

Memorandum

To: ISO Board of Governors
From: Eric Hildebrandt, Director, Market Monitoring
Date: October 26, 2010
Re: **Market Monitoring Report**

This memorandum does not require Board action.

EXECUTIVE SUMMARY

This report provides comments and recommendations by the Department of Market Monitoring (DMM) on two issues being presented to the ISO Board of Governors by Management at the November 1-2, 2010, meeting.

- **Capacity procurement mechanism.** We support Management's proposal regarding the capacity procurement mechanism. Having the authority to procure capacity needed for reliability as a backstop of "last resort" is an essential function for both reliability and local market power mitigation. Management's proposal is essentially an extension of the interim capacity mechanism currently in place, with an increase in payment of about 34 percent. In practice, the ISO has not needed to rely on this backstop authority to meet any deficiencies in the amount or type of capacity procured by load serving entities under the resource adequacy program. DMM is optimistic that the ISO can continue to avoid procurement of any substantial amount of capacity under this mechanism by being proactive in performing the studies and analysis needed to better determine the amount and characteristics of future resource needs with as much lead time as is practicable. This will help ensure that these resource needs can be met through bilateral procurement made as part of the state's long-term procurement planning process and resource adequacy program. The ISO is also considering development of new ISO market products for procuring needed operational capabilities on a day-to-day basis and providing additional revenues to incent resources with these capabilities. As the details of these resource needs and characteristics are better defined, modifications in this longer-term procurement process and the resource adequacy requirements may be necessary to ensure that the needed type of capacity is procured and made available to the ISO through these bilateral procurement processes.

- **Reliability demand response product.** DMM is very supportive of participation of dispatchable demand response in the ISO market, especially as resources that can be used to reliably meet resource adequacy capacity requirements and help protect against some of the uncertainty associated with intermittent renewable resources. Management’s proposal to establish a reliability demand response product represents a practical step toward integrating retail emergency demand response programs into the ISO market. Methods to be used for measuring and verifying performance of the reliability demand response product are similar to those beginning to be implemented for the ISO’s proxy demand response product for price-sensitive demand response. DMM has expressed concerns about potential inaccuracies associated with these methods, and the need for the ISO to develop enhanced capabilities to effectively monitor and assess the performance of demand response. In the context of reliability demand response product, these concerns are lessened by the fact that these resources should be dispatched very infrequently. However, as with proxy demand resources, DMM recommends that the initial performance of emergency demand response resources be quickly assessed and that modifications be made if significant inaccuracies are identified.

The following sections discuss each of these issues in greater detail.

CAPACITY PROCUREMENT MECHANISM

As described in Management’s memo on this issue, the capacity procurement mechanism being proposed is essentially an extension of the interim mechanism currently in place. These tariff provisions provide a backstop mechanism to allow the ISO to procure additional supply capacity in instances where resource adequacy procurement by load serving entities does not fully meet the requirements or when necessary under unforeseen conditions to maintain reliable grid operation. Having the authority to procure capacity needed for reliability as a backstop of “last resort” is an essential function of the ISO for both reliability and local market power mitigation.

Mitigating Local Market Power

In each of the major local transmission-constrained areas within the ISO system, there is already sufficient thermal generation to meet local capacity requirements.¹ However, in each of these areas, the market for local generation capacity is structurally uncompetitive, with one or two major suppliers owning the majority of existing capacity. Generation plant siting and environmental issues appear to pose significant barriers to entry for new suppliers within most major local areas in the ISO control area.

This concentration of ownership and barriers to entry of new supply makes many existing suppliers *pivotal* in the bilateral market for capacity available to meet local capacity

¹ See Table 2.2, *2009 Annual Report on Market Issues and Performance*, Department of Market Monitoring, p. 2.6. As shown in Table 2.2, in 2009 about 71 percent of generation within the Bay Area was needed to meet total local reliability area requirements, while 80 percent of generation in the LA Basin was needed to meet local area requirements.

requirements. Suppliers are pivotal when a portion of the capacity owned by these suppliers is required in order to meet local capacity requirements set by the ISO. Once-through cooling requirements may make the local market power of existing suppliers even greater as some existing capacity is retired or temporarily taken out of service for retrofit and re-powering.

The California Public Utilities Commission's current resource adequacy process is designed to ensure that reliance is placed on bilateral contracting to meet local reliability requirements whenever possible, but provides for a waiver process in the event capacity cannot be procured at a reasonable price due to local market power. Load serving entities subject to CPUC jurisdiction can face significant penalties if they do not meet their local resource adequacy requirements. However, if a load serving entity is unable to procure local capacity under a price threshold established by the CPUC, the load serving entity may apply for a waiver from these local requirements. The CPUC has set the trigger price threshold for such waivers at \$40/kW-year, or approximately equal to the ISO's current interim capacity procurement mechanism payment price.

In practice, the ISO has not needed to utilize the current capacity procurement mechanism to meet local requirements that could not be procured by load serving entities within this \$40/kW-year price due to local market power. However, the ISO's authority to procure capacity needed for reliability as a backstop of "last resort" in this process is essential for both reliability and local market power mitigation. For example, without the ISO's backstop authority to procure capacity at a just and reasonable price, it is possible that capacity needed to meet local requirements may not be procured through the resource adequacy process.

Going Forward Costs

DMM supports Management's proposal to base compensation under the capacity procurement mechanism on going forward costs – rather than the cost of new capacity – for several reasons:

- It is economically rational for a unit to remain in operation as long as the unit's net market revenues exceed its going forward fixed costs. The proposed compensation ensures that the unit owner receives going forward fixed costs of a new peaking unit (\$55/kW-year) plus a 10 percent adder, and also keeps all net market revenues earned from sales of energy and ancillary services. Thus, the proposed compensation is clearly sufficient to provide reasonable compensation of existing units which does include a contribution to the unit's sunk or fixed costs. Moreover, the proposal allows generation owners to apply for a higher payment if they believe their going forward costs exceed the level upon which the payment is based.
- There appears to be consensus among load serving entities that the proposed level of compensation would provide a reasonable level of price mitigation for the local market power of existing units needed for reliability.
- Under current conditions, basing compensation on the cost of new capacity could provide an inefficient incentive for increased investment in thermal capacity that is not needed and may not have the more flexible operational characteristics that are likely to be needed

from thermal generation as increased reliance is placed on intermittent renewable resources.

- Even if a cost of new entry price was used for the capacity procurement mechanism, this would not provide an effective price signal for new investment because this payment is not used for multi-year capacity procurement. Without a multi-year requirement, the mechanism would not provide a price signal for this needed capacity until well after any new investment could respond.
- DMM supports continued efforts to develop a more formal forward procurement process, which could ultimately include a centralized forward capacity market with payments tied to the cost of new entry. However, as discussed later in this memo, DMM believes significant details of this type of forward procurement process need to be resolved, including how to effectively incorporate local reliability constraints and resource attributes needed for renewable integration.

Plant Retirements

Numerous participants have expressed concern that the level of compensation proposed under this mechanism – combined with the ISO’s authority to procure capacity from units indicating their intention of retiring – may create opportunities for gaming or the exercise of market power. DMM suggested several refinements to Management’s proposal to address these concerns. Specifically, if a generating unit owner notifies the ISO that they intend to retire a unit after the required 90-day notification period, the owner’s sworn statement of the unit’s financial condition must include the following:

- A specific explanation as to the economic reason or overall business case for why the unit is being retired. DMM’s understanding is that in order to be eligible for capacity payments under this mechanism, the unit owner would need to certify that they determined that the unit’s potential net operating revenues (including any capacity payments from the bilateral market) would not cover its going forward costs.
- The unit’s going forward fixed costs and supporting documentation.²
- The owner’s calculation of net market revenues that might be earned if the unit did not retire (with supporting documentation and assumptions).
- A summary of offers made and received by the unit owner for the unit’s capacity in the bilateral market.

DMM will review this information to assess the veracity of information provided and reasonableness of analysis and conclusions. This will also provide DMM with information needed to assess whether the unit owner offered the capacity at a competitive price in the

² DMM notes that for an existing plant, going forward fixed costs could potentially include any demonstrable opportunity costs associated from forgoing other uses of a plant site that are forgone due to continued operation of the unit.

bilateral market or the unit owner declined offers in the bilateral market that would appear to financially support continued operation of the unit.

If DMM has concerns about the veracity or reasonableness of information provided or that a unit may be economically withheld from the market, then the issue may be subject to referral to the Federal Energy Regulatory Commission. DMM could also recommend that modifications in market rules be made to address specific inefficiencies or market power issues observed to be occurring due to the capacity procurement mechanism.

DMM generally favors market rules and mitigation approaches that do not rely on *ex post* review of costs or other factors that may be difficult to assess. However, this approach seems generally consistent with the role of market monitors in reviewing capacity offer prices and going forward costs for existing units in other capacity markets (such as ISO New England and PJM Interconnection), as well as the role of the market monitor in the capacity market approach proposed by the California Forward Capacity Market Advocates. In addition, DMM believes that if this scenario occurs, it should be relatively infrequent and administratively manageable.

Additional Resource Procurement Needed for Renewable Integration

The capacity procurement mechanism may be needed to supplement resource adequacy capacity in order to ensure that the ISO has access to the right mix of resources where and when they are needed for reliability. As noted in Management's proposal, this may be increasingly important to respond to operational conditions as the ISO places increased reliance on renewable resources. DMM is optimistic that the ISO can continue to avoid procurement of any substantial amount of capacity under this mechanism in several ways.

First, the ISO should continue to be proactive in performing the studies and analysis needed to better determine the amount and characteristics of future resource needs with as much lead time as is practicable. The ISO has already started this process as part of its various renewable integration studies and initiatives. Continuing the current emphasis on this process will help ensure that these resource needs can be met through bilateral procurement made as part of the state's long-term procurement planning process and resource adequacy program.

The ISO is also considering development of new ISO market products to procure needed operational capabilities on a day-to-day basis and provide additional revenues to incent resources with these capabilities. As the details of these resource needs and characteristics are better defined, modifications in this longer-term procurement process and the resource adequacy requirements may be necessary to ensure that the needed type of capacity is procured and made available to the ISO through these bilateral procurement processes.

For example, due to the intermittent or use-limited nature of many non-conventional resources (including wind, solar and demand-response), DMM believes it may be appropriate to develop enhanced ways to incorporate the reliability and operational characteristics of these resources in the capacity value assigned to these resources by the CPUC in the resource adequacy process.³

³ 2009 Annual Report on Market Issues and Performance, Department of Market Monitoring, p. 23.

Similarly, DMM has suggested that, if possible, the cost of new products needed for renewable integration should be allocated in a way that reflects the reliability and operational characteristics of different resources. This would help ensure better price signals for investments in different types of new resources.⁴

In addition, even in cases when the ISO cannot clearly identify any special resource needs with enough lead time or specificity to incorporate these bilateral procurement processes, DMM believes that the ISO can minimize procurement under the capacity procurement mechanism by continuing to follow the policy of allowing load serving entities with the opportunity to procure capacity needed to meet various ISO needs bilaterally before the ISO procures any capacity under this mechanism. For instance, under the current resource adequacy process, the ISO reviews initial showings made in the fall of each year and identifies any supplemental capacity that would need to be procured to meet local reliability requirements. Load serving entities then have the opportunity to procure additional capacity to meet these needs before the final year-ahead resource adequacy filings are made at the end of each year. The ISO can seek to follow a similar process whenever possible to allow load serving entities the opportunity to procure capacity bilaterally before it is procured under the capacity procurement mechanism.

Mechanisms for Investment in New Capacity

Under California's current market design, investment in new capacity is driven by a combination of the state's resource adequacy program, the long-term procurement planning process, and renewable portfolio standards, which promotes investment in renewable resources. The resource development that California has seen in recent years may be, in significant part, attributable to these programs. DMM acknowledges that refinements to this current paradigm may be beneficial. For example, there is almost a complete lack of transparency in the bilateral market for resource adequacy capacity. Also, as previously noted, many key resource characteristics and limitations are not currently considered in capacity requirements and pricing.

DMM supports continuation of efforts to develop a more formal forward procurement process which could ultimately include a centralized forward capacity market based on the cost of new capacity. However, as noted in DMM's previous comments on this issue, DMM believes significant details of how to effectively incorporate local reliability constraints and resource attributes needed for renewable integration into a more formal forward procurement process need to be resolved. As discussed in the previous sections, DMM recommends that the ISO continue to work with the CPUC and stakeholders to address these issues as the necessary precursor to any type of centralized capacity market based on the cost of new capacity.

RELIABILITY DEMAND RESPONSE PRODUCT

DMM is very supportive of participation of dispatchable demand response in the ISO market, especially from resources that can be used to reliably meet resource adequacy capacity requirements and help protect against some of the uncertainty associated with intermittent renewable resources. We also appreciate the challenges involved in developing mechanisms for

⁴ Ibid.

increased participation by demand response directly in the ISO market, particularly within the constraints imposed by other aspects of California's current retail and wholesale market design.

The proxy demand response product currently being implemented by the ISO represents an important step toward beginning to integrate a wide range of price-response types of demand response into the ISO's market. The reliability demand response product represents another important step that is aimed at integrating a significant other segment of potential demand response into the ISO's market.

The reliability demand response product is aimed at loads and customers that are willing to be curtailed a limited number of times each season or year – much like peaking units that may only operate a limited number of hours per year. In order to optimize use of these resources, this product allows these resources to be dispatched only in the event of system contingency or localized emergency. To limit reliance on this type of limited-use resource, the ISO will require the amount of non-price sensitive demand that can be used to meet resource adequacy requirements to be reduced from nearly four percent of total peak demand to about two percent (or about 1,000 MW) by 2014.

Methods to be used for measuring and verifying performance of the reliability demand response product are similar to those beginning to be implemented for the ISO's proxy demand response product for price-sensitive demand response. DMM has expressed concerns about potential inaccuracies associated with these methods, and the need for the ISO to develop enhanced capabilities to effectively measure the performance of demand response. DMM has also offered several recommendations to provide a reasonable level of assurance that demand reductions from proxy demand response are actually achieved.

For example, we have suggested spot testing of these demand response resources and development of some type of performance incentives or standards for demand response resources. For the emergency demand response product, the ISO will seek to rely on actual events to determine the availability and performance of reliability demand response product resources to avoid the burden of a test event on end-use customers. However, if no events have been called within the year, then the ISO has the authority and expects to perform one unannounced test annually to determine reliability demand response product resource availability and performance. The ISO will seek to develop availability standards for demand response resources that participate in the wholesale market, including reliability demand response product resources in 2011 through the ISO's standard capacity product initiative.

DMM has also recommended that as reliance on demand response grows the ISO should be prepared to develop and implement more sophisticated approaches for calculating the baseline level of demand that would occur if a demand resource had not been dispatched. We have also noted that verification of demand response resources may require significant additional staff resources, and that the ISO should plan to ramp up its capabilities in this area as participation in demand response products grows.

In the context of the reliability demand response product, DMM's concerns are lessened by the fact that these resources should be dispatched very infrequently. However, as with proxy

demand response resources, DMM recommends that the initial performance of emergency demand response resources be quickly assessed and that modifications be made if significant inaccuracies are identified.