**Settlements & Billing**

Configuration Guide: RUC Net Amount

**Pre-calculation**

Version 6.0

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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) 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 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 an 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 up 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 CAISO Commitment Period. Resources are eligible to receive BCR for SUC, MLC, TC, awarded Energy and A/S during a CAISO Commitment Period.

For each resource, the total SUC, MLC, TC, Bid Costs together with the energy and AS bid costs, and market revenues from 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, the RUC, and RTM Shortfalls and Surpluses are then netted over all hours of a Trading Day. Net Surpluses from either of the RUC or RTM markets offset any net shortfalls from the RTM or RUC market, respectively, 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.

Bid Cost Recovery for resource costs in the IFM, RUC and RTM markets is determined for each Settlement Interval based upon a resource’s performance and delivered energy relative to its Expected Energy. Pre-calculation RUC Net Amount, as described herein, provides the net Shortfall or Surplus for the RUC component of Bid Cost Recovery.

With the Day Ahead Market Enhancement (DAME) initiative, RUC refers to Residual Unit Commitment for Reliability Capacity, which covers both the new products Reliability Capacity Up (RCU) and Reliability Capacity Down (RCD).

## Description

In this BPM, starting whenever is the Go-live date of DAME/EDAM initiatives, the term RUC will correspond to the residual unit commitment process for Reliability Capacity where Reliability Capacity Up (RCU) and/or Reliability Capacity Down (RCD) is awarded. Further, in this document, the acronym RUC (just so we can keep mostly the same name as before) will be a shorthand for both RCU and RCD and can take the place of RCU/RCD. Where necessary to differentiate the Up or Down product, RCU or RCD will be specified.

For each Settlement Interval, this pre-calculation will generate the RUC Bid Costs, RUC Market Revenue, and the RUC Net Amount as the net difference between RUC costs and RUC revenue for Bid Cost Recovery Eligible Resources that got RCU or RCD awards in a single Trading Day. In any given settlement period, a resource can only be awarded RCU, or RCD, but not both. The RUC Net Amount is subsequently used as an input for CC 6620, RUC and RTM Bid Cost Recovery Settlement and for Pre-calculation Bid Cost Recovery Sequential Netting. For EDAM SCs, CC 6620 eventually feeds CC 66200 (RTM Bid Cost Recovery EIM Settlement) and will get their RUC bid cost recovery settlement under this latter charge code.

RUC Bid Costs and RUC Market Revenue for a resource are set to zero in a Settlement Interval where the negative Uninstructed Imbalance Energy (UIE) is in excess of both (a) 5MWh divided by the number of Settlement Intervals in a Trading Hour and (b) 3% of the resource’s maximum capacity divided by the number of Settlement Intervals in a Trading Hour.

# Charge Code Requirements

## Business Rules

| Bus Req ID | Business Rule |
| --- | --- |
|  | This Pre-calc is a daily computation generating results on a Settlement Interval basis. |
|  | This charge code applies to market participants, which got RCU or RCD awards. |
|  | This charge code applies to EDAM SCs for their Bid Cost Recovery Eligible resources, if these resources have RCU or RCD awards. |
|  | Resources for Metered sub-systems (MSS) will be treated like , regardless of the MSS’ gross or net energy election, like any other non-MSS resources. |
|  | Regardless of Resource Type, RUC Net Amount must follow the same sign convention --- positive RUC Net Amount indicates a Shortfall, negative RUC Net Amount indicates a Surplus. |
|  | RUC Bid Costs combines all RCU and RCD Bid Costs; and RUC Revenues combines all RCU and RCD revenues. |
|  | No pay quantities for RCU and RCD are taken out from the values for RUC Bid Costs and RUC Revenues. |
|  | The CAISO excludes RUC Bid Costs and RUC Market Revenues from calculations to the extent the costs or revenues relate to RA Capacity that overlaps with RCU or RCD Award.  The RA overlapping capacity will be excluded regardless of opt in or out of selection of LSE(s) during the transition period for the RA overlap capacity LSE true-up mechanism. |
|  | RUC Bid Costs are computed as the sum of (a) the (RCU awards less RCU No Pay quantity) times RCU Bid price , and (b) the (RCD awards less RCD No Pay quantity) times RCD Bid price |
|  | RUC revenues is the sum of (a) RCU payment less RCU no pay amount, and (b) RCD payment less RCD no pay amount. |
|  | For purposes of determining the RUC Unrecovered Bid Cost Uplift Payments and for the purposes of allocating Net RUC Bid Cost Uplift, the CAISO shall calculate the RUC Bid Cost Shortfall or the RUC Bid Cost Surplus as the algebraic difference between the RUC Bid Cost and the RUC Market Revenues for each Bid Cost Recovery Eligible Resource for each Settlement Interval. |
|  | The RUC Bid Costs shall be calculated pursuant to Tariff Section 11.8.3.1 and the RUC Market Revenues shall be calculated pursuant to Tariff Section 11.8.3.2. |
|  | Bid Cost Recovery costs related to the energy delivered from Short Start Units committed in Real-Time as a result of awarded RUC Capacity will be included in RTM Compensation Costs. |
|  | For any Settlement Interval, the RUC Market Revenue for a Bid Cost Recovery Eligible Resource is the RUC Availability Payment divided by the number of Settlement Intervals in a Trading Hour. |
|  | If the RUC Availability Bid Cost of a BCR Eligible Resource is reduced to zero (0) in a Settlement Interval because of Uninstructed Deviation, then the RUC Market Revenue for that resource for that Settlement Interval shall also be set to zero (0) since the resource is subject to rescission of RUC Availability Payments. |
|  | For Multi-Stage Generating (MSG) Resources, Energy Bid Costs (determined under IFM Net Amount Pre-calculation, RUC Net Amount Pre-calculation, and RTM Net Amount Pre-calculation) are calculated at the resource level. |
|  | For Multi-Stage Generating (MSG) Resources, the comparison of market revenues to bid costs occurs at the resource level. |
|  | The Minimum Load Cost for the applicable Settlement Interval shall be the Minimum Load Cost of the Bid Cost Recovery Eligible Resource divided by the number of Settlement Intervals in a Trading Hour. |
|  | For each Settlement Interval, only the RUC Minimum Load Cost in a CAISO RUC Commitment Period is eligible for Bid Cost Recovery. |
|  | The RUC Minimum Load Cost for any Settlement Interval is zero if: |
|  | 1. the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule in that Settlement Interval; |
|  | 1. the Bid Cost Recovery Eligible Resource is not committed or Dispatched in the Real-time Market in the applicable Settlement Interval; or |
|  | 1. the applicable Settlement Interval is included in an IFM Commitment Period. |
|  | For the purposes of determining RUC Minimum Load Cost for a Bid Cost Recovery Eligible Resource recovery of the RUC Minimum Load Costs is subject to the Real-time Performance Metric. |
|  | The RUC Minimum Load calculation shall be subject to the Shut-Down State Variable. |
|  | The CAISO will adjust the RTM Energy Bid Cost, the RUC and RTM Minimum Load Costs and the RTM Market Revenues calculations by multiplying the Real-Time Performance Metric with those amounts for the applicable Settlement Interval. |
|  | In all cases, regardless of the rules specified herein, the application of the Real-Time Performance Metric shall never increase a BCR Eligible Resource’s Unrecovered Bid Cost Uplift payments. |
|  | If the RTM Energy Bid Cost plus the RUC and RTM Minimum Load Costs, and the RTM Market Revenues are greater than or equal to zero (0), the CAISO will apply the Real-Time Performance Metric to RTM Energy Bid Costs, RUC and RTM Minimum Load Costs, and not the RTM Market Revenues. |
|  | If the RTM Energy Bid Costs plus the RUC and RTM Minimum Load Costs are greater than or equal to zero (0) and the RTM Market Revenues are negative, the CAISO will apply the Real-Time Performance Metric to the RTM Energy Bid Costs, RUC and RTM Minimum Load Costs, and the RTM Market Revenues. |
|  | If the RTM Energy Bid Costs plus the RUC and RTM Minimum Load Costs are negative, and the RTM Market Revenues are greater than or equal to zero (0) , the CAISO will not apply Real-Time Performance Metric to the RTM Energy Bid Costs, RUC or RTM Minimum Load Costs or the RTM Market Revenues. |
|  | If the RTM Energy Bid Costs plus the RUC and RTM Minimum Load Costs, and the RTM Market Revenues are negative, the CAISO will apply the Real-Time Performance Metric to the RTM Market Revenues but not the RTM Energy Bid Costs or the RUC or RTM Minimum Load Costs. |
|  | If for a given Settlement Interval the absolute value of the resource’s Metered Energy, less Regulation Energy and less Expected Energy, is less than or equal to the Performance Metric Tolerance Band, then the CAISO will not apply the Real-Time Performance Metric to the calculation of the RTM Energy Bid Cost, RTM Minimum Load Cost, or RTM Market Revenue. |
|  | Bid Cost Recovery (BCR) Eligible Resources are those resources eligible to participate in the Bid Cost Recovery. They include Generating Units, System Units, System Resources with RTM Economic bids, Participating Loads, and Proxy Demand Resources. *(Fact)* |
|  | A System Resource that has a Schedule that results from Bids submitted in violation of Section Tariff 30.5.5 (Scheduling Sourcing/Sinking in Same Balancing Authority Area) shall not be a Bid Cost Recovery Eligible Resource for any Settlement Interval that occurs during the time period covered by the Schedule that results from Bids submitted in violation of Section Tariff 30.5.5. |
|  | Accepted Self-Schedule Hourly Blocks, cleared Economic Hourly Block Bids, and cleared Economic Hourly Block Bids with Intra-Hour Option are not eligible to participate in Bid Cost Recovery in the Real-Time Market. |
|  | Scheduling Coordinators for Non-Generator Resources are not eligible to recover Start-Up Costs, Minimum Load Costs, Pumping Costs, Pump Shut-Down Costs, or Transition Costs but are eligible to recover Energy Bid Costs, RUC Availability Payments and Ancillary Service Bid Costs. |
|  | PTB Logic apples to the RUC Net Amount Pre-calculation. |
|  | Balancing Authority Area attribute shall be associated with the net amounts - for resource net amounts - to be used in successor charge codes. |
|  | When an eligible resource has an interval with a negative MWh meter, CAISO will not charge for the energy of those intervals. |

## Predecessor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Pre-calc – Metered Energy Adjustment Factor |
| Pre-calc – IFM Net Amount |
| Pre-calc – RT Energy Quantity |
| Pre-calc – RTM Net Amount |
| Pre-calc – Start Up and Minimum Load Cost |
| CC 8800 – DA RUC Reliability Capacity Up Settlement |
| CC 8810 – DA RUC Reliability Capacity Down Settlement |

## Successor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| CC 6620 – RUC and RTM Bid Cost Recovery Settlement |
| Pre-calc – Bid Cost Recovery Sequential Netting |

## Inputs – External Systems

| Row # | Variable Name | Description |
| --- | --- | --- |
|  | BAHourlyResRCUAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh | The hourly awarded Reserve Capacity Up MW quantity for each resource for every hour for each trading day. |
|  | BAHourlyResRCDAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh | The hourly awarded Reserve Capacity Down MW quantity for each resource for every hour for each trading day. |
|  | RCUAcceptedBidPrice BrtuT’I’M’VL’W’R’F’S’mdh | The RCU Accepted Bid price for Business Associate and Resource r and Trading Hour h. |
|  | RCDAcceptedBidPrice BrtuT’I’M’VL’W’R’F’S’mdh | The RCD Accepted Bid price for Business Associate and Resource r and Trading Hour h. |
|  | BA15MResRCU\_RAOverlapCapQty BrtQ’mdhc | 15-min RCU Overlapping RA Capacity  This data is coming in as an hourly MW value every 15-min. |
|  | BA15MResRCD\_RAOverlapCapQty BrtQ’mdhc | 15-min RCD Overlapping RA Capacity  This data is coming in as an hourly MW value every 15-min. |
|  | GeneratorToleranceBandMW | Tolerance Band expressed in terms of MW capacity for Bid Cost Recovery Eligible Resources (5 MW). This value shall be stored as standing data. |
|  | GeneratorToleranceBandPercent | Tolerance Band for performance requirement expressed as a percentage applied to Maximum Operating Limit of a Bid Cost Recovery Eligible Resource (3%). This value shall be stored as standing data. |
|  | MaxOperMW BrtF’S’md | Maximum Operating MW Limit as registered in MasterFile for Business Associate B, Resource r, Resource Type t, Entity Component Type F’, Entity Component Subtype S’, and Trading Day d. Applicable for Bid Cost Recovery Eligible Resources. |

## Inputs - Predecessor Charge Codes or Pre-calculations

| Row # | Variable Name | Predecessor Charge Code/  Pre-calc Configuration |
| --- | --- | --- |
|  | BASettlementIntervalResourceRTPerformanceMetric BrtuT’I’M’F’S’mdhcif | Pre-calc – Metered Energy Adjustment Factor |
|  | BAHourlyResRCUPaymentAmount BrtQ’mdh | CC 8800 – DA RUC Reliability Capacity Up Settlement |
|  | BAHourlyResRCUNoPayAmount BrtQ’mdh | CC 8800 – DA RUC Reliability Capacity Up Settlement |
|  | BA15MResRCUNoPayQuantity BrtQ’mdhc | CC 8800 – DA RUC Reliability Capacity Up Settlement |
|  | BAHourlyResRCU\_RAOverlapCapAssessmentAmount BrtQ’mdh | CC 8800 – DA RUC Reliability Capacity Up Settlement |
|  | BAHourlyResRCDPaymentAmount BrtQ’mdh | CC 8810 – DA RUC Reliability Capacity Down Settlement |
|  | BAHourlyResRCDNoPayAmount BrtQ’mdh | CC 8810 – DA RUC Reliability Capacity Down Settlement |
|  | BA15MResRCDNoPayQuantity BrtQ’mdhc | CC 8810 – DA RUC Reliability Capacity Down Settlement |
|  | BAHourlyResRCD\_RAOverlapCapAssessmentAmount BrtQ’mdh | CC 8810 – DA RUC Reliability Capacity Down Settlement |
|  | TotalExpectedEnergyFiltered BrtuT’I’M’F’S’mdhcif | Pre-calc – Metered Energy Adjustment Factor |
|  | ResourceToBAAMapFactor BruT’I’Q’M’F’md | Pre-calc – Metered Energy Adjustment Factor |
|  | MSSToBAAMapFactor BT’I’Q’M’md | Pre-calc – Metered Energy Adjustment Factor |
|  | SettlementIntervalRealTimeUIE BrtuT’I’Q’M’F’S’mdhcif | Pre-calc – Real Time Energy Quantity |
|  | EligibleRUCSUC BrtuT’I’M’F’S’mdhcif | Pre-calc – Start Up and Minimum Load Cost |
|  | AvailableRUCMLCBrtuT’I’M’F’S’mdhcif | Pre-calc – Start Up and Minimum Load Cost |
|  | EligibleRUCTCBrtuT’I’M’F’S’mdhcif | Pre-calc – Start Up and Minimum Load Cost |
|  | BAHourlyResourceCircularScheduleFlag BrF’mdh | Pre-calc – IFM Net Amount |
|  | RTMEnergyBidCostforRUCMLCBrtuT’I’M’F’S’mdhcif | Pre-calc – RTM Net Amount |
|  | ResourceWholesaleExemptionFlag rmdhcif | Pre-calc Real Time Energy Quantity |

## CAISO Formula

BAARUCNetAmount BruT’I’Q’M’F’mdhcif =

RUCNetAmount BruT’I’M’F’mdhcif

Where ResourceToBAAMapFactor BruT’I’Q’M’F’md exists

BAARUCNetTempMSSAmount BT’I’M’mdhcif =

Sum (r,u,F’) RUCNetAmount BruT’I’M’F’mdhcif

Where I’ = ‘Net’

BAARUCMSSNetBCRAmount BT’I’Q’M’mdhcif =

BAARUCNetTempMSSAmount BT’I’M’mdhcif

Where MSSToBAAMapFactor BT’I’Q’M’md exists

RUCNetAmount BruT’I’M’F’mdhcif =

Sum (t, S’) { ( 1 – INTDUPLICATE(BAHourlyResourceCircularScheduleFlag BrF’mdh )) \* ( RUCCost BrtuT’I’M’F’S’mdhcif – RUCRevenue BrtuT’I’M’F’S’mdhcif ) }

Where Energy Settlement Type (I’) <> ‘Net’

Where RUCCost BrtuT’I’M’F’S’mdhcif =

BASettlementIntervalResourceRUCBidCostAmount BrtT’uI’M’F’S’mdhcif + BASettlementIntervalResource**EligibleRUCCommitmentCost** BrtuT’I’M’F’S’mdhcif

Where BASettlementIntervalResource**EligibleRUCCommitmentCost** BrtuT’I’M’F’S’mdhcif =

EligibleRUCSUC BrtuT’I’M’F’S’mdhcif +

EligibleRUCMLC BrtuT’I’M’F’S’mdhcif +

EligibleRUCTC BrtuT’I’M’F’S’mdhcif

EligibleRUCMLC BrtuT’I’M’F’S’mdhcif =

IF

TotalExpectedEnergyFiltered BrtuT’I’M’F’S’mdhcif = 0

THEN

EligibleRUCMLC BrtuT’I’M’F’S’mdhcif = 0

ELSE IF

RTMEnergyBidCostforRUCMLCBrtuT’I’M’F’S’mdhcif > 0

THEN

EligibleRUCMLC BrtuT’I’M’F’S’mdhcif =

AvailableRUCMLCBrtuT’I’M’F’S’mdhcif \* BASettlementIntervalResourceRTPerformanceMetric BrtuT’I’M’F’S’mdhcif

ELSE

EligibleRUCMLC BrtuT’I’M’F’S’mdhcif =

AvailableRUCMLCBrtuT’I’M’F’S’mdhcif

END IF

BASettlementIntervalResourceRUCBidCostAmount BrtT’uI’M’F’S’mdhcif =

Sum (Q’, V, L’, W’, R’) {

Max (0,

{[(BAHourlyResRCUAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh -

BA15MResRCUNoPayQuantity BrtQ’mdhc -0.25\*BA15MResRCU\_RAOverlapCapQty BrtQ’mdhc )\*( INTDUPLICATE(RCUAcceptedBidPrice BrtuT’I’M’VL’W’R’F’S’mdh))] +

[(BAHourlyResRCDAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh -

BA15MResRCDNoPayQuantity BrtQ’mdhc -0.25\*BA15MResRCD\_RAOverlapCapQty BrtQ’mdhc )\*(INTDUPLICATE(RCDAcceptedBidPrice BrtuT’I’M’VL’W’R’F’S’mdh))] }\*

RUCToleranceBandEligiblityFlag BrtuT’I’M’F’S’mdhcif ) }

where exists BAHourlyResRCUAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh or BAHourlyResRCDAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh.

Implementation Note: Automatic frequency conversion occurs in that all inputs will be converted to 5-minutes first before doing the calculation.

**RUCToleranceBandEligiblityFlag** BrtuT’I’M’F’S’mdhcif =

IF

( SettlementIntervalRealTimeUIEforRUCCalc BrtuT’I’M’F’S’mdhcif< 0

AND

ABS ( SettlementIntervalRealTimeUIEforRUCCalc BrtuT’I’M’F’S’mdhcif )

>

RUCToleranceBandQuantity BrtuT’I’M’F’S’mdhcif)

OR

ResourceWholesaleExemptionFlag rmdhcif = 1

THEN

**RUCToleranceBandEligiblityFlag** BrtuT’I’M’F’S’mdhcif = 0

ELSE

**RUCToleranceBandEligiblityFlag** BrtuT’I’M’F’S’mdhcif = 1

END IF

Where SettlementIntervalRealTimeUIEforRUCCalc BrtuT’I’M’F’S’mdhcif =

SettlementIntervalRealTimeUIE BrtuT’I’Q’M’F’S’mdhcif

And Where RUCToleranceBandQuantity BrtuT’I’M’F’S’mdhcif=

Sum over (Q’, V, L’, W’, R’) {**Max (**GeneratorToleranceBandMW ,

(MaxOperMW BrtF’S’md \* GeneratorToleranceBandPercent) )/12 }

Where Exists

BAHourlyResRCUAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh or

BAHourlyResRCDAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh.

Where RUCRevenue BrtuT’I’M’F’S’mdhcif =

Sum over (Q’, V, L’, W’, R’) {

Max (0 , (-1)\*[BAHourlyResRCUPaymentAmount BrtQ’mdh +

BAHourlyResRCUNoPayAmount BrtQ’mdh + BAHourlyResRCDPaymentAmount BrtQ’mdh + BAHourlyResRCDNoPayAmount BrtQ’mdh - ( BAHourlyResRCU\_RAOverlapCapAssessmentAmount BrtQ’mdh + BAHourlyResRCD\_RAOverlapCapAssessmentAmount BrtQ’mdh]))\*

RUCToleranceBandEligiblityFlag BrtuT’I’M’F’S’mdhcif }

where exists BAHourlyResRCUAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh or

BAHourlyResRCDAwardedQty BrtuT’I’Q’M’VL’W’R’F’S’mdh.

## Outputs

| Output Req ID | Name | Description |
| --- | --- | --- |
|  | In addition to any outputs listed below, all inputs shall be included as outputs. |  |
|  | BAARUCNetAmount BruT’I’Q’M’F’mdhcif | RUCNetAmount associated to its BAA. Applicable for non-MSS or MSS gross settlement election.  This includes either RCU or RCD. |
|  | BAARUCNetTempMSSAmount BT’I’M’F’mdhcif | RUC net amount for MSS net settlement election without BAA\_ID attribute. |
|  | BAARUCMSSNetBCRAmount BT’I’Q’M’mdhcif | RUC net amount for MSS net settlement election with BAA\_ID attribute. |
|  | RUCNetAmount BruT’I’M’F’mdhcif | The net difference (in $) of RUC Cost and RUC Revenue for a given resource and Settlement Interval.  This includes either RCU or RCD. |
|  | RUCCost BrtuT’I’M’F’S’mdhcif | The eligible bid costs (in $) associated with RUC including the Start Up Costs, Minimum Load Costs, Transition Costs, and Energy Bid Costs for a given resource and Settlement Interval. |
|  | BASettlementIntervalResource**EligibleRUCCommitmentCost** BrtuT’I’M’F’S’mdhcif | The RUC CAISO-commitment costs (in $) that are eligible for Bid Cost Recovery in a given Settlement Interval. They include any applicable Start Up Cost, Minimum Load Cost or Transition Cost. |
|  | EligibleRUCMLC BrtuT’I’M’F’S’mdhcif | Pre-calc – Start-up and Minimum Load Cost  Eligible RUC Minimum Load Costs for a given resource and Settlement Interval. |
|  | BASettlementIntervalResourceRUCBidCostAmount BrtT’uI’M’F’S’mdhcif | The RUC Availability Bid Cost (in $) for a given Settlement Interval, netted with cost attributed to no pay capacity and multiplied by the RUC Tolerance Band Eligibility flag to qualify the bid cost with the resource’s performance based on its negative UIE. |
|  | **RUCToleranceBandEligiblityFlag** BrtuT’I’M’F’S’mdhcif | An output flag (Boolean – 0/1) that indicates whether (1) or not (0) RT UIE quantity is negative and exceeds tolerance quantity for a given resource and Settlement Interval. |
|  | SettlementIntervalRealTimeUIEforRUCCalc BrtuT’I’M’F’S’mdhcif | Real-Time UIE value used in the calculation for RUC tolerance band eligibility flag. |
|  | RUCToleranceBandQuantity BrtuT’I’M’F’S’mdhcif | Settlement IntervalRUC tolerance band quantity (in MWh) that the magnitude of negative Real-Time UIE shall not exceed in order for the RUC availability bid cost and revenue to be eligible for participation in the RUC BCR calculation. |
|  | RUCRevenue BrtuT’I’M’F’S’mdhcif | The eligible RUC revenue (in $) for a given resource and Settlement Interval. |

# Charge Code Effective Dates

| Charge Code/  Pre-calc Name | Document Version | Effective Start Date | Effective End Date | Version Update Type |
| --- | --- | --- | --- | --- |
| Pre-calc RUC Net Amount | 5.1 | 02/01/10 | 07/31/10 | Documentation and Configuration Edits |
| Pre-calc RUC Net Amount | 5.1a | 08/01/10 | 09/30/10 | Documentation Edits Only |
| Pre-calc RUC Net Amount | 5.2 | 10/01/10 | 03/31/12 | Documentation and Configuration Edits |
| Pre-calc RUC Net Amount | 5.3 | 04/01/12 | 01/31/13 | Documentation and Configuration Edits |
| Pre-calc RUC Net Amount | 5.4 | 02/01/13 | 04/30/14 | Documentation and Configuration Edits |
| Pre-calc RUC Net Amount | 5.5 | 05/01/14 | 9/30/14 | Documentation and Configuration Edits |
| Pre-calc RUC Net Amount | 5.6 | 10/01/14 | 10/31/16 | Configuration Impacted |
| Pre-calc RUC Net Amount | 5.7 | 11/01/16 | 10/31/17 | Documentation and Configuration Edits |
| Pre-calc RUC Net Amount | 5.8 | 11/01/17 | 9/30/20 | Configuration Impacted |
| Pre-Calc RUC Net Amount | 5.9 | 10/1/20 | 4/30/26 | Configuration Impacted |
| Pre-Calc RUC Net Amount | 6.0 | 5/1/26 | Open | Configuration Impacted |