EAGLE CREST ENERGY COMMENTS ON FRAC-MOO2 DRAFT FRAMEWORK

Eagle Crest Energy (ECE) appreciates this opportunity to comment on the CAISO's November 21st document, *Flexible Resource Adequacy Criteria and Must Offer Obligation, Phase 2 – Draft Flexible Capacity Framework* (Framework).

ECE is developing the 1,400 MW Eagle Mountain Pumped Storage Project in Riverside County, California. The Project will be located at the inactive Eagle Mountain mine (a brownfield industrial site) and will use two former mine pits as upper and lower reservoirs, in a closed-loop system, with no surface connection to other bodies of water. The Project has already been awarded an operating license by the Federal Energy Regulatory Commission (FERC) and will be able to provide California with 22,000 MWh of energy storage capacity, with minimal environmental impacts.

The Framework describes the CAISO's proposal to revise both the Flexible Ramping Product (FRP) and Flexible Resource Adequacy (FlexRA) requirements for Load-Serving Entities (LSEs). The Framework is intended to tie the latter more closely to the former and ensure that the CAISO has sufficient flexible resources in all relevant market timeframes (Day Ahead (DA), Fifteen Minute Market (FMM), and 5-minute Real Time Dispatch (RTD)) to meet its ramping needs.

ECE strongly supports the CAISO's efforts to revise the FRP and FlexRA processes to better meet CAISO operational needs, and to ensure that resources counted for FlexRA requirements are capable of actually providing those services to CAISO's markets. ECE's specific comments on the Framework are summarized below, and explained in more detail in the remainder of this document.

- EFC Ratings Generally: The CAISO should revamp its FlexRA Effective Flexible Capacity (EFC) assignment methodology, by decoupling EFC ratings from "generic" RA Net Qualifying Capacity (NQC) ratings. Specifically, resources (including Energy Only and partially deliverable resources) should be eligible to provide FlexRA separate from generic local and system RA (i.e., without the need for costly Delivery Network Upgrades) if they choose.
- Storage EFC Ratings: The CAISO should revisit and adopt an earlier FRAC-MOO2 proposal to assign storage resources with very short transition times RA (EFC and NQC) ratings that reflect their full operating range, i.e., both "generation" and "demand" capabilities.
- Overall FlexRA Determination: The CAISO should consider: (1) Determining FlexRA requirements using a longer ramping period (e.g., 4-8 hours); and/or (2) including the flexibility to lengthen ramping periods as these market changes evolve over time.

Revamping EFC Ratings

The CAISO tariff already allows some resource types to have higher values for EFC than NQC. For example, while the storage NQC is determined by sustainable four-hour output, the EFC for non-Regulation Energy Management storage resources is the output range over three hours (CAISO Tariff Section 40.10.4.1(d)).

The Framework proposes (at p.28) to extend this concept somewhat through:

• Possible use of EFC values for variable resources (e.g., solar) that exceed NQC values, since the NQC values are far below those resources' outputs during daily ramps (i.e., potential downward flexibility far above NQC), if they are willing to submit economic bids into CAISO markets.

• CAISO "deliverability studies" (EFC Deliverability Assessments) to determine the amount of deliverable capacity during expected ramping hours, to ensure that assigned EFC capacity is actually available to the system when needed.

These measures are intended to help ensure that EFC values reflect ramping capacity realistically available to CAISO when ramping needs are expected to be greatest. However, they stop short of the true reforms that would benefit CAISO the most from increased utilization of flexible resources.

Currently, flexible resources must undergo a Deliverability Assessment in the Interconnection Study process (RA Deliverability Assessment), and qualify as "generic" (Local or System) RA Resources, to be eligible to count as FlexRA. The RA Deliverability Assessment measures a resource's ability to serve peak demand under stressed system conditions, the foundational premise underlying the generic RA program.

ECE does not challenge the need for RA Deliverability Assessments for generic RA eligibility, but we disagree that it should be used to determine resource eligibility to count as FlexRA. Instead, <u>all</u> resources – whether or not they are RA Resources – should be eligible to provide FlexRA as long as they are willing to assume the FlexRA economic-bid Must-Offer Obligation (Economic MOO), whether or not they qualify for generic RA provision.

The concept of decoupling EFC values from NQC values – e.g., allowing EO/PCDS resources to provide FlexRA even though they are not RA Resources providing full "generic" RA capacity – is not a new one and has been periodically raised in FRAC-MOO and other stakeholder processes. This concept makes even more sense given these recent and expected trends:

- Forecasted slower demand growth amid rising RPS requirements (50% by 2030 or earlier, 60% or more thereafter), reducing the need for new resources to be "deliverable" under the RA Deliverability Assessment (and LSE/ratepayer willingness to pay for the Delivery Network Upgrades (DNUs) to facilitate that deliverability.
- Increased Transmission Access Charge (TAC) pressures, e.g., in CAISO regionalization efforts and other forums. This cost pressure will increase further the need to limit policy-driven transmission costs even at higher RPS levels, and to increase efficient use of existing/approved transmission resources.
- Ramping needs that are very different from the peak-demand needs considered in RA Deliverability Assessments. For example, the CAISO's highest ramping needs have been evident in the Spring ("duck belly") season, and on weekends and holidays (hence, past CAISO support for converting the current Category 3 FlexRA offer obligation to a 7-day/week requirement).

These factors will likely combine to increase the need for new RA, integration, and low-emission resources, reduce the need and desirability for them to be fully deliverable under the "generic" RA structure, and increased ramping resource needs at non-peak times not reflected in RA Deliverability Assessments.

The result will be higher levels of Energy-Only resources (and possibly more PCDS resources as well) on the system that cannot count as FlexRA, even though they could could provide needed ramping flexibility in actual CAISO operations.

In the absence of the NQC/EFC decoupling that ECE is advocating here, these new EO and PCDS resources – which will be more flexible than existing older resources – would not have any Must-Offer Obligations for their Energy-Only capacity. By decoupling FlexRA from generic RA, the CAISO could assign EFC ratings to those resources and thus assure their market availability through economic bids, bolstering a robust, flexible CAISO market.

It would be poor public policy to force such resources to fund unnecessary DNUs in the interconnection-study process to qualify as generic RA just to qualify as FlexRA. Forced coupling of generic RA and FlexRA will only delay delivery of flexible resources to the market, prevent optimal use of transmission, and increase costs to flexible resources (and, ultimately, ratepayers).

In conclusion, ECE supports the Framework proposal to perform EFC Deliverability Assessments to ensure that all EFC capacity is deliverable in actual operations. Those studies should:

- Include EO and PCDS resources willing to assume Economic MOOs for their EO capacity, and assign EFC values to resources that reflect their full potential flexibility value and ramping capability, regardless of their generic RA status; and
- Reflect realistic operational ramping conditions (as opposed to peak demand conditions) and consider CAISO market optimization capability, e.g., through congestion management.

Enhanced Storage EFC Values

Tariff Section 40.10.4.1(d) awards EFC values to non-Regulation Energy Management storage resources for "the MW output range the resource can provide over three hours of charge/discharge while constantly ramping." This language has been interpreted to mean that:

- Storage resources with continuous ramping capability (e.g., no transition times between or within charge and discharge modes, in either direction) could receive EFC values reflecting <u>both</u> their "load" and "generation" modes, i.e., the full value of their ramping range; but
- Storage resources with "transition times" during those ramps (no matter how short) would have their EFC ratings limited to ratings based on their output levels level only, without consideration of the flexibility provided by their charging (load) capabilities effectively limiting their EFC ratings to half their actual ramping range.

The CAISO's December 15th, 2015 FRAC-MOO2 <u>Straw Proposal</u> included a proposal to consider awarding pumped storage resources with transition times EFC ratings for the full range of their flexibility, i.e., including both generation and pumping modes. This proposal was dropped without explanation in the November 9th, 2016 FRAC-MOO2 <u>Supplemental Issue Paper</u> and is not currently proposed to be in scope for this initiative.

However, this proposal was both sensible and important, and it should be reinstated in the scope of the current effort. Transition times that are very short should not disqualify such resources from counting for the full range of flexibility that they offer into the market. (For example, Eagle Mountain will be able to span the full 2,800 MW range between full output to full pumping mode (or vice versa) in less than 10 minutes.)

Moreover, if storage resources were split into separate generation and load resources, with start-up times equal to the current resource transition times, each piece could qualify for EFC values that reflect this full range. There is no reason that the combined resource should count for less.

Therefore, the CAISO should reinstate this proposal in the current initiative and examine reasonable transition times that would allow these resources to count for FlexRA EFC ratings reflecting their full flexibility range and their ramping value to the CAISO.

Overall FlexRA Determination

Three-hour ramps have been used to determine overall FlexRA requirements since the inception of the program in 2015, but there are good reasons to revisit that part of the Framework methodology.

As renewables penetration increases, and as regionalization may spread across more time zones, ramps are expected to increase and may also become longer. For example, this trend is evident in the CPUC Integrated Resource Planning (IRP) proceeding, in year 2030 scenarios with Renewables Portfolio Standards (RPS) above 60%.

The current redesign effort offers an excellent opportunity to revisit the three-hour ramping element of the FlexRA requirement. The CAISO should examine more recent ramping durations, as well as potential future ramping needs under the much higher RPS levels under consideration in the CPUC IRP proceeding (57-72%).

At a minimum, the new rules should allow the CAISO to adjust the ramping duration used to determine overall FlexRA requirements over time and criteria for when changes to the ramping duration would be implemented. The CAISO should be looking at long-term trends in its analysis, since resources procured in the near term will remain on the system many years into the future.