the available rights capacity. (Fact) |
| 1.4 | 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. |
| 1.5 | A refund of Congestion Charge shall be given to System Resources, where the refund is limited to the quantity of Undispatchable Capacity due to a transmission derate as per CAISO Tariff Section 11, assessed at the higher of the Day-Ahead Shadow Price and the simple average of RTPD Shadow Prices over the hour of the resource, for Import of AS Non-Spinning Reserve for the relevant Trading Hour.  The keyword “lower” in the Tariff is replaced here with “higher” to account for the usual sign of the shadow prices - these are usually negative values. |
| 1.5.1 | The Non-Spin import Undispatchable Capacity MW value due a refund cannot exceed the MW values for DA Award plus the non-contract eligible portion of QSP for Non-Spin import. |
| 1.5.2 | Hourly RTPD Shadow Price for a resource is obtained by taking the simple average of the four 15-min RTPD Shadow Prices of the resource within the same Trading Hour. |
| 1.6 | AS qualified self-provision using ETC/TOR contracts, particularly Day-Ahead Non-Spinning Reserve QSP, that is within the remaining capacity entitlement of such contract shall not be charged for congestion. (Fact) |

## Predecessor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Ancillary Services Pre-Calculation |
| ETC/TOR/CVR Quantity Pre-Calculation |
| CC 6710 – Day-Ahead Congestion – AS Spinning Reserve Import Settlement |
| Spin and Non-spin No Pay Quantity Pre-Calculation |

## Successor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| CC 6700 - CRR Hourly Settlement |

## Inputs – External Systems

| Row # | Variable Name | Description |
| --- | --- | --- |
| 1 | HourlyResourceDANonSpinImportShadowPrice rtmdh | Day-Ahead Shadow Price for resource r for Trading Hour h. It is the marginal value of relieving intertie constraints (associated with the resource) for congestion in the import direction. ($/MW)  Note: This usually comes in as negative. |
| 2 | PTBChargeAdjustmentDACongestionNonSpinAmount BJmdh | Pass Through Bill (PTB) amount for this Charge Code. ($) |
| 3 | 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)  Note: This usually comes in as negative. |

## Inputs - Predecessor Charge Codes or Pre-calculations

| Row # | Variable Name | Predecessor Charge Code/  Pre-calc Configuration |
| --- | --- | --- |
| 1 | DANonSpinAward BrtQ’F’S’mdh | Ancillary Services Pre-Calculation |
| 2 | DANonSpinNonContractEligibleQSP BrtF’S’mdh | ETC/TOR/CVR Pre-Calculation |
| 3 | DAtoRTPD\_OTCReductionFlag rtmdh | CC 6710 – Day-Ahead Congestion – AS Spinning Reserve Import Settlement |
| 4 | BA15mResourceUntaggedNonSpinQuantity  BrtQ’F'S'mdhc | Spin and Non-spin No Pay Quantity Pre-calculation |

## 

## CAISO Formula

Day-Ahead Congestion Non-Spin amount for Business Associate B, Resource r, and Trading Hour h:

DACongestionNonSpinAmount BrtF’S’mdh =

(DACongestionNonSpinAwardChargeAmount BrtF’S’mdh

+ DACongestionNonSpinQSPChargeAmount BrtF’S’mdh

+ DANonSpinUndispatchableCapacityRefundAmount BrtF’S’mdh)

Where DACongestionNonSpinAwardChargeAmount BrtF’S’mdh =

Sum (Q’) (-1) \* DANonSpinAward BrtQ’F’S’mdh \* HourlyResourceDANonSpinImportShadowPrice rtmdh

Where Resource Type t = ITIE

Note: This filter is redundant as the quantity input is already filtered in AS Pre-calculation.

Where DACongestionNonSpinQSPChargeAmount BrtF’S’mdh =

(-1) \* DANonSpinNonContractEligibleQSP BrtF’S’mdh\* HourlyResourceDANonSpinImportShadowPrice rtmdh

Where DANonSpinUndispatchableCapacityRefundAmount BrtF’S’mdh =

(DANonSpinUndispatchableCapacityQty BrtF’S’mdh \* max(HourlyResourceDANonSpinImportShadowPrice rtmdh,HourlyResourceAverageRTNonSpinImportShadowPrice rtmdh )

And Where HourlyResourceAverageRTNonSpinImportShadowPrice rtmdh =

(1/4)\* FMMIntervalResourceRTNonSpinImportShadowPrice rtmdhc

And Where DANonSpinUndispatchableCapacityQty BrtF’S’mdh =

min[(DANonSpinAwardEligibleQuantity BrtF’S’mdhDANonSpinNonContractEligibleQSP BrtF’S’mdh),

(HourlyUntaggedNonSpinCapacity BrtF’S’mdh \* DAtoRTPD\_OTCReductionFlag rtmdh)]

And Where DANonSpinAwardEligibleQuantity BrtF’S’mdh = Sum (Q’) DANonSpinAward BrtQ’F’S’mdh

And Where HourlyUntaggedNonSpinCapacity BrtF’S’mdh =

*Sum (Q’,c)* BA15mResourceUntaggedNonSpinQuantity BrtQ’F'S'mdhc

Where Resource Type t = ITIE

BAHourlyDACongestionNonSpinAmount Bmdh=

*Sum (r,t,F’,S’)* DACongestionNonSpinAmount BrtF’S’mdh

Note: 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.

CAISOHourlyTotalDACongestionNonSpinAmount mdh =

** BAHourlyDACongestionNonSpinAmount Bmdh

Note: 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.

## Outputs

| Output Req ID | Name | Description |
| --- | --- | --- |
| 1 | In addition to any outputs listed below, all inputs shall be included as outputs. | All inputs. |
| 2 | DACongestionNonSpinAmount BrtF’S’mdh | The Congestion Charge for scheduling Non-Spin at a congested resource r where location type t = ITIE, for Trading Hour h of the DAM. ($) |
| 3 | BAHourlyDACongestionNonSpinAmount Bmdh | The Congestion Charge for scheduling Non-Spin for Trading Hour h of the DAM. ($)  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 | CAISOHourlyTotalDACongestionNonSpinAmount mdh | The CAISO total DA Congestion revenue from non-spin imports for Trading Hour h. ($)  This is provided as part of reporting structure and is not configured as an individual charge type. This is shown as a reporting BD in the BD matrix file. |
| 5 | DANonSpinUndispatchableCapacityRefundAmt BrtF’S’mdh | The amount of Non-Spinning Reserve Congestion Charge refund for Undispatchable Capacity due to a transmission derate affecting Scheduling Point / System Resource. ($) |
| 6 | HourlyUntaggedNonSpinCapacity BrtF’S’mdh | Hourly untagged Non-Spinning Reserve, which contains the Undispatchable Capacity due to a transmission derate, affecting Scheduling Point / System Resource rfor Trading Hour h across all markets. (MW) |
| 7 | DANonSpinUndispatchableCapacityQty BrtF’S’mdh | The recognized Day-Ahead Non-Spinning Reserve Undispatchable Capacity due to a transmission derate that is eligible for refund. (MW) |
| 8 | DANonSpinAwardEligibleQuantityBrtF’S’mdh | The recognized Day-Ahead Non-Spinning Reserve |
| 9 | DACongestionNonSpinAwardChargeAmount BrtF’S’mdh | The congestion charge for DA AS Non-Spinning Reserve Import Award. This includes the charge for Undispatchable Capacity that would be refunded in valid cases. |
| 10 | DACongestionNonSpinQSPChargeAmount BrtF’S’mdh | The congestion charge for DA AS Non-Spinning Reserve Import qualified self-provision. This charge includes ETC/TOR contract usage beyond the rights capacity. |
| 11 | HourlyResourceAverageRTNonSpinImportShadowPrice rtmdh | The hourly average Real Time Import Shadow Price for a resource. |

# Charge Code Effective Dates

| Charge Code/  Pre-calc Name | Document Version | Effective Start Date | Effective End Date | Version Update Type |
| --- | --- | --- | --- | --- |
| CC 6720 –Day Ahead Congestion - AS Non-Spinning Reserve Import Settlement | 5.0 | 04/01/09 | 3/31/09 | Documentation Edits Only |
| CC 6720 –Day Ahead Congestion - AS Non-Spinning Reserve Import Settlement | 5.1 | 04/01/10 | 4/30/14 | Configuration Impacted |
| CC 6720 –Day Ahead Congestion - AS Non-Spinning Reserve Import Settlement | 5.2 | 05/01/14 | 6/30/15 | Configuration Impacted |
| CC 6720 –Day Ahead Congestion - AS Non-Spinning Reserve Import Settlement | 5.3 | 7/1/15 | 10/31/2021 | Configuration Impacted |
| CC 6720 –Day Ahead Congestion - AS Non-Spinning Reserve Import Settlement | 5.4 | 11/1/2021 | 4/30/2026 | Configuration Impacted |
| CC 6720 –Day Ahead Congestion - AS Non-Spinning Reserve Import Settlement | 5.5 | 5/1/2026 | Open | Configuration Impacted |