

Dispute Submittal Guide: Instructed Imbalance Energy and Transmission Loss Obligation**Instructed Imbalance Energy and Transmission Loss Obligation**
Charge Types 4401 and 4450**Description**

This section of the Dispute Submittal Guideline covers Instructed Imbalance Energy (IIE) settled through CT 4401 and Transmission Loss Obligation settled through CT 4450. All uplift payments for Instructed Imbalance Energy are covered in the section of this guide titled “Instructed Energy Uplift Settlements”.

CT 4401

IIE consists of both expected energy instructed from a bid or under direct ISO control, and expected energy based on physical characteristics or self-provision. CT 4401 is the charge type used to settle the expected IIE, which is calculated based on the expected deviations from Hour-Ahead final schedule. The equation takes into account all dispatch instructions and self-provided transmission losses. In the case of generation resources, the IIE calculation also takes into account the resources relevant start-up time, ramping capabilities, hourly schedule changes, any operating constraints and/or derates/rerates of the resource. The Imbalance Energy components are calculated on a 5-minute dispatch interval basis, and are summed by 10-minute interval for Settlements.

CT4450

CT 4450 is used to settle the transmission loss obligation of Imports and Generators. The loss obligation is calculated using meter read of the generation resource (or real-time flow of an Import) multiplied by a pre-determined loss factor for the specific resource or tie point less any self-provided losses.

1. Minimum Supplemental Information Required for Dispute Submittal

In order to support its claim when submitting a dispute, the SC must identify what specific component(s) of the calculation it disagrees with, and provide an explanation of why the SC believes the ISO data is incorrect or the SC’s suggested correction is correct. The SC needs to be very specific, and describe exactly why the dispute is being submitted within the Detailed Description field of the SDS ticket. In addition to this standard information required for all disputes, as discussed in Section 3 of the Dispute Submittal Guide, disputes in this charge type category should also include the following additional data elements/information:

- Resource ID

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- Dispatch Interval
- Settlement Interval
- Evidence in support of the SC's suggested correction
 - Phone logs evidencing dispatch instructions or real-time Intertie cut different than what is reflected in the Settlement files
 - SLIC log numbers for Outages/derates

Discussion of Potential No Pay or Non-Compliance Disputes:

Billable Quantity Disputes:

If an SC disagrees with its CT 4401 Billable Quantity, it is not sufficient to simply state that the dispute pertains to the Billable Quantity since, as you will see in the next section, there are 11 different components that can make up the BQ. The SC needs to be specific and identify which of the BQ components it believes is in error and why. If the SC disagrees with its expected SUPP quantity, it should indicate how it calculated its SUPP quantity and explain or show how that value was derived based on previous instructions, the resource bid and schedule ramps, etc. (all of which must be provided in the dispute to identify where the discrepancy lies).

Price Disputes:

A SC submitting disputes on price need to indicate which price it disagrees with (Resource Specific or Average Ex-post Price). Typically, disputes pertaining to the Resource Specific Price should be submitted under CT 4401, where the price was derived. Disputes on the Average Ex-post Price will need to indicate what the price should be, and the SC's source for the price.

2. List of Calculation Components

The below listed calculation components and the simplified equations provided in the next section are provided to aide SCs in understanding their Settlements charges. By determining the components identified below and plugging them into the simplified formulas in Section 3, a SC should be able to validate its charge, as well as identify where discrepancies exist between its data and the ISO data. If a SC is using a different value for a component, it should describe the difference in a dispute and demonstrate how the SC's value was derived. This explanation is necessary if the SC wishes to disprove the ISO data.

For CT 4401 the components of the calculation are as follows:

Price Components:

- IIE Total (both for specific Resource and for System)
 - IIE - Instructed Imbalance Energy (from CT 4401 BQ equation)

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- IIE_LOSS – Self Provided Transmission Loss
- Dispatch Interval Ex Post Prices

Billable Quantity Components:

- IIE_ECON - Supplemental Energy or A/S Energy (spin, non-spin, replacement)
- IIE_PREDISPATCH – hourly pre dispatched energy
- IIE_ML – Minimum load dispatched Energy
- RIE – Residual Imbalance Energy
- OOS_P – Incremental Out-of-Stack Energy
- OOS_N - Decremental Out-of-Stack Energy
- RED – Ramping Energy Deviation
- IIE_RERATE - SLIC rerated Pmin or Pmax
- IIE_REG - Regulating Energy

For CT 4450 the components of the calculation are as follows:

Price Components:

- Resource Specific Price (From CT 4401), or
- Dispatch Interval Ex Post Prices

Billable Quantity Components:

- Meter Read (for Generators) or RT Flow (for Intertie)
- GMMa or TMMa
- IIE_LOSS – Self Provided Transmission Loss

3. Explanation of Charge Type Calculations

The below equations are simplified to aid the reader in understanding the various concepts, and are not intended to capture every potential scenario or nuance of each Charge Type algorithm. For the actual detailed calculations, refer to the ISO Settlement Charge Matrix and/or the Settlements Guide documents posted on the ISO Website.

CT 4401

$$\begin{aligned} \text{Settlement Amount} &= \text{Billable Quantity} * \text{Price} \\ &= (\sum \text{IIE} * \text{Resource-Specific Price}) + (\sum \text{IIE_REG} * \text{Zonal Ex-Post Price}) \end{aligned}$$

Where;

The billable quantity is derived first for each 5-minute Dispatch Interval, and summed for the 10-minute Settlement Interval

Price

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$$\text{Resource Specific Price} = [(IIE_TOTAL \text{ Interval A}) * (\text{Dispatch Interval Ex Post Price}) + (IIE_TOTAL \text{ Interval B}) * (\text{Dispatch Interval Ex Post Price})] / (IIE_TOTAL \text{ Interval A} + IIE_TOTAL \text{ Interval B})$$

Where;

$$IIE_TOTAL = IIE + IIE_LOSS$$

And,

This calculation is performed for each 10-minute Settlement Interval

$$\text{Zonal Ex-Post Price} = [(\sum IIE_TOTAL \text{ Interval A}) * (\text{Dispatch Interval Ex Post Price}) + (\sum IIE_TOTAL \text{ Interval B}) * (\text{Dispatch Interval Ex Post Price})] / (\sum IIE_TOTAL \text{ Interval A} + \sum IIE_TOTAL \text{ Interval B})$$

Where;

IIE_TOTAL is the summed for the ISO system for each dispatch interval, and the Zonal Ex Post Price is determined for the 10-minute Settlement Interval.

Billable Quantity

$$IIE = (IIE_ECON + IIE_PREDISPATCH + IIE_ML + RIE + OOS_P + OOS_N + RED + IIE_RERATE)$$

$$IIE_REG = IIE_REG$$

CT 4450
Settlement Amount = Price * Billable Quantity

$$\text{Price} = AVE_EX_POST_PRICE \text{ Or Resource Specific Price}$$

Where;

If resource has no self-provided losses and no IIE

Then Price = AVE_EX_POST_PRICE

If not Price = Resource Specific Price

And,

$$AVE_EX_POST_PRICE = (\text{Dispatch Interval Ex Post Price Interval A} + \text{Dispatch Interval Ex Post Price Interval B})/2$$

$$\begin{aligned} \text{Billable Quantity} &= \text{Transmission Loss Obligation} \\ &= (TL + OA_QTY - IIE_LOSS) \end{aligned}$$

Where;

$$\text{Generator TL} = \text{Meter read} * (1 - GMM_a)$$

$$\text{System Resource TL} = \text{RT Flow} * (1 - TMM_a)$$

And,

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OA_QTY = transmission loss quantity associated with Four-Corners and/or Sylmar DC payable to APS and LDWP, respectively.

4. Validation Sources

Charge Type 4401 and 4450

Component	How/Where to Verify
IIE	<p>SC Workspace – Expected Energy Calculation Template SLIC – reported outages, derates/re-rates (IIE_RERATE) Schedule Templates</p> <ul style="list-style-type: none"> • HA Final Energy Schedule Templates – Schedule Ramp Rate • Supplemental Energy Bid Schedules – Bid in quantities, Ramp Rates, Pre-dispatch Flag <p>Settlement Statement files</p> <ul style="list-style-type: none"> • Instructed and Uninstructed Imbalance Energy Detail Records • Detail record by service (RT Energy Dispatch record, Pre Dispatched Intertie Detail Record, Residual Imbalance Energy Detail Record, OOSM Detail Records)
Resource Specific Price	<p>SC Workspace – ISO calculated trajectory (<u>ALL</u> Calculation expected energy IIE_TOTAL) OASIS – 5 Minute Interval Prices Settlement Statement files</p> <ul style="list-style-type: none"> • Resource Specific Detail Records • Expost Price Records
IIE_Reg	<p>OMAR – Meter Data (ME) HA Final Awarded Regulation Capacity - available on workspace when final schedules are published Final HA Energy Schedule SC Workspace – Expected Energy Calculation Template Settlement Statement files - Instructed and Uninstructed Imbalance Energy Detail record</p>
Zonal Ex-Post Price	<p>OASIS – 10 Minute interval Zonal Ex Post Price Settlement Statement files - Zonal Expost Price Records</p>
Transmission Loss Obligation	<ul style="list-style-type: none"> • OMAR – Meter Data (ME) • SC Workspace – Expected Energy Calculation Template • OASIS/System Resources - GMM or TMM • Settlement Statement files - Transmission Loss Detailed Records