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Shaping a Renewed Future



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**California ISO
Non-Generator Resource Regulation Energy Management Project
Implementation Plan – Version 2.1
March 13, 2012**

Revision History

Revision	Date	Description	Author
V0.1	11/22/2011	Initial Draft Posted	J.Malekos
V0.2	12/2/2011	Team review and Comment	L.Zhou
V1.0	12/5/2011	Published Externally	J.Malekos
V2.0	01/25/2012	Version 2.0 update	J.Malekos
V2.1	03/13/2012	Link to direct telemetry requirements for NGR Fall Market Sim deadline is July 27,2012	J.Malekos

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1. Introduction

From 2010 through 2011 the California ISO conducted a comprehensive stakeholder process to further the goal of bringing Regulation Energy Management (REM) for Non-Generating Resources (NGR) into its wholesale markets.

This is a new model that removes the barriers to the participation of limited energy storage and other dispatchable demand resources participation in the ISO markets consistent with FERC Order 719 and 890.

Regulation Energy Management for a Non-Generating Resource is an important market enhancement that enables new types of resources to participate in regulation markets.

The implementation of Non-generator Resources will:

- Create the initial model for energy storage devices to fully participate in ISO markets; and
- Enable Dispatchable Demand Response to participate in all ISO markets, by implementing a base model and then working with market participants through a workshop to determine if any enhancements are required to that model.
- Help ease integration issues with the 33% RPS standard
- Allow a smooth implementation of AB 2514.

Note: In connection with its February 23, 2012 stakeholder workshop, the ISO is examining enhancements to its base non-generator resource model to provide additional functionality for dispatchable demand response resources.

Table describes the non-generator resource model:
Figure 1 –

Project	Technology	Operation Range	Option to REM (Special Treatment)	Regulation	Spin/Non-Spin	Energy	Qualified MW
Non-Generator Resource (NGR) <i>New functions in EMS, and market from Bid to Bill</i>	Limited Energy Storage Resource (LESR) (Flywheel, battery, energy storage)	Operation range between negative (Charge) and positive (Discharge), constrained by State of Charge (SOC)	REM	SC Bid	No	No	15 minute continuous delivery
			Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification
	Dispatch-able Demand Response (DDR) Implementation of the Participating Load (PLR) model	Operation range is non-positive	REM	SC Bid	No	No	15 minute continuous delivery
			Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification

This document is intended to provide participants additional information during the implementation phase. The contents are in draft form and will be finalized as part of business practice manuals, technical specifications or other design documents. The information ultimately contained in these or other formal documents supersedes any information contained in this implementation plan document. The ISO plans to issue updates to this document as implementation activities progress.

2. Registration Process

Spring Market Simulation Registration

The due date for participation in the 2012 spring NGR-LESR-REM-only market simulation has passed. Registered market participants will need to work with their Scheduling Coordinator to submit the NGR RDT 6.0 by 3/15/12 for the spring market simulation.

Registration due date for participation in the 2012 fall Market simulation is **July 27, 2012**

Potential NGR market simulation participants must submit the following initial resource characteristics listed below.

Resource Characteristics

1. Select Type
 - a. Limited Energy Storage Resource. (LESR)
2. Select REM or NON-REM (Phase I market simulation is REM only)



3. Resource characteristics
 - a. Location:
 - i. substation name, voltage level
 - b. size (Pmin, Pmax)
 - c. Energy: MWh
4. Scheduling Coordinator ID
5. Submit RDT 6.0 (definitions listed below)
 - a. http://www.caiso.com/Documents/GeneratorResourceDataTemplate_IntertieResourceDataTemplateDataDefinitions.xls

Registration Process

New market participants wishing to participate in ISO markets, are required to secure a Wholesale Distribution Agreement Tariff (WDAT) while simultaneously contacting ISO interconnection process. Lead time for this process is currently 6-8 months.

New Market Participant action items:

- Submit for and receive approval of a WDAT with local IOU.
- In parallel to that process the potential market participant need to engage the ISO the following ways
 - Access to the ISO Grid and market:
 - <http://www.caiso.com/participate/Pages/Generation/Default.aspx>
 - Fill out the New Participant Contact Form:
 - <http://www.caiso.com/participate/Pages/NewParticipantContactUs.aspx>
 - Initiate the process for the NGR to be modeled into upcoming model builds:
 - email: NewResourceImplementation@caiso.com
 - Update: this link will contain the overall process for implementing an NGR resource
 - http://www.caiso.com/Documents/FullNetworkModelDocumentation_ProcessReferenceMatrix.xls
 - CAISO> Participate > Generation > Process and requirements.

Documents to Review:

- Review and prepare to complete all of the tasks associated with the new generator checklist: **Storage Owner Checklist.xls**
- Review ISO generator Interconnection Manual: **GIM 12202010.pdf**
- Metering Requirements
 - Metering/Telemetry site including supported hardware:
 - <http://www.caiso.com/market/Pages/MeteringTelemetry/Default.aspx>
 - Direct telemetry requirements for NGR's: **Direct Telemetry Requirement for Non-Generator Resources.pdf**

Note: Work with your ISO assigned account manager to complete the Checklist.

Helpful links:

Regulation Energy Management Stakeholder Process:

<http://www.caiso.com/Documents/Regulation%20energy%20management%20-%20implementation>

Pay for Performance Regulation:

<http://www.caiso.com/informed/Pages/StakeholderProcesses/PayforPerformanceRegulation.aspx>

The ISO requires the use of a certified Scheduling Coordinator (SC) to be eligible to submit bids in the ISO Day-Ahead market. Each entity participating in a market simulation will be required to designate a Scheduling Coordinator that will be authorized to execute regulation up and down transactions on its behalf. The SC designated may be an existing SC or the participant may certify a new SC by going through the SC Certification process. (Note: there is roughly a 120 day lead time for market participants to become a certified SC.)

Certified scheduling coordinators and contact information

The lists contain the primary contact for the scheduling coordinator along with ISO primary and back up client representatives.

http://www.caiso.com/Documents/Certified%20scheduling%20coordinators%20and%20contact%20information/List-SchedulingCoordinators_CRRHoldersandConvergenceBiddingEntities.pdf

The registration timeline is illustrated below.

Figure 2 – NGR-REM Pseudo Market Simulation Timeline



Figure 3 – NGR-REM Physical Resource Registration Process

See Appendix A

As part of the registration process and in order to prepare participants for market simulation and implementation of Regulation Energy Management, the ISO has scheduled a web conference training course on March 26, 2012. The ISO strongly encourages all participants planning to register to participate in Pseudo REM resource simulation or in production to attend this training course.

3. NGR Phased Approach

This section describes the two individual phased approaches for this project.

Phase I

Phase one of the ISO’s market simulation includes the deployment of the base non-generator resource model for regulation energy management.

The following applications will be updated in Phase one:

1. The SIBR Application will be updated to use the new version of following B2B web services
 - RetrieveCurrentBidResults_SIBRv20120401_AP
 - RetrieveCurrentBidResults_SIBRv20120401_DocAttach_AP
 - SubmitRawBidSet_SIBRv20120401_AP
 - SubmitRawBidSet_SIBRv20120401_DocAttach_AP
 - RetrieveCleanBidSet_SIBRv20120401_AP
 - RetrieveCleanBidSet_SIBRv20120401_DocAttach_AP
2. Settlement Application
3. EMS application

Phase one of the market simulation is scheduled to occur between April 16, 2012 through May 4, 2012. This phase of the market simulation will not include any physical resources, but will allow market participants to analyze the economic viability of potential non-generator resources using the regulation energy management market enhancement. This phase will also provide fictitious testing of the base non-generator resource model. See figure 5. Below.

Note: Phase one will not include outage management functionality or compliance monitoring.

Figure 4 – Phase I Highlighted

Project	Technology	Model	Option to REM (Special Treatment)	Regulation	Spin/Non-Spin	Energy	Qualified MW
Non-Generator Resource (NGR) <i>New functions in EMS, and market from Bid to Bill</i>	Limited Energy Storage Resource (LESR) (Flywheel, battery, energy storage)	Operation range between negative (Charge) and positive (Discharge), constrained by State of Charge (SOC)	REM	SC Bid	No	No	15 minute continuous delivery
			Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification
	Dispatch-able Demand Response	Operation range is non-positive,	REM	SC Bid	No	No	15 minute continuous delivery

	(DDR) Implementation of the Participating Load (PLR) model		Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification
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Phase II

Phase two will deploy the remainder of the non-generator resource model including the ability for Non-Generator Resources to participate in energy and Ancillary Services markets without the use of regulation energy management. See figure 5. Below. This final code set is scheduled for deployment and activation in 2012 Fall release. This means the changes listed in phase one will also become effective during the 2012 fall release.

The following applications will be affected for the 2012 Fall Release:

- Master File along with new version of web services.
- MQS
- Settlement with Regulation up /down changes
- SLIC /OMS functionality

Phase two market simulation is tentatively scheduled on 9/17/12 – 10/5/12. Registration due date for the fall market simulation is 7/27/12.

Note: Phase two includes outage management functionality and compliance monitoring for non-generator resources.

Figure 5 – Phase II Highlighted

Project	Technology	Model	Option to REM (Special Treatment)	Regulation	Spin/Non-Spin	Energy	Qualified MW
Non-Generator Resource (NGR) <i>New functions in EMS, and market from Bid to Bill</i>	Limited Energy Storage Resource (LESR) (Flywheel, battery, energy storage)	Operation range between negative (Charge) and positive (Discharge), constrained by State of Charge (SOC)	REM	SC Bid	No	No	15 minute continuous delivery
			Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification
	Dispatch-able Demand Response (DDR) Implementation of the Participating Load (PLR) model	Operation range is non-positive,	REM	SC Bid	No	No	15 minute continuous delivery
			Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification

Phase two includes:

- Ability of non-generator resources to participate in all ancillary service markets as qualified.
- Deployment of the full NGR model into production. See figure 6. Below

Figure 6 – Complete NGR Model

Project	Technology	Model	Option to REM (Special Treatment)	Regulation	Spin/Non-Spin	Energy	Qualified MW
Non-Generator Resource (NGR) <i>New functions in EMS, and market from Bid to Bill</i>	Limited Energy Storage Resource (LESR) (Flywheel, battery, energy storage)	Operation range between negative (Charge) and positive (Discharge), constrained by State of Charge (SOC)	REM	SC Bid	No	No	15 minute continuous delivery
			Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification
	Dispatch-able Demand Response (DDR) Implementation of the Participating Load (PLR) model	Operation range is non-positive,	REM	SC Bid	No	No	15 minute continuous delivery
			Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification

The ISO announced at its January 30, 2012 Market and Performance Forum that it will schedule a workshop on February 23, 2012 for market participants interested in discussing additions to non-generator resource market functionality in order to refine the support for dispatchable demand response resources.

4. Technical Specifications

All technical specification updates can be found at:

CAISO.com > Release Planning > spring 2012 release > Regulation energy management – implementation

Master File

RDT 6.0 has been posted on the CAISO website. The RDT includes examples data specific for an NGR-LESR-REM-only option however the template is based on the full function.

Update: RDT 6.0 is available:

http://www.caiso.com/Documents/Regulation%20energy%20management%20-%20implementation/GeneratorResourceDataTemplate_IntertieResourceDataTemplateDataDefinitions.xls

RDT 6.0 will be activated in the 2012 Fall Release although 2012 Spring Market Simulation participants are required to complete this RDT by 3/15/12.

SIBR Rules

All XSD/WSDL artifacts were updated and posted on December 19, 2011.

Separate from that, the Release Notes and the Rules, SIBR BR (v4.91), that supports the new functionality of the Charge Limits was also be posted by December 19, 2011.

The ISO will update the Scheduling Infrastructure Business Rules (SIBR), Raw Bid, Clean Bid and Bid Results web services on April 10, 2012 in support of the 2012 Spring Release. As a result of this update the ISO will no longer support these older versions: V20090801 submitRawBidSet, V20091101 CleanBidSet and the V20091101 BidResults services.

The following SIBR XSDs will be updated to support NGR-REM:

- RawBidSet XSD
- CleanBidSet XSD
- BidResult XSD

TargetNamespace (wsdl)	Xmlns (xsd)
2012-04-01/submitRawBidSet_v20120401.wsdl	2012-04-01/RawBidSet_v20120401.xsd
	2008-05-21/RequestBidResults.xsd
	2006-06-13/StandardAttachmentInfor.xsd
	2006-06-13/StandardOutput.xsd
2012-04-01/retrieveCurrentBidResults_v20120401.wsdl	2012-04-01/BidResult_v20120401.xsd
	2008-05-21/RequestBidResults.xsd
	2006-06-13/StandardAttachmentInfor.xsd
	2006-06-13/StandardOutput.xsd
2012-04-01/retrieveCleanBidSet_v20120401.wsdl	2012-04-01/CleanBidSet_v20120401.xsd
	2008-05-21/RequestCleanBidSet.xsd
	2006-06-13/StandardAttachmentInfor.xsd
	2006-06-13/StandardOutput.xsd

In addition to the new services, the following existing web services will continue to be supported:

TargetNamespace (wsdl)	Xmlns (xsd)
2011-10-01/retrieveCurrentBidResults_v20111001.wsdl	2011-10-01/BidResult_v20111001.xsd
	2008-05-21/RequestBidResults.xsd
	2006-06-13/StandardAttachmentInfor.xsd
	2006-06-13/StandardOutput.xsd
2009-08-01/retrieveCleanBidSet_v20111001.wsdl	2011-10-01/CleanBidSet_v20111001.xsd
	2008-05-21/RequestCleanBidSet.xsd
	2006-06-13/StandardAttachmentInfor.xsd
	2006-06-13/StandardOutput.xsd
2009-11-01/submitRawBidSet_v20091101.wsdl	2009-11-01/RawBidSet_v20091101.xsd
	2006-06-13/StandardAttachmentInfor.xsd
	2006-06-13/SubmitStandardOutput.xsd



Details can be found in Market Notice: Spring 2012 Release SIBR Clean Bid and Bid Results Web Services Update

Link:

http://www.caiso.com/Documents/Spring2012ReleaseSIBRCleanBid_BidResultsWebServicesUpdate.htm

For more information please see next edition or the CAISO website.

CAISO.com > Release Planning > spring 2012 release > Regulation energy management – implementation

Update: SIBR BR v4.9.1 is available:

http://www.caiso.com/Documents/Regulation%20energy%20management%20-%20implementation/SIBR_BusinessRulesBiddingSpring2012Release.xls

SIBR Interface Specifications for Bidding Services v8 clean

[http://www.caiso.com/Documents/Draft%20technical%20specifications%20-%20SIBR%20Web%20Service%20Changes/SIBRInterfaceSpecification_BiddingServices_v8\(LESR\)Clean.pdf](http://www.caiso.com/Documents/Draft%20technical%20specifications%20-%20SIBR%20Web%20Service%20Changes/SIBRInterfaceSpecification_BiddingServices_v8(LESR)Clean.pdf)

SIBR BidResults Web Service Artifacts (20120401 LESR)

http://www.caiso.com/Documents/Draft%20technical%20specifications%20-%20SIBR%20Web%20Service%20Changes/SIBR_BidResultsWebServiceArtifacts.zip

SIBR CleanBidSet Web Service Artifacts (20120401 LESR)

http://www.caiso.com/Documents/Draft%20technical%20specifications%20-%20SIBR%20Web%20Service%20Changes/SIBR_CleanBidSetWebServiceArtifacts.zip

SIBR RawBidSet Web Service Artifacts (20120401 LESR)

http://www.caiso.com/Documents/Draft%20technical%20specifications%20-%20SIBR%20Web%20Service%20Changes/SIBR_RawBidSetWebServiceArtifacts.zip

EMS

<http://www.caiso.com/Documents/DirectTelemetryRequirement-Non-GeneratorResourcesV1-0.pdf>

EMS shall receive telemetry every four seconds for following points

- Maximum Operating Limit (MW);
- Minimum Operating Limit (MW);
- Resource Instantaneous Output(Net,Gross,POD MW);
- Resource Charge/Load Pickup Ramp Rate (MW/min); -- Optional
- Resource Discharge/Load Drop Ramp Rate (MW/min); -- Optional
- Resource Connectivity Status (On/Off);
- Resource AGC Control Status (Remote/Local);

- State of Charge (SOC), represents the actual stored energy (MWh)
- Curtailment Energy limit(CEL) in MWh for DR only

Additional information is described in ISO website:

<http://www.caiso.com/thegrid/operations/gcp/index.html>

5. Business Requirements

The ISO has posted an updated external version of the Business Requirements Specification (BRS) document to the website. The BRS describes the additional business-level detail on the functionality that the ISO is building.

The ISO has also posted an external *frequently asked questions* document to the website. This document explains in detail many questions that stem from the posted external BRS.

For physical resources there is a direct telemetry requirement.

The external BRS and FAQ are posted on the ISO Website at:
CAISO.com > Release Planning > spring 2012 release > Regulation energy management – implementation

6. Settlements

NGR-REM will have the following impacts on settlements. For the purposes of NGR-REM, there are no new charge codes

The following charge codes will have additional BDs to describe the new SOC category for AS:

1. CC 6124 – No Pay Spinning Reserve Settlement
2. CC 6224 – No Pay Non Spinning Reserve Settlement
3. CC 6524 – Non Compliance Regulation Up Settlement
4. CC 6624 – Non Compliance Regulation Down Settlement
5. CC 6824 – No Pay Residual Unit Commitment (RUC) Settlement

The following charge codes will be updated and these changes all apply to DDR to account for the baseload for participating load – an additional MW quantity will be determined in the measure demand pre-calc and used in all the charge codes for assessing measured and metered demand allocation:

1. HVAC meter pre-calc – dispatchable demand response baseload
2. Measured Demand over control area – 7 pre-calc charge codes
 - a. Measured Demand Black Start Excluding Exports (MD_BLACK_START_PC)
 - b. Measured Demand Emissions Over Control Area Excluding External Exports (MD_EMISSIONS_PC)
 - c. Measured Demand Over Control Area (MD_CONT_AREA_PC)
 - d. Measured Demand Over Control Area Excluding MSS Energy (MD_NON_MSS_PC)
 - e. Measured Demand Over Control Area Excluding Transmission Loss Adjustment (MD_NON_TRANS_LOSS_PC)



- f. Measured Demand MSS Netting (MD_MSS_NETTING_PC)
- g. Measured Demand over TAC area (MD_TAC_AREA)
- 3. Ancillary service pre-calc
- 4. Spin/non spin pre-calc
- 5. SCP pre-calc
- 6. CC 525 – FERC Fee Over / Under Recovery
- 7. CC 550 – FERC Fee Settlement – due Monthly
- 8. CC 551- FERC Fee Settlement – due Annually
- 9. CC 6474 – Real Time Unaccounted for Energy Settlement
- 10. CC 6477 – Real Time Imbalance Energy Offset
- 11. CC 6480 (may be accommodated in Measured demand pc) – Excess Cost Neutrality Allocation
- 12. CC 6490 – NERC/WECC
- 13. CC 6636 – IFM Bid Cost Recovery Tier 1 Allocation
- 14. CC 6637 – IFM Bid Cost Recovery Tier 2 Allocation
- 15. CC 6678 – Real Time Bid Cost Recovery Allocation
- 16. CC 6806 – Day Ahead Residual Unit Commitment (RUC) Tier 1 Allocation
- 17. CC 6807 – Day Ahead Residual Unit Commitment (RUC) Tier 2 Allocation
- 18. CC 6774 – Real Time Congestion Offset

The file format for statements and invoices will not change.

7. Tariff

The ISO filed the Regulation Energy Management for non-generator resource tariff with FERC on August 22, 2011 in Docket ER11-4353. On November 30, 2011, FERC issued an order accepting the ISO's tariff provisions. The ISO will seek additional authority to modify the effective date of the tariff provisions to implement the two-phased implementation approach discussed above.

For more information regarding the NGR-REM tariff please visit:
CAISO.com > Legal & Regulatory > FERC Filings > FERC Filings – 2010

CAISO.com > Stay Informed > Stakeholder Processes > Renewables integration market and product review phase 1 > Regulation Energy Management – Tariff language

8. Testing and Market Simulation

The ISO will do internal testing and conduct a thorough market simulation for registered market participants. Market participants must be registered in order to participate in the market simulations. Please contact Jeremy Malekos at 916-608-1058 for more information.

Testing

The ISO will test the new and affected systems, processes, and reports affected by the implementation of NGR-REM phase I.

ISO will be testing the following systems during the testing phase:

- 1) SIBR
- 2) IFM/RTM
- 3) EMS
- 4) MF
- 5) CMRI
- 6) B2B SIBR web services

The ISO will use market participants submitted RDTs to setup NGR-REM resources in master file. ISO systems will use the master file data to test the NGR-REM functionality. For testing purposes, ISO will create a bid set for NGR-REM purposes and submitting in SIBR. Various systems will use these bids to test the functionality.

Additional details on the process for submitting sample bid sets will be provided at the operations training scheduled for Monday, March 26th at 10am PST to 12pm

Market Simulation

The ISO will publish a Market Simulation Plan. This plan will contain a detailed schedule and a description of simulation scenarios.

Market Simulation plan will post end of March 19, 2012.

9. BPM Updates

The following matrix outlines the BPMs and sections that have been identified as impacted by the NGR-REM project. Additional impacts may still be identified and will be added to the change list. The BPM draft language is anticipated to be available in the first quarter of 2012.

Table 1 – Preliminary List of Planned BPM Updates

Topic	BPM	Section
	Manage Full Network Model	
Definition of NGR	Market Operations	2.1
Changes to high level description of Ancillary Services	Market Operations	2.2.2
Changes to Ancillary Services procurement rules	Market Operations	4.3
Special considerations regarding NGR	Market Operations	4.5
Clarifications regarding certification and testing requirements for NGR	Market Operations	4.6
Special rules regarding commitment of NGR in IFM	Market Operations	6.6.2
Special rules regarding dispatch of NGR in RTM	Market Operations	7.1
Special rules regarding dispatch	Market Operations	7.8



Topic	BPM	Section
	Manage Full Network Model	
of NGR in RTED		
Changes to expected energy calculation	Market Operations	Appendix attachment C
Changes to high level description of Ancillary Services Bids	Market Instruments	3.2
Addition of NGR and DDR specific bid parameters to bid components section	Market Instruments	4.1
Addition of NGR specific bid parameters to energy bids	Market Instruments	5.1
Addition of DDR specific bid parameters to energy bids	Market Instruments	5.2
Changes to Ancillary Services procurement rules	Market Instruments	6.1
Addition of NGR and DDR specific parameters to RDT	Market Instruments	B.2.1 and B.2.2
	Reliability Requirements	
NGR outages will be treated the same as a generator resource.	Outage Management	Section 9 of Tariff
No Changes to BPM	Compliance and Monitoring	Removed
See phase I, Phase II impacts below.	Settlements and Billing	

Phase 1 Impacts – 18 Settlement BPMs potentially impacted:

- HVAC meter pre-calc
- Measured Demand Black Start Excluding Exports
- Measured Demand Emissions Over Control Area Excluding External Exports
- Measured Demand Over Control Area
- Measured Demand Over Control Area Excluding MSS Energy
- Measured Demand Over Control Area Excluding Transmission Loss Adjustment
- MSS Netting
- Measured Demand over TAC area
- Ancillary service pre-calc
- 6474 – Real Time Unaccounted for Energy Settlement
- 6477 – Real Time Imbalance Energy Offset
- 6490 – NERC/WECC
- 6636 – IFM Bid Cost Recovery Tier 1 Allocation
- 6637 – IFM Bid Cost Recovery Tier 2 Allocation
- 6678 – Real Time Bid Cost Recovery Allocation
- 6806 – Day Ahead Residual Unit Commitment (RUC) Tier 1 Allocation
- 6807 – Day Ahead Residual Unit Commitment (RUC) Tier 2 Allocation
- 6774 – Real Time Congestion Offset

Phase 2 Impacts – 8 Settlement BPMs potentially impacted:

- 6124 – No Pay Spinning Reserve Settlement
- 6224 – No Pay Non Spinning Reserve Settlement
- 6524 – Non Compliance Regulation Up Settlement
- 6624 – Non Compliance Regulation Down Settlement
- 6824 – No Pay Residual Unit Commitment (RUC) Settlement
- Spin/non spin No Pay pre-calc
- RUC No Pay pre-calc
- Reg No Pay pre-calc

The tentative schedule for updating BPMs is presented in Table 2.

Table 2 – Preliminary BPM Update Schedule

Event	Date
Post New PRR addressing NGR-REM	9/4/12
Initial BPM web conference call	9/25/2012
-Open for 10BD comment period	
Post recommendations from conference call	10/9/12
-Open for 10BD comment period	
Final BPM web Conference call	11/14/12
Final approval of NGR-REM BPM language	11/27/12
Phase I and phase II Changes effective	TBD

BPM Updates will follow the Proposed Revision Request (PRR) process. BPM changes submitted to Market participants six weeks before phase II market simulation, TBD.

10. Training

The ISO will schedule a web conference training Monday, March 26th at 10am PST to 12pm.

The call-in numbers are as follows:

United States: (800) 230-1059

International: (612) 234-9959

Web log-in is as follows:

www.webmeeting.att.com

Meeting No. 866-205-4243

Access code 4011761

Topics to be covered during that session will be, but not limited to:

- Overview of REM-NGR initiative
- Determining REM capacity
- Bidding into the Day-Ahead and Real Time Markets
- Settlement impacts

Training materials will be provided two weeks prior to scheduled training.

For a complete schedule please go to:

CAISO.com > Release Planning > spring 2012 release > Regulation energy management – implementation

Or

CAISO.com > Participation > Training > Customer Training Catalog

11. Deployment Activities and Key Milestones

Table 3 contains key milestones.

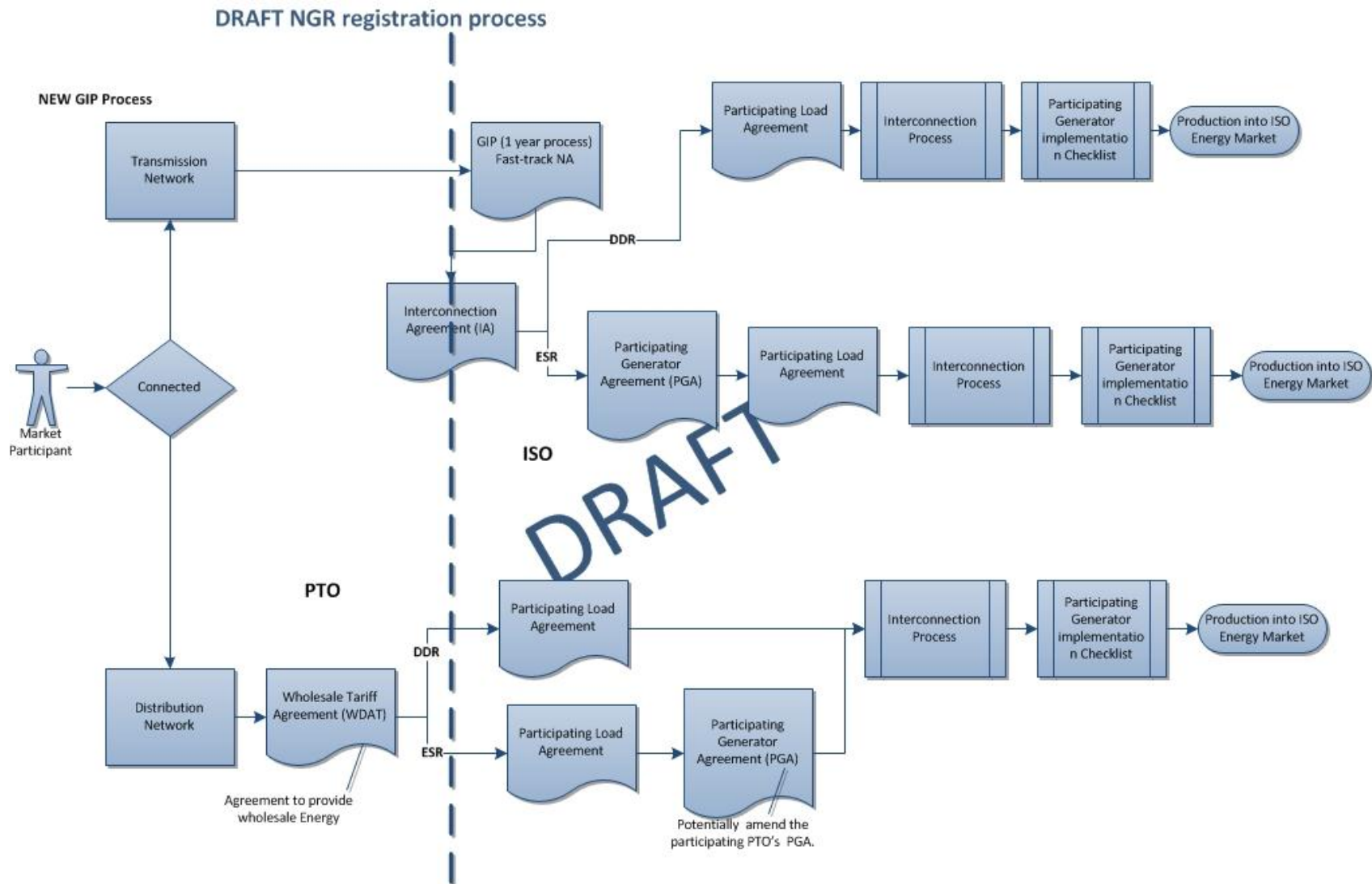
Table 3 – Key Milestones

Milestone	Date
Business Requirement Specifications Published	Oct 25, 2011
Draft Tariff Language Posted	Jul 27, 2011
Technical Specifications Published	Dec 19, 2011
NGR-REM Phase I Market Simulation Registration Deadline	Dec 20, 2011
DDR model workshop	Feb 23, 2012
Submit RDT 6.0 for Spring market Simulation	Mar 15, 2012
Web Conference Market Participant Training	Mar 26, 2012
Settlement Configuration Guides Posted*	Apr 16 – May 4 2012
Market Simulation Begins	Apr 16, 2012
NGR phase II Market Simulation Registration Deadline	Jul 27, 2012
2012 Fall Market Simulation	Sep 17 – Oct 5 2012
NGR Effective Date – First market trade date	Dec 1, 2012

*Based on April 16, DRAFT technical documents (draft configuration guides) will be posted week of March 12, 2012 (6 weeks before the start of Settlements market simulation). *Settlements will enter the PRRs in time for the fall release (not for spring market simulation)*

Appendix A DRAFT NGR registration process

Image is on the next page



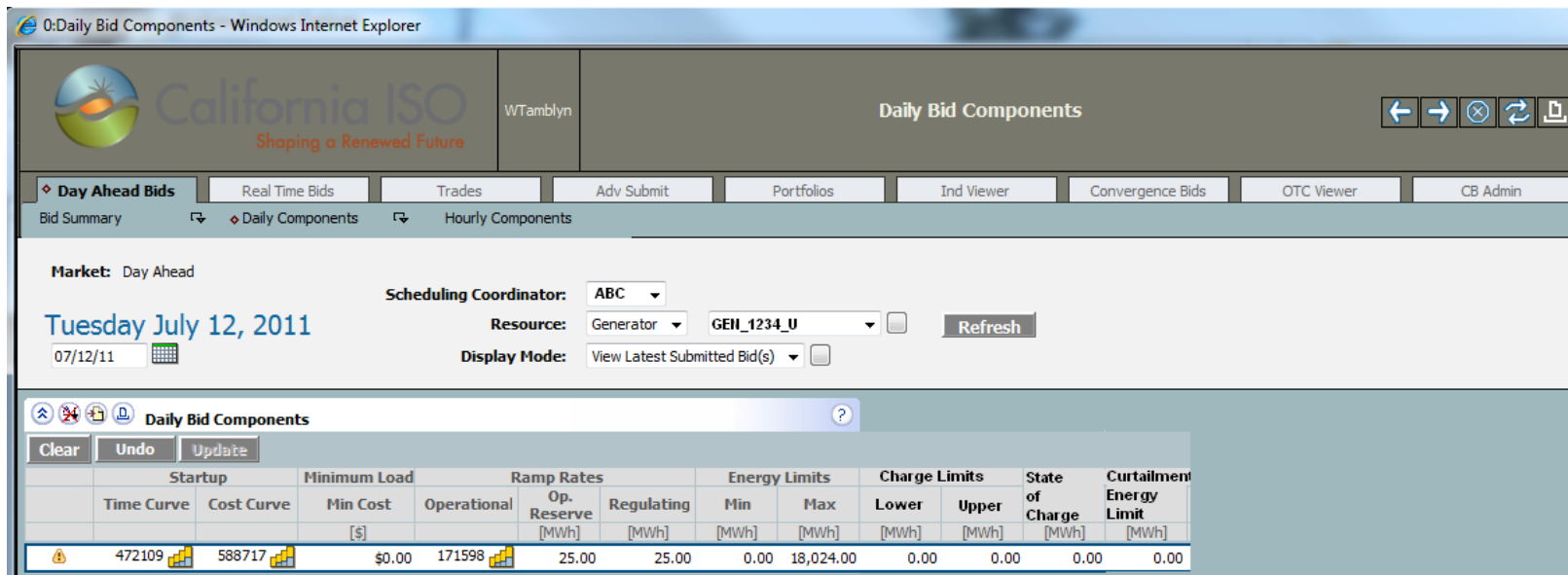
Appendix B: SIBR Screen Captures

Storyboards

Daily/ Real Time Bid Components Screen Mockup for LESR and DDRs

The new values (Lower Charge Limit, Upper Charge Limit, and Energy Curtailment Limit) will be added to existing Daily Bid Components and Real-Time Bid Components screens. The new values will be available for view and modification for NGRs (LESRs and DDRs) only. Other resources may see the new fields, but they should be “greyed out.”

The column “state of charge” shall be greyed out in the screen shot.



0:Daily Bid Components - Windows Internet Explorer

California ISO Shaping a Renewed Future

WTamblyn

Daily Bid Components

Day Ahead Bids | Real Time Bids | Trades | Adv Submit | Portfolios | Ind Viewer | Convergence Bids | OTC Viewer | CB Admin

Market: Day Ahead

Scheduling Coordinator: ABC

Resource: Generator GEN_1234_U Refresh

Display Mode: View Latest Submitted Bid(s)

Tuesday July 12, 2011

07/12/11

	Startup		Minimum Load		Ramp Rates		Energy Limits		Charge Limits		State of Charge	Curtailment Energy Limit
	Time Curve	Cost Curve	Min Cost	Operational	Op. Reserve	Regulating	Min	Max	Lower	Upper		
472109	472109	588717	\$0.00	171598	25.00	25.00	0.00	18,024.00	0.00	0.00	0.00	0.00