

EIM-S Informational Meeting

02.02.2023



Agenda

GRID Modernization 

- Opening Remarks
- EIM-S schedule
- Impact of Timing on Charge Codes
- Tags: Ghosts vs. EIMBASE vs. Mirrors
- Customer Portal
- Closing remarks

Opening Remarks

EIM-S schedule

EIM-S Schedule



- Normal Cadence means two EIM Services Bills a month. In order to catch up BPA will need to begin sending out more than two months of bills each month.
- BPA delivered both Oct Initial (T+9B) and May Re-Calc (T+70B) EIM Detailed Data Files (DDFs) and EIM Services Bills in January.
- Targeting late February to publish Nov & Dec Initial (T+9B) and June Re-Calc (T+70B) EIM Detailed Data Files (DDFs) and Re-Calculated EIM Services Bills
- More schedule information planned for next customer informational meeting

EIM Services Bills Normal Cadence <i>(Initial 1 month & Recalc 4 month in arrears)</i>		
Publish Bills ~ 25th each mo.	Initial (T+9B) Market Month	Recalc (T+70B) Market Month
Jun-22	May-22	
Jul-22	Jun-22	
Aug-22	Jul-22	
Sep-22	Aug-22	May-22
Oct-22	Sep-22	Jun-22
Nov-22	Oct-22	Jul-22
Dec-22	Nov-22	Aug-22
Jan-23	Dec-22	Sep-22
Feb-23	Jan-23	Oct-22
Mar-23	Feb-23	Nov-22
Apr-23	Mar-23	Dec-22

Impact of Timing on Charge Codes

Impact of Timing on Charge Codes

GRID Modernization 

- Customers will only be charged in one of the three charge codes in any 5 minute period:
 - 64750 Uninstructed Imbalance Energy (UIE)
 - 64600 Fifteen Minute Market Instructed Imbalance Energy (FMM IIE)
 - 64700 Real-Time Instructed Imbalance Energy (RT IIE)
- Data moves through multiple systems, which can create latency
Customer System → BPA Systems → CAISO Systems → Next market run
- If schedule changes after cut-off for FMM Market Run, then for those 5 minute intervals within the fifteen minutes, will receive Real-Time Imbalance Energy (64700)

Impact of Timing on Charge Codes



GRID Modernization

- T-57 cut-off
 - If Base Schedule is entered/submitted and NOT CHANGED and Base Schedule is not equal to Meter Data, imbalance is assessed in Uninstructed Imbalance Energy (UIE) - 64750
 - If Base Schedule is entered and then CHANGED after T-57, there will be financial implications and energy imbalance
 - VERs should have sum of eTags equal to the T-70 VER Forecast to populate Base Schedule

Example:

Base Schedule (T-57) = 10 (submitted to CAISO)

Changed Tag after T-57 = 12 (manual dispatch to CAISO for next market run)

Meter Read = 15

Depending on when Base Schedule changed will be either FMM OR RT IIE = 2

Uninstructed Imbalance Energy – UIE (64750) = $15 - 2 - 10 = 3$

Impact of Timing on Charge Codes

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GRID Modernization

- After T-57 schedule changes
 - For schedule changes after T-57, but before T-40, those are implemented by BPA at T-38.5 to allow for the Resource Sufficiency test to be run
 - For schedule changes after T-40, those are batched and implemented by BPA one minute before each next Real-Time (5 min) market run
 - Customer Data Entry (CDE) schedules can only be changed up until T-10, no changes thereafter

Impact of Timing on Charge Codes

GRID Modernization 

- Schedule change at T-45
- BPA collects all between T-57 and T-40, send at T-38.5*
- Translating Hour Ending to Wall Clock Time
 - Hour Ending 5 = Wall Clock Time 4:00 – 4:59
 - T-38.5 is 38.5 minutes prior to Trade Hour, 3:21:30
 - :xx denotes the first hour and :yy denotes the second hour (trade hour)
 - According to table, T-45 has the Binding FMM of Minute 0-15
- Shows up ONLY in Charge Code 64600
(Fifteen Minute Market Instructed Imbalance Energy)
- No Impact on 64700
(Real-Time Instructed Imbalance Energy)

Binding FMM	Translated FMM Offset	Translated Wall Clock Time
Minute 0-15	Executed 37.5 minutes to the start of FMM Interval	xx:22:30 snapshot for yy:00:00-yy:15:00 binding solution
Minute 15-30	Executed 37.5 minutes to the start of FMM Interval	xx:37:30 snapshot for yy:15:00-yy:30:00 binding solution
Minute 30-45	Executed 41.5 minutes to the start of FMM Interval	xx:48:30 snapshot for yy:30:00-yy:45:00 binding solution*
Minute 45-60	Executed 37.5 minutes to the start of FMM Interval	yy:07:30 snapshot for yy:45:00-yy:60:00 binding solution

Impact of Timing on Charge Codes



- Schedule change at T-30
- Gets sent at T-28.5
- Translating Hour Ending to Wall Clock Time
 - Hour Ending 5 = Wall Clock Time 4:00 – 4:59
 - T-28.5 is 28.5 minutes prior to Trade Hour, 3:31:30
 - According to table, T-28.5 has the Binding FMM of Minute 15-30
- Shows up in Charge Code 64600 (FMM IIE)
- Receive 64700 (RT IIE) for the first 15 minutes of the Trade Hour
- Any schedule change after 7.5 minutes into the Trade Hour (T+7.5) results ONLY in 64700 (RT IIE)

Binding FMM	Translated FMM Offset	Translated Wall Clock Time
Minute 0-15	Executed 37.5 minutes to the start of FMM Interval	xx:22:30 snapshot for yy:00:00-yy:15:00 binding solution
Minute 15-30	Executed 37.5 minutes to the start of FMM Interval	xx:37:30 snapshot for yy:15:00-yy:30:00 binding solution
Minute 30-45	Executed 41.5 minutes to the start of FMM Interval	xx:48:30 snapshot for yy:30:00-yy:45:00 binding solution*
Minute 45-60	Executed 37.5 minutes to the start of FMM Interval	yy:07:30 snapshot for yy:45:00-yy:60:00 binding solution

- 15-minute Market Dispatch (FMM Dispatch)
 - 15-min BPA VER Forecast is average of three 5-min forecasts, submitted directly to CAISO
- 5-min Real-Time Dispatch Operating Target
 - BPA has chosen to use the CAISO Persistence Forecast
 - Wind: output from ~10 minutes prior to each 5-min interval (i.e. 10/5 persistence)
 - Solar: “Smart persistence”
 - combination of 10/5 persistence and a clear sky profile for the site
 - “Clear sky profile” is based on 1 year of historical data for the site
 - In certain circumstances, CAISO may opt to use the 5-min BPA VER Forecast

CDE vs. Tags

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- What is CDE?
 - Customer Data Entry (CDE) is used to provide generation estimates for generating resources greater than 3MW
- How is CDE data used?
 - BPA Bid and Base Schedule system will use CDE generation values up to the point at which tagging begins, tags take priority 25 hours before the operating hour
 - EIM Settlements uses CDE generation estimates to calculate Transmission Customer Load Base and After the Fact Schedule for situations where a generating resource is behind the point of interconnection (aka Behind the Meter)
- Tags vs. CDE
 - If there are values in both tags and CDE, BPA Bid and Base Schedule system uses tag data
 - If Bid & Base Schedule knows there is a generation outage, even if BPA receives tags or CDE data, BPA will not submit a base schedule to CAISO

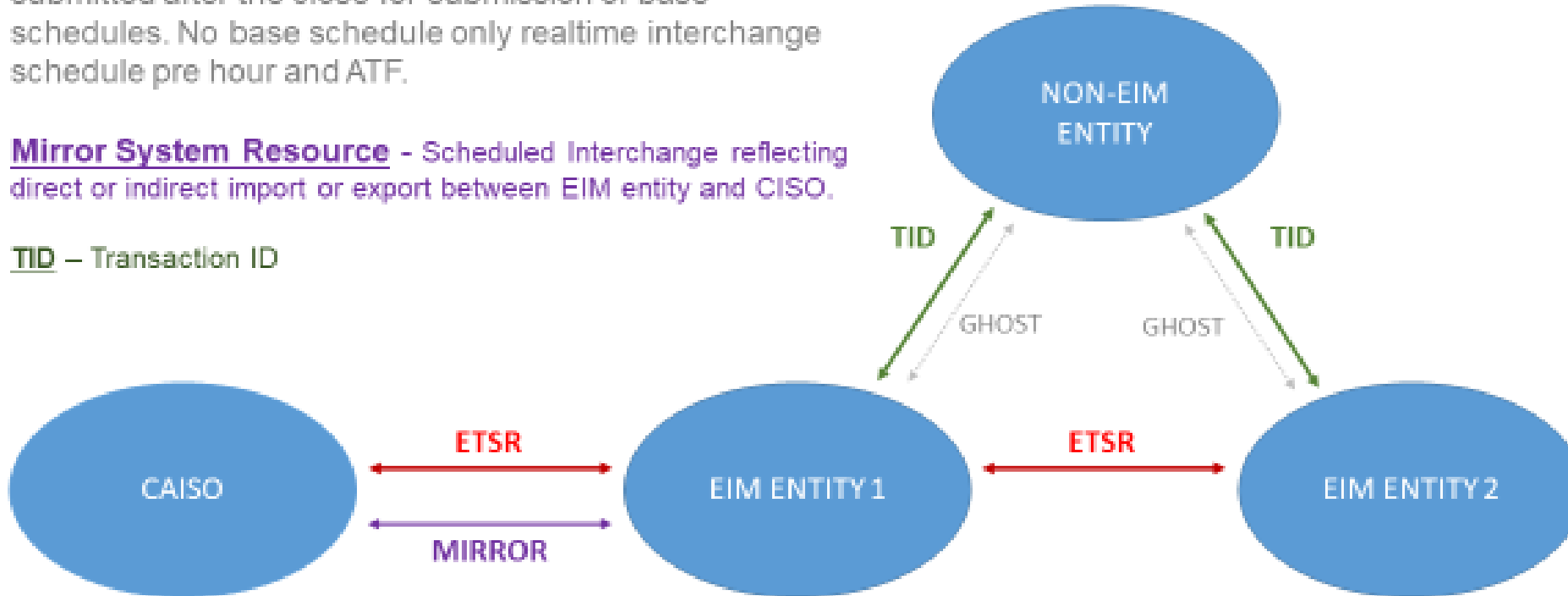
Tags: Ghosts vs. EIMBASE vs. Mirrors

Ghosts vs. Mirrors

Ghost Intertie Resources – Ghost resources are utilized for EIM entity to Non-EIM Entity transactions that are submitted after the close for submission of base schedules. No base schedule only realtime interchange schedule pre hour and ATF.

Mirror System Resource - Scheduled Interchange reflecting direct or indirect import or export between EIM entity and CISO.

TID – Transaction ID



Ghosts vs. EIMBASE vs. Mirrors

GRID Modernization 

- Ghosts
 - Late Transaction IDs (late is after T-57)
 - BPA Transmission Customers will always get the Transaction ID in their detailed data files, not the ghost
- ETSR – Energy Transfer System Resource is interchange between
 - EIMBASE is a type of ETSR
 - EIM BA and EIM BA OR
 - EIM BA and CAISO
- Mirrors – interchange between EIM BA and CAISO
 - Not all customers will see tags with MIRROR in them
 - Example tag name: TXCUST_BPAT_PRICEPT_E_F_MIRROR
 - TXCUST = Transmission Customer abbreviation
 - BPAT = EIM Entity in the diagram
 - PRICEPT is the price point
 - E = Export
 - F = Firm

Customer Portal

Customer Portal

GRID Modernization 

- Authorized users may sign up to receive an email from Customer Portal when a new EIM Services Bill is added
 - This feature is not yet available for Detailed Data Files and there is not currently an ETA when this will be an option
- Not all users are authorized users – must be able to access the Billing section of Customer Portal
- To mitigate this issue, BPA is currently sending out a Tech Forum message announcing when the DDFs and EIM Services Bills will be available

Questions?

BPA Contacts for EIM



Topic / Question Area	Email and Phone	Email (cc)
EIM Services Bill (EESC)	EESCSettlements@bpa.gov or 503-230-EIM1	gridmod@bpa.gov and Power or Transmission Account Executive
Customer Billing		
Accts Payable/Receivable (Payment/Refund Questions)	ar@bpa.gov & acctspay@bpa.gov	
Metering	mdm@bpa.gov	
Customer Portal	customerportal@bpa.gov	
BPA Outage Office	Planned outages: bpaoutage@bpa.gov Unplanned: Contact BPA's Generation Dispatcher	
After-hours Outage	Contact BPA's Generation Dispatcher	N/A

Closing Remarks