

# **Slice of Day Workshops Hedging Component R.19-11-009 and R.21-10-002**

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- Vistra will discuss the following workshop topics today:
  - Hedging component
  - Transactability
- Recall, D.21-07-014 directs workshops to cover:
  - “(1) Structural Elements; (2) Resource Counting; (3) Need Determination and Allocation; (4) Hedging Component; and (5) Unforced Capacity Evaluation and Multi-Year Requirement Proposals.”
  - **“Workshops shall also cover the transactability of Resource Adequacy (RA) products, multi-day reliability event concerns, and alignment of RA compliance penalties and California Independent System Operator backstop procurement.”**

# A well-functioning market should:

- Maintain consistency between the CPUC and CAISO processes
  - CPUC (IRP & RA) and CAISO (RA & CPM)
- Support reliability and state environmental goals
- Promote efficient entry and exit of resources
- Establish system requirements based on 1:10 planning standard set by Loss of Load Expectation study capturing uncertainty factors
- Value use-limited and on-demand resources based on capability
- Require resources to be available all days it is physically capable
- Recognize RA commercial procurement realities
- Respect existing contracts

# Principle 1: Hedging Component

**“An implementable Resource Adequacy framework is one that** addresses the implementation details in Ordering Paragraph 1, as well as five key principles, as follows:

- **Principle 1: To balance ensuring a reliable electrical grid with minimizing costs to customers.**
- Principle 2: To balance addressing hourly energy sufficiency for reliable operations with advancing California’s environmental goals.
- Principle 3: To balance granularity and precision in meeting hourly RA needs with a reasonable level of simplicity, and transactability.
- Principle 4: To be implementable in the near-term (e.g., 2024).
- Principle 5: To be durable and adaptable to a changing electric grid.”

(Ordering Paragraph 2, Page 52)

“We find it critical that a future framework include a component that links RA to a resource’s energy bidding behavior so as to increase the cost-effectiveness of RA.”  
(Page 27)

“Commission finds it critical that a future RA framework include a *means to ensure that RA is linked with energy bidding behavior to balance reliability with minimizing costs*. We maintain that parties shall consider a hedging requirement in upcoming workshops.” (Page 49)

# What issue are we trying to solve?

- The question we need to discuss on “hedging” is what type of risk are we concerned with mitigating and who’s at risk?
- What type of risk?
  - **Financial exposure? We believe this is the concern under discussion.**
  - Physical exposure? We believe the RA MOO and other rules addresses this.
- Who’s at risk?
  - Load Serving Entities (i.e. buyers)?
  - Resource owners (i.e. sellers)?
  - End-use consumers (i.e. ratepayers)?

# Who's at risk and what is the risk?



- End-use consumers?
  - Risks are largely dependent on the type of retail product the consumer is on.
  - **If concern is with retail products unnecessarily exposing consumers to risks resulting from wholesale market outcomes, we do not believe this is an RA issue but a retail one.**
  - **If concern is with the effectiveness of the CAISO mitigation paradigm, we do not believe this is a RA issue instead it is an issue to be discussed in CAISO stakeholder process.**
- Load Serving Entities?
  - Buyers **can** enter hedges through financial or physical energy markets today to hedge their forward exposures.
  - **If concern is financial exposures could lead to LSEs defaulting where consumers revert back to providers of last resort, we do not believe this is an RA issue but a retail one.**
- Resource owners?
  - Suppliers **can** enter hedges through financial or physical energy markets today to hedge their forward exposures.
  - **If concern is that a seller did not appropriately hedge and consequently lose money on their investment, we do not think this is a RA market issue but an inherent market risk.**

# Propose retail market concerns should be moved into a retail / direct access docket



- Vistra believes that the financial risks that LSEs and/or end-use consumers are exposed to boil down to concerns with retail markets
- Vistra proposes the Commission discuss its concerns with defaulting LSEs or unfair rates being passed through retail products to consumers in a retail or direct access docket.



# Propose concerns with CAISO market power mitigation design be taken up at CAISO



- Vistra believes that if the driving concern is separately the effectiveness of the CAISO mitigation paradigm that this is a concern with CAISO's Tariff
- We continue to believe CPUC RA rules that might incorporate a financial energy hedging requirement or energy bid cap are not needed, or appropriate, to mitigate market power in the energy markets because:
  - CAISO has the responsibility for ensuring energy market is protected from economic withholding concerns
  - CAISO has a mitigation paradigm set up to address this concern that we believe is well-functioning although we are open to CAISO evaluating whether enhancements are needed.
  - An energy component already comes with the RA obligation by way of a Must Offer Obligation.
- Vistra proposes the Commission and other parties who share this concern request the CAISO consider this issue in its stakeholder processes

# Propose RA explicitly allow an energy hedge option in RA product - not a requirement



- We continue to believe in most cases competitive supplier and buyers can most cost-effectively hedge financial risks through existing financial or physical markets rather than an RA contract including an energy hedge.
- It's important to allow more cost-effective hedging to be performed by sellers if it can result in a more cost competitive offer to minimize cost to consumers.
- Consumers benefit when incentives align so bids and offers are most competitive.
- Should avoid artificial limits that that reduce market efficiency.
- Vistra proposes that the CPUC should **not require an energy hedge component in the bundled RA contract** because this **could be less cost-effective outcome for consumers**.
- Vistra proposes CPUC add to the risk mitigation tools available to buyers and sellers an option that allows for an ***energy hedge option*** such that solicitations can allow suppliers to offer and buyers to consider both:
  - RA-only offers
  - RA + energy settlement offers

# Principle 3: Transactability

### **“An implementable Resource Adequacy**

**framework is one that** addresses the implementation details in Ordering Paragraph 1, as well as five key principles, as follows:

- Principle 1: To balance ensuring a reliable electrical grid with minimizing costs to customers.
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- **Principle 3: To balance granularity and precision in meeting hourly RA needs with a reasonable level of simplicity, and transactability.**
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(Ordering Paragraph 2, Page 52)

“We seek a framework that appropriately balances granularity of meeting hourly RA needs with a *reasonable level of simplicity and transactability to minimize the complexity of the RA program.*” (Page 28)

# Current framework largely workable with need for targeted improvements



- Vistra finds that the current RA construct is largely workable and proposes that any framework be adopted with as little need to change commercial negotiation and contracting as possible
- Vistra recognizes there are real reliability challenges facing the California RA paradigm necessitating change, however we believe incremental improvements can address them through
  - Improved requirement determination
  - Improved counting rules
  - New ex post sufficiency tests if additional slices are added
- Any framework adopted should improve on reliability while respecting that to achieve efficient and cost-effective market outcomes the granularity should be limited and as much of current contracting maintained as possible
  - This is consistent with CPUC direction is that any framework should have a reasonable level of simplicity and transactability to minimize the complexity of the RA program

# Current challenges that should be addressed can be done without harming market liquidity



## Challenges to reliability

## Solution to improve reliability

Workshops 3 & 4:  
Counting Rules

RA construct does not accurately capture value of use-limited resources in reserve margin or NQC

Tying resource capacity value to its ability to show up when needed and carry load through risks of loss of load improves reliability and reduces uncertainties in PRM

Workshops 5 & 6:  
Need/Allocation  
Workshop 8:  
Addressing  
uncertainties

RA construct is not maintaining 1 in 10 planning standard today

Setting probabilistically determined PRM through LOLE study set to 1:10 standard that is updated regularly as system conditions change better supports reliability

## Challenges to RA market efficiency

## Solution to improve RA market efficiency

Issue in all  
workshop topics

CPUC RA and IRP as well as CAISO's RA and CPM not sufficiently coordinated

Seeking consistency across rules will reduce regulatory uncertainty, complexity and administrative costs leading to more cost-effective and reliable outcomes

Workshop 9:  
Transactability

Workshop discussions exploring alternatives that are not consistent with the bundled nature of RA

Recognizing any rule changes to valuing resource capacity value for system needs must apply to local needs and inform flex needs to result in rational outcomes

- One of the biggest factors to harming the ability to transact the product is introducing so much granularity to the product such that competition is not robust within the product requirements
  - Increasing slices or unbundling products will harm liquidity
  - Harming liquidity results in less competitive market that can result in sub-optimal outcomes for buyers and sellers
- Another factor is the ability to understand the price for a good (\$/kw-month) sold relative to its contractual obligation
  - Increased complexity to which the buyers alone are exposed will drive resource valuations that are not transparent to the sellers. Lack of transparency will make it difficult for sellers of energy limited resources to offer to mitigate limitations to provide best valued asset for reliability.
  - A complicated compliance framework for LSEs that is separate from the seller's obligation makes it difficult for sellers to predict commercial outcomes
  - The more complicated any seller's obligation, the more costly the service is likely to be given increased compliance risks

- A third factor is that RA capacity is based on a standard capacity product concept that allows fungibility of the product (i.e. NQC MW = NQC MW)
  - Adding additional slices will move the RA framework away from the idea that the RA contract is a standard capacity product
  - If additional slices are added, then resources eligible for replacement under RA contract will likely be limited since it resource will have a different profile
  - Need to recognize risk that 24-slices introduces most risk that RA capacity is not fungible and reduces liquidity harming secondary market outcomes
  - For example, potential adverse impacts could occur if:
    - A wind resource may not be able to replace its capacity from a solar resource because solar's energy profile is less than wind's energy profile
    - A storage resource may not be able to replace its capacity from a solar or wind resource because solar/wind's energy profiles are fixed whereas storage has flexibility to show up to its maximum output in different slices
  - Vistra believes in the standard capacity product framework rather than one that creates silos where the product can only be transacted among same or limited technologies (harming liquidity)
  - It is imperative to adopt a framework that allows for RA capacity to be fungible to allow liquidity in replacement market



- A fourth factor is that RA resources must be allowed to take planned outages to ensure it can maintain the resources at levels that can support reliable operations
  - 100% POSO rules increase RA risks since the risk of not being able to take needed outage increases potential maintenance costs and increases risks of forced outage due to plant trouble by rejecting the outage.
  - We continue to believe that a well-functioning RA design should include rules that account for the risk of resources needing planned outages in a market where substitution is not available.
  - Incorporating the planned outage without substitution risk in the LOLE study as proposed in 2-slice proposal will negate the need for 100% POSO rules.
  - Allowing for retiring of this inefficient rule and ensuring the risks are appropriately accounted for will increase transactability and ensure more cost-effective RA outcomes.

- Gross peak reliability enhancements can be achieved through changes to the PRM determination method, updates to measuring Net Qualifying Capacity measuring reliability value, and improving risks modeled in LOLE
- Other “slices” reliability enhancements needed can be applied through adding an additional after-the-fact CPUC validation for “slices” where there was identified loss of load risks in the LOLE study
  - Note, reasonable to apply adjustments to the NQC values to estimate expected output, however the specific method is highly dependent on whether 2-slices or 24-slices is adopted (specifics to be detailed in future workshops)
- Contracts and showings should maintain status quo to support liquidity
  - Single NQC per showing period
  - Must offer obligation 8,760 when physically available
  - Pricing should reflect relative difference in reliability expected from different resources based on the resource specific capabilities
- Respect existing contracts where a change in law would not necessitate re-opening contracts, any new contract execution rules would apply

- RA framework should maintain bundling of products and any slices:
  - Unbundling local from system would be too difficult to ensure results in competitive and rational outcomes in a decentralized framework
  - Unbundling slices would raise need to explore whether we are abandoning a capacity requirement altogether and open up debate on whether MOO should not be all hours when physically available
- All RA products should remain bundled
  - System + Local RA cannot exceed Generic NQC
  - If applicable Effective Flexible Capacity is bundled as well
- If more than one “slice” is added then all slices should be bundled
  - Unbundling slices would increase the granularity of the product that can be traded, which will reduce liquidity within the slices leading to competition concerns
  - Unbundling slices is also likely to add the equivalent of a nested energy product within the RA paradigm, which will have impacts to the pricing for specific resources
    - Note, no analysis to date to support potential price impacts

# Proposal – maintain contracting status quo to greatest extent possible and enhance validations



## Enhancements - PRM

- Enhance system RA requirement for gross peak based on probabilistically determined LOLE study (see Gridwell & Vistra presentation at 12/1/21 workshop)
- Ensure uncertainty risks including limited energy supply conditions during a day with loss of load risks are included in the LOLE study to set RA need (see Vistra presentation at 12/17/21 workshop)

## Status Quo - Contracting & Showings

- Contracts require bundled RA products and bundled slices
- RA contract amounts based on single NQC per showing period
- LSEs and Suppliers submit CAISO plans with single NQC per showing period (month/seasons)
- LSEs submit CPUC showings same as today with single NQC per showing period
- CPUC performs sufficiency assessment relative to meeting the updated gross peak RA requirement

## Enhancements – CPUC Sufficiency Test

- CPUC adds a sufficiency evaluation for additional slices where there is a risk of loss of load
- CPUC should adjust the single NQC for the showing period to the applicable slice based on expected output (See Gridwell and Vistra presentation at 12/1/workshop re net peak options)

# **Appendix: Previous slides on transactability from October 6 workshop**

# Commercial reality is that changes here will impact local and flexible RA as well

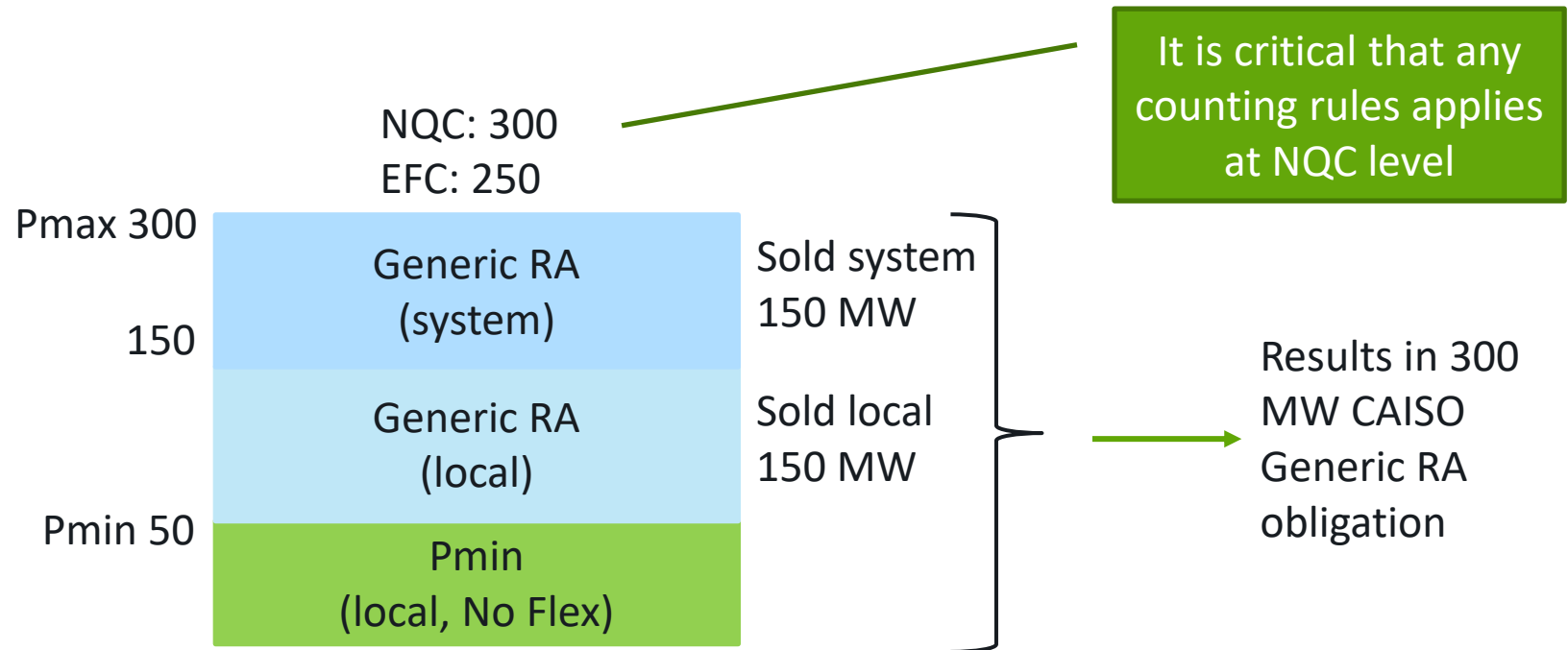


Vistra provides following commercial perspectives based on our experience:

- Under PG&E's CPE, multi-year local RA has been implemented such that the competitive solicitation is for bundled products that include all attributes of that RA
  - For example, a MW of bundled RA sold into PG&E CPE sells system, local, and any applicable flexible attributes associated with that MW
  - Reality is that there is now multi-year system and multi-year flex resource capacity being procured by the CPE within the local RAR
- In bilateral RA markets, regardless of whether we enter bundled RA, local RA or system RA contracts our obligation is the same:
  - In practice, our RA performance for system contracts results in a Generic RA obligation
    - A supplier cannot establish more Generic RA (system+local) than its NQC
  - The contract MW when shown meets both local and system needs

# Commercial reality is that changes here will impact local and flexible RA as well cont.

- Resource capacity value sets the resource's NQC
  - NQC is maximum RA capacity that can be sold for Generic RA
- CAISO will use the NQC as input to calculating EFC
- CAISO sets Generic RA as sum of system and local MW, which cannot exceed NQC
- CAISO sets Flex RA as amount of flex MW shown, which cannot exceed EFC



# Commercial reality is that changes here will impact local and flexible RA as well cont.



- Adopted framework should describe how CPE multi-year procurement for bundled product, which includes system, interacts with system RAR
  - E.G., if CPE awards bundled RA contracts it will meet portion of system requirements as well as local requirements, how should the process for system RA requirements take this into consideration?
  - We believe local requirements should be a subset of system requirements
- Since PG&E CPE is procuring MW with system, local, and any applicable flex it is prudent to explore potential counting rules that would still establish a single NQC value by month for each resource
  - This will not only support transactability within the CPE competitive solicitations but also bilateral markets to retain NQC structure
- Even without multi-year system RAR it is prudent for CPUC to require system RA requirement study to provide the system RA requirements for each year provided in the local RA requirement studies
  - Provides greater transparency on how the system and local RA requirements interact across the multi-year period



# Thank you!

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