

Market Simulation Call -Fall 2020 Release

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September 21, 2020

Recordings

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Agenda

- MAP Stage Availability
- Known Issues ADS
- ADS Replacement Cutover Activities at a Glance
- ADS Dependencies for DOTTC, IDS Functionality
- ADS SSL Cipher Settings with ADS Cutover
- Next Steps



Fall 2020 Release MAP Stage Availability

- Refer to MAP Stage portal https://portalmap.caiso.com for system availability information
- Current MAP Stage Maintenance
 - None
- Upcoming MAP Stage & Stage Maintenance
 - MAP STAGE
 - <u>Tentative</u> 9/28-10/2: Extended Outage one week, Monday-Friday: CMRI UI/API for EIM Enhancements 2020 deployment - Closure, system will be unavailable
- MAP Stage Weekly Maintenance Window
 - Friday



Known Issues - ADS

| # | System | Summary | Status | Estimated Fix Date |
|---|--------|---|--------|-----------------------|
| 1 | ADS | Continuous Alarm Change to repeat every x seconds (recommend 5 seconds) | Open | TBD |
| 2 | ADS | Column Picker should sort list of checkboxes alphabetically | Open | TBD |
| 3 | ADS | ADS Query Tool Dead Sapce on the bottom when lots of data available to show | Open | 9/24 |
| 4 | ADS | Column Selector availability intermittent. | Open | TBD |
| 5 | ADS | Ability to share/port over the profiles across environment | Open | TBD |



ADS Replacement – Cutover Activities at a Glance

Even for use of existing ADS API URL and version (v7), you may need to whitelist the new ADS API IPs as access to the v7 will redirect to the new IPs.

| | MAPSTAGE | STAG E | RODUCTION |
|----------------------|------------------------------|-------------------------------|----------------------------|
| APP Existing URL | htps://adsmap.caiso.com:447/ | htps://adsstage.caiso.com:447 | htps://ads.caiso.com:447/ |
| API Existing IPS | 2.200.60.164 | 2.200.60.237 | 12.200.60.98 |
| | | 2.200.60.238 | 2.200.60.99 |
| | | | 12.231.58.98 |
| | | | 2.231.58.99 |
| AR New Additional IB | 4542.17.165 | 4542.17.51 - corretion | 4542.16.51 |
| | 4542.23.165 | 4542.23.51 - corretion | 4542.22.51 |
| UIExisting URL | htps://adsmap.caiso.com:447/ | htps://adsstage.caiso.com:447 | htps://ads.caiso.com:447/ |
| UI Existing IP | 2.200.60.164 | 2.200.60.237 | 12.200.60.98 |
| | | 2.200.60.238 | 2.200.60.99 |
| | | | 2,231.58.98 |
| | | | 2.231.58.99 |
| UI New Additonal URL | htps://ads.map.caiso.com/ | htps://ads.stage.caiso.com/ | htps://ads.prod.caiso.com/ |
| UI New Additonal IP | 4542.17.130 | 4542.17.16 | 4542.16.16 |
| | 4542.23.130 | 4542.23.16 | 4542.22.16 |



ADS Dependencies for DOTTC, IDS Functionality Reminder:

- The new DOTTC & IDS functionality will only be available in new ADS UI and ADS API v8 and will
 not be available in the old ADS client or ADS API v7 (ADS API v6 will be deprecated), so any
 participant seeking to leverage the benefit of DOTTC and IDS on the ADS will need to use the new
 ADS UI and/or the new ADS API v8
 - New ADS UI & ADS API v8 available 10/1/20
 - DOTTC activation 10/1/20
 - IDS activation 1/1/2
 - ADS cutover 21/2021
- ADS API v6 will be deprecated upon deployment of ADS API v8 and only ADS API v8 and ADS API v7 will be supported; the UI is adopt when ready
- ISO Customer Service is conducting outreach for customer cutover plans for further coordination
- ADS & DOTTC training materials also provide reflect the availability of the new features in the new ADS

| Milstone Date | Activity | Production - ADS Replacement | Production - DOTC | Production - IDS |
|---------------------|-----------------------|---|-------------------------------------|-----------------------------------|
| 0/1/2020 | New Code Available | New ADS UI ADS API V8 Producton Go-Live | | |
| 10/1/2020 | Hard CutOver | ADS API V6 | | |
| 10/1/2020 | Activation | | DOTTC Activation only on New ADS | |
| 1/1/2021 | Activation | | | IDS Activation only on New ADS |
| 02/0 <i>1</i> /2021 | Hard CutOver | Current ADSDephi Client | | |
| 🍣 Californi | a ISO | COPYRIGHT © 2016 by California | SO. All Rights Reserved. | Page 7 |

ADS SSL Cipher Settings with ADS Cutover

As discussed on 9/15 TUG:

- New SSL cipher settings will be enforced with for ADS with ADS cutovers in MAP-Stage, Stage, and Production
- No change in TLS version TLS will remain 1.2
- We encourage customers to transition to the new SSL cipher settings as early as possible to avoid impacts when the new settings become enforced for ADS
- In MAP-Stage and Stage
 - On **11/4/20** old ADS will no longer be available, and participants will need to have the new SSL cipher settings to continue using new ADS UI and any ADS API (including v7)
- In Production
 - When new ADS is available 10/1, we will not enforce the new SSL cipher settings
 - On 2/1/21 old ADS will no longer be available, and participants will need to have the new SSL cipher settings to continue using new ADS UI and any ADS API (including v7)



ADS SSL Cipher Settings with ADS Cutover - continued

 Here is the list of the ciphers being accepted today, in comparison to the reduced list that will be enforced with the ADS cutover:

| Currently Supported TS 12 iphers | Future Supported TS 1.2 iphers to be enforced 11/4 in MAP- STAGE/STAGE and 2/1 in IRODUCTION |
|---------------------------------------|---|
| TLS_DHE_RSA_WITH_AES_128_CBC_SHA | TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256 |
| TS_DHE_RSA_WITH_AES_128_CBC_SHA256 | LS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 |
| TS_DHE_RSA_WITH_AES_128_GCM_SHA256 | TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384 |
| TLS_DHE_RSA_WITH_AES_256_CBC_SHA | LS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 |
| TS_DHE_RSA_WITH_AES_256_CBC_SHA256 | |
| TLS_DHE_RSA_WITH_AES_256_GCM_SHA384 | |
| TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA | |
| TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256 | |
| TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 | |
| TS_ECDHE_RSA_WITH_AES_256_CBC_SHA | |
| TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384 | |
| TS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 | |
| TLS_RSA_WITH_AES_128_CBC_SHA | |
| TLS_RSA_WITH_AES_128_CBC_SHA256 | |
| TLS_RSA_WITH_AES_128_GCM_SHA256 | |
| TLS_RSA_WITH_AES_256_CBC_SHA | |
| LS_RSA_WITH_AES_256_CBC_SHA256 | |
| LS_RSA_WITH_AES_256_GCM_SHA384 | |





 The next teleconference is scheduled on Thursday, September 24 at 1400 PDT



Reference Slides



Market Simulation Issue Management

- Submit all issues to the CIDI case management system
- CIDI tickets must have "Functional Environment" = "Market Simulation Fall 2020" to be reviewed by ISO SMEs



ISO Market Simulation Support

- Hours: Monday thru Friday 0900-1800 PDT
- ISO's 24x7 Service Desk: (916) 351-2309 (Connectivity – UI or API)
 - Issues called in after hours will be worked on during the next business day
- Email: <u>MarketSim@caiso.com</u>



Fall 2020 Release Communication Plan

• Schedule

| Monday | Tuesday | Thursday |
|---|-------------|---------------------|
| y 27 الل | September 8 | uly 23,30 يال |
| August 3, 0 , 17 , 24, 31 | | August 6, 8, 20, 27 |
| September 14 | | September 3, 10, 17 |

Connection Information

- Web Conference Information
 - Web Address: https://caiso.webex.com/meet/MarketSim
 - Meeting Number: 962 667 710
 - Audio connection instructions will be available after connecting to the web conference. When prompted, select "Call me" and enter the phone number you will use during the call. You will be called by the conference shortly.
- Conference Call Information
 - Dal-in Number: 866-528-2256
 - hternational Dal-in: 216-706-7052
 - Access Code 202 249 0



Structured Scenario Registration Details

MP's will need to register their request with the ISO to participate in this simulation via the MarketSim@caiso.com mailbox.

Date of registration July 3, 2020.

We will do our best to accommodate for late registration



Fall 2020 Release MAP Stage Connectivity Testing

- **Timeline Phase 1:** July 27 August 10
- **Timeline Phase 2:** July 27 August 10



Fall 2020 Release Market Simulation Initiatives & Timelines

| Fall 2020 Release Initiatives | <u>Start Date</u> | <u>Start Date (Trade</u> Date) | End Date | <u>Stuctured Simulation Star</u> t (<u>Trade Date</u>) |
|---|-------------------|-----------------------------------|----------|--|
| Fall 2020 Release Market Sinulation Phase 1 | 07/27/20 | 07/28/20 | 09/04/20 | 08/11/20 |
| Automated Dspatch System (ADS) eplacement | | | | 08/11/20 (Corpleted) Rerun on 8/18 per MP request - Corplete |
| Commitment osts and effault energy bd enhancements | | | | NA |
| Dspatch perating brget briff darification | | | | 08/12/20 (Corpleted) |
| Energy storage and obstributed energy resources phase 3 | | | | 08/19/20 (Complete) Rerun on 9/2 - Complete |
| ERC Order No. 841 requested adjustments | | | | 08/12/20 (Settlement statement published) |
| Ommitment ost ehancements ariff darifications | | | | NA |
| Fall 2020 Release Market Sinulation Phase 2 | 07/27/20 | 07/28/20 | 09/18/20 | 08/25/20 |
| Market settlement timeline transformation | | | | 08/25/20 (TD 8/25 under Settlements omplete) |
| Excess behind the meter production | | | | 08/25/20 (TD 8/25 under Settle rents omplete) |

Market Simulation Plan:

http://www.caiso.com/Documents/MarketSimulationPlan-Fall2020Release.pdf



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Known Issues - DRRS

| # | System | Summary | S atus | Estimated F x Date |
|---|--------|--|---------------|------------------------------|
| 1 | | U: Advanced fiter input controls do not automatically dose as the user is dicking from one control to another, causing the controls (date picker, text felds, dropdown lists, etc) to stack on top of each other. | Cpen | TBD |
| 2 | | U: The application disconnect/connect icon and its respective display text are not in-sync: When the application is disconnected caused by a timeout, the text displays as "Ginnected" where it should display as" Disconnected". When the application reconnects, the icon obes not display as connected While there is an issue with the visual freedback, the application functionality is not impacted. | Qpen | TBD |



Automated Dispatch System (ADS) replacement

- **Timeline:** July 27 September 04
- Structured: August 11 (Completed)

Rerun on 8/18 per Market Participant Request - Complete

Structured Scenarios document -

http://www.caiso.com/Documents/MarketSimulationScenarios -ADSReplacement.pdf

Training -

- <u>http://www.caiso.com/Documents/AutomatedDispatchSyste</u> <u>mReplacementPart1.pdf</u>
- <u>http://www.caiso.com/Documents/AutomatedDispatchSyste</u> <u>mReplacementPart2.pdf</u>



ADS Replacement – Cutover Activities At a Glance

| Milestone Date | Activity | MAP S age | Stage | Production |
|--------------------|-----------------------|---|--|---|
| 7 27/2020 | New Code Available | New ADS UI ADS APIV8 Begin Market Som | - | - |
| 727/2020 | Hard Ctt-Over | ADS APIV6 | - | - |
| ው /01/2020 | New Code Available | - | New ADS UI ADS APIV8 Begin Parallel Operations | - |
| () /01/2020 | Hard Ctt-Over | - | ADS APIV6 | - |
| (9 /04/2020 | Milestone | End Market Sm | - | - |
| () /30/2020 | Milestone | - | End Parallel Operations | - |
| 101/2020 | New Code Available | - | - | New ADS UI ADS APIV8 Production Go-Live |
| 1Ø1/2020 | Hard Ctt-Over | - | - | ADS APIV6 |
| 11/04/2020 | Hard Ctt-Over | Current ADS Delphi Client | Current ADS Delphi Client | - |
| @/01/2021 | Hard Ctt-Over | - | - | Current ADS Delphi Client |



ADS dependencies for DOTTC, IDS functionality - continued

- New functionality includes
 - Follow DOT Flag
 - Operating instructions
 - Un announced AS TEST
 - RTCD Commitment
 - Receive Operating instruction flag for EIRs
 - Broadcast message to EIRs operator
 - Display the HASP schedule, the scheduling coordinator accepted value, and the difference between the two



ADS Replacement – Data availability – During Parallel Operations

- During parallel operation Data for new functionalities (such as Follow DOT Flag, Operating instructions, Un announced AS TEST, RTCD Commitment) will not be available as we will stream production data to parallel environment.
- For those new functionalities data will be available in MAPStage.



Energy storage and distributed energy resources phase 3

- **Timeline:** July 27 September 04
- Structured: August 19 Complete (Rerun on 9/2-Complete)
- Setup needed:
 - PDR-LSR Curtailment.
 - If market participant wants to see only energy award, then, submit very cheap energy bids
 - If market participant wants to see AS award, say Spin, submit very expensive energy bids and 0\$ Spin bid
 - PDR-LSR Consumption.
 - Avoid submitting large negative energy bid. Suggested bid around \$ -1

Structured Scenarios document -

http://www.caiso.com/Documents/ESDER3BMarketSimulationStructured ScenariosFall2020.pdf

Training -

http://www.caiso.com/Documents/EnergyStorage DistributedEnergyReso urces Phase3B.pdf



Excess behind the meter production

- **Timeline:** July 27 September 18
- Structured: August 25
- Note:
 - MSTT cutover TD 8/24/20 (Corresponds to Production TD 1/1/21)
 - Phase 2 (MSTT, EBTMP) Structured Scenarios first Settling TD 8/25
 - MP needs to submit meter data by 8/28 for initial and by 9/2 for Recalc statement
 - On 8/31, ISO terminated submitted EBTMP values from Settlements only for TD 8/25 to execute SS#1 in order to demonstrate the use of only gross load "LOAD" data for the initial statement processing
 - EBTMP meter data was removed from Settlements only to exclude from initial statement and this submitted EBTMP meter data will be readded to Settlements for processing of the recalc statement
 - Submitted EBTMP meter data is still able to be retrieved in MRI-S
 - Please submit EBTMP values for TD 8/25 by 9/2 for SS#2 to include in Recalc
 - OASIS: EBTMP report will have data for TD 8/25 when the Settlements Recalc has been processed

Structured Scenarios document -

http://www.caiso.com/Documents/MarketSimulationScenariosExcessBehindtheMeterProduction.pdf

Training - http://www.caiso.com/Documents/Presentation-Excess-Behind-Meter-Production-Training.pdf





Market settlement timeline transformation

- **Timeline:** July 27 September 18
- Structured: August 25
- Note:
 - MSTT cutover TD 8/24/20 (Corresponds to Production TD 1/1/21)
 - Phase 2 (MSTT, EBTMP) Structured Scenarios first Settling TD 8/25

Structured Scenarios document -

http://www.caiso.com/Documents/MarketSimulationScenario sMarketSettlementTimeline.pdf

Training - <u>http://www.caiso.com/Documents/Presentation-</u> <u>MarketSettlementsTimelineTransformationTraining.pdf</u>



FERC Order No. 841 requested adjustments

- **Timeline:** July 27 September 04
- Structured: August 12 (Settlement statement published)

Structured Scenarios document http://www.caiso.com/Documents/FERC841RequestedAdjustm entsMarketSimulationStructuredScenariosFall2020.pdf

Training - <u>http://www.caiso.com/Documents/FERC841Training.pdf</u>



Commitment Costs and Default Energy Bid Enhancements

- **Timeline:** July 27 September 04
- Training <u>http://www.caiso.com/Documents/Presentation-</u> <u>CommitmentCosts-DefaultEnergyBidEnhancements.pdf</u>



Commitment cost enhancements tariff clarifications

• Timeline: July 27 – September 04



Dispatch operating target tariff clarification

- **Timeline:** July 27 September 04
- Structured: August 12 (Completed)

Structured Scenarios document http://www.caiso.com/Documents/MarketSimulationScenarios -DispatchOperatingTargetTariffClarification.pdf

Training - <u>http://www.caiso.com/Documents/Presentation-</u> <u>Dispatch-Operating-Target-Clarification-Training-Jul16-</u> <u>2020.pdf</u>



Energy imbalance market enhancements 2020 - Independent 2020

- Timeline
 - Phase 1: August 31 October 14
 - Phase 2: September 21 October 14
- Structured: N/A market simulation will now be tested as unstructured with a CAISO issued guide for market participants

Structured Scenarios document http://www.caiso.com/Documents/MarketSimulationScenarios EnergyImbalanceMarket2020Enhancements.pdf



Energy imbalance market enhancements 2020

| System | Phase 1: 8/31 | Phase 2: 9/21 |
|---------------------|---|--|
| BAAOP | Allow EIM entity override activation for the contingencies up to 15 in NA contingency list Add visibility of other adjacent BAAs ETSR locks and reasons Add Static ETSR transfer data to RTD Dispatch Control Display (ETSR tab). Add Static ETSR transfer data to BAAOP ETSR Detail Display (in RTD) In RTD/RTPD Dispatch Control display, in Dispatch Instruction Review table, add columns for UP and DN remaining ramp capacity (5/15 minute respectively). In addition, include the sum of these columns at bottom of table. Example Calculation: RTD UP Ramp = MIN(5MinRampRate, [UpperLim-CurrentDispatch]. Add Supplemental DOT to VER resources to Dispatch Control displays; Detail: In BAAOP RTD/RTPD Dispatch Control, add SUPP DOT column Fix the functionality for Manual Dispatches - users should be able to utilize MSG functions, such as designating a specific configuration, and users should be able to do commitment override EIM Entities have a notification status of market inputs, showing if BAAOP received the latest payload of critical market inputs. Example Critical data submissions: (not all inclusive) | • Fix/Improve SVG One Lines. Request to be able to view SE and telemetry values for all substation flows and elements |
| BSAP | Add Manual Dispatch information to BSAP Resource Bal Viewer. Add any applicable deviations that used in the test to BSAP BAA Bal Viewer. For the Bid Range Capacity Test Results report, Requirement Amount Column needs to publish the true requirement, not just the INCREMENTAL/DECREMENTAL requirement | N/A |
| RTM | Publish the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD Publish the effective ETSR import and export limits for the market run for RTPD and RTD Support Pump Storage for EIM BAAs | Publish the effective load conforming for the market run for RTPD and RTD for Binding and Advisory |
| CMRI | Display and publish, download the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD For the Bid Range Capacity Test Results report, Requirement Amount Column needs to display and publish, download the true requirement, not just the INCREMENTAL/DECREMENTAL requirement. Only upstream has changes with regards to the data that is sends to CMRI. | Display and publish, download the data of the effective load conforming for the market run for RTPD and RTD for CMRI Load Conforming Binding rpt CMRI Load Conforming Advisory rpt |
| - North Contraction | | |



Trouble-shooting tips to access ADS

- Check your firewall settings.
- Clear the browser cache & cookies.
- Pop-up blockers on your browser may lead to issues accessing CAISO ADS.
- If you use a pop-up blocker, you must whitelist the CAISO domain (caiso.com)



Energy storage and distributed energy resources phase 3 - CIRA changes



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- PDR_LSR Consumption resources are not eligible for Resource Adequacy
- CIRA will not allow a PDR-LSR Consumption resource to submit a request for NQC

| Plans | RA Validation | Substitutions | RAAIM Pre-Calc | CSP Offers | Reports | Legacy Replacement |
|-----------|--|-------------------|--|-------------------|---------|--------------------|
| Upload | Submit NQC Re | quest Form | | | | |
| () Invali | d ResourceId (Cell B3) | й | | | | |
| | | | | | | |
| NQC | | PDR-LSR Consumpti | on Resource PGCC_1_P | DRPCON002 (Cell I | 83) | |
| NQC | d ResourceId (Cell B2) | PDR-LSR Consumpti | | | | |
| NQC | d ResourceId (Cell B2) | PDR-LSR Consumpti | on Resource PGCC_1_P on Resource PGCC_1_P | | | |
| NQC | d ResourceId (Cell B2) upload not allowed for | PDR-LSR Consumpti | | | | |

Master File GRDT v14 Submissions

- Please submit GRDT v14 to MAP Stage Master File UI/API
- <u>GRDT 14.0</u>
- UI: https://portalmap.caiso.com/mf
- API:
 - https://wsmap.caiso.com/sst/runtime.asvc
 - RetrieveGeneratorRDT_MFRDv5
 - RetrieveGeneratorRDT_MFRDv5_DocAttach
 - SubmitGeneratorRDT_MFRDv5
 - SubmitGeneratorRDT_MFRDv5_DocAttach

| Naster File | | |
|------------------|--|---------|
| Project | Change | |
| ISDER3B | Add enumeration to GRDT: DR_TYPE of FDR_LSR | |
| TERC841 RA | New GRDT attribute: Apply Wholesale Charge | |
| BM2020 | New GRDT attribute: Meter Data hterval | |
| Œher | Remove fom GRDT: MN_DISP_LEVEL | |
| CCE Tariff | New GRDT attribute: Run of River | |
| Sow DR | New GRDT attribute: Sow DR | |
| 🊰 California ISO | COPYRIGHT © 2016 by California ISO. All Rights Reserved. | Page 34 |

| Set | tleme | | | |
|-----|-------|--|--|--|
| | | | | |

| | | | | Meer Data Due T+4 | | Rublish Recalc | | Rublish Recalc | |
|---------|---------------|---------------|-------------------|-------------------|----------------------|---------------------|-------------------|---------------------|---|
| Caled | CMR | | Staten ent | Staten ent | Rablish Initial | Staten ent | Meer data due for | Staten ent | |
| ar Day | T+1B | | T+4B | | statenent T+6B | T+8B | T+70B staten ent | T+9B | Rablish Maket Invoice |
| | | Submit Meer | T+3BInitial. | | | | | | |
| | | Data | Estimatel by | | | | | | |
| | | by T+3B 18:00 | | Submit Meer Data | | | Submit Meer Data | | |
| | | for T+9B | Mteer Data | by T+4B 18:00 for | T+9BInitial. Include | | by T+6B 18:00 for | | |
| | | Initial | submission | Recalc | Estimation | | Recalc | T+70B Recalculation | |
| | | | INTIAL Current | | INTIAL (New MSTT) | RECALC1 (Current | New MSTT | RECALC (New | |
| | | | MSTT) | Current MSTT | | MSTT) | | MSTT) | |
| 29-Jul- | | | | | | | | | |
| 20 | ℬ -Jul | | | | | | | | |
| 30-Jul- | | | | | | | | | |
| 20 | 29-Jul | | | | | | | | |
| 03-Aug- | | | | | | | | | |
| 20 | | | ℬ -Jul | 28-Jul | | | | | |
| 04-Aug- | | | | | | | | | |
| 20 | | | ⊉ -Jul | 2 9-Jul | | | | | |
| 05-Aug- | | | Monthly hitial 8- | | | | | | Daily hitial 2 -Jul, 2 -Jul |
| 20 | 4Aug | | Jul - 29-Jul | | | | | | Monthly hitial 8-Jul - 9-Jul |
| 06-Aug- | | | | | | | | | |
| 20 | 5Aug | | | | | | | | |
| 07-Aug- | | | | | | | | | |
| 20 | | | | | | 8 -Jul | | | |
| 10-Aug- | | | | | | | | | |
| 20 | | | 4Aug | 4Aug | | 29-Jul | | | |
| 11-Aug- | | | 0 | ŭ | | Monthly Recalc 28- | | | |
| 20 | | | 5Aug | 5Aug | | ull - 29-Jul | | | |
| 12-Aug- | | | Monthly hitial 4 | | | | | | Daily Recalc 28-Jul, 29-Jul |
| 20 | | | Aug - 5Aug | | | | | | Nonthly Recalc 28-Jul - 29- |
| - | | | 7 u g 01ug | | | | | | |
| | | | | | | | | | 11 |
| | | | | | | | | | Daily hitial 4Aug, 5Aug |
| | 1-Aug | | | | | | | | Monthly hitial 4Aug - 5Aug |
| 13-Aug- | - 0 | | | | | | | | netting that way only |
| 20 | 2-Aug | | | | | | | | |
| 14-Aug- | | | | | | | | | |
| 20 | | | | | | 4Aug | | | |
| 17-Aug- | | | | | | | | | |
| 20 | | | 1 -Aug | 1 -Aug | | 5Aug | | | |
| 18-Aug- | | | | - / | | Monthly Recalc 4Aug | | | |
| 20 | | | 2-Aug | 2-Aug | | - 5Aug | | | |
| 20 | | | - / | = / | | - anuy | 1 | 1 | |



| Settleme | | | |
|----------|--|--|--|
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| | | | | aloridai | | | | | |
|---------|----------------|---------------|----------------------------|--------------------|----------------------|-------------------|-------------------|---------------------|---|
| | | | | Meer Data Due T+4E | | Rublish Recalc | | Rublish Recalc | |
| Caled | CMR | | Staten ent | Staten ent | Rablish Initial | Staten ent | Meer data due for | Staten ent | |
| ar Day | T+1B | | T+4B | | statenent T+6B | T+8B | T+70Bstatenent | T+9B | Rublish Maket Invoice |
| | | Submit Meer | T+3BInitial. | | | | | | |
| | | Data | Estimatel by | | | | | | |
| | | by T+3B 18:00 | | Submit Meer Data | | | Submit Meer Data | | |
| | | for T+9B | Mteer Data | by T+4B 18:00 for | T+9BInitial. Include | | by T+6B 18:00 for | | |
| | | Initial | submission | Recalc | Estimation | | Recalc | T+70B Recalculation | |
| | | | INTIAL Current | | INTIAL (New MSTT) | RECALC1 Current | New MSTT | RECALC (New | |
| | | | MSTT) | Current MSTT | | MSTT) | | MSTT) | |
| 19-Aug- | | | Monthly hitial 1- | | | | | | Daily Recalc 4Aug, 5Aug |
| 20 | | | Aug - 12-Aug | | | | | | Nonthly Recalc 4Aug - 5 |
| | | | /49 _/49 | | | | | | Aug |
| | | | | | | | | | |
| | | | | | | | | | Daily hitial 1-Aug, 2-Aug |
| | | | | | | | | | Monthly hitial 1 -Aug - 2 - |
| | 1 8-Aug | | | | | ` | | | Aug |
| 20-Aug- | | | | | | | | | , 29 |
| 20 | 9 -Aug | | | | | | | | |
| 21-Aug- | | | | | | | | | |
| 20 | | | | | | 1 -Aug | | | |
| 24-Aug- | | | | | | | | | |
| 20 | | | 1 8-Aug | 1 8-Aug | | 2-Aug | | | |
| 25-Aug- | | | | | | Monthly Recalc 1- | | | |
| 20 | | | ᠑ -Aug | ᠑ -Aug | | Aug - 2-Aug | | | |
| 26-Aug- | | | Monthly hitial 8- | × · · · · | | | | | Daily Recalc 11-Aug, 12-Aug |
| 20 | | | Aug - 9-Aug | | | | | | Monthly Recalc 1-Aug - 2- |
| | | | , u g v , ug | | | | | | Alg |
| | | | | | | | | | 749 |
| | | | | | | | | | Daily hitial 8-Aug, 9-Aug |
| | | | | | | | | | Monthly hitial 8-Aug - 9- |
| | ጛ -Aug | | | | | | | | Aug |
| 27-Aug- | | | | | | | | | |
| 20 | ℬ -Aug | | | | | | | | |
| 28-Aug- | | | | | | | | | |
| 20 | | ℬ -Aug | | | | 1 8-Aug | | | |
| 31-Aug- | | | | | | | | | |
| 20 | | ℬ -Aug | | | | ᠑ -Aug | | | |
| 01-Sp- | | | | | | Monthly Recalc 8- | | | |
| 20 | | | | | | Aug - 9-Aug | | | |
| 02-Sp- | | | | | | | | | |
| 20 | 1Sep | | | | ង-Aug | | 3-Aug | | |
| 03-Sp- | | | | | | | | | |
| 20 | 2Sep | | | | ℬ -Aug | | ℬ -Aug | | |
| | | | 201211 | • | | | | • | |



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| | | | Rablish Initial | Meer Data Due T+4B | | Rublish Recalc | | Rablish Recalc | |
| Caled | CMR | | Staten ent | Staten ent | Rablish Initial | Staten ent | Meer data due for | Staten ent | |
| ar Day | T+1B | | T+4B | | statenent T+6B | T+8B | T+70B staten ent | T+9B | Rublish Maket Invoice |
| | | Submit Meer | T+3BInitial. | | | | | | |
| | | Data | Estimatel by | | | | | | |
| | | | | | | | | | |
| | | by T+3B 18:00 | DREAMS. NO | Submit Meer Data | | | Submit Meer Data | | |
| | | for T+9B | Mteer Data | by T+4B 18:00 for | T+9BInitial. Include | | by T+6B 18:00 for | | |
| | | Initial | submission | Recalc | Estimation | | Recalc | T+70B Recalculation | |
| | | | INTIAL Current | | INTIAL (New MSTT) | RECALC1 (Current | New MSTT | RECALC (New | |
| | | | MSTT) | Current MSTT | | MSTT) | | MSTT) | |
| 02-Sp- | | | | | | | | | |
| 20 | 1Sep | | | | ቜ-Aug | | <u> </u> B-Aug | | |
| 03-Sp- | | | | | <u>_</u> | | Ŭ | | |
| 20 | 2Sep | | | | ℬ -Aug | | ₺ -Aug | | |
| 04-Sp- | | | | | Monthly hitial 25-Aug - | | 27.008 | | |
| 20 | | 1Sep | | | | | | | |
| 08-Sp- | | <u>150</u> p | | | ℬ -Aug | | | | |
| | | 26.5 | | | | | | T A | |
| 20 | | 2Sep | | | | | | ଞ-Aug | |
| 09-Sp- | | | | | | | | | Daily hitial 25-Aug, 26-Aug |
| 20 | | | | | | | | | Monthly hitial B-Aug - B- |
| | | | | | | | | | Aug |
| | | | | | | | | | |
| | | | | | | | | | Daily Recalc 8-Aug, 9-Aug |
| | | | | | | | | | Monthly Recalc 8-Aug - 9- |
| | | | | | | | | ℬ -Aug | Aig |
| 10-Sp- | | | | | | | | Monthly Recalc 23- | <u>, "</u> g |
| 20 | | | | | 1Sep | | 1Sep | Aug - 18-Aug | |
| 11-Sp- | | | | | 1300 | | 1300 | Aug - D-Aug | |
| 20 | | | | | 2Sep | | 2Sep | | |
| | | | | | | | zœp | | |
| 14-Sp- | | | | | Monthly hitial 0-Sep - | | | | |
| 20 | | | | | 02-Sep | | | | |
| 16-S p - | | | | | | | | | Daily hitial 0-Sep , 02-Sep |
| 20 | | | | | | | | | Monthly hitial 0-Sep - 02- |
| | | | | | | | | | Sep |
| | | | | | | | | | |
| | | | | | | | | | Daily Recalc 25-Aug, 25-Aug |
| | | | | | | | | | Monthly Recalc 2-Aug - 2- |
| | | | | | | | | 1Sep | Aig |
| 17-Sp- | | | | | | | | 1000 | Aug |
| 20 | | | | | | | | 2Sep | |
| | | | | | | | | | |
| 18-Sp- | | | | | | | | Monthly Recalc 0- | Daily Recalc O-Sep , O-Sep |
| 20 | | | | | | | | Sep - Q-Sep | Monthly Recalc 0-Sep - 2- |
| | | | | | | | | | <u>အ</u> မှာ |
| | | | | | | | | | |



Fall 2020 Release - System Interface Changes - CCDEBE1

| \$BR | BR | | | | | | | | | | | |
|---------|-------------|---|-----------|--------------------|--------------------------|--|--|--|--|--|--|--|
| ₽oject | Change Type | API Service Name & Major Version, Artifacts | MAP Sage | Poduction | Technical Specifications | | | | | | | |
| CDEBE1 | MOCIITY | RetrieveCleanBidSet_SIBRv5_AP | ✓ ❶/16/19 | ✓ Deploy ≱26/20 | 8.2 | | | | | | | |
| C DEBEI | | RetrieveCleanBidSet_SIBRv5_DocAttach_AP | ¥ 10/19 | Activation 10/1/20 | B.2 | | | | | | | |
| CDEBE1 | Modify | RetrieveCurrentBidResults_SIBRv5_AP | ✓ ❶/16/19 | ✓ Deploy ≱26/20 | B.2 | | | | | | | |
| C DEBEI | wearry | RetrieveCurrentBidResults_SIBRv5_DocAttach_AP | ¥ 10/19 | Activation 10/1/20 | D.2 | | | | | | | |
| CDEBE1 | Modify | ရှိbmitRawBidSet_SIBRv5_AP | ✓ ❶/16/19 | ✓ Deploy ≱26/20 | B.2 | | | | | | | |
| C DEBEI | weatty | SubmitRawBidSet_SIBRv5_DocAttach_AP | ¥ ₩/10/19 | Activation 10/1/20 | B.2 | | | | | | | |

| ©M/RI | | | | | | | | | | | | |
|----------------|----------------|-------------------------|--|--|---|-----------------------------------|--|--|--|--|--|--|
| ₽oject | Change Type | U | API Service Name & Major Version, Attifacts | MAP \$ age | Poduction | Echnical Specifications | | | | | | |
| MPME ©DEBE1 | Modify | Existing Benort Detault | ιetrieveDefaultBidCurves_CMRIv2_AP RetrieveDefaultBidCurves_CMRIv2_DocAttach_AP | MPME ✓ ∮12/19 ©DEBE1 ✓ 1/6/19 | MPME ✓ 1/13/19 CDEBE1 ✓ Beploy \$26/20 Activation 10/1/20 | 39.4 Release Notes 12 | | | | | | |
| CDEBE1 | Modify | Existing Benort Detault | ֎trieveExternalDefaultCommitmentCost_CMRIv1_AP@trieveExternalDefaultCommitmentCost_CMRIv1_DocAttach_AP | ✓ 1/11/19 | ✓ Deploy \$26/20 Activation D(1/20 | 39.4 Release Notes 12 | | | | | | |

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Fall 2020 Release - System Interface Changes

| ADS | | | | | | |
|-----------------|----------------|-------------------------------------|--------------------------|-------------|---------------|--|
| Poject | C hange | Summary | Technical Specifications | MAP Stage | Poduction | |
| " Oject | Type | | | Turki aruge | "ou de chom | |
| ŊΆ | Decom | Decommission of deprecated versions | 🗸 🖇 🖉 🖉 🖌 | 7/27/20 | D/1/20 | |
| ADS Replacement | New | ÆlWebService 😵 | ✓ Ø16/20, ⊗.1.0 | 727/20 | D/1/20 | |
| DOTTC | | APIResponseWebService & | ✓ \$21/20, % .0.0 | ,27,20 | D/ 1/20 | |

| DRRS | | | | | | |
|---------|----------------|---|--------------------------|-------------------|----------------|--|
| ₽oject | Change Type | Simmary | Technical Specifications | MAP \$ age | Poduction | |
| | | SubmitDRLocations_DRRSv2_AP | | | Beploy \$14/20 | |
| | Modify | SubmitDRLocations_DRRSv2_DocAttach_AP | | 7 27/20 | | |
| | | SubmitDRRegistrations_DRRSv2_AP | | | | |
| ISDER3B | | SubmitDRRegistrations_DRRSv2_DocAttach_AP | ✓ ≸1/20, ⊗.2 | | | |
| BUERSB | wully | RetrieveDRLocations_DRRSv2_AP | ♥ ₱1/20, ₪.2 | | | |
| | | RetrieveDRLocations_DRRSv2_DocAttach_AP | | | | |
| | | RetrieveDRRegistrations_DRRSv2_AP | | | | |
| | | RetrieveDRRegistrations_DRRSv2_DocAttach_AP | | | | |

| MRI-S | | | | | |
|--------|----------------|---|--------------------------|---------------------------|-------------------|
| ₽oject | Change Type | Summary | Technical Specifications | MAP Sage | Poduction |
| BTMP | Modify | Bir: -NRIS Natter: Submit Natter & -NRIS Natter: Retrieve Natter additionally include BitMP measurement type values (as negative bad) both Goss bad and BitMP meter olta would associate with same bad Resource D | ✓ ≸28/20, ¥.5 | 7 27/20 Page 39 | Activation 1∕1/21 |



Fall 2020 Release - System Interface Changes

| Master Fle | | | | | | | | |
|---------------|---|----------------|---|-----------------------------|--------------|-----------|--|--|
| Roject | Change | Change Type | Summary | Technical Specifications | MAP Stage | Roduction | | |
| ISDER3B | Add enumeration to GRDT: DR_TYPE of PDR_LSR | | RetrieveGeneratorRDT_MFRDv5 | | | | | |
| ÆRC841 RA | New GRDT attribute: Apply Wholesale Charge | | RetrieveGeneratorRDT_MFRDv5_DocAtta ሰ | ✓ Ø12/20, √6.1 | 707 (00 | D/1/20 | | |
| EM2020 | New GRDT attribute: Meter Data Interval | Modify | SubmitConcratorDDT_MEDDyE | ✓ 5⁄28/20, √6.0 | 7/27/20 | | | |
| C ther | Remove fom GRDT: MIN_DISP_LEVEL | | SubmitGeneratorRDT_MFRDv5 SubmitGeneratorRDT_MFRDv5_DocAttac | | | | | |
| CCE Tariff | New GRDT attribute: Run of River | | h | | | | | |
| Slow DR | New GRDT attribute: Sow DR | | | | | | | |

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Fall 2020 Release - System Interface Changes

| O MRI | | | | | | |
|--------------|----------------|--|---|-----------------------------|------------------|---------------|
| Project | Change Type | Summary | | ical \$ ecifications | MAP S age | Roduction |
| Ŋ/A | Decom | Decommission of deprecated versions | ~ | ≸29/20, ൾ.9.5 | 7/27/20 | 9 1/20 |
| EM2020 | | RetrieveEIMInfeasibility_CMRIv1_AP RetrieveEIMInfeasibility_CMRIv1_DocAttach_AP | ~ | ≸29/20, ൾ.9.5 | 7/27/20 | D/1/20 |
| EM2020 | | RetrieveLoadConfirming_CMRlv1_AP RetrieveLoadConfirming_CMRlv1_DocAttach_A P | ~ | ≸29/20, v3.9.5 | 7 /27/20 | D/1/20 |
| EM2020 | New | Available Balance Capacity | | 7/2/20 | 7/27/20 | D/1/20 |

| OASIS | | | | | |
|---------|----------------|-------------------------------------|-----------------------------------|------------------|---------------------|
| Project | Change Type | Summary | Technical Specifications | MAP S age | Roduction |
| Ŋ⁄A | Decom | Decommission of deprecated versions | ✓ <i>≸</i> 29/20, <i>\</i> 5.1.13 | 7/27/20 | 9 1/20 |
| BTMP | New | ENE_ EBTMP_PERF_DATA | ✓ Ø22/20 ✓ Ø29/20, ७.1.13 | 7/27/20 | Activation ⊉1/21 |

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Introducing ISO Settlements Twitter Tool for Market Sim Updates

- Market sim updates will be made available ۰
- Note: Will not replace any existing media communications •
- Please take the opportunity to follow <u>@ISOSettlements on Twitter</u> by downloading the Twitter application to **any mobile device**
- Twitter feed can be accessed on **any web browser**
- **No account required** to view the Twitter feed and posts



Updates that are tweeted

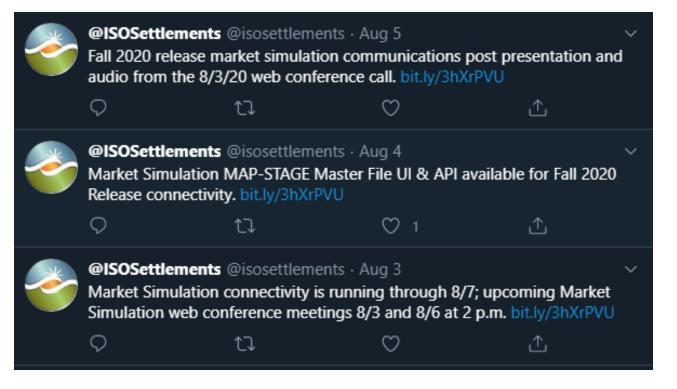
| | Tweets | | Information |
|---|--|---|--|
| • | Market Smulation MAP-STAGE Master File UI and API available for Fall 2020 Release connectivity | • | http://www.caiso.com/Pages/documentsby group.aspx?@oupID=25991DEB-2F25- 4976-8958-4F04745A59AA |

::: Submit updates to us: twitter.com/isosettlements.com





Recent Tweets



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Reminder: DRRS UI Upgrade features

- Image icons, control buttons, label fonts have a new different color scheme
- The "Apply" and "Reset" buttons appear on the far right side of the screen, as opposed to appearing after the last display input filter
- The data grid output export filename no longer contain the user certificate name
- The application window is not maximized by default, when launching the application
- The data grid columns are no longer adjustable
- <u>Technical User Group Presentation 6/28</u>



Reminder: DRRS UI Upgrade features

Current Production/Pre-Fall 2020 Release

| 🍣 Californ | nia ISO Dei | mand Respon | ise Regist | ration System | • ◆ ● ℃ ₽₽ ☆ →] | 1 | | DRRS |
|-------------------------------|--------------------|---------------------|---------------|--------------------|---------------------------------|----------------------------------|---------------|-----------|
| DRP VIEW UDC VIEW LSE VIE | W ADMINISTRATION | | | | | | | |
| DRP VIEW Locations | | | | | | | | |
| LOC ID LOC Name | SAN SAN | DRP [ALL] VDC [ALL] | LSE [ALL] | ✓ SUBLAP [ALL] ✓ D | efense Active [ALL] Apply Reset | | | ^ |
| Create Copy | Delete Defend With | draw Edit End D | Date Register | | | - | | |
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| Locations | | | | | | | Registrations | |
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| | 25 of 423730 🕨 🄰 📩 | SAN | DRP UDC | LSE SUBLAP | PNODE Start Date End I | Defense Defense Defe | v 🗄 🖷 | |
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Fall 2020 Release currently in MAP-Stage:

| California ISO Demand Response Registration System 🗢 🗢 × 🌣 🖉 🖉 | | | | | | | | | DRRS |
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| DRP VIEW UDC VIEW LSE VIEW ADMINISTR | ATION | | | | | | | | |
| > DRP VIEW > Locations | | | | | | | | | |
| LOC ID LOC Name | SAN DRP | ♥ UDC [ALL] ♥ LSE [A | L] V SUBLAP | ALL] V Defense | Active [ALL] V Updated Since DateTime | iiii | | Apply Rese | et 🖉 |
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