

Reactive Power Requirements and Financial Compensation

Addendum to Draft Final Proposal Stakeholder
Call

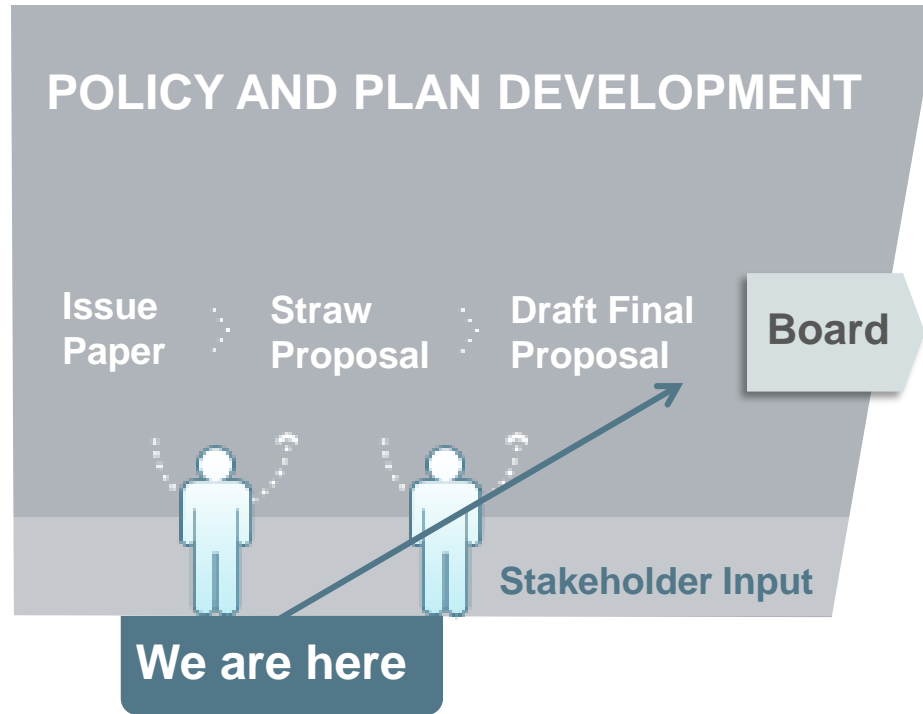
July 28, 2016



Agenda

Time	Topic	Presenter
10:00-10:05	Introduction	Kim Perez
10:05-11:55	Addendum to Draft Final Proposal	Chris Devon
11:55-12:00	Next steps	Kim Perez

ISO policy initiative stakeholder process



Stakeholder process schedule

Milestone	Date
Addendum to Draft Final Proposal posted	July 21, 2016
Stakeholder call on Addendum to DFP	July 28, 2016
Comments on addendum due	August 4, 2016
Board of Governors meeting	Aug 31-Sep 1, 2016

Addendum to Draft Final Proposal

Chris Devon

Senior Infrastructure Policy Developer

FERC Order 827: Reactive Power Requirements for Non-Synchronous Resources

- ISO issued Draft Final Proposal on November 12, 2015
- FERC also issued a Notice of Proposed Rulemaking (NOPR) on Reactive Power Requirements for Non-Synchronous Generation under Docket No. RM16-1-000 shortly thereafter
- As a result, ISO suspended this initiative pending the outcome of that proceeding
- On June 16, 2016, FERC issued its final rule on Reactive Power Requirements for Non-Synchronous Generation under Order 827

Pursuant to Order 827, all newly interconnecting non-synchronous generators will be required to provide reactive power as a condition of interconnection

- Order 827 does not require all of the same technical requirements for reactive power capability and voltage regulation that the ISO proposed in its draft final proposal
- ISO accepts FERC's Order 827 technical requirements and plans to submit a filing to comply by September 21, 2016
- Consistent with Order 827, ISO is seeking additional automatic voltage control capabilities

FERC determined transmission providers may propose additional technical requirements in separate filing pursuant to section 205 of FPA

- ISO proposed automatic voltage control capabilities as part of the operational requirements for asynchronous generating facilities under this initiative previously
 - FERC Order 827 does not require this capability as a standard condition of interconnection
- Addendum to DFP finalizes ISO proposal for automatic voltage control capabilities that will apply to asynchronous resources required to provide reactive power capability
 - Similar requirements apply to all generating units providing voltage support

Automatic voltage control requirements are necessary for resources providing reactive power to maintain voltage schedules

- Resources interconnected to the ISO system must be able to actively move within their required power factor range in order to maintain those voltage schedules
- This requires automatic voltage control

ISO proposes the following automatic voltage control requirements for asynchronous resources

- Voltage regulation and reactive power control requirements for Asynchronous Generating Facilities:
 - A. The Asynchronous Generation Facility's reactive power capability shall be controlled by an automatic voltage regulator system having both voltage regulation and net power factor regulation operating modes. The default mode of operation will be voltage regulation.
 - B. The voltage regulation function mode shall automatically control the net reactive power of the Asynchronous Generating Facility to regulate to the scheduled voltage, compensated to the POI, as assigned by the Participating TO or ISO, within the constraints of the reactive power capacity of the Asynchronous Generation Facility.

Next steps

- Stakeholders are welcome to submit written comments on the Addendum by **August 4, 2016** to InitiativeComments@caiso.com
- Stakeholder comment template has been posted and is available on the ISO website here: <http://www.caiso.com/informed/Pages/StakeholderProcesses/ReactivePowerRequirements-FinancialCompensation.aspx>
- Initiative Contact: Chris Devon (cdevon@caiso.com)