Settlements & Billing

Configuration Guide: Daily Flexible Ramp Up Uncertainty Award Allocation

CC 7077

Version 5.6

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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

The Flexible Ramping product (FRP) is designed to ensure that there is sufficient ramping capability available in the financially binding five-minute interval to meet the forecasted net load for interval t+5 and cover upwards and downwards forecast error uncertainty.

FRP will help the system to maintain and use dispatchable capacity, as well as provide the market more transparent and less volatile price signals when undergoing forecasted ramp-constrained conditions. It will be procured and dispatched to meet five minute to five minute net forecast (load forecast minus VER forecast) changes plus uncertainty and will be modeled as a ramping capability constraint.

FRP will financially settle in the day-ahead market (DAM), the fifteen-minute market (FMM), and the five-minute market (RTM), with rescission of payments applied to resources with UIE (uninstructed imbalance energy) or OA (operational adjustment) amounts, positive or negative, which are imposed on reserved FRP capacity awards. Settlement and allocation of FRP costs will happen on a daily basis for forecasted movement portion and uncertainty award portion. At the end of the month, the uncertainty award allocation will be reversed and will be re-allocated based on the month’s net UIE or OA values.

As no economic bids are applied to FRP, FRU/FRD awards will be exempt from grid management charges (GMC). Additionally, dispatchable resources will have their FRP awards and forecasted movement assessments - ignoring rescission settlement - included as part of daily RTM bid cost recovery calculations.

## Description

For each Balancing Authority Area (BAA) and Trading Day this charge code configuration on a daily basis shall allocate the charges associated with the total Flexible Ramp Up Uncertainty capacity award settlement amounts that are paid in association with charge code CC 7071 (Daily Flexible Ramp Up Uncertainty Capacity Settlement) to the BAA in accord with the business rules and attendant allocation criteria stipulated in Business Rules section 3.1 below.

# Charge Code Requirements

## Business Rules

| Bus Req ID | Business Rule |
| --- | --- |
|  | FRU and FRD uncertainty movement payments and charges shall apply daily with monthly resettlement of the FRU and FRD uncertainty movement charges. |
|  | The below rules were implemented and calculated in the Flex Ramp Product Pre-calculation under sub-heading Daily Uncertainty Allocations. This charge code will allocate: |
|  | 1. the cost of the Uncertainty Award within each Balancing Authority Area in the EIM Area and within the EIM Area on a daily basis according to resource categories; |
|  | 1. the daily amounts to Scheduling Coordinators. |
|  | 1. Uncertainty awards to the BAA based upon the pass group.   For the EIM\_area host control area ID, Settlements shall allocate the costs to the BAAs that pass the sufficiency test based on their categories.  For the uncertainty award cost associated with the BAA that did not pass the sufficiency test, those costs will be allocated to the BAA based on its categories and any residual unallocated balance to the metered demand of that BAA, however if metered demand is not available and there are BAA specific costs, those will be allocated to the entity. |
|  | This charge code will allocate the total RTM FRU uncertainty cost through a two-tier allocation methodology based upon the FRU Pass Group, or the pool or BAAs that fail the WEIM resource sufficiency evaluation upward test. |
| 3.1 | If the Extended Day-Ahead Market (EDAM) Pool fails the WEIM RSE upward test, then the BAAs associated with the EDAM Pool will create two sub-groups based on whether the BAAs elected Assistance Energy Transfer (AET). |
| 3.2 | The sub-group will be split into one group that elects AET, and another group that does not elect AET. |
| 3.3 | For BAAs that only participate in the WEIM and fail the WEIM RSE upward test, this charge code will assess those BAAs as standalone BAAs. |
| 3.4 | The WEIM BAAs and EDAM Pool that pass the WEIM RSE upward test shall be grouped together in the FRU pass group. |
|  | For each interval, this charge code will calculate the net Uncertainty Movement of each resource as follow: |
|  | 1. for Supply resources other than non-Dynamic System Resources as the difference between the Dispatch Instruction of the binding interval in the next RTD run and the first advisory RTD interval in the current run. |
|  | 1. for non-Dynamic System Resource and export schedule as the difference between the schedule used in the RTD (accounting for ramp) for the binding interval in the next RTD run and the scheduled use for the first advisory interval in the current RTD run. |
|  | This charge code will determine the total net RTD Uncertainty Movement for each category separately for each Balancing Authority Area in the EIM Area and by EIM Area as follows: |
|  | 1. for the category of Supply resources, which shall not include non-Dynamic System Resources, as the net sum of the five-minute Uncertainty Movement of all the Supply resources in the category; |
|  | 1. for the category of Intertie resources, which shall comprise non-Dynamic System Resources and exports, as the net sum of the five-minute Uncertainty Movement determined of all the non-Dynamic System resources and export schedules; |
|  | 1. for the non-Participating Load category, as the difference between-    1. the CAISO Forecast of BAA Demand of the binding interval in the next RTD run; and    2. the CAISO Forecast of BAA Demand for the first advisory interval in the current RTD run. |
|  | This charge code will allocate the total upward Uncertainty Award cost to each of the three (3) resource categories based on — |
|  | 1. for upward Uncertainty Award cost, the ratio of such category’s positive Uncertainty Movement to the sum of the positive Uncertainty Movements of all categories with positive Uncertainty Movement for 2. each Balancing Authority Area in the EIM Area that failed their Flex Ramp Up Balancing Test 3. the EIM Area for EIM entities that passed their Flex Ramp Up Balancing Test. |
|  | 1. for downward Uncertainty Award cost, the ratio of such category’s positive Uncertainty Movement to the sum of the negative Uncertainty Movements of all categories with negative Uncertainty Movement for 2. each Balancing Authority Area in the EIM Area that failed their Flex Ramp Up Balancing Test 3. the EIM Area for EIM entities that passed their Flex Ramp Up Balancing Test.. |
|  | This charge code will allocate the Uncertainty Awards costs of the non-Participating Load category to Scheduling Coordinators as follows: |
|  | 1. for upward Uncertainty Award cost in proportion to the Scheduling Coordinator’s negative non-Participating Load UIE, excluding the non-Participating Load of an MSS that has elected to load-follow according to an MSS Agreement, without netting that UIE across Settlement Intervals, to the total of such negative non-Participating Load UIE, without netting that UIE across Settlement Intervals, in the Balancing Authority Area or EIM Area as applicable; |
|  | The allocated upward Uncertainty Award costs shall signify an increase in the Scheduling Coordinator’s Demand (i.e., more Demand than expected). |
|  | 1. for downward Uncertainty Award cost in proportion to the Scheduling Coordinator’s daily positive non-Participating Load UIE, excluding the non-Participating Load of an MSS that has elected to load-follow according to an MSS Agreement, without netting that UIE across Settlement Intervals, to the total of such positive non-Participating Load UIE, without netting that UIE across Settlement Intervals, in the BAA or EIM Area as applicable. |
|  | The allocated upward Uncertainty Award costs shall signify a decrease in the Scheduling Coordinator’s Demand (i.e., less Demand than expected). |
|  | This charge code will allocate the Uncertainty Awards costs of the Supply category to Scheduling Coordinators for each resource in the Supply category based on the sum of the resource’s Uncertainty Movement and UIE as follows: |
|  | 1. for upward Uncertainty Award cost in proportion to the Scheduling Coordinator’s negative sum of the resource’s Uncertainty Movement and UIE, without netting that sum across Settlement Intervals, to the total negative sum of all resources’ Uncertainty Movement and UIE, without netting that sum across Settlement Intervals, in the Balancing Authority Area or EIM Area as applicable, except as stipulated in 3) below; |
|  | The allocated upward Uncertainty Award costs shall signify a decrease in the Scheduling Coordinator’s Generation (i.e., less Generation than expected). |
|  | 1. for downward Uncertainty Award cost in proportion to the Scheduling Coordinator’s positive sum of the resource’s Uncertainty Movement and UIE, without netting that sum across Settlement Intervals, to the total positive sum of all resources’ Uncertainty Movement and UIE, without netting that sum across Settlement Intervals, in the BAA or EIM Area as applicable, except as stipulated in 3) below; |
|  | The allocated upward Uncertainty Award costs shall signify an increase in the Scheduling Coordinator’s Generation (i.e., more Generation than expected). |
|  | 1. for the MSS that have elected to load follow pursuant to an MSS Agreement, this charge code will calculate the positive and negative sums specified above for each Settlement Interval as the sum of MSS non-Participating Load UIE, Supply resources within the MSS UIE, MSS Load Following Energy, MSS Load Following Operational Adjustments, and Uncertainty Movement of resources within the MSS Aggregation. |
|  | This charge code will allocate the Uncertainty Awards costs of the Intertie category to Scheduling Coordinators for each non-Dynamic System Resource and export based on the sum of the resource’s Uncertainty Movement and Operational Adjustment as follows: |
|  | 1. for upward Uncertainty Award cost in proportion to the magnitude of the Scheduling Coordinator’s negative Operational Adjustment for non-Dynamic System Resources, or positive Operational Adjustment for export resources (where export Energy is considered positive) relative to the sum of magnitude of such Operational Adjustments in the Balancing Authority Area or EIM Area, as applicable, without netting that sum across Settlement Intervals; |
|  | The allocated upward Uncertainty Award costs shall signify a decrease in the Scheduling Coordinator’s import Generation (i.e., imported Energy less than expected) or an increase in the Scheduling Coordinator’s export Generation (i.e., exported Energy more than expected). |
|  | 1. for downward Uncertainty Award cost in in proportion to the magnitude of the Scheduling Coordinator’s positive Operational Adjustment for non-Dynamic System Resources, or magnitude of negative Operational Adjustment for export resources (where export Energy is considered positive) relative to the sum of the magnitude of such Operational Adjustments in the Balancing Authority Area or EIM Area, as applicable, without netting that sum across Settlement Intervals; |
|  | The allocated upward Uncertainty Award costs shall signify an increase in the Scheduling Coordinator’s import Generation (i.e., imported Energy more than expected) or a decrease in the Scheduling Coordinator’s export Generation (i.e., exported Energy less than expected). |
|  | 1. for the purposes of the allocations specified above, the MSS Load Following Operational Adjustment is excluded. |
|  | If the sum of the settlement of Uncertainty Awards and the charges to Scheduling Coordinators for Uncertainty Award costs is nonzero, this charge code will allocate such amounts to Scheduling Coordinators based on the ratio of its metered CAISO Demand and metered EIM Demand to the total EIM area metered demand. |
|  | 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. |
|  | When an eligible resource has an interval with a negative MWh meter, there will not be a charge for the energy of those intervals. |
|  | The categories for the EIM Area Pass Group will be derived as the total quantity of each category for BAAs that belong to the Pass Group. |

## Predecessor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Pre-calculation Flexible Ramp Product |

## Successor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| CC 4989 Daily Rounding Adjustment Allocation |
| CC 7078 Monthly Flexible Ramp Up Uncertainty Award Allocation |

## Inputs - External Systems

| Row # | Variable Name | Description |
| --- | --- | --- |
|  |  |  |
|  | PTBBAADayFRUUncertaintyAllocAmt BJmd | PTB charge adjustment for FRU Uncertainty Allocation (in $). |

## Inputs - Predecessor Charge Codes or Pre-calculations

|  |  |  |
| --- | --- | --- |
| Row # | Variable Name | Predecessor Charge Code/  Pre-calc Configuration |
|  | BADailyCompleteFRUncertaintyAllocationAmount BQ’kmd | PC – Flexible Ramp Product |

## CAISO Formula

The formula for Daily Flexible Ramp Up Uncertainty charge allocation by BA ID (B) is as follows:

BADailyCompleteFRUUncertaintyAllocationAmount BQ’md =

Sum over (k) {BADailyCompleteFRUncertaintyAllocationAmount BQ’kmd }

Where Indicated Direction (k) = ‘UP’

## Outputs

| Row # | Name | Description |
| --- | --- | --- |
| -- | In addition to any outputs listed below, all inputs shall be included as outputs. |  |
|  | BADailyCompleteFRUUncertaintyAllocationAmount BQ’md | FRU Uncertainty Charge (in $) allocated to a BA of resources throughout the EIM Area as a share of the cost of the FRU award settlement amount for the Trading Day. |

# Charge Code Effective Dates

| Charge Code / Pre-calc Name | Document Version | Effective Start Date | Effective End Date | Version Update Type |
| --- | --- | --- | --- | --- |
| CC 7077 Daily Flexible Ramp Up Uncertainty Award Allocation | 5.0 | 11/01/16 | 10/31/16 | Initial Implementation |
| CC 7077 Daily Flexible Ramp Up Uncertainty Award Allocation | 5.1 | 11/01/16 | 9/30/20 | Documentation Edits and Configuration Impacted |
| CC 7077 Daily Flexible Ramp Up Uncertainty Award Allocation | 5.2 | 10/1/20 | 10/31/21 | Documentation Edits and Configuration Impacted |
| CC 7077 Daily Flexible Ramp Up Uncertainty Award Allocation | 5.3 | 11/1/21 | 10/31/22 | Configuration Impacted |
| CC 7077 Daily Flexible Ramp Up Uncertainty Award Allocation | 5.4 | 11/1/22 | 6/30/23 | Configuration Impacted |
| CC 7077 Daily Flexible Ramp Up Uncertainty Award Allocation | 5.5 | 7/1/23 | 4/30/26 | Configuration Impacted |
| CC 7077 Daily Flexible Ramp Up Uncertainty Award Allocation | 5.6 | 5/1/26 | Open | Configuration Impacted |