Opinion on the ISO's Dynamic Transfer Policy for Intermittent Resources

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Summary

This opinion comments on the ISO's policy for allowing dynamic transfers (DTs) of intermittent resources such as wind and solar electricity into the California ISO control area. Because the ISO currently has a number of studies underway of the system reliability and market efficiency consequences of allowing dynamic transfers from intermittent resources, the ISO management has decided to implement an interim procedure and then design and implement a final proposal once these studies are complete. We support a two-stage approach because the increasing number of requests by renewable resources located outside of California to submit dynamic schedules emphasizes the need for a policy that allows this to occur as soon as possible, but the limited information on the market performance and system reliability impacts of dynamic transfers by intermittent resources argues against adopting a final policy at the present time. Because we generally support the interim policy, this opinion instead focuses on clarifying the principles that we believe should guide the policy-formulation process.

1. Introduction

The growing demand for intermittent resources by California's load-serving entities caused by the state's renewable energy goals has led to an increased demand to deliver energy produced by units electrically located outside of the state into the California ISO control area. The immediate policy question is how the CAISO should respond to this demand under its dynamic transfer (DT) framework.[1] The CAISO has concerns about the reliability and cost implications of large amounts of intermittent resources being imported as DTs and is currently studying these issues.

[1] According to the ISO's "Dynamic Transfers, Draft Final Proposal," (May 20, 2010, p. 3) dynamic transfers are either dynamic schedules or pseudo-ties. Dynamic schedules are interchange schedules in which the resource remains under the control of the balancing authority (BA) where it is electrically located and this BA includes the resource's output in balancing supply and demand in its balancing authority area (BAA). Pseudo-ties are transfers in which the source is accounted for in the attaining BA's supply and demand balance. The attaining BA also performs other balancing area functions for pseudo-tie resources.

In order to allow some dynamic transfers of energy from intermittent resources as soon as possible, the ISO is proposing as an interim solution (until its reliability studies are complete) to limit these imports to no more than 10% of the capacity on each existing intertie into the California ISO control area. Under this proposal, priority for dynamic transfers under this limit would be allocated on a first-come basis measured by the date of completion of: (1) the external resource's interconnection agreements, (2) the dynamic transmission agreements with the host and any intermediate balancing areas, (3) and a signed power purchase agreement with an entity serving load in the California ISO control area, subject to the generation resource having an expected commercial operation date prior to July 1, 2011. The ISO is proposing to implement a long-term solution in the summer of 2011.

2. Comments on Interim Proposal

We generally support the concept of an interim proposal. While admittedly ad-hoc, practical considerations make more sophisticated options infeasible in the near-term. All parties seem to accept the need for some form of limit on intermittent DT imports. Absent a more firm picture of what the final limits on DT import capability will be, the costs and effort involved in developing a market-based mechanism for allocating DT import capacity for the next year seem to outweigh the potential benefits.

The main market issue is how to allocate this potentially scarce capacity amongst market participants. As we discuss below, several institutional factors have caused the demand for DT transfer capabilities to become separate from the true economic need for those capabilities. In other words, it is very likely that generation resources that gain access in the interim, may not be the resources that most require (from a market efficiency standpoint) access in the long-run. For this reason, if any kind of priority scheduling right is created, we encourage the ISO to make these rights transferable, so that bilateral trading arrangements can begin to rectify any market inefficiencies that might arise from the initial allocation of these interim privileges.

For similar reasons, we are concerned with the proposal that the intertie allocations for DTs received under the interim proposal become permanent. Entities that are able to meet the above requirements are awarded long-term access to a potentially valuable right, which clearly disadvantages future renewable resource owners that locate outside of California and wish to sell to loads inside the ISO control area. We recognize the need for resource owners to have certainty on the availability of intertie capacity for DTs, but we question the need to make intertie allocations under an interim proposal extend beyond the terms of the interim proposal.

We therefore would prefer an interim solution that would minimize explicit or implied long-term commitments and would therefore be truly interim. We believe the best option would be to implement a congestion management (CM) approach as the interim process. This solution would best allow usage of the interim capacity while minimizing long-term market efficiency consequences. Recall that most criticisms of the CM approach relate to the long-term uncertainty associated with it. The largest concern with CM is that developers may have trouble securing financing and other long-term arrangements without some relatively firm picture of their ability to schedule their

resources as DT. Under the interim proposal, however, only resources that are nearly operational would be able to qualify anyway. Conversely, if scheduling rights are created, but are sunset at the end of the interim period, they would provide little additionally certainty relative to a pure congestion management approach.

Thus, the only way to really address the long-run uncertainty concerns would be to provide very long-lasting scheduling rights which would be definition not be interim rights. We believe that would be inconsistent with the desire to defer a long-term solution until a full picture of the constraints and policies has emerged.

Finally, we note that the demand for DT treatment of imports is largely artificial. The delivery of electricity from specific generation resource to a specific load-serving entity in the ISO control area is a purely financial arrangement that does not represent the actual flow of energy across the BAAs. Consequently, the demand for DT is the direct result of state and regional policies, many of which are beyond the control of the ISO, that result in inconsistent treatment of renewable resources across control areas.

The remainder of this opinion explores the root causes of this divergence between the physical energy flows and financial contract path, and describes how specific policy options can help deploy and utilize intermittent resources in the western U.S. in a least cost manner.

3. Current Approach to Dynamic Transfers

Currently, most imported power is taken under rather inflexible conditions, with no ability to adjust transactions in the real-time market. Imports that are scheduled in the hour-ahead scheduling process (HASP) are deemed delivered and received the hour-ahead price. In contrast, an import (e.g. transfer) that is dynamically scheduled can be adjusted in real-time, and is treated in the real-time market much like an internal resource.[2]

Because of this ability to participate actively in the ISO's real-time market, dynamic scheduling is an attractive feature for dispatchable resources located outside of the ISO control area. Unexpected imbalances over interties can be adjusted through real-time market dispatch of dynamic resources. However, for an intermittent resource that can only produce energy if wind or solar energy is available (and is therefore not dispatchable), a dynamic transfer does not increase the utilization of an intertie; indeed, it diminishes its value to the CAISO market relative to a firm transfer that is backed by balancing resources in the exporting control area. In effect, an intermittent DT import simply shifts responsibility for the balancing of the scheduled production from the exporting control region into the importing region, the ISO.

The interest in dynamically scheduling imports is therefore being driven by a sense that the imbalance treatment for these resources will be more favorable inside the ISO than inside the BBA that contains these resources. There appear to be several factors behind this. First, no formal exchange-based balancing market exists outside of the ISO

[2] Dynamically scheduled resources are also eligible to sell ancillary services into the CAISO system.

region of the WECC. For any resource this can increase the cost, risk, and complexity of participating in a wholesale market. Second, there is currently uncertainty about what the balancing requirements and costs will be for intermittent resources in some neighboring regions. Last, as part of its push to promote an aggressive renewable portfolio, California has pursued or proposed policies that favor "local" resources as well as DT scheduled resources over other types of renewable resources.[3]

Operators of neighboring control areas are naturally concerned that a California policy will result in an expansion of their own local intermittent production, and possibly local operating costs.[4] At the very least, neighboring control areas are uninterested in adopting policies that, in their view, implicitly subsidize any additional operating costs imposed by intermittent generation if that generation is being exported into California. However, it is important for regional and national policy to consider exactly what is the least cost way on west-wide basis to deal with imbalances from intermittent resources. In other words, we need to separate the question of *how* to manage intermittency from the question of *who pays* for the cost of that management.

There is no obvious reason why California should be better able to manage the uncertainty from all the renewable resources that are stimulated by California's RPS that will be coming on-line in neighboring control areas. If it is more efficient to manage the intermittency locally, then there is a strong need to develop a set of markets and policies that are consistent enough across control areas that allow that to happen. If this imposes extra costs on neighboring areas, a transparent balancing mechanism can allow for the proper compensation. Then there is no need to expand mechanisms, such as dynamic imports, that perpetuate a fiction about the location of the resources and possibly result in inefficiencies in the provision of balancing services and use of scarce import capacity.

4. Toward a Rationalized Regional Policy

We now explore what principles and policies would allow for a rationalized regional expansion of renewable, intermittent generation. We begin by highlighting three principles that we believe best support an efficient, market-based renewable policy. These are transparency, consistency, and efficiency. While few would argue with these goals in the abstract, in practice these goals have been undermined in the push to adopt aggressive renewable mandates.

[3] For example SB 722 would specifically allow DT scheduled resources to qualify as "in-State" resources, regardless of the cost or efficiency benefits that may (or may not) accrue from a DT schedule for that resource. This could have a perverse effect of giving DT resources higher priority than imported energy from intermittent sources that is firmed up by balancing resources in the exporting region.

[4] It is important to recognize that these neighboring regions might also benefit from California's RPS policy, both in terms of increased economic activity and reduced greenhouse gas emissions.

Transparency:

California has been a path breaker in developing policies to promote renewable generation. These resources can yield new benefits, but also create new challenges for operating electric systems. The intermittency of generation imposes new costs on system operations, although the exact nature and severity of these costs – at least at the high levels of penetration now proposed - are still unknown. If these additional system costs are allocated solely to intermittent resources, then these resources become more expensive to build and operate and the costs of these resources appear to increase. Consequently, there is concern that the renewable goals could not be met if these costs are borne only by the intermittent resources.

However, if an RPS is truly enforced, then the renewable energy will be provided, and any costs above the cost of providing conventional energy will be reflected in the price of renewable energy credits (RECs) if they are liquid and traded, or in the cost of bilateral energy agreements, if a REC market does not exist. Therefore, any policies that implicitly subsidize intermittent energy will not result in more renewable energy, only in masking the cost of the RPS target, and lowering REC prices.

Consistency:

The treatment of renewable resources should be as consistent across control areas as possible. It appears that a lack of consistency is a major driver behind the current interest in DT scheduling into the CAISO. As Federal and regional policy attempts to keep up with California's aggressive pace of renewable expansion, it will become increasingly important that policies for charging for imbalances be based on actual imbalance costs and made consistent across regions. If this does not happen, then it is likely that balancing will happen in less efficient and more costly regions. This raises the expense of renewable supply and makes the compliance with RPS goals more costly and raises the risk that these goals will not be met.

Efficiency:

Policies should be implemented in a fashion that can meet the true goals of those policies in the most efficient, least-cost manner. One aspect of RPS policies has been varying opinions about what the goals of the policy are. Over the last decade, most view that the main goal of an RPS is an environmental one: to reduce GHG emissions. While other justifications, such as decreasing renewable costs through learning curve effects, reducing risk, energy "independence," and economic development have been raised at varying times, we would argue that the environmental goals dominate these other considerations.[5] If reducing greenhouse gas emissions is the dominant goal, then competing renewable sources should be judged on the basis of their costs and ability to reduce global greenhouse gasses, rather than their ability to "deliver" green electrons to

[5] Consider that if reducing fossil fuel emissions were *not* a key focus of renewable policy, there are likely less expensive ways of achieving many of the other goals. For example energy independence would most easily be achieved by an expansion of coal generation if other factors were of no concern.

California. Because California's electric system is already less GHG intensive than much of the U.S., expansion of renewable energy outside of California would be both less expensive and could result in offsetting more greenhouse gas emissions.

Efficient management of intermittent supply is also important for controlling the costs of renewable mandates. This means that we should work toward mechanisms that allow for the BBA's that are best equipped to manage intermittency to do so, and to allocate the costs appropriately. The ability to schedule DT imports should flow to those whose alternative options are the most costly. Market mechanisms for the allocation of this capacity are most likely to achieve this efficiency.

5. Conclusion

As the contribution of intermittent renewable resources to electricity supply in the West grows, the provision of balancing services to offset forecast errors and variations in output will become increasingly important. The costs of inefficient provision of such services could be very large. The harmonization of policies for providing and pricing balancing services should be a high priority, and these policies should reflect the principles of transparency, consistency, and efficiency. An interim policy for allocating scarce import capacity to external resources that will require CAISO-based balancing services should facilitate long run implementation of balancing policies that implement those principles, and avoid enshrining allocation procedures that lock-in inefficiencies while bestowing substantial economic rents for long periods of time.