Briefing on hybrid resources phase 2 proposal and decision on advisory role

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The hybrid resources initiative includes two different models for generation with different technology types at the same location

- Co-located resource – Individual resource ID for each generator behind a single point of interconnection
  - Each component will be modelled similar to other resources on the grid today
  - Approved by ISO Board in July, Fall 2020 implementation

- Hybrid resource – A single resource ID aggregating multiple generators at a single point of interconnection
  - ISO has visibility to a single resource which can allow flexibility for hybrid resource management
  - ISO Board decision in November, Fall 2021 implementation

The Phase 2 proposal provides enhanced market rules for hybrid resources and additional provisions for co-located resources

- New provisions for managing hybrid resources
  - Allows for hybrid resources to provide ancillary services
  - Enables hybrid resources to communicate their generation availability in real-time through new functionality
- Enhanced functionality and accommodations for co-located resources
  - Allow co-located resources to provide ancillary services
  - Allow co-located storage resources to deviate from dispatch instructions under certain conditions to avoid renewable curtailment
- Facilitate hybrid wind and solar resource forecasting by collecting new data from hybrid and co-located resources

Hybrid resources phase 2 proposal falls under the EIM Governing Body's advisory role

- New functionality will be available to the ISO and EIM balancing authority areas
- Rules apply generally to the entire market, therefore proposal falls under EIM Governing Body's advisory role

Proposal includes a new dynamic limit tool for hybrid resource operators to convey real-time operating limits

- Hybrid resources face unique challenges operating a mix of resources under a single resource ID
  - Physical output limits based on combined resource capabilities of wind or solar and storage component
- The dynamic limit tool enables the unique nature of hybrid resources to inform the ISO of expected real-time capability
  - This new tool conveys information to ISO operators on the upward and downward capability of the hybrid resource
  - Helps ensure ISO issues feasible dispatches to hybrid resources

Allow co-located storage resources to deviate from dispatch instructions under limited conditions to avoid renewable curtailment

- Storage component would be allowed to produce less than dispatch (charge) under the following conditions:
  - The co-located VER resource must be producing above dispatch
  - The co-located resource would otherwise be producing above point of interconnection limits
  - The co-located resource may not be providing ancillary services
- Information sharing necessary to facilitate the deviation would be borne by the co-located resource operators
- Resource deviations would be settled as uninstructed energy

Proposal includes new provisions for collecting data from wind and solar components for forecasting needs

- ISO will require high sustainable limit data from wind and solar components that are either co-located or part of a hybrid resource
  - Provides real-time telemetry data on the maximum expected output of the wind or solar components
- This information will be used to forecast potential output of wind and solar hybrid resource components

Stakeholders largely support Management's Hybrid Phase 2 Proposal

- Most stakeholders recognize the proposal provides new market tools for an emerging technology
  - Quick delivery is necessary to accommodate new resources
- Feedback from stakeholders was instrumental in developing a more workable dynamic limit tool
  - Reduces onerous manual work for outage card submission
- Stakeholders continue to advocate for additional functionality for operating co-located resources
  - Management will begin policy work to consider extending the hybrid and co-located constructs in the summer of 2021

Management requests the EIM Governing Body support the hybrid resources proposal.

- Hybrid proposal provides improved functionality to efficiently manage resources under a single resource ID located at the same point of interconnection
- Enables both co-located and hybrid resources to provide ancillary services
- Improves forecasting with a telemetered estimate of generating capabilities for wind and solar components of hybrid and co-located resources