

# Market Redesign and Technology Upgrade



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**California ISO**  
Your Link to Power

**Board of Governors Meeting  
General Session  
July 18-19, 2007**

# MRTU Executive Summary

MRTU Schedule	
Current Period	Trend
	
<p><b>Tracking Delay: 0 weeks</b>  <b>Critical Path Items: Vendor Delivery, Integration Testing</b>  <i>*Based on approved 2/1/08 Go-Live Trade date</i></p>	

MRTU Budget	
Current Period	Trend
	
<p><b>Approved MRTU budget: \$189.223 M*</b>  <i>*Based on approved budget on 12/06</i></p>	

- Application development completed for majority of MRTU scope, with the exception of some FERC scope. Focus shifting to integration testing.
- Integration testing of Real-Time engine underway; focus on Real-Time runs and downstream systems;
- Operating automatically with Real-Time constraints was proven successful at the factory and in Folsom with improved Day-Ahead information
- IMS R2 preliminary evaluation on 7/6 and R2 final evaluation/target end date extended to 7/20 based on Market Participant feedback; R2 report cards to be published on 6/25, 7/2, 7/9 and 7/16.

- PMO continues to process change requests and evaluate against approved budgets.
- PMO evaluating April 20<sup>th</sup>, May 8<sup>th</sup> FERC Orders and June 25<sup>th</sup> FERC Compliance Order.
- PMO implemented resource changes to Testing team to mitigate schedule delays. Budget impact currently being managed without Program contingency.

	 Delay, but will not impact 2/1/08 Go-Live Trade date.
	 Delay, will impact 2/1/08 Go-Live Trade date. Use of contingency funds.

	Variance less than +2 %		Situation has improved since last reporting period.
	Variance between +2 % and +6 %		No change since last reporting period.
	Variance over +6 %		Situation has deteriorated since last reporting period.



### ■ External Readiness:

- ✓ Distributed all action plans from initial Stakeholder assessment
- ✓ Posted the first follow-up Participant Assessment workbook
- ✓ Begun conducting the first follow-up Stakeholder Assessments

### ■ Internal Readiness:

- ✓ Facilitated phase 2 internal process walkthrough kickoff meetings with Human Resources and Treasurer's Office
- ✓ Completed revisions to Internal Readiness Criteria Dashboard and finalized internal assessment results
- ✓ Began first of three Internal Readiness Certification Milestone checkpoints.

### ■ Training team:

- ✓ Continued working on OASIS and No-Pay/UDP CBTs,
- ✓ Continued Grid Ops training development
- ✓ Completed Bid-to-Bill sessions in San Gabriel, Folsom and New York and continued registration for final Bid-to-Bill sessions

## Integrated Market Simulation (IMS) Status

- Release 2 beginning on 5/29, conducted market participant workshops, held briefing and debriefing market participant calls, and published weekly report cards, and issues and variance reports.
- IMS R2 participation is less than IMS R1 in terms of bid submissions and participation in retrieving IMS R2 settlement statements, which has been declining over the simulation. CAISO working on resolution of outstanding issues.
- IMS R3/4 planning stakeholder meeting was on 6/28. Stakeholders requested a re-evaluation of the market simulation timeline given the lessons learned to date.

## CRR Production Readiness

- 66 entities have been registered, executed CRR agreements and became Candidate CRR Holders ready to start CRR allocation/auction
- TRTC Instructions Overdue – still working with some Participating TOs for data
  - CAISO will use data received so far in TRTC Instructions as well as all other available data, including the CRR Dry Run data for: 1) Modeling of ETCs, TORs and CVRs; 2) Adjustments to Load Metrics; and 3) Intertie set aside
- 7/24: Close Load Submittal Market
- 8/1: Close Tier 1 Annual CRR Nominations
- 8/6: Post results from Tier 1 Annual Allocation

## Accomplishments & Milestones

### Integration (Interfaces)

- Completed Cimparser design optimization effort and released to Functional Integration Testing (FIT)
- Continued build for various defects
- Provided support for IMS R2 in staging environment, IMS R3/4 in FIT environment, and Load & Performance testing

### SaMC

- Tested Period 1A process
- Completed negative testing for cancellation and RMR invoice import and cancellation
- Completed R5 charge code design guides

### Integrated Forward Markets/Real-Time Nodal

- IFM CR3C / CR4 FAT: Continued ETC/TOR testing
- Ran CR3B FIT successfully in Folsom environment

### Scheduling Infrastructure and Business Rules (SIBR)

- SIBR CR4 SAT completion on track for 7/6

### Market Quality Systems

- Began Factory Acceptance Testing (FAT) with v2.0
- Created first Expected Energy (EE) and Allocation payloads from IFM/RTM save cases

### Congestion Revenue Rights

- Completed FAT at Nexant for FERC Release 1 functionality
- Completed SAT in Folsom for FERC Release 1 functionality
- Finalized FERC Release 2 requirements for 2009

### Testing

- Integration Testing team conducted IMS R2 Day-Ahead execution
- IMS R3: Prepared FIT environment for Real-Time and Day-Ahead runs for integration with Real-Time; started running RTM continuously in FIT environment

## Planned Activities

### Integration (Interfaces)

- Continue build of SaMC services
- Upgrade framework to 1.9.8
- Continue various FIT environment upgrades
- Analyze and fix duplicate payload issue

### Integrated Forward Markets/Real-Time Nodal

- CR3B FIT to merge Real-Time (RT) with NA
- CR3C / CR4 FAT: Continue ETC/TOR testing; review operator display requests related to FNM

### Legacy

- Request approval to exit CAPS and OASIS SAT

### Market Quality Systems

- Complete FAT and begin SAT
- Support FIT testing for v1.1 FIT for IMS R3/4

### Congestion Revenue Rights

- Continue working with participants to confirm verified source amounts and upload historical load data into CRR system
- MUI load data and nomination upload preparation

### Testing

- Integration Testing team to perform IMS R3 FIT test execution with integrated RT runs
- Support IMS R2 Day Ahead activities; continue IMS R3 test data preparation

### Market Simulation

- R2 preliminary evaluation on 7/13 and R2 final evaluation/target end date on 7/20; R2 report cards to be published on 6/25, 7/2, 7/9, and 7/16
- Develop IMS R3/4 scripts and documents; post technical interface documents
- The target start date for R3/4 is no longer 7/23; the structure and schedule of IMS-R3/4 is being evaluated based on Market Participant feedback and updates will be provided on 7/2 and 7/9.

## MRTU Program Progress as of June 26th, 2007

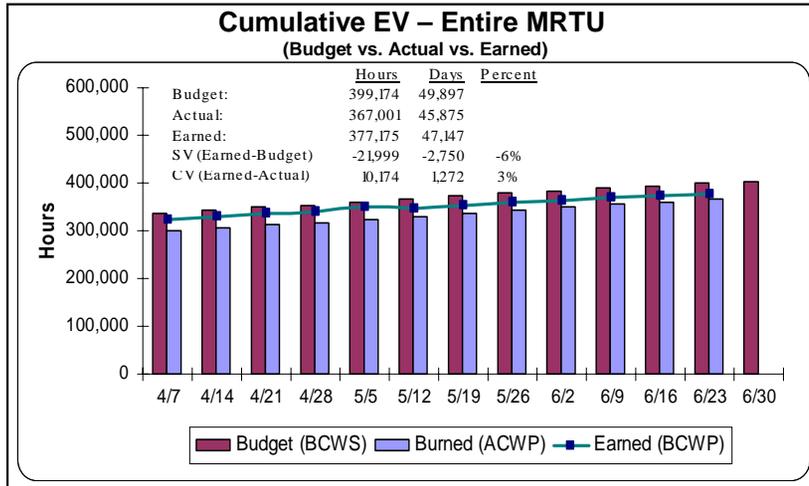
Program Area	Design	Build	Test	Integration Test	End-to-End Test	Market Simulation	Deployment
Phase 1A							
Phase 1B							
<b>Market Systems</b>							
Real-Time Market							
Integrated Forward Market							
Hour-Ahead Processor							
Residual Unit Com.							
Scheduling							
Policy Must-Haves							
FERC Changes - Market Systems							
<b>Settlements</b>							
Base Product							
Charge Types							
Congestion Revenue Rights							
FERC Changes - Settlements/CRRs							
<b>Legacy</b>							
Automated Dispatch System (ADS)							
Reference Level Calculator (RLC)							
Scheduling and Logging System (SLIC)							
Compliance Automation Production System (CAPS)							
Existing Transmission Contract Coordination (ETCC)							
Operational Meter Analysis and Reporting (OMAR)							
Open Access Same-Time Information System (OASIS)							
Reliability-Must-Run Application Validation Engine (RAVE)							
<b>Other Applications</b>							
Market Quality System							
PTR							
Portal							
MFRD							
FERC Changes - Legacy/Other Applications							

Preliminary application - specific testing conducted

Legend	Supporting Activities
Phase not started	
Phase in progress	
Phase complete	

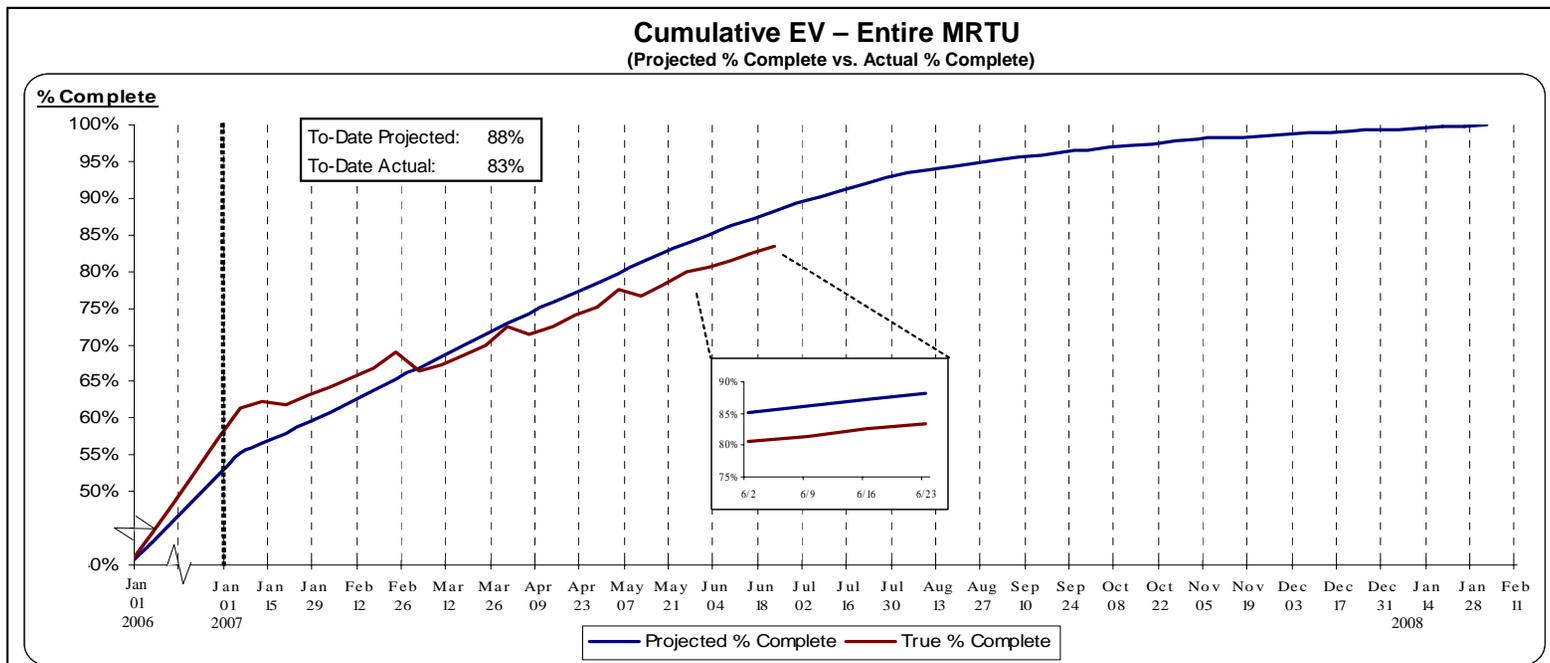
Program Area	Planning	Development	Execution
Internal Readiness			
External Readiness			
Training			
Business Processes (Phase 1)			
BPMs			





**Notes/Comments:**

Graph represents the new baseline as of June 2006.  
Addition of MDS project starting 52107.



Included in Graphs: BPM, Business Process, SIBR, Training, FNM/SE, IFM, MQS, CRR, MDS, MFRD, SaMC, Portal, Testing, Integration, PTR, PMO, Legacy, STiNG, Readiness, and Technical Architecture.

Not Included in Graphs: n/a



# MRTU Financials

California Independent System Operator Corporation

California Independent System Operator  
 Summary of Expected Completion Costs vs. December, 2006 Budget  
 May 31, 2007  
 (In Thousands) \*

Project	Re-baselined Project Costs Dec. 2006 (a)**	Actual Costs Through 2006 (b)	Paid Invoices To Date 5/31/07 (c)	Estimated Costs to Complete (d)	Cost of Project at Completion (e)=(c+d)	Increase (Decrease) from Baseline (f)=(e-a)
<b>Market Redesign</b>						
	\$ 64,807	\$ 49,990	\$ 53,090	\$ 11,717	\$ 64,807	\$ -
1 Automatic Mitigation Procedures/Phase 1A	773	773	773	0	773	0
2 Real Time Markets/Phase 1B	16,297	16,297	16,297	0	16,297	0
3 Integrated Forward Markets/Real -Time Market (IFM/RTM)	33,372	23,673	25,980	7,392	33,372	0
4 Congestion Revenue Rights (CRR)	4,516	3,986	4,191	324	4,516	0
4A Market Quality System (MQS)	6,261	2,315	2,903	3,359	6,261	0
11A Hardware & Software Purchases	3,588	2,947	2,947	642	3,588	0
<b>Technology Upgrade</b>						
	\$ 74,179	\$ 61,020	\$ 66,393	\$ 7,786	\$ 74,179	\$ -
5 Scheduling Infrastructure Business Rules (SIBR)	13,323	9,727	10,258	3,065	13,323	0
6 Settlements and Market Clearing (SaMC)	18,030	16,170	16,994	1,036	18,030	0
6 Master File (MFRD)	2,300	2,291	2,340	(40)	2,300	0
9 Post Transactional Repository (PTR)	2,461	2,236	2,649	(187)	2,461	0
10 Legacy Systems	7,785	6,379	6,870	914	7,785	0
10A State Estimator/Full Network Model	1,345	1,040	1,159	187	1,345	0
11 Technology Infrastructure/ Portal	2,065	2,050	2,051	14	2,065	0
11B Hardware & Software Purchases	6,923	5,197	6,067	857	6,923	0
12A System Integration/Enterprise Architecture	17,989	15,540	17,160	829	17,989	0
12B Technology Architecture	1,957	389	846	1,112	1,957	0
<b>Common Projects ***</b>						
	\$ 41,214	\$ 25,738	\$ 31,724	\$ 9,491	\$ 41,214	\$ -
13 Training/Readiness Projects	9,709	6,975	8,635	1,074	9,709	0
14A Project Management	17,666	11,907	13,057	4,609	17,666	0
14B Testing	13,840	6,856	10,032	3,808	13,840	0
<b>Ongoing Scope Adjustments</b>						
	\$ 1,523	\$ -	\$ -	\$ 1,523	\$ 1,523	\$ -
Pending MRTU Scope Changes	1,523	0	0	1,523	1,523	0
<b>Contingency</b>						
	\$ 7,500	\$ -	\$ -	\$ 7,500	\$ 7,500	\$ -
15 Program Contingency	7,500	0	0	7,500	7,500	0
<b>Total MRTU Project</b>	<b>\$ 189,223</b>	<b>\$ 136,748</b>	<b>\$ 151,206</b>	<b>\$ 38,017</b>	<b>\$ 189,223</b>	<b>\$ -</b>

\* Columns and rows may not total due to rounding.

\*\* Budgets include: Consultant Labor, Vendor Costs, Travel & Meals Expenses, Training, Hardware, Software, Maintenance, Employee Backfill costs

\*\*\* Common Projects Allocation: 47.9% to Market Redesign; 52.1% to Technology Upgrade