California ISO

Stakeholder Comments Template

Day-Ahead Market Enhancements (DAME) Initiative

This template has been created for submission of stakeholder comments on the revised straw proposal that was published on June 8, 2020. Materials related to this initiative can be found on the ISO website at: http://www.caiso.com/StakeholderProcesses/Day-ahead-market-enhancements.

Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on July 6, 2020.

Submitted by	Organization	Date Submitted
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Please provide your organization's overall position on the DAME revised straw proposal:

- ☐ Support
- ☐ Support w/ caveats
- ☐ Oppose
- ☐ Oppose w/ caveats
- ☒ No position

Please provide written comments on each of the revised straw proposal topics listed below:

1. Updated market formulation:

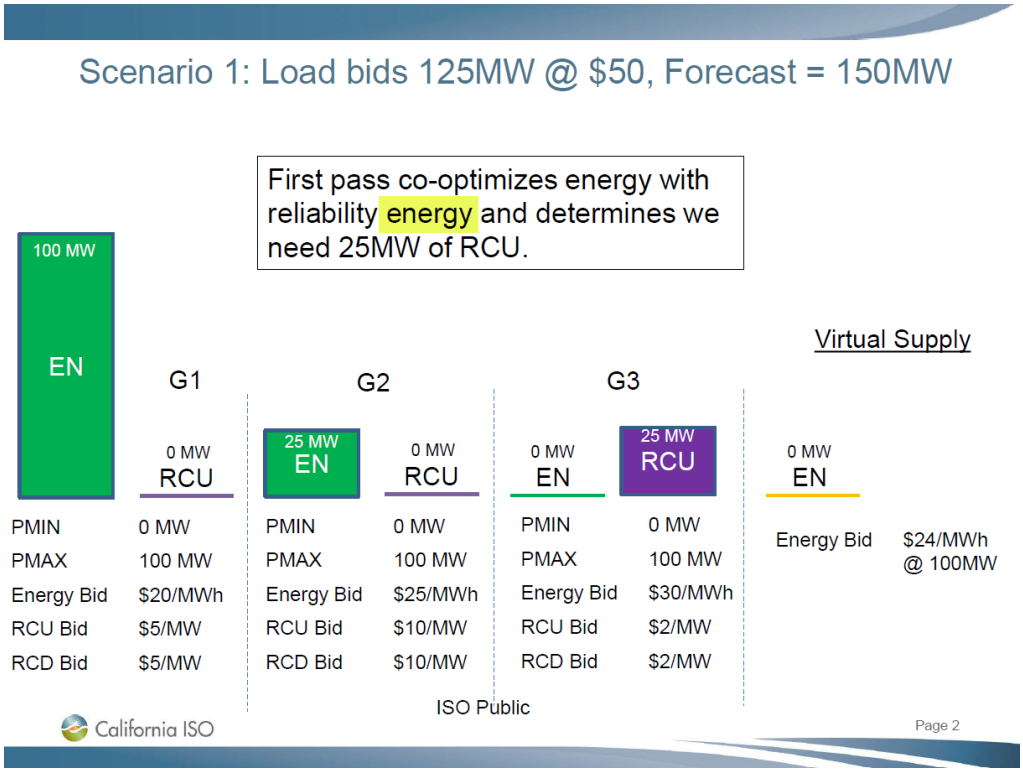
MRP appreciates that the CAISO is trying to develop a market formluation that simultaneously optimizes energy and relabiilty capacity procurement and develops market clearing prices that do not detrimentally affect the virtual supply markets and congestion revenue right settlements.

First, MRP supports the goal of integrating clearing the IFM and taking the reliability actions needed to ensure adequate capacity is secured to meet the CAISO's demand forecast.

Second, MRP supports the CAISO's proposal to drop "Reliability Energy" from the proposed market forumulation.

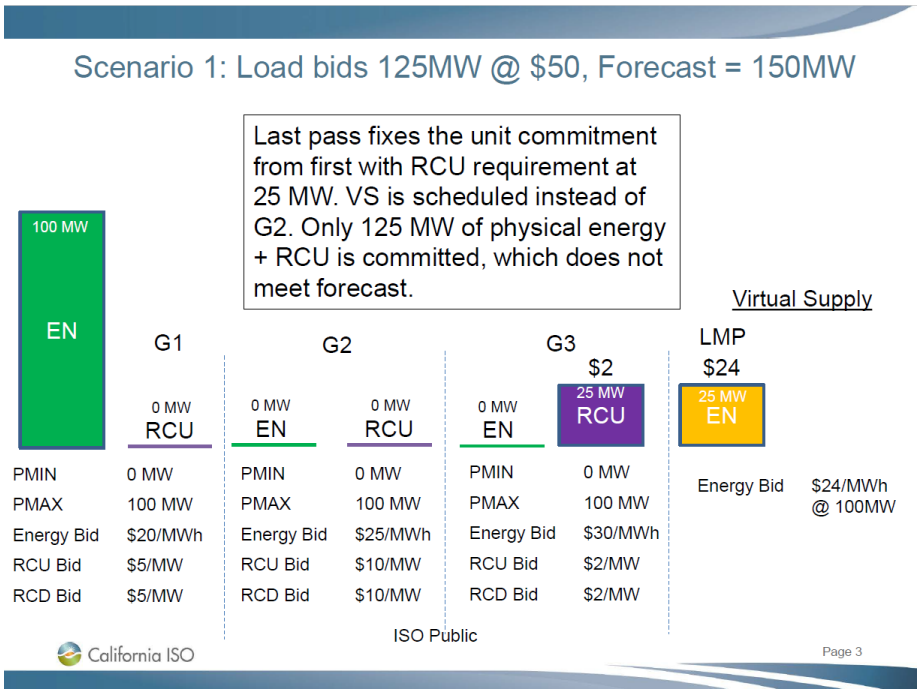
That said, MRP has some concerns about the proposed market formulation presnted on June 17. For the purpose of these comments, MRP includes screen shots from the CAISO's June 17, 2020 presntation entitled "Discussion on updated formulation".

The CAISO's first slide is:

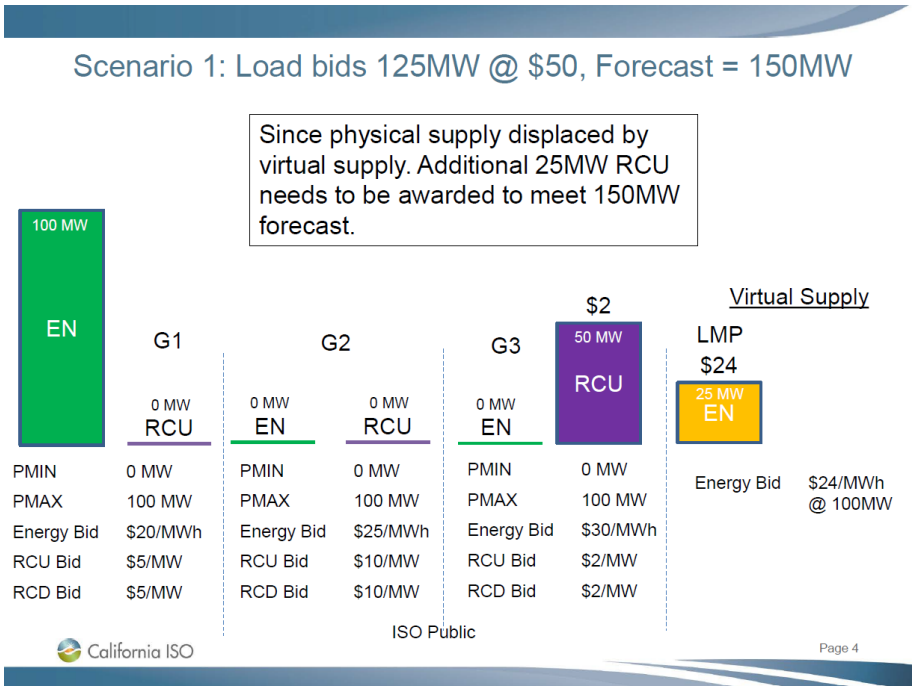


As a minor matter, in the call-out box, given that the CAISO has dropped Reliabliity Energy from the proposed market formulation, does the CAISO mean the first market pass optimizes energy with reliability **capacity**?

This example, in which G2 clears energy at $25 even though there is virtual supply available at $24 (because the CAISO needs to procure a MW of Reliability Capacity Up for every MW of cleared virtual supply, which raises the "effective price" of virtual supply to $26), leads to G2 being committed, even though in the second pass, shown below, G2 does not provide any products above its minimum load and does not need to be committed. Committing G2 even though it does not provide any products (energy, RCU or IRU) above its miniumm load is not a efficient outcome. G2's minimum load – which the example simplistically assumes is 0 MW – may crowd out other energy, will increase uplift costs and depress energy prices – at least until the CAISO modifies its market so that commitment costs are reflected in LMPs instead of being recovered through non-transparent uplifts, something the CAISO heretofore has not been willing to entertain.



In the second pass shown above, the CAISO has fixed (*i.e.*, locked in) the unit commitment (which includes G2, though G2 will be left with no energy or capacity after this pass). As MRP understands this example, because the CAISO has acquired 25 MW of RCU (reflecting the fact that the CAISO's forecast is 25 MW higher than the load at which the energy market cleared, the 25 MW RCU award makes the $24 virtual supply econmic, and the resulting virtual supply award displaces the $25 energy awarded to G2.



In this final pass, the CAISO awards an additional 25 MW of RCU, for a total of 50 MW, to offset (1) the 25 MW virtual supply schedule and (2) the 25 MW difference between the loads at which the energy market cleared and the CAISO's demand forecast. As MRP understands, G2 remains committeed but provides no incremental energy or capacity.

On the June 24 call, Powerex objected to the final result, which lowered the MCP from $25 in the first pass to $24 in the second pass. This reduction is due to the interaction between virtual supply and RCU. MRP also finds this outcome to be problematic, further, MRP finds problematic the fact that this results in committing a unit that is not required – something that will increase uplift costs to load and will detrimentally affect energy prices for other generting units where the committed unit has a non-zero minimum load level and start-up costs.

MRP objected to the earlier "reliability energy" proposal because, under that proposal, a resource would receive a lower energy price if the CAISO cleared the energy market at its forecast level, independent of whether the CAISO's demand forecast was right or wrong. This example seems also to yield a suoptimal outcome, albeit through a different path - the original MCP of $25 is reduced to $24 even though the CAISO's demand forecast is *higher* than the level at which the energy market cleared. Again, this appears to be the result brought about by the interaction of virtual supply and RCU across multiple market passes. The more concerning result is the multi-pass optimization committing a unit that ultimately receives no incremental energy or capacity awards. This may have no practical consequence in an example in which unit minimuum loads are zero MW and there are no miniumm load costs, but committing unneeded units with non-zero minimum load levels and non-zero start-up costs will have significant detrimental real-world effects.

In sum, while MRP supports efforts for day-ahead market prices to reflect all the actions reuired to support reliability (instead of separate energy market and post-energy market actions), MRP is not yet persuaded that the CAISO's multi-pass approach yields the right result.

2. Accounting for energy offer cost in upward capacity procurement:

The CAISO's presentation for the June 15 and June 17 meetings (slide 43) includes these bullets (MRP's highlight emphasis):

- Less of concern for contingency reserves but a big concern for RCU and IRU because they will be routinely dispatched for energy in real time.
- Optimal to award upward capacity products to unloaded resource with lowest underlying energy cost because it would be most cost-effective if needed in real-time.

The CAISO's premise is that it did not need to consider energy offers for contingency reserves because the likelihood of the energy needing to be dispatched was small, but need to consider the underlying energy offers in optimizing imbalance reserves and reliability capacity because there is a "relatively high likelihood" of energy being dispatched from these capacity products (RSP at page 23). The CAISO therefore proposes to implement a "real-time energy offer cap" at the

marginal cost of meeting the P97.5 net load forecast. The CAISO envisions that this real-time energy offer cap would be set prior to the day-ahead market to allow market participants time to adjust their imbalance reserve and reliability capacity bids.

In the presentation excerpt above, the terms "routinely" and "if needed" do not appear to be fully congruent. Further, while the premise that energy will be "routinely" dispatched from imbalance reserves and reliability capacity may lead to the reasonable conclusion that the energy prices associated with this capacity therefore should be accounted for in the market optimization, it's not apparent as to why this premise also leads to the need for a dynamic energy offer cap different from the energy offer cap that is in place at all times. To facilitate further discussion on this topic, MRP requests the CAISO provide further discussion and analysis as to how often the CAISO expects energy will be dispatched from these capacity products. For context and comparison, the CAISO should also present information as to how often energy is dispatched from RUC and spinning and nonspinning awards. MRP also requests the CAISO provide additional justification as to why the CAISO believes a different, dynamic energy offer cap is required once these capacity products are implemented.

3. Variable energy resources:

The CAISO has proposed to prohibit variable energy resources (VERs) from providing reliability capacity up and imbalance reserve up, but allow them to provide reliability capacity down and imbalance reserves down. (RSP at page 26). Given the limitations and complications currently involved in ensuring a disptachable upward response from a VER – for example, the predominant form of VER contract encourages, if not demands, energy production instead of holding back capacity to provide an on-demand response, and there remain significant limitations on being able to predict a VER's ability to produce energy in a future interval - MRP views this as a reasonable approach at this time.

4. Market power mitigation for reliability capacity and imbalance reserves:

The CAISO proposes to assess the ability for market participants to exercise local market power through their imbalance reserve bids, and to mitigate imbalance reserve bids if that potential is deemed (through the application of a three pivotal suppler test) to exist. The CAISO proposes to implement a "hard cap" of $247/MW on imbalance reserves and, if the potential to exercise local market power is deemed to exist, mitigate those imbalance reserve bids to $30/MW (the 90th percentile of historical spinning reserve prices) plus the resoutce's default energy bid minus the real-time offer cap (the energy portion of the cap applies only to "up" capacity products, and only the $30 capacity cap will be applied to "down" capacity products). The CAISO proposes no changes to how energy offers will be mitigated.

At this time, MRP does not oppose the CAISO's proposal with regards to how mitigated capacity bids will be priced. MRP requests the CAISO clarify whether that, if a resource's imbalance reserve or reliability capacity bid is mitigated such that that resource's capacity bid cannot set an imbalance reserve or reliability capacity price higher than its mitigated capacity bid, the resource still will receive a higher imbalance reserve or reliability capacity price if that higher price was set by an unmitigated capacity bid.

5. **Please include additional comments including considerations for other possible solutions or concerns to any of the above topics:**