2021 Contract Management (COMA) Enhancement – Issue Paper and Straw Proposal

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Stakeholder Call

August 17, 2021

Housekeeping reminders

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO's permission.
- Meeting is structured to stimulate dialogue and engage different perspectives.
- Please keep comments professional and respectful.
- Please try and be brief and refrain from repeating what has already been said so that we can manage the time efficiently.

New instructions for raising your hand to ask a question

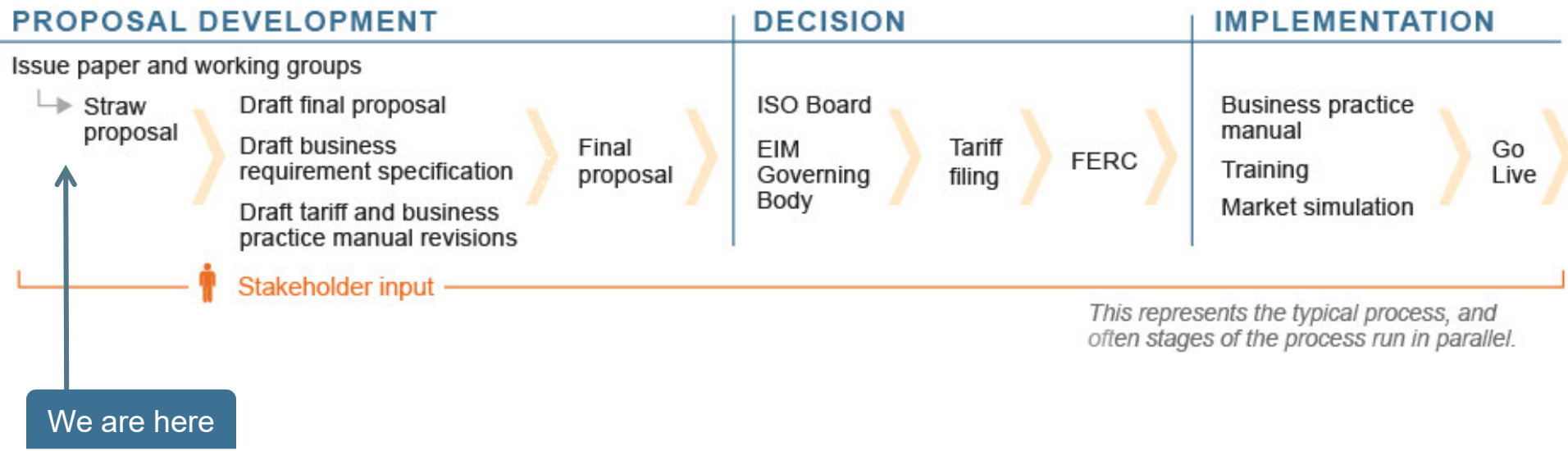
- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon  above the chat window located on bottom right corner of the screen. **Note**: #2 only works if you dialed into the meeting.
- If you need technical assistance during the meeting, please send a chat to the event producer.
- Please remember to state your name and affiliation before making your comment.
- You may also send your question via chat to the meeting host – Isabella Nicosia.

Agenda

- Welcome and introduction
- CAISO as an Affected System study agreement
- Retirements & Repower
  - Clarification of retention of Interconnection Service
  - Repower study plan timeline
  - Repower language clarifications for Section 25
- Modification Adjustments
  - COD Alignments with PPA (for TPD Group 3 projects)
  - Project conversions to 100% storage
  - Appendix U clarifications/updates
- Generator Interconnection Study Process Agreement effective date
- Market Quality
  - Dead-band and droop requirement revisions to GIA
- Next Steps

Note: CAISO is planning an IPE process later in 2021

CAISO Policy Initiative Stakeholder Process



Proposed Initiative Schedule

Date	Milestone
Issue Paper/Straw Proposal	
Aug 10, 2021	Publish Issue Paper/Straw Proposal
Aug 17, 2021	Stakeholder meeting
Aug 31, 2021	Comments due
Revised Straw Proposal – Target October	
Week of Sept 27, 2021	Publish Revised Straw Proposal
Week of Oct 4, 2021	Stakeholder meeting
Week of Oct 18, 2021	Comments due
Draft Final Proposal – Target November	
Week of Nov 15, 2021	Publish Draft Final Proposal
Week of Nov 29, 2021	Stakeholder meeting
Week of Dec 13, 2021	Comments due
Board of Governors, Draft BRS (if required), and Tariff Language	
February 2022	Board of Governors
February 2022	FERC Filing
April 2022	FERC Order
2022 (2023 as necessary)	Policy implementation

Note: The schedule may be adjusted if a step in the process is no longer necessary.

CAISO as an Affected System Study Agreement

- CAISO is becoming more impacted by interconnections in neighboring balancing authorities
- CAISO must review such proposed generation as an Affected System to ensure there are no system impacts to the CAISO grid and reliability is maintained

- **CAISO proposes:**
  - A *pro forma* agreement
  - Language in Appendix DD to address the study agreement, notification requirements, and study deposit

Retirement & Repower
Retention of Interconnection Service

- Similar to deliverability retention following retirement, a project also has interconnection service rights
- Section 6.1.3.4 of the BPM for reliability requirements
  - a project retains its deliverability status and allocation for exactly three years from the date of retirement

- **CAISO Proposes:**
  - Clarify that Interconnection Customers will retain Interconnection Service rights concurrent with deliverability rights - three years from the date of retirement

Retirement & Repower:
Repower study plan timeline

- The data from the valid repower Interconnection Request is necessary for the creation of the study plan
- The process of reviewing and validating a repower interconnection requests and technical data frequently takes longer than the 10 days currently included in the tariff
  - Due to varying factors; including volume of cluster projects, material modification requests, engineering workload, etc.

- **CAISO Proposes:**
  - Remove the 10 business day requirement to tender a draft study plan from the tariff

Retirement & Repower
Tariff Section 25 Repower language

- Section 25 of the CAISO tariff applies to:
  - generating units seeking to interconnect to the CAISO Controlled Grid
  - modifications to existing generating units
  - generating units that previously operated and seek to repower their units and retain deliverability
  - and a generating unit currently identified as a qualified facility and converting to a CAISO participating generator.

- **CAISO Proposes:**
  - to remove ambiguity, the CAISO will clarify and modify the repower-specific language
  - Add *Section 25.1(f)* and clarify affidavit requirements
    - each existing Generating Unit connected to the CAISO Controlled Grid that proposes to repower its Generating Unit, is subject to Section 25.1.2.

Modifications - Aligning COD with PPA

- TP Deliverability (TPD) allocation Group 3 allows projects to seek a TPD allocation by claiming they are proceeding without a power purchase agreement
  - With certain criteria, limitations, and requirements
- One limitation is projects may not extend their COD beyond the date proposed in their original interconnection request
- CAISO does not prohibit Group 3 projects from seeking and executing a PPA
- Current tariff expressly exempts a COD extension to allow the project's COD to align with the PPA

- **CAISO Proposes:**
  - Projects *Proceeding without a PPA* in TPD allocation Group 3 may align their project COD with the executed and regulatory-approved PPA even if its beyond the maximum time in queue

Modifications
Allowing projects to convert to 100% storage

- Currently, generating units are prohibited from *completely* converting from one asynchronous technology to a battery storage resource

- **CAISO Proposes:**
  - Allow projects to convert to 100% storage
    - Provided the electrical characteristics of the plant remain substantially unchanged and other projects are not impacted
    - Change allowed via a Material Modification Assessment or a repower request

Modifications
Appendix U updates – Modifications

- Section 4.4 of Appendix U provides the rules for serial projects to request modifications prior to achieving their Commercial Operations Date
- With the evolution of the study process section 4.4.4 in now inconsistent with section 4.4.6

- **CAISO Proposes:**
  - To align the serial process to be consistent with existing modification procedures by deleting section 4.4.4 of Appendix U

Modifications
Appendix U updates – Restudy Timeline

- Appendix U was predicated on the previous study process: a Feasibility Study, a System Impact Study, and a Facilities Study
- These studies and re-studies are now performed in the Cluster Phase I and II studies and the annual reassessment process

- CAISO Proposes:
  - To delete section 6.4 and 7.6 of Appendix U in their entirety
    - Section 8.5 of Appendix U is still needed due to a FERC settlement agreement and the CAISO will retain this section for that reason

Generator Interconnection Study Process Agreement (Appendix 3) Effective Date

- Currently, the GISPA is effective upon *submission* to the CAISO
- In the queue cluster application window, projects must submit a complete package to be included in the cluster study process
- Interconnection request applications deemed incomplete are neither studied nor charged for study costs
  - Refunded 100% of study deposit
  - Until package is deemed complete the agreement is not necessary
- **CAISO Proposes:**
  - To change the effective date of the GISPA to the date the interconnection request package is “deemed complete”.
    - Revise Appendix DD (GIDAP) Section 3.5.1
    - Revise GISPA

Market Quality
Revise dead-band and droop requirements in the GIA

- With the integration of higher levels of Variable Energy Resources ("VERs") and the increased amount of rooftop photovoltaics, the CAISO is experiencing increased levels of variability on the system
- CAISO has no real-time forecasting or real-time visibility of roof-top solar, and yet, still has a NERC requirement to balance supply against demand every 4-seconds and calculate its control performance on a 1-minute basis

- **CAISO Proposes:**
  - To change governor-like droop setting at the plant level to 4% from 5% and implement frequency dead-band change of ± 0.0167 Hz instead of ± 0.036 Hz
    - Appendix H of the LGIA and Attachment 7 of the SGIA would be revised
    - This change would result in faster response to frequency deviations in real time, help address the variability concerns, and reduce the need to curtail VERs

Market Quality
CAISO's current real time operational challenges

- Intra-hour ramps can be greater than ± 7,000 MW in some hours
- Maximum 3-hour ramps greater than 17,000 MW during sunset
- 10-minute variability between ±1,000 MW and ± 1,500 MW
  - Dispatch decisions for the binding 5-minute interval could be off by ± 1,500 MW
- Oversupply conditions continue to increase
- Experiencing control performance challenges during sunrise and sunset and the middle of the day on weekends due to low net load
- During spring, cannot commit enough gas units on governor control to meet primary frequency response obligation --- especially under hydroelectric spill conditions

Market Quality
Proposed dead-band and droop requirements for inverter based resources in the GIA

CAISO recommendation for inverter based resources:

- Change the governor-like droop setting at the plant level to 4% from 5%, and
- Change the frequency dead-band to ± 0.017 Hz instead of ± 0.036 Hz
- Revise Appendix H of the LGIA and Attachment 7 of the SGIA for asynchronous generators

Note: This change would result in faster better response to frequency deviations in real time, help address the variability concerns, and reduce the need to curtail VERs.

Market Quality
The WECC criterion on governor droop setting to facilitate frequency support in the west

PRC-001-WECC-CRT-2.1 “Governor Droop Setting” is to facilitate frequency support in the Western Interconnection

Requirements and Measures

- ***WR1*** - Each Generator Owner shall set the Frequency Response droop for each generating unit to greater than or equal to 3 percent but less than or equal to 5 percent

- ***WM1 -*** Each Generator Owner will have evidence that it set the Frequency Response droop for each generating unit to the parameters specified in WR1. Evidence may include, but is not limited to, dated setting sheets, generator test reports, generator logs, pictures, or other documentation

Market Quality -- NERC's reliability guideline on primary frequency for synchronous, inverter-based, and other technologies as of May 2019

Western Interconnection

Western Interconnection Dead-Band Settings	
Generator Type	***Maximum Dead-Band Setting***
All Generating Units	± 0.036 Hz

ERCOT Interconnection

ERCOT Interconnection Dead-Band Settings	
Generator Type	***Maximum Dead-Band Settings***
Steam and Hydro Turbines with Mechanical Governors	± 0.034 Hz
All Other Generating Units/Generating Facilities	± 0.017 Hz

https://www.nerc.com/comm/OC/RS_GOP_Survey_DL/PFC_Reliability_Guideline_rev20190501_v2_final.pdf

Next Steps

- Stakeholder comments due August 31, 2021
- Submit comments through the ISO's commenting tool using the template provided on the initiative webpage: https://stakeholdercenter.caiso.com/StakeholderInitiatives/Contract-management-enhancements-2021
- For questions, please contact Jason Foster at jlfoster@caiso.com