Commitment Costs Enhancements Phase 2

Straw proposal discussion

November 12, 2014

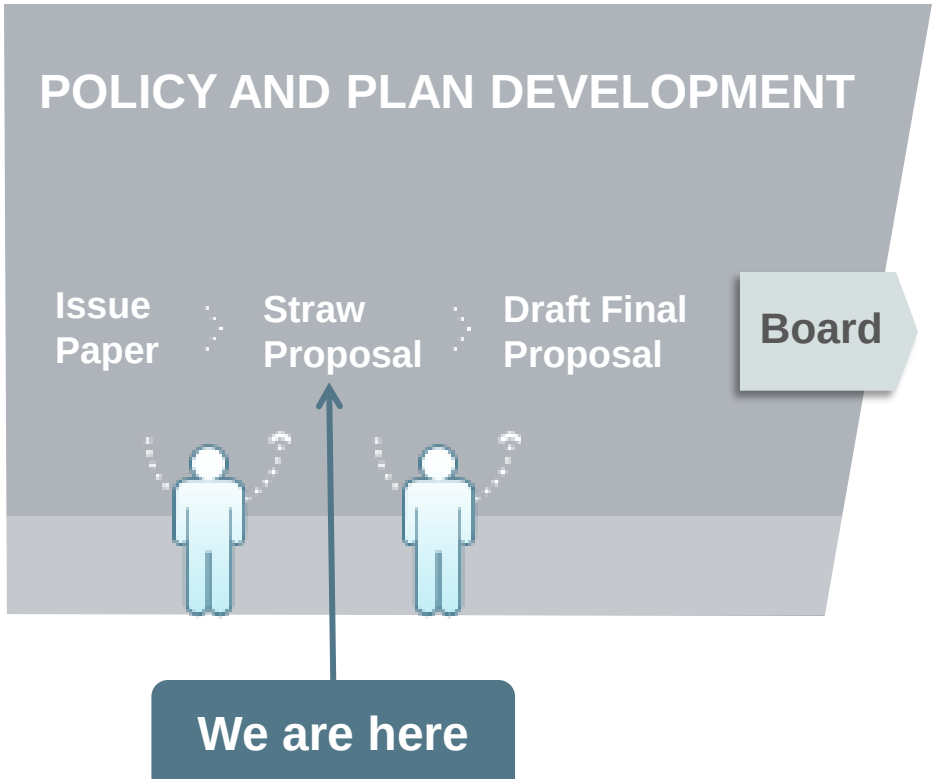
Delphine Hou

Senior Market Design and Policy Specialist

Agenda

Time	Topic	Presenter
1:00 – 1:05	Introduction	Kristina Osborne
1:05 – 2:00	Use-limited resource definition	Delphine Hou
2:00 – 2:30	Resource adequacy	Carrie Bentley
2:30 – 2:45	Opportunity cost modeling	Delphine Hou
2:45 – 3:15	Transition costs	Delphine Hou
3:15 – 3:30	Greenhouse gas costs	Delphine Hou
3:30 – 3:45	BPM clarifications	Delphine Hou
3:45 – 3:55	Additional items not in straw proposal	Delphine Hou
3:55 – 4:00	Next steps	Kristina Osborne

ISO Policy Initiative Stakeholder Process



Existing and proposed definition of use-limited resources

Existing (per CCE1 policy)	Proposed
A resource that, due to design considerations, environmental restrictions on operations, cyclical requirements, such as the need to recharge or refill, or other non-economic reasons, is unable to operate continuously. This definition is not limited to Resource Adequacy Resources. A Use-Limited Resource that is a Resource Adequacy Resource must also meet the definition of a Resource Adequacy Resource.	A resource with non-economic and non-contractual limitations the CAISO optimization cannot model but for the inclusion of opportunity cost adders. Limitations may include environmental, regulatory, or operational restrictions, as approved by the CAISO. This definition is not limited to Resource Adequacy Resources. A Use-Limited Resource that is a Resource Adequacy Resource must also meet the definition of a Resource Adequacy Resource.

Same as current but make this explicit.

CAISO optimization is only over a single day.

Use-limited resources have an opportunity cost. They are not simply fuel-limited.

Will discuss later in RA section

Resource-specific discussion

Resource type	Use-limited (Yes/No)	Proposed changes
Gas-Fired (Steam)	No	**None**
Gas-Fired (Combined Cycle)	No	**None**
Gas-Fired (GT with limited fuel storage)	Yes	**Not use-limited if can be optimized by ISO**
Gas-Fired (GT without limited fuel storage)	No	**None**
Gas-Fired with environmental restrictions that constrain its operation	Yes	**Not use-limited if can be optimized by ISO.**
Hydro-Large Storage	Yes/No - although Hydro with large amount of storage may have more flexibility to generate on demand and thus may not be use-limited in a manner similar to a run-of-the river, downstream water flow and water-release needs and other environmental conditions may dictate output so as to warrant Use-Limited status	**None.** See additional discussion above on run-of-river hydro
Hydro-Small Storage/Small Conduit	Yes	**None**
Hydro-Run of the River	Yes	**None**

Resource-specific discussion (cont'd)

Resource type	Use-limited (Yes/No)	Proposed changes
Wind	Yes	**Not default use-limited. Do not have to bid in DAM (40.6.4.3.4). Assume same treatment in RTM.**
Solar	Yes	**Not default use-limited. Do not have to bid in DAM (40.6.4.3.4). Assume same treatment in RTM.**
Nuclear	Yes	**Not use-limited – regulatory must-take.**
QF	Yes	**Not use-limited – regulatory must-take.** See additional discussion on combined heat and power resources.
Resource with Contractual Limitation that Limits Availability	No	**This is an overarching requirement, not just under QFs.**
Clarification: Proxy demand and reliability demand response resources	**Yes, per current tariff section 40.6.4.1**	**No commitment-related opportunity cost for RDRR. Both may have energy-related opportunity costs.***
New: Combined heat and power (non-QF)	**n/a**	**Not use-limited for regulatory must-take capacity; may be use-limited otherwise.**
New: Geothermal (non-QF)	**n/a**	**Not default use-limited.** [seeking feedback]
New: Storage	**n/a**	**Not default use-limited.**
New: Biomass, landfill gas, others (non-QF)	**n/a**	**Likely not use-limited but more discussion needed.** [seeking feedback]

*Correction from straw proposal

Resource adequacy discussion
Overview

- Two RA rules depend on use-limited definition
  - Generated bids (bid insertion)
  - Residual unit commitment participation
- Generating bids (40.6.8)
  - The ISO does not insert any bid into the energy market for an RA resource that is use-limited
- RUC participation (40.6.4.3.2)
  - The ISO does not insert a $0 RUC bid or require participation by hydro, pumping load, and non-dispatchable, use-limited resources

Resource adequacy discussion
Generating bids

- Is bid insertion still necessary under the new availability incentive mechanism?
- Currently RA resource availability is based on whether a resource is out on a forced outage
  - Bid insertion ensures a resource cannot avoid potential penalties by simply not bidding
- In the future RA resource availability will be based on whether a resource has bid into the energy markets
  - Is this enough assurance that resources will offer into the market so we don't need to generate bids for RA resources in the future?

Resource adequacy discussion
Use-limited definition impacts the generated bids rules

- Use-limited resources are exempt from generated bid rules
  - Definition of use-limited is changing
  - Certain resources therefore may be subject to generated bid rules
- Could continue to exempt use-limited resources, in addition to:
  - Regulatory must-take
  - Storage

Resource adequacy discussion
Solar and wind

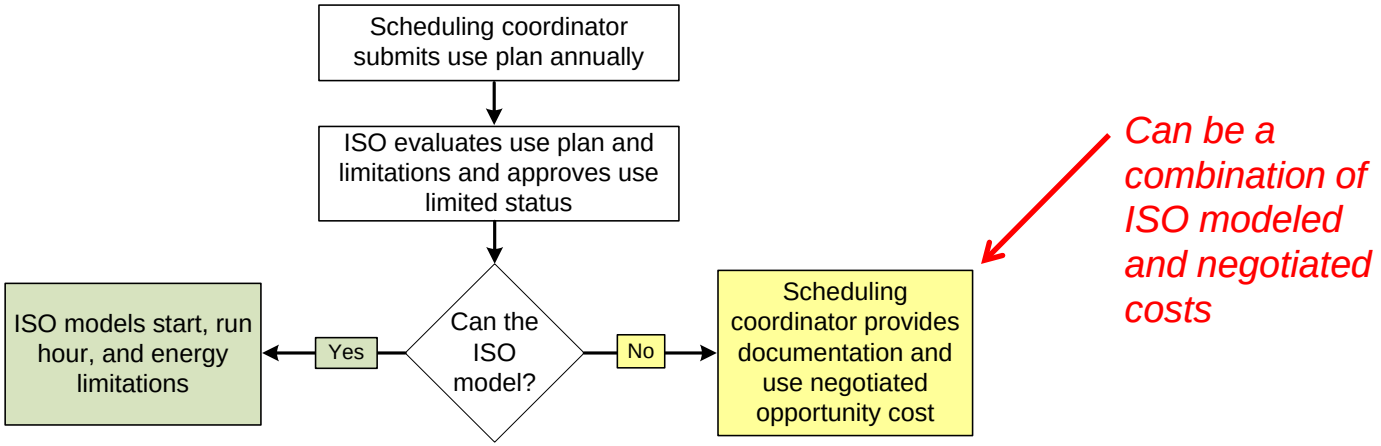
- Propose two options for wind and solar RA resources that are not registered as use-limited:
  1. ISO will insert resource's forecast (if provided) as a self-schedule in the event there is no bid
  2. Exempt wind and solar from generated bid requirement

Resource adequacy discussion
Use-limited definition impacts RUC participation rules

- Hydro, pumping load, and non-dispatchable, use-limited resources are exempt from RUC participation
- Hydro and pumping load will remain exempt
- Resources that are currently non-dispatchable, use-limited may not be in the future
  - May need to change rules to accommodate resource set change
- May need to clarify rules related to dispatchable and non-dispatchable intermittent resources

Opportunity cost modeling: process

- Using new use-limited definition, process will divide resources into two groups based on ISO review:



- For negotiated costs, seeking stakeholder feedback on type and extent of documentation submitted.

Opportunity cost modeling: methodology

- Basic modeling methodology unchanged from CCE1 discussion.
- ISO has a prototype but will improve modeling to incorporate annual limitations (evaluating if rolling annual is also possible). Can currently model monthly.
- ISO will not be able to model multi-stage generators but would not likely impact many resources. Seeking stakeholder feedback.
- Seeking stakeholder feedback on proposal to update quarterly in conjunction with 25% headroom. (Originally proposed 10% adder is now removed.) Should this percentage decrease over time?
- Seeking stakeholder feedback on use of historical versus futures gas prices.

Transition cost proposals

- BPM change – minor change to ensure calculation is correct
- Policy change
  - Seeking stakeholder feedback on following interpretation:
    - A transition is the path taken to move to a different configuration for a multi-stage generator that is already ‘On.’
    - Transition cost is the fuel cost to increase in configurations.
    - There are no downward transition costs.
  - Major maintenance adders should be considered in all starts, even if unit cannot directly start in that configuration. Seeking stakeholder feedback on whether there is sufficient documentation to support major maintenance adders in every configuration. (See later discussion on major maintenance adders.)

Transition cost policy change

- Assuming ISO's interpretations are correct, we propose the following policy changes:
  - Eliminate "boundary rules" 1 and 2;
  - Scheduling coordinators to provide fuel input for a transition path;
  - Can add greenhouse gas to transition costs (see following discussion on greenhouse gas);
  - Can bid transition costs similar to proxy costs;
  - Scheduling coordinators provide major maintenance adders* for all starts and start costs increase per increasing configuration; and
  - No transition or start costs are incurred for decreasing configuration.

*See last side for additional discussion on major maintenance adders.

Greenhouse gas

- Starting January 1, 2015, natural gas suppliers will also be considered covered entities for greenhouse gas compliance.
- California Public Utilities Commission has an open proceeding on this issue.
- Uncertain if gas indices will reflect additional greenhouse gas costs.
  - If indices do not include cost, ISO proposes to allow all natural gas resources to reflect cost explicitly in commitment costs, default energy bids and generated bids.
  - If indices do include cost, ISO proposes to not allow any natural gas resources to reflect cost explicitly in commitment costs, default energy bids and generated bids.

Other BPM clarifications

- Costs for non-thermal units
  - Non-thermal units may use “fuel cost” fields to accommodate commitment costs. Recognizes that Master File fields are thermal resource-centric and not always well suited to non-thermals.
  - Change is pending.
- Major maintenance adder
  - Appendix L of the Market Instruments BPM clarifies documentation required and methodology.
  - Change is PRR 782.

Additional discussions (not in straw proposal)

- Major maintenance adders - many resources only have access to contracts such as power purchase agreements as supporting documentation when applying for these adders. These costs may not necessarily reflect actual operational costs but rather a negotiated price. In order to lessen administrative burden, should ISO develop default adders when the scheduling coordinator does not provide actual historical maintenance data? Can this process be used for major maintenance adders for multi-stage generator starts (both “startable” and “non-startable”).
- Default variable O&M costs – the ISO is approaching the three year review period of default VOM costs as noted in *Commitment Cost Refinements*. Would stakeholders support a review and what process?

Next steps

Date	Event
Wed 10/29/14	Straw proposal posted
Wed 11/12/14	Stakeholder call
Wed 11/19/14	Stakeholder comments due
Mon 12/22/14	Revised straw proposal posted
Tue 1/6/15	Stakeholder call
Tue 1/13/15	Stakeholder comments due on revised straw proposal
Tue 2/3/15	Draft final proposal posted
Tue 2/10/14	Stakeholder call
Tue 2/24/14*	Stakeholder comments due on draft final proposal
Thu/Fri 3/26-3/27/15	Board of Governors meeting

***Correction – paper incorrectly noted 2/14 as due date**

Please submit commitment cost comments to ComCosts2@caiso.com
Please submit resource adequacy comments to RSA@caiso.com