Settlements & Billing

Configuration Guide: RUC and RTM Bid Cost Recovery Settlement

**CC 6620**

 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 Charge Code in one document.

# Introduction

## Background

Bid Cost Recovery (BCR), as applied over the CAISO Control Area, is the process by which the CAISO ensures SCs are able to recover Start-Up Costs (SUC), Minimum Load Costs (MLC), MSG ResourceTransition 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 resource-specific System Resources) scheduled or dispatched by CAISO, independent of whether they are CAISO-committed or instead are self committed.

For purposes of determining BCR eligibility, CAISO uses a concept called Commitment Period. A Commitment Period consists of the consecutive time periods within a Trading Day when a resource is on-line, synchronized to the grid, and available for dispatch. A Commitment Period is comprised of two distinct sub-types – Self-Commitment Period and CAISO Commitment Period. The portion of a Commitment Period where a resource submits Energy Self-Schedule or A/S self provision is called a Self-Commitment Period. A Self-Commitment Period may include time periods when a resource is not operating pursuant of an Energy Self-schedule or A/S self-provision, but must be on due to Ramping constraints or a Minimum Run Time or Minimum Down Time requirement. Resources are not eligible for BCR of SUC, MLC or TC during Self-Commitment Periods, but are eligible for BCR of awarded Energy and A/S. The portion of a Commitment Period that is not a Self-Commitment Period is called a CAISO Commitment Period. Resources are eligible to receive BCR for SUC, MLC, TC, awarded Energy and A/S during a CAISO Commitment Period.

SUC, MLC and TC for each market and resource are determined in Pre-calculation Start-Up and Minimum Load Cost. The commitment costs together with the energy and AS bid costs are then used as inputs to calculate a resource’s net difference between costs and revenues in separate Pre-calculations by market --- IFM Net Amount, RUC Net Amount, and RTM Net Amount. 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, in the case of a MSS entity that has elected net settlement, all MSS resources collectively, the IFM, RUC, and RTM Shortfalls and Surpluses are then netted over all hours of a Trading Day, with the IFM Shortfalls and Surpluses netted separately from the RUC and RTM Shortfalls and Surpluses. Thus, RUC or RTM surpluses over the entire Trading Day are used to offset a RTM or RUC shortfall, respectively, incurred over the entire Trading Day. For either IFM or the combined RUC and RTM netting, if the net amount over the Trading Day is positive (a Shortfall), then the resource or net-settled MSS entity receives a BCR Uplift Payment equal to the net Trading Day amount under CC 6620 – RUC and RTM Bid Cost Recovery Settlement (for a combined RUC and RTM shortfall), or CC 6630 IFM Bid Cost Recovery Settlement (for an IFM shortfall).

## Description

Charge Code *CC 6620 – RUC and RTM Bid Cost Recovery Settlement* applies over the CAISO Control Area. The calculation presents the Bid Cost Recovery Settlement for various Bid Cost Recovery Eligible Resources that are settled on a Resource basis as well as those Bid Cost Recovery Eligible Resources of MSS entities that have selected to settle Energy on a net-settlement basis. Eligible SUC, MLC, TC, Bid Costs and market revenues are netted across RUC and RTM, Trading Hours, and Settlement Intervals in a Trading Day for a single RUC and RTM Uplift Payment by resource or MSS entity.

For an MSS entity that has elected gross settlement, the RUC and RTM BCR uplift payment is calculated by resource. For an MSS entity that has elected net settlement, the BCR uplift payment is calculated at the MSS level.

The net amount of SUC, MLC, TC, Bid Costs, and market revenue for each resource or MSS net entity, CAISO market, and Settlement Interval are calculated by predecessor Pre-calculations RUC Net Amount, and RTM Net Amount, then used as inputs for the BCR Settlement calculation. If the summation of all net amounts for a Trading Day is positive, the Scheduling Coordinator will receive a BCR payment. The BCR payments are subsequently used as inputs for Pre-calculation BCR Sequential Netting.

# Charge Code Requirements

## Business Rules

| Bus Req ID | Business Rule |
| --- | --- |
|  | This Charge Code calculates the Bid Cost Recovery Settlement for various Bid Cost Recovery Eligible Resources that are settled on a Resource basis as well as those Bid Cost Recovery Eligible Resources of MSS entities that have selected to settle Energy on a net-settlement basis. Eligible SUC, MLC, TC, Bid Costs and market revenues for RUC and RTM are netted across all Trading Hours, and Settlement Intervals in a Trading Day for a single combined RUC and RTM Uplift Payment by resource or MSS entity. |
|  | For an MSS Operator that has elected net Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RUC Bid Costs and RUC Market Revenue are combined with RTM Bid Cost and RTM Market Revenue on an MSS level. |
|  | For Multi-Stage Generating Resources, Unrecovered Bid Cost Uplift Payments will be calculated and made at the Generating Unit level and not the MSG Configuration level.  |
|  | MSS Bid Cost Recovery Eligible Resources by MSS Operators that have elected net settlement will receive Unrecovered Bid Cost Uplift Payment for MSS Bid Cost Recovery Eligible Resources at the MSS level and not by individual resource. |
|  | MSS Bid Cost Recovery Eligible Resources by MSS Operators that have elected gross settlement will receive Unrecovered Bid Cost Uplift Payments at the MSS Bid Cost Recovery Eligible Resource level like all other resources. |
|  | Scheduling Coordinators shall receive RUC and RTM Unrecovered Bid Cost Uplift Payments for a Bid Cost Recovery Eligible Resource, if the net of all RUC Bid Cost Shortfalls, RUC Bid Cost Surpluses, RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses for that Bid Cost Recovery Eligible Resource over a Trading Day is positive. |
|  | For Metered Subsystems that have elected net settlement, the Unrecovered Bid Cost Uplift Payment will be the sum, if positive, of the RUC and RTM Bid Cost Shortfall and, if any surplus, the existing RUC and RTM Bid Cost Surplus, for each Trading Hour over the Trading Day for all Bid Cost Recovery Eligible Resources in the MSS. |
|  | The CAISO will provide EIM Participating Resources RTM Bid Cost Recovery. |
|  | The CAISO will calculate Real-Time Bid Cost Recovery in accordance with Tariff Section 11.8.4, except that the CAISO will treat a non-zero EIM Base Schedule of an EIM Participating Resource as a Self-Schedule and the EIM Participating Resource will not be eligible for recovery of Start-Up Costs and Minimum Load Costs, in accordance with the treatment of costs during self-commitment intervals as specified in Tariff Section 11.8.4.1.2. |
|  | This Charge Code must be computed daily on a dailybasis. |

## Predecessor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Pre-calc – RUC Net Amount |
| Pre-calc – RTM Net Amount |

## Successor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Pre-calc – Bid Cost Recovery Sequential Netting |

## Inputs - External Systems

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

## Inputs - Predecessor Charge Codes or Pre-calculations

| Row # | Variable Name | Predecessor Charge Code/ Pre-calc Configuration |
| --- | --- | --- |
| 1 | BAARUCNetAmount BruT’I’Q’M’F’mdhcif | Pre-calc – RUC Net Amount. The net difference of RUC Cost and RUC Revenue.  |
| 2 | BAARTMNetAmount BruT’I’M’Q’F’mdhcif | Pre-calc – RTM Net Amount. The net difference of RTM Cost and RTM Revenue  |
| 3 | BAARUCMSSNetBCRAmount BT’I’Q’M’mdhcif | Pre-calc – RUC Net Amount. The difference between of RUC Cost and RUC Revenue |
| 4 | BAARTMMSSNetBCRAmount BT’I’Q’M’mdhcif | Pre-calc – RTM Net Amount. The net difference of RTM Energy Bid Costs, RTM AS Costs, RTM Market Revenue, and RTM AS Revenue for an MSS entity with net Settlement election  |

## CAISO Formula

The daily uplift settlement of Bid Cost Recovery for each resource is as follows:

### TradingDayTotalRUCandRTMBCRUpliftAmount BruT’I’Q’M’F’md =

BAATradingDayTotalRUCandRTMBCRUpliftAmount BruT’I’Q’M’F’md

Where

Q’ = ‘CISO’

### BAATradingDayTotalRUCandRTMBCRUpliftAmount BruT’I’Q’M’F’md =

BAATradingDayRUCandRTMBCRUpliftAmount BruT’I’Q’M’F’md +

BAATradingDayMSSNetRUCandRTMBCRUpliftAmount BT’I’Q’M’md

BAATradingDayRUCandRTMBCRUpliftAmount BruT’I’Q’M’F’md =

(-1) \* Max (0, BAATradingDayRUCandRTMBCRNetAmount BruT’I’M’Q’F’md)

BAATradingDayRUCandRTMBCRNetAmount BruT’I’Q’M’F’md =

Sum (h, c, i, f) {BAARUCNetAmount BruT’I’Q’M’F’mdhcif +

BAARTMNetAmount BruT’I’M’Q’F’mdhcif }

**Note:**The above charge type is calculated for Entity Type T’ <> MSS or ( Entity Type T’ = MSS and Energy Settlement Type I’ = Gross), as previously filtered for both underlying inputs used in the above formula.

BAATradingDayMSSNetRUCandRTMBCRUpliftAmount BT’I’Q’M’md =

(-1) \* Max (0, BAATradingDayMSSNetRUCandRTMBCRNetAmount BT’I’Q’M’md)

BAATradingDayMSSNetRUCandRTMBCRNetAmount BT’I’Q’M’md =

Sum (h, c, i, f) { BAARUCMSSNetBCRAmount BT’I’Q’M’mdhcif
+ BAARTMMSSNetBCRAmount BT’I’Q’M’mdhcif }

**Note:**The above charge type is calculated for Entity Type T’ = MSS and Energy Settlement Type I’ = NET, as previously filtered for both underlying inputs used in the above formula.

## Outputs

| Row # | Name | Description |
| --- | --- | --- |
|  | In addition to any outputs listed below, all inputs shall be included as outputs. |  |
| 1 | TradingDayTotalRUCandRTMBCRUpliftAmount BrQ’uT’I’M’F’md | Total RUC/RTM BCR Uplift Payment (in $) for MSS and Non-MSS entities for resources in the CAISO Control Area. |
| 2 | BAATradingDayTotalRUCandRTMBCRUpliftAmount BruT’I’Q’M’F’md  | Total RUC/RTM BCR Uplift Payment (in $) for MSS and Non-MSS entities for resources in the CAISO Control Area and EIM Balancing Authority Areas. |
| 3 | BAATradingDayRUCandRTMBCRUpliftAmount BruT’I’Q’M’F’md | RUC/RTM BCR Uplift Payment (in $) for non-MSS resources and resources associated with an MSS entity that has elected Gross settlement, where the resources are associated with the CAISO Control Area and EIM Balancing Authority Areas. |
| 4 | BAATradingDayRUCandRTMBCRNetAmount BruT’I’Q’M’F’md | RUC/RTM BCR net amount daily total (in $) for non-MSS resources and resources associated with an MSS entity that has elected Gross settlement, where the resources are associated with the CAISO Control Area and EIM Balancing Authority Areas. |
| 5 | BAATradingDayMSSNetRUCandRTMBCRUpliftAmount BT’I’Q’M’md | RUC/RTM BCR Uplift Payment (in $) for MSS entity that has elected Net settlement, where the MSS is part of the CAISO Control Area or an EIM Balancing Authority Area.  |
| 6 | BAATradingDayMSSNetRUCandRTMBCRNetAmount BT’I’Q’M’md | RUC/RTM BCR net amount daily total (in $) for a MSS entity that has elected Net settlement, where the MSS is part of the CAISO Control Area or an EIM Balancing Authority Area.  |

# Charge Code Effective Date

| Charge Code/Pre-calc Name | Document Version | Effective Start Date | Effective End Date | Version Update Type |
| --- | --- | --- | --- | --- |
| CC 6620 – Bid Cost Recovery Settlement | 5.0a | 04/01/09 | 07/31/10 | Documentation Edits Only |
| CC 6620 – Bid Cost Recovery Settlement | 5.0b | 08/01/10 | 09/30/10 | Documentation Edits Only |
| CC 6620 – Bid Cost Recovery Settlement | 5.0c | 10/01/10 | 4/30/14 | Documentation Edits Only |
| CC 6620 – RUC and RTM Bid Cost Recovery Settlement | 5.1 | 5/01/14 | 4/30/14 | Configuration Impacted |
| CC 6620 – RUC and RTM Bid Cost Recovery Settlement | 5.2 | 10/01/14 | 9/30/14 | Configuration Impacted |
| CC 6620 – RUC and RTM Bid Cost Recovery Settlement | 5.3 | 5/01/14 | 9/30/14 | Configuration Impacted |
| CC 6620 – RUC and RTM Bid Cost Recovery Settlement | 5.4 | 10/01/14 | 4/30/26 | Configuration Impacted |
| CC 6620 – RUC and RTM Bid Cost Recovery Settlement | 5.5 | 5/01/26 | Open | Configuration Impacted |