

Comments on FRACMOO 2 Working Group Meeting held on September 26, 2017

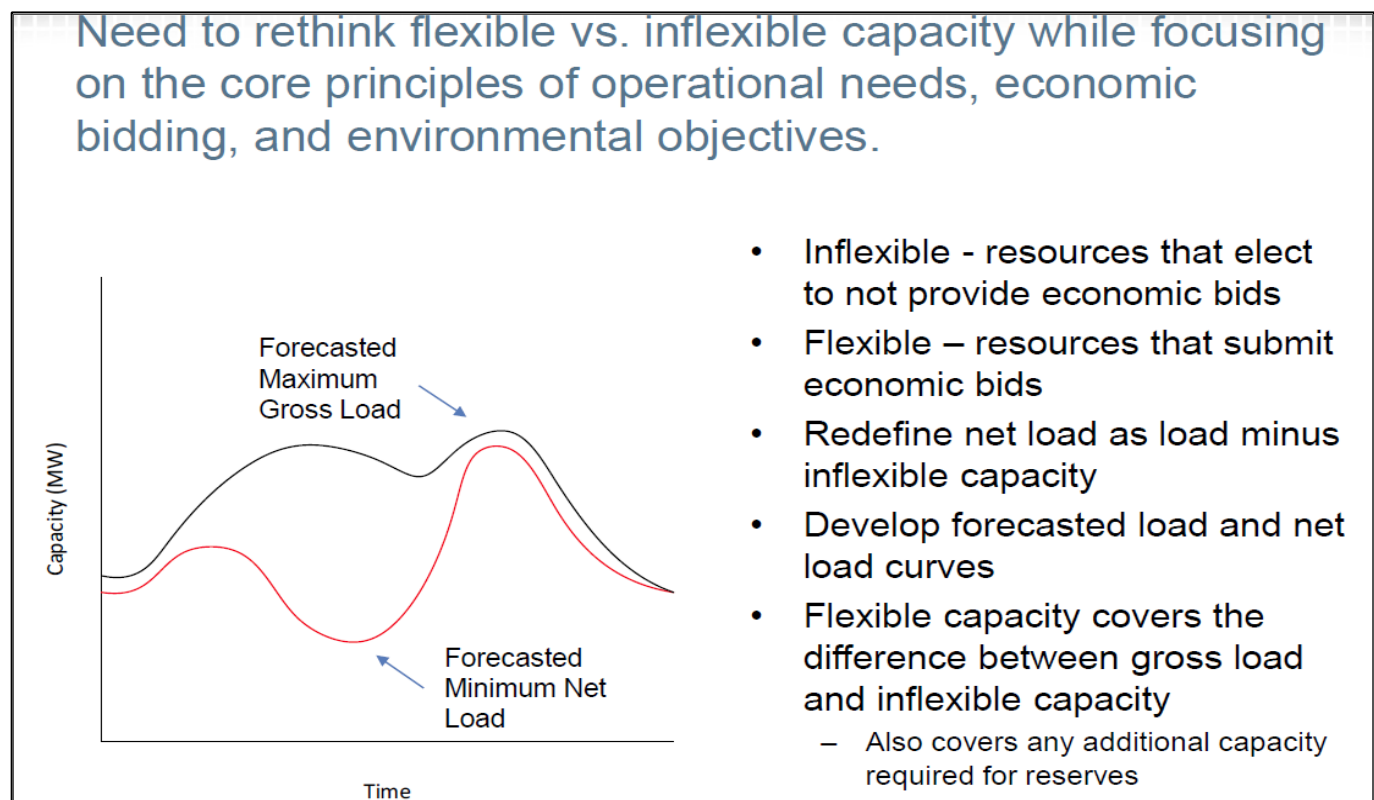
October 11, 2017

CDWR appreciates the opportunity to submit following comments on the FRACMOO 2 Working group meeting held on September 26, 2017:

1. Clarification is needed regarding flexible and inflexible capacity concepts:

CAISO is considering flexible resources as those providing economic bids (Figure 1). However, there are resources that both self-schedule and offer economic bids at the same time. Self-scheduling may be required to address environmental restrictions as well as operational requirements of a resource. As CAISO's conceptual design classifies resources as flexible based on their economic bidding activity, it would be difficult for a resource operator to determine at the early planning stages (such as at the time of a flexible capacity needs study) whether certain capacity can be economically bid or must be self-scheduled. Moreover, as defined, a resource that self-schedules even for a portion of its capacity may be disqualified to provide flexible RA capacity.

Figure 1:

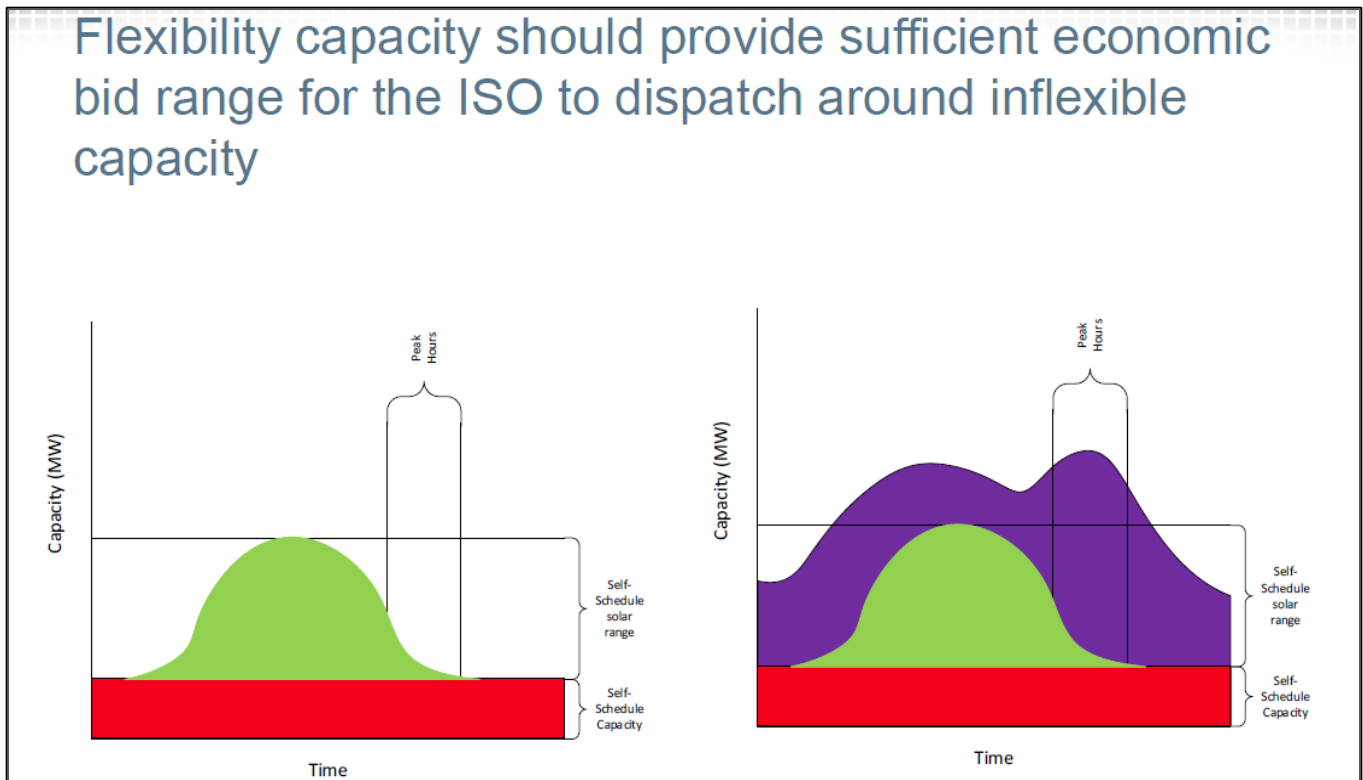


California Department of Water Resources State Water Project

Due to the inherent vagueness in defining flexible and inflexible capacity for a resource, there could be challenges in determination of the self-schedule capacity range in Figure 2. Therefore, there is a need for wider and clearer definition of flexible and inflexible capacity.

It appears that flexible RA capacity is based on gross load (plus PRM) assuming that there is no self-scheduled generation (defined as inflexible capacity). This effectively requires all system RA need to be the flexible RA. More clarification is needed why flexible RA should be the same as System RA.

Figure 2:



2. Would Participating Load be eligible to provide flexible RA?

CDWR believes that a participating load would be eligible to provide flexible RA where the operational characteristics of the participating load meet the flexible product requirements. CDWR requests CAISO to explore specific requirements that would apply to participating loads providing flexible RA capacity.

The four Flexible RA products envisioned in the conceptual framework are thought to be bi-directional. In other words, the same resource would provide both ramping up and ramping down capacity. However, some resources, such as participating load, could perform better in one direction (e.g., participating load would be more effective at providing ramping down capacity by pumping more water, which is equivalent to a generating resource reducing its output). It would be prudent to consider whether separate ramping up and ramping down

products could be a viable option to maximize the resource pool in meeting different ramping needs (up or down).

3. Need for 15 minute and 5 minute products to offer into Day Ahead market?

CAISO's presentation indicated that the 5 minute product would cater for load following and forecast error between the Fifteen Minute Market (FMM) and Real Time Dispatch (RTD). Similarly, the 15 minute product would cater for load following and forecast error between the Integrated Forward market (IFM) and FMM. CAISO's presentation also indicated that the Day- Ahead flexible RA product would meet the ramping needs created by the maximum gross load plus planning reserve margin (PRM) less 5 minute and 15 minute products. To better understand CAISO's conceptual framework, it would be helpful to have a clear explanation as to why resources providing the 5 minute and 15 minute products would be needed to offer in the IFM.