Commitment Costs and Default Energy Bid Enhancements

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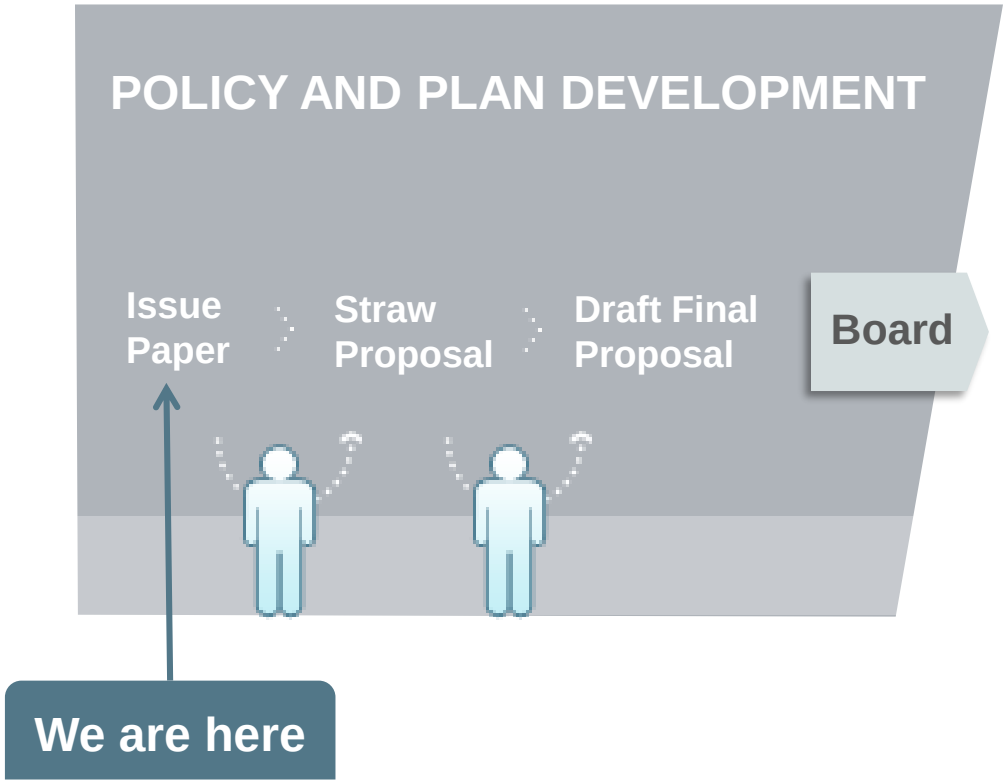
Issue Paper Stakeholder Call
November 22, 2016

Agenda

Time	Topic	Presenter
1:00 – 1:10	Introduction	Kim Perez
1:10 – 1:30	Overview	Cathleen Colbert
1:30 – 3:00	Identified Issues	Cathleen Colbert
3:00 – 3:50	Proposed Principles	Cathleen Colbert
3:50 – 4:00	Questions & Next Steps	Cathleen Colbert

ISO Policy Initiative Stakeholder Process



Plan for stakeholder engagement

Milestone	Date
Issue paper posted	November 18, 2016
Stakeholder call	November 22, 2016
Stakeholder written comments due	December 9, 2016
Straw Proposal Posted	February 7, 2017
Stakeholder meeting	February 14, 2017
Stakeholder written comments due	February 28, 2017
Revised straw proposal posted	May 4, 2017
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Draft final proposal posted	May 31, 2017
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Stakeholder written comments due	June 21, 2017
Board of Governors meeting	July 2017

OVERVIEW

Commitment Costs and Default Energy Bid Enhancements - Introduction

- Initiative to address stakeholder concerns with ISO's market design features impacting bidding flexibility
- Bidding Flexibility includes design features that:
  - Balance allowing both:
    - Suppliers ability to submit economic prices reflecting their willingness to provide energy at a given price
    - Market's ability to protect against vulnerability
  - Ensure mitigated prices are reasonable reflections of suppliers' cost expectations
- Goal: evaluate ISO's bidding flexibility design and assess whether modifications should be pursued

Summary of Issues

Production may not be appropriately valued in market ➔

1. Limitations might exist due to commitment cost market power mitigation where commitment cost mitigation may be overly restrictive
2. Limitations might exist where the market power protections are insufficient where exceptional dispatch mitigation may not be restrictive enough
3. Limitations might exist due to reference level design for commitment costs and energy costs where reference levels exclude price impact of externalities
4. Limitations might exist due to reference level design for commitment costs reference levels may not reasonably reflect cost expectations

Summary of Issues Cont.

Some Stakeholders raised concerns ➔

- Commitment Cost Treatment: Method used to mitigate commitment costs may result in over-mitigation of units that limits ability to submit prices based on willingness to sell
- Commitment Proxy Cost and Default Energy Bid Calculation: Method of determining the mitigated price has several limitations imposing a larger price risk on them to potentially incur losses
- Inaccurate valuation ➔ reducing market efficiency and potentially compromising cost recover

IDENTIFIED ISSUES

Issue 1 - Commitment Cost Mitigation May Be Overly Restrictive

- Bid Cap limits offer range (125% conduct test)
- Applying cap under all conditions – competitive or uncompetitive conditions – disregards that under competitive conditions design should allow supply offers based on suppliers' valuation of asset
- This is inappropriate because the competitive market forces exist to provide incentives that limit adverse market impacts from market power

Issue 1 - Commitment Cost Mitigation May Be Overly Restrictive Cont.

- Stakeholders expressed concerns that the commitment cost mitigation methodology may result in over-mitigation
  - Assumes uncompetitive conditions for every run
  - Conduct threshold lower than other reference level designs
- Initiative will evaluate whether an impact test should test for adverse market impacts by:
  - Identifying constrained versus unconstrained areas
  - Examining changes in energy prices or uplifts
  - Examining changes as result of non-committed units,
  - Examining changes as result of portfolio of units

Issue 1 - Commitment Cost Mitigation May Be Overly Restrictive Cont.

- Test for uncompetitive conditions - Pivotal Supplier Test
  - Evaluates if constraint is competitive or un-competitive by removing largest suppliers and testing if supply could relieve constraint.
    - If there is sufficient supply to meet demand after removing the largest suppliers ➔ competitive
    - If insufficient supply to meet demand after removing the largest suppliers ➔ uncompetitive and opportunity for market power.
- Concern - unit not mitigated because commitment decision would relieve congestion

Figure 1: Example of difficulties applying dynamic mitigation to commitment costs

Stakeholder Feedback on Pivotal Supplier Test

- Do you view testing for potentially constrained areas as a necessary condition for mitigation?
- Would a dynamic assessment performed in tandem with the energy mitigation be preferable?
- Would you support considering a static competitive path assessment for commitment cost mitigation if a dynamic one is not feasible?
- How to limit risk of over-mitigation while capturing potential impact of lumpy commitments?

Issue 1 - Commitment Cost Mitigation May Be Overly Restrictive Cont.

- Use structural test to identify constrained areas.
- Apply conduct and impact tests with different conduct thresholds based on type where impact test also fails.
- Conduct and Impact Test: Evaluates if economic withholding could be occurring to warrant mitigation if capable of adverse market impacts.
    - Apply conduct threshold where offers exceeding level are flagged
    - Apply impact threshold where changes in energy prices or uplift exceeding level are flagged
- Concern – allows markup for potential market power within headroom provided by conduct threshold

Issue 1 - Commitment Cost Mitigation May Be Overly Restrictive Cont.

	Component	Category	Conduct Threshold	Impact Threshold
NYISO	Minimum Load	Constrained	Distribution factor greater than 0 and increase of more than calculated threshold	lower of 200% or $100/MWh increase of energy prices or uplift payments
MISO	Minimum Load (No-Load plus Energy up to Hourly Economic Minimum)Level	Broad Constrained Area (sufficient compensation expected)	lower of 300% or $100/MWh increase relative to reference level (except if offer less than $25/MWh)	lower of 200% or $100/MWh increase of energy prices or any increase in uplift payments
MISO	Minimum Load (No-Load plus Energy up to Hourly Economic Minimum)Level	Narrow Constrained Area (insufficient compensation expected)	Distribution factor greater than 0 and increase of more than calculated threshold	calculated threshold relative to energy prices or any increase in uplift payments
SPP	No-load	Local Reliability Issue Commitment	10% increase relative to submitted mitigated offer	$25/MWh increase of energy prices, uplift payments,
MISO	Start-up	Broad Constrained Area (sufficient compensation expected)	200% of reference level	lower of 200% or $100/MWh increase of energy prices or any increase in uplift payments
MISO	Start-up	Narrow Constrained Area (insufficient compensation expected)	50% of reference level	calculated threshold relative to energy prices or any increase in uplift payments
NYISO	Start-up	Constrained	200% increase relative to reference level	lower of 200% or $100/MWh increase of energy prices or uplift payments
SPP	Start-up	Local Reliability Issue Commitment	10% increase relative to submitted mitigated offer	$25/MWh increase of energy prices, uplift payments,

Issue 1 - Commitment Cost Mitigation May Be Overly Restrictive Cont.

General Areas – Not a Constrained Area

	Component	Category	Conduct Threshold	Impact Threshold
NYISO	Minimum Load	General	lower of 300% or $100/MWh increase relative to reference level (except if offer less than $25/MWh)	lower of 200% or $100/MWh increase of energy prices
SPP	No-load	General	25% relative to submitted mitigated offer (except if offer less than $25/MWh)	$25/MWh increase of energy prices, uplift payments,
NYISO	Start-up	General	200% of reference level	lower of 200% or $100/MWh increase of energy prices
SPP	Start-up	General	25% relative to submitted mitigated offer (except if offer less than $25/MWh)	$25/MWh increase of energy prices, uplift payments,

Stakeholder Feedback on Conduct and Impact Tests

- What would be an appropriate threshold that should fail the conduct test to be subject to the impact test?
- How could the California ISO effectively capture impacts of commitments?
- Should the impact test examine impact to energy prices, uplift payments or both?
- What analysis should be done to support any design changes?

Issue 2 - Exceptional Dispatch Mitigation May Not Be Restrictive Enough

- With increased flexibility the ISO will need to re-examine its policies for mitigating exceptional dispatches
- Current policy is if an incremental exceptional dispatch could affect an uncompetitive constraint it is mitigated or if dispatched to Pmin
- ISO poses a question as to whether the exceptional dispatch mitigation policy should be expanded to include other factors.
  - Should dispatches for natural gas issues be considered uncompetitive since only resolved by specific unit
  - Should decremental exceptional dispatches be mitigated

Issue 3 - Reference Levels Exclude Price Impact of Externalities

- Agreement there needs to be avenue for suppliers to balance obligations to gas and electric systems
- Current policy for reference levels does not allow inclusion of social costs of externalities
- By introducing potential risk of noncompliance charge into the gas market, gas operators introduce externality
  - Externality, monetized by charge, should affect suppliers' view of their gas costs to generate power
  - Ideally, supplier could use bids to reflect cost of deviating from gas instruction that could undermine gas system
  - The markets could co-optimize the cost of dispatch consistent with electric and gas system constraints

Stakeholder Feedback on Conduct and Impact Tests

- What are the views on expanding the current policy to include dispatches for system needs (gas or electric) that could only be addressed by a specific unit?

- How could the ISO differentiate exceptional dispatches for “gas system needs” versus for electric needs.

- What type of test or questions need to be asked to determine whether the decremental would have the ability to exacerbate congestion so that it’s offer price is designed to suppress prices?

Issue 4 - Reference Levels May Not Reasonably Reflect Cost Expectations

- Stakeholders expressed that there are several limitations that may result in them not reflecting their cost expectations for a unit
- Limitations could impose a larger price risk on the supplier to potentially incur losses than the supplier would have been willing to assume
- Some stakeholders communicated that they have seen reference levels when mitigated that did not adequately reflect their incremental production costs
  - Overly restrictive commitment cost bid caps
  - Undervalued default energy bids

Issue 4 - Reference Levels May Not Reasonably Reflect Cost Expectations Cont.

- While the reference level design generally “works well” to not produce overly restrictive bid caps or undervalue default energy bids
- There are several assumptions that have been made to administratively calculate gas-fired units’ costs
  - One Fuel Type per Unit
  - One Procurement Location
  - One Shipper
  - One Price as Proxy
  - Next Day Price as Proxy

Stakeholder Feedback on Bid Structure and Bidding Rule Design

- Should ISO re-examine its policy that gas-fired units' costs can be estimated while other types cannot?
- Should the ISO consider moving from a reference level to a bid-in mitigated offer supporting bid-in cost offers?
- Should the ISO consider enhancing its minimum load structure to allow hourly variation?
- Should the ISO consider moving to a "no load" versus a "minimum load" structure?

Stakeholder Feedback on Mitigated Price Design

- What is a reasonable approach to valuing expected costs?
- How to support calculations with different fuel types?
- How to support calculations where supplier may procure at different locations or transport on different pipelines?
- How to include economic incentives from gas markets?
- How to support calculations that capture volatility?

PROPOSED PRINCIPLES

Proposed Design Principles

- Under competitive conditions, supply offers that include additional valuation of asset outside of its expected production costs are appropriate (e.g. incidental costs, risks, externalities, or influences of supply and demand)
- Under uncompetitive conditions it is reasonable to mitigate supply offers to price levels that are reasonable reflection of suppliers' cost expectations, with no additional valuation
- When mitigated, suppliers should not be allowed to recover other factors, even if it contributes to their willingness to sell, due to market power concerns

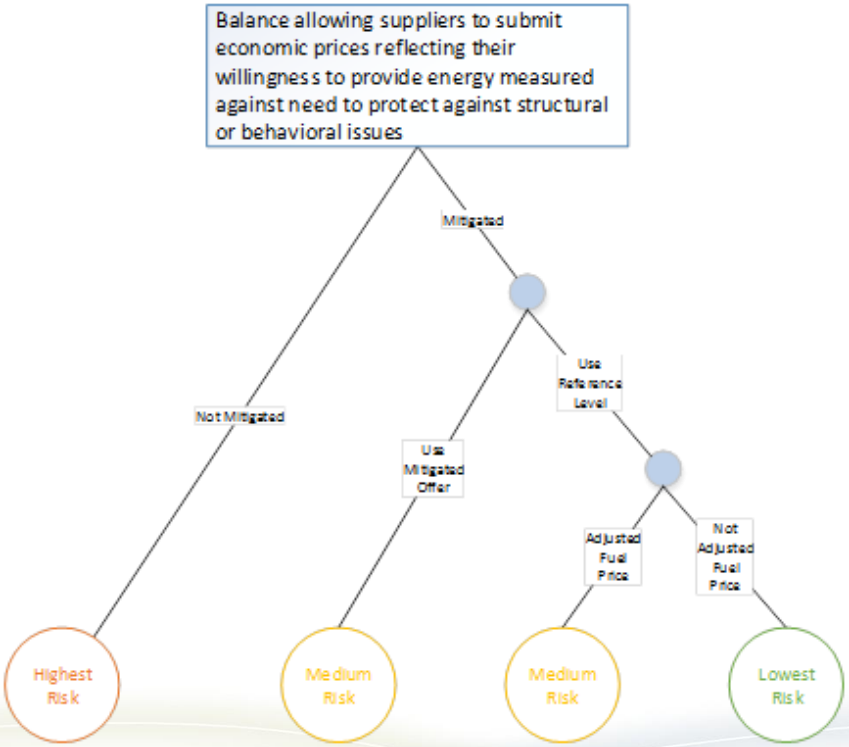
Proposed Design Principles Cont.

- Under competitive market conditions –
  - Suppliers should be able to offer price at which they are willing to sell the good based on their asset valuation
  - Competitive forces provide market power protection based on profit-maximizing incentives to submit offers for suppliers' expectation of incremental costs of unit
- Under uncompetitive market conditions –
  - Accepting supplier's offer price based on how it assesses the units' value could open markets up to market power
  - Market must protect consumers against exercise of market power or gamine due to insufficient supply
  - Market must ensure offers reflect suppliers' cost expectations

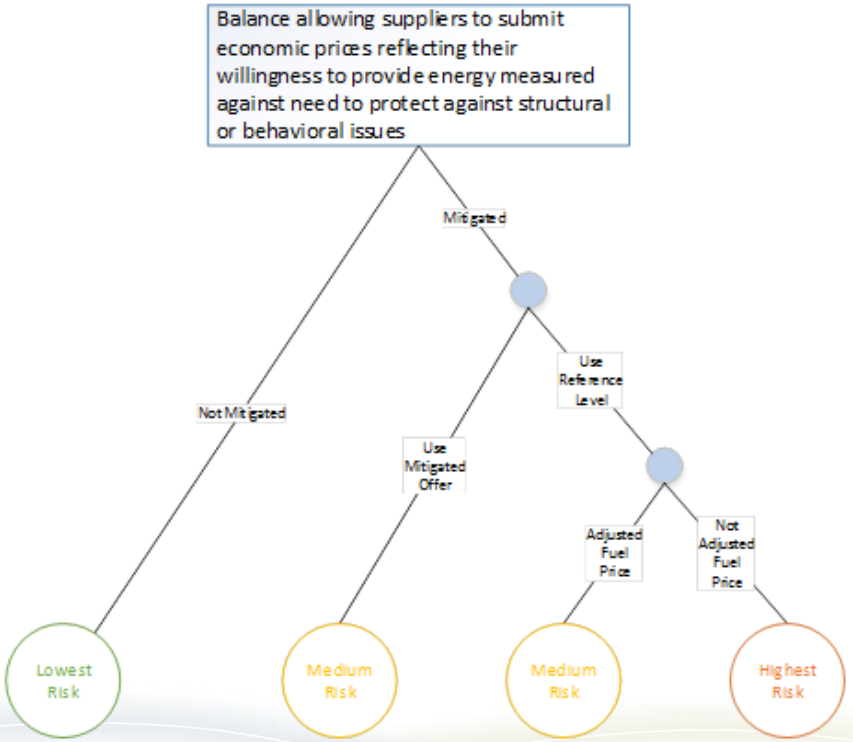
Stakeholder Feedback on Proposed Principles

What is the preferred design path to find the optimal design balancing suppliers' need to bid assets' value and market's need to protect against market power or gaming concerns?

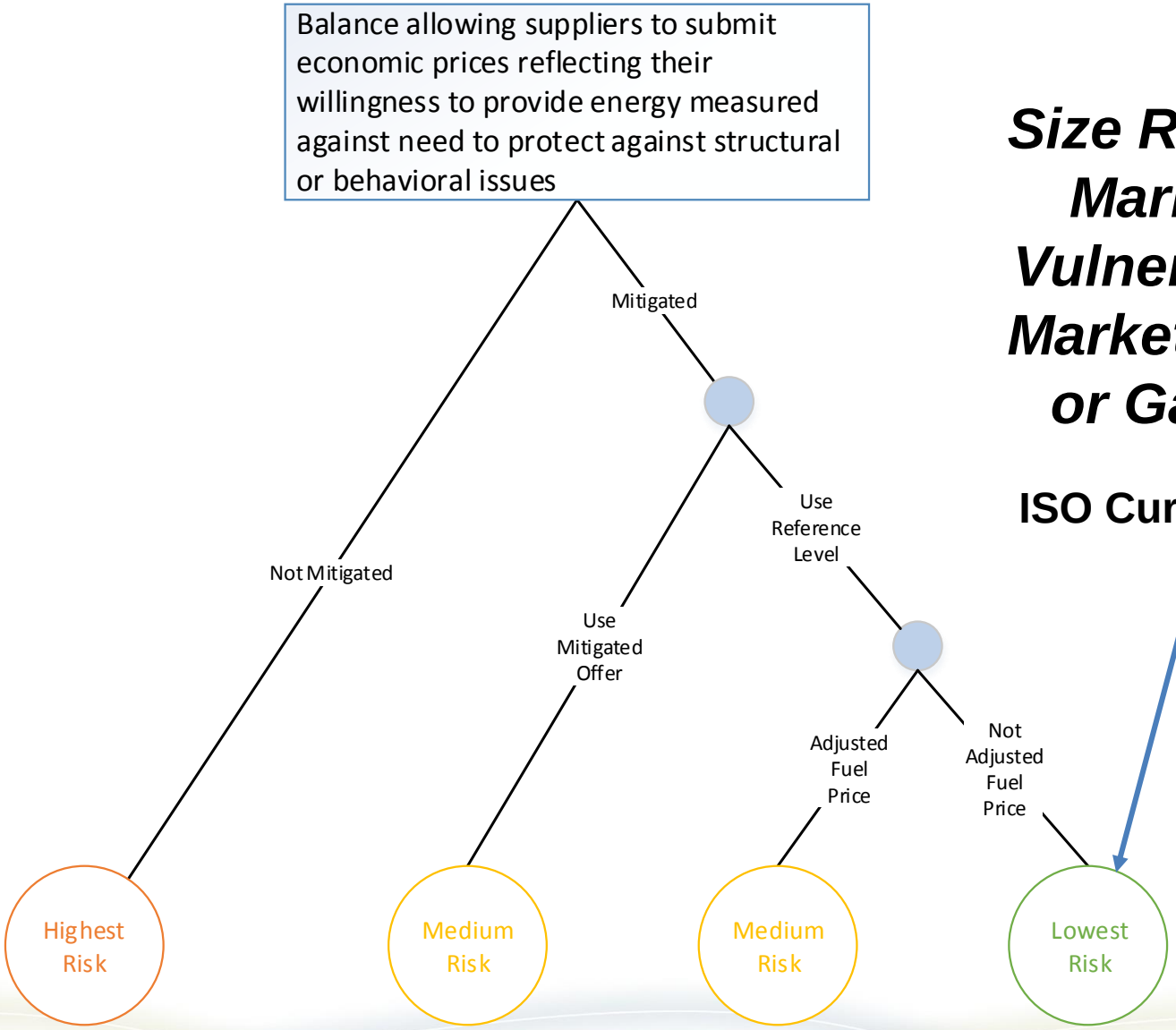
Size Risk that Market is Vulnerable to Market Power or Gaming



Size Risk that Suppliers' Value Not Reflected in Market



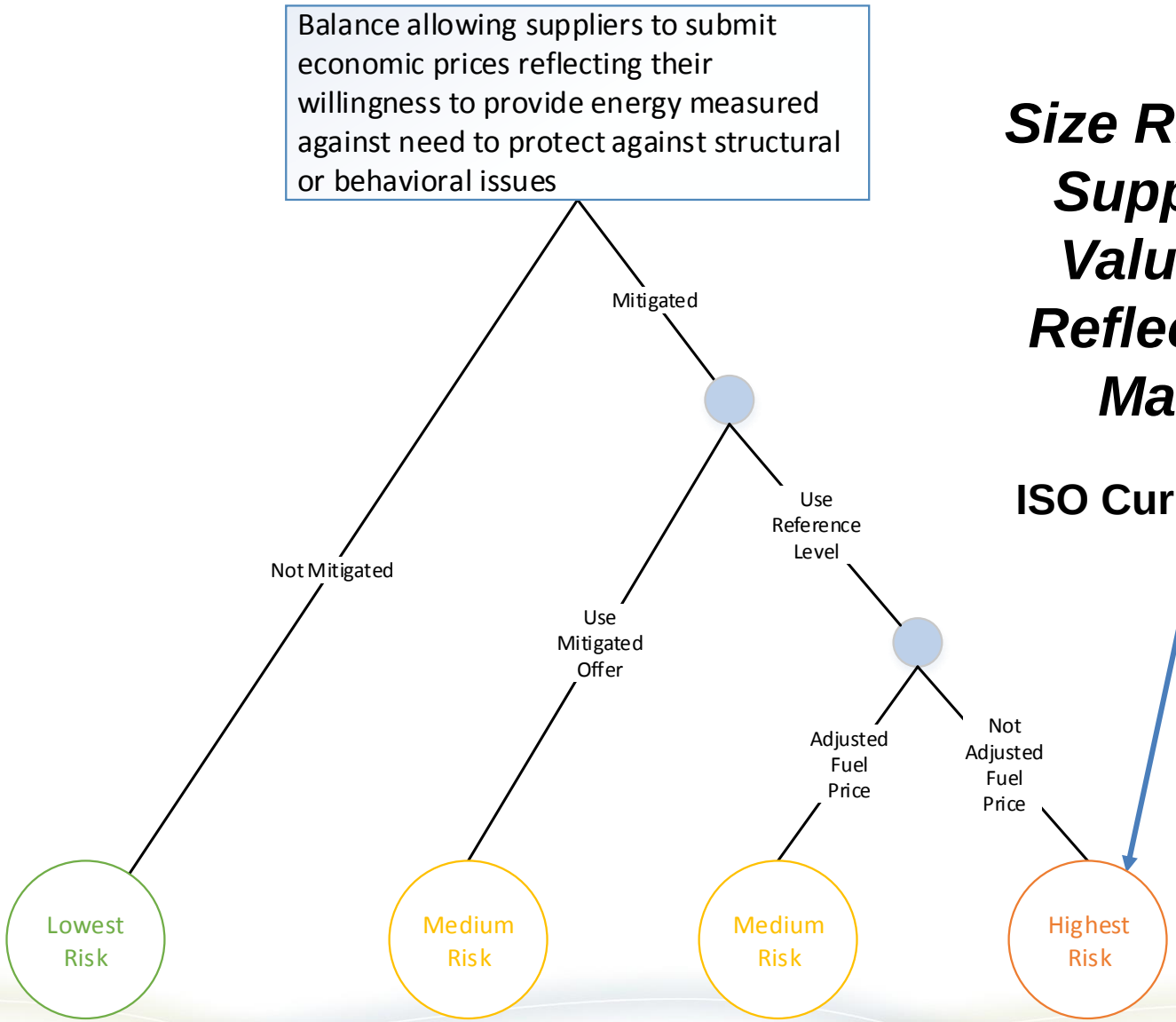
Stakeholder Feedback on Proposed Principles



Size Risk that Market is Vulnerable to Market Power or Gaming

ISO Current Path

Stakeholder Feedback on Proposed Principles



Size Risk that Suppliers' Value Not Reflected in Market

ISO Current Path

Stakeholder Feedback on Proposed Principles

Since the ISO path has lowest risk of market vulnerability but highest risk to suppliers, should the ISO consider the two middle paths that introduce medium risk to both?

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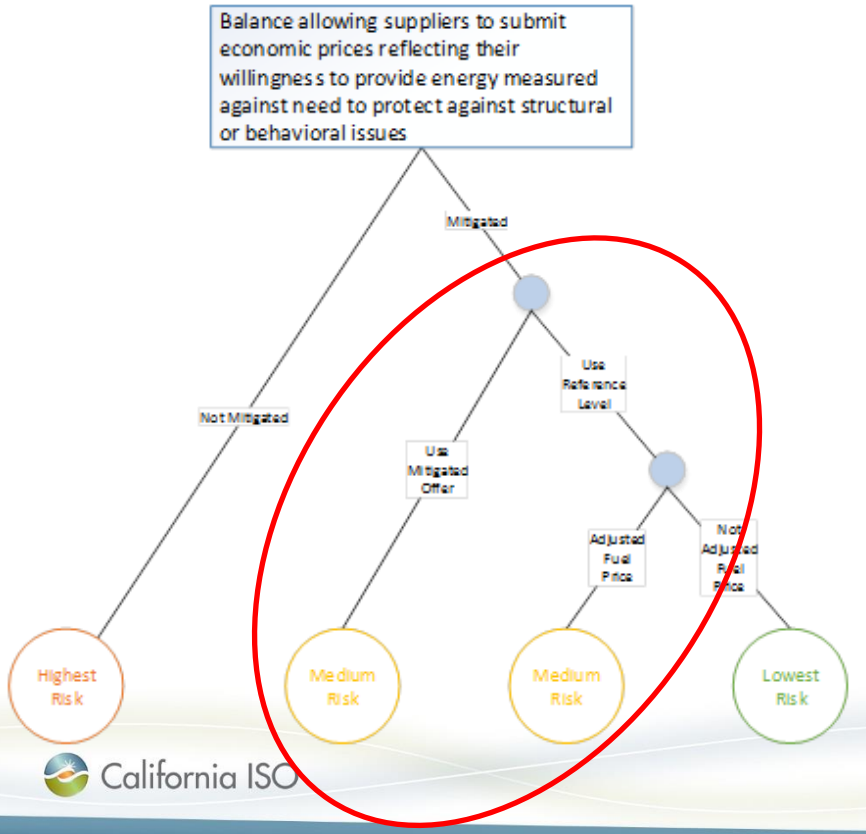

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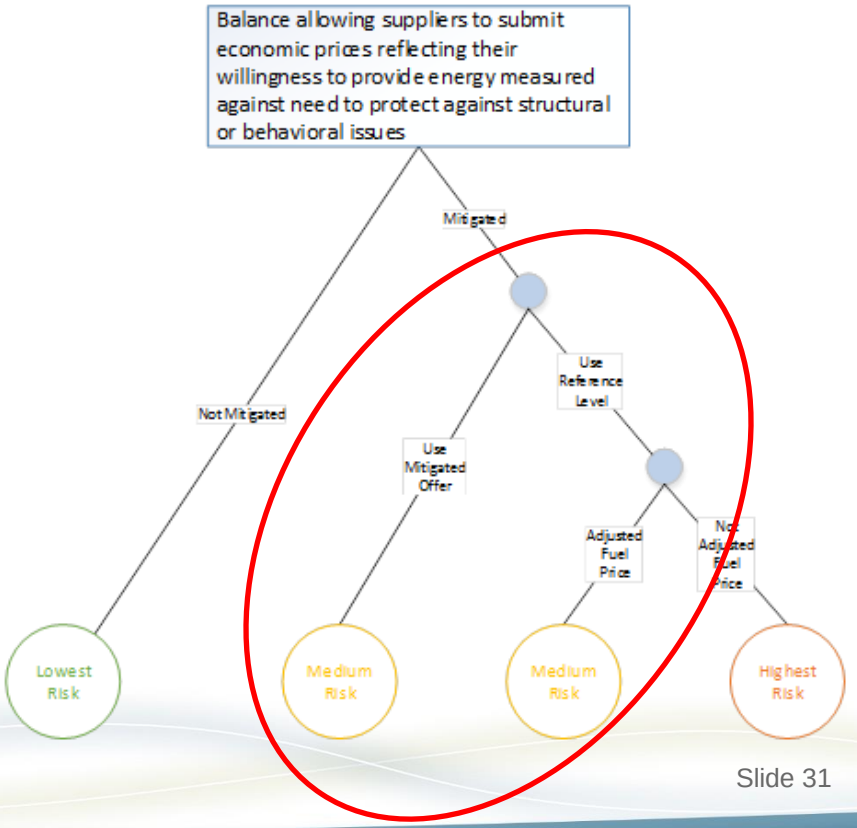

QUESTIONS & NEXT STEPS

Evaluating Straw Proposal Scope

		Improve balance of allowing suppliers to submit economic prices for commitment cost offers reflecting their willingness to provide energy measured against need to protect against structural or behavioral issues	
		Yes	No
Increase assurance that mitigated prices are reasonable reflections of suppliers' cost expectations	Yes	Propose Enhancements for Both	Propose Enhancements to Improve Mitigated Prices Reflection of Suppliers' Cost Expectations
	No	Propose Enhancements to Adjust Market Power Mitigation Method for Commitment Cost Offers	Determine No Enhancements Needed

Next Steps

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Please submit comments to initiativecomments@caiso.com