Hybrid Resources – Aggregate Capability Constraint (ACC) for Co-Located Resources

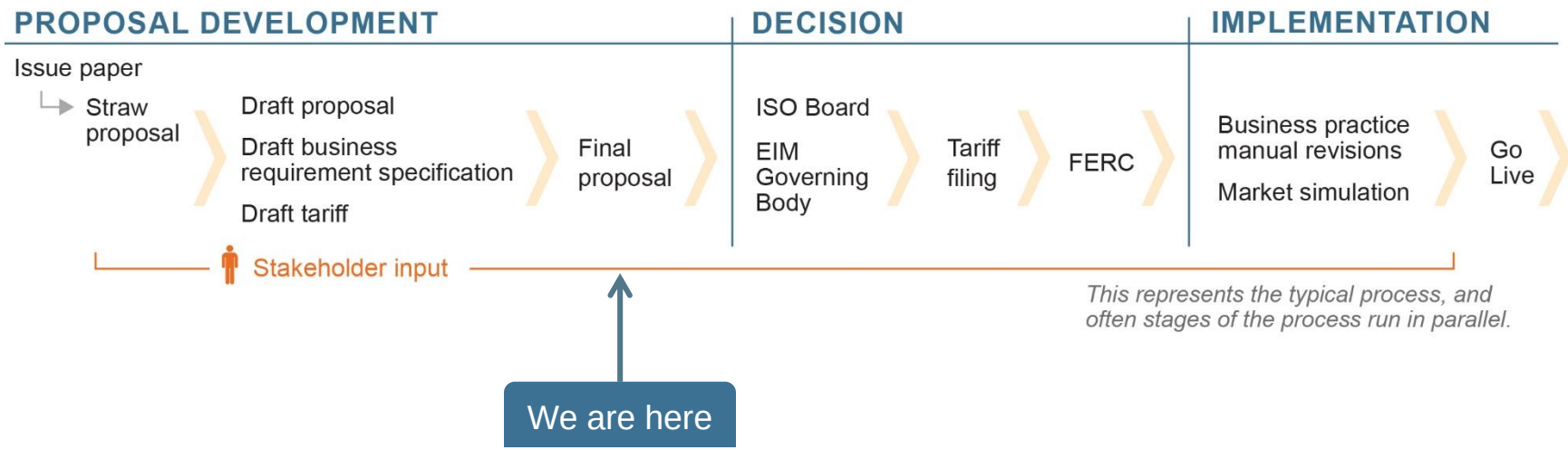
Final Proposal

June 3, 2021

Web Conference

Gabe Murtaugh

ISO Policy Initiative Stakeholder Process



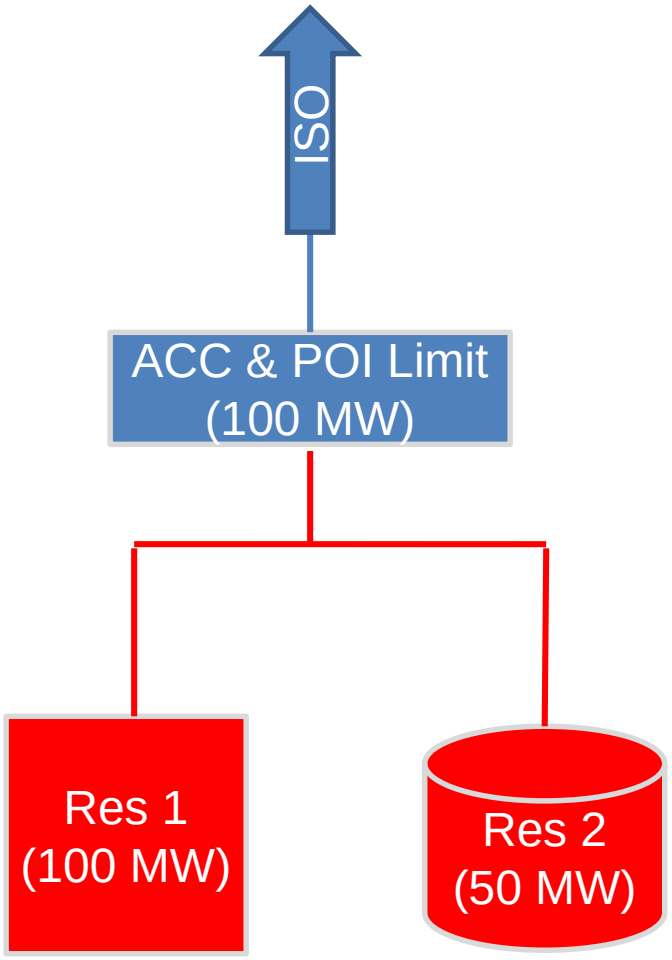
Stakeholder Process Timeline

Date	Milestone
June 3, 2021	Web Conference: ACC final proposal and draft tariff language
June 14	Comments due
June 30	EIM Governing Body meeting
July 14-15	Board of Governors meeting
Fall 2021 / Spring 2022	ACC Implementation

The aggregate capability constraint prevents dispatch of co-located resources from exceeding POI limits

- Some co-located resources may have the capability to produce at levels above the interconnection limits
  - Prevalent for solar+storage resources
- The ACC prevents aggregate dispatch from co-located resources from exceeding interconnection limits
  - The ISO also requires and verifies that controls (limiters/run-back schemes) are in place at the physical infrastructure at the point of interconnection
- Current tariff rules only allow for a single aggregate capability constraint at a generating facility
  - ISO proposes to enhance these rules and allow additional constraints to be modeled at the same generating facility
  - ACCs will then be able to model contractual limitations imposed on off-takers

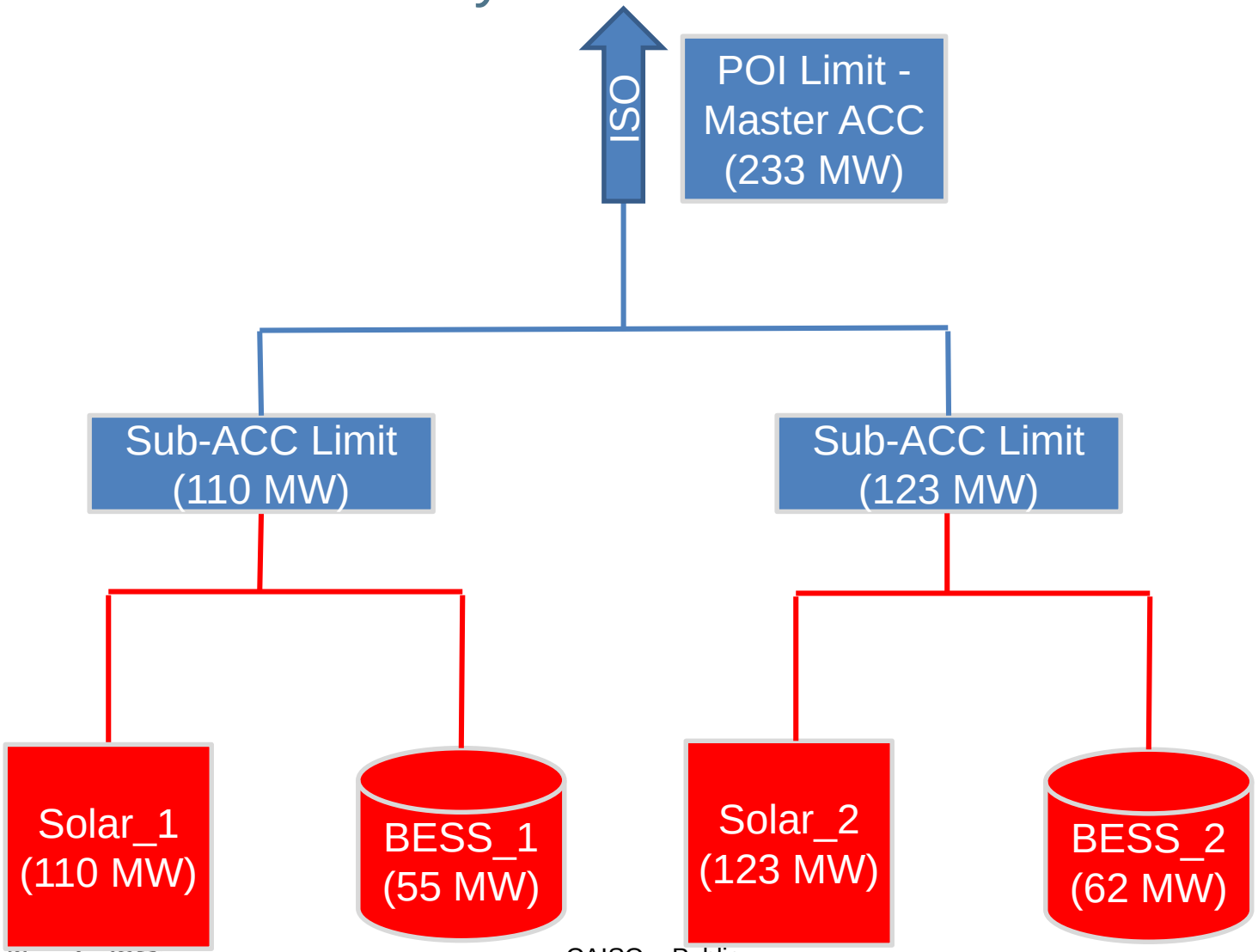
Existing aggregate capability constraint functionality



The ISO proposes functionality for master aggregate capability constraints and subordinate-ACCs

- Large co-located solar and storage resources may contract with multiple off-takers
  - Each off-taker will have rights to a fraction of the aggregate solar and storage resource
  - These can be modeled as independent resource IDs, which is consistent with current ISO modeling practices
  - Each individual variable resource (corresponding to a resource ID) will continue to be subject to Appendix Q rules
  - Off-takers may also be entitled to a share of the interconnection limit, from the combined output of resource shares
- A master aggregate capability constraint will ensure dispatch instructions do not exceed interconnection limits
- Sub-aggregate capability constraints will model the contractual limits placed on output for a specific off-taker

Proposed master and subordinate aggregate capability constraint functionality



The ISO may relax the sub-ACC when reliability is threatened, but not the master ACC

- The master ACC enforces studied interconnection limits
  - The ISO market software will not relax these constraints (the ISO may re-evaluate these limits in the event of emergency conditions)
  - The penalty parameter will be set similar to transmission constraints
- Sub-ACCs may enforce contractual output limits
  - The ISO market software can relax sub-ACCs during reliability events
  - The penalty parameter will be similar to the power balance constraint
- If the sub-ACC constraint is relaxed underlying resources **are** required to follow dispatch instructions
  - Dispatch instructions during reliability events may require resources to exceed underlying contractual limits for brief periods of time
  - ISO may rescind availability to use this functionality if resources consistently do not follow dispatch instructions
  - ISO will not offer any additional or unusual compensation during these intervals

Next steps

- All related information for the hybrid resources initiative is available here: http://www.caiso.com/StakeholderProcesses/Hybrid-resources
- Please submit stakeholder written comments on today's discussion and the hybrid resources draft final proposal by June 14, 2021

Please submit comments via the ISO's commenting tool, which is available at: https://stakeholdercenter.caiso.com/StakeholderInitiatives