



# Energy Storage and Distributed Energy Resources Phase 2

Customer Partnership Group

March 27, 2018

1 p.m. – 2 p.m. (Pacific Standard Time)

# Agenda

## Item

Project Schedule Update

New Baseline Requests - Submittal Process Overview

Review of New Business Requirements Specifications

Questions Received and ISO Answers

Next Steps

# Fall 2018 – ESDER Phase 2 Project Schedule Update

Project Info	Details/Date
Application Software Changes	<p><b>Settlements:</b></p> <ul style="list-style-type: none"> <li>• Alternative Baselines:           <ul style="list-style-type: none"> <li>• Possible system changes to include addition of an automated monitoring tool for performance measurement data received from external participants.</li> <li>• Changes to the DRRS registration system for the selection of the new baselines and allowing for ISO approval prior to use in the market.</li> <li>• Settlement configuration will need to be evaluated and revised to assure PDRs that provide AS services can be calculated correctly based on the submitted SQMD.</li> </ul> </li> </ul> <p><b>ECIC:</b></p> <ul style="list-style-type: none"> <li>• EIM Net Benefits Testing:           <ul style="list-style-type: none"> <li>• Code modification to calculation to accommodate addition of all applicable gas price indices.</li> </ul> </li> </ul> <p><b>MRI-S:</b></p> <ul style="list-style-type: none"> <li>• Alternative Baselines:           <ul style="list-style-type: none"> <li>• The DRS Decommissioning project seeks to retire the current DRS system. Once this system is retired all current functionality will reside in the MRI-S (Market Results Interface – Settlements) system. It should be noted that all available customer load baseline calculations will be submitted into the MRI-S system once the DRS system is retired.</li> </ul> </li> </ul>
BPM Changes	<p><b>Market Instruments:</b></p> <ul style="list-style-type: none"> <li>• EIM Net Benefits Testing:           <ul style="list-style-type: none"> <li>• Changes will include addition of all gas price indices used in calculation.</li> </ul> </li> </ul> <p><b>Metering:</b></p> <ul style="list-style-type: none"> <li>• Alternative Baselines:           <ul style="list-style-type: none"> <li>• Need to revise the BPM to explain new baselines and changes to existing systems.</li> </ul> </li> <li>• Station Power:           <ul style="list-style-type: none"> <li>• Need to revise BPM to provide examples of wholesale/retail uses for generation and storage</li> <li>• Need to revise BPM to clarify permitted/prohibited netting rules.</li> </ul> </li> </ul> <p><b>Definitions &amp; Acronyms:</b></p> <ul style="list-style-type: none"> <li>• Station Power:           <ul style="list-style-type: none"> <li>• Revision of Station Power definition to match Tariff language.</li> </ul> </li> </ul> <p><b>Settlements &amp; Billing:</b></p> <ul style="list-style-type: none"> <li>• Alternative Baselines:           <ul style="list-style-type: none"> <li>• Possible changes to reflect settlements configuration changes.</li> </ul> </li> </ul>

# Fall 2018 – ESDER Phase 2

Project Info		Details/Date	
Business Process Changes		<ul style="list-style-type: none"> <li>• Develop Infrastructure (DI) (80001)</li> <li>• Manage Market &amp; Reliability Data &amp; Modeling (MMR) (80004)</li> <li>• Manage Operations Support &amp; Settlements (MOS) (80007)</li> <li>• Support Business Services (SBS) (80009)</li> <li>• Other</li> </ul>	
Milestone Type	Milestone Name	Dates	Status
Board Approval	Obtain Board of Governors Approval	Jul 26, 2017	✓
BPMs	Post Draft BPM changes	Jun 04, 2018	
	Publish Final Business Practice Manuals	Jul 02, 2018	
External BRS	Post External BRS	Oct 17, 2017	✓
	Post Revised External BRS	Mar 01, 2018	✓
Tariff	Post Draft Tariff	Nov 17, 2017	✓
	Post Updated Draft Tariff (based on feedback)	Apr 20, 2018	
	File Tariff with FERC	Jun 01, 2018	
CPG	Next CPG Meeting	Mar 27, 2018	
Config Guides	Settlements Config Guides	May 18, 2018	
Tech Spec	Publish ISO Interface Spec (Tech spec)	Apr 26, 2018	
External Training	Deliver external training	Jul 11, 2018	
Market Sim	Market Sim Window	Jul 17, 2018 - Aug 31, 2018	
Production Activation	ESDER Phase 2	Oct 01, 2018	

## New Baseline Requests - Submittal Process Overview

- New baseline performance submittal draft templates are posted on the CAISO CPG webpage (ESDER2 Implementation CPG section):
  - <http://www.caiso.com/informed/Pages/MeetingsEvents/CustomerPartnershipGroups/Default.aspx>

# Review of new BRS requirements

- **BRQ revisions:** BRQ028, BRQ053, BRQ083, BRQ091, BRQ094, BRQ097, BRQ0100, BRQ112, BRQ115
- The redlined BRS is now available on the CAISO Release Planning webpage (under Fall 2018 release):
  - <http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx>

# Questions Received

*BRQ097 (and related to BRQ019): “The DRP/SC shall determine a Demand Response (DR) event interval as beginning with a first interval of non-zero Total Expected Energy (TEE) and end when the TEE returns to zero.”*

- Q: Can CAISO confirm that the intervals described above (and the related BRQ019) are 5 minute intervals, not hourly expected energy? *E.g.*, if a resource got dispatched for the last 10 minutes of the hour, performance data would only need to be submitted for (and would only be settled for) these 10 minutes (and any ramping intervals), not the rest of the hour - is this correct?

Correct, per BRQ0106 for both DA and RT participation, Settlement Quality Meter Data (DREM) shall be submitted in 5 minute granularity.

Current DRS limitations which have included the starting and or ending of an event in intervals where TEE was 0, will be corrected with this implementation.

## Questions Received -Continued

**Q: Will intervals with 0 TEE but non-zero energy awarded in the day-ahead or FMM still have performance settled as UIE?**

If there is not a submittal of demand response energy measurements for intervals in which there is a 0 TEE, there will be no UIE. Additionally, data submitted for intervals in which TEE is not non-zero, will be ignored ensuring no UIE settlement for intervals in which the resource is not dispatched.



## Comments/Concerns Received

- Concerned that the CAISO is putting this (*performance*) calculation burden on the providers -- in the long run I think this will prove more costly for the participants (and therefore the state of California) than it would have been for the CAISO to develop this functionality directly.
- We would prefer there be no parallel submission of data to support AS awards (e.g., for MBMA and LOAD). This is an additional complication that is based on the CAISO design, not inherent to the AS. We feel it really should be handled internally by the CAISO.

# Questions Received -Continued

Q: Can Performance Data be submitted every day or only for Event Days?

Performance Data should only be submitted for the Event Day. Settlements will only settle on days where Total Expected Energy is non-zero. However, baseline data, for the purposes of monitoring, can be submitted daily.

Q: How Should Verbal Dispatches be considered? Where will it be stored?

Verbal dispatches will be logged into the ISOs Exceptional Dispatch Tool and will flow downstream to Settlements.

Q: Does the “No Elimination” rule exclude outliers?

Yes

Q: How is registration going to be organized in MRI-s?

MeterData XSD currently has a provision to include a Registration ID. So, no change is needed. Registration ID should be included only if they are using CBL or TMNT as the measurement types. This data will not be available for retrieve or view in MRI-S.

# Questions Received -Continued

**BRQ053** For DRPs that are approved for Control Group Baseline Methodology:

System will allow the user to identify the **location(s)** within a registration as belonging to a control group or treatment group.

System will allow any number of locations within a registration to be identified as a treatment group.

Systems will validate that if there are any locations within a registration identified as belonging to a control group, there shall be at least 150 such **locations**. In other words, if a DRP selects a **location** within a registration to belong to a control group, the System will reject any registrations submitted with less than 150 such **locations** identified.

If a **location** is identified as a treatment group **location** within a registration, the system shall not allow that **location** to be used in other registrations with overlapping dates

If a **location** is identified as a control group **location** within a registration, the system shall allow that **location** to be used in other registrations with overlapping dates as long as they are identified as a control group **location** in all such registrations

Q: Does “location” mean customers/SA’s?

Yes

Q: Could we theoretically have one control for entirety of the program?

Yes. A single control group can be used for multiple resources.

If a program is represented by multiple resources, then they could conceivably all use the same set of locations for a control group.

# Questions Received -Continued

**BRQ083** System shall allow control group location across the sub-laps. DRP shall submit hourly data by Resource ID and Registration ID for analysis and monitoring purposes. New measurement types will be:

For Day matching, Weather matching and Control Group methodologies:  
-Baseline Load Data (.CBL)

In addition, for those electing Control group methodology:  
-Treatment Group Load Data (.TMNT)

**Q: Does this affect the 10-in-10 Baseline?**

Yes, once ESDER2 is implemented 10/10 (day matching) will be SC/DRP calculated therefore this data would be required. Does not apply for trade dates prior to implementation which will continue to be calculated in the DRS until all settlement statements (re-calcs) are complete.

**Q: Do we submit all days or 45 historical Day from the Event Day?**

You can submit all days, but the minimum requirement will now be 90 days from the Event Day

**C: Need more clarification on frequency of sending data to the CAISO for monitoring purposes.**

Submit on a daily basis **or** submit full set of data once dispatch occurs. Preference is up to participant. Data is needed once event (dispatch/award) occurs.

# Questions Received -Continued

**BRQ0100** The DRP/SC shall perform the baseline calculations for the new and existing methods as listed below:

- Control Group (Residential)
- Control Group (Non-Residential)
- Day Matching 5/10 (Residential Only)
- Day Matching 10/10 (Non-Residential)
- Day Matching Combined
- Weather Matching 4-Day (Residential)
- Weather Matching
- 10 in 10 (Already Existing)
- Hourly Gen (Already Existing)
- Meter Generation Output (Already Existing)
- Meter Generation Output with 10 in 10 (Already Existing)
- Statistical Sampling (Already Existing)BRQ0100

Q: Day Matching 10/10-Does this mean non-residential now?

This option is available for resources consisting of residential, non-residential or combination as it is currently used.

Q: What is Day Matching Combined? How would it be combined

Allows the use of 5/10 to develop DREM for residential locations and 10/10 for non-residential locations when combined in the same resource.

Example provided on next slide – from 1/29/18 CPG.

# Combined residential and non-residential Day Matching Baseline Type Simplified Example

Example: PDR Event HE12 Intervals 1 – 6 (TEE>0)

- Resource Registration includes both residential and non-residential locations
- **Day Matching** Baseline Type selected

Baseline values assume adjustment has been applied:

HE12	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5	Interval 6
10/10 non-residential	1.5 MW	1.75 MW	1.75 MW	2.0 MW	2.0 MW	2.0 MW
5/10 residential	.25 MW	.50 MW	.50 MW	.50 MW	.65 MW	.75 MW
<b>BASELINEadj Data Submitted</b>	<b>1.75 MW</b>	<b>2.25 MW</b>	<b>2.25 MW</b>	<b>2.50 MW</b>	<b>2.65 MW</b>	<b>2.75 MW</b>

Actual load values for resource during dispatch:

HE12	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5	Interval 6
10/10 non-residential Load	1.25 MW	1.25 MW	1.00 MW	1.00 MW	1.00 MW	2.00 MW
5/10 residential Load	.10 MW	.10 MW	.25 MW	.50 MW	.75 MW	1.00 MW
<b>LOAD Data Submitted</b>	<b>1.35 MW</b>	<b>1.35 MW</b>	<b>1.25 MW</b>	<b>1.50 MW</b>	<b>1.75 MW</b>	<b>3.00 MW</b>

Demand Response Energy Measurement (DREM) = Baseline - Actual:

HE12	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5	Interval 6
10/10 non-residential Load	.25 MW	.50 MW	.75 MW	1.00 MW	1.00 MW	0 MW
5/10 residential Load	.15 MW	.40 MW	.25 MW	0 MW	0 MW <sup>[1]</sup>	0 MW <sup>[1]</sup>
<b>DREM Data Submitted = BASELINEadj – Actual Load</b>	<b>.40 MW</b>	<b>.90 MW</b>	<b>1.00 MW</b>	<b>1.00 MW</b>	<b>1.00 MW</b>	<b>0 MW <sup>[1]</sup></b>

<sup>[1]</sup> Note, DREM = max (0, BASELINEadj – Actual Load)



# Questions?

# Next Steps

- Please submit further questions or comments to:

Elaine Siegel at [esiegel@caiso.com](mailto:esiegel@caiso.com)

or

[initiativecomments@caiso.com](mailto:initiativecomments@caiso.com)

- Customer Partnership Groups webpage available at:  
<http://www.caiso.com/informed/Pages/MeetingsEvents/CustomersPartnershipGroups/Default.aspx>



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