

**Center for Energy Efficiency and Renewable Technologies and  
The Interstate Renewable Energy Council  
Comments on the California ISO  
Cost Allocation Guiding Principles, Feb 21, 2012**

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The Center for Energy Efficiency and Renewable Technologies (CEERT) and the Interstate Renewable Energy Council (IREC) appreciates the opportunity to comment on the CAISO's Cost Allocation Guiding Principles. Our comments on the enumerated principles are below.

**Causation:** CEERT and IREC are not, in principle, opposed to the general concept of allocating costs to cost causers. Indeed, it is well established that allocating costs based on cost causation in competitive wholesale markets incentivizes economically efficient behavior of market participants. For example, a generator that is charged for operational reserves in proportion to its frequency of forced outages will be incentivized to maintain equipment in order to reduce such outages and the related system costs.

However, the output of Variable Energy Resources (VERs) is variable and uncertain precisely because of fluctuations in, and incomplete knowledge of, weather patterns, which will directly affect aspects of their output characteristics in a manner that is completely outside of their control. For this reason, charging VERs for the integration costs that they impose on the system due to variability and uncertainty in their output that is completely outside of their control will not in any way incentivize improvements in their market performance. Furthermore, such charges will simply add an unnecessary transactional cost that will impede the development and operation of these vital and policy driven resources, a cost that will ultimately be borne by load, regardless of the mechanism by which it is allocated.

**Comparable Treatment:** It is interesting to note that CAISO markets do not currently allocate costs based on cost causation. Rather, costs for ancillary services in the CAISO markets are currently based on hourly energy consumption, which do not reflect actual costs to the system nor do they incentivize market participants to reduce these costs. Accordingly, if the CAISO wants to allocate costs based on cost causation in a just and reasonable manner, then it needs to apply this principle across *all* generators on an equal basis. Even more importantly, the

CAISO needs to apply whatever cost allocation principles it develops across all generators *and across all ancillary services*. Simply developing cost allocation rules and applying them to the new proposed flexible ramping services, for example, would disproportionately and unfairly impact VERs, while at the same time overlooking the historical allocation of all other ancillary service costs to load. Such a treatment would be *per se* discriminatory. For this reason, CEERT and IREC strongly encourage the CAISO to develop cost allocation mechanisms that support comparable treatment *across all generators and across all ancillary services*.

We have specific concerns with the following statement included on page 5 of the February 14, 2012 Straw Proposal:

“Once causation is identified for a particular cost, all similarly situated resources and/or market participants fitting the causation criteria should be allocated the costs. This principle is important in encouraging development of new technologies as well as ensuring fair treatment of existing ones.”

As a statement of principle, this sentence is highly problematic and incorrect. Contrary to this statement, we believe that such an approach will inhibit, rather than encourage, the development of new technologies. Moreover, if implemented, such a concept would inevitably lead to the imposition of discriminatory cost allocation mechanisms to one class of generators, namely VERs, while generator classes that have historically benefitted from the allocation of integration costs to load will continue to preserve this current advantage. Thus, if the CAISO is seeking to develop a new, alternative approach to allocating the costs of ancillary services, then applying this approach to a single type of ancillary service, such as flexible ramping, while not applying it uniformly across *all* ancillary services, including regulation and contingency reserves, is *per se* discriminatory.

**Policy Alignment:** A state-wide renewable procurement policy that is not aligned with market-based cost causation principles may create pricing and financing uncertainties and hence impede development of VERs. Unfortunately, the current renewable procurement policy in California does not account for the system value of different VER technologies, and tends to be based on Least-Cost principles, rather than on Least-Cost / Best-Fit. The current procurement approach may tend to drive LSE procurement to least cost resources while ignoring other technologies that may provide greater system value, such as solar thermal, geothermal, as well as the complementary value added by wind resources. Moreover, the procurement process in California still takes place in a silo, and is not coordinated with transmission planning, the generator interconnection study process and the still evolving process for identifying the optimal resources needed to most effectively integrate increasing amounts of VERs into the grid.

Only when the generation procurement process becomes integrally aligned with transmission planning, generator interconnection and resource adequacy can market-based cost allocation mechanism be integrated into a rational pricing framework. Any *ex post* cost causation mechanisms that the CAISO may seek to develop is more likely to increase pricing uncertainties that will impede development of VERs, rather than encourage their development. Thus, the

implementation of specific cost allocation proposals based on these principles would appear to have the effect of undermining California's clean energy goals and policies, rather than to support them. The CAISO must accordingly proceed carefully as it moves forward on this new initiative.

**Manageable:** A recent paper out of NREL<sup>1</sup> has found that while integration costs are simple in concept, actually calculating the costs associated with managing the variability of the system is difficult, if not impossible. This is for two reasons. First, in order to calculate the cost of the variability, one must compare it to a base case without the variability. And such a choice for the base case is highly arbitrary, which will easily affect the calculated cost. Second, it is virtually impossible to untangle the costs of managing the variability of load from the costs of managing the variability of generation. That is not to say that there is no cost to managing the variability of VERs – for sure there is. But while there is a cost, it is difficult if not impossible to calculate, and so it is best assessed to load, as is currently done for all other ancillary services. For example, one can consider the following rhetorical questions:

- How much cost should be allocated to load?
- Should we differentiate between load that is stable and predictable versus load that is volatile and unpredictable?
- Should we charge the generator who has a forced outage on a peak day?
- Should we charge for the privilege of self scheduling?

We therefore believe that any attempt to allocate integration costs to a single generator or class of generators will be fraught with difficulties, and will represent not only a considerable computational burden, but will also require many highly subjective and contentious approximations in order to come up with integration costs. For this reason, we believe that attempting to calculate an absolute integration cost is a fool's errand.

On the other hand, it may be possible to develop metrics for the evaluation of the relative values of one technology to another, in a manner that could even include the relative value of geographic location both related to the quality of fuel source as well as the availability of existing or planned transmission. While we believe that such an exercise would still require considerable stakeholder input, such a relative valuation of technologies and geographic attributes could greatly aid in the Least-Cost / Best-Fit selection of VERs. We strongly believe that such selection criteria should be incorporated and adopted into the state-wide generation resource procurement mechanism and included within the utilities' RPS procurement policies and practices. However, the CAISO should not take the burden of developing such valuation metrics upon itself. To the contrary, any *ex post* cost allocation mechanisms developed and imposed by the CAISO that are not explicitly accounted for in the state-wide procurement

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<sup>1</sup> [Michael Milligan, Erik Ela, Bri-Mathias Hodge, Brendan Kirby \(Consultant\), and Debra Lew, \*Cost-Causation and Integration Cost Analysis for Variable Generation\*, National Renewable Energy Laboratory, U.S. Dept. of Energy, Technical Report NREL/TP-5500-51860, June 2011.](#)

process are likely to add cost uncertainties and, thus, impede the financing and development of the projects procured through the normal resource adequacy and long-term procurement mechanisms.

**Rational:** We believe that before considering a complete restructuring of the basis for allocating the costs for all ancillary services, it is rational and prudent to attempt to minimize those costs. In fact, it is clear that increasing VER penetration will create incremental challenges to the reliable operation of the electric grid, and will also add an associated integration cost to the system. However, before these costs can be effectively and rationally allocated to market participants, steps should be taken to mitigate these costs. Such mitigation efforts should include:

- Shorter scheduling intervals on a coordinated regional basis;
- Scheduling closer to flow;
- Improved intermittent resource forecasting;
- Balancing Authority coordination and consolidation, including efforts such as the Energy Imbalance Market examined by WECC;
- Demand side management, including energy efficiency, Demand Response and dynamic pricing; and
- Regional transmission planning that optimizes the use of existing and planned transmission capacity, and that facilitates the optimal, but not necessarily maximum, delivery of a geographically and technologically diverse mix of renewable resources.

In summary, CEERT and IREC appreciate the opportunity to provide comments to the CAISO on this cost allocation proposal. We have significant concerns that any *ex post* cost allocation mechanisms that are not integrated with a state-wide long term planning process is more likely to increase pricing uncertainties that will impede development of VERs, rather than encourage their development. Furthermore, we strongly encourage the CAISO to develop any proposed cost allocation mechanisms *across all generation and across all ancillary services*. Any cost allocation mechanism that either targets a single class of generator or a single type of ancillary service is *per se* discriminatory.