



California Independent  
System Operator Corporation

July 14, 2008

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

**Re: Monthly Status Report re MRTU, California Independent  
System Operator Corporation  
Docket No. ER06-615**

Dear Secretary Bose:

Enclosed for filing in the above-captioned docket, please find an electronic copy of the July 2008 MRTU Status Report of the California Independent System Operator Corporation.

Respectfully submitted,

**/s/ Sidney Mannheim Davies**

Sidney Mannheim Davies  
The California Independent System  
Operator Corporation  
151 Blue Ravine Road  
Folsom, CA 95630

Attorney for the California Independent  
System Operator Corporation



management presented an extensive MRTU update concerning the status of CAISO readiness and acknowledged that the target MRTU launch date of October 1, 2008 was not feasible but that a Fall 2008 implementation was still feasible. Representatives from San Diego Gas & Electric Company, Pacific Gas and Electric Company and Southern California Edison Company expressed their commitment to extend their best efforts to achieve a November 1, 2008 launch. Several representatives from the municipal community, including the Northern California Power Agency, the City of Anaheim and the City of Riverside expressed their commitment to a successful MRTU launch but expressed a greater degree of doubt as to whether MRTU could be launched in the fall of 2008. The CAISO will then reassess its readiness and market participant readiness at the August 14, 2008 CAISO Board of Governors meetings.

The attached July 2008 MRTU Status Report contains additional details on the status of the MRTU implementation efforts currently underway. In addition, additional details concerning the market status, including metrics, was included in the recent CAISO Board of Governors memorandum dated July 1, 2008 and presentation dated July 9, 2008. These documents are attached to the Status Report for the Commission's information.

Respectfully submitted,

**/s/ Sidney Mannheim Davies**  
Sidney Mannheim Davies

Counsel for the California Independent  
System Operator Corporation

Dated: July 14, 2008

## CERTIFICATE OF SERVICE

I hereby certify that I have caused the public version of the foregoing document to be served upon the Public Utilities Commission of the State of California and upon all parties of the official service lists maintained by the Secretary for Docket No. ER06-615.

Dated at Folsom, California, this 14<sup>th</sup> day of July 2008.

*Is/ Anna Pascuzzo*  
Anna Pascuzzo

**ATTACHMENT**

**Market Redesign and Technology Upgrade**

**FERC Report**

**July 14, 2008**

# **Market Redesign and Technology Upgrade**

**FERC Report**

**July 14, 2008**

## Executive Summary:

This report is an update to the June 2, 2008 report of the accomplishments of, and provides the status for, the Market Redesign and Technology Upgrade (“MRTU”), with a proposed Go Live date in the Fall of 2008, which is to be no earlier than November 1, 2008. This status report will provide the Federal Energy Regulatory Commission (“Commission”) with additional information supporting the California Independent System Operator’s (“CAISO”) efforts to prepare itself and its Market Participants to commence MRTU operations. The highlights for the month include:

- Integrated Market Simulation - Update 2 (“IMS Update 2”) re-commenced after a one-week maintenance down time on June 2<sup>nd</sup> and has been going for 6 weeks of continuous simulation.<sup>1</sup>
  - Significant Real-time issues were resolved with patches effective June 16<sup>th</sup>
  - Last two weeks of June demonstrated system stability
  - Scenario Testing began on July 2<sup>nd</sup>
- Business Process Sign Off for 11 of 13 Tier 1 Business Processes.
- Transfer of MRTU Applications to the business units from the MRTU Program has been completed for 20 of 21 applications.
- Certification of the new MRTU applications (CRR, MQS, IFM/RTN and SIBR) mapping to the MRTU Tariff requirements was completed by SAIC. CAISO is evaluating the SAIC findings and planning to update the MRTU Tariff with additional detail as needed. .
- Internal and External Readiness activities continued throughout the month.

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<sup>1</sup> Previously, CAISO took a two-week down time to upgrade the applications from March 22<sup>nd</sup> until April 6<sup>th</sup>. Market Simulation re-commenced on April 7<sup>th</sup>.

## Overall Dashboard

The following dashboard outlines the current status for Business Units, Market Participants and the MRTU Program Management for the components People, Process, and Technology at the time the report was filed.

**Please Note:** The overall program status is based on the previously targeted October 1, 2008 Go-Live date.<sup>2</sup> The status provided for the CAISO Business Units and Market Participants is as of June 2008. The CAISO continues to work with Market Participants through touchpoint updates and will re-evaluate readiness after the participants have had additional time to test their systems. The CAISO completed a pre-final assessment touchpoint in June 2008; action items from this touchpoint are ongoing. The CAISO anticipates that a final assessment will be conducted in August/September 2008. Also, the CAISO concluded the June IMS Functionality Touchpoint. Although progress has been made, the CAISO will continue to further assess these areas throughout Integrated Market Simulation Update 2 (“IMS Update 2”). In each case, the status provided is reflective of the lowest common denominator (score) for each category.

Category	Business Units		Market Participants
	Core	Non-Core	
People			
Process			
Technology			

 = No Delays

 = Delay, but will not impact a 10/1/08 Go-Live Trade Date. Contingency maintained, but at risk

 = Delay, will impact program delivery and a 10/1/08 Go-Live Trade Date. Use of contingency funds

<sup>2</sup> As noted previously and reflected in the Board of Governor’s materials attached to this report, October 1, 2008, is not a viable Go Live Date. However, this report is based on a targeted date of October 1, 2008, and has not been recalibrated to reflect an alternative Fall Go Live date. In its next month’s report, it is anticipated that the CAISO will provide an assessment based on a revised Go Live date.

**Technology/Testing Readiness:**

As of Sunday, June 1<sup>st</sup>, the IMS Update 2 environment was externally available after a 1 week downtime that began on Friday, May 23<sup>rd</sup>. This downtime allowed for the integration of EMS functionality along with patch deployments. Semi-structured testing and scenario testing resumed during the month of June. Effective as of June 16<sup>th</sup> Market Participants have been able to submit bids and trades based on their specific strategies while being encouraged by CAISO to submit bids and trades consistent with the operational scenario for that day. Additional detail of the market status, including metrics, was included in the recent CAISO Board of Governors memorandum dated July 1, 2008 and presentation dated July 9, 2008 which are attached for the Commission's information.

**Key Accomplishments:**

- **FIT/ETE Testing – IMS Update 2:** Execution is 100% completed; 93% pass rate
- Market Simulation Testing – 21 business days
- **Bid-to-Bill Testing of Standard Charge Codes:** Execution is 81% complete; 27% pass rate
- **Bid-to-Bill Testing of Charge Codes associated with Scenarios:** Execution is 60% complete; 20% pass rate. Testing is dependant on scenario testing.

**Key Issues:**

- **Vendor Delivery:** Variance turn-around time risk has decreased with most recent delivery of backlogged variances. Timely deliveries continue to be crucial for resolution of outstanding variances. After delivery, all patches that have been received to address software variances must be validated and the CAISO must verify and identify any new variances that might be created by the delivered solutions. This poses additional challenges in fully integrating all variances after delivery. The CAISO continues to manage the flow of variances by prioritizing variances, including the backlog, and dedicating resources strategically to mitigate towards the more severe variances.
- **Market Systems:** The integration of EMS, VSTLP and Nomograms into the Market Simulation was completed over the past month. In addition to overall quality of solution testing, the remaining outstanding Market System functionality (SMDM integration and the enforcement of Forbidden Operating Regions) has been delivered and is being tested internally.
- **Settlements:** All Charge Types have been delivered and unit-tested, but significant Bid-to-Bill validation remains (44/124 validated); risk decreases once upstream variances are corrected and all scenarios have been run to prove out charge codes to participants – anticipate a reduction in this risk by late July.
- **Market Simulation Experience:** Confidence in the ability to consistently meet or exceed the Day-Ahead Market timeline has increased over the last month after having successfully deployed a number of crucial software patches that resolved certain software variances.

**Readiness:**

The CAISO Business Units and External Market Participants are continuing their readiness activities. The following dashboard outlines the status for Internal Readiness and External Readiness.

**Please Note:**

*When viewing the Dashboard below, please note that the CAISO Business Units, were assessed based off a checkpoint date of June 2008 and are tracking to internal readiness by October 1, 2008. The Market Participants' People, Process, Technology is also based on a June 2008 assessment. The CAISO continues to work with Market Participants on a daily basis through debriefing calls and formal touchpoint updates. The CAISO completed a pre-final assessment touchpoint in June 2008; action items from this touchpoint are ongoing. The CAISO anticipates that a final assessment will be conducted in August/September 2008. Also, the CAISO concluded a June IMS Functionality Touchpoint. Although, progress has been made, the CAISO will continue to assess these areas during IMS Update 2. In each case, the status provided is reflective of the lowest common denominator (score) for each category.*

Internal Readiness	
Current Period	Trend
	

External Readiness	
Current Period	Trend
	

- Continue to track to final go-live, checklists of remaining activities by Business Units.
- Signed off 10 of 13 critical Tier 1 MRTU Business Process.
- Working with remaining 3 business process owners to identify remaining gaps/issues for sign off.
- Signed off all MRTU Application Transfer documentation between Business Units and IT.
- Operators continue to execute Scenario testing.

- IMS Update 2 resumed on June 2<sup>nd</sup> with scenario executions.
- Quick Response Team continues to address Participant issues.
- Registrations for Go-Live Training courses are open. Courses have begun and will continue to take place in July thru September onsite at the CAISO and at various locations across the country.
- CAISO resources added to correct issue identified in the Bid-to-Bill settlement validations to provide additional "validated" charge codes to participants
- Concluded Pre-Final Assessments and June IMS Update 2 Touchpoints. Results are being analyzed and action items developed.
- Note: External Readiness status is "Red" due to lack of fully validated Charge Codes.

	Complete
	No Delays
	Delay, but will not impact a 10/1/08 Go-Live date. Contingency maintained, but at risk
	Delay, will impact program delivery and a 10/1/08 Go-Live Date. Use of contingency funds

**Key Accomplishments:**

### *CAISO Internal Business Unit Readiness*

- **Training:** CAISO Employees completed knowledge transfer activities. Completion of the final technical training courses is on target to be complete by the end of July with ongoing hands on training continuing through Go-Live. Scenario execution for Business Units is ongoing.
- **To-Be Processes:** Final Sign Off for 10 of 13 Tier 1 Business Processes that were tested in April. For the remaining 3, Readiness is working with Business Process Owners to identify and resolve the gas and issues that will need to be closed prior to sign off. For gaps that are out of their immediate control, Business Process Owners are developing workarounds.
- **Assessment of Readiness:** Business Units are tracking remaining activities for Go-Live. Both Core and Non-Core Business Units are currently on track for Go-Live. The Business Units are involved in planning and testing specific business scenarios to execute as part of the final Go-Live Readiness Criteria.
- **MRTU Application Transition:** Completed Final Sign Off for MRTU Application Transition activities; 21 Applications (both Siemens and Legacy) were signed off as having been transferred from the MRTU project to IT and the responsible Business Unit.

### *External Readiness*

- **Integrated Market Simulation:** IMS Update 2 continued in June with Semi-Structured and scenario testing. Preliminary results from the scenario testing are posted on the CAISO website for Market Participant review. Final results report for each scenario will be posted by the CAISO for Market Participant validation. The CAISO has requested that Market Participants also provide feedback regarding the scenario results.
- **Training:** The CAISO continues to offer refresher courses and has developed new courses to meet audience demand. The CAISO has held additional Settlements training (Day Ahead and Real Time charges) and refresher courses throughout June. In preparation for Go-Live, the CAISO has designed and will implement a Go-Live training program in July thru September consisting of a 2-day Refresher Training course entitled, "Market Participant Operations "Go Live" Training". The course is designed to focus on Day-Ahead and Real-Time Market Operations and will target the Market Participant's Operators, Traders, Marketers or Trainers - individuals who will actually be performing the day-to-day operations and who will be responsible to train their coworkers on operating in the CAISO MRTU Markets. Courses will be held at the CAISO site and at various locations throughout the US. Registrations for these courses are now open. Meanwhile, the CAISO continues to assess the training needs of the Market Participants and will offer courses as needed to meet these demands.
- **Assessment of Readiness:** The Readiness Team concluded the Pre-Final Assessment and June functionality touchpoint survey on June 27<sup>th</sup>. The objective of the Pre-Final Assessment was to confirm that the areas of People, Process, and Technology are either Complete or On Track for a 2008 Fall Go-Live date, which was then set for October 1, 2008. The IMS Update 2 Touchpoint was a follow up to the touchpoint conducted in March to understand what functionalities SCs have been able to execute in Market Sim. All 91 SCs were surveyed with the following response rates:
  - 41 SCs responded to the Pre-Final Assessments
  - 28 SCs responded to the June IMS Update 2 Touchpoints



Results are being analyzed and any action items as a result of these Touchpoints will be implemented in the coming weeks. However, the results indicated that there are risks in achieving an October 1, 2008, Go-Live date in the areas of People, Process, and Technology. These risks are due to concerns raised by Market Participants with respect to the ability to complete the scenario testing and performing bid-to-bill validation of charge codes in time to support the Go Live date. This is the main contributing factor as to why CAISO has taken October 1<sup>st</sup> off the table for MRTU Go Live and reported to the Commission that the earliest Go Live date is November 1, 2008. The External Readiness team will continue to use the results during on-going communication with individual Market Participants as well as the numerous meetings and workshops designed to discuss specific system areas, such as the daily Market Simulation Touchpoint calls, and the SAMC and SIUG (technical) workshops

- **Quick Response Team:** With the support of the Quick Response Team, the CAISO hosted a major review of all open issues with participants in late May and a follow-up meeting in mid-June. The objective of these meetings was to provide Market Participants with the latest general status of open issues (with the specific status where possible), consolidate and close currently-open issues, and flag issues for further investigations based on Market Participant's suggestions for reprioritization. During the meeting Market Participants recommended 30 issues for additional attention. To date, the Quick Response Team has identified over 200 issues requiring high priority, of which over 160 have been closed. The CAISO continues to encourage the Market Participants to perform retesting of issues that they have identified during Market Simulation and have been corrected by the CAISO.

**Risks and Mitigations:**

Risks and Mitigations	
<b>Technology/Testing</b>	<ul style="list-style-type: none"> <li>▪ <b>High Availability/Cutover to Production Systems</b> has not yet occurred. Mitigation: Plans to implement high availability as part of the cutover to production systems have been developed, and implementation is scheduled to occur over the next two months.</li> <li>▪ <b>Application and Infrastructure Monitoring</b> in the IMS Update 2 environment has been enhanced, but additional application level monitoring is still being developed. Mitigation: IT will continue to work with the infrastructure team and application owners to continue to refine monitors, alerts, and the communication process” surrounding them.</li> <li>▪ <b>System Stability and Performance</b> – The Day-Ahead and Real-Time system stability has increased significantly over the past month. However, Market Participants have expressed concerns about system performance. Mitigation: IT continues to enhance/refine monitoring to target specific areas for performance tuning. Also, the risk with respect to system performance is expected to be reduced with the cutover to actual production hardware/systems that are high availability over the next month.</li> </ul>
<b>Business Units</b>	<ul style="list-style-type: none"> <li>▪ <b>Core Business Units</b> – Ongoing monitoring of Business Unit Readiness for Core Business Units reveals that all people and processes are on track. A Go-Live checklist is being used to track the Business Units to completion and raise issues as needed. Ongoing monitoring of Business Unit Readiness will continue through Go-Live. Activities include: continued application testing and validation of results, finalize the three remaining Tier 1 Business Processes, and closing the remaining functional gaps.</li> <li>▪ <b>Non-Core Business Units</b> – Ongoing monitoring of Business Unit Readiness for Non-Core Business Units reveals that all people and processes are on track. The Readiness Team will continue to work closely with the applicable Business Units, Program Management and Testing Team to complete the remaining Go-Live activities and deliverables including processes and tools.</li> </ul>
<b>Market Participants</b>	<p>The Market Participants’ Readiness in the People, Process and Technology areas is highly dependent upon a stable and effective Market Simulation environment to practice their internal processes and the ability to fully validate Settlement Charge Codes. The CAISO continues to do the following:</p> <ul style="list-style-type: none"> <li>▪ Conduct an additional Settlement Workshop for Charge Codes in IMS Update 2 as soon as Charge Codes are validated.</li> <li>▪ Ensure the ability of Market Participants to provide their own bids during Market Simulation.</li> <li>▪ The Quick Response Team will continue with their objectives until</li> </ul>

	<p>Go-Live. Retest of issues will begin as soon as they have been resolved.</p> <ul style="list-style-type: none"> <li>▪ Market Participant Scenarios are being tested during Market Simulation.</li> <li>▪ Provide Market Simulation status reports daily showing which Charge Codes have valid results for each day of Market Simulation as well as a report that provides useful information on system status.</li> <li>▪ Continue with the scheduled meetings and workshops (i.e.: monthly MRTU Implementation Workshops, bi-weekly SIUG and weekly SaMC meetings.)</li> <li>▪ Provide Onsite Testing and support at the CAISO during IMS Update 2 with specific Scheduling Coordinators selected by the Market Participants when beneficial for the market.</li> <li>▪ Conduct Touchpoints during IMS Update 2 to gauge Market Participants' experience with Market Simulation and identify action items that the CAISO can take to ensure an effective Market Simulation.</li> <li>▪ Track SCs' Market Simulation activities by system (i.e. SIBR, CMRI, OASIS, BAPI). If SCs are identified as not participating, the CAISO will contact them to discuss the reason why.</li> <li>▪ Conduct Market Simulation Issues Review meetings to communicate status and resolution of issues.</li> </ul>
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**Key Activities and Next Steps:**

- Continue Market Simulation, including Market Participant Scenario testing in IMS Update 2 with final MRTU functionality.
- The Quick Response Team will continue to address Participant issues.
- Continue analyzing and taking appropriate corrective actions to resolve Market Participant submitted market simulation issues. Communicate status of issues and begin retesting of the condition when appropriate to ensure resolution has been achieved.
- External Readiness Final Assessment Touchpoint to take place in July/August.
- Completion of PwC Audit Opinion is contingent on Go-Live date.
- Resolution of issues/recommendation found during the SAIC Market Software Certification.
- Final Sign Off for remaining Tier 1 Business Processes.
- FERC Informational Filing 60-Days in advance of Go-Live (report will include status of remaining activities & milestones).

CAISO has currently scheduled a special ISO Governing Board meeting on August 14<sup>th</sup> to address the status of CAISO Market Simulation, and both the CAISO and Market Participants readiness under MRTU. During this meeting the CAISO may discuss the Fall Go Live date.

## Readiness Criteria High Level Overview: - July Status Report

The following shows the overall status of the MRTU Readiness Criteria as of June 30, 2008.

### Total Number of MRTU Readiness Criteria: 33

- # of Completed Readiness Criteria: 7
- # of "On Track" Readiness Criteria: 24
- # of "Not On Track" Readiness Criteria: 2

### April Status Changes:

- # of Readiness Criteria that have changed status from Orange to Purple: 3
  - The following Readiness Criteria changed status from Orange to Purple:
    - MOD-1
    - ORG-3
    - LMP-TST
- # of Readiness Criteria that have changed status from Orange to Blue: 0
- # of Readiness Criteria that have changed status from Purple to Orange: 0
- # of Readiness Criteria that have changed status from Purple to Blue: 0

\*Only status change on parent criteria are counted in these statistics. Any status changes on sub-criteria are not counted.

### Readiness Criteria status is indicated by the following color codes:

- **Clear: A Readiness Criterion is clear (C) if:**
  - The Readiness Criterion has not begun.
- **Purple: A Readiness Criterion is purple (P) if:**
  - The completion or status updates are on schedule based on the specified target due date or milestone, OR
  - A mitigating action has been implemented successfully and the Readiness Criterion is back on schedule to be completed on the specified target due date.
- **Orange: A Readiness Criterion is orange (O) if:**
  - One or more Readiness Components in that Readiness Criterion are not complete on the specified target due date or milestone, OR
  - A Readiness Criteria has reported risks or issues that have a potential for not allowing it to be completed on the specified target due dates or milestones.
- **Blue: A Readiness Criterion is blue (B) if:**
  - All Readiness Components in that category are complete.

Criterion	Status	Comments	Criterion	Status	Comments
<b>Completed Readiness Criteria</b>			<b>"On Track" Readiness Criteria</b>		
BPM – 1	B	As of November 2007, all BPMs have met FERC directives and have been posted on the CAISO website.	CRR-3	P	The timeline for the monthly allocation process is being reevaluated due to the changes in the MRTU schedule.
CRR – 1	B	As of April 2007, the CAISO has completed the CRR Dry Run in Market Simulation.	ENT-1	P	All enterprise systems are in the verification process to ensure that they will meet availability requirements.
CRR-4	B	The CAISO made its compliance filing with the FERC's Long-Term Transmission Rights Final Rule on January 29, 2007.	GO-1	P	All Procedures have been completed. The CAISO is On Track to post these procedures 1 day prior to MRTU Go-Live.
ECA-1	B	The Control Area Scheduler went live on 2/13/07 and all tags applicable to CAISO from Partisans have been linked to CAS.	INF-1	P	Monitoring tools and production environment are available to support Market Simulation.
MM-Study 2	B	Analysis of the potential LMPM deficiency showed that it was not a valid concern.	LMP PRD	P	IFM tool already complete. It is still anticipated that the real-time validation tool will be completed by 7/1.
SE-1	B	As of 6/30/07, the State Estimator has meet all stipulations of this Readiness Criterion.	LMP Testing	P	Analysis Track Testing (ATT) effort has completed review of 100% of test cases identified for IFM. Work continues fro validation in the Market Sim environment.
TST-1	B	Performance Testing for IMS Update 2 has been completed and passed QRB Review.	MKS-1	P	This scenario ran on June 5 <sup>th</sup> for trade date 6/6/08. Results are on the CAISO website for Market Participant review.
<b>"On Track" Readiness Criteria</b>			<b>"On Track" Readiness Criteria</b>		
MKS-2	P	The CAISO is in the final stages of finalizing the list of reporting metrics.	ORG-3	P	The EDR is available to DMM and issues arising from testing are being addressed.
MM-Study	P	The final CPA report will be published one month prior to Go-Live.	REG-1	P	Filings are On Track to be completed 90-60 days prior to MRTU Go-Live.
MOD-1	P	FNM model DB23 was simultaneously promoted with the markets and EMS on 6/1/08 into Update 2. This process is on track and will continue to be tested with the promotion of DB 32.	STL-1	P	Revised Settlements BPM have been posted on the CAISO website. Audit of the SaMC software has begun and scheduled to complete by end of IMS U2.
MS-1	P	All Hardware and monitoring tools have been deployed to measure availability of the systems during PPS.	SIM - 1	P	IMS Update 2 resumed on June 2 <sup>nd</sup> .
ORG-1	P	Business Units have met the 5/1 corporate goal and are On Track.	TECH-1	P	Operational Readiness Testing is in progress.
ORG-2	P	Continued tracking the remaining activities and deliverables for all Business Units.	TST- 2	P	Integration testing continues for additional functionality.
PRT-1	P	The CAISO anticipates conducting the Final Assessments in August.	BUS-BA-1	P	Application Transition sign-off in progress for all MRTU systems
PRT-2	P	All Critical and Very High issues in IMS Update 2 are being resolved as they arise.	BUS- BA - 2	P	The CAISO will align the FERC filing with the Fall Go-Live date once that has been established.
CRR-2	P	CRR Broadcast Services are currently in Integration Test.			

Readiness Criterion	Status	Comments
<b>“Not On Track” Readiness Criteria</b>		
STL-2		Charge codes have been rolled out during Update 1 and will continue to be rolled out into Update 2 of IMS. Charge Codes continue to go through the Bid to Bill validation process during IMS Update 2.
STL-3		This criteria is dependent on the Bid to Bill validation of Charge Codes and accurate invoices.

# Memorandum

**To:** ISO Board of Governors  
**From:** Steve Berberich, Vice President, Corporate Services  
Deborah Le Vine, Director of Market Services and MRTU Program Manager  
**Date:** July 7, 2008  
**Re:** **Assessment of Progress Towards Fall 2008 MRTU Go-Live**

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*This memorandum does not require Board action.*

## EXECUTIVE SUMMARY

This memorandum describes the Market Redesign and Technology Upgrade (MRTU) status through June 2008 and proposes a plan for proceeding towards a Fall 2008 Go Live date.

The CAISO has now reached a point of a very significant change in its readiness. Indicators show that there has been a remarkable change in trend in the state of systems' stability and that full testing has been consistently available to participants since the last report to the Board. The Day-Ahead Market is running consistently and is publishing results within the production timeline. The Hour-Ahead Scheduling Process ("HASP") has been finishing on time and is publishing results within the availability and timeline objectives set for the market simulation. The 15-minute Real-Time Pre-Dispatch ("RTPD") and 5-minute Real-Time Dispatch ("RTD") are also finishing on time and dispatching within the availability and timeline objectives set for the market simulation. The settlement charge codes are individually unit tested and the bid-to-bill validation process is in progress. To date, a total of 46 charge codes out of 123 have been initially validated through the bid-to-bill process but have not been fully validated by market participants.

During June, CAISO grid operators performed an intensive two day walkthrough of MRTU processes and systems. The walkthrough was a resounding success and demonstrated that the systems were now at a point where the grid could be effectively operated. Related to quality of solution, we received the final report from LECG which reported once again that there were no material issues with the pricing engines.

Market participants continue to have a number of concerns. Notably the concerns relate to questions about pricing, data traceability, and settlement charge code availability. It is critical that CAISO resolve these issues quickly to instill the confidence necessary for support of a Fall Go Live date.

To allow market participants sufficient time to gain confidence with the improved systems CAISO will address CAISO readiness and MRTU program status at the July Board meeting. The August 14 Board meeting will then be an opportunity for market participants to apprise the Board on their readiness and allow CAISO to provide a further MRTU

program status. This should provide the Board with sufficient information to make an informed decision on the Fall Go Live date. Once the Go Live date is established, CAISO will need to file with the Federal Energy Regulatory Commission, at least 60-days in advance of the Go Live date, the MRTU Readiness Certification which based on this timeline can be no earlier than November 1, 2008.

Below is additional information detailing CAISO's current state of MRTU market readiness and our ongoing efforts to prepare ourselves and our market participants for the market launch. Specifically, this memo updates our status with respect to:

- Technology Readiness
- Internal (Business Unit) Readiness
- External (Market Participant) Readiness
- MRTU Readiness Criteria
- Market Simulation Exit Criteria
- Timeline for Upcoming Events

### ***TECHNOLOGY READINESS STATUS:***

#### **Market Simulation Status**

The ISO is currently executing its final phase of market simulation, known as Integrated Market Simulation Update 2 (IMS U2). In this phase, all MRTU systems have been integrated, such that market participants can test all MRTU applications end-to-end and all market functionality is available. As demonstrated in the tables below, overall, the market solution availability to participants and participation metrics for IMS U2 indicate that system stability has improved, particularly with respect to the Real-Time Market, and that market participant involvement remains high. Coordinating with market participants, CAISO executed IMS U2 following a graduated approach, initially submitting bids on behalf of market participants until market participants were ready to submit bids without CAISO intervention. By executing in this manner, CAISO was able to demonstrate increased system stability and provide market participants with reasonable confidence as the market simulation moved into testing specific market scenarios.

#### **Day-Ahead Market Status**

Though we have run the market simulation continuously since June 1, we do not officially track metrics on the weekend, as that is CAISO's down time to install application patches and validate the patches that were promoted to the market simulation environment. So currently, Monday 8:00 AM through Friday 5:00 PM is considered our market simulation time. Notably during this time, practically all intervals (daily, hourly, 15-minute and 5-minute) have been solved with an alternating current (AC) solution using simulated power flows versus a direct current (DC) solution which allows for a better quality of power flows and pricing.

## Day-Ahead Market Running Consistently and Producing Quality Results

	Requirement	Market Simulation Results
DA Market Publishing	Daily	100%
DA Market Publishing Timeline	1300	83% <sup>1</sup>
Availability to submit bids	Graphical User Interface	100%
	Automated Programmatic Interface	100%
Ability to submit bilateral trades	Graphical User Interface	100%
	Automated Programmatic Interface	100%
Quality of Solution	Alternating Current	98% <sup>2</sup>

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<sup>1</sup> During the June Market Simulation began, publishing of the Day-Ahead Market by 1300 was not met on 5 days. June 5 DA results were published at 1340; June 6 DA results were published at 1335; and June 12 DA results were published at 1313. While the results were published after 1300, they were all published by 1400, the market simulation timeline goal. CAISO received a performance patch from the vendor which was promoted to the market simulation environment on June 15. Since that time 1300 was only missed 2 days – June 19 when DA results were published at 1303 due to the Quality of Solution issue discussed below and on June 24 when CAISO held the market open to allow bids to be received that will trigger additional charge codes.

<sup>2</sup> The only day where a DC solution was observed was due to ~16,000 MW of participant load missing in the Day-Ahead Market to meet the CAISO Forecast of CAISO Demand and thus a dynamic power flow solution could not be found which is what would be expected in this situation. The results were solved using a DC solution in 13 intervals of the Day-Ahead Market. There are 720 intervals in the 30 days of June.

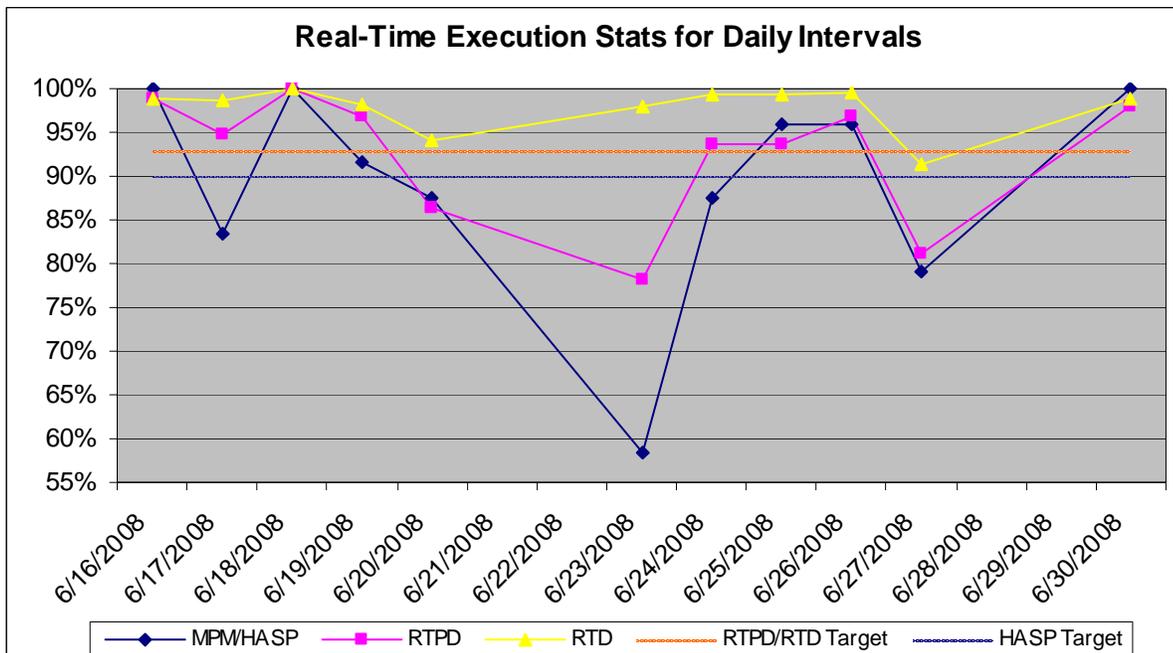
## Real-time Market Status

The Real-Time Market has been consistently running and publishing results. Since a number of major patches were deployed into the market simulation environment on June 15, the performance of the Hour-Ahead Scheduling Process ("HASP"), the 15-minute Real-time Pre-Dispatch ("RTPD") and the 5-minute Real-time Dispatch ("RTD") have improved significantly. We are reviewing the results to ensure all necessary data from Real-Time systems are available and appropriately published and passing the correct data to other downstream systems.

With respect to the quality of the solution, the real-time results are generally solving with Alternating Current ("AC") power-flow rather than have to revert to a less complex Direct Current ("DC") solution. This fact is further highlighted because we are now integrated with the Energy Management System ("EMS") simulator and are using the State Estimator solutions from the simulator. Achieving an integrated solution with the EMS simulator is a major accomplishment and represents as far as one can go in a testing environment. Since we are simulating each resource's response to coming online, running and shutting down instead of having actual telemetry from resources that are physically responding like in production, we are encountering some simulation challenges that are resulting in some unrealistic imbalance and pricing results at various times. Actions are being taken to improve the simulation responsiveness to address these observations.

### Real-Time Market Running Consistently and Producing Quality Results

	Target	6/16	6/17	6/18	6/19	6/20	6/23	6/24	6/25	6/26	6/27	6/30
HASP	90%	100%	83.3%	100%	91.7%	87.5%	58.5%	87.5%	95.8%	95.8%	79.2%	100%
RTPD	93%	98.96%	94.79%	100%	96.9%	87.5%	78.1%	93.75%	93.75%	96.88%	81.25%	97.92%
RTD	93%	98.96%	98.61%	100%	98.3%	94.4%	96.2%	99.31%	99.31%	99.65%	91.32%	98.96%



## Settlement Status

While all 123 charge codes have been tested with stubbed data, CAISO is performing a bid-to-bill validation in the market simulation integrated environment to ensure that both the charge code is correct and the data received by the settlement system is correct. Each charge code typically requires a number of pieces of data or billing attributes to completely calculate (i.e. awarded bids, meter data, nodal prices, exemptions, etc.). Most participants would see approximately 48 charge codes on a daily or monthly basis. The remaining 75 charge codes require specific instances to trigger the data needed to get the charge code to calculate completely with all billing attributes. In numerous instances we have charge codes that have calculated for all of the data available, however to be completely validated, the charge code needs to have one final piece of data. As an example, for the Real-Time Congestion charge codes to completely calculate, CAISO needs 1) a participant to successfully bid an import on an intertie that 2) becomes congested in the Hour-Ahead Scheduling Process ("HASP") and then 3) the transmission line has to be derated in Real-Time. We have seen imports on lines that are congested, or imports on lines that are derated, but not all three requirements simultaneously. So the charge code is valid for all of these separate conditions, but has not been completely validated for this final (all three simultaneously) condition and therefore not considered to have completed the Bid-to-Bill validation process. As of June 30, 2008, 44 of 123 Charge Codes were confirmed by CAISO to meet Bid-to-Bid validation and therefore considered to be in-scope for Market Participant validation.

## Market Participant Scenarios

For IMS Update 2, CAISO has worked with market participants to define forty (40) operational scenarios for execution during market simulation. Execution of the scenarios started on May 13, 2008 and will continue until all defined scenarios have been successfully executed. The scenarios center around testing various operational conditions that may exist once we start production including:

- Impact to supply, demand and Existing Contracts when there is a transmission derate
- Insufficient energy, Residual Unit Commitment or Ancillary Service bids or self-schedules and relaxation of limits
- Insufficient bids to relieve congestion and the impact on prices
- Evaluate pump impacts, pseudo ties, tie scheduling priority, over generation conditions, and load flow
- Test Exceptional Dispatch, Extremely Long Start, Daylight Savings transition and nomogram implementation

The scenarios test the impact on the various applications when one of the events described above occurs. Scenarios are scheduled for the Day-Ahead Market or the Real-Time Market, and in some instances a scenario is run in both markets. This information should provide guidance to participants on the impact of various bidding strategies and financial outcomes when a similar operational event occurs in production.

Scenario testing was temporarily suspended for the week of June 16 to ensure the systems were stable with all of the new patches. However during this time the participants were able to continue to fully test the systems by putting in any bid set they desired. The process for executing scenarios requires CAISO to execute them in advance on a test system to determine the type of bids and quantities needed to make the scenario work as expected. CAISO then provides this information to market participants one week in advance to allow participants time to properly structure their bid sets. The day after the scenario is run in the Day-Ahead Market, CAISO briefs the participants on its observations on a morning briefing call. If the scenario is run in Real-Time, CAISO will again verbally brief the participants as to what we saw the day after the trade day, again at a morning briefing call. Then CAISO puts out a written report describing the scenario, the set-up, its observations in the execution of the scenario and whether the scenario went as expected – generally in accordance with the CAISO Tariff and Business Practice Manuals. To date, CAISO has executed 6 scenarios; provided preliminary reports to participants on 5 scenarios and provided final reports on 4 scenarios. Market participants are then asked to validate the scenarios and confirm the results were as expected.

## Remaining MRTU Activities

The completion of the following activities will prepare MRTU to exit IMS Update 2. The Program Management and Market Simulation Team are monitoring these on a daily basis:

- Resolution of all critical and very high variances, and resolution or mitigation of all high variances – this varies on a daily basis and a current status will be provided during the Board presentation
- Tracking and completion of all exit criteria is discussed further below
- Execution of all operational scenarios is discussed above

The following phases of market participant testing will continue through MRTU Go Live:

- *Scenario Testing:* Market participants will submit bids and trades based on the operational scenario for the day and for the hours of the specific scenario testing for that day.
  - Round 1: First pass of all defined scenarios.
  - Round 2: Retest effort if scenario does not pass.
- *Market participant testing:* During the scenarios and prior to pre-production, the participants have requested three months of testing and additional training time for their staffs.
- *Pre-Production / Parallel Operations:*
  - Pre-production: CAISO MRTU Operations and Operations Support are running 24 hours a day, with internal processes and roles evolving to MRTU paradigm.
  - Parallel operations: Market participants put in bids and trades consistent with the actual CAISO Forecast of CAISO Demand, generator availability, and trades they are actually making in non-MRTU production that day, mirroring how the participants will actually meet their load and resource configuration on 10/1/2008. Today's requirement in production is to submit a balanced schedule (load + exports = resources + imports). However in the MRTU market structure submitting balances schedules is not required. Therefore for parallel operations participants may submit self-schedules, bids and trades into the MRTU markets.

## Environments

Hardware and operating system requirements were initially established by each vendor when the initial contract was executed in 2003 – 2004. Since that time hardware opportunities have changed and MRTU testing with the contracted environment structure has not attained the performance levels needed and CAISO's operating system strategy has changed. Analysis of the requirements and monitoring results has concluded that additional hardware design considerations are needed for the final production environment build. These analysis results primarily included different hardware and operating system options for the database servers. With the new hardware and operating systems, CAISO can obtain substantially improved performance of the applications and reduced overall system costs. In order to maintain system integrity and reliability, and facilitate proper promotion of the environments to production, the final MRTU hardware and operating system configuration will include today's industry standard environments. The status of needed Go Live environments follows:

### *Production - Folsom and Alhambra with High Availability*

- The hardware for the production environments has been delivered.
- Build, configuration, and validation of Folsom production environment to be completed by July 1, 2008.
- Build, configuration and validation of Alhambra production environment is substantially complete and is targeted for completion by July 15, 2008.
- Operational testing
  - Begin failover testing July 1, 2008.
  - Begin fallback\fall forward testing July 15, 2008.

- Remediate any findings
- Cutover high availability environments to market simulation are targeted for August.

*Staging*

- Current MRTU Update 2 environment to be renamed to staging environment when high availability environments are cutover.

*Testing*

- The current MRTU Testing environment will remain the testing environment in production.

**Cutover / Reversion**

Over the last six months, CAISO has worked with participants on the cutover and reversion plan previously presented to the Board. CAISO is in the process of affirming the plan and scheduling an external table-top review with market participants in August.

We are currently reviewing detailed internal cutover and reversion plans for all the MRTU systems and applications. In these plans we are documenting the detailed steps of transitioning to the MRTU version of the applications from the current production and the reversion steps to be taken, if needed. At the same time, we are reviewing and updating the support plan, which includes hardware environment and logistics plans, and the internal communication plan to support the MRTU Cutover and Reversion activities. Internal CAISO table-top reviews are also in progress.

**INTERNAL READINESS STATUS**

In an effort to accurately monitor, track, and report the readiness activities of each CAISO business unit, we created several phases, each with different milestones for deliverables, training, and process identification: Plan, Analysis, Design, Build, and the Implement Assessment.

Phase	Group A Milestone	Group B Milestone
Plan	10/1/06 – 11/31/06	11/1/06 – 1/31/07
Analysis	10/1/07 – 11/31/07	2/1/07 – 3/31/07
Design	3/1/07 – 5/31/07	3/1/07 – 5/31/07
Build	6/1/07 – 8/31/07	6/1/07 – 8/31/07
Implement Phase	9/1/07 – 11/30/07	9/1/07 – 11/30/07
Go Live Punch List	1/16/08 – Go-live	1/16/08 – Go-live

As of June 2008, each business unit has completed the Plan, Analysis, Design, Build, and Implement Phase Assessments and is currently tracking remaining activities to Go Live.

After the Implement phase assessment was completed, in an effort to monitor internal readiness activities leading up to Go Live, CAISO drafted a checklist of remaining activities. These activities are reported on a weekly basis and the checklist is updated accordingly. The final hands-on technical training courses are scheduled for completion by the end of July. Scenario execution for business units is ongoing and will continue up until MRTU pre-production.

Final sign-off packets have been assembled for all 14 Tier 1 business processes tested end-to-end in April. Business process owners are identifying the gaps and issues that will need to be closed prior to sign-off as well as developing workarounds for those gaps out of their immediate control. CAISO has targeted July 1 as sign-off for the business processes with no outstanding issues. For business processes with gaps and issues still outstanding, we will test and

sign-off on effective workarounds by the end of July, in advance of the FERC certification filing notice. As of July 1, 11 Tier 1 business processes have been transitioned from MRTU to the business units.

**EXTERNAL READINESS STATUS**

In an effort to monitor market participants’ readiness activities in the year prior to Go Live, CAISO initially decided to conduct three participant assessments (initial Assessment, First Follow-up Assessment, and the Final Assessment) from November 2006 until Go Live. To date, CAISO has conducted two assessments. Both consisting of questions surrounding three categories: People, Process, and Technology in the areas of Communication, Market Simulation, Training, Organizational Readiness and Technical Readiness. The Initial Participant Assessment began in November 2006 and ended January 2007. CAISO used this assessment to engage the scheduling coordinators. The assessment in turn is used to ensure that scheduling coordinators have what they need to obtain information, training and the answers to their questions from CAISO. The First Follow-up Assessment began in June 2007 and ended in August 2007. The primary focus was to gauge the participants’ MRTU implementation progress. The Assessment also provided the market participants with another venue to ask questions or express concerns over their MRTU implementation.

Due to changes in the program, the CAISO readiness team revised the MRTU Assessment activities to better gauge market participant readiness in the months leading up to MRTU Go Live through a series of touch point surveys and assessments. The readiness team is currently conducting a Pre-Final Assessment and functionality touch point survey to confirm that the areas of People, Process, and Technology are either complete or on track for a 2008 Fall Go-Live date. Of the 91 scheduling coordinators that have been sent the survey, 39 have responded as of June 30 (42%). Results from this Pre-Final Assessment will be used to define the scope of the questions asked in the Final Assessment. The results to date are as follows:

Category	% On Track	% On Track with Risk	% Not On Track
People	74%	21%	5%
Process	44%	51%	5%
Technology	51%	5%	44%

The readiness team is preparing for two additional functional touch point surveys and the Final Assessment process scheduled to begin in August. Though the functional touch point surveys are intended to identify gaps in the participant’s readiness, the results of the surveys facilitate the development of mitigation plans with the scheduling coordinator. The plans are then used for continuing discussions to monitor implementation of the needed actions and to ensure that the scheduling coordinator is ready for the MRTU Go Live date. We will use the Final Assessment to confirm our understanding and gain agreement with scheduling coordinators that we have no gaps in the People, Process, and Technology areas that would prevent the scheduling coordinator from operating in the market under the MRTU rules and processes.

The CAISO has continued with various communication forms and outreach activities to ensure that market participants are in the best possible position to achieve MRTU readiness by Go Live. The CAISO has observed a consistent participation rate of market participants in the Implementation Workshops, Market Simulation Planning sessions,

IMS U2 daily phone calls and open bridge, System Interface User Group (“SIUG”), and Settlements and Market Clearing (“SaMC”) meetings.

Recognizing that market simulation testing is an integral part of participant readiness, the readiness team has carried out several efforts during IMS Update 2 to ensure that market participants have an effective testing experience. To gain better visibility into market participants’ simulation experience, 11 scheduling coordinators, selected overall by the market participants themselves, participated in testing at the CAISO’s facilities at the start of IMS Update 2. Participants and CAISO found the on-site testing beneficial. With the open conference bridge, CAISO was able to hold continuous discussion with the market participants who have devoted the time to perform their market simulation testing at CAISO and share that experience with those doing the testing in their offices. This has helped us understand and resolve market participants’ issues. The CAISO committed to keep the room supported as long as both CAISO and the market participants felt there were mutual benefits. As of May 2 the room was temporarily closed; however, the room will be re-opened when the market participants and CAISO agree that the market would benefit from the client testing team’s return.

In addition, the readiness team closely monitored IMS U2 participation. Scheduling coordinators, identified as not participating in IMS Update 2, were contacted by their client representatives to gauge any issues or risks that were preventing them from participating. Identified issues were addressed by the appropriate party, and scheduling coordinators were encouraged to participate in the market simulation. Additionally, an IMS Update 2 functionality touch point was conducted to assess the first 5 weeks of testing in the areas of system connectivity, performance, and successful execution of the systems’ functionalities. This functionality touch point discussed above will be used during summer testing to monitor IMS testing progress.

To ensure that issues are resolved, CAISO has hosted multiple meetings to discuss outstanding participant issues, the most recent major review of all open issues taking place May 19. The meeting’s objective was to provide market participants with the latest general status of open issues, with specific status where possible, to consolidate and close currently open issues and to flag issues for further investigation based on market participants’ suggestions for reprioritization. During the meeting, market participants recommended 30 issues as needing immediate attention. The CAISO conducted a follow-up meeting with participants on June 11 to address these important issues and continue to work on closing the critical open issues and closing or mitigating the remaining open high issues.

### **External Training**

Externally, CASIO has offered 100 through 300 level training and settlements workshops for market participants through computer based training and instructor led training. Over 1000 representatives of market participants have attended the instructor led training sessions hosted at the CAISO and at the sites of several scheduling coordinators.

Recognizing that most of the formal CAISO training has been presented to the market and made available on DVDs or on the CAISO website, CAISO has focused on the development and presentation of a series of refresher training courses over the last few months. These courses included refresher training on Day Ahead and Real Time Scheduling Activities, Bidding and Scheduling Resource Adequacy, and more focused training on the Metered Subsystem activities. All classes have received strong attendance and high marks from market participants.

In preparation for Go Live, CAISO has designed and will implement a Go Live training program that will run July through September, consisting of a 2-day refresher training course entitled “Market Participant Operations ‘Go Live’ Training”. The course is designed to focus on Day-Ahead and Real-Time Market Operations and will target the market participants’ operators, traders, marketers or trainers: individuals who will actually be performing the day-to-day operations of our clients’ businesses or trainers who will be responsible for teaching their coworkers how to operate in the CAISO MRTU Markets. The class will provide a brief overview of the MRTU program and will demonstrate

concepts through the use of participatory exercises for the Day-Ahead Market, the Real-Time Market and Inter-SC Trades.

### ***MRTU READINESS CRITERIA***

As directed in FERC Order 1417 and with the support of the market participants, CAISO developed measurable Readiness Criteria that allowed CAISO to:

- Develop a tracking system tied to milestones within the MRTU program timeline,
- Establish a methodology to determine whether scheduling coordinators and the market participants are prepared for MRTU Implementation as well as if CAISO is ready,
- Provide for a monthly update to FERC on the status of these Readiness Criteria, and
- Use as input into the CAISO's certification of readiness to be filed with FERC 60-days prior to the MRTU effective date.

The CAISO began tracking and publishing the status of the Readiness Criteria on January 31, 2007 and has provided monthly status to the Market and to FERC via the MRTU Readiness Criteria Dashboard. The June 30, 2008 update of the Readiness Criteria is attached for reference.

As of July 1, the status of the Readiness Criteria is as follows:

- Total Number of MRTU Readiness Criteria: **33**
- # of Completed Readiness Criteria: **7**
- # of "On Track" Readiness Criteria: **24**
- # of "Not On Track" Readiness Criteria: **2**

The Readiness Criteria that are on-track but incomplete consist predominately of those that will remain unfinished until the market simulation is completed or actual production starts. Below are some examples of Readiness Criteria considered to be "On Track":

- Congestion Revenue Rights need to demonstrate a monthly allocation and auction which can be done until 30 days prior to Go Live.
- The revised Grid Operations Procedures and Emergency Procedures are posted on the CAISO website. This activity can not be completed until the day before production commences, but all procedures have been updated and are ready for posting.
- CAISO will develop tools, processes and procedures for Locational Marginal Pricing validation.
- The Final Competitive Path Assessment (CPA) will be posted one month prior to go live. CAISO has held extensive discussion with participants on the three sets of CPA results published to date.

The two Readiness Criteria considered "Not On Track":

- CAISO will test and implement its final settlement charge code configuration prior to entry of pre-production. Thus, this criterion is waiting for both the bid-to-bill validation and pre-production.
- CAISO will publish accurate and complete settlement statements and invoices during the Update 2 Market Simulation. This criterion is waiting for both the bid-to-bill validation and invoicing.

## MARKET SIMULATION EXIT CRITERIA

The CAISO has also worked with market participants to define Exit Criteria for IMS Update 2, and is tracking the progress and completion of each scenario and Exit Criteria on a consolidated dashboard and progress chart. The IMS Update 2 Exit Criteria will help ensure the readiness of both CAISO and market participants before entering Pre-Production. While the Exit Criteria were originally written for a March 31, 2008 Go Live date, the functions required have not changed. The IMS U2 Exit Criteria consist of the following:

Number	Updated Criteria	Status
<b>Variance Availability</b>		
U2.01	Simulation concludes without any open Critical and Very High variances. At least one meeting will be scheduled with market participants as a collaborative effort to review all variances prior to exiting IMS U2. High variances will be repaired and tested when possible while remaining High variances will be mitigated.	Currently no open Critical issues and 8 Very High issues. CAISO has met twice with market participants to review the issues. High issues are being evaluated to determine which will be resolved versus mitigated.
U2.17	Patches in CAISO systems to address Critical, Very High, or High variances that require market participant software changes will be fully tested, installed by CAISO and validated by participants prior to exiting IMS U2.	CAISO is following this on an on-going basis.
<b>IMS Participation</b>		
U2.02	CASIO will make all externally facing MRTU applications available for 100% of SCs to participate.	All external interfaces are available to participants.
U2.03	CASIO will publish the daily list of SCs participating in IMS U2 for SIBR, BAPI, and CMRI for Market Participants to evaluate what SCs that have an obligation to bid resources but are not participating.	CAISO is publishing the daily list of participants.
<b>Settlements</b>		
U2.04	CAISO publishes Settlement Statements and all supporting Settlement documentation including Configuration Guides and Bill Determinants for each Trade Date within TD+15 BD for each initial settlement statement through 2/8/2008 for each SC that participated in IMS U2 consistent with the respective SC's participation.	CAISO is currently publishing settlement statements at TD + 5BD for each initial daily settlement statement. CAISO has been publishing configurations guides and billing determinants in advance of the statement publishing.
U2.05	CAISO publishes Settlement Statements and all supporting Settlements documentation for Month End within TD + 25 BD for each SC that participated in IMS U2 consistent with the respective SC's participation.	CAISO has publishing March and April monthly settlement statements.
U2.06	CAISO publishes Settlement Statements and all supporting Settlements documentation for CRR Auction for each SC that participated in IMS U2 consistent with the respective SC's participation.	CRR charge types are not currently in scope, but expected within the next month. These Charge Codes are being evaluated by the bid to bill team for inclusion into IMS.
U2.07	CAISO publishes accurate Invoices and supporting Settlements documentation for a Trade Month based on respective monthly Settlement Statements for each SC that participated in IMS U2.	Sample Initial Invoices have been distributed to market participants however a market simulation invoice has not been published. The April invoice is currently being validated before presentation to participants.
U2.14	Every Charge Type must be exercised and valid in accordance with the BPM for Settlements & Billing and CAISO Tariff during IMS Update 1 or 2 between 12/10/2007 and 2/8/2008 Trade Dates but not every SC will necessarily be assessed the Charge Type	44 Charge Codes are currently in scope. Scenarios are being created to include the remaining Charge Codes.

Number	Updated Criteria	Status
<b>Markets Run/Solve</b>		
U2.08	Day Ahead market successfully solves and results are published by 1:00 PM for 7 consecutive trading days during IMS U2 Semi-Structured testing.	The Day-Ahead Market has consistently solved for the past several months, with the latest occurrence of six consecutive trade days (6/14-6/19) having published prior to or by 1 PM, we continue to track this progress toward the stated criteria
U2.09	No more than 5 consecutive 5-minute RT cases fail for 7 consecutive trading days during IMS U2 Semi-Structured testing (except in scenarios specifically testing RT failure and contingency plans or during planned outages for patch deployment). RT case failure means no dispatchable solution was reached; does not include DC solutions or solutions achieved through constraint relaxation.	Since early June, market simulation has been consistently running with market participant bids and shortly thereafter, has been trending 90-100% solutions and external market results availability. We continue to track this progress toward the stated criteria.
U2.10	Market Portal, SIBR, CMRI, OASIS, SLIC, ADS, BAPI, OMAR, and Programmatic Interfaces are available 97.5% of the time during the last 4 weeks of IMS U2 (other than periods of disaster recovery testing and backup and restore testing).	Essentially completed. In June, various participants have had intermittent access issues which CAISO responds to quickly.
U2.13	Quality of solution to be 90% AC solution over the last 4 weeks of IMS U2.	To date, the only DC solution seen in 2008 market simulation was on 6/19 as discussed above.
U2.15	All scenarios agreed to by market participants and CAISO will be successfully completed and market participants affirm completion in accordance with scenario dashboard.	The latest scenario execution schedule is published, with the accompanying scenario detail and a published process in place for review, We continue to track this progress toward the stated criteria
U2.16	Market results are based on market inputs and consistent across external markets application	Since early June, market simulation has been consistently running with market participant bids and shortly thereafter, has been trending 90-100% solutions and external market results availability
U2.18	HASP Market successfully solves and publishes within timing guidelines 95% of the time for 7 consecutive trading days during Update 2 Semi-Structured testing	As discussed previously in this document and displayed in "Real-Time Market Running Consistently and Producing Quality Results" table above, we continue to trend in a positive direction toward completion of this criteria.
U2.19	Real-Time Market successfully solves and publishes within timing guidelines 95% of the time for 7 consecutive trading days during Update 2 Semi-Structured testing	As discussed previously in this document and display in "Real-Time Market Running Consistently and Producing Quality Results" table above, we continue trend in a positive direction toward completion of this criteria.
<b>CAISO IT</b>		
U2.11	Backup and restore plans executed for 100% of the market simulation impacted servers deemed operational critical during normal operating hours.	Scheduled for July
U2.12	Archiving and data retention plans for all market simulation systems performed for each day of phase.	Scheduled for July

## ***TIMELINE FOR UPCOMING EVENTS***

Market participant testing will continue through the summer. The scenarios will be run and completed as soon as possible. The CAISO will continue to posts on its website:

- Daily Charge Code Status
- Daily Participation Reports
- Daily Market Simulation Issue Reports;
- Daily Market Simulation Status Reports;
- Market Simulation Real Time Data Exchange Reports;
- Weekly Market Simulation Issues Reports;
- Weekly Market Simulation Results; and,
- Weekly Market Simulation Report Cards.

In addition, CAISO will publish weekly the status of the IMS U2 Exit Criteria, scenario execution and the Market Simulation Completion Profile. This data should provide sufficient advance notice of the status of the program to participants. Key upcoming dates include:

August 7 – Annual process for the 2009 Congestion Revenue Rights begins

August 14 - ISO Governing Board Meeting: Provide Board the MRTU status and discuss participant readiness

August 26 – MRTU Implementation Workshop: confirm that the Board provisions have been met.

September 8 – 9 – ISO Governing Board Meeting: Provide Board the MRTU status

September 23 - MRTU Implementation Workshop

October 28 – 29 - ISO Governing Board Meeting: Provide Board the MRTU status



# MRTU Readiness Criteria Dashboard

June 30, 2008

This Dashboard is designed to display the status of each MRTU Readiness Criteria. Readiness Criteria status is indicated by the following color codes:

- Clear: A Readiness Criterion is clear (C) if:
  - The Readiness Criterion has not begun.
- Purple: A Readiness Criterion is purple (P) if:
  - The completion or status updates are on schedule based on the specified target due date or milestone, OR
  - A mitigating action has been implemented successfully and the Readiness Criterion is back on schedule to be completed on the specified target due date.
- Orange: A Readiness Criterion is orange (O) if:
  - One or more Readiness Components in that Readiness Criterion are not complete on the specified target due date or milestone, OR
  - A Readiness Criteria has reported risks or issues that have a potential for not allowing it to be completed on the specified target due dates or milestones.
- Blue: A Readiness Criterion is blue (B) if:
  - All Readiness Components in that category are complete.

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These readiness criteria will help the CAISO to determine the status of design elements and processes that must be in place to ensure implementation of MRTU Release 1 without undue risk to the CAISO or its Market Participants. The CAISO reserves the right to revise these criteria. The CAISO's certification of readiness to be filed with FERC 60-days prior to the proposed effective date of MRTU will be based on all information available to the CAISO including, but not limited to, status of readiness criteria, including mitigating actions, advice of Market Participants and the informed business judgment of CAISO senior management.

## Integrated Market Simulation

R1: 4/30/07 - 5/18/07; R2: 5/29/07 - 7/20/07;

R3: 9/24/07 - 11/09/07; U1: 11/13/07 -12/21/07;

U2: 02/19/08- TBD; PPS: TBD

MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
BPM - 1	BPM	<p>CAISO will prepare Business Practice Manuals (BPMs), intended to contain implementation detail, consistent with and supported by the CAISO Tariff, including: instructions, rules, procedures, examples, and guidelines for the administration, operation, planning, and accounting requirements of CAISO and the markets.</p> <p>The CAISO Business Practice Manual (BPMs) will be completed and posted on the CAISO website to allow Market Participants the opportunity to review and comment on each BPM. CAISO will facilitate stakeholder review meetings to discuss critical issues. (This criterion is subject to change based on the output of the FERC Technical Conference.)</p> <p>CAISO will also establish and communicate to FERC and Market Participants a BPM change management process that describes the procedure that is used to update the BPMs after MRTU implementation.</p>		3/31/08	B		
		<p><b>BPM - 1.1</b> The "Initial Version Release" BPM requirements are complete.</p>	B	1/19/07			
		<p>1. The following "Initial Version Release" BPMs are prepared and published to the CAISO website incorporating stakeholder feedback and resolved critical issues, in preparation for Business Structure Market Simulation:</p> <ul style="list-style-type: none"> <li>- BPM for Compliance Monitoring</li> <li>- BPM for Congestion Revenue Rights</li> <li>- BPM for Definitions &amp; Acronyms</li> <li>- BPM for Market Instruments</li> <li>- BPM for Market Operations</li> <li>- BPM for Metering</li> <li>- BPM for Outage Management</li> <li>- BPM for Reliability Requirements</li> <li>- BPM for Rules of Conduct Administration</li> <li>- BPM for Scheduling Coordinator Certification and Termination</li> <li>- BPM for Settlements and Billing</li> <li>- BPM for Managing Full Network Model</li> </ul>		5/1/06 - 7/31/06		<p>The following BPMs were posted on 5/1/06: BPM for Definitions and Acronyms; BPM for Market Instruments; BPM for Market Operations; BPM for Settlements and Billing.</p> <p>The following BPMs were posted on 7/31/06: BPM for Compliance Monitoring; BPM for Congestion Revenue Rights; BPM for Definitions &amp; Acronyms; BPM for Market Instruments; BPM for Market Operations; BPM for Metering; BPM for Outage Management; BPM for Reliability Requirements; BPM for Rules of Conduct Administration; BPM for Scheduling Coordinator Certification and Termination; BPM for Settlements and Billing; BPM for Managing Full Network Model.</p>	
		<p>2. Stakeholders are provided with opportunity to review, provide comments, and identify critical issues for each BPM.</p>		7/31/06 - 8/29/06		<p>Stakeholders were allowed to submit their questions / comments to the BPM In-Box up to 2 weeks prior to each BPM meeting. Stakeholder questions on each BPM and CAISO responses can be found at: <a href="http://www.caiso.com/186a/186ae8622e6f0.html">http://www.caiso.com/186a/186ae8622e6f0.html</a></p>	

Integrated Market Simulation

R1: 4/30/07 - 5/18/07; R2: 5/29/07 - 7/20/07;  
R3: 9/24/07 - 11/09/07; U1: 11/13/07 -12/21/07;  
U2: 02/19/08 - TBD; PPS: TBD

MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
		3. CAISO facilitates BPM review meetings for each BPM as appropriate to collect comments and discuss critical issues.	●	8/29/06 - 10/5/06		Seven organized BPM Stakeholder meetings occurred between 8/29/06 and 10/5/06. Details of each set of meetings that occurred, and which BPMs were covered can be found at: <a href="http://www.caiso.com/1872/1872e51451200.html">http://www.caiso.com/1872/1872e51451200.html</a>	
		4. Revised Draft Version BPMs are posted to the CAISO website.	●	1/19/07		<b>The following BPMs were posted on 1/19/07:</b> BPM for Compliance Monitoring; BPM for Congestion Revenue Rights; BPM for Definitions & Acronyms; BPM for Market Instruments; BPM for Market Operations; BPM for Metering; BPM for Outage Management; BPM for Reliability Requirements; BPM for Rules of Conduct Administration; BPM for Scheduling Coordinator Certification and Termination; BPM for Settlements and Billing; BPM for Managing Full Network Model.	
		<b>BPM - 1.2</b> <b>Subsequent BPM updates due to FERC requirements &amp; Market Simulation are further developed.</b>	<b>B</b>	8/3/07			
		1. Stakeholders are provided the opportunity to review, provide comments, and identify critical issues for each of the Market Simulation Release BPMs that were posted on January 19, 2007.	●	1/19/07 - 3/2/07		A market notice was sent out on January 12, 2007 providing details to Stakeholders on how to submit comments on the revised BPMs posted on 1/19/07.	
		2. CAISO hosts Compliance Process for Business Practice Manuals call.	●	2/7/07		Conference call was held from 2:00 PM to 3:00 PM on 2/7/07.	
		3. CAISO drafts MRTU Tariff Language and posts to CAISO website along with reconciled BPMs.	●	4/2/07		All BPM revisions were posted by 6/7/07.	
		4. CAISO allows stakeholders to review and comment on BPM updates.	●	12/3/07		Individual BPM status can be found under the heading "BPM Completion Status Reports" at: <a href="http://www.caiso.com/17ba/17baa8bc1ce20.html">http://www.caiso.com/17ba/17baa8bc1ce20.html</a>  BPMs have all been updated based on comments provided by stakeholders. As BPM modifications continue to occur, Stakeholders will have the opportunity to review and comment.	
		5. CAISO holds a conference call or meeting with Stakeholders on proposed MRTU Tariff Language.	●	4/17/07		BPM Tariff Language call was held from 1:00 PM - 4:00 PM on 4/17/07.	
		6. CAISO files additional proposed MRTU Tariff language to support BPMs and posts revised BPMs to CAISO website.	●	8/3/07		BPM Tariff Language was filed with FERC	

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### MRTU Readiness Criteria Dashboard

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		7. The FERC Technical Conference held.	●	Fall 2007		Technical Conference held 9/26 - 9/27 in Washington D.C.	
		8. The CAISO complies with all FERC Technical Conference directives. - Post all revised BPMs as a result of the FERC Technical Conference - File proposed Tariff Language.	●	11/15/07		The CAISO has posted all revised BPMs onto the CAISO website as of Nov 15th and has filed proposed Tariff Language. The following is a list of the BPMs that were revised and posted: Change Management, Compliance Monitoring, Congestion Revenue Rights, Credit Management, Definitions and Acronyms, Managing Full Network Model, Market Instruments, Market Operations, Metering, Outage Management, Reliability Requirements, Scheduling Coordinator Certification & Termination, Settlements and Billing.	
		<b>BPM - 1.3</b> <b>CAISO BPMs are sufficiently complete for the MRTU Implementation.</b>  *** Please note that BPMs marked "complete" are considered to be essentially complete; however, are subject to the outcome of the BPM Technical Conference, and any revisions required as a result of Testing or Market Simulation.	B	3/31/08		Further details on each BPM can be found under "BPM Completion Status Report" at: <a href="http://www.caiso.com/17ba/17baa8bc1ce20.html">http://www.caiso.com/17ba/17baa8bc1ce20.html</a>	
		BPM for Candidate CRR Holder Registration	●			Complete	
		BPM for Congestion Revenue Rights	●			Complete, revised version posted Nov 15th	
		BPM for Compliance Monitoring	●			Complete, revised version posted Nov 15th	
		BPM for Change Management	●			Complete; See Readiness Criterion BPM 1.4 for status	
		BPM for Credit Management	●			Complete, revised version posted on September 12th	
		BPM for Definitions and Acronyms	●			Complete, revised BPM posted on September 21	
		BPM for Managing the Full Network Model	●			Complete, revised version posted on Nov 15th	
		BPM for Market Instruments	●			Complete, revised version posted on Nov 15th	
		BPM for Market Operations	●			Complete, revised version posted Nov 15th	
		BPM for Metering	●			Complete, revised version posted Nov 15th	
		BPM for Outage Management	●		Complete, revised version posted on Nov 15th		

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		BPM for Reliability Requirements	●			Complete, revised version posted Nov 15th	
		BPM for Rules of Conduct Administration	●			Complete	
		BPM for Scheduling Coordinator Certification and Termination	●			Complete, revised version posted Aug 20th	
		BPM for Settlements and Billing	●			Complete, Attachment E posted on Nov 12th. * Going forward, updates and changes to this BPM will be tracked on Criterion STL 1.1.1.	
		<b>BPM - 1.4</b> CAISO establishes the BPM Change Management Process; communicates the process to stakeholders; and files the BPM Change Management Process with FERC. The process establishes the procedure that is used to update the BPMs after market launch.	B	8/3/07		<ul style="list-style-type: none"> <li>- Revised BPM for Change Management Process was posted on June 26.</li> <li>- Information on the Change Management Process can be found at: <a href="http://caiso.com/17ba/17baa8bc1ce20.html">http://caiso.com/17ba/17baa8bc1ce20.html</a></li> <li>- FERC Filing over Change Management Process occurred on August 3rd.</li> <li>- Process will go into effect at Go Live.</li> </ul> <p>All updates to the BPM Change Management Process as a result of the FERC Technical Conference on Sept 27th have been posted onto the CAISO website as of Nov 15th.</p>	
CRR-1	CRR	CAISO will conduct a market simulation phase, called the Congestion Revenue Right (CRR) Dry Run, to provide market participants and CAISO with the opportunity to step through the process of allocating and auctioning CRRs in a manner that will be similar to the process that will be used to support MRTU implementation.		3/30/07	B		
		<b>CRR - 1.1</b> CRR Participants meet the eligibility requirements to participate in the CRR Dry Run.	B	8/30/06			
		1. Participants complete CRR training.	●	6/29/06			
		2. Participants receive security digital certificates.	●	8/30/06			
		<b>CRR - 1.2</b> CRR Participants provide CAISO with valid, annual CRR nominations for the CRR Dry Run.	B	8/30/06			
		<b>CRR - 1.3</b> CAISO completes the annual and monthly CRR allocations for the CRR Dry Run.	B	2/15/07			
		1. New CRR Participants meet eligibility requirements.	●	9/30/06			
		2. CRR Participants submit CRR nominations to CAISO.	●	10/15/06			

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		3. CAISO runs the CRR allocation markets and publishes results.	●	2/15/07		Annual results of the allocation market were published during 12/06. Monthly results from the allocation market were published on 1/16/07. This Criterion finished early.	
		<b>CRR - 1.4</b> CAISO completes the annual and monthly CRR auctions for the CRR Dry Run.	B	2/15/07			
		1. New CRR Participants meet eligibility requirements.	●	9/30/06			
		2. CRR Participants submit CRR bids to CASIO.	●	10/15/06			
		3. CAISO runs CRR auction markets and publishes results.	●	2/15/07		Monthly results of the auction market were published on 1/16/07. Annual results of the auction were published on 1/26/07. This Criterion finished early.	
		<b>CRR - 1.5</b> CAISO collects the results of the CRR Dry Run, prepares an informational report, and submits it to FERC.	B	3/30/07		Informational Report over Dry Run can be found at: <a href="http://www.caiso.com/1bb4/1bb4f3562b4c0.pdf">http://www.caiso.com/1bb4/1bb4f3562b4c0.pdf</a>	
CRR - 2	CRR	CAISO will complete the integration testing of the CRR output services. The test results will pass the Quality Review Board review.		5/1/08	P	- All CRR Broadcast Services were successfully triggered to an SOA (Service Oriented Architecture) Bus. - CRR Release 1 successfully passed Quality Review Board FAT and SAT Test review.  <b>June 2008 Update:</b> The CRR Broadcast Services are currently in integration test.	
CRR - 3	CRR	CAISO will complete the first annual process for allocation of 1-Year CRRs and LT CRRs and for auction of 1-Year CRRs, and first monthly allocation and auction of monthly CRRs.		TBD	P		
		<b>CRR - 3.1</b> CRR participants meet the eligibility requirements to participate in the CRR production market.	B	10/1/07			
		1. CRR Participants receive security digital certificates if not already received from CRR Dry Run.	●	6/29/07		All certificates requested by the Participants have been received for allocation.	
		2. CRR System is populated with collateral data from the financial group.	●	12/1/07		The CRR System was populated with collateral data from the financial group on 12/6/07.	
		<b>CRR - 3.2</b> The first production run of 1) the annual process for allocation of 1-Year CRRs and LT CRRs, and for auction of 1-Year CRRs; and 2) first monthly allocation and auction of monthly CRRs are complete.	P	TBD			

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### MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
		1. Completion of Annual and Long Term Allocation Process	●	12/3/07	B	- Tier 1 market: 9/4 - 9/14 - complete - Tier 2 market: 10/5 - 10/9 - complete - Tier LT market: 10/29 - 10/31 - complete - Tier 3 market: 11/21 - 11/27 - complete	
		2. Completion of Annual Auction Process	●	12/18/07		- Annual Auction: 12/11 - 12/13  The Annual Auction Process completed on 12/20/07.	
		3. Completion of Monthly Allocation Process	○	TBD		- Tier 1 Monthly Allocation: TBD - Tier 2 Monthly Allocation: TBD  Target completion date to be determined once Go-Live date is established.	
		4. Completion of Monthly Auction Process	○	TBD		- Monthly Auction Process  Target completion date to be determined once Go-Live date is established.	
CRR - 4	CRR	CAISO will make its compliance filing with the FERC's Long-Term Transmission Rights (LT FTR) Final Rule.		1/29/07	B	Filing can be viewed at: <a href="http://www.caiso.com/1845/1845dca750770.html">http://www.caiso.com/1845/1845dca750770.html</a> under the name: "CAISO Filing to FERC on Long Term Transmission Rights - 29-Jan-2007"	
ENT - 1	Enterprise Systems	CAISO will verify that its enterprise systems meet availability requirements. This will be demonstrated by establishing Service Level Agreements (SLAs) for IT support, development, and implementation of monitoring tools and achieving availability requirements during the Pre-Production Simulation (PPS).		Exit PPS	P		
		ENT - 1.1 Service Level Agreement (SLA) documents are created and signed off by the MRTU IT Director.	P	Entry PPS	B	Initial Drafts completed, turned over to the Operations Information Technology (OIT) team.	
		ENT - 1.2 Monitoring tools are built into each enterprise system and are used to produce performance and availability reports during PPS market simulation.	P	Entry PPS		- OS and System Monitoring completed - Application Monitoring deployment in progress	
		ENT - 1.3 Each enterprise system meets its minimum availability requirement during the PPS market simulation.	P	Exit PPS		Results will be available after the close of PPS.	
ECA - 1	External Control Area	CAISO, market participants, and external control areas agree on the new interchange and e-tagging procedures, being developed as part of the Scheduling and Tagging Next Generation (STING) project, including the new Control Area Scheduler (CAS).		1/23/07	B		

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		ECA - 1.1 100% of tags applicable to CAISO are linked by market reservation to Control Area Scheduler (CAS).	B	1/23/07		100% of the tags applicable to CAISO from the Participants are being linked through market reservation to CAS.	
		ECA - 1.2 Control Area Scheduler (CAS) is fully operational and in production.	B	1/23/07		Control Area Scheduler officially went live on Tuesday, 2/13/07 at 10:00pm.	
GO - 1	Grid Ops	CAISO grid operating procedures will be created or updated to reflect MRTU implementation. The new and revised grid operating procedures will be reviewed with market participants and external control areas.		1 Day Prior to Go-Live	P		
		GO - 1.1 CAISO Grid Operating Procedures and Emergency Procedures are reviewed. New procedures are created or existing procedures are revised for training purposes to reflect MRTU implementation.	B	5/1/08		Of 352 Operating Procedures: - 83 Operations Procedures have been identified as needing revisions for MRTU. - 47 minor Operating Procedures - 32 significant Operating Procedures will be created or withdrawn. - 4 major Operating Procedures critical for Operations Training.  All Operating Procedures are complete: - 4 out of 4 Major Operating Procedures completed. - 32 out of 32 Significant Operating Procedures completed. - 47 out of 47 Minor Operating Procedures completed.	
		GO - 1.2 CAISO Grid Operating Procedures and Emergency Procedures are provided to Market Participants and External Control Areas.	B	5/1/08		The following are the 4 major operating procedures: - M-401 Day Ahead Market - M-402 Exceptional Dispatch - M-403 Real Time Market - S-326 Southern Cities  April Update: All Major Operating Procedures are complete: M-401 Day-Ahead Market M-402 Exceptional Dispatch M-403 Real-Time Market	

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		<b>GO - 1.3</b> The revised CAISO Grid Operating Procedures and Emergency Procedures are posted on the CAISO website.	P	1 Day Prior to Go-Live		All procedures have been completed and are ready for posting.	
INF-1	Infrastructure	CAISO will meet the MRTU system architecture requirements, including information monitoring processes and tools and availability and stability standards during market simulations.		Exit PPS	P		
		<b>INF - 1.1</b> Infrastructure monitoring tools produce logs of system performance and availability during market simulations.	P	Exit PPS			
		1. Weekly up-time reports reflect that system infrastructure is available for at least the time required during each market simulation.	●	Exit PPS		- Monitoring agents deployed - Report development in process  Daily Uptime/Availability Reports are generated for each Market Simulation.	
		<b>INF - 1.2</b> Production environment is available and stable for 7 consecutive days (24 hours a day), excluding approved outages (emergency only), during the market simulations.	P	Exit PPS		The Production environment is available to support Market Simulations. Any required changes will result from Market Simulation testing and/or hardware modifications.	
		<b>INF - 1.3</b> Archive capability is planned, tested, and accomplished in the MRTU infrastructure.	P	Exit PPS			
		<b>INF - 1.4</b> Backup/Recovery and Failover/Fallback of MRTU infrastructure is planned, tested, and accomplished.	P	Exit R3 Update 2			
		1. Backup/Recovery of MRTU infrastructure is planned, tested and accomplished.	●	Exit R3 Update 2			
		2. Failover/Fallback of MRTU infrastructure is planned, tested and accomplished.	●	Exit R3 Update 2		- Creating Testing Environment - Developing Test Cases	
		<b>INF- 1.5</b> The final production environment is configured for Go-Live.	P	Entry PPS		The Production environment is available to support Market Simulations. Reconfiguration may occur at the termination of the final Market Simulation in preparation for PPS.	

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		<b>INF- 1.6</b> Release management processes (framework/structure) are in place prior to PPS market simulation around any changes to the code or production environment.		Entry PPS		Process identification in progress.	
LMP-Testing-1	LMP Testing	CAISO will perform Location Marginal Pricing (LMP) testing. The purpose of LMP testing will be to ensure that the LMP and Ancillary Service Marginal Pricing (ASMP) calculations are accurate using data and results compiled from market simulation activities, analysts track testing, and, to the extent possible, LMP Study 4.		Entry PPS			
		<b>LMP Testing - 1.1</b> <b>LMP and ASMP Validation in Controlled Test Environment</b>		7/31/08		LMP Testing 1.1.1 -1.1.3 combined comments	LMP Testing 1.1.1 -1.1.3 combined comments
		1. LMP for a generating resource, participating load, system resource, and non-participating demand are appropriately (i) equal to, (ii) above, or (iii) below the resources bid, depending on whether the resource schedule is constrained by specific conditions.		7/31/08	<b>June 2008 Update:</b> Analysis Track Testing (ATT) effort has completed review of 100% of test cases identified for IFM, RTPD, and RTID applications. Currently, some individual test cases continue to be evaluated as new software patches become available. Next steps are : (i) complete re-testing of test cases associated with resolved variances, and (ii) publish a revised summary report.		<b>Issue:</b> Previously, the Readiness Criteria for LMP testing reflected a completion date of 4/30/07, and the status turned Orange (delayed) when this date passed. The 4/30 date was based on the original (out-dated) completion date for Analysis Track Testing (ATT). The original ATT schedule did not anticipate that key functionality of the IFM software would be delayed several months (namely, output of correct distribution factors from SCUC, and other critical data for LMP analysis), and also had underestimated the development time required for LECG to produce a working version of their SAS validation software. <b>Mitigation:</b> The Price Analysis Software has been going through Analysis Track Testing (ATT). Analysis Testing has been accomplished and resulted in approximately 80 variances from the validation of IFM and RTM applications relating to various dispatch and pricing conditions, of which approximately 71 have been resolved to date by either (a) vendor upgrades to the market software, (b) cleaning up test data used in analysis, or (c) correcting the price validation method. Closure of these variances and overall completion of the ATT schedule requires a re-run on the final IFM software (R3 SAT).
		2. ASMP for a generating resource, participating load, and system resources are appropriately (i) equal to, (ii) above, or (iii) below the resources Ancillary Service (AS) bid, depending on whether the resource AS schedule is constrained by specific conditions.		7/31/08			
				7/31/08			
		<b>LMP Testing - 1.2</b> <b>LMP and ASMP Validation under Market Simulation Environment</b>		Entry PPS		LMP Testing 1.2.1 -1.2.2 combined comments	

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		1. LMP for a generating resource, participating load, system resource, and non-participating demand are appropriately (i) equal to, (ii) above, or (iii) below the resource bid, depending on whether the resource schedule is constrained by specific conditions.	●	Entry PPS		- Testing was accomplished with the start of IMS Release 2. - Daily Price Validation Processes for all markets has begun with IMS R3 and conclude prior to the start of PPS. - The goal of this effort is to accomplish comprehensive price validation for all markets within the price correction time horizon (8 days).	<b>June Update:</b> <b>Issue:</b> Full execution of these activities is significantly behind the original Target Due Date due to continued delays in completion of the Analysis Track Testing (ATT). <b>Mitigation:</b> This delay is mitigated by incorporation of Market Simulation results into ATT environment for validation. In so doing, validation of Market Simulation results have begun on a spot-check basis in the interim period while the price validation software and IFM software continue to mature to a point where the Market Simulation results can be validated directly.
		2. ASMP for a generating resource, participating load, and system resources are appropriately (i) equal to, (ii) above, or (iii) below the resources AS bid, depending on whether the resource AS schedule is constrained by specific conditions.	●	Entry PPS		<b>June 2008 Update:</b> • Direct validation of selected IFM and RTM Market Simulation solutions is currently under way. These activities are currently focusing on establishment of the data through-flow and process execution control. • Next steps include: a) Conclude ATT activities and focus all validation efforts on Market Simulation cases b) Expand Market Simulation validation scope to include all market runs (it's currently validating spot-cases only) c) Begin publication of Price Validation reporting metrics d) Install automation features to Market Simulation validation process	
LMP-PRD - 1	LMP Production	CAISO will develop and implement the Locational Marginal Pricing (LMP) validation tools, processes, and procedures necessary to support MRTU implementation.		7/1/08	P		
		LMP Production - 1.1 The LMP tool is operational and 100% of processes and procedures are completed.	P	7/1/08		<b>June 2008 Update:</b> IFM and RUC tools already complete. LECG is still working on the tool to analyze the 5-minute dispatch. It is still anticipated that the real-time validation tool will be completed on or around the first week of July 2008	

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Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
MKS - 1	Market Services	CAISO will prepare an assessment of the MRTU market systems' effectiveness when responding to instances where the demand bids exceed the supply bids and post on the CAISO website.		Exit Update 2	P	<p><b>June 2008 Update:</b> This Readiness Criterion is reflected in Scenario 10 of the IMS Scenario Executions. This scenario ran on June 5th for trade date 6/6/08. Initial results have been posted on the CAISO website for Market Participant review (<a href="http://www.caiso.com/1fe1/1fe1c10355590.pdf">http://www.caiso.com/1fe1/1fe1c10355590.pdf</a>). A final report will be issued and posted on the website.</p>	
MKS - 2	Market Services	CAISO will develop post implementation evaluation criteria, including MRTU performance and operational issues, collaboratively with stakeholders for inclusion in CAISO's post-implementation performance reports.		7/31/08	P	<p>Two Stakeholder meetings have been held to identify the type criteria that would be included on post implementation reports.</p> <p>The CAISO has developed a set of MRTU Market Performance Metrics to be used in the Post Implementation evaluation report. These metrics can be found on the CAISO website on the following link: <a href="http://www.caiso.com/179d/179dbce22760.html">http://www.caiso.com/179d/179dbce22760.html</a>. The CAISO is working on compiling the list of post-evaluation criteria and will post it onto the CAISO website.</p> <p><b>June 2008 Update:</b> The CAISO is in the final stages of finalizing the list of reporting metrics for the Post Implementation quarterly report. This item will be "Complete" after it is filed with FERC.</p> <p>Note: The target date was changed to reflect additional items to complete in the reporting metrics.</p>	
MS - 1	Market Systems	CAISO will create support, monitoring, and availability requirements for the MRTU market systems, including the establishment of Build Documents, Run Books and application monitoring tools.		Exit PPS	P		
		MS - 1.1 Build Documents and Run Books are created and signed off.	P	Entry PPS		Process for creating Build Docs and Run Book requirements in progress.	
		MS - 1.2 Monitoring tools are integrated and functioning in each Market System and are used to produce performance and availability logs during the Pre-Production Simulation (PPS) market simulation phase.	P	Entry PPS		Application monitoring in progress	

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R1: 4/30/07 - 5/18/07; R2: 5/29/07 - 7/20/07;  
R3: 9/24/07 - 11/09/07; U1: 11/13/07 -12/21/07;  
U2: 02/19/08 - TBD; PPS: TBD

MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
		1. The monitoring tool is integrated with the Settlement and Market Clearing (SaMC) system.		Entry PPS		Application monitoring in progress	
		2. The monitoring tool is integrated with the Client Management Repository (CMRI) system.		Entry PPS		Application monitoring in progress	
		3. The monitoring tool is integrated with the Scheduling Infrastructure Business Rules (SIBR) system.		Entry PPS		Application monitoring in progress	
		4. The monitoring tool is integrated with the Integrated Forward Market (IFM) system.		Entry PPS		Application monitoring in progress	
		5. The monitoring tool is integrated with the Real-Time Market (RTM) system.		Entry PPS		Application monitoring in progress	
		6. The monitoring tool is integrated with the Portal system.		Entry PPS		Application monitoring in progress	
		7. The monitoring tool is integrated with the Market Quality System (MQS) system.		Entry PPS		Application monitoring in progress	
		<b>MS - 1.3</b> <b>Each Market System has met its minimum availability requirement during the PPS market simulation phase.</b>		Exit PPS		Hardware and monitoring tools deployed to measure availability during PPS.	
		1. The SaMC system meets minimum availability requirement.		Exit PPS		Hardware and monitoring tools deployed to measure availability during PPS.	
		2. The CMRI system meets minimum availability requirement.		Exit PPS		Hardware and monitoring tools deployed to measure availability during PPS.	
		3. The SIBR system meets minimum availability requirement.		Exit PPS		Hardware and monitoring tools deployed to measure availability during PPS.	
		4. The IFM system meets minimum availability requirement.		Exit PPS		Hardware and monitoring tools deployed to measure availability during PPS.	
		5. The RTM system meets minimum availability requirement.		Exit PPS		Hardware and monitoring tools deployed to measure availability during PPS.	
		6. The Portal system meets minimum availability requirement.		Exit PPS		Hardware and monitoring tools deployed to measure availability during PPS.	
		7. The MQS system meets minimum availability requirement.		Exit PPS	Hardware and monitoring tools deployed to measure availability during PPS.		

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 R3: 9/24/07 - 11/09/07; U1: 11/13/07 -12/21/07;  
 U2: 02/19/08 - TBD; PPS: TBD

MRTU Readiness Criteria Dashboard

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MM - Study - 1	Market Monitor Study	CAISO will complete the Final Competitive Path Assessment (CPA) after thorough review and input from stakeholders; allowing the resulting path designations to be posted to the CAISO website.		30 days prior to Market Launch	P	<p>The first set of preliminary results were published on the CAISO website under the heading "MRTU Competitive Path Assessment White Paper": A second set of preliminary CPA results was published on 10/1/07. Both reports and all other CPA information can be found at: <a href="http://www.caiso.com/docs/2005/07/01/200507011120583480.html">http://www.caiso.com/docs/2005/07/01/200507011120583480.html</a>.</p> <p>Third set of preliminary CPA results were published on 12/19/07 under the heading: CPA for MRTU Release 3 of Preliminary Results. This report can be found at: <a href="http://www.caiso.com/docs/2005/07/01/200507011120583480.html">http://www.caiso.com/docs/2005/07/01/200507011120583480.html</a>.</p> <p>The Final CPA report will be published 1 month prior to Go-Live.</p>	
MM - Study - 2	Market Monitor Study	The issue raised by LECG about a potential deficiency in the preferred Local Market Power Mitigation (Direct Mitigation) will be evaluated and will be determined not to be a significant concern.		12/31/06	B	<p>There is no indication that the LECG concern was valid for the LMPM approach that we are taking, and therefore, is not a significant concern. Report on LMPM deficiency can be found at: <a href="http://www.caiso.com/docs/2004/10/01/2004100110503422982.html">http://www.caiso.com/docs/2004/10/01/2004100110503422982.html</a></p>	
SIM - 1	Market Simulation	In advance of each of the market simulations, CAISO, with input from stakeholders, will establish entry and exit criteria. The entry and exit criteria will be posted on the CAISO website. The entry and exit criteria from each Market Simulation will be met.		Exit PPS	P		
		SIM - 1.1 The Rules Validation / Connectivity Simulation (RV/CS) phase entry and exit criteria are met.	B	Exit RV/CS		RV/CS Scorecard can be found at: <a href="http://www.caiso.com/18d2/18d292673ba0.pdf">http://www.caiso.com/18d2/18d292673ba0.pdf</a>	
		SIM - 1.2 The Enhanced Rules and Connectivity Inter - SC Trade (ERC-IST) simulation phase entry and exit criteria are met.	B	Exit ERC-IST		ERC/IST Scorecard can be found at: <a href="http://www.caiso.com/1bbe/1bbe8903a0f0.pdf">http://www.caiso.com/1bbe/1bbe8903a0f0.pdf</a>	

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		<b>SIM – 1.3</b> The Integrated Market Simulation (IMS) entry and exit Criteria are met.		Exit R2			
		<b>SIM 1.3.1 Release 1</b> The Integrated Market Simulation (IMS) Release 1 (R1) entry and exit criteria are met.		Exit R1		R1 successfully exited on 5/18/07. R1 entry and exit criteria can be found in the "Market Simulation Criteria Tracker" at: <a href="http://www.caiso.com/186a/186acd53cdf0.html">http://www.caiso.com/186a/186acd53cdf0.html</a> The R1 Scorecards can be found at: <a href="http://www.caiso.com/1bb6/1bb674bb18c90.html">http://www.caiso.com/1bb6/1bb674bb18c90.html</a>	
		<b>SIM 1.3.2 Release 2</b> The Integrated Market Simulation (IMS) Release 2 (R2) entry and exit criteria are met.		Exit R2		R2 concluded on 7/20/07. R2 entry and exit criteria can be found in the "Market Simulation Criteria Tracker" at: <a href="http://www.caiso.com/186a/186acd53cdf0.html">http://www.caiso.com/186a/186acd53cdf0.html</a> R2 Weekly Report Cards can be found at: <a href="http://www.caiso.com/1bb8/1bb8c03d28380.html">http://www.caiso.com/1bb8/1bb8c03d28380.html</a>	Release 2 was concluded with 2 outstanding High+ issues. Both issues will be resolved prior to the start of R3.  <b>September Update:</b> Both High+ issues have been resolved in preparation for IMS R3.
		<b>Sim 1.4 Release 3</b> IMS Release 3 Entry and Exit Criteria as identified in the Market Simulation Guide Book are complete with the exit of IMS Update 2.		Exit Update 2			
		<b>SIM 1.4.1 Release 3</b> Integrated Market Simulation Release 3 begins.		Exit R3		- IMS Release began on 9/24/07. - IMS R3 URL Document, Charge Code, and other information can be found at: <a href="http://www.caiso.com/1bd7/1bd7ebbc72fc0.html">http://www.caiso.com/1bd7/1bd7ebbc72fc0.html</a>  IMS Release 3 concluded on 11/9/07.	
		<b>SIM 1.4.2 Update 1</b> Integrated Market Simulation Update 1 begins.		Exit Update 1		IMS Update 1 began on 11/13/07. -IMS Update 1 URL Document, Charge Code, and other information can be found at: <a href="http://caiso.com/1c2d/1c2d9ced4aa60.html">http://caiso.com/1c2d/1c2d9ced4aa60.html</a>  IMS Update 1 concluded on 12/21/07	

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### MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
		<p><b>SIM 1.4.3 Update 2</b> Integrated Market Simulation Update 2 begins and concludes with all Exit criteria as identified in the Market Simulation Guide Book complete.</p>	P	Exit Update 2		<p>IMS Update 2 began on 02/19/08. -IMS Update 2 URL Document, Charge Code and other information can be found at : <a href="http://caiso.com/1c96/1c96acdd1d710.html">http://caiso.com/1c96/1c96acdd1d710.html</a></p> <p><b>June 2008 Update:</b> IMS U2 continues beginning the 17th week of market simulation on June 30, 2008.</p>	
		<p><b>Sim - 1.5</b> The Pre-Production Simulation (PPS) entry and exit criteria are met.</p>	C	Exit PPS			
MOD-1	Model	CAISO will complete all updates to the Full Network Model. (FNM)		9/1/08	P		
		<p><b>MOD - 1.1</b> FNM updates are completed (except for simultaneous promotion of Markets and EMS to production) utilizing integrated databases or approved workarounds.</p>	B	6/30/07		<p><b>October Update:</b> The FNM has been updated in the FIT environment and is scheduled to be included in the next phase of Market Simulation. All future model updates are planned to be promoted into the MRTU Market Simulation.</p>	<b>Issues / Mitigating Actions:</b>
		<p><b>MOD - 1.2</b> FNM updates are completed (including simultaneous promotion of Markets and EMS to production) utilizing integrated databases or approved workarounds.</p>	P	9/1/08		<p><b>June 2008 Update:</b> • FNM model DB23 was simultaneously promoted with the markets and EMS on 6/1/08 into Update 2. This process is on track and will continue to be tested with the promotion of DB 32.</p>	

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MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
ORG - 1	Organizational Readiness	CAISO's organizational readiness tasks will be completed and the Core Business Units affirm their successful completion. Readiness tasks may include the following elements, as applicable: 1. Organizational Impact Assessment 2. Job Analysis and Design 3. Organizational Analysis and Design 4. Communication Plan 5. Knowledge Transfer Plan 6. Revised Job Descriptions 7. Revised Contingency Plan 8. Tools, Processes, and Procedures		60 Days Prior to Market Launch		<b>June 2008 Update:</b> Continuing to track the tasks that remain following the 5/1 goal. Business Units continue to be involved in current testing activities (Operations, IT). Business Process sign off has started and is targeted to be complete by the end of July. MRTU Application transition between the project to the Business Units and IT are targeted to be complete by July 1. All open issues are receiving the highest priority and will be completed prior to the target date.	
ORG - 2	Organizational Readiness	CAISO's organizational readiness tasks will be completed and the Non-Core Business Units affirm their successful completion. Readiness tasks may include the following elements, as applicable: 1. Communication Plan 2. Training 3. Organizational Analysis and Design 4. Communication Plan 5. Knowledge Transfer Plan 6. Revised Job Descriptions 7. Revised Contingency Plan 8. Tools, Processes, and Procedures		60 Days Prior to Market Launch		Non-Core Business Units are still on track.  <b>June 2008 Update:</b> Continued tracking the remaining activities and deliverables for all Business Units. All MRTU tasks for Non-Core Business Units are either complete or on track for completion. There are no risks for Go-Live and progress remains good.	
ORG - 3	Organizational Readiness	CAISO will establish the tools and environments required to support the market monitoring, enforcement, and compliance functions.		60 Days Prior to Market Launch			

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MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
		<p><b>ORG - 3.1</b>                      All data identified by the Department of Market Monitoring (DMM) Unit as critical for market monitoring will be stored in an organized relational database, thoroughly documented, and will be made available to the Department of Market Monitoring Unit.</p>		<p><b>60 Days Prior to Go-Live</b></p>		<ul style="list-style-type: none"> <li>Enterprise Data Repository (EDR): Project is near completion for critical (to DMM) six market applications, and further enhancements have been made by EDR Team. Delayed sync to market simulation has delayed development of monitoring system, however data are now available to proceed with development. Issues still exist with access to MQS system, regular loading of data from critical apps, interpretation of Siemens data, and availability of shift factor and transmission data that must be resolved.</li> <li>Initial draft of Data Dictionary is available, but documentation is dated and incomplete, making this source of information of limited use. Need updates from vendors (esp. Siemens) and assignment of data dictionary custodianship (definitions and data dictionary application) to individuals / business unit before go-live.</li> </ul>	<p><b>June 2008 Update:</b> Most of the data availability issues have been addressed and DMM is able to continue developing monitoring system on this data. This "On Track" progress is contingent upon continued accelerated EDR progress and satisfactory resolution of the issues identified above well in advance of go-live. DMM is actively working with EDR and MRTU PMO to get issues resolved.</p>
		<p><b>ORG - 3.2</b>                      A core set of monitoring tools (software, indices, and reports) will be completed and functional.</p>		<p><b>60 Days Prior to Go-Live</b></p>		<ul style="list-style-type: none"> <li>Hardware and software has been installed, software configuration complete.</li> <li>Data identification challenged by limited data definitions and access to SMEs, however is on track.</li> <li>Metric development and production has begun, but is behind schedule due to incomplete data and lack of data documentation. A base set of metrics is functional, with gaps in CRR and DEB diagnostics that s/b addressed by change requests to EDR and additional work by DMM. Additional metrics are required as well.</li> </ul> <p><b>June 2008 Update:</b></p> <ul style="list-style-type: none"> <li>Now have access to Mkt Sim U2 data for critical (to DMM) applications.</li> <li>Metric development and production continues, with testing of base metrics on U2 data and development of additional metrics to begin in early July.</li> </ul>	

**Integrated Market Simulation**  
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### MRTU Readiness Criteria Dashboard

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		<b>ORG - 3.3</b> A Market simulation tool (the MRTU Sandbox / DMM Tool) that is based on the actual CAISO market software will be developed and tested by the CAISO MRTU Team and made available to the Department of Market Monitoring (DMM) Unit three months prior to Go Live.	<span style="background-color: #8e44ad; border-radius: 50%; padding: 2px 6px;">P</span>	<b>90 Days Prior to Go-Live</b>		<ul style="list-style-type: none"> <li>DMM Sandbox is on site and in use in the MRTU Testing environment.</li> <li>There have been significant reliability issues with this system that have rendered the system of limited use to date.</li> <li>IT / PMO are aware of issues and the need to resolve quickly and have committed to allocate resources to work through issues with DMM staff.</li> </ul> <p><b>June 2008 Update:</b>                      Progress on the MRTU Standalone environment in terms of reliability and usability are in progress, and IT/PMO have committed to make resources available in June to assist in resolution. Patches have been installed and the environment can now run save cases with the data provided from IMS. However, a key business requirement of this system is to be able to re-run the market with modifications</p>	
PRT - 1	Participant Readiness	CAISO will monitor the "readiness" of the market participants through a series of MRTU Readiness Assessments to assist in ensuring that at least 80% of the active CAISO market participants including those that meet significant CAISO demand requirements are "Ready" prior to market launch. The assessment criteria will include people, process, and technology areas of readiness.		30 Days Prior to Market Launch	<span style="background-color: #8e44ad; border-radius: 50%; padding: 2px 6px;">P</span>		
		<b>PRT - 1.1</b> 80% of the market participants including those that meet significant CAISO demand requirements complete the Initial Baseline Assessment.	<span style="background-color: #2980b9; border-radius: 50%; padding: 2px 6px;">B</span>	1/31/07		81% of Market Participants including those that meet significant CAISO demand completed their assessments.	
		<b>PRT - 1.2</b> 80% of the market participants including those that meet significant CAISO demand requirements complete the First Follow-Up Assessment.	<span style="background-color: #2980b9; border-radius: 50%; padding: 2px 6px;">B</span>	7/31/07		100% of Market Participants completed their assessments.	
		<b>PRT - 1.3</b> 80% of the market participants including those that meet significant CAISO demand requirements achieve a "READY" score on Final Assessment.	<span style="border: 1px solid black; border-radius: 50%; padding: 2px 6px;">C</span>	30 Days Prior to Market Launch		The CAISO will conduct the Final MRTU Assessments in August.  A Pre-Final Assessment was sent to Market Participants on June 3, 2008. Information received is being evaluated to identify gaps and actions to ensure readiness.	

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MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
PRT - 2	Participant Readiness	CAISO will monitor and record overall issues during each Release (and update) of Integrated Market Simulation (IMS), resolve any issues that hinder meeting the pre-defined release objectives and all for Market Participant testing time.		Exit R3 Update 2	P		
		<p>PRT - 2.1 Release 2 - Resolution of all high priority issues that hinder the pre-defined release objectives and allow for Market Participant testing time.</p>	B	Exit R2		<p>- Settlement files to-date have not met Market Participant expectations and requirements for testing.                      - All R2 in-scope activities are not yet available.                      - R2 Simulation concluded without simulation success from a product testing and business process point of view.                      - There were two High+ issues that prevented participants from meeting the objectives for Release 2. There were also two High+ issues with Market Test status. IMS R2 was concluded. The Market Simulation team and the PMO are currently discussing steps to resolve the open issues.</p>	<p><b>August Update:</b> 2 High + Issues (2472, 2475) interfered with Market Participants being able to successfully participate in and achieve all the goals of IMS R2. Both issues (2472, 2475) are expected to be resolved prior to the start of Release 3 towards the end of September 2007.  <b>September Update:</b> Both SaMC-related issues (2472, 2475) have been resolved by the SaMC Team in preparation for the start of IMS R3 on 9/24/07.</p>
		<p>PRT - 2.2 Release 3 (includes Updates 1 &amp; 2) - Resolution of Critical and Very High priority issues that hinder the pre-defined release 3 objectives and allow for Market Participant testing time.</p>	P	Exit Update 2		<p>All Critical and Very High issues are being resolved as they arise.                       A weekly Status and Issue report is posted on the CAISO website at :  <a href="http://www.caiso.com/1bd7/1bd7ebbc72fc0.html#1c6011d9c6cd70">http://www.caiso.com/1bd7/1bd7ebbc72fc0.html#1c6011d9c6cd70</a>.</p>	
REG - 1	Regulatory	CAISO's MRTU regulatory requirements will be completed, including tariff updates and filings.		60 - 90 days prior to go-live	P		
		<p>REG - 1.1 CAISO completes tariff updates and other necessary filings such as additional non- substantive compliance or 205 filings (e.g. clean ups, deferred maintenance, merger of S&amp;R tariff amendments into MRTU (e.g. Credit policy)) and files them with FERC.</p>	P	60 - 90 days prior to go-live		<p><b>June 2008 Update:</b> On track to file remaining substantive tariff amendments and known compliance filings 60-90 days prior to Go Live.</p>	

Integrated Market Simulation

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		REG - 1.2 BPM updates are consistent with MRTU tariff and applicable FERC orders.	B	60 - 90 days prior to go-live		Revised BPMs were posted on November 15 consistent with FERC orders and MRTU Tariff on file. Additional proposed tariff language were also filed on November 15. The CAISO has satisfied BPM-related FERC directives.	
		REG - 1.3 All substantive compliance filings and substantive 205 filings are filed with FERC.	B	180 Days Prior to Market Launch		On 8/3/07, all compliance items that required filing no later than 180 days prior to Go Live from the 9/21, 4/20, and 6/25 FERC Orders, were submitted to FERC.  -The initial scope of this criterion was satisfied on 8/3/07. An extension on two filings (LAP Clearing, and RA Backstop) in scope for this criterion will be tracked on criterion REG - 1.1.	
SE - 1	State Estimator	The purpose of the State Estimator (SE) criteria is to provide a measurement to evaluate the stability of the SE system and solution for MRTU. This category will monitor the State Estimator performance, voltage accuracy, and difference from telemetered flows on tie lines and branches that are within a predefined criteria: 1. SE solution must be achieved for 97% of five minute periods within a 30 day period. 2. SE voltage must be within 2% of metered voltage on 50 critical buses. 3. SE MW flow must be within 50MW or 5% of telemetered flow on 10 tie lines to outside CAISO. 4. SE flows on transmission lines and transformers must be within 10% of telemetered flows on all other branches within the CAISO footprint.		6/1/07	B		

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		SE - 1.1 Real-Time Performance Criteria – For thirty (30) consecutive days a Valid State Estimator solution is achieved for ninety-seven percent (97%) of the five (5) minute periods within that thirty (30) day period. There are no more than three (3) consecutive five (5) minute periods without a valid solution (except when there is a planned system software migration as required by the Energy Markets project or when ICCP data is unavailable due to remote CA ICCP node errors). Valid solution are defined as one converged solution in a 5 minutes period using converge tolerance of 10 MW/ MVAR and maximum 'Zero-Injection' bus mismatch of 25 MW/MVAR inside the State Estimator solution within the California ISO Market footprint.	B	6/1/07		Criteria is complete	
		SE - 1.2 On fifty (50) buses where voltage is deemed critical, the solved State Estimator voltage is within two percent (2.0%) +/- accuracy of the metered voltage, provided that the metered voltage is measured to within the notified accuracy. The fifty (50) critical buses are defined by the California ISO with Transmission Owner input and include at least one bus in each control area that is inside the observable California ISO market footprint. All buses (elements) are inside the observable California ISO Market model.	B	6/1/07		Criteria is complete	
		SE - 1.3 On ten (10) tie lines to outside of the California ISO System, the absolute difference between the telemetered flow and the State Estimator MW flow is within fifty (50) MW or five percent (5%) for lines 100kv and above, of the base rating. The ten (10) tie lines are defined by California ISO, with Stakeholder input. All tie lines (elements) are inside the observable California ISO Market model.	B	6/1/07		Criteria is complete	
		SE - 1.4 On all other branches (>100kV) within the California ISO footprint, the absolute difference between the telemetered flows and the State Estimator flows on transmission lines and transformers are within ten percent (10%) of the base rating. All other branches (elements) are inside the observable California ISO Market model.	B	6/1/07		Criteria is complete	
STL- 1	Settlements	CAISO will complete a Settlement and Market Clearing (SaMC) audit. The purpose of the audit will be to ensure that the SaMC software performs as defined in the CAISO MRTU Tariff.		1 Day Prior to Market Launch	P		
		STL - 1.1 CAISO completes the following activities to ensure consistency:	P	Entry PPS			
		1. Validation that the BPM for Settlements & Billing is consistent with the requirements that are identified in the CAISO MRTU Tariff.	●	Entry PPS		Updated Settlements BPM was posted on the CAISO website on 11/15/07 and reflect changes requested through the 9/27/07 FERC Technical Conference.	

Integrated Market Simulation

R1: 4/30/07 - 5/18/07; R2: 5/29/07 - 7/20/07;  
R3: 9/24/07 - 11/09/07; U1: 11/13/07 -12/21/07;  
U2: 02/19/08 - TBD; PPS: TBD

MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
		2. Validation of the consistency between the Settlement BPM and the SaMC design documents.		Entry PPS		This process is on going for PWCP test audit sign off.	
		<b>STL - 1.2</b> An audit by an independent firm that validates the consistency of the SaMC software with the CAISO tariff is completed per the tariff timeline.		1 Day Prior to Market Launch		The audit began in October 2007 and is scheduled to be completed by the end of IMS Update 2.	
STL- 2	Settlements	CAISO will test and implement its final settlement charge code configuration. The final configuration must include required changes from market simulation activities, the Grid Management Charge (GMC), and any changes arising from the 9/21/06, 4/20/07, 5/8/08, 6/25/07, and 7/6/07 FERC Orders.		Entry PPS		<p>Team is revising test cases from the previous release; and requirements have been updated from the SaMC August release. The GMC aspect of this Criterion should be complete by early October, although there is a possibility of policy-related items causing a minor delay in completion of the other Charge Types.</p> <p>Charge types have been rolled out during Update 1 and will continue to be rolled out into Update 2 of IMS. To date, 29 out of 148 charge types have been validated from Bid to Bill. Once a significant number of charge types have been validated from Bid to Bill, this criterion will be moved to 'On Track'.</p> <p>A list of the charge types validated from Bid to Bill can be found on the CAISO website under the heading "Daily Charge Code Status" at:  <a href="http://www.caiso.com/1c2d/1c2d9ced4aa60.html#1caacdff53ca0">http://www.caiso.com/1c2d/1c2d9ced4aa60.html#1caacdff53ca0</a></p>	

Integrated Market Simulation

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U2: 02/19/08 - TBD; PPS: TBD

MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
STL- 3	Settlements	CAISO will publish accurate and complete settlement statements and invoices during Update 2 of the Integrated Market Simulation phase. The published statements and invoices will be consistent with market participants activities during Update 2 of the Integrated Market Simulation phase.		Exit Update 2		At the conclusion of Update 1, 29 Charge Types have been validated from Bid to Bill. During IMS U2, additional Charge Types will be validated and settlement statements and invoices will be published.  A list of the charge types validated from Bid to Bill can be found on the CAISO website under the heading "Daily Charge Code Status" at: <a href="http://www.caiso.com/1c2d/1c2d9ced4aa60.html#1caacdff53ca0">http://www.caiso.com/1c2d/1c2d9ced4aa60.html#1caacdff53ca0</a>	- During IMS Release 2, Participants experienced issues with the Integration Process and Charge Code Configuration.  IMS R3 started with 13 Charge Types that were validated from Bid to Bill by the CAISO. Settlement Guides were provided for these Charge Types. During IMS Update 1, 29 charge types were validated from Bid to Bill. It is important to note that the Settlement system still calculates all the Charge Types designed for MRTU Go Live (148). As IMS progresses and other CAISO systems are integrated into Market Simulation and the appropriate payloads are available, more Charge Types will be validated from Bid to Bill.
TECH - 1	Technology	The Technical Operational Readiness Testing (ORT) exit criteria will be satisfied and approved by the CAISO Business Owners and the Director of MRTU IT. ORT exit criteria will include: 1. Successful completion of high availability testing. 2. Fault tolerance and failover/fallback testing. 3. Load and Performance Testing.		Entry PPS		Operational Readiness Testing is in progress.	
TST - 1	Testing	Performance Testing criteria for the IMS Releases 1-2 and Release 3 (including Updates 1 and 2) of Market Simulation will be met as defined in the Performance Test approach document.		Entry Update 2			
		TST - 1.1 Performance Testing entry and exit criteria are met for Release 1 of the Integrated Market Simulation.		Entry R1		R1 Performance testing is completed and has passed QRB review.	
		TST - 1.2 Performance Testing entry and exit criteria are met for Release 2 of the Integrated Market Simulation.		Entry R2		R2 Performance testing is completed and has passed QRB review.	
		TST - 1.3 Performance Testing entry and exit criteria are met for Release 3 of the Integrated Market Simulation.		Entry R3		R3 Performance testing is completed and has passed QRB review.	
		TST - 1.4 Performance Testing entry and exit criteria are met for Update 1 of Market Simulation.		Entry Update 1		The CAISO has performed Performance testing needed to enter into IMS Update 1. As a result, this criterion is marked as 'Complete'	

Integrated Market Simulation

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### MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
		TST - 1.5 Performance Testing entry and exit criteria are met for Update 2 of Market Simulation.	B	Entry Update 2		Update 2 Performance testing is completed and has passed QRB review.	
TST - 2	Testing	Integration Testing criteria for the IMS Releases 1-2 and Release 3 (including Updates 1 and 2) of Market Simulation will be met as defined in the Performance Test approach document.		Entry Update 2	P		
		TST - 2.1 Integration Testing entry and exit criteria are met for Release 1 of the Integrated Market Simulation. * This is integration testing to get into Market Simulation.	B	Entry R1		R1 Integration testing is completed and has passed QRB review.	
		TST - 2.2 Integration Testing entry and exit criteria are met for Release 2 of the Integrated Market Simulation. * This is integration testing to get into Market Simulation.	B	Entry R2		R2 Integration testing is completed and has passed QRB review.	
		TST - 2.3 Integration Testing entry and exit criteria are met for Release 3 of the Integrated Market Simulation. * This is integration testing to get into Market Simulation.	B	Entry R3		R3 Integration testing is completed and has passed QRB review.	
		TST - 2.4 Integration Testing entry and exit criteria are met for Update 1 of Market Simulation. * This is integration testing to get into Market Simulation.	B	Entry Update 1		Update 1 Integration Testing is completed and has passed QRB review.	
		TST - 2.5 Integration Testing criteria are met for Update 2 of Market Simulation.	P	Entry Update 2		<b>June 2008 Update:</b> Integration testing continues for additional functionality.	

**Integrated Market Simulation**

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### MRTU Readiness Criteria Dashboard

Readiness Criterion Identifier	Readiness Category	Readiness Criterion	Criterion Component Status	Target Due Date / Market Simulation Phase	Overall Category Status	Documentation and Comments	Issues and Mitigating Actions
BUS- BA - 1		<p>All MRTU systems will meet the business requirements and pass the Business Unit review. Acceptable manual workarounds will be identified for systems that do not satisfy the required business functions.</p> <ol style="list-style-type: none"> <li>1. The Settlement and Market Clearing (SaMC) system will pass Business Unit review.</li> <li>2. The Scheduling Infrastructure Business Rules (SIBR) system will pass Business Unit review.</li> <li>3. The Integrated Forward Market (IFM) system will pass Business Unit review.</li> <li>4. The Real-Time Market (RTM) system will pass Business Unit review.</li> <li>5. The Operational Meter Analysis and Reporting (OMAR) system will pass Business Unit review.</li> <li>6. The Master File will pass Business Unit review.</li> <li>7. The Open Access Sametime Information System (OASIS) system will pass Business Unit review.</li> <li>8. The Participant Intermittent Resource Program (PIRP) system will pass Business Unit review.</li> <li>9. The Automated Dispatch System (ADS) system will pass Business Unit review.</li> <li>10. The Reference Level Calculator (RLC) system will pass Business Unit review.</li> <li>11. The Existing Transmission Contract Coordination (ETCC) system will pass Business Unit review.</li> <li>12. The Compliance Automation Production System (CAPS) will pass Business Unit review</li> <li>13. The Scheduling and Logging in California (SLIC) system will pass Business Unit Review.</li> <li>14. The Market Quality System (MQS) system will pass Business Unit Review.</li> <li>15. The Control Area Scheduling (CAS) system will pass Business Unit Review.</li> <li>16. The Automated Load Forecast System (ALFS) will pass Business Unit Review.</li> <li>17. The RMR Automated Validation Engine (RAVE) will pass Business Unit Review.</li> <li>18. The Full Network Model (FNM) will pass Business Unit Review.</li> <li>19. The PTR will pass Business Unit Review.</li> <li>20. The Energy Management System (EMS) will pass Business Unit Review.</li> <li>21. The Market Definition Service (MDS) system will pass Business Unit Review.</li> </ol>		60 days prior to go-live	<span style="background-color: #4a69bd; color: white; border-radius: 50%; padding: 2px 6px;">P</span>	<p><b>June 2008 Update:</b> Application Transition sign off are in progress for all MRTU Applications and is targeted to be complete by July 1.</p>	
BUS- BA - 2	Business Approval Business Area	<p>CAISO will submit to FERC its readiness certification based upon the following information:</p> <ol style="list-style-type: none"> <li>1. Review of all readiness criteria</li> <li>2. All Market Participant input through the assessment process</li> <li>3. Resolution of critical high issues</li> <li>4. Completion of cutover and reversion plans</li> <li>5. Completion of contingency plans</li> <li>6. Completion of cutover walkthrough</li> <li>7. 60 Day Plan</li> </ol>		60 days prior to go-live	<span style="background-color: #4a69bd; color: white; border-radius: 50%; padding: 2px 6px;">P</span>	<p><b>June 2008 Update:</b> The CAISO will align the 60 Day Certification with the Fall Go-Live date once that is established.</p>	

**Integrated Market Simulation**

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# Assessment of Progress Towards Fall 2008 MRTU Go Live



Deborah Le Vine  
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ISO Board of Governors  
General Session  
July 9, 2008

## CAISO has made substantial progress toward a Fall 2008 MRTU Go Live.

- CAISO Grid Operators have tested the systems, run simulations and are confident they can operate the grid with the systems
- Real-Time Market *consistently* running
- Day-Ahead Market *consistently* publishing by 1300
- Market solves *high percentage of time* with AC solution
- Market results are *consistently* published for participants
- Quality of solution is *close to production* given market participant bids and use of a simulator
- SAIC has *certified* the software is consistent with the CAISO Tariff absent minor issues that are being resolved

## Nonetheless, market participants need to be given an ample opportunity to test their internal systems and processes.

- 🌐 The current simulation has been open since February 19
- 🌐 Most of the functionality can be tested by participants
- 🌐 Many of the charge codes still need release from CAISO and validation by market participants
- 🌐 Data traceability issues are contributing to perception of issues
- 🌐 Questions remain around pricing
- 🌐 Nonetheless, absent patching/other maintenance CAISO systems are stable and consistent

## Much work remains and exit criteria for the market simulation still needs to be met.

The Update 2 Market Simulation Exit Criteria that have not been met consist of:

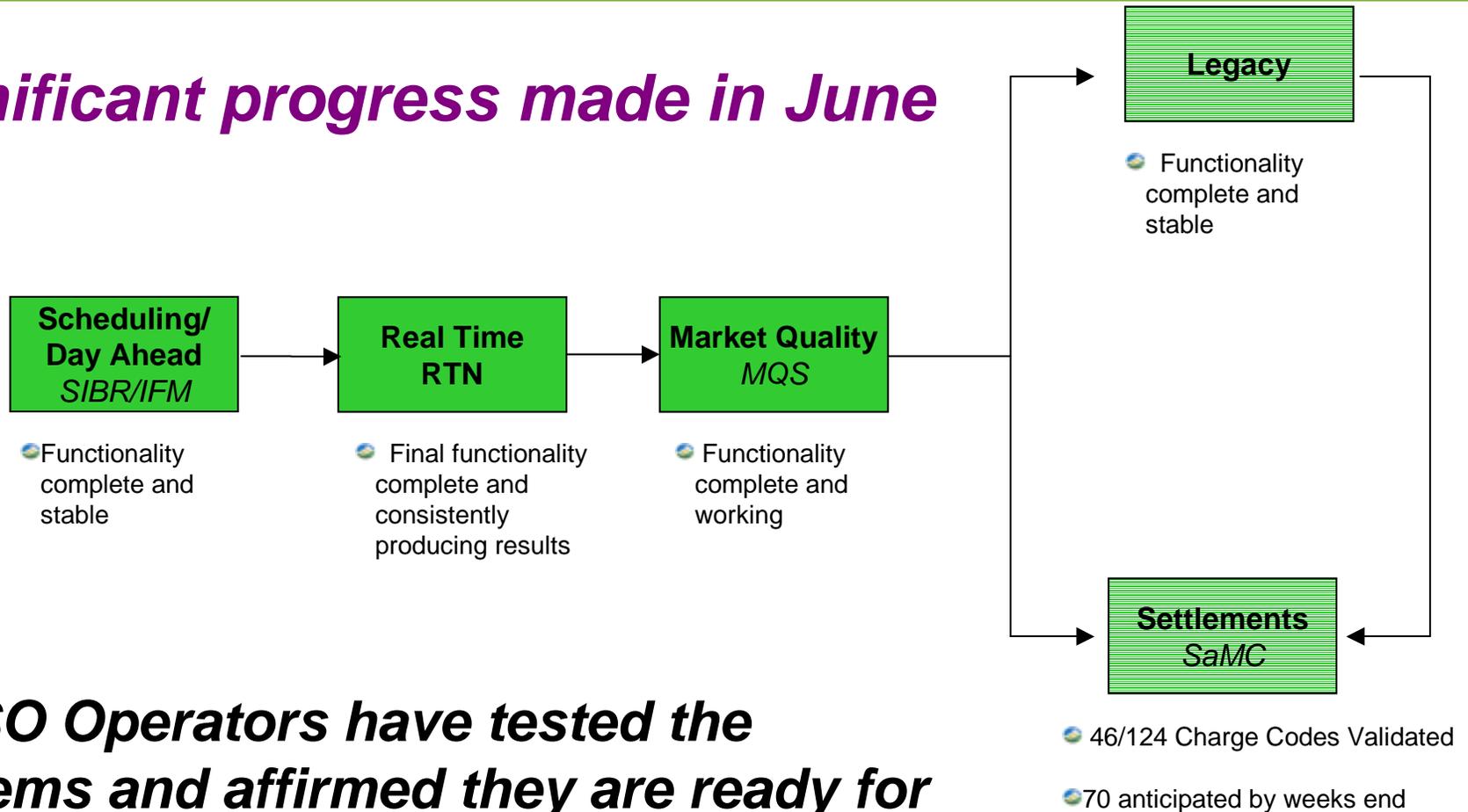
- 🌐 Scenario testing needs to be completed
- 🌐 Charge code Bid-to-Bill validation needs to be confirmed
- 🌐 Critical and Very High variances need to be resolved
- 🌐 High variances need to be resolved or mitigated
- 🌐 Market results need to be traceable to bids & schedules

## Proposed process between now and September ISO Governing Board Meeting:

- 🌐 **July 9:** ISO Governing Board Meeting
  - CAISO readiness
- 🌐 **July 22:** MRTU Implementation Workshop
- 🌐 **August 14:** ISO Governing Board Meeting
  - Status of CAISO and Participant readiness
  - Discuss Fall Go Live Date
- 🌐 **August 26:** MRTU Implementation Workshop
- 🌐 **September 8 - 9:** ISO Governing Board Meeting
  - Status of CAISO and Participant readiness

# Remaining MRTU functionality is completed.

## Significant progress made in June



**CAISO Operators have tested the systems and affirmed they are ready for a Fall Go Live.**

# Day-Ahead Market in market simulation is stable.

## Between June 2<sup>nd</sup> and July 3<sup>rd</sup>:

- 🌐 Day Ahead Market publish results every day = 100%
- 🌐 Results publish by production timeline (1300) = 82%
- 🌐 SIBR
  - Graphical User Interface available = 100%
  - Automated Programmatic Interface availability = 98.96%
- 🌐 Market Participants submitted bids only are used to run the market.
  - Typically, 800 – 1000 bids processed daily
  - July 1<sup>st</sup> Participants submitted 10,000 real-time bids and 800 Day-Ahead bids simultaneously

## Real-Time Market is consistently solving and publishing on time.

Average Market Simulation Performance over last 3 weeks:

- 🌐 HASP hourly intervals solving = 87.5%
- 🌐 RTPD 15-minute intervals solving = 91.7%
- 🌐 RTD 5-minute intervals solving = 97.4%
- 🌐 ADS Dispatches broadcast = 99.8%

# Market Simulation quality of solution is good.

## LECG Report:

- Planned scope of analysis track testing is completed
- Prices and dispatches are consistent with economic objectives
- No fundamental issues with pricing were observed

## Extend the LECG engagement to address:

- Forbidden Region, Wheeling and Nomograms

# Market solution is predominately AC.

- 🌐 Alternating Current (AC) vs. Direct Current (DC) solution
  - AC solution better depicts the power flow and has more accurate pricing
  - DC solution simplifies the topology of the grid and therefore provides an approximation for pricing
- 🌐 Day-Ahead Market solves with AC solution
- 🌐 Real-Time Market solves with AC solution

## Results are published timely and participant interfaces are available.

- 🌐 Publish HASP, RTPD, RTD = 88% of the time
- 🌐 CAISO Market Results Interface (CMRI) available:
  - Graphical User Interface = 99.25%
  - Automated Programmatic Interface = 99.38%
- 🌐 Open Access Same-time Information System (OASIS)
  - Graphical User Interface = 100%
  - Automated Programmatic Interface = 99.75%
- 🌐 MRTU Portal, Scheduling and Logging Information of CAISO (SLIC), and Operational Metering & Reporting (OMAR) are similarly available
- 🌐 While applications are available, still have data issues

# Settlements is the last major hurdle to overcome.

- 🌐 Total of 124 Charge Codes
  - All charge codes have been unit tested
  - All charge codes are available for participant testing
- 🌐 CAISO Bid-to-Bill Validation of all components:
  - Valid Daily/Monthly Charge Codes = 29 of 49
  - Valid Special Charge Codes = 17 of 75
  - Total of 46 of 124 Bid-to-Bill validated
- 🌐 Additional 20 charge codes have been validated in integrated test environment
- 🌐 New monthly settlement should produce at least 6 more validated charge codes
- 🌐 Scenario testing still required for validation of ~ 55 codes

# Settlement statements and invoices are being published.

- 🌐 Daily Statements have published every day of market simulation
- 🌐 Monthly settlement statements
  - March, April & May completed
  - June on track for July 25<sup>th</sup>
- 🌐 Invoices
  - April published
  - May invoice targeted for end of this week
- 🌐 Billing and Processing Interface (BAPI) availability
  - Graphical User Interface = 100%
  - Automated Programmatic Interface = 100%

# Internal Key Readiness Accomplishments

- 🌐 As of June 1st, each Business Unit has completed the Plan, Analysis, Design, Build, and Implement Phase Assessments.
- 🌐 As a result of the May 1<sup>st</sup> effort, both Core and Non-Core personnel and processes are on track for a Fall Go-Live.
- 🌐 Essential knowledge transfer and training activities completed.
- 🌐 Tier 1 Business Processes were tested end-to-end in April.
- 🌐 Grid Operators are in the process of receiving final hands-on refresher training.
- 🌐 Business Unit scenario execution is ongoing.
- 🌐 Business process and transition document sign off is in the final stages

## Key accomplishments and activities for External Readiness are on-going.

- Core MRTU Level 100, 200, and 300 courses delivered to over 1000 representatives of Market Participants
  - Computer-Based Training and DVDs made available
- “Refresher courses” are ongoing
  - 4 classes to date given to over 250 people
- “Go-Live” training plan developed and targeted at Market Participant operators
  - “train the trainer” opportunity for Market Participant
  - Scheduled for July – September
  - Other locations – Houston, Baltimore, Portland, etc
- MRTU assessments and touch points will continue through the summer

# MRTU Readiness Criteria is on-track for a Fall Go Live.

- 🌐 MRTU Readiness Criteria established with participants
- 🌐 Criteria established in accordance with FERC Order
- 🌐 Total Number of MRTU Readiness Criteria: 33
- 🌐 Criteria status as of June 30<sup>th</sup>:
  - # of Completed Readiness Criteria: **7**
  - # of “On Track” Readiness Criteria: **24**
    - On Track means criteria is achievable but not completed
  - # of “Not On Track” Readiness Criteria: **2**
    - Both criteria waiting for Bid-to-Bill settlement validation and invoices

# There are 19 exit criteria in 5 categories to be completed prior to beginning Pre-Production.

## **Variance Count**

- No critical or very-high variances
- High variances will be resolved or mitigated

## **Market Simulation Participation**

- Applications are available and RA Units participating

## **Settlements**

- Publish Daily and Monthly Statements and Invoices
- Validate Charge Codes

## **Markets Run / Solve**

- Specific time criteria for successfully solving markets
- Pass 40 market participant scenarios

## **CAISO IT Requirements – target for July**

- Exercise backup and restoration plans
- Archive and retrieve data

## Market Participant issue status need for Update 2 Exit Criteria is as follows:

Current Simulation	Open	Market Test	Postponed	Closed
Critical	1	1	0	7
Very High	10	11	0	49
High	321	213	11	492

- 🌐 CAISO receives ~ 16 issues per day
- 🌐 Does not include issues prior to February 2008:
  - 29 open issues that are prior to Update 2 simulation
  - 93 market test issues that CAISO has fixed but participants have not affirmatively validated
  - 19 postponed issues are enhancements for after Go Live
  - 706 closed issues have been resolved

# Market Participation Statistics

- 🌐 Average # of SCs participating = 52 of 91
- 🌐 Average % Generating Capacity participating = 83%
- 🌐 Average % Load participating = 73%
- 🌐 Average % Resource Adequacy Units participating = 82.2%
- 🌐 Inter-Scheduling Coordinator Trade volume varies from 200-500 trades / day

## Participant scenarios still need to be completed.

Total of 40 scenarios consisting of:

- 🌐 Impact to supply, demand and Existing Contracts when there is a transmission derate
- 🌐 Insufficient energy, RUC or Ancillary Service bids or self-schedules and relaxation of limits
- 🌐 Insufficient bids to relieve congestion and the impact on LMP and ASMP
- 🌐 Evaluate pump impacts, pseudo ties, tie scheduling priority, over generation conditions, and load flow
- 🌐 Test Exceptional Dispatch, Extremely Long Start, Daylight Savings transition and nomogram implementation

# If Update 2 Exit Criteria were assessed today, where would we be?

## **Variance Count – on track**

- 1 Critical
- 10 Very-high variances that must be resolved
- 321 High variances open that must be resolved or mitigated

## **Market Simulation Participation - *completed***

## **Settlements - on track**

- All Charge Codes unit tested and validated with stub data
- Not All Charge Codes are Bid-to-Bill validated
- Publish Daily and Monthly Statements
- Publish Invoices

## **Markets Run / Solve – on track**

- Specific time criteria for successfully solving markets
  - Day-Ahead – 6 consecutive days met timeline need 7
  - Hour-Ahead – still need consistent consecutive day publishing
  - Quality of Solution – AC solution 100% for Real-Time
- Initially passed 4 Market Participant Scenarios, 40 required

## **CAISO IT Requirements – target for July**

## Cutover/Reversion plan is progressing.

- 🌐 Draft of detailed version of plan schedule to post on 7/21
- 🌐 Continuing review with participants
- 🌐 Table top exercise this summer in preparation for the Fall
  - Walk-through activities leading to Go Live date
  - Simulate various steps including bids, trades and schedule timing; operator communication; and operating requirements over the midnight hour
- 🌐 Reversion decision called when
  - Issues prevent reliable and accurate dispatching and settlement of markets; and
  - No viable work-around can be implemented; and
  - Underlying condition can not be timely resolved