Review of Reliability Must-Run and Capacity Procurement Mechanism

Stakeholder Working Group Meeting
May 30, 2018

Keith Johnson
Infrastructure and Regulatory Policy Manager

Agenda

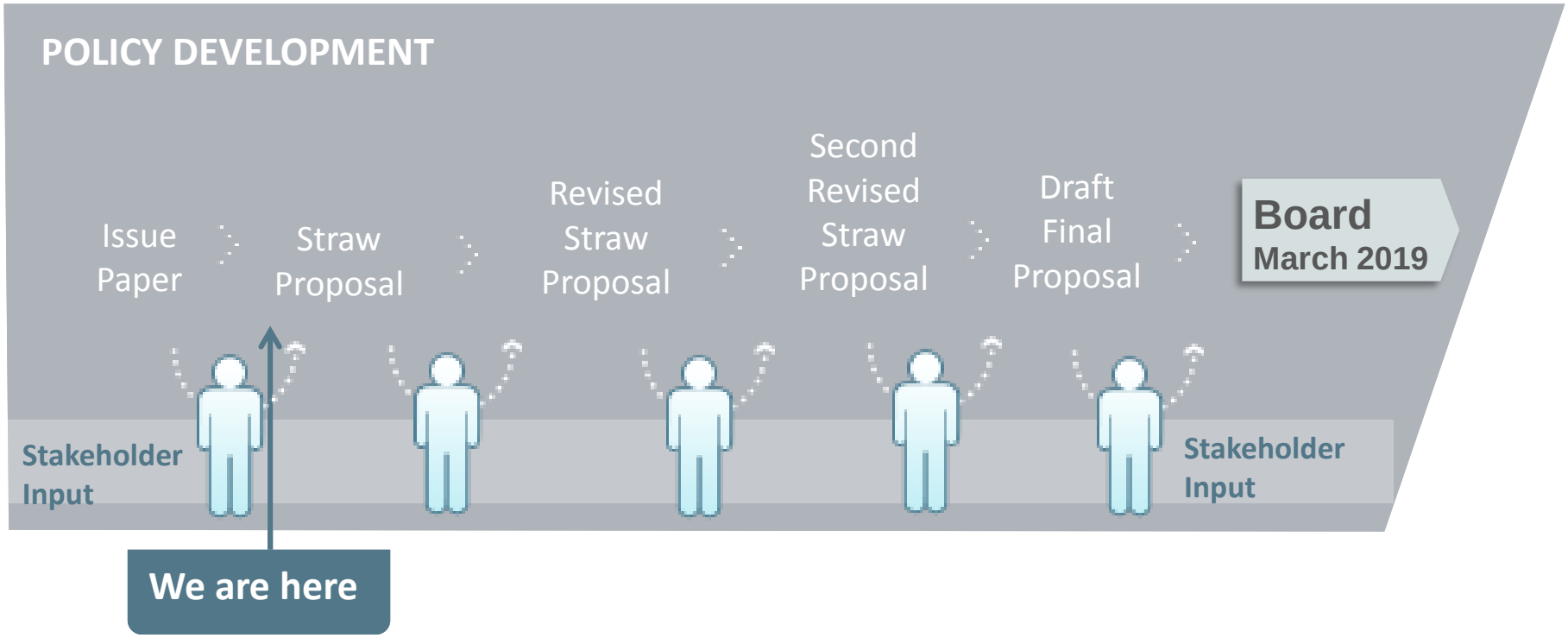
Time	Item	Speaker
10:00-10:05	Introduction and stakeholder process	Jody Cross
10:05-10:15	Approach, scope and schedule	Keith Johnson
10:15-10:25	Increased transparency of planned retirements	Keith Johnson
10:25-11:20	Stakeholders presentations	Various stakeholders
11:20-11:40	Year-ahead use of CPM	David Zlotlow
11:40-12:15	ISO backstop procurement processes	Gabe Murtaugh
12:15-1:00	Lunch break	(on your own)
1:00-1:20	Flexible RA credits from RMR units	Keith Johnson
1:20-1:45	Must-offer obligation for RMR units	Keith Johnson
1:45-2:15	Year-ahead CPM cost allocation and RA credits	Gabe Murtaugh
2:15-2:35	Interim change to pro forma RMR agreement	Sidney Mannheim
2:35-2:55	Lower RMR banking costs and settlement items	Chhanna Hasegawa James Lynn
2:55-3:00	Next steps	Jody Cross

INTRODUCTION AND STAKEHOLDER PROCESS

Jody Cross

Stakeholder Engagement & Policy Specialist

Stakeholder Process



List of acronyms used in this presentation

AS	Ancillary services
CEC	California Energy Commission
CPM	Capacity procurement mechanism
CPUC	California Public Utilities Commission
DMM	Department of Market Monitoring
FERC	Federal Energy Regulatory Commission
ISO	California Independent System Operator Corporation
LAR	Local area requirement
LCR	Local capacity requirements
LSE	Load serving entity
MMA	Major maintenance adder
MOO	Must-offer obligation
OAL	Office of Administrative Law of State of California
OTC	Once-through cooling
PTO	Participating transmission owner
RA	Resource adequacy
RAAIM	Resource adequacy availability incentive mechanism
RMR	Reliability must run
ROR	Risk of retirement
RUC	Residual unit commitment
SC	Scheduling coordinator
SWRCB	State Water Resources Control Board
TAC	Transmission access charge

APPROACH, SCOPE AND SCHEDULE

Keith Johnson

Infrastructure & Regulatory Policy Manager

The ISO is advocating changes to RA program at the CPUC to address increased use of backstop procurement.

- Enhance flexible RA capacity procurement requirements
- Establish multi-year RA procurement
- Vet appropriate load forecasting assumptions
- Establish Local Capacity Area-specific procurement
- Modify counting rules to align resource capabilities with operational needs
- Establish LSE RA assessment methodology to ensure operational needs are met given transforming grid
- Move up annual RA showing timeline to enable timely and informed retirement decisions

The ISO is changing its approach for addressing RMR and CPM issues based on the April 12 FERC order.

- In its order, FERC
  - Rejected ISO's January 12 filing to enhance the ROR CPM procurement process as FERC found a spring window would front-run the RA process, distort prices and interfere with bilateral RA
  - Strongly encouraged the ISO and stakeholders to adopt a holistic, not a piecemeal, approach
  - Encouraged the ISO to propose a package of more comprehensive reforms

The ISO has consolidated all of the items under consideration and will review them holistically.

- Enhance ISO backstop procurement processes
- Modify compensation paid for RMR and CPM
- Make RMR units subject to a MOO
- Provide flexible RA credits from RMR units
- Modify cost allocation of CPM to reflect load migration
- Lower banking costs for RMR invoicing
- Streamline and automate RMR settlement process
- Make interim change to RMR pro forma agreement

A formal settlement approach may be needed to reach agreement on changes to RMR and CPM.

- RMR construct took years to develop and was heavily litigated given complexity and trade-offs
- CPM tariff was developed through settlement discussions as parties were so far apart in their views
- It may not be possible to achieve changes to RMR and CPM using a traditional, iterative stakeholder process
- Do stakeholders see value in using a settlement approach now for some or all of the topics?

The ISO has targeted taking its RMR and CPM proposal to the Board in March 2019.

Stage	Date	Milestone
Milestones prior to May 30	Nov 2, 2017	ISO commits to undertake review of RMR and CPM
	Jan 2, 2018	Issue market notice announcing this initiative
	Jan 23	Post issue paper and straw proposal for two items
	Jan 30	Hold stakeholder meeting
	Feb 20	Stakeholder written comments due
	Mar 13	Post draft final proposal for two items
	Mar 20	Hold stakeholder meeting
	Apr 10	Stakeholder written comments due
Straw proposal	May 30	Hold working group meeting
	Jun 26	Post new straw proposal
	Jul 11	Hold stakeholder meeting
	Aug 7	Stakeholder written comments due
Revised straw proposal	Aug 27	Hold working group meeting
	Sep 19	Post revised straw proposal
	Sep 27	Hold stakeholder meeting
	Oct 23	Stakeholder written comments due
Second revised straw proposal	Nov 1	Hold working group meeting
	Nov 19	Post second revised straw proposal
	Nov 26	Hold stakeholder meeting
	Dec 21	Stakeholder written comments due
Draft final proposal	Jan 23, 2019	Post draft final proposal
	Jan 30	Hold stakeholder meeting
	Feb 22	Stakeholder written comments due
Final proposal	Mar	Present proposal to Board of Governors

INCREASED TRANSPARENCY OF PLANNED RETIREMENTS

Keith Johnson

Infrastructure & Regulatory Policy Manager

The ISO will now notify stakeholders when it receives a notice that a resource plans to retire.

- Early in this initiative stakeholders asked the ISO to make this change to provide an early heads up of potential ISO backstop procurement designations
- New policy is being implemented through a change to Generator Management BPM
  - Implementation expected by July 1
  - New policy establishes if resource owner sends such a notice the information will not be considered confidential
  - For more information, see PRR 1056 at http://www.caiso.com/Documents/Presentation-BusinessPracticeManualChangeManagementMay222018.pdf

STAKEHOLDERS PRESENTATIONS

Various stakeholders

YEAR-AHEAD USE OF CPM

David Zlotlow

Senior Counsel

Background.

- The CPUC has asked the ISO to consider in this initiative whether the December 22, 2017 year-ahead annual CPM designation in the SDG&E TAC area has effectively triggered a review of the CPM mechanism design per the terms of the settlement agreement

The ISO filed, and FERC approved, the current CPM construct in 2015 (FERC Docket No. ER15-1783).

- The ISO filed the current CPM provisions under FERC rules as an offer of settlement
- FERC found it was not “a settlement filed pursuant to” FERC rules, but would be treated “as record evidence in support of CAISO’s section 205 filing”
- For this initiative, the ISO will follow the settlement provisions outside of the section 205 filing

A non-tariff element of the CPM settlement was to consider LSEs' use of CPM for primary procurement.

- If one of two triggers are met, then the ISO has "a stakeholder initiative to explore whether load serving entities have relied on the CPM, to an unacceptable extent, as a primary means of capacity procurement"
  - Trigger #1 – In two-year period, did same LSE twice use CPM to meet RA deficiency?
  - Trigger #2 – Does any LSE ever meet more than half of its RA obligation with CPM capacity?

The CPM settlement defines the scope of the expected stakeholder initiative.

- In light of the triggering CPM, the initiative would consider two items
  - Item #1 – “[P]ossible solutions to discourage load serving entities from relying on the CPM for forward capacity procurement in the future”
  - Item #2 – “[P]rospectively-applicable remedial measures designed to avoid load serving entity reliance on the CPM”

On December 22, 2017, the ISO issued two year-ahead annual local CPM designations.

- Annual CPM designations for 2018 were issued to resources in the PG&E and SDG&E TAC areas
- Some LSEs in the SDG&E TAC area met 50%+ of their local RA obligation from the CPM designation of the Encina power plant
- Therefore, it appears that trigger #2 was met

The December 22 CPM designations in the San Diego TAC area were driven by unique circumstances.

- CPUC jurisdictional entities indicated that they were prohibited from contracting with generation resources for deliveries beyond the SWRCB's OTC compliance date
- This caused the CPUC's jurisdictional entities in San Diego TAC area to not purchase the Encina power plant as RA
- On August 15, 2017, the SWRCB approved an OTC compliance date extension until December 31, 2018, and the OAL approved the policy change on November 29, 2017
- Notwithstanding the OTC compliance date extension, SDG&E did not pursue a RA contract with Encina nor did the CPUC provide direction to do so

The December 22 CPM designations (continued)

- As a result, most LSEs (especially small LSEs) could not find any resource to procure in the San Diego TAC area
- The ISO ended up procuring Encina through a year-ahead annual CPM designation to fulfill the local need
- When the ISO then applied RA credits from the CPM procurement to deficient LSEs, almost all of the small LSEs in the San Diego TAC area became fully procured relative to their RA obligation
- The CPUC's order to exclude Encina from RA procurement resulted in the CPM settlement provision being triggered

The ISO notes the following relative to this instance and the CPM settlement provision.

- It appears that a change in design of CPM would not have affected the December 22 procurement
  - Procurement would have occurred regardless of CPM price or other design parameter
- Different remedial measures than the current CPM provisions would not have discouraged LSEs from relying on CPM for forward capacity procurement
- There is no evidence that LSEs have intentionally relied on CPM to an unacceptable extent as a primary means of capacity procurement

ISO BACKSTOP PROCUREMENT PROCESSES

Gabe Murtaugh

Senior Infrastructure & Regulatory Policy Developer

Some stakeholders believe the current backstop procurement processes can be improved.

- Goal today
  - Describe how current processes work
  - Stakeholders can inform ISO what they think needs to be improved from what exists today and why
    - Specifically describe how processes should be changed

Section 43 of the ISO tariff defines seven types of CPM designations.

1. Local
   a) Monthly*
   b) Annual
2. Collective Deficiency
3. System*
   a) Monthly*
   b) Annual*
4. Significant Event
5. Exceptional Dispatch
6. Risk of Retirement*
7. Cumulative Flexible*
   a) Monthly*
   b) Annual*

* The ISO has never made this type of CPM designation

Provided below are some things to be aware of relative to the ISO's CPM.

To date the ISO has used only four types of CPM designations

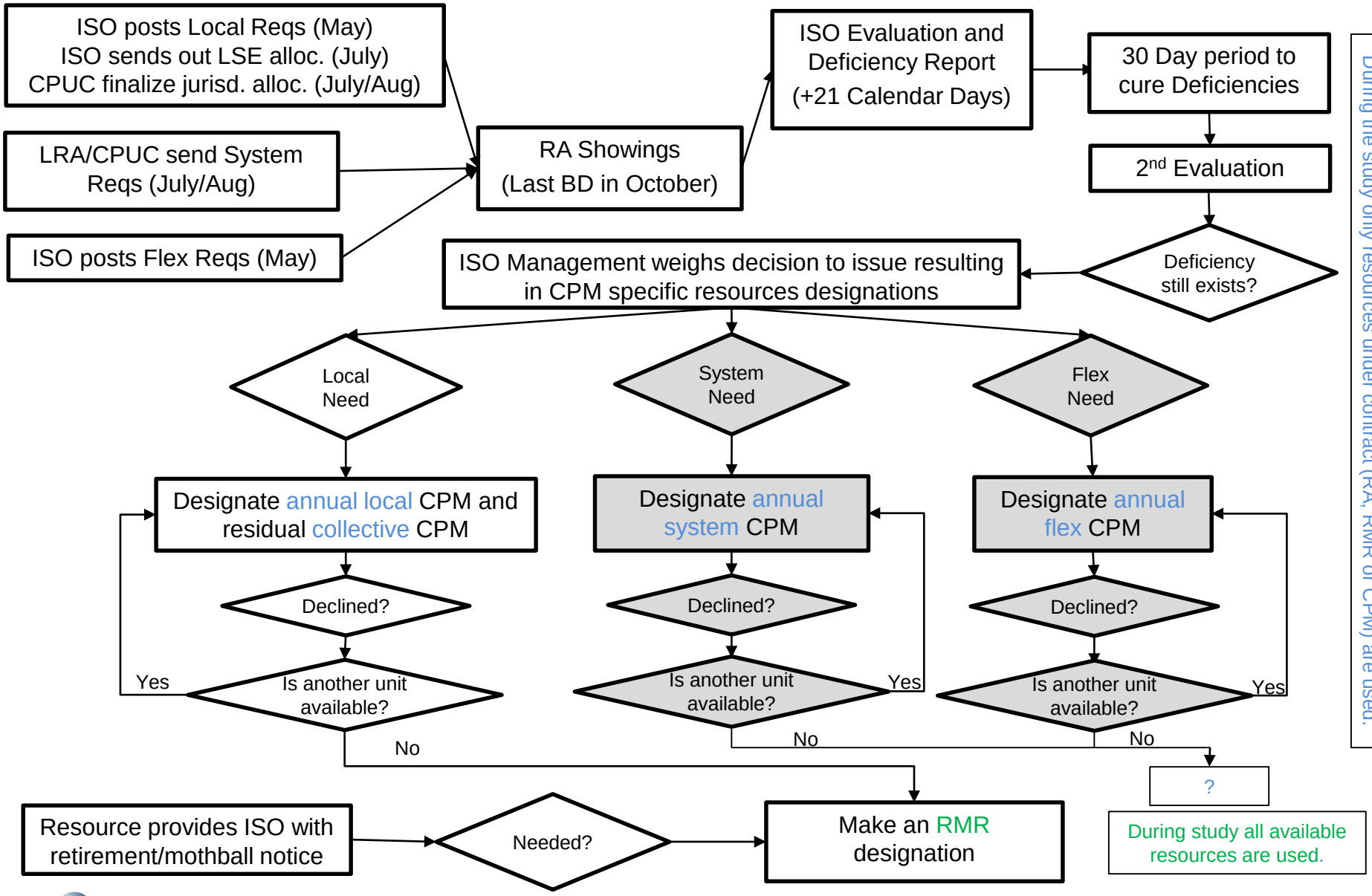
1. Exceptional Dispatch - When a resource is exceptionally dispatched above its RA designation
2. Significant Event - May be used when there is a significant change in capacity availability
3. Local Annual Deficiency - Made after ISO evaluation period
4. Local Collective Deficiency - Made after ISO evaluation period

All resources may bid into CPM auction

- If a resource has a bid, it may not refuse CPM offer
- If a resource does not bid, it may refuse the CPM offer and is inserted above bid stack; if cleared receives cap of $6.31/kW-month

Provided below are some things to be aware of relative to the ISO's RMR.

- RMR can only be designated by
  - A declined CPM designation from a needed resource
  - An alert from a resource announcing its plan to retire or mothball
- General process is to procure CPM before RMR; however, resources going off-line or intending to retire may "front-run" both the RA and CPM processes
- Resources that are going off-line, face more challenging criteria to determine a future need
  - Studies assume all other resources may be used to meet reliability needs, which is unlike the typical process that only assumes availability of resources with RA contracts


ISO posts Local Reqs (May)
ISO sends out LSE alloc. (July)
CPUC finalize jurisd. alloc. (July/Aug)
LRA/CPUC send System Reqs (July/Aug)
ISO posts Flex Reqs (May)
RA Showings (Last BD in October)
ISO Evaluation and Deficiency Report (+21 Calendar Days)
30 Day period to cure Deficiencies
2nd Evaluation
Deficiency still exists?
ISO Management weighs decision to issue resulting in CPM specific resources designations
Local Need
System Need
Flex Need
Designate annual local CPM and residual collective CPM
Designate annual system CPM
Designate annual flex CPM
Declined?
Declined?
Declined?
Yes
Is another unit available?
Yes
Is another unit available?
Yes
Is another unit available?
No
No
No
?
During study all available resources are used.
Resource provides ISO with retirement/mothball notice
Needed?
Make an RMR designation
During the study only resources under contract (RA, RMR or CPM) are used.

FLEXIBLE RA CREDITS FROM RMR UNITS

Keith Johnson

Infrastructure & Regulatory Policy Manager

The CPUC has asked the ISO to consider allocating flexible RA credits from RMR resources.

- Current RMR pro forma agreement does not cover procurement and allocation of flexible capacity
- CPUC staff has asked that RMR designations include the flexible attributes of the RMR resource
- The ISO supports this policy
- The ISO seeks stakeholder input on any conditions that might need to be established, such as
  - Ensuring that an RMR resource is not counted as providing flexible RA when it does not meet the performance requirements
  - Resource owner having to agree within RMR agreement that it will fulfill flexible RA operating requirements

MUST-OFFER OBLIGATION FOR RMR UNITS

Keith Johnson

Infrastructure & Regulatory Policy Manager

On March 13 the ISO posted a draft final proposal to have RMR resources subject to a MOO.

- Many stakeholders support the ISO moving forward with its proposal
- However, several of the stakeholders that support a MOO request that the ISO clarify how maintenance costs will be treated in bids given an RMR agreement covers such costs

March 13 proposal (continued)

- Several stakeholders believe the ISO should not file a MOO requirement until the ISO has conducted a thorough discussion with stakeholders of all of the items in the scope of this initiative
- Some stakeholders believe that if there is to be a MOO additional resource performance requirements are needed beyond what the ISO has proposed, such as making an RMR resource subject to the RAAIM mechanism that RA resources are subject to

The ISO proposes a MOO for RMR Units similar to the RA MOO.

Condition 2 Units	Condition 1 Units
SC submits energy and AS cost-based bids during all hours unit is physically available [1] If energy and AS bids are not submitted by SC up to full RMR capacity, ISO will submit cost-based bids up to RMR capacity, with bids generated in same way ISO currently generates RA bids when a RA unit fails to submit bids [2] [3] • ISO generated energy bids will include - Start-up costs - Minimum load costs - Energy costs • ISO generated AS bids will be priced at $0/MW per hour ISO can instruct unit to not run, such as for a reliability or environmental limitation, or if unit would exceed its contract service limits	SC submits energy and AS market-based bids during all hours unit is physically available [4] If energy and AS bids are not submitted by SC up to full RMR capacity, ISO will submit cost-based bids up to RMR capacity in same manner as for Condition 2 RMR units (shown in adjacent column)

[1] AS bids can be greater than $0/MW per hour using formula in Schedule M in RMR agreement. SC can include opportunity costs and major maintenance adders in bids. SC credits back to PTO market revenues above RMR contract cost.
[2] If ISO inserts AS bids, AS bids will be priced at $0/MW per hour like is done for RA capacity (will not use the formula in Schedule M of RMR agreement). Will include major maintenance adders in start-up costs and minimum load costs. Opportunity costs will be included.
[3] There will be an obligation in RUC for the full RMR capacity at $0 (and if RUC design changes over time, will revisit in future).
[4] These market bids are subject to local market power mitigation.

RMR resources need to be subject to performance incentives.

- Section 8.5, Non-Performance Penalty, of current RMR pro forma agreement provides a financial penalty for non-performance
  - Section 8.5 provided in March 13 paper in Appendix 1
  - Penalty calculated for each hour of penalty period in which owner is not deemed to be in full compliance with a dispatch notice and is not excused from performance
- The ISO seeks feedback from stakeholders regarding whether RMR resources also should be subject to RAAIM performance financial penalties and bonuses

Major maintenance costs (adders) and opportunity costs should be included in bids.

- ISO believes that major maintenance costs (adders) and opportunity costs should be reflected in bids, rather than in static RMR payments - this ensures that the true cost of unit operation is considered in market decisions
- DMM currently reviews and approves all MMA and opportunity costs currently considered in the market
- ISO expects that DMM would approve MMA and opportunity costs as a part of the RMR agreement process
- DMM will continue to not approve costs that are already being paid elsewhere (such as in an RMR agreement)

YEAR-AHEAD CPM COST ALLOCATION AND RA CREDITS

Gabe Murtaugh

Senior Infrastructure & Regulatory Policy Developer

Stakeholders have requested ISO review year-ahead CPM procurement cost allocation to address load migration.

- Goal today
  - Describe how current processes work
  - Stakeholders can inform ISO what they think needs to be improved from what exists today and why
    - Specifically describe how processes should be changed

Cost allocation of CPM (per Tariff Section 43).

1. Local
   a) Monthly (ratio of LSE deficiency vs. sum of deficiency by TAC)
   b) Annual (ratio of LSE deficiency vs. sum of deficiency by TAC)
2. **Collective Deficiency** (forecasted load share ratio)
3. System
   a) Monthly (ratio of LSE deficiency vs. aggregate deficiency)
   b) Annual (ratio of LSE deficiency vs. aggregate deficiency)
4. Significant Event (percent of actual load)
5. Exceptional Dispatch (percent of actual load)
6. Risk of Retirement (percent of actual load)
7. Cumulative Flexible
   a) Monthly (ratio of LSE deficiency vs. sum of deficiency by LAR)
   b) Annual (ratio of LSE deficiency vs. sum of deficiency by LAR)

Current timeline for the local CPM process.

- CEC load forecast is received June 30 of the prior year
- LCR allocations are sent out in mid-July of the prior year
- LSEs make 100% local showing on last business day in October
- Compliance check is done automatically by ISO's CIRA system against allocations
- Local and collective CPM, if needed, are designated in December
- Cost responsibility and RA credit are awarded in the year-ahead timeframe for each month of CPM designations
  - Generally no local credit is awarded for January or February because Local RA showings are required 45 days prior to the RA month
- Settlement occurs (payments and collections) immediately after each month

Consider an example with two LSEs (A and B) in a TAC area and a CPM procurement of 200 MW.

- Costs and credit for local annual CPM designations are first allocated to deficient LSEs within a local area
- Costs and credit for collective deficiency CPM designations are made according to load share ratios
  - Local capacity requirements, determined in the July Local Capacity Study, are used to calculate shares

Month	Short (A)	Short (B)	Tot Short		Local	Collective
…	…	…	…		…	…
April	0	120	120		120	80
May	50	130	180		180	20
June	60	140	200		200	0
…	…	…	…		…	…

Potential changes to the cost allocation methodology.

- Costs for collective deficiencies could be allocated later
  - Costs could be allocated based on actual load share, and “trued-up” after each month
  - Costs could be allocated based on estimated load shares at local showing window (49 days prior to month)
- Credit for collective deficiencies could be allocated later
  - Credit could be allocated based on estimated load shares at local showing window (49 days prior to month)

INTERIM CHANGE TO PRO FORMA RMR AGREEMENT

Sidney Mannheim

Assistant General Counsel - Tariff

The ISO is considering filing this summer a potential limited interim change to pro forma RMR agreement.

- Current RMR agreement
  - Allows ISO to extend the term of agreement by giving notice no later than October 1 (2.1(b))
  - Limits ISO's right to re-designate an RMR unit in event ISO terminates or does not extend RMR agreement
    - ISO may not designated during the one year period following termination (2.2(d))
    - Except under limited circumstances

Potential limited interim change to pro forma RMR agreement (continued)

- Proposed interim modification to pro forma RMR agreement
  - ISO to have right to terminate RMR agreement once FERC accepts new pro forma RMR agreement
  - ISO has right to re-designate RMR units (and other units at same facility) under the new pro forma agreement

LOWER RMR BANKING COSTS AND SETTLEMENT ITEMS

Chhanna Hasegawa

Lead Corporate & Market Accountant

James Lynn

Senior Advisor Market Settlement Design

The goal of this item is to lower banking costs associated with RMR invoicing.

- Will explore eliminating tariff requirement where ISO now must open new accounts for each RMR contract and in its place have ISO establish a bank trust account specific to administering RMR related transactions

The proposed new process will result in efficient RMR invoice clearing.

- Current process
  - Requires minimum of two bank accounts for each RMR agreement (more if multi-party)
  - RMR accounts have zero balances at all times since disbursements are made same day as receipt of payments
- Proposed process
  - Use current market clearing bank account to receive and disburse RMR funds
  - RMR funds will still be tracked individually
  - Invoices/payment advices are cleared on specified due dates

Proposed new process (continued)

- Advantages of using market clearing bank account
  - Reduces costs - By using only one bank account instead of multiple accounts (ISO pays fixed fees to maintain each RMR account)
  - Minimizes potential bank fraud - By using only one account as opposed to multiple accounts
  - Reduces administrative burden - Each RMR account has to be monitored, reconciled and verified
  - Eliminates confusion - RMR participants do not have to choose from a list of bank accounts when submitting payments

The following elements will be considered within the streamline and automate RMR settlement item.

- Standardize RMR invoice submittal timeline
  - Establish set submittal timelines
  - Align with market settlement invoicing timelines
  - Align settlement dispute timeline

- Simplify and automate validations
  - Configure validation equations
  - Publish validation results to participants

NEXT STEPS

Jody Cross

Stakeholder Engagement & Policy Specialist

Next Steps

- June 26 – ISO posts new straw proposal
- July 11 – ISO holds stakeholder meeting
- August 7 – Stakeholder written comments due