



EIM Resource Sufficiency Evaluation Enhancements

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Today's Topics – business practices

- Allowance of a tolerance threshold of 1% for the Flexible Ramp Sufficiency Test. (FRST)
 - Implemented 2/15/19
- Independent Bid Range Capacity (BRC) and Flexible Ramping Sufficiency Test evaluations at a 15-minute interval basis (and BRC impacts to FRST results).
 - New production activation date 5/6/19
- Determination of EIM transfer limits based on 15-minute FRST results.
 - New production activation date 5/6/19

Today's Topics - applications

- Balancing Authority Area Operations Portal (BAAOP) display modifications
 - Resource Sufficiency Test status and Bid Range Capacity test detailed results.
 - UI display changes 3/25/19
- Transparency improvements provided for existing application reports in:
 - Open Access Same Time Information System (OASIS)
 - CAISO Market Results Interface (CMRI) Reports

SYSTEM CHANGES

Real-time Market (RTPD, RTD):

- Apply EIM transfer limits based on 15-minute Sufficiency Test results:
 - EIM Transfer for 15min interval failing FRU/FRD limited from below/above (import/export) to least restrictive of:
 - EIM Transfer in previous 15min interval from last successful FMM, or
 - Base EIM Transfer schedule in current 15min interval from current FMM

Hourly process for real-time market leading up to operating hour (EIM components)

(T- = start of the hour)

T-75: Base schedules and energy bids due (Resources)

T-55: Updated base schedules are submitted if necessary (Resources)

T-40: Updated base schedules are submitted if necessary (Entity SC)

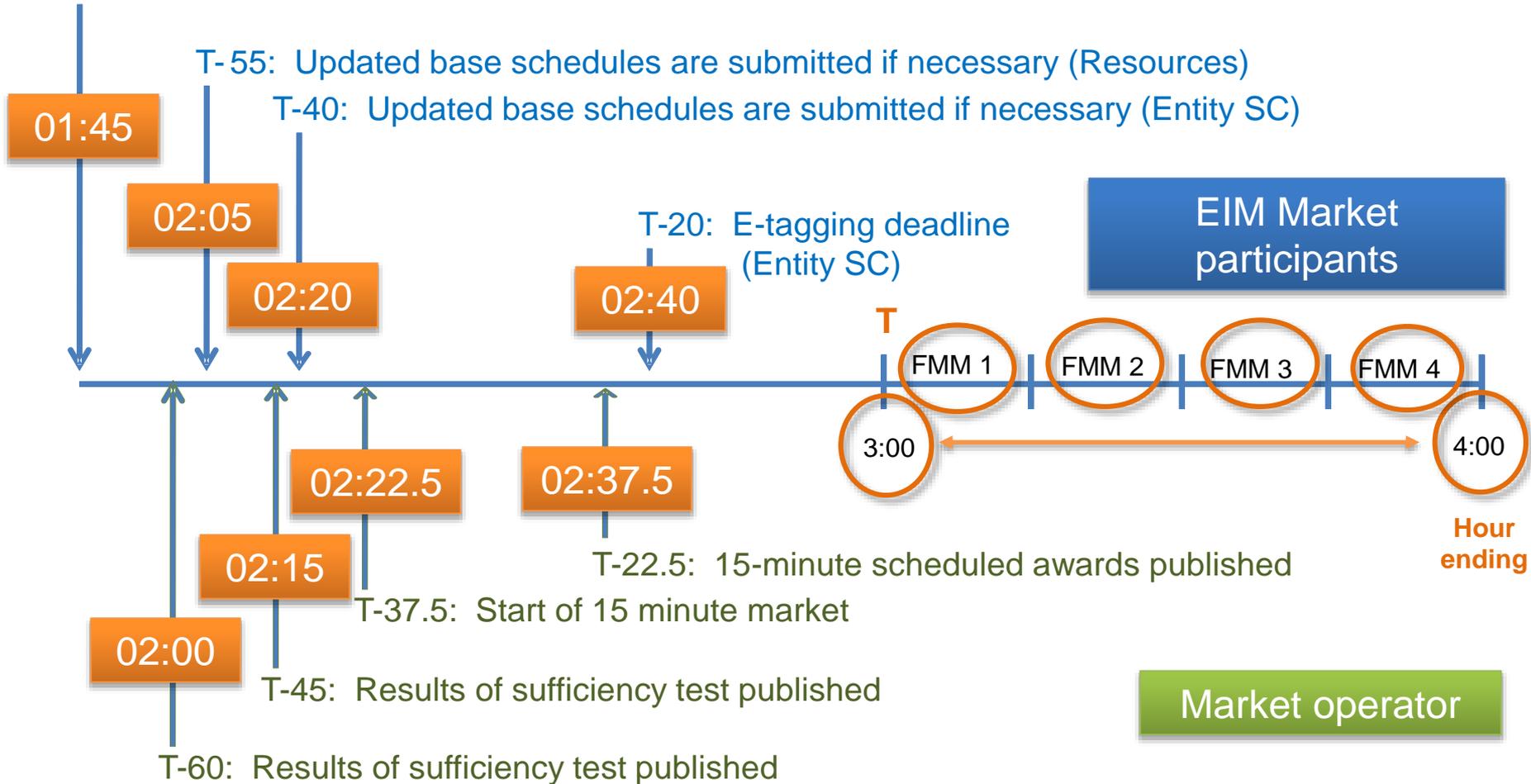
T-20: E-tagging deadline (Entity SC)

T-22.5: 15-minute scheduled awards published

T-37.5: Start of 15 minute market

T-45: Results of sufficiency test published

T-60: Results of sufficiency test published



Example of 15-Min EIM Transfer Limit Logic for BAA with Failed Flexible Ramping Sufficiency Test

Market Run			15-min Interval				
Market	Run Time	Result	0 (T-7.5')	1 (T+7.5')	2 (T+22.5')	3 (T+37.5')	4 (T+52.5')
FMM	T-82.5'	EIM Transfer (MW)	-200				
RTBS	T-75'	Base Transfer (MW)		-300	-300	-300	-300
		FRU Test		Pass	Pass	Fail	Fail
FMM	T-67.5'	Transfer Limit (MW)				-300	-300
		EIM Transfer (MW)		-400	-320	-210	-300
RTBS	T-55'	Base Transfer (MW)		-100	-100	-100	-100
		FRU Test		Fail	Pass	Fail	Fail
FMM	T-52.5'	Transfer Limit (MW)		-200		-320	-210
		EIM Transfer (MW)		-200	-270	-180	-210
RTBS	T-40'	Base Transfer (MW)		-250	-250	-250	-250
		FRU Test		Fail	Pass	Fail	Fail
FMM	T-37.5'	Transfer Limit (MW)		-250		-270	-250
		EIM Transfer (MW)		-230	-350	-270	-250
FMM	T-22.5'	Transfer Limit (MW)		-250		-350	-270
		EIM Transfer (MW)		-240	-330	-300	-270
FMM	T-7.5'	Transfer Limit (MW)				-330	-300
		EIM Transfer (MW)			-280	-330	-300
FMM	T+7.5'	Transfer Limit (MW)				-280	-330
		EIM Transfer (MW)				-260	-330
FMM	T+22.5'	Transfer Limit (MW)					-260
		EIM Transfer (MW)					-260

See next slide for clarification



Example of 15-Min EIM Transfer Limit Logic for BAA with Failed Flexible Ramping Sufficiency Test

Market Run			15-min Interval				
Market	Run Time	Result	0 (T-7.5')	1 (T+7.5')	2 (T+22.5')	3 (T+37.5')	4 (T+52.5')
FMM	T-82.5'	EIM Transfer (MW)	-200				
RTBS	T-75'	Base Transfer (MW)		-300	-300	-300	-300
		FRU Test		Pass	Pass	Fail	Fail
FMM	T-67.5'	Transfer Limit (MW)				-300	-300
		EIM Transfer (MW)		-400	-320	-210	-300
RTBS	T-55'	Base Transfer (MW)		-100	-100	-100	-100
		FRU Test		Fail	Pass	Fail	Fail
FMM	T-52.5'	Transfer Limit (MW)		-200		-320	-210
		EIM Transfer (MW)		-200	-270	-180	-210
RTBS	T-40'	Base Transfer (MW)		-250	-250	-250	-250
		FRU Test		Fail	Pass	Fail	Fail
FMM	T-37.5'	Transfer Limit (MW)		-250		-270	-250
		EIM Transfer (MW)		-230	-350	-270	-250
FMM	T-22.5'	Transfer Limit (MW)		-250		-350	-270
		EIM Transfer (MW)		-240	-330	-300	-270
FMM	T-7.5'	Transfer Limit (MW)				-330	-300
		EIM Transfer (MW)			-280	-330	-300
FMM	T+7.5'	Transfer Limit (MW)				-280	-330
		EIM Transfer (MW)				-260	-330
FMM	T+22.5'	Transfer Limit (MW)					-260
		EIM Transfer (MW)					-260

The activation of the EIM Transfer Limit logic was set for the 3rd (T+37.5') 15-min interval based on the failed Flexible Ramping Sufficiency Test (FRST) at T-40'. This was the final opportunity for this interval to avoid enforcement of the transfer limit logic as there will be no additional FRST. The limit for the 3rd interval (T+37.5') was determined to be -270 MW for the T-37.5' FMM market run (the first FMM run after T-40'). In this case, the T-52.5' FMM market run's EIM transfer schedule of -270 MW for the 2nd interval (i.e. prior interval to the evaluated 3rd interval) was less restrictive than the T-40' Base Transfer schedule of -250 MW. So far, so good. In the next FMM market run (at T-22.5'), the EIM transfer limit logic must still apply as the final T-40' test failed. This run compares Base Transfer Schedule (-250 MW submitted for T-40') with the less restrictive -350 MW EIM Transfer Schedule taken from the T-37.5' FMM market run's 2nd interval. The new transfer limit becomes -350 MW. Both in the subsequent T-7.5' and T+7.5' FMM runs, the prior interval's EIM transfer schedule from the previous FMM run remains the less restrictive option and the logic chooses it as the new EIM Transfer Limit.

Balancing Authority Area Operations

BALANCING TEST RESULTS

BAAOP Enhancement: BSCH Execution Control Screen

15 MIN Base
Schedule Test
Changes to the UI

Visual Changes:

- March 25th

The screenshot displays the 'BSCH Execution Control' interface. At the top, there are navigation tabs for 'BAA' and 'Apply'/'Reset'. Below this, the 'Current Case' section shows 'Current Case: UPDATE' and 'CANCEL' buttons, along with fields for 'Case Description' (RTBS_3), 'Trading Period Start' (03/05/2019 05:00), 'Trading Period End' (03/05/2019 06:00), 'Trading Interval (min)' (60), and 'No of Intervals' (1).

The main area is divided into several sections:

- Base Schedule Test Results:** A red box highlights this section, which contains three sub-sections:
 - Balancing and Feasibility:** A table with columns 'BAA', 'Start Time', 'End Time', 'Balancing', and 'Feasibility'. The first row shows '03/05/2019 05:00' to '03/05/2019 06:00' with 'PASS' in both columns.
 - Bid Range Capacity:** A table with columns 'BAA', 'Start Time', 'End Time', 'Up', and 'Down'. The first row shows '03/05/2019 05:00' to '03/05/2019 05:15' with 'PASS' in both columns.
 - Flex Ramp Sufficiency:** A table with columns 'BAA', 'Start Time', 'End Time', 'Up', and 'Down'. The first row shows '03/05/2019 05:00' to '03/05/2019 05:15' with 'PASS' in both columns.
- Base Schedule Execution Control:** A separate window or panel on the right showing 'Execution Mode' (Manual), 'Execute' button, 'RTBS Status' (NONE), 'BSCH Start', 'BSCH End', and 'Thresholds'.
- Base Schedule Output:** A table with columns 'BAA', 'Start Time', 'End Time', 'Area Generation', 'Base MW', 'Demand Forecast', and 'Base Load'. The first row shows '03/05/2019 05:00' to '03/05/2019 06:00' with values: 5,521.00, 2,415.00, 3,107.75, and 3,026.25.
- BAA Information:** A table with columns 'Name', 'Market Operator Flag', 'EM Flag', 'Gap', and 'Armed ID'. The first row shows 'H', 'Y', and '0017'.

CMRI: Balancing Test Results

Day-Ahead Real-Time Post-Market Default Bids Convergence Bidding Forecast

Energy Imbalance Market

Start Date: 03/22/2019 EIM Entity: [ALL] Market: [ALL] Hour: [ALL] Apply Reset
 End Date: 03/22/2019 Input Time Type: [ALL]

Balancing Test Results

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Trade Date	EIM Entity	Market	Input Time Type	Hour Ending	Balancing Authority Area	Test Result	Imbalance Direction	Imbalance [%]	Imbalance Amount [MW]	Requirement Amount [MW]
03/22/2019		RTM	T-40	14		FAIL	UNDER	9.26	207.43	2240.4307
03/22/2019		RTM	T-40	15		FAIL	OVER	15.4	337.84	2193.1628
03/22/2019		RTM	T-40	16		FAIL	OVER	18.41	428.77	2329.2312
03/22/2019		RTM	T-55	14		FAIL	UNDER	9.26	207.43	2240.4307
03/22/2019		RTM	T-55	15		FAIL	OVER	15.4	337.84	2193.1628
03/22/2019		RTM	T-55	16		FAIL	OVER	18.41	428.77	2329.2312
03/22/2019		RTM	T-75	14		FAIL	UNDER	9.26	207.43	2240.4307
03/22/2019		RTM	T-75	15		FAIL	OVER	15.4	337.84	2193.1628
03/22/2019		RTM	T-75	16		FAIL	OVER	18.41	428.77	2329.2312
03/22/2019		RTM	T-40	14		FAIL	OVER	19.88	231.69	1165.3077
03/22/2019		RTM	T-40	15		FAIL	OVER	33.9	387.85	1144.1495
03/22/2019		RTM	T-40	16		FAIL	OVER	20.33	236.23	1161.7675
03/22/2019		RTM	T-55	14		FAIL	OVER	19.88	231.69	1165.3077
03/22/2019		RTM	T-55	15		FAIL	OVER	33.9	387.85	1144.1495
03/22/2019		RTM	T-55	16		FAIL	OVER	20.33	236.23	1161.7675
03/22/2019		RTM	T-75	14		FAIL	OVER	19.62	229.1	1167.897
03/22/2019		RTM	T-75	15		FAIL	OVER	34.12	389.76	1142.2426
03/22/2019		RTM	T-75	16		FAIL	OVER	22.3	254.93	1143.0747
03/22/2019		RTM	T-40	14		FAIL	UNDER	4.27	68.71	1609.657
03/22/2019		RTM	T-40	15		FAIL	UNDER	4.38	69.48	1585.3447

Customer Market Results Interface (CMRI)

FLEXIBLE RAMP SUFFICIENCY TEST

Flexible Ramp Requirement Sufficiency Test Results Scenario 1

- BAA's EIM Flexible Ramping Sufficiency Test result fails for at least one 15-minute interval for a given direction in same trade hour, where the following conditions occur:

Value	:15	:30	:45	:60
Flexible Ramping Sufficiency Requirement Up	100	100	100	100
Flexible Ramping Upward Capacity	99.5	110	130	90
Flexible Ramping Sufficiency Requirement Down	200	200	200	200
Flexible Ramping Downward Capacity	150	175	220	250

Flexible Ramp Requirement Sufficiency Test Results Scenario 1

Value	:15	:30	:45	:60
Flexible Ramping Sufficiency Requirement Up	100	100	100	100
Flexible Ramping Upward Capacity	99.5	110	130	90
Flexible Ramping Sufficiency Requirement Down	200	200	200	200
Flexible Ramping Downward Capacity	150	175	220	250

Description	:15	:30	:45	:60
Test Status (Upward)	Pass	Pass	Pass	Fail
Test Indicator	1	2	3	4
Ramp Type	Up	Up	Up	Up
Insufficiency Percentage (%)	0.5	-10.0	-30.0	10.0
Insufficiency Amount (MW)	0.5	-10	-30	10.0
Requirement Amount (MW)	100	100	100	100
Test Status (Downward)	Fail	Fail	Pass	Pass
Test Indicator	1	2	3	4
Ramp Type	Down	Down	Down	Down
Insufficiency Percentage (%)	25.0	12.5	-10.0	-25.0
Insufficiency Amount (MW)	50	25	-20	-50
Requirement Amount (MW)	200	200	200	200

Flexible Ramp Requirement Sufficiency Test Results Scenario 2

- BAA's EIM Flexible Ramping Sufficiency Test result fails for at least one 15-minute interval for a given direction in same trade hour, where the following conditions occur:

Value	:15	:30	:45	:60
Flexible Ramping Sufficiency Requirement Up	100	100	100	100
Flexible Ramping Upward Capacity	150	150	150	150
Flexible Ramping Sufficiency Requirement Down	200	200	200	200
Flexible Ramping Downward Capacity	250	250	250	250

Flexible Ramp Requirement Sufficiency Test Results Scenario 2

Value	:15	:30	:45	:60
Flexible Ramping Sufficiency Requirement Up	100	100	100	100
Flexible Ramping Upward Capacity	150	150	150	150
Flexible Ramping Sufficiency Requirement Down	200	200	200	200
Flexible Ramping Downward Capacity	250	250	250	250

Description	:15	:30	:45	:60
Test Status (Upward)	Pass	Pass	Pass	Fail
Test Indicator	1	2	3	4
Ramp Type	Up	Up	Up	Up
Insufficiency Percentage (%)	-50.0	-50.0	-50.0	0.0
Insufficiency Amount (MW)	-50	-50	-50	0
Requirement Amount (MW)	100	100	100	100
Test Status (Downward)	Fail	Fail	Pass	Pass
Test Indicator	1	2	3	4
Ramp Type	Down	Down	Down	Down
Insufficiency Percentage (%)	0.0	0.0	-25.0	-25.0
Insufficiency Amount (MW)	0	0	-50	-50
Requirement Amount (MW)	200	200	200	200

BAAOP Enhancement: Flex Ramp Sufficiency Screen

EIM > System > Base Schedule Test Results > Base Schedule Test

BAA End Time [ALL]

▼ Base Schedule Test Results - Balancing and Feasibility

				Test Status	
BAA	Start Time	End Time	Balancing	Feasibility	
	03/21/2019 12:00	03/21/2019 13:00	FAIL	PASS	

▼ Base Schedule Test Results - Flex Ramp Sufficiency

				Sufficiency	
BAA	Start Time	End Time	Up	Down	
	03/21/2019 12:00	03/21/2019 12:15	PASS	PASS	
	03/21/2019 12:00	03/21/2019 12:30	PASS	PASS	
	03/21/2019 12:00	03/21/2019 12:45	PASS	PASS	
	03/21/2019 12:00	03/21/2019 13:00	PASS	PASS	

▼ Base Schedule Test Results - Bid Range Capacity

				Capacity	
BAA	Start Time	End Time	Up	Down	
	03/21/2019 12:00	03/21/2019 13:00	PASS	PASS	

15 MIN Flex Ramp Sufficiency Test Results Changes to the UI

Visual Changes:

- March 25th

BID RANGE CAPACITY TEST

EIM Capacity Test Results Scenario 1

- BAA's EIM Capacity Test result fails for a single 15-min interval, where the following conditions occur for trade hour:

Aggregated Base Transfer Schedules by BAA

Value	:15	:30	:45	:60
Base Transfer Schedule	1100	1100	1100	1100
15-minute Load Forecast	975	1050	1125	1025
Imbalance Direction	Over	Over	Under	Over
Imbalance Amount	125	50	25	75
Bid Range Capacity (Up)	100	100	100	100
Bid Range Capacity (Down)	100	100	100	100

EIM Capacity Test Results Scenario 1

Value	:15	:30	:45	:60
Base Transfer Schedule	1100	1100	1100	1100
15-minute Load Forecast	975	1050	1125	1025
Imbalance Direction	Over	Over	Under	Over
Imbalance Amount	125	50	25	75
Bid Range Capacity (Up)	100	100	100	100
Bid Range Capacity (Down)	100	100	100	100

Value Description	:15	:30	:45	:60
Test Status (Over)	Fail	Pass	Pass	Pass
Insufficiency Direction (Over)	Over	Over	Over	Over
Insufficiency Percentage (%)	25.0	-50.0	-125.0	-25.0
Insufficiency Amount (MW)	25	-50	-125	-25
Test Status (Under)	Pass	Pass	Pass	Pass
Insufficiency Direction (Under)	Under	Under	Under	Under
Insufficiency Percentage (%)	-225.0	-150.0	-75.0	-175.0
Insufficiency Amount (MW)	-225	-150	-75	-175

EIM Capacity Test Results Scenario 2

- BAA's EIM Capacity Test result fails for at least one 15-minute interval for each direction in same trade hour, where the following conditions occur:

Aggregated Base Transfer Schedules by BAA

Value	:15	:30	:45	:60
Base Transfer Schedule	1100	1100	1100	1100
15-minute Load Forecast	975	950	1110	1225
Imbalance Direction	Over	Over	Under	Under
Imbalance Amount	125	150	10	125
Bid Range Capacity (Up)	100	100	100	100
Bid Range Capacity (Down)	100	100	100	100

EIM Capacity Test Results Scenario 2

Value	:15	:30	:45	:60
Base Transfer Schedule	1100	1100	1100	1100
15-minute Load Forecast	975	950	1110	1225
Imbalance Direction	Over	Over	Under	Under
Imbalance Amount	125	150	10	125
Bid Range Capacity (Up)	100	100	100	100
Bid Range Capacity (Down)	100	100	100	100

Description	:15	:30	:45	:60
Test Status (Over)	Fail	Fail	Pass	Pass
Insufficiency Direction (Over)	Over	Over	Over	Over
Insufficiency Percentage (%)	25.0	50.0	-110.0	-225.0
Insufficiency Amount (MW)	25	50	-110	-225
Test Status (Under)	Pass	Pass	Pass	Fail
Insufficiency Direction (Under)	Under	Under	Under	Under
Insufficiency Percentage (%)	-225.0	-250.0	-90.0	25.0
Insufficiency Amount (MW)	-225	-250	-90	25

EIM Capacity Test Results Scenario 3

- BAA's EIM Capacity Test result passes for all 15-minute interval for each direction in same trade hour, where the following conditions occur:

Aggregated Base Transfer Schedules by BAA

Value	:15	:30	:45	:60
Base Transfer Schedule	1100	1100	1100	1100
15-minute Load Forecast	1050	1075	1125	1150
Imbalance Direction	Over	Over	Under	Under
Imbalance Amount	50	25	25	50
Bid Range Capacity (Up)	100	100	100	100
Bid Range Capacity (Down)	100	100	100	100

EIM Capacity Test Results Scenario 3

Value	:15	:30	:45	:60
Base Transfer Schedule	1100	1100	1100	1100
15-minute Load Forecast	1050	1075	1125	1150
Imbalance Direction	Over	Over	Under	Under
Imbalance Amount	50	25	25	50
Bid Range Capacity (Up)	100	100	100	100
Bid Range Capacity (Down)	100	100	100	100

Description	:15	:30	:45	:60
Test Status (Over)	Pass	Pass	Pass	Pass
Insufficiency Direction (Over)	Over	Over	Over	Over
Insufficiency Percentage (%)	-50.0	-25.0	-125.0	-150.0
Insufficiency Amount (MW)	-50	-25	-125	-150
Test Status (Under)	Pass	Pass	Pass	Pass
Insufficiency Direction (Under)	Under	Under	Under	Under
Insufficiency Percentage (%)	-150.0	-125.0	-75.0	-50
Insufficiency Amount (MW)	-150	-125	-75	-50

BAAOP: BSCH Execution Control Screen

15 MIN Bid Range Capacity Test Changes to the UI

Visual Changes:

- March 25th

EIM > System > Base Schedule Test Results > Bid Range Capacity Test

BAA [] End Time [ALL] Test [ALL] Apply Reset

Bid Range Capacity Test

BAA	Interval End	Area Generation	Base NSI	Demand Forecast	Direction	Capacity MW	Imbalance %	Additional Bid Range Req
	03/05/2019 05:15	2,946.00	-510.00	3,360.62	DNCAP	325.00	-492.01 -14.88	0.00
	03/05/2019 05:15	2,946.00	-510.00	3,360.62	UPCAP	440.00	-766.99 -23.19	0.00
	03/05/2019 05:30	2,946.00	-510.00	3,413.13	DNCAP	325.00	-545.82 -16.24	0.00
	03/05/2019 05:30	2,946.00	-510.00	3,413.13	UPCAP	440.00	-713.18 -21.22	0.00
	03/05/2019 05:45	2,946.00	-510.00	8,466.70	DNCAP	325.00	-598.13 -17.52	0.00
	03/05/2019 05:45	2,946.00	-510.00	8,466.70	UPCAP	440.00	-660.87 -19.36	0.00
	03/05/2019 06:00	2,946.00	-510.00	8,504.47	DNCAP	325.00	-5,651.70 -66.75	0.00
	03/05/2019 06:00	2,946.00	-510.00	8,504.47	UPCAP	440.00	4,392.70 51.88	0.00

Upward Capacity

Interval End	BAA	Resource	Unit Type	Upward Capacity	Previous EN	Current EN	RU	SR	NR	RD	Min	Max
03/05/2019 05:15			CT	72.00	0.00	0.00	0.00	0.00	0.00	0.00	35.00	72.00
03/05/2019 05:15			CT	72.00	0.00	0.00	0.00	0.00	0.00	0.00	35.00	72.00
03/05/2019 05:15			MSG	5.00	18.00	31.00	20.00	10.00	0.00	13.00	18.00	66.00
03/05/2019 05:15			MSG	18.00	18.00	18.00	0.00	30.00	0.00	0.00	18.00	66.00
03/05/2019 05:15			MSG	76.00	0.00	0.00	0.00	0.00	0.00	0.00	60.00	76.00
03/05/2019 05:15			MSG	28.00	392.00	354.00	60.00	62.00	0.00	37.00	280.00	505.00
03/05/2019 05:15			MSG	78.00	510.00	512.00	0.00	20.00	0.00	20.00	336.00	610.00
03/05/2019 05:15			MSG	90.00	0.00	0.00	0.00	0.00	0.00	0.00	55.00	90.00
03/05/2019 05:30			CT	72.00	0.00	0.00	0.00	0.00	0.00	0.00	35.00	72.00
03/05/2019 05:30			CT	72.00	0.00	0.00	0.00	0.00	0.00	0.00	35.00	72.00

Downward Capacity

Interval End	BAA	Resource	Unit Type	Downward Capacity	Previous EN	Current EN	RU	SR	NR	RD	Min	Max
03/05/2019 05:15			MSG	10.00	18.00	31.00	20.00	10.00	0.00	13.00	18.00	66.00
03/05/2019 05:15			MSG	30.00	18.00	18.00	0.00	30.00	0.00	0.00	18.00	66.00
03/05/2019 05:15			MSG	99.00	392.00	354.00	60.00	62.00	0.00	37.00	280.00	505.00
03/05/2019 05:15			MSG	176.00	510.00	512.00	0.00	20.00	0.00	20.00	336.00	610.00
03/05/2019 05:15			MSG	10.00	22.00	31.00	20.00	10.00	0.00	9.00	22.00	61.00
03/05/2019 05:30			MSG	10.00	18.00	31.00	20.00	10.00	0.00	13.00	18.00	66.00
03/05/2019 05:30			MSG	30.00	18.00	18.00	0.00	30.00	0.00	0.00	18.00	66.00
03/05/2019 05:30			MSG	99.00	392.00	354.00	60.00	62.00	0.00	37.00	280.00	505.00
03/05/2019 05:30			MSG	176.00	510.00	512.00	0.00	20.00	0.00	20.00	336.00	610.00
03/05/2019 05:30			MSG	10.00	22.00	31.00	20.00	10.00	0.00	9.00	22.00	61.00
03/05/2019 05:45			MSG	10.00	18.00	31.00	20.00	10.00	0.00	13.00	18.00	66.00
03/05/2019 05:45			MSG	30.00	18.00	18.00	0.00	30.00	0.00	0.00	18.00	66.00
03/05/2019 05:45			MSG	99.00	392.00	354.00	60.00	62.00	0.00	37.00	280.00	505.00
03/05/2019 05:45			MSG	176.00	510.00	512.00	0.00	20.00	0.00	20.00	336.00	610.00
03/05/2019 05:45			MSG	10.00	22.00	31.00	20.00	10.00	0.00	9.00	22.00	61.00
03/05/2019 06:00			MSG	10.00	18.00	31.00	20.00	10.00	0.00	13.00	18.00	66.00
03/05/2019 06:00			MSG	30.00	18.00	18.00	0.00	30.00	0.00	0.00	18.00	66.00
03/05/2019 06:00			MSG	99.00	392.00	354.00	60.00	62.00	0.00	37.00	280.00	505.00
03/05/2019 06:00			MSG	176.00	510.00	512.00	0.00	20.00	0.00	20.00	336.00	610.00

CMRI: Bid Range Capacity Test Results

Day-Ahead Real-Time Post-Market Detail Bids Convergence Bidding Forecast

Energy Imbalance Market

Start Date: 03/22/2019 EIM Entity: [ALL] Market: [ALL] Hour: [ALL] Apply Reset
 End Date: 03/22/2019 Input Time Type: [ALL]

Bid Range Capacity Test Results

Trade Date	EIM Entity	Market	Input Time Type	Hour Ending	Balancing Authority Area	Test Result	Insufficiency Direction	Insufficiency [%]	Insufficiency Amount [MW]	Decremental Requirement [MW]	Incremental Requirement [MW]	Requirement Amount [MW]
03/22/2019		RTM	T-40	14		PASS	OVER	-52.71	-1176.25	0	0	0
03/22/2019		RTM	T-40	14		PASS	UNDER	-45.33	-1004.03	0	0	0
03/22/2019		RTM	T-40	15		PASS	OVER	-59.88	-1408.99	0	0	0
03/22/2019		RTM	T-40	15		PASS	UNDER	-36.22	-814.39	0	0	0
03/22/2019		RTM	T-40	16		PASS	OVER	-65.16	-1625.08	0	0	0
03/22/2019		RTM	T-40	16		PASS	UNDER	-25.08	-598.17	0	0	0
03/22/2019		RTM	T-55	14		PASS	OVER	-52.71	-1176.25	0	0	0
03/22/2019		RTM	T-55	14		PASS	UNDER	-45.33	-1004.03	0	0	0
03/22/2019		RTM	T-55	15		PASS	OVER	-59.88	-1408.99	0	0	0
03/22/2019		RTM	T-55	15		PASS	UNDER	-36.22	-814.39	0	0	0
03/22/2019		RTM	T-55	16		PASS	OVER	-65.16	-1625.08	0	0	0
03/22/2019		RTM	T-55	16		PASS	UNDER	-25.08	-598.17	0	0	0
03/22/2019		RTM	T-75	14		PASS	OVER	-52.71	-1176.25	0	0	0
03/22/2019		RTM	T-75	14		PASS	UNDER	-45.33	-1004.03	0	0	0
03/22/2019		RTM	T-75	15		PASS	OVER	-59.88	-1408.99	0	0	0
03/22/2019		RTM	T-75	15		PASS	UNDER	-36.22	-814.39	0	0	0
03/22/2019		RTM	T-75	16		PASS	OVER	-65.16	-1625.08	0	0	0
03/22/2019		RTM	T-75	16		PASS	UNDER	-25.08	-598.17	0	0	0
03/22/2019		RTM	T-40	14		PASS	OVER	-52.34	-804.31	0	0	0
03/22/2019		RTM	T-40	14		PASS	UNDER	-26.82	-304.89	0	0	0

Open Access (OASIS)

SYSTEM CHANGES

Impacted Systems: OASIS

- System shall update identified report name from “EIM Transfer Limits” to “Net EIM Transfer Limits”
 - OASIS menu label will also be updated
 - OASIS API name shall *not* be updated
 - Atlas Reference documentation will be updated
 - Market Instruments BPM will be updated

OASIS: Net EIM Transfer Limits

Date From: 03/21/2019 To: 03/21/2019 Market/Process: [ALL] BAA Group ID: [ALL] Apply Reset

Download XML Download CSV

Net EIM Transfer Limits																														
Market	Opr Date	Balancing Authority Area Group ID	Limit Type	Opr Interval	HE01	HE02	HE03	HE04	HE05	HE06	HE07	HE08	HE09	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19	HE20	HE21	HE22	HE23	HE24	HE25	
RTD	03/21/2019		EXPORT	1	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		67.41	0.00	0.00	0.00	0.00	0.00	0.01				
RTD	03/21/2019		EXPORT	2	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		67.41	0.00	0.00	0.00	0.00	0.00	0.01				
RTD	03/21/2019		EXPORT	3	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		67.41	0.00	0.00	0.00	0.00	0.00	0.01				
RTD	03/21/2019		EXPORT	4	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		67.41		0.00	0.00	0.00	0.00	0.01				
RTD	03/21/2019		EXPORT	5	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		67.41		0.00	0.00	0.00	0.00	0.01				
RTD	03/21/2019		EXPORT	6	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		67.41		0.00	0.00	0.00	0.00	0.01				
RTD	03/21/2019		EXPORT	7	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01			
RTD	03/21/2019		EXPORT	8	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01			
RTD	03/21/2019		EXPORT	9	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01			
RTD	03/21/2019		EXPORT	10	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01			
RTD	03/21/2019		EXPORT	11	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01			
RTD	03/21/2019		EXPORT	12	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01			
RTD	03/21/2019		IMPORT	12																-0.00										
RTD	03/21/2019		EXPORT	1	-82.00	-102.00	-125.73	223.75	185.66	-170.47			583.85		563.32															
RTD	03/21/2019		EXPORT	2	-104.00	-102.00	-125.73	179.25	185.66	-170.47			583.85		563.32															
RTD	03/21/2019		EXPORT	3	-110.00	-102.00	-125.73	157.00	185.66	-170.47			583.85		563.32															
RTD	03/21/2019		EXPORT	4	-102.00	-125.73	-150.23	185.66	52.99	-170.47			562.87		683.82		93.07													-303.00
RTD	03/21/2019		EXPORT	5	-102.00	-125.73	-150.23	185.66	52.99	-170.47			562.87		683.82		93.07													-303.00
RTD	03/21/2019		EXPORT	6	-102.00	-125.73	-150.23	185.66	52.99	-170.47			562.87		683.82		93.07													-303.00
RTD	03/21/2019		EXPORT	7	-102.00	-125.73	-150.23	185.66	52.99	-170.47			562.87		683.82															-303.00
RTD	03/21/2019		EXPORT	8	-102.00	-125.73	-150.23	185.66	52.99	-170.47			562.87		683.82															-303.00
RTD	03/21/2019		EXPORT	9	-102.00	-125.73	-150.23	185.66	52.99	-170.47			562.87		683.82															-303.00
RTD	03/21/2019		EXPORT	10	-102.00	-125.73	-150.23	185.66	52.99	-170.47			78.00	563.32	-116.00															-303.00
RTD	03/21/2019		EXPORT	11	-102.00	-125.73	-146.25	185.66	52.99	-170.47			51.00	563.32	-72.88															-272.88

What's next?

- External testing begins March 27, 2019
- This presentation posted on Learning Center
- CBT with more detailed information and examples posted on Learning Center mid-April
- Production activation ~~April 16, 2019~~ **May 6, 2019**

New
Date!

Unstructured Market Sim April 1 - 7

Date of Data Refresh: 3/12/19



Legend	
Market Simulation	CA ISO Holiday
External Testing	Deployment Week

3/11/19 - 3/17/19
3/18/19 - 3/24/19
3/25/19 - 3/31/19
4/1/19 - 4/7/19
4/8/19 - 4/14/19
4/29/19 - 5/5/19
7/15/19 - 7/21/19
7/22/19 - 7/28/19
7/29/19 - 8/4/19
8/5/19 - 8/11/19
8/12/19 - 8/18/19
8/19/19 - 8/25/19
8/26/19 - 9/1/19
9/2/19 - 9/8/19
9/9/19 - 9/15/19
9/16/19 - 9/22/19
9/23/19 - 9/29/19
9/30/19 - 10/6/19
10/7/19 - 10/13/19
10/14/19 - 10/20/19

MAP Stage Environment Window

CRR 1B CMRI Report	CRR 1B CMRI Report (03/01-03/21)
CRR 1B - CMRI Report External Testing Starts	CRR 1B - CMRI Report External Testing Starts (03/12)
EIM Resource Sufficiency - Capacity & Sufficiency	EIM Resource Sufficiency - Capacity & Sufficiency (03/25-04/16)
EIM Resource Sufficiency - Capacity & Sufficiency - External Testing Starts	EIM Resource Sufficiency - Capacity & Sufficiency - External Testing Starts (03/27)
CCDEBE Phase 1	CCDEBE Phase 1 (07/15-08/30)
CCDEBE Phase 1 - Market Sim	CCDEBE Phase 1 - Market Sim (07/15-08/30)
ESDER Phase 3A	ESDER Phase 3A (07/15-08/30)
ESDER Phase 3A - Market Sim	ESDER Phase 3A - Market Sim (07/15-08/30)
RMR and CPM Enhancements	RMR and CPM Enhancements (07/15-08/30)
RMR and CPM Enhancements - Market Sim	RMR and CPM Enhancements - Market Sim (07/15-08/30)
LMPM - Enhancements	LMPM - Enhancements (07/15-08/30)
LMPM - Enhancements - Market Sim	LMPM - Enhancements - Market Sim (07/15-08/30)
EIM Enhancements 2019	EIM Enhancements 2019 (07/15-08/30)
EIM Enhancements 2019 - Market Sim	EIM Enhancements 2019 - Market Sim (07/15-08/30)

Production Environment Window

CRR 1B CMRI Report	CRR 1B CMRI Report (03/21)
Commitment Cost Phase 3 Activation	Commitment Cost Phase 3 Activation (04/01)
EIM - BANC-SMUD	EIM - BANC-SMUD (04/03)
EIM Resource Sufficiency - Capacity & Sufficiency	EIM Resource Sufficiency - Capacity & Sufficiency (04/16)
LMC Transparency Enhancement	LMC Transparency Enhancement (05/01)
CCDEBE Phase 1	CCDEBE Phase 1 (10/01)
ESDER Phase 3A	ESDER Phase 3A (10/01)
RMR and CPM Enhancements	RMR and CPM Enhancements (10/01)
LMPM - Enhancements	LMPM - Enhancements (10/01)
EIM Enhancements 2019	EIM Enhancements 2019 (10/01)



For more detailed information on anything presented, please
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Acronyms and Definitions

- API Application Programmable Interface
- BAA Balancing Authority Area
- BAAOP Balancing Authority Area Operations Portal
- BPM Business Process Manual
- BRS Business Requirements Specification
- BSAP Base Schedule Aggregation Portal
- CAISO California Independent System Operator
- CISO California Independent System Operator
- CMRI CAISO Market Results Interface
- DA Day-Ahead
- DAM Day-Ahead Market
- DAME Day-Ahead Market Enhancements
- EIM Energy Imbalance Market
- FMM Fifteen Minute Market
- FRD Flexible Ramping Downward

Acronyms and Definitions

- FRD Flexible Ramping Downward
- FRST Flexible Ramping Sufficiency Test
- FRU Flexible Ramping Upward
- HASP Hour-Ahead Scheduling Process
- IFM Integrated Forward Market
- ISO Independent System Operator
- MF MasterFile
- MOO Must-Offer Obligation
- MQS Market Quality System
- OASIS Open Access Same Time Information System
- RST Resource Sufficiency Test
 - » *[comprehensively includes Balancing, Capacity, Flexible Ramping sufficiency (FRST), and feasibility tests]*
- RTBS Real-Time Base Schedule
- RTD Real-Time Dispatch

Acronyms and Definitions

- RTM Real-Time Market
- RTPD Real-Time Pre-Dispatch
- RUC Residual Unit Commitment
- SC Scheduling Coordinator
- SIBR Scheduling Infrastructure and Business Rules
- STUC Short-Term Unit Commitment
- UI User Interface