

**JOINT COMMENTS OF
THE CALIFORNIA WIND ENERGY ASSOCIATION,
THE LARGE-SCALE SOLAR ASSOCIATION, and THE VOTE SOLAR INITIATIVE
ON CAISO RENEWABLES INTEGRATION MARKET & PRODUCT REVIEW**

The California Wind Energy Association (CalWEA), the Large-scale Solar Association (LSA), and The Vote Solar Initiative (Vote Solar) appreciate the opportunity to comment on the December 22nd document, *Straw Proposal on Reforms to Energy Market and PIRP Rules and Procedures - Renewable Integration: Market and Product Review, Phase 1* (Proposal), and the January 6th stakeholder meeting to discuss it.

The Proposal contains two recommendations:

- **Decremental energy bid floor:** Lower the current -\$30/MWh bid-price floor, in stages through 2014, to match the \$1,000/MWh incremental-energy bid cap that will become effective this coming April.
- **Participating Intermittent Resource Program (PIRP):** Eliminate PIRP, including the monthly netting of imbalances from forward schedules, for all new Variable Energy Resources (VERs). Plants with “signed contracts” could stay in the program for the life of the contract.

The CAISO is proceeding with the Regulation Energy Management (REM) proposal in a now-separate effort. The CAISO decided not to proceed at this time with provisions to mandate economic bids for RA or intermittent resources, or to require intermittent resources to submit DA bids except under the current Use-Limited Resource (ULR) provisions.

Overview of comments: Our comments on the Proposal recommendations are summarized below and explained further in the remainder of this document.

TOPIC	CalWEA/LSA/VSI POSITION
Dec energy bid floor	Support Proposal position
PIRP	Strongly oppose elimination, & lack of expansion to DA or Dynamic Transfer schedules Support instead reasonable changes to allow economic bids and further assessment of changes in light of CAISO needs and other regulatory/market developments

Generally speaking, we support CAISO market rules that allow all resources to participate in economic dispatch, and respond to price signals, where that is economically and operationally feasible. However, we are concerned that the Proposal element to eliminate PIRP for new VERs would impose risks on suppliers that they cannot easily bear; to the extent that they are able to monetize those increase risks and finance their projects despite them, consumers will ultimately bear the burden through higher RPS compliance costs.

Separately, we support: (1) the REM Regulation proposal and other “no regrets” actions to reduce market barriers to new resources that will increase both current and future market efficiency and operability of the system; and (2) the CAISO decision not to proceed at this time with the other actions considered in the prior issue paper.

Energy bid-price floor

We support the CAISO proposal to lower the bid-price floor in multiple steps, to eventually match the bid-price ceiling. Once the caps are symmetrical, unless there are strong arguments to the contrary, changes to them should be made together.

As we have said before, there is no justification for the current huge disparity between the bid-price ceiling and floor. At a minimum, the floor price must be low enough to cover financial losses for:

- **Take-or-pay or minimum-take gas or other fuel contracts;**
- **Opportunity costs for hydro facilities spilling water instead of generating energy,** or for other Use-Limited Resources (ULRs);
- **Minimum production guarantees or delivery obligations** in PPAs;
- **Loss of related industrial production** for CHP units;
- **Incremental wear-and-tear** from additional unit cycling; and
- **Loss of PPA payments and Production Tax Credits (PTCs),** where applicable.

Moreover, lowering the bid-price floor would encourage new and existing suppliers to make capital investments to improve their operating flexibility, such as lowering their minimum operating points.

We also support the concept discussed at the meeting to separate the Day Ahead (DA) and Real Time (RT) Bid-Cost Recovery (BCR) mechanisms, to address the issues raised by Calpine with the lower bid-price floor and the current 24-hour BCR mechanism.

PIRP

The Proposal's recommendations to eliminate PIRP for new intermittent resources requires further analysis and consideration of relevant market and commercial issues – specifically:

- **Such drastic action is not needed to improve economic dispatch at this time.** The CAISO can address the most serious issue – incentives to submit economic bids – and get resulting benefits even from existing resources, without immediately eliminating the program.
- **The CAISO can modify PIRP to promote economic-bid submission without eliminating the program,** for both existing and new plants.
- **PIRP elimination would not likely increase economic bids from VERs,** at least without further action by the CAISO.
- **PIRP elimination would be contrary to Order 890,** which requires consideration of VER characteristics in imbalance-energy policies.
- **The large IOUs can moderate the size and impact of the PIRP program,** and they can reduce both significantly without taking the program away from those that need it.
- **PIRP is still needed, in general and for specific circumstances,** especially where smaller buyers and/or suppliers are responsible for imbalances.
- **The PIRP “subsidy” may not exist and, in any case, would not be unique to VERs.** The CAISO has not demonstrated that there is any real “subsidy,” and the “cost causation” arguments ignore explicit (and possibly much larger) subsidies received by other resource types.
- **The CAISO should coordinate any PIRP elimination with implementation of other market-rule changes that could mitigate the impacts.**

These issues are further explained below. We also address the CAISO's proposed “grandfathering” provision, which was not well-defined in the Proposal.

Drastic action is not needed to improve economic dispatch, for the following reasons:

- **The CAISO has not yet determined (or at least has not told stakeholders) the amount of downward flexibility needed to maintain system reliability**, or mitigate involuntary curtailment risk or market volatility, in different seasons, hours, and under different market conditions – or, at least, it has not given stakeholders that information. The studies release so far indicate that it is certainly not necessary for all resources in the market to be totally dispatchable, in all hours, and approximately 20% of the market is apparently already offering economic bids, not long after MRTU has been implemented; this will likely increase as:
 - **The Multi-Stage Generating Unit (MSG) functionality overcomes the current implementation difficulties** and is more widely implemented.
 - **Market price signals become stronger** as the CAISO need for flexibility increases. Lowering the energy bid-price floor will help strengthen those signals.
 - **Convergence Bidding is implemented**, which could reduce instances of over-generation as additional resources are dispatched in real time to cover Day Ahead virtual supply bids.
 - **New technologies and tools become available**, including: (1) storage resources; (2) demand-side resources; (3) new pumped-storage facilities; (4) more flexible imports; (5) new gas-fired resources that are likely to be more flexible than the old units that they will replace; and (6) operating flexibility from VERs themselves.

Moreover, given the state’s “loading order” policy for generation resources, it’s not clear how desirable reducing renewable generation (as opposed to use of other resources and tools) would be, on a societal level. Thus, we fully support the CAISO’s efforts to ensure greater dispatchability of flexible non-renewable resources.

- **The bilateral market is already moving toward additional flexibility**. The major market buyers are already making major changes in new contracts to give them more bidding and economic curtailment flexibility. It is reasonable to assume that this hard-fought capability will actually be used in the future as market signals encouraging this are strengthened.
- **The CAISO is moving to encourage more flexibility through Resource Adequacy (RA) changes**. CAISO studies have identified the need for additional Regulation and ramping capability, and the CAISO has filed an interim proposal to begin reflecting those needs in RA requirements for Load-Serving Entities (LSEs), presumably with additional rules to come.

Enhanced RA requirements will cause LSEs to execute contracts with more-flexible resources (and/or incent existing resources to improve their flexibility) that will give the CAISO the operating capabilities it needs.

When all of this increased resource flexibility is considered, with current energy and A/S Must-Offer Obligations, the CAISO may have sufficient resources to manage any operational challenges from higher VER penetration without more drastic action, now or ever. There is certainly no need for actions that assume that all these efforts, including the CAISO’s own market signals, will fail.

The CAISO itself has urged caution in market-rule changes while there are significant unknowns about how the market will develop. The CAISO’s September 21st comments in the CPUC Long-Term Procurement Proceeding (LTTP) urge the CPUC to focus on developing tools to analyze integration issues and adopt only “the minimum measures that must be taken now to allow for the process to mature and evolve” over the next decade.” Moreover, CAISO’s own 20% RPS Study found that the existing generation fleet can provide sufficient flexibility to meet this target.

The CAISO can modify PIRP to promote economic bids without eliminating the program, for both existing and new plants. The CAISO could easily enable economic bids from PIRP resources, by: (1) removing the prohibition against such bids; (2) paying/charging Instructed Imbalance Energy dispatched pursuant to those bids at the real-time price; and (3) allowing the uninstructed portion of the imbalance energy to retain PIRP netting treatment.

It's important to note that the CAISO would have to make the software changes needed to distinguish between instructed and uninstructed energy with or without PIRP, if it wants to accommodate economic bids from VERs. For example, the CAISO must forecast VER output in the interval(s) to which a dispatch instruction would apply, in order to:

- ***Ensure that only feasible dispatch instructions are issued to VERs***, e.g., that they are not dispatched "below zero" when they are operating in real time at a level below their forward schedules; and
- ***Accurately measure the response to those dispatch instructions***, e.g., determine how much of the response is due to deliberate action vs. changes in wind/sun availability.

Allowing bids under the existing PIRP rules should thus not be significantly more complicated than without PIRP, from a settlements perspective.

We also note that the CAISO proposal would keep the program as is for the large amount of VERs already operating or under contract as of the FERC order. It's not clear why the CAISO would forego the opportunity to encourage economic bids from this large amount of variable generation, and those changes could be used to preserve the PIRP option for the market segments that need it.

PIRP elimination would not likely increase economic bids from VERs, at least not without further CAISO action. The Proposal states that eliminating PIRP, and exposing VERs to LMPs, will encourage VERs to submit decremental energy bids. It notes that eastern ISOs expose VERs to such real-time prices.

However, the CAISO's research has not addressed the question of whether VERs in eastern ISO markets actually submit economic bids. Our anecdotal information indicates that virtually all VER energy in those markets continues to be self-scheduled, i.e., the schedulers do not submit economic bids. If this is true, the evidence simply would not support the contention that eliminating PIRP, in and of itself, will increase such bids.

Finally, PIRP is hardly the main reason why VERs don't submit Day Ahead schedules against which economic bids can be submitted. The longer in advance that schedules are due, the greater the imbalance risk, and that fact is the greatest disincentive of all to VER DA schedule submission.

In summary, the CAISO should take a more comprehensive look at barriers to economic bids by VERs and not simply conclude that eliminating PIRP will result in such bids.

PIRP elimination would be contrary to Order 890. The Order (at p.365) requires that the pricing of imbalances, among other things, must "account for the special circumstances presented by intermittent generators and their limited ability to precisely forecast or control generation levels..." Most recently, the CAISO's October 11th, 2007 MRTU compliance filing in Docket No. OA08-12-000 addressed this requirement specifically (at p.22), by citing PIRP as evidence of the CAISO's compliance:

Specifically, the CAISO has implemented a Participating Intermittent Resource Program ("PIRP") under the current ISO Tariff. The PIRP will be continued under the MRTU Tariff and will allow intermittent resources to settle their UIE, based on their net balance over the month, at the monthly weighted average LMP of their deviations from their Real-Time self-schedules submitted by 75 minutes prior to the start of each operating hour. This allows Participating Intermittent Resources ("PIRs") to utilize an hour-ahead generation forecast - which is inherently much more accurate than a Day-Ahead forecast for these types of resources - as the basis for measuring deviations and thereby avoid being subject to charges associated with hourly variations from the Day-Ahead Schedule. This essentially allows such resources to "smooth out" their variations - which are often due to uncontrollable weather conditions - over the month, thereby accommodating the limited ability of intermittent resources to forecast or control their Generation levels, a goal enunciated in Order No. 890.

PIRP elimination, without any other mitigating actions, would thus leave the CAISO tariff non-compliant with this requirement and, therefore, non-compliant with Order 890.

The large IOUs can moderate the size and impact of the PIRP program. Due to their size, applicable RPS requirements, and contract provisions, those entities will likely be scheduling and bidding most new VERs in the market. They can eliminate most PIRP participation by simply not enrolling plants for which they schedule in PIRP, or scheduling the plants at levels outside the HA plant-specific PIRP forecasts, without taking the program away from others that need it.

PIRP is still needed, in general and in specific circumstances. Even large IOUs acknowledge value to the program, through their ongoing contract requirement that new VERs either become eligible, or explicitly join, PIRP. Their actions belie the claims of some IOUs that PIRP is no longer needed.

We fear that, if these IOUs do not have the option to mitigate their scheduling risk through PIRP when needed, their price offers – which apply (or will apply) to the large majority of existing and future new VER output – will reflect the increased risk (e.g., through buyer risk calculations or inclusion of imbalance risk in the CPUC “Least-Cost, Best-Fit” (LCBF) rules).

Moreover, all LSEs do not have the same ability to absorb the forecast uncertainty associated with VERs as a large utility. Smaller buyers – e.g., munis and Community Choice Aggregators (CCAs) – have been reluctant to take imbalance risks, since they do not have the large, diverse portfolios and regulatory protections of the large IOUs, and they are pushing in PPA negotiations for suppliers to take those risks. Thus they,

Instead, these smaller suppliers try to push those risks onto suppliers, and we fear that larger suppliers will again start to do the same. As we have seen before, suppliers (whose portfolios are typically even less diverse than smaller LSEs) would find it difficult or impossible to finance plant construction with an open-ended market liability for imbalances.

Note that lenders typically consider the worst case – that VER imbalances might not net for some reason – and, thus will demand higher financing costs without PIRP protection, if they are willing to finance at all. Even if suppliers try to monetize those risks through higher prices, those prices would be passed on to consumers anyway.

Finally, these issues may be relevant for resources external to the CAISO BAA, e.g, for Dynamic Transfer of VERs into the CAISO area. Contract structures for Dynamically Transferred resources are not yet clear. Many import contracts currently provide delivery at the intertie; delivery for DT resources could be either at the plant bus like internal resources (i.e., with the buyer taking imbalance risk) or at the intertie (i.e., with the seller taking imbalance risk). The CAISO risks damaging the ability of developers to finance these plants, and depriving the CAISO area of these potentially economic resources, if they are subject to real-time prices without any liability limit.

The PIRP “subsidy” may not exist and, in any case, subsidies are not unique to VERs:

- **The CAISO has not demonstrated that there is any real PIRP “subsidy” under MRTU.** The CAISO claims that there is a subsidy of \$1.20/MWh under MRTU (down from \$2-4/MWh before), but if the PIRP forecast is unbiased, the positive and negative imbalances should largely net each other out, so there should be no “subsidy” for imbalance energy to PIRP participants.

The Proposal explains that this “subsidy” relates to the fact that the PIRP imbalance-energy netting reduces the MWhs over which certain uplift charges are allocated. However, these uplifts are not caused by PIRP participants – they are actually subsidies to others (see below), and a “cost-causation” argument simply cannot be fairly used to characterize this allocation issue as a “subsidy.”

If there is a good reason to address these cost-allocation impacts, that issue should be fully understood and addressed directly, and not used to justify eliminating the program entirely.

- **Other resources also impose market costs, through their physical operating or commercial characteristics, without calls for eliminating any “subsidy.”** For example:

- **MSGUs and other gas-fired generators get BCR for energy supporting their ramps up and down, and any minimum run times** – i.e, they get the higher of their bid price or the market price over a specified netting period, with the cost spread to the entire market (including VERs). (It is especially noteworthy that Dynegy – expected to be a primary beneficiary of the MSG functionality – fails to mention its BCR subsidy.)
- **Import imbalance-energy resources can currently only be dispatched on an hourly basis** and receive a special hour-ahead clearing price, which exceeds the real-time price at least some of the time. They cannot be turned down in real time, even when the energy is not needed, and they are not subject to real-time prices for any unneeded energy.
- **The Proposal mentions uplifts associated with Exceptional Dispatch** as the remaining source of the so-called PIRP “subsidy.”

These very explicit subsidies are largely due to the inherent operating nature of the specific resources. However, all the suppliers receiving these subsidies could increase their bid prices to cover price risks for ramping and/or other unneeded real-time energy, and/or try to get their buyers to absorb this risk.

It’s not clear why those suppliers (and the subsidies that they receive, which are likely many times the PIRP cost-allocation impact discussed above) should be exempt from the “cost-causation” argument, and why VERs should be singled out uniquely even though their need for PIRP likewise stems from the inherent operating nature of their resource.

PIRP should not be eliminated in advance of market-rule changes that could mitigate the impacts of the elimination. A recent FERC NOPR is examining changes, like intra-hour scheduling, which could greatly reduce VER exposure to imbalance charges. Other potentially mitigating changes are also under consideration, in that venue and others (e.g., WECC, which is examining possible intra-hour scheduling between BAAs, and the CPUC LTTP, where Vote Solar has proposed a broader approach that could consider imbalances using more of a group approach (e.g., for all solar plants together)).

If PIRP is eliminated, the CAISO should coordinate that change with implementation of these other changes, to rationalize the framework overall and mitigate the impacts on VERs.

The proposed “grandfathering” provision should be simple and broad. The Proposal would allow generation projects “currently under the PIRP program” to “remain” in the program. This would apply to resources that have “signed contracts” but are not yet operating. The January 6th meeting discussion indicated that this provision may be limited to those with contracts that can show that their projects “depend on PIRP.”

The grandfathering provisions are a necessary protection for existing arrangements, and we strongly support this concept. However, we believe that the CAISO should take a broad view of this grandfathering proposal, for several reasons.

First, some generation projects do not have control over whether they are currently “in PIRP.” For example, their PPAs may provide that the buyer/SC is the one with the option to make that election. The contracts were written with the assumption that the election would be available and could be made at any time.

Second, contracts for QF generation projects, where the buyers currently take the imbalance risks, have been undergoing sometimes-significant revision over the last several years. In the next several years, some of those contracts may be converted to more standard PPA forms, in whole or in part – a process that the CAISO would presumably support, because they would then be subject to the market signals from which they have been largely isolated.

Throughout the contract reform process, sellers have been assuming that they would have PIRP as an option if they need it as they enter the markets. The capacity represented by these QFs is relatively small, and the CAISO should accommodate the significant changes they will likely make in the near future by giving them a PIRP option.

To accommodate the needs of these projects, if the CAISO decides to proceed with eliminating PIRP for new VERs, it should apply the grandfathering provisions to:

- **All VER projects with executed contracts as of the date of FERC approval**, whether or not they are actually in PIRP as of that date, for the length of their current PPAs; and
- **All VER QFs in operation as of the date of FERC approval**, even if they elect PIRP after that.