Stakeholder Comments

Flexible Ramping Product Draft Final Straw Proposal

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Please find Southern California Edison (SCE) comments in response to the California Independent System Operator's (CAISO) Flexible Ramping Product (FRP) Draft Final Proposal.

SCE notes that the CAISO has made significant progress on an innovative design that is likely to have implications nationwide. Given the importance of this proposal, it is crucial that the CAISO's product design is effective, fully defensible, and to the extent possible, supported by its stakeholders. While SCE is optimistic this outcome can be achieved in the near-term, stakeholders need more time to discuss certain design elements and consider alternatives to achieve this end-state. The CAISO needs to include additional processes and should not go to the board in May. Rather, it should allow additional time to consider alternatives solutions for specific design aspects and gain more consensus and support, and to ensure the proposal will withstand scrutiny and ultimately gain approval at FERC.

A. FRP should not be considered for Board for approval in May. Stakeholders need more time to digest and consider alternatives.

FRP is a brand new, extremely complicated product which, to SCE's knowledge, has never been attempted in any other electricity market in the world. This product also provides a market-based solution to enable cost-effective integration of intermittent renewable energy sources and is likely to have nation-wide implications. Given these serious factors, the CAISO must produce a thorough, well-vetted market design and anticipate detailed FERC review. Operationally, the CAISO can tolerate a more thorough design process because the Flexible Ramping Constraint (FRC) already offers a temporary fix to upward ramping needs.[1]

[1] The CAISO Board of Governors' recommendation for a speedy FRP design to replace the FRC was predicated on concerns over the FRC's proposed cost-allocation and use of a clearing price for a non-product. As the FRC Settlement Hearing works towards solutions on these matters, the concerns offered to the CAISO are being addresses. If anything, the Settlement ruling underscores the need to gain initial consensus, and not rush design of any aspect of the product.

B. Alternative rules to consider energy costs associated with Flexi-ramp products in the optimization selection should be assessed.

Consensus for the degree to which energy bids associated with FRP or the methodology the IFM should use to consider and treat energy bids does not exists. Two sets of rules for energy bids need consideration. First, the DA optimization may need to evaluate both capacity and energy bids in its FRP selection process. With such capability, the optimization could better choose among units with identical capacity bids but different energy bids, or between units with high FRP capacity costs yet cheap energy or units with low capacity but high energy bids. Second, in order to ensure the "cost minimization" obtained in the IFM is actually realized, rules that "lock in" energy prices (e.g. energy bids used in the IFM must be available in real-time (RT)) may be needed.

Other alternatives could be preferable to the CAISO's current proposals for rules of this nature. The CAISO's attempt to factor in the DA energy costs uses a "capacity adder" approach which only provides price differentiation at extreme energy "bid cap bids" for FRU (>$300) and FRD (<$0). Meanwhile, to address the problem that a change in energy bid from DA to RT might undermine the DA optimization results; the CAISO proposes to enforce this "bid-in bid cap (or floor)"iin real-time to limit the magnitude of the change for energy bids possible for DA awarded FRP. In concert, these two rules attempt to address the above-mentioned problems associated with energy bids.

The CAISO should explore alternatives, such as simply "locking in" day-ahead energy bids when a unit is award FRP, or using these bids as the unit's RT cap. Since the CAISO's proposed capacity adders could, under a combined pricing and scheduling run, escalate prices and pay more for FRP than any bid submitted, these rules may not be ideal.[2] SCE is evaluating alternatives and sees merit in investigating alternative approaches. Options include:

- Changing the objective function to include an estimate of probabilistically expected costs of energy delivered from flexible ramping capacity in RT. This could include a "usage factor[3]" in determining ultimate costs. By including these costs of expected energy dispatched from FRP in the DA objective function, the optimization would be able to make trade-offs between low FRP capacity bids with high associated energy bids, and high capacity bids with low energy bids.
- Separating the scheduling and pricing runs and, in the scheduling run only, use a more granular tiered "capacity-adder" based on energy prices
- Setting an explicit energy target to accompany the FRP capacity target[4]

Potential rules that guard against changes to energy bids for DA FRP awards such that the DA results are sub-optimal include:

[2] These rules should also be considered in conjunction with rules for the energy bid for incremental RT FRP that is procured on top of DA FRP and some energy award. The CAISO's proposal to use the top of the RT energy curve needs further explanation and stakeholder review.

[3] For instance, data from FRC should provide insight into existing dispatch frequencies and may serve as a credible proxy for how much energy is deployed relative to capacity reserved.

[4] Analogous to Pay-For-Performance, the CAISO would constrain energy (Mileage) and Capacity separately in the optimization.

- Locking the energy bid for DA FRP awards for use in the RT market.
- Using the Default Energy Bid (DEB) for energy dispatch in RT of DA procured FRP
- Using the DA energy bid as either a cap or floor to limit real-time energy bids cap for the unit.

In the "bid locking" structure, SCE likens the DA FRP product to an option where the capacity price is the "option value" based on an energy "strike price" with some expectation of dispatch. Locking the energy price helps value the option. If parties know the "locking rules", they can price any real-time risks in to the option premium. Moreover, viewing FRP as a financial option, it would be nonsensical to allow a seller to determine an option premium, sell the option, and then to allow the seller to change the strike price. However, the CAISO's current proposal allows exactly this sort of perverse pricing outcome.

C. SCE supports the "trading" of Flexi-ramp uplift costs.

SCE supports the CAISO's approach which allows inter-SC trades of FRP cost-allocations. This structure provides for proper cost-allocation and positions contractual counterparties to decide who will ultimately pay the costs.

SCE is the scheduling coordinator for the vast majority of its VERs and thus expects these costs would typically flow directly to it. SCE strongly supports cost-allocation based on causation and understands concerns regarding the transition to this new but important cost allocation structure. While SCE believes cost-trading is a proper solution, it remains open to limited grandfathering if that becomes necessary.

D. While still pursuing cost-allocation based on cost-causation principles, several cost allocation alternatives should be considered.

SCE supports the CAISO's overall effort to develop proper cost-allocation for FRP based on causation and to allow for regional diversification benefits among load, generators and interties. Within this effort, however, SCE recommends the CAISO consider at least the following alternative approaches.

- Use a two-tiered allocation[5] such that resources never bear costs greater than the costs of either their actual *or* expected deviations. With such an approach, the CAISO's proposed averaging structure may not be needed. SCE proposed details for this approach and encourages the CAISO and stakeholders to formally discuss this methodology.
- Create more granular cost-allocation time-periods. Per section 5.4, the CAISO's six-hour blocks still blunt the price signal of FRP in certain hours and may indirectly shift costs. One or perhaps two-hour averaging could improve cost-allocation accuracy and fairness, if feasible.

[5] SCE promulgated this approach in its comments on the "Flexible Ramping Product Cost Allocation Straw Proposal": http://www.caiso.com/Documents/SCE-Comments-FlexibleRampingProductCostAllocationStrawProposal.pdf

- Identify and vet alternative approach for FRP obligation and allocation to known variability, including for interties and generation ramping. The CAISO should explore differentiation of FRP obligations and allocation approaches for when known variability aligns with overall system shaping needs as compared to known variability that moves against system needs.

E. The CAISO should provide additional forums to discuss stakeholder alternatives.

SCE appreciates the recent all-day discussion on the CAISO's proposal. Stakeholders' ideas and alternatives should be given a similar forum for discussion. SCE previously raised key questions or considerations which have not been sufficiently discussed in the current process. Key questions include:

- What is the cost of withholding flexible RUC capacity from the FRP procurement process in the IFM? How feasible are solutions to this inefficiency, such as a co-optimized RUC?[6] SCE remains concerned that the withholding of RUC flexible capacity from DA FRP awards may create costly inefficiencies. SCE noted this issue multiple times[7].
- Why is a 95% confidence interval procurement target more appropriate than a 90%, 85%, or 80% target?
- Do stakeholders understand Flexible Ramping Down Product? Has sufficient discussion on this aspect of FRP occurred?
- Should the demand curve procure more than the 60% day-ahead target if prices are "low enough"?
- Should the impact on transmission/congestion be considered when procuring FRP?
- Must units be "committed", e.g. on-line and synchronized, in order to get FRP awards? What about for fast-start units that can be generating within one RTD instruction interval?

In general, CAISO's responses to comments enhance stakeholder processes and allow for deliberative discussion and debates. They also help to gain consensus wherever possible, but at a minimum they help all parties gain clarity needed to understand these complex proposals. They may also drive the use of data and analysis in decision-making while further educating stakeholders. By justifying its decisions through this process, stakeholders can better support the CAISO proposals.

[6] NYISO Technical Bulletin #49, "Multi-Pass Methodology of Security Constrained Unit Commitment". See page 9 of SCE's previous comments on the FRP Second Revised Straw Proposal. http://www.caiso.com/Documents/SCE_Comments-FlexibleRamping_Products_Second_RevisedStraw_Proposal.pdf

[7] SCE's comments on earlier FRP proposals highlighted the nature of this inefficiency and provided examples of other similar inefficiencies that resulted from the exclusion of "paid for" capacity (e.g. RUC) in IFM optimizations. See SCE comments on the Third *and* Second Revised FRP Straw proposals.