

California Independent System Operator

**Comments of the California Wind Energy Association
on the March 15, 2012, CAISO Draft Final Proposal on
Flexible Ramping Product Cost Allocation Straw Proposal**

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I. INTRODUCTION

The California Wind Energy Association (“CalWEA”) appreciates the opportunity to comment on the California Independent System Operator Corporation’s (“CAISO”) Flexible Ramping Product (FRP) Cost Allocation Straw Proposal dated March 15, 2012.

CalWEA must oppose this proposal due to several fundamental problems that we identified in our March 30, 2012, comments on the CAISO’s Cost Allocation Guiding Principles Final Draft Proposal (appended to these comments for reference). The first fundamental problem is that, under FERC Order 890, the CAISO can recover ancillary service costs from generators only when they cannot recover such costs from transmission customers serving load in the host balancing authority area; this is not the case with FRP costs, which can, in most circumstances, be charged to transmission customers.

To remedy this legal problem, the CAISO could allocate the FRP costs associated with specific resources to their respective purchasing LSEs, rather than spreading total associated costs based on load share among all LSEs as is done today. This would provide an incentive to

LSEs to procure least-total-cost resources, since they will have to pay for the integration costs associated with the resources they acquire. This option is discussed below.

The second fundamental problem with the FRP proposal is one of efficiency and fairness: before charging costs to generators or LSEs, the CAISO should first seek to minimize those costs by revising the market structure to better accommodate intermittent renewables. In our comments on the CAISO Cost Allocation Guiding Principles, attached, we discuss several options that could substantially reduce integration costs: allowing supply and demand resources to schedule more granularly and closer to real-time operation; investigating a successful new market feature in the Midwest ISO called the Dispatchable Intermittent Resource (“DIR”) program that provides an incentive to intermittent resources to voluntarily provide ramping and other flexible capability to the grid operator; creating a more robust dispatch stack; and introducing incentives to encourage generators to change their behavior.

In addition to these fundamental problems are two important technical ones: the proposed FRP cost allocation does not reflect cost causation principles and does not consider the diversity benefits of pooling both generation resources and load. Below we discuss the two technical issues and explore the potential benefits of assessing integration costs – if they remain significant after market reforms are implemented – to load.

II. TECHNICAL PROBLEMS WITH THE PROPOSED FRP COST ALLOCATION

A. The Proposal Is Not Based on “Cost Causation” Principles

Despite the claim that the driver for the proposed cost allocation formula is cost causation, the reality is otherwise:

- CAISO’s own papers on the FRP product show that the need for FRP capacity and the “costs caused” for procuring that capacity are not based on the difference in the actual value of resources and their schedules, but mainly related to the expected forecast error between Real-Time Pre-Dispatch (RTPD) and Real-Time Dispatch (RTD) timeframes. Only after the CAISO modifies its market to allow more granular resource schedules to be provided closer to the real-time (similar to the proposed administrative formula whereby 15-minute schedules are provided 37.5 minutes before real-time) to be actually used for market operation is there a relatively good correlation between the CAISO proposed cost allocation formula and actual costs caused for procuring the FRP. Even then, the settlement period for the administrative fix should stay at 15 minutes, or shorter period, rather than the monthly settlement time interval.
- It is well understood that one of the drivers for the need for system flexibility, including the need for the FRP and regulation, is the inability of its supply resources to follow the load variations. While renewable energy generators are generally unable to follow load due to the nature of their fuel sources, nuclear and coal generation, whether in-state or imports, will also be drivers for flexible capacity needs, including FRP, because they generate with a flat profile and, as a result, fail to follow load during many hours of operation. The CAISO’s proposed FRP cost allocation formula, however, systematically allocates ZERO costs to these resources.

In fact, the CAISO’s proposed FRP cost allocation formula, similar to many other similar cost allocation formulae currently used by the CAISO for the purpose of cost allocation, is mainly intended to motivate its market participants to control the output of

their resources to closely follow the forward schedule specified for such resources. This is a reasonable objective, but there is a more effective way of achieving it:

1. Again, first give generators the tools to be able to schedule more accurately – implement more granular scheduling in CAISO operations;
2. Use an allocation formula that closely matches the underlying method used to determine the need for the flexible product; and
3. Apply a penalty/reward scheme, rather than allocate the entire cost of a product, to incent various resources to follow their schedules or follow dispatch signal. This would be similar to the CAISO penalty/reward scheme that is already in place to motivate generators to improve the availability of their generators.

B. Allocate the Real Cost of the Flexible Ramping Product: Acknowledge Pooling Efficiencies

CAISO should procure FRP and allocate its real costs to the CAISO market participants, including to renewable generators, only after the market design is completed. When it comes to allocating the FRP cost, the CAISO should allocate only the real cost of providing that service, realizing all the savings achieved by supply and demand resource pooling. This would be similar to the way the CAISO currently calculates, for the purpose of allocation, the total cost of various reserve capacities before it procures such reserves, and in contrast to the way CAISO allocates the costs for congestion and losses – the latter being “marginal cost based” allocation.

CalWEA proposes the following straightforward procedure to allocate the cost of any integration service, such as FRP, to specific resources:

- a) Develop an allocation formula that closely reflects the actual formula used to determine the need for the product.

- b) Allocate the total real cost of the FRP service among various classes of supply and demand resources based on the aggregated impact of all individual resources in that class. In this scheme, the total cost of procuring FRP would be first allocated to two super-classes of market participants: i) a Demand Super-Class, consisting of all loads and exports, and ii) a Supply Super-Class, consisting of all the generators such as gas, hydro, renewables, and imports.
- c) Allocate the cost assigned to each resource super-class more granularly to various resource classes within that super-class. For example, the allocated cost of the entire Supply Super-Class would be allocated to four supply classes as follows:
 - i) Import Class;
 - ii) Dispatchable Resource Class (fossil generation, dispatchable load, and reservoir based hydro generation);
 - iii) Non-Dispatchable Resource Class (nuclear generation, geothermal and biomass generation); and
 - iv) Intermittent Class (wind, solar and run-of-river hydro generation).
- d) Finally, allocate the cost assigned to a resource class to individual resources within that subclass.

Before moving onto the next step of this process, the CAISO should make an assessment whether the total cost to be allocated to a supply class, generation type, or even a specific generator is large enough to warrant the effort.

III. RECOVER THE INTEGRATION COSTS OF SPECIFIC SUPPLY RESOURCES FROM THE LOAD SERVING ENTITIES TAKING DELIVERY OF THOSE RESOURCES

If, after implementing market reforms to efficiently manage intermittent resources, FRP costs are appreciable, the CAISO should consider collecting the associated costs of a specific supply resource from the transmission customer (LSE) that takes delivery of that resource. In addition to complying with FERC policy on ancillary services cost recovery, which clearly requires all ancillary services costs to be recovered from transmission customers if possible, this step has the added benefit of incentivizing efficient behavior by all CAISO market participants.

This cost recovery mechanism would be a major shift from the current CAISO practice of spreading integration costs to all LSEs based on their load share. Furthermore, this cost recovery mechanism would provide an incentive to LSEs to procure least-total-cost resources, since they will have to pay for the integration costs associated with the resources they acquire. In fact, the procurement process is the time when these cost signals will be most effective in controlling integration costs by ensuring that resources that impose significant costs will be selected only if their price and other attributes outweigh those integration costs. To facilitate this process, the CAISO could estimate future integration costs for each resource type for LSEs to consider when they select among resources. Unlike generators who must build worst-case estimates of future integration costs into their PPA price, an LSE can pass on to ratepayers only the actual costs that materialize.

Finally as we noted before, in order to ensure that the resources that are competitively selected in the procurement process continue to perform competitively, the CAISO could develop performance standards that the resource can manage to and use a reward/penalty system to incentivize the resource to follow those standards. The CAISO has already established such critical standards through its reward/penalty based available capacity standards – whereby a highly availability could receive a reward and a resource with low availability would face a

penalty. Additional standards, to the extent they do not explicitly or implicitly already exist, could be developed for this purpose.

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Date: March 30, 2012

The California Wind Energy Association (“CalWEA”) appreciates the opportunity to comment on the California Independent System Operator Corporation’s (“CAISO”) Cost Allocation Guiding Principles – Draft Final Proposal dated March 15, 2012. The Draft Final Proposal, with one modification, presents the same principles as the original proposal for cost allocation of CAISO market products, including products for integration services: (1) Causation, (2) Comparable Treatment, (3) Accurate Price Signal, (4) Incentivize Behavior, (5) Manageable, (6) Synchronized, and (7) Rational. The only change in these principles has been to take away the “Policy” principle and replace it with “Accurate Price Signal.” As CAISO agreed at page 5 of the Draft Final Proposal, “the guiding principles have limited value until applied to a specific product.” It has already proposed to use its analytic principles to guide cost allocation for the new “Flexible Ramping Product” being discussed in a parallel stakeholder process. The Flexible Ramping Product appears to be a new type of ancillary service to capture the costs associated with deviations from assumed “baseline” schedules associated with load and different types of generating resources.

In these comments, we first point out that ancillary service costs can be applied to generators only in limited circumstances. We then propose a practical step-wise process for efficiently procuring and effectively managing integration costs: First, revise the current market design to reflect the characteristics of California's rapidly changing resource mix. Second, identify the actual cost of integration services by considering the diversity benefits of pooling both generation resources and load. Third, determine whether integration costs are sufficiently appreciable to warrant specific allocation or will be effective in changing generator behavior. And, lastly, if integration costs are appreciable enough to affect market decisions, then the CAISO should consider allocating the associated cost of integration services of specific resources to their respective purchasing LSEs, rather than spreading total associated costs based on load share among all LSEs as is done today.

I. ANCILLARY SERVICE COSTS CAN BE APPLIED TO GENERATORS ONLY IN LIMITED CIRCUMSTANCES

The analytic flaw in the CAISO's approach is that it assumes -- as a matter of sound ratemaking policy -- that it is sufficient to classify market participants, estimate deviations attributable to those participants, and then directly assign the costs of managing short-term deviations to the assumed cost-causers.¹ The CAISO's assumption is not correct because it leads to a cost allocation methodology that is a radical departure from the FERC pro forma Open Access Transmission Tariff (OATT), which assumes that the costs of ancillary services will be borne by transmission customers in the balancing authority where the power sinks. In fact, transmission customers (on behalf of the load they serve) are required to procure and pay for the

¹ In the case of flexible ramping, the CAISO has not provided a study to document those costs, which we assume it will prepare to support an eventual tariff filing at FERC. The failure to produce such an analysis would, of course, make CAISO's filing patently deficient at FERC and subject it to summary rejection.

ancillary services that are required to support their transmission schedules. The obligation to procure ancillary services does not rest with energy suppliers in the first instance.

FERC’s policy under Order 890 allows transmission providers to recover the costs of energy imbalance service from generators under circumstances when they cannot recover the costs from transmission customers serving load in the host balancing authority area. Even then, the transmission providers bear the burden to show that they will not recover their energy imbalance service costs twice (once from transmission customers and a second time from generators). The same is true for transmission providers that seek to recover the costs of capacity to provide regulating reserves to balance their systems—the costs are to be recovered in the first instance from transmission customers. The costs may be charged to generators taking service under the transmission service tariff when, for example, the generators engage in transactions that cause the transmission provider to incur imbalance costs that are not otherwise recoverable under the OATT, such as export transactions. Thus, in proposing to allocate costs directly to generators who do not take transmission service under the OATT, CAISO bears a heavy burden to show that (1) the costs are not recoverable from transmission service customers (whether serving load in the balancing authority area or engaging in export transactions), and (2) to the extent CAISO proposes a tariff to recover the costs, there will be no double recovery of these costs. The CAISO’s “guiding principles” do not account for these basic ratemaking requirements, nor has the CAISO addressed them at all.

Not only does FERC ratemaking policy require the CAISO to recover ancillary service costs from transmission customers in the first instance, it also requires CAISO to provide a portfolio-wide analysis to justify different allocations of ancillary service costs to different classes of market participants that have scheduling deviations. It is not sufficient to make

assumptions about baseline behavior and allocate cost responsibility based on deviations from that assumed behavior. Since all users of the system contribute to the total needs of the system, the CAISO's analysis must consider the diversity benefits that multiple users bring (*e.g.*, the extent to which scheduling deviations by one customer cancel out the deviations of another). The CAISO also must take into account system improvements in scheduling (*e.g.*, shorter intervals) and better resource forecasting techniques. It must analyze the need for integration services based on the results of these analytic refinements, and require transmission customers to pay for the service based on the demonstrated need to procure it to balance deliveries from different types of resources. Again, the charges must be borne by the transmission customers, and charged to generators only to the extent that they engage in transactions that use the transmission system in ways that do not allow the CAISO to recover costs.

Finally, the guiding principles do not address how to attribute cost causation between resources and load. With regard to flexible capacity, for example, a recent CAISO study showed that, based on expected California load in 2020 and generation resources producing 33% renewable energy, there is no need for new flexible capacity in California. The same CAISO study showed that, if load were to increase by 10% beyond its expected value in 2020 holding renewable energy more or less constant, there is a need to add 4,600 MW of new flexible resource capacity. Accepting the accuracy of these capacity addition figures, the logic of the "causation" principle would suggest that the cost of any new flexible generation capacity should be allocated only to the amount of load exceeding expected load. Such an outcome may not, however, be anticipated under the "causation" principle.

II. A STEP-WISE PROCESS FOR ADDRESSING INTEGRATION COSTS

Rather than focusing on general principles that are so vague as to be unhelpful in cost allocation decisions, CalWEA proposes here a practical and rational step-wise process for efficiently procuring and effectively managing integration costs.

A. Revise the Current Market Design to Reflect the Characteristics of California's Rapidly Changing Resource Mix

The first order of business should be to minimize the need for integration services and to efficiently procure the integration services that remain needed. This goal can be achieved by modifying the CAISO's market structure to efficiently handle renewable resources, recognizing that the current market structure was designed around in-state nuclear, gas, and hydro generation resources and out-of-state coal, nuclear and hydro imports. Without evolving the market structure to reflect the characteristics of the intermittent renewable resources that are rapidly changing California's portfolio mix, that market structure will inevitably produce "costs" that merely reflect the fact that intermittent resources cannot behave like traditional generators. Moreover, market reforms will benefit consumers by reducing the need for and associated cost of integration services even in the absence of new renewables.

In seeking to modify its market structure, the CAISO should consider the market changes instituted by other RTOs to manage intermittent-heavy resource portfolios. The following are examples of changes that, together and even individually, could largely reduce the need to procure incremental integration services associated with increasing penetrations of renewable energy.

- The CAISO has recently taken an important step by proposing to allow supply and demand resources to schedule more granularly and closer to real-time

operation.² We encourage the CAISO to carry out this important change *prior to assessing the need for additional integration services and allocating their costs according to new paradigms*, as those needs can be expected to decline substantially with this change in market structure.

- The Midwest ISO (MISO) has recently implemented a new market feature called the Dispatchable Intermittent Resource (“DIR”) program that provides an incentive to wind resources to voluntarily provide ramping and other flexible capacity capability to the grid operator, at a minimal cost to the market. Partly because of this program, , MISO has not needed to increase the amount of regulation capacity that it procures even after adding 10,000 MW of wind resources (around 10% of MISO’s active resource base) to its system. MISO continues to use only about 400 MW of regulation capacity or less most of the time, and procures 500 MW of regulation capacity only for those few hours in the year when it forecasts very steep ramps in its system. MISO has not introduced any new products, such as the “flexible ramping” product being contemplated by the CAISO.
- In addition to, or in lieu of, a market feature such as DIR, the CAISO could work with its LSEs (and their LRAs) to explore how similar results might be achieved by coordinating the use of flexibility provisions that are already included in most renewable PPAs.

² The CAISO indicated in its latest stakeholder meeting on the cost allocation of a Flexible Ramping Capacity product that it intends, over the long-term, to allow resources to schedule on a 15-minute (rather than hourly) basis, as close as 37.5 minutes in advance of real-time operation. In the shorter term, the CAISO proposes only to factor theoretical shorter-term scheduling into the allocation of actual integration costs.

- The CAISO should take steps to create a more robust dispatch stack. Most of the generation, even the generation receiving capacity payments, is self-scheduled and not in the market -- but could be with a more efficient market design.
- The CAISO should consider whether it can reduce integration costs by introducing incentives to encourage generators to change their behavior (to the extent generator performance is the source of the problem). In doing so, FERC policy requires CAISO to consider the extent to which generators are able to change their behavior to avoid any penalties. The CAISO has already established one such standard through its reward/penalty based availability standards, whereby high availability would receive a reward and low availability would receive a penalty. Additional standards, to the extent they do not explicitly or implicitly already exist, could be developed for this purpose.

B. Identify the Real Costs of Integration Services

After implementing appropriate reforms to reduce integration costs, the CAISO should identify the actual cost of integrating services by considering the diversity benefits of pooling both generation resources and load (as FERC requires). This would be similar to the way the CAISO currently calculates, for the purpose of allocation, the total cost of various reserve capacities that it procures, accounting for all the benefits of resource pooling and in contrast to the way CAISO allocates the costs for congestion and losses – the latter being “marginal cost based allocation.”

C. Determine Whether Integration Costs Are Sufficiently Appreciable to Warrant Specific Allocation or Will Be Effective in Changing Behavior

Once market modifications are implemented to minimize the need for integration services and diversity benefits are considered, actual increases in integration costs beyond what is

procured today may be too small to warrant changing the allocation process in order to charge generators whose costs are not otherwise recoverable from transmission service customers, or to warrant specific itemization within ancillary service charges as discussed below.

In addition to considering the administrative cost of allocation, the CAISO should consider whether the costs are likely to change behavior. In the case of allocating costs to generators (again, only when costs are not otherwise recoverable from transmission service customers), variable renewable resource generators generally lack the operational capability to respond to integration cost signals (at least without spilling free fuel), and nuclear generation units are unlikely to be subdivided in order to reduce contingency reserves.

The CAISO should also consider whether the added cost to generators of financing unknown future integration costs (especially for those generators paid through fixed-price contracts who then have to add a risk premium to the price, unnecessarily raising the cost to ratepayers) would outweigh any expected benefit, and, likewise, whether the risk that imposing new costs could bankrupt existing generators under fixed-price contracts is warranted by the expected benefits.

D. If Appreciable, Allocate Resource-Specific Ancillary Service Costs to Transmission Customers

If integration costs are appreciable enough to potentially affect the resource procurement decisions of LSEs to meet their energy and capacity needs and public policy requirements, then the CAISO should consider allocating the associated cost of integration services of specific resources to their respective purchasing LSEs, rather than spreading total associated costs based on load share among all LSEs as is done today. This would provide an incentive to LSEs to procure least-total-cost resources, since they will have to pay for the integration costs associated with the resources they acquire. The procurement process is the time when these cost signals

will be most effective in controlling integration costs by ensuring that resources that impose significant costs will be selected only if their costs and other attributes outweigh those costs.

To facilitate this process, the CAISO could estimate future integration costs for each resource type for LSEs to consider when they select among resources. Unlike generators who must build worst-case estimates of future integration costs into their PPA price, an LSE can pass on to ratepayers only the actual costs that materialize.