California ISO

Settlement User Group

Dec 18, 2024   10:00 a.m. – 11:00 a.m. (Pacific Time)

Web Conference Information	Conference Call Information
Web Address: https://caiso.webex.com/meet/settlementuser Meeting Number: 961 854 046 Audio connection instructions will be available after connecting to the web conference. When prompted, select "Call me" and enter your phone number you will use during the call.	US Toll Free: 1-844-621-3956 US Toll : 1- 650-479-3208 Access Code: 961 854 046

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The recording will be posted on our website and be available for a short period of time until January 15th, 2025. Please mute your phone

while the discussion is going on in order to eliminate background noise, to unmute press and hold the spacebar to

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To ask a question after each topic, unmute yourself before asking your question, or enter question on the chat

please state your name and affiliation. Thank you.

mute

Settlement User Group Agenda

Wednesday, Dec 18, 2024   10:00 a.m. – 11:00 a.m. (Pacific Time)

Time	Topic	Presenter
▪ 10:00 – 10:02	▪ Welcome and Introduction	▪ Massih Ahmadi
▪ 10:02 – 11:00	▪ Settlements	
	▪ Q1 2025 Emergency Release	▪ Massih, Mel, Tyler
	▪ TSMSP Phase 3 Resale update	▪ Massih Ahmadi
	▪ RC Services	▪ Elise Yohpe

Presenters

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Q1 2025 Emergency Settlement Release

- Defects:
    - Assistance Energy Transfer (AET) – *Retroactive Effective Date:* 7/1/2023
    - Advisory Shutdown MLC Disqualification - *Retroactive Effective Date:* 8/1/2024
    - Negative Generic Availability for LESR RA – *Retroactive Effective Date:* 3/1/2023

- BPMs/PRRs: WIP – will communicate to SUG distribution

- Anticipated prod deployment: **1/8/2025**

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AET Configuration Changes

- Defect:

  Existing Assistance Energy Transfer configuration does not consider credit for ABC Reg Up when a resource has a 0 Energy Base Schedule

- Objective:

  System calculation needs to correctly credit for ABC Regulation Up

- Resolution:

  Update configuration to correctly credit ABC Reg Up in Assistance Energy Transfer calculation

AET Configuration Changes

- – This is a system configuration only change

- – BPM Change for 6476

- – Description of the Settlements changes :
  - *Adding an intermediate Charge Type for ABC Regulation Up, and applying a flag to link B and Q' attributes instead of through a driver usage*

- – Retroactive Effective Date: 7/1/2023

- – Planned Date to be Fixed : 1/8/2025

SUG Overview - Advisory Shutdown MLC Disqualification Disputes

Mel Ciubal

Market Services, CAISO

12/18/2024

ISO Public

Problem Statement & Resolution

- Problem:
  - The system is disqualifying minimum load cost (MLC) of resources that are not deviating

- Solution:
  - Add condition to check deviation (captured by shutdown state variable) is positive first before disqualifying MLC
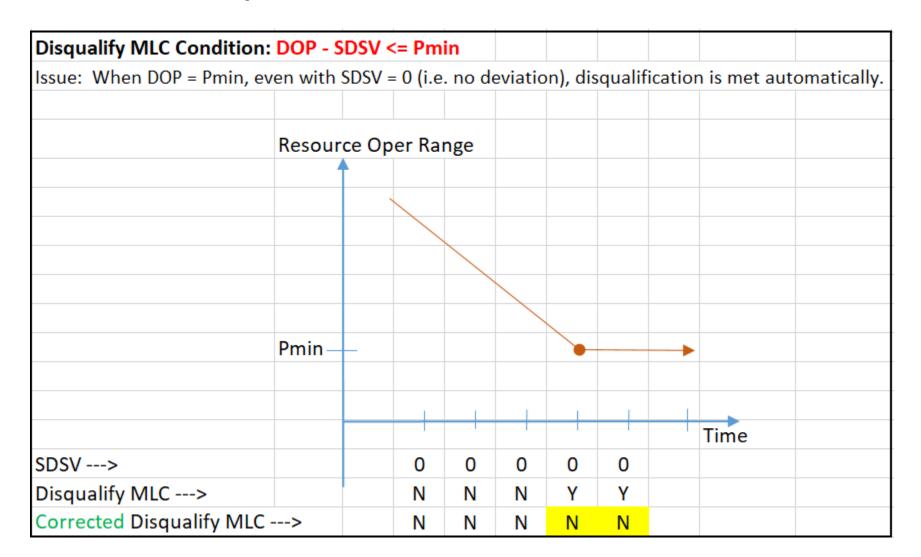
Tariff 11.17.2.1
Disqualification Based on Advisory Schedules

From Dispatch Interval in which CAISO has determined DOP minus Shut-Down State Variable <= Minimum Load, and until Shut-Down State Variable is reset,

IFM, RUC, or RTM Minimum Load Costs, will be disqualified from BCR.

Analysis: In above red highlight, when DOP (aka TEE) is at Minimum Load (aka Pmin), equality is satisfied, even though Shut-Down State Variable (SDSV) = 0. This automatically disqualifies MLC.

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Issue Description:

Disqualify MLC Condition: DOP - SDSV <= Pmin

Issue: When DOP = Pmin, even with SDSV = 0 (i.e. no deviation), disqualification is met automatically.

Resource Oper Range

Pmin

Time

SDSV --->		0	0	0	0	0
Disqualify MLC --->		N	N	N	Y	Y
Corrected Disqualify MLC --->		N	N	N	N	N

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Settlement dispute Example

- DOP (or TEE) is at Min Load (or Pmin), SDSV = 0, shows MLC is zero, i.e. MLC is automatically disqualified.

TD	BD_NAME	RSRC_ID	INT091	INT092	INT093	INT094	INT095	INT096	
8/3/2024	TEE (aka DOP)	RES_A	36.50	31.84	27.75	24.26	23.76	23.76	
8/3/2024	Minimum Load	RES_A	23.76	23.76	23.76	23.76	23.76	23.76	← Pmin
8/3/2024	RT_ON@FLAG	RES_A	1.00	1.00	1.00	1.00	1.00	1.00	
8/3/2024	POS_UIE@QUANTITY	RES_A	-	-	-	-	-	-	
8/3/2024	SDSV	RES_A	-	-	-	-	-	-	SDSV = 0
8/3/2024	LHS of Inequality (DOP minus SDSV)	RES_A	36.50	31.84	27.75	24.26	23.76	23.76	
8/3/2024	RHS of Inequality (Pmin)	RES_A	23.76	23.76	23.76	23.76	23.76	23.76	
8/3/2024	AdvShutdownUIEFlag (1 means disqualify)	RES_A	-	-	-	-	1.00	1.00	
8/3/2024	Qualified RUC_MLC	RES_A	1,474.48	1,474.48	1,474.48	1,474.48	-	-	MLC = 0

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BPM Formula Change

$$BASettlementIntervalAdvisoryShutdownUIEFlag_{BrtuT'I'M'F'S'mdhcif} =$$

```
IF JOUChildResourceFlag rmd = 1
THEN

        BASettlementIntervalAdvisoryShutdownUIEFlag BrtuT'I'M'F'S'mdhcif =
        JOUChildSettlementIntervalAdvisoryShutdownUIEFlag rmdhcif
ELSE
(
IF ( BASettlementIntervalResourceCumulativeUIE BrtuT'I'M'F'S'mdhcif > 0
AND
(BASettlementIntervalResourceExpectedEnergyUIEDifference
BrtuT'I'M'F'S'mdhcif <=
BASettlementIntervalResourceCumulativeUIEPMinTestLimit
BrtuT'I'M'F'S'mdhcif
))

THEN
    BASettlementIntervalAdvisoryShutdownUIEFlag BrtuT'I'M'F'S'mdhcif =
    BADispatchIntervalAdvisoryShutdownFlag BrtuT'I'M'F'S'mdhcif
ELSE
    BASettlementIntervalAdvisoryShutdownUIEFlag BrtuT'I'M'F'S'mdhcif = 0

END IF
)
END IF
```

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Impacts

- **Trade Dates:**
  - TDs 8/1/2024 through 12/26/2024
- **Charge Codes:**
  - CC 6630: IFM Bid Cost Recovery Settlement
  - CC 6636: IFM Bid Cost Recovery Tier 1 Allocation
  - CC 6637: IFM Bid Cost Recovery Tier 2 Allocation
  - CC 6620: RUC and RTM Bid Cost Recovery Settlement
  - CC 6678: Real-Time Bid Cost Recovery Allocation
  - CC 66200: RTM Bid Cost Recovery EIM Settlement
  - CC 66780: Real-Time Bid Cost Recovery EIM Allocation
- **BAA(s):**
  - Both CAISO and WEIM
- **Configuration Guide:**
  - BPM: CG PC Start-Up and Minimum Load Cost

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Impacts cont'd

Please watch out for official communication for impacted Trade Dates when code is actually deployed to Production sometime around Jan 8, 2025:

Settlement Statements	Tentative Trade Dates
T+9B	From 12/26/2024
T+70B	From 9/27/2024 through 12/25/2024
T+11M	From 8/1/2024 through 9/26/2024

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Appendix: Shut-Down State Variable (SDSV, refresher)

- Keeps track of +UIE once an advisory Shut-Down Instruction is issued to a resource. Provides MWh cumulative over RTUC Intervals had resource followed Shut-Down Instruction.

- Begins to accumulate +UIE as soon as advisory schedule includes a 0MW DOT w/in RTM dispatch horizon and continues to accumulate +UIE as long as (1) unit is On, and (2) Metered Energy less Regulation Energy less EE > Performance Metric Tol Band.

- Will be reset to zero when most recent RTUC run no longer has a 0MW DOT w/in RTM dispatch horizon or when resource is Off.

SUG Overview - Negative Generic Availability for LESR RA Disputes

Settlements Users Group

Mel Ciubal

Market Services, CAISO

12/18/2024

ISO Public

Problem Statement and Impacts

- Generic availability became negative for LESR

- Impacts LESRs for their RAAIM penalties, and every resource with RAAIM incentives for the month since penalties become funds for incentives.

Problem Statement

- Long Description:

   Limited Energy Storage Resource (LESR) issue when computing non-generator resources (NGR) total bid availability. This latter uses RegUp, RegDown, Energy Self-schedule, and Energy economic Bids to compute basis.

   Flex usage is subtracted from this basis to get whatever remains for generic usage. Since flex obligation expanded with negative range recently, the subtrahend (flex usage) became larger.

   The Energy bid data looks like -10 (lower energy bid) to 10 (upper energy bid), and so the Energy Bid on negative range was not captured properly.

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Solution

- For NGRs only: Recognize lower energy bids (which has negative value) since that is shared with Flex usage.

- For all resources: Add a floor of zero on Day Ahead and Real Time availability quantities to prevent negative results propagating into final RAAIM assessment values.

Issue Description, LESR NREM considerations

LESR	Pmin value expected to be negative, operates at Pmin to Pmax. Can be restricted by outage availability, as reflected in its Lower Operating Limit (LOL) to Upper Operating Limit (UOL).	

Item	Flex	Generic
Full range	[Negative Pmin, Pmax]	[0, Pmax]
Obligation	Full range	Positive range only
Operating limit	[LOL, UOL]	[0, UOL]
Reg Up bid	full range	Positive range only
Reg Down bid	not allowed	not allowed
Self schedule	n/a	Positive range only
Energy bid	[Lower energy bid, Upper energy bid]	[Lower energy bid, Upper energy bid]

LESR Resource A: Pmin = -50, Pmax = 50

Item	Flex	Generic
Full range	[-50, 50], value = 100	[0, 50], value = 50
Obligation (max)	[-50, 50], value = 100	[0, 50], value = 50
Operating limit (max)	[-50, 50], value = 100	[0, 50], value = 50
Reg Up bid (max)	[-50, 50], value = 100	[0, 50], value = 50
Reg Down bid	not allowed	not allowed
Self schedule	not allowed	[0, 50], value = 50
Energy bid (max)	[-50, 50], value = 100	[-50, 50], value = 100

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Issue Description and Resolution

NGR Total bid availability (which feeds BA_HRLY_RSRC_DA_AVAIL_TOTAL_BID_QUANTITY) is used first to satisfy FLEX usage, any remainder satisfies GENERIC obligation.
But LESRs Obligation as seen in **<u>light green</u>** above overlaps Flex and Generic usage.
NGR Total bid availability = Min(Outage Availability, Max(0, RU, RD, SS, Upper EN))
Solution: Use full range for Energy Bid. That is, Energy Bid = Upper Energy - Lower Energy
Corrected NGR Total bid availability = Min(Outage Availability, Max(0, RU, RD, SS, Upper EN - Lower EN))

Issue Description and Resolution (cont'd)

BA_HRLY_RSRC_DA_GENERIC_AVAL@QUANTITY (DA Gen Availability)	
Old	Min(BA_HRLY_RSRC_DA_GENERIC_OUTAGE_AVAIL_QUANTITY,BA_HRLY_RSRC_DA_GENERIC_OBLIG_CAPPED_QUANTITY,BA_HRLY_RSRC_DA_AVAIL_TOTAL_BID_QUANTITY-BA_HRLY_RSRC_TOTAL_DA_FLEX_AVAL_QUANTITY)
Corrected To	Max(0, Min(BA_HRLY_RSRC_DA_GENERIC_OUTAGE_AVAIL_QUANTITY,BA_HRLY_RSRC_DA_GENERIC_OBLIG_CAPPED_QUANTITY,BA_HRLY_RSRC_DA_AVAIL_TOTAL_BID_QUANTITY-BA_HRLY_RSRC_TOTAL_DA_FLEX_AVAL_QUANTITY))

Current formula (shown above) uses only the Upper EN. In our example only 50. Once we subtract the Flex usage of 100, the

Old DA Gen Availibility = Min (100, 0, 50 - 100) = -50

Corrected DA Gen Availibility = Max(0, Min (100, 0, 100 - 100)) = Max (0, 0) = 0

Similar formula updates were made to RT compared to DA.

While it seems the Max(0, ...) is not needed but it is put there for protection against any future issue with any incorrect data.

NB: We didn't find any issue with Flex calculations. There is a different stream of calculations for those.

Impacts

- **Trade Dates:**
  - TDs 3/1/2023 through 12/26/2024
- **Charge Codes:**
  - CC 8830: Monthly RAAIM Settlement (aka RAAIM Penalty)
  - CC 8831: Monthly RAAIM Allocation (aka RAAIM Incentive)
  - CC 8835: Annual RAAIM Neutrality

- **BAA(s):**
  - CISO Only

- **Configuration Guide:**
  - BPM: RA Availability Incentive Mechanism Precalculation

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Impacts

- Effective Date: 3/1/2023 (retro to T+24M)
- Planned Prod Deployment Date : 1/8/2025 (Emerg Q4 '24 release)

  Please watch out for official communication for impacted Trade Dates when code is actually deployed to Production sometime around Jan 8, 2025:

Settlement Statements	Tentative Start Trade Date
T+9B	12/26/2024
T+70B	9/27/2024-9/29/2024
T+11M	2/6/2024
T+21M	4/4/2023
T+24M	3/1/2023 (to be done weeks later)

- Note also that since RAAIM is a monthly Charge Code, in order to get fully accurate monthly values, all dailies should have been run using new code.

TSMSP Phase 3 Resale - Timeline

- TSMSP Phase 3 Resale has been deployed to Prod on 12/16/2024

- Effective Start Date – **12/17** - Prospective

RC Services

RC Services Assessment Year 2025:

- – External RC West Informational Submittal Window – 09/01/24 – 09/30/24

- – RC West Informational Statement:
  - • Publishes: 10/30/24
  - • RC Customer Validation & External RC Customer Resubmittal Period Ends: 11/30/24

- – RC West Initial/Recalculation Statement & Invoice
  - • 2025 Initial & 2024 Recalculation Publishes: 01/02/25
  - • Payment Due: 02/03/24

- – RC West Payment Calendar:
  http://www.caiso.com/Documents/RCWestAnnualPaymentsCalendar.pdf

Next SUG Meeting: January 15th, 2025 at 10:00 A.M

Settlement User Group Calendar 2024

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Thank you for participating in our call

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