



# **Review of Reliability Must-Run and Capacity Procurement Mechanism**

**Draft Final Proposal for Phase 1 Items and Items  
under consideration for Phase 2**

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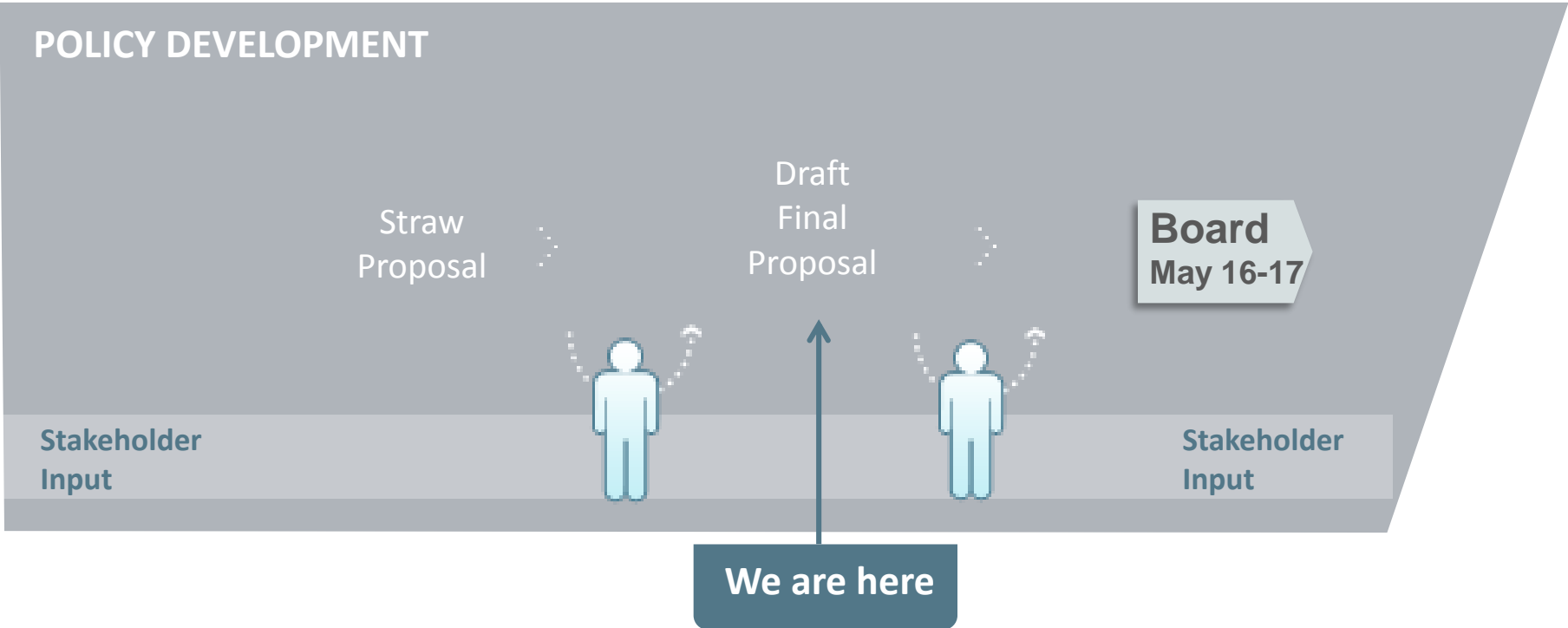
Stakeholder Meeting  
March 20, 2018

# Agenda

Time	Item	Speaker
10:00-10:10	Stakeholder Process and Schedule	Jody Cross
10:10-10:25	Scope of Initiative	Keith Johnson
10:25-10:40	Background on RMR	Riddhi Ray
10:40-10:55	Interplay of RA, RMR and CPM	Keith Johnson
10:55-12:00	Straw Proposal for RMR MOO Item	Keith Johnson
12:00-1:00	Lunch Break	(on your own)
1:00-1:30	Straw Proposal for Notification Item	Keith Johnson
1:30-2:50	Potential Phase 2 Items	Keith Johnson
2:50-3:00	Next Steps	Jody Cross

# STAKEHOLDER PROCESS AND SCHEDULE

# Phase 1 Stakeholder Process



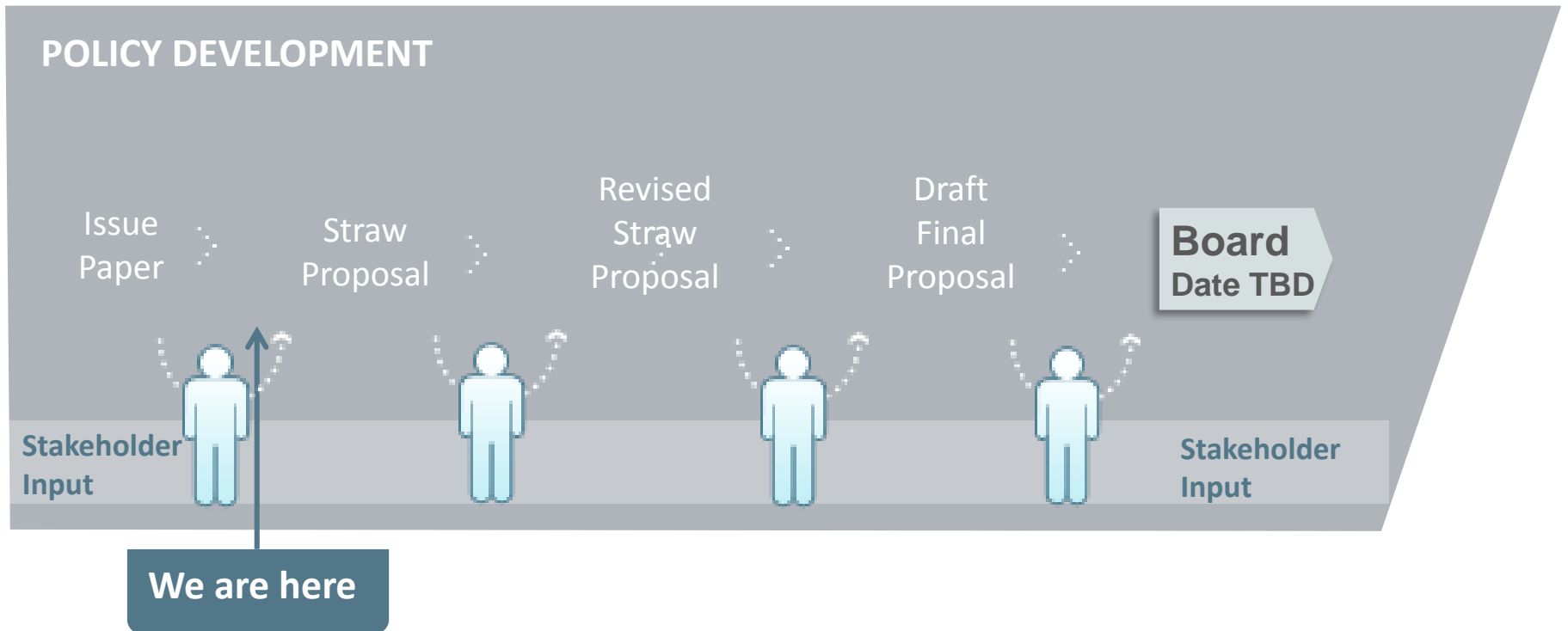
# Phase 1 Schedule

Stage	Date	Milestone
Kick-off	Nov 2, 2017	ISO commits to undertake review of RMR and CPM
	Jan 2, 2018	Issue market notice announcing this initiative
Issue paper and straw proposal for phase 1 items	Jan 23	Post issue paper and straw proposal for phase 1 items
	Jan 30	Hold stakeholder meeting
	Feb 20	Stakeholder written comments due
Draft final proposal for phase 1 items	Mar 13	Post draft final proposal for phase 1 items
	Mar 20	Hold stakeholder meeting
	Apr 10	Stakeholder written comments due
Final proposal for phase 1 RMR MOO item	May 16-17	Present phase 1 RMR MOO proposal to Board of Governors

## Schedule for the phase 1 notifications item

- Will be implemented through a business practice manual (“BPM”), which does not require Board approval (so it can move independently of May Board meeting)
- Will implement as soon as possible, with pace determined after receipt of April 10 written stakeholder comments

# Phase 2 Stakeholder Process



# Phase 2 Schedule

Stage	Date	Milestone
Straw proposal for phase 2 items	May 30	Hold working group meeting
	Jun 26	Post straw proposal for phase 2 items
	Jul 11	Hold stakeholder meeting
	Aug 7	Stakeholder written comments due
Revised straw proposal for phase 2 items	Aug 27	Hold working group meeting
	Sep 19	Post draft final proposal for phase 2 items
	Sep 27	Hold stakeholder meeting
	Oct 23	Stakeholder written comments due
Draft final proposal for phase 2 items	TBD	TBD
Final proposal for phase 2 items	TBD	Present phase 2 proposal to Board of Governors

# SCOPE OF INITIATIVE



# The ISO is considering improvements to its existing backstop procurement mechanisms.

- In light of
  - Experience gained with implementing new reliability must-run agreements (“RMR”) and year-ahead capacity procurement mechanism designations (“CPM”)
  - Concerns identified by the ISO and stakeholders
- Will review
  - RMR tariff provisions, pro forma RMR agreement and procurement process
  - Seek to clarify and align use of RMR procurement and backstop procurement under the CPM tariff provisions

# This initiative will proceed in two phases.

	Scope
Phase 1	<p>RMR items that require immediate attention and implementation</p> <hr/> <ul style="list-style-type: none"><li>• Implement notifications item as soon as possible</li><li>• Board approval of must-offer obligation (“MOO”) for RMR units item on May 16-17, 2018</li><li>• RMR MOO item in place in fall 2018 for 2019 operating year</li></ul>
Phase 2	<p>Address potential additional refinements to RMR tariff provisions, pro forma RMR agreement and procurement process</p> <p>Evaluate creating a comprehensive and cohesive RMR and CPM procurement framework</p> <hr/> <ul style="list-style-type: none"><li>• Board approval TBD</li><li>• In place in fall 2019 for 2020 operating year</li></ul>

The March 13 paper lays out the approach for the two phases.

- ISO's draft final proposal for the two items in phase 1
  - Make RMR Condition 1 and 2 units subject to a MOO for energy and ancillary services (“AS”) comparable to MOO for resource adequacy (“RA”) resources (requires a tariff change)
  - Provide notification to stakeholders when a resource informs the ISO it may retire (can be done through change to existing BPM)
- “Catalog” of 13 potential items for phase 2
  - Stakeholders are encouraged to comment on how they prioritize the various items identified by ISO and stakeholders

# The Phase 2 scope has not yet been decided; it currently includes 13 items for discussion.

## RMR and CPM items

- Clarify when RMR procurement is used versus CPM procurement
- Explore whether RMR and ROR CPM can be merged into one procurement mechanism
- Review allowed rate of return on capital for RMR and CPM compensation
- Explore expanding ISO's tariff authority regarding local capacity requirements ("LCR") criteria and integration of renewable resources

## RMR items

- Consider whether both Condition 1 and 2 RMR units are still needed
- Streamline and automate RMR settlement process
- Lower banking costs associated with RMR invoicing
- Review cost allocation alternatives for RMR procurement
- Expand RMR designation authority to include flexibility needs
- Consider allocating flexible RA credits from RMR designations (new)

## CPM items

- Align CPM tariff to current RMR rules that allow for recovery of needed capital additions
- Review year-ahead CPM cost allocation to address load migration
- Per CPM settlement evaluate if load-serving entities ("LSEs") are using CPM for primary capacity procurement (new)

# BACKGROUND ON RMR

The ISO has broad authority under Section 41 of the tariff to designate a unit as RMR.

- ISO has the right at any time based upon ISO controlled grid studies to designate a unit as RMR to maintain grid reliability
- Pro forma RMR agreement is in Appendix G of tariff
- Agreement is between ISO and RMR owner and filed at FERC as rate schedule of RMR owner
- Responsible utility is responsible for costs paid to RMR owner under agreement

The RMR agreement allows a unit to operate under one of the following options: Condition 1 or 2.

- RMR owner has sole right to designate the condition
- Condition 1 unit free to bid energy and AS into available markets at any time, subject to no conflict with requested RMR service, and retains all market revenues
- Condition 2 unit must submit cost-based bids for energy and AS into available markets only when issued a dispatch notice and does not retain market revenues
- Unit can transfer between Condition 1 and 2 subject to notice requirements

## The ISO has broad dispatch rights for RMR units.

- ISO can dispatch a unit for energy solely for meeting local reliability needs or managing non-competitive congestion constraints
  - Dispatch includes any local reliability need - not just local reliability reason for RMR designation
- ISO may exceptionally dispatch an RMR unit if that unit is required for energy or operating reserve or to manage congestion and no other generating unit is available



# Condition 1 and Condition 2 RMR units have different requirements.

	Condition 1	Condition 2
Expectation and requirement to bid	No requirement, but expectation is unit will bid to earn market revenues	Required to bid only when ISO provides a RMR dispatch for specified hours
Market revenues	Retain all market revenues	Credit to Participating Transmission Owner (“PTO”) any market revenues from an RMR dispatch
Market bids	Submit market bids subject to local market power mitigation	Required to submit cost-based energy and AS bids

# INTERPLAY OF RA, RMR AND CPM

RA is a mechanism to procure sufficient capacity in advance of operating month to reliably operate grid.

- Capacity requirements established in advance to procure
  - System capacity
  - Local capacity
  - Flexible capacity
- Capacity is procured by LSEs to meet their pre-established RA capacity requirements in the year-ahead and month-ahead process
- RA capacity has explicit MOO to offer its capacity into the ISO's markets

RMR is used to procure resources to meet an unmet reliability need.

- ISO procurement authority under following situations
  - Capacity from specific unit is needed and unit is not contracted for RA
  - Unit is contracted as RA, but voltage support, black start or dual fuel capability services are required but not provided through RA
  - Unit may exercise market power
  - Protect availability of given unit that could be jeopardized or reduced without RMR agreement
- RMR resources currently do not have an explicit MOO to offer into the ISO's markets

CPM is used as a last resort to ensure reliable operation of the grid.

- ISO procurement authority is under the following situations
  - RA showing deficiency for local, system or flexible capacity in year-ahead or month-ahead showings
  - Significant Event occurs on ISO controlled grid
  - Reliability or operational need for Exceptional Dispatch
  - Capacity needed for future year is at risk of retirement
- CPM capacity has explicit MOO to offer its capacity into the ISO's markets

## RA, RMR and CPM operate under different, but coordinated timelines.

- RA program provides for both a year-ahead and month-ahead process where resources that have been procured are demonstrated in showings to the ISO
- New RMR procurement can occur at any time of the year, while renewals of existing RMR agreements must occur by October 1
- CPM procurement can occur at any time in the year subject to triggering events

# STRAW PROPOSAL FOR RMR MOO ITEM

RMR paradigm does not include a MOO because it was developed prior to creation of the RA program.

The ISO believes that:

- Given that LSEs are now procuring RA for reliability needs
- RMR must be used to retain capacity not provided through the RA program
- Recently the use of RMR has been increasing
- It is appropriate to update RMR paradigm to include a MOO for energy and AS similar to the RA MOO



The Department of Market Monitoring (“DMM”) has requested that a MOO be applied to RMR units.

*“To ensure mitigation of local market power and avoid artificial inflation of overall market prices, the limits on market participation by Condition 2 units must be removed and a must offer requirement must be established for all units under both Condition 1 and Condition 2 of the CAISO’s RMR tariff and contract provisions.”*

In their February 20 written comments, stakeholders were split on whether RMR units should have a MOO.

Entity	Support MOO now in Phase 1?	
	For RMR Condition 1 Units	For RMR Condition 2 Units
Calpine	Yes	No (wait for CPUC RA reforms)
CLECA	Yes	Yes
CPUC	Yes	Yes
DMM	Yes	Yes
IEP	No (additional study needed)	No (additional study needed)
NRG	No (instead focus on improving RA)	No (instead focus on improving RA)
ORA	Yes	Yes
PG&E	(need to describe use plan)	(need to describe use plan)
SCE	Yes	Yes
SDG&E	Yes	Yes
Six Cities	Yes	Yes
WPTF	No (not without broader reforms)	No (not without broader reforms)

# The ISO has made five changes to the straw proposal that was in the January 23, 2018 paper.

- Revised Condition 2 RMR MOO to state Scheduling Coordinator (“SC”) has primary responsibility for submitted bids and not ISO
- Provided detail on components of bids submitted by SC and ISO if SC does not submit bids (for both Condition 1 and 2 units)
- Added information on implementation plan
- Clarified pricing of AS bids by SC and ISO
- If ISO submits bids to meet MOO obligation, residual unit commitment (“RUC”) availability bids for full RMR capacity will be submitted at \$0

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

Condition 2 Units	Condition 1 Units
<p>SC submits energy and AS <u>cost-based</u> bids during all hours unit is physically available <sup>1</sup></p> <p>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 <sup>2 3</sup></p> <ul style="list-style-type: none"> <li>• ISO generated energy bids will include               <ul style="list-style-type: none"> <li>- Start-up costs</li> <li>- Minimum load costs</li> <li>- Energy costs</li> </ul> </li> <li>• ISO generated AS bids will be priced at \$0/MW per hour</li> </ul> <p>ISO can instruct unit to not run, such as for a reliability or environmental limitation, or if unit would exceed its contract service limits</p>	<p>SC submits energy and AS <u>market-based</u> bids during all hours unit is physically available <sup>4</sup></p> <p>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)</p>

<sup>1</sup> 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.

<sup>2</sup> 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 per CCE3 initiative will be included.

<sup>3</sup> 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).

<sup>4</sup> These market bids are subject to local market power mitigation.

The current penalties in the RMR agreement will be used to incent performance.

- Section 8.5, Non-Performance Penalty, of pro forma RMR 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
- RMR units will be exempt from RAIM performance financial penalties and bonuses

ISO is currently assessing whether ISO bid insertion functionality can be in place by January 1, 2019.

If functionality cannot be in place on January 1, 2019:

- SC for RMR unit will have obligation to submit energy and AS bids
- ISO will monitor bidding of SC
- If bidding requirements are not being fulfilled, ISO will notify unit owner to remedy situation
- If situation not remedied, ISO will have right to impose a 25 percent reduction of daily Annual Fixed Revenue Requirement payment until situation is remedied

# STRAW PROPOSAL FOR NOTIFICATION ITEM

# The ISO proposes to notify stakeholders when it receives a notice that a resource may retire.

- Stakeholders have requested early notification of unit retirement
- ISO agrees and will share this information in a timely manner and has added this item to phase 1
  - Will notify stakeholders through market participant communication when ISO receives such notice
  - Will establish if a resource owner sends such notice that information will not be considered confidential
  - Will not post actual owner's notification letter, but will summarize key information such as date received, affected unit and requested retirement date



The ISO's goal is to implement this new policy as soon as possible.

- If supported by stakeholders in comments due April 10, may be possible to implement prior to or shortly after May 16-17 Board meeting
- Intend to provide information on notifications received in 2018 prior to implementation of new policy so stakeholders have view of pending retirement requests received in 2018

# POTENTIAL PHASE 2 ITEMS

The March 13 paper discusses 13 items that may be candidates for phase 2 of this initiative.

- ISO added two items in response to stakeholder comments
- Stakeholders encouraged to comment on their priorities for various items identified by ISO and stakeholders
- Will take phase 2 items to Board for approval in 2019
  - Goal is to implement in fall 2019 and have in effect for 2020 operating year
- Potential items are divided into
  - Combined RMR and CPM items
  - RMR items
  - CPM items

## Summary of stakeholder comments on RMR and CPM items.

- Many believe it is very important that ISO clarify use of RMR versus CPM
- Some believe there may be value in merging RMR and CPM
- Many believe allowed rate of return on capital should be updated
- Many do not support expanding ISO's tariff authority to integrate renewable resources

## Summary of stakeholder comments on RMR items.

- Split on whether both RMR Condition 1 and 2 units are still needed (and on which option could go away)
- Few commented on streamlining and automating the RMR settlement process
- Few commented on lowering banking costs associated with RMR invoicing
- Many support reviewing cost allocation alternatives for RMR procurement
- Many do not support expanding the ISO's RMR designation authority to include flexibility needs

## Summary of stakeholder comments on CPM items.

- Many do not support aligning CPM tariff to current RMR rules that allow for recovery for needed capital additions
- Few commented on reviewing year-ahead CPM cost allocation to address load migration
- Some support evaluating if LSEs are using CPM for primary capacity procurement, with some viewing the offer of settlement trigger potentially being met but believe resulting stakeholder process should be narrower in scope than scope advocated by CPUC

Thus far the ISO has identified four potential RMR and CPM items for phase 2.

1. Clarify when RMR is used versus CPM procurement -  
Some stakeholders are concerned that it currently may be unclear when ISO may use RMR procurement versus CPM procurement – ISO will consider process interplay between RMR and CPM to ensure that mechanisms work properly
2. Explore whether RMR and ROR CPM can be merged -  
Explore whether possible to integrate RMR and CPM into single, cohesive ISO procurement mechanism (or merge certain aspects of each) where ISO would assess two different reliability need horizons (upcoming year and year after) under a single mechanism

## Four potential RMR and CPM items for phase 2 (continued)

3. Review allowed rate of return on capital for RMR and CPM compensation - Explore updating the number as some stakeholders have stated in response to RMR agreements effective for 2018 that the current fixed number hard-coded into agreement is too high for today's conditions
4. Explore expanding ISO's tariff authority regarding LCR criteria as well as integration of renewable resources - Consider potentially expanding ISO's authority to designate RMR and CPM resources based on technical criteria updated to reflect latest mandatory NERC/WECC/ISO reliability standards as well as integration of renewable resources in order to reliably operate grid



Thus far the ISO has identified six potential RMR items for phase 2.

1. Consider whether both RMR Condition 1 and Condition 2 units are still needed - Explore whether there should continue to be two options
2. Streamline and automate RMR settlement process - Explore automating validation and invoicing processes so done within ISO's settlements system and timeline rather than done manually outside ISO's settlement system through an accounting process and on different timeline
3. Lower banking costs associated with RMR invoicing - 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

## Six potential RMR items for phase 2 (continued)

4. Review cost allocation alternatives for RMR procurement - Open to discussing potentially changing this cost allocation, as some stakeholders have suggested there may be a better way to allocate RMR costs
5. Expand RMR designation authority to include flexibility needs - Explore expanding ISO's authority to include RMR procurement to meet flexible capacity needs
6. Consider allocating Flexible RA credits from RMR designations (new) - Current RMR contracts do not cover procurement and allocation of flexible capacity and CPUC Staff would like to ensure that any future RMR designations include flexible attributes of RMR resource

Thus far the ISO has identified three potential CPM items for phase 2.

1. Align CPM tariff to current RMR rules that allow for recovery for needed capital additions - Explore treating recovery of needed capital additions, including costs for major maintenance, similar for both RMR and CPM
2. Review year-ahead CPM cost allocation to address load migration - Explore changes to year-ahead CPM cost allocation for situations where there is load migration
3. Per CPM settlement evaluate if LSEs are using CPM for primary capacity procurement (new) - Consider how Dec 2017 year-ahead CPM designations in SDG&E area could have been prevented had CPM design included additional remedial measures to discourage LSEs from relying on backstop

# NEXT STEPS

## Next Steps

- April 10 - Stakeholders submit written comments by close of business
  - Use template provided on website at:  
[http://www.caiso.com/informed/Pages/StakeholderProcesses/Review\\_ReliabilityMust-Run\\_CapacityProcurementMechanism.aspx](http://www.caiso.com/informed/Pages/StakeholderProcesses/Review_ReliabilityMust-Run_CapacityProcurementMechanism.aspx)
  - Submit to mailbox: [initiativecomments@caiso.com](mailto:initiativecomments@caiso.com)
- May 16-17 - Present phase 1 RMR MOO proposal to ISO Board for approval
- May 30 - Hold phase 2 working group meeting

# THANK YOU

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