

# DECA

Full CREDIT for Flexible Capacity  
An Alternative Proposal

March 20, 2013  
CPUC Workshop Presentation

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# **The CPUC needs to seriously consider that the ED and JP proposals may undermine most Commission programs**

Energy Efficiency, Demand Response, SGIP, and RPS

**...and prevent emerging technologies from developing**

Storage, and ADR

## **While creating a negative carbon feedback loop**

Decrease the ability of non-generation resources to provide flexibility

Increase penetration of “carbon backstop”-requiring resources

**...resulting in even more GHG emissions over time**

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# The structure of this presentation

**Overview of the Market Forces at Play**

—

**Problems with the ED and JP proposals**

—

**The Role of the CPUC**

**The Full CREDIT Proposal**

- **The Flexibility Duration Curve vs. Load Duration Curve**
- **Flexibility and Flexible Capacity**

**Next Steps**

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# Market forces

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# A bad outcome caused by two simultaneous events...

## 1) The collapse of traditional peak-oriented, “generic” capacity

- Quite probably inevitable, but will be instantaneous under the ED and JP proposals

## 2) The exclusion of non-combustion resources from flexibility markets, which denies them the value of their actual flexible capacity - the only capacity value left in the market

- Direct result of an administrative decision in this proceeding

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## **...which will massively distort CPUC programs and processes**

Procurement evaluation for *any* resources will be governed by near zero (or at least never reaching CONE) peak/generic capacity values

- Will freeze investment in most non-fossil generation for years
- Massively disruptive to RFOs
- Also affects cost effectiveness calcs for procurement directives  
e.g. SGIP, RPS

Program design and evaluation will no longer be able to rely on any capacity values for their justification

- EE and DR particularly hard hit

## **...denying a vehicle for potential transformative solutions**

- Curtailment
- Storage
- Smart EV charging
- ADR
- Upward demand response

## **...and cementing high GHG resources in CA, permanently**

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# Problems with the ED and JP Proposals

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# The ED and JP proposals have real and unquantified flaws...

**Both proposals are incompatible over the long term with the state's environmental goals**

- fail to quantify or even consider the carbon impact of their design
- designed with the flawed assumption that only combustion resources can provide “real” flexibility
  - Driven by the CAISO Flexible Ramping Products, which don't really exist yet
  - Inherently optimized for energy resources, not ramp need
    - e.g. energy bid obligation, 3 hour ramp

**Both proposals assume the CAISO's flexible ramping products should be the sole product to address ramp needs**

**Both proposals result in pricing signals to imports that are fundamentally backwards with regard to isolating California from WECC**

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## ...and contain fundamentally flawed assumptions

**Both proposals wrongly exclude imports and exports from being considered as potential ramp mitigating resources**

- “the methodology described in Section 2.1, above, is one example of how the interties are taken into account in the needs determination.”\* (October 29, JP proposal)
- The scale of this omission is potentially 28,000 MW
- The CAISO goes further by proposing to penalize imports in the FRP despite their ability to help meet ramp

**Both proposals wrongly assume a resource must be dispatchable to help meet a ramp need**

- “Flexible resources [...] must also be contractually bound to operate subject to economic dispatch.” (March 11 ED proposal)
- CAISO assumptions decrement the fleet's flexible capability because of self scheduling.

\* Please note Section 2.1 contains no accounting of interties and the section itself does not apparently exist in the document.

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# Concerns about the exclusion of non-combustion resources

ED and JP proposals rely unduly on the CAISO's discriminatory construct that flexible resources must offer energy beyond when they are needed for ramp

- Wrongly forces end to self scheduling and requires Must Offer Obligation for most resource in CAISO
- Unduly relies on NQC, which is peak-, not ramp-oriented
- Mostly penalizes non-combustion resources
- Absurd handling of hydro
- Assign extra ramping capability to CCs
- Discriminatory handling of imports/exports
  - Imports/exports are certainly not necessary non-combustion
  - Special consideration of GHG, RPS, RECs, firming, etc. should be considered as part of this proceeding

Sends a terrible signal to investors regarding the viability of non-carbon emitting renewable integration technologies precisely during the time period when they are most needed.

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# The Role of the CPUC

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# **CPUC must take a broader view of resource procurement than those offered in the ED and JP proposals**

**The preferred loading order requires it**

**Opportunity to prevent the release of millions of tons of carbon**

**Simple solutions exist**

e.g. allowing bundling of resource by LSE

- The pumped storage/import hypothetical

**And can be implemented without sending market disrupting information about uncertainty of capacity value for DG, etc.**

- Probably not by June
- Will require review of impact on wide range of programs
- But can certainly be addressed before June 2014

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# The Full CREDIT Proposal

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# How does the Full CREDIT proposal help?

**Recognizes that the CPUC is the best entity to ensure the state's environmental goals are met.**

- **Control of IOU procurement**
- **Ability to set complimentary retail rates**
- **Broad range of iterative programs under management**
- **Better cost sensitivity than FERC**

**Recognizes that the CAISO's tools for addressing ramp need are inadequate.**

- **Difficulty in treating load as a resource**
- **Aversion to resource retirement**
- **Unwillingness to aggregate load and small generation**
- **Bias against any resource it cannot control**
- **Inherent shortcomings of MRTU**

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**There is a simple solution to the flexibility problem:**

- do almost nothing.**

**The Full CREDIT proposal only slightly modifies the existing RA program**

- Embraces the current MCC bucket design**
- Provides flexibility for LSEs to optimize their fleet and load**
- Compatible with CAM, but not CAM dependent**
- Complimentary to ongoing peak-oriented RA requirement**

**The Full CREDIT proposal can be used to look forward at flexibility needs for an interim period, but can rely on historical behavior on a forward going basis**

- Consistent with historical RA practices regarding resource limitations**
- Avoids creating a permanent forward market for a short term transitional need**

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# What is the Full CREDIT proposal?

Requirement within the existing RA program for the LSEs to meet a system monthly/annual flexible capacity/ramp mitigation obligation (based on a historical forecast) that is assigned based on the LSE's proportional load share.

The ability of resources to meet the flexibility requirement is based on their ability to match, via MCC buckets, a portion of the Flexibility Duration Curve (FDC), not an energy MOO bundled with ramp rate.

The program acknowledges full value of resources' contributions to meeting FDC curve, including those contributions outside direct ISO control, so long as they are obligated to assist in meeting ramp needs in a deliberate, quantifiable way.

- Utilizes NQC-like process for qualifying capacity that is CPUC stakeholder vetted with input from the CAISO
- Can be tied to a CAISO MOO (with elimination of energy offer requirements) or obligated to a CPUC-established minimum performance threshold via bilateral contract

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# Full CREDIT's flexible capacity vs. peak capacity showing

LSEs meet their flexible RA requirement within the existing RA program structure via a showing of flexible capacity, which may or may not have peak-oriented RA value.

- If flexible capacity has an RA value, it may be counted toward peak-oriented/generic capacity obligation, if it does not, a separate RA procurement must be shown
  - Provides flexibility for LSE's to optimize fleet/contracts to load and new flexibility requirements, including flexible value that can be extracted from current peak-oriented RA contracts
  - Sends market a timely signal that all ramp mitigation capacity has a capacity value and provides an incentive for bringing that capacity to market
  - Can be easily integrated into known/traditional peak-oriented RA RFO processes

# An overview of the proposed Full CREDIT process

- 1) Identification of an flexibility/ramp need by hour
- 2) Assignment of each hour's ramp need to FDC
- 3) Administrative determination of resources' effective flexible capacity/ramp need contribution factor
- 4) Assessment of MCC buckets based on FDC inflection points and fleet capability (may not occur annually)
- 5) Assignment of LSEs' load-proportional flexible capacity obligation/Flex RAR
- 6) LSEs' procurement of Flex RAR through bilateral contract (if necessary)
- 7) LSEs' Flex RAR showing
- 8) CPUC/ISO Flex RAR netting similar to peak-oriented RA residual net short
- 9) Backstopping process can be addressed via CPUC directed procurement first, CAISO flexibility capacity backstop process second.

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# Benefits the Full CREDIT proposal

Ensures that scarcity rents only apply to actual, not administrative, scarcity.

Provides a mechanism for valuing contribution to flexibility needs outside of a FERC defined administrative tool for addressing it.

Provides a special seat at the table for the CPUC to advocate on behalf of the state's environmental goals when interacting with ISO/FERC.

Recognizes that the CPUC needs an integrated mechanism for valuing the capacity of a range of programs and resources in light of emerging needs rather than past needs.

Requires CPUC/ISO quantification of forecasted flexibility need in a collaborative fashion ahead of a coordinated procurement mechanism.

Introduces a potential interim, RA program compatible intermediate-term procurement tool based on changing system needs and does not force a capacity market into existence ahead of a Commission decision.

Does not create market uncertainty for capacity value of non-gas resources.

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# The Flexibility Duration Curve vs. Load Duration Curve

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# The Load Duration Curve

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# Load Duration Curve with MCC Buckets



Source: California Independent System Operator (CAISO), OASIS database.

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# Flexibility and Flexible Capacity

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## **What should count as flexibility? Ramp mitigation.**

**The Full CREDIT proposal is designed to quantify the ability of the full range of resources, including preferred resource, that can positively affect ramp rate needs.**

- Accepts that a reduction in load is the same as an increase in generation
- Accepts that an increase in load is the same as a reduction in generation
- Can recognize the doubling of ramp from storage resources
- Compatible with a spectrum of curtailment scenario

**The CAISO's Flexible Ramping Products and the ED/JP proposals are not sufficiently inclusive of either current or future preferred resources/mechanisms' ability to affect ramp**

- Ignore the role of inertias in meeting load
- Penalize imports exactly when they are most beneficial
- Incompatible with non-generation resources
- Result in an increasing amount of carbon per renewable MW over a relatively low threshold

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# How should flexibility be measured?

The Full CREDIT proposal is designed to quantify the ability of a range of resources to affect ramp rates in a technology neutral way.

- Accepts callable changes in energy commitment as MW for MW capacity
- Well suited for valuing cost of contract changes for curtailment
- Values the portion of load that is responsive to ramp needs based on the reduction in ramp rate
- Recognizes the doubling of ramp from storage resources
- Encourages optimization by utilities of imports as ramp tools
- **The CAISO's Flexible Ramping Products and related proposals are biased toward energy, not ramp, favoring some technologies while penalizing others.**
- Overvalues the flexibility of many gas resources
  - e.g. Combined cycles' forbidden zones are ignored
- Penalizes imports and exports despite their obvious value
  - e.g. A 15min intertie schedule vs 1H intertie schedule

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# Next Steps

DECA is interested in working with LSEs and generation resources to begin developing a spectrum of potential ramp-affecting resources for consideration in this proceeding, especially those whose current offerings may be harmed by a collapse in generic capacity.

Larger, supporting document detailing the proposal is in draft form.

DECA expects to file this document in a timely manner based on ALJ feedback from today's PHC.

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# Thank You

Aram Shumavon

[a.shumavon@d-e-c-a.org](mailto:a.shumavon@d-e-c-a.org)

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