SaMC

Configuration Guide: Day Ahead Residual Unit Commitment (RUC) Tier 2 Allocation

CC 6807

Version 5.2

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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

There are two payments associated with the Day Ahead Residual Unit Commitment (RUC). One is the RUC Availability Payment at the RUC Price, and the other is the RUC Bid Cost Recovery (BCR).

During the Day Ahead Market, if the scheduled Demand is less than the CAISO's forecast, of CAISO Demand Residual Unit Commitment (RUC) Availability is procured to ensure that enough committed capacity is available and on line to meet the forecasted Demand. Awarded RUC capacity is paid at the RUC Price.

Bid Cost Recovery (BCR) is the process by which the CAISO ensures Scheduling Coordinators (SCs) are able to recover Start Up Costs (SUC), Minimum Load Costs (MLC), Transition Costs (TC), and Energy Bid Costs. In order to recover SUC and MLC, a Generating Unit, Pumped-Storage Unit, or resource-specific System Resource must be committed by the CAISO. Likewise, the CAISO must commit a Multi-Stage Generating Resource in order for it to receive TC compensation. Bid Cost recovery for Energy and Ancillary Services (A/S) Bids applies to Bid Cost Recovery Eligible Resources in general (for example, Generating Units, Pumped-Storage Units, Proxy Demand Resources, and System Resources) scheduled or dispatched by CAISO independent of whether they are CAISO-committed or instead are self-committed.

For each resource, the total SUC, MLC, TC, Bid Costs, and market revenues from IFM, RUC, and RTM are netted together for each Settlement Interval. If the difference between the total costs and the market revenues is positive in the relevant market, then the net amount represents a Shortfall. If the difference is negative in the relevant market, the net amount represents a Surplus. For each resource or MSS entity that has elected net settlement, the IFM, RUC, and RTM Shortfalls and Surpluses are then netted over all hours of a Trading Day. As a result, surpluses from any of the CAISO markets offset any shortfalls from the other markets over the entire Trading Day. If the net Trading Day amount is positive (a Shortfall), the Scheduling Coordinator receives a BCR Uplift Payment equal to the net Trading Day amount. While there is one Bid Cost Recovery payment per resource per day across all CAISO Markets, the methodology for allocation of RUC Compensation Costs per Trading Hour occurs in two tiers. RUC Costs are first allocated in CC 6806 DA RUC Tier 1 Allocation based upon Net Negative CAISO Demand Deviation and positive net Virtual Supply Awards, and any remaining costs are allocated pro rata to metered CAISO Demand under CC 6807 DA RUC Tier 2 Allocation.

## Description

The RUC Compensation Costs (represented as CAISO Hourly Total RUC Allocation Amount) that are allocated to Scheduling Coordinators under CC 6806 DA RUC Tier 1 Allocation and CC 6807 DA RUC Tier 2 Allocation is the net of CAISO Hourly Total RUC Availability Payment (CC 6800), CAISO Hourly Total (CC 6824), and CAISO Hourly Total RUC Uplift Allocation Amount (generated by the Sequential Netting Pre-calc). The CAISO Hourly Total RUC Allocation Amount is allocated in two tiers as follows:

In the first tier, the CAISO Hourly Total RUC Allocation Amount is allocated to Business Associates based on their Net Negative CAISO Demand Deviation and positive net Virtual Supply Awards in the relevant Trading Hour. The Business Associate shall be charged an amount equal to the RUC Uplift Rate multiplied by the sum of the Net Negative CAISO Demand Deviation and any RUC Bid Cost obligation for Virtual Supply Awards. RUC Bid Cost obligation for Virtual Supply Awards of a Business Associate shall be calculated as the product of (a) the positive net Virtual Supply Awards for the Scheduling Coordinator divided by the sum of each Scheduling Coordinator’s positive net Virtual Supply Awards and (b) any positive net system-wide Virtual Supply Awards. The RUC Uplift Rate is the lower of CAISO Hourly Total RUC Allocation Amount divided by the sum of the Total Net Negative CAISO Demand and positive net system-wide Virtual Supply Awards in that Trading Hour or CAISO Hourly Total RUC Allocation Amount divided by the RUC Capacity in that Trading Hour.

Any remaining CAISO Hourly Total RUC Allocation Amount in a Trading Hour that was not allocated in Charge Code 6806 RUC Tier 1 Allocation, shall be allocated proportionately to the Business Associate under Charge Code 6807 RUC Tier 2 Allocation based upon metered CAISO Demand.

For MSS entities, regardless of gross or net settlement, that have elected to opt-out of RUC, RUC Compensation Costs will not be assessed to the MSS SC. MSS entities that have elected to opt-into RUC, regardless of gross or net settlement, RUC Uplift Costs will be assessed in the same manner as other non-MSS SCs.

# Charge Code Requirements

## Business Rules

| **Bus Req ID** | **Business Rule** |
| --- | --- |
| 1.0 | CAISO Hourly Total RUC Allocation Amount is allocated in two tiers |
| 1.1 | The remaining RUC Compensation Costs, if any, after CC 6806 DA RUC Tier 1 Allocation is distributed in Tier 2 allocation.  |
| 1.2 | Tier 2 is allocated to every Business Associate proportional to its metered CAISO Demand for each Trading Hour. |
| 1.3 | The Measured Demand is the sum of the metered CAISO Demand and the Real-Time Interchange export schedules. |
| 2.0 | If a MSS has elected to opt-out of RUC process, regardless of gross or net settlement, the MSS SC will not be allocated RUC Compensation Costs under CC 6806 DA RUC Tier 1 Allocation and CC 6807 DA RUC Tier 2 Allocation. |
| 2.1 |  n/a |
| 2.2 | For MSS operators that have opted-in the RUC process, regardless of gross or net settlement, Tier 2 allocation to MSS SC will be performed in the same manner as a non-MSS SC. |

## Predecessor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| CC 6806 – Day Ahead Residual Unit Commitment (RUC) Tier 1 Allocation |
| Pre-calc – Measured Demand Over Control Area |

## Successor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| None |

## Inputs – External Systems

|  |  |  |
| --- | --- | --- |
| Row # | Variable Name | Description |
|  | None |  |

## Inputs - Predecessor Charge Codes or Pre-calculations

|  |  |  |
| --- | --- | --- |
| Row # | Variable Name | Predecessor Charge Code/ Pre-calc Configuration |
| 1 | CAISOHrlyTotalRUCAllocationAmount **h** | CC 6806 – Day Ahead Residual Unit Commitment (RUC) Tier 1 Allocation |
|  |  |  |
| 2 | RUCTier1Charge **Bh** | CC 6806 – Day Ahead Residual Unit Commitment (RUC) Tier 1 Allocation |
|  |  |  |
| 3 | BAHourlyResMeteredDemandMinusTORControlAreaQty\_BCR **BrtuT’I’M’F’W’S’VL’mdh** | Measured Demand Over Control Area Pre-calculation in which metered Demand quantity is a negative value that considers Exemption #6 and TOR quantities are excluded. |

## CAISO Formula

Tier 2 RUC Charge:

RUCTier2Charge **Bh** = BARUCBCRHrlyDemand **Bh** \* RUCTier2BaseRate **h**\* (-1)

Where BARUCBCRHrlyDemand **Bh** =

NonMSSRUCBCRHrlyDemand **Bh** +

MSSRUCBCRHrlyDemand **Bh**

Where NonMSSRUCBCRHrlyDemand **Bh** =



BAHourlyResMeteredDemandMinusTORControlAreaQty\_BCR **BrtuT’I’M’F’W’S’VL’mdh**

#### Where (T’ <> ‘MSS’)

And MSSRUCBCRHrlyDemand **Bh** =



BAHourlyResMeteredDemandMinusTORControlAreaQty\_BCR **BrtuT’I’M’F’W’S’VL’mdh**

#### Where (T’ = ‘MSS’ and RUC Participation Flag V = ‘Y’)

And RUCTier2BaseRate **h** =

RUCTier2AllocationAmount **h** / CAISORUCBCRHrlyDemand **h**

Where RUCTier2AllocationAmount **h** =

#### CAISOHrlyTotalRUCAllocationAmount **h** - CAISORUCTier1Charge **h**

And CAISORUCBCRHrlyDemand **h** = BARUCBCRHrlyDemand **Bh** \*(-1)

And CAISORUCTier1Charge **h** = RUCTier1Charge **Bh** \*(-1)

## Outputs

| Output ID | Name | Description |
| --- | --- | --- |
|  | In addition to any outputs listed below, all inputs shall be included as outputs. |  |
| 1 | RUCTier2Charge **Bh** | The Tier 2 RUC Bid Cost Recovery Allocation Charge for Business Associate B and hour h. |
| 2 | BARUCBCRHrlyDemand **Bh** | Metered Demand quantity for Business Associate B in Trading Hour h, where Business Associate is a non-MSS entity or an MSS entity with RUC opt-in election.  |
| 3 | NonMSSRUCBCRHrlyDemand **Bh** | Metered Demand quantity for Trading Hour h where Business Associate B is a non-MSS entity. |
| 4 | MSSRUCBCRHrlyDemand **Bh** | Metered Demand quantity for Trading Hour h where Business Associate B is a MSS entity with RUC opt-in election. |
| 5 | RUCTier2BaseRate **h** | The Tier2 RUC BCR allocation rate for Trading Hour h. |
| 6 | CAISORUCBCRHrlyDemand **h** | Total metered Demand quantity for in Trading Hour h, where Business Associate is a non-MSS entity or an MSS entity with gross settlement election. |
| 7 | CAISORUCTier1Charge **h** | Total RUC Compensation Costs allocated under CC 6806, Day Ahead Residual Unit Commitment (RUC) Tier 1 Allocation, in Trading Hour h. |
| 8 | RUCTier2AllocationAmount **h** | Total amount allocated in RUC Tier 2 cost allocation for Trading Hour h. |

# Charge Code References and Internal Comments

## Charge Code Effective Date

| **Charge Code/****Pre-calc Name** | **Document Version** | **Effective Start Date** | **Effective End Date** | **Version Update Type** |
| --- | --- | --- | --- | --- |
| CC 6807 – Day Ahead Residual Unit Commitment (RUC) Tier 2 Allocation | 5.0 | 04/01/09 | 07/31/10 | Documentation Edits Only |
| CC 6807 – Day Ahead Residual Unit Commitment (RUC) Tier 2 Allocation | 5.0a | 08/01/10 | 09/30/10 | Documentation Edits Only |
| CC 6807 – Day Ahead Residual Unit Commitment (RUC) Tier 2 Allocation | 5.0b | 10/01/10 | 03/04/10 | Documentation Edits Only |
| CC 6807 – Day Ahead Residual Unit Commitment (RUC) Tier 2 Allocation | 5.1 | 03/05/10 | 01/31/11 | Configuration Impacted |
| CC 6807 – Day Ahead Residual Unit Commitment (RUC) Tier 2 Allocation | 5.2 | 02/01/11 | ~~Open4~~/30/25 | ~~Documentation Edits Only~~Configuration Impacted |

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