

COMMENTS OF EDF RENEWABLE ENERGY, INC. ON DRAFT TARIFF LANGUAGE FOR AUTOMATIC VOLTAGE CONTROL

EDF Renewable Energy (EDF RE) appreciates the opportunity to comment on the CAISO's draft tariff language, posted September 14th, for the Reactive Power Requirements and Financial Compensation stakeholder initiative. The posted language addresses the automatic voltage control (AVC) requirements adopted by the CAISO Board on August 31st, which would be submitted to FERC in a Section 205 filing. EDF RE understands that the CAISO plans to submit this filing to FERC, along with a separate filing to comply with Order Nos. 827 and 828, in mid-October.

EDF RE has comments on two issues – applicability of the new requirements and concerns about them generally. These comments are summarized below and explained in the rest of this document.

Summary of EDF RE comments

- **Specific tariff-language comments:** The posted tariff language should be modified to clarify that the new AVC requirements only apply going forward, and not to existing generation assets except in specific circumstances.
- **Concern about the requirements generally:** The CAISO has not demonstrated the need for AVC requirements, considered the unique, additional costs the requirements would impose on wind generation or provided any Tariff means for recovery of these extra costs.

Applicability going forward

The CAISO has consistently stated, in all of its proposals in this initiative, that the new provisions would apply only going forward, and not to already-operating generators or those that have completed their interconnection studies. For example:

- **Reactive Power and Financial Compensation Draft Final Proposal** (November 12th, 2015) (emphasis added):

"...the ISO is proposing to adopt, **going forward**, requirements for all asynchronous resources to provide the ability to provide reactive power and automatic voltage control." (p.3)

"The ISO proposes to exempt all projects already in the ISO interconnection process and existing individual generating units of an asynchronous generating facility that are, or have been, interconnected to the ISO controlled grid at the same location from these new requirements for the remaining life of the existing generating unit. This exemption includes resources that are currently in the interconnection queue that have entered the queue prior to Cluster 9 and may not yet have negotiated or executed an interconnection agreement. However, the ISO proposes that any generating units that are replaced or repowered must meet these new requirements.

...if a generating unit is undergoing a repowering or refurbishing that does not require the unit to go through the interconnection queue again, then the unit will not be subject to the new reactive power requirements. Repowering or refurbishing units that includes new turbines or any other changes that would require reentry through the interconnection queue, or that constitutes a material modification under the interconnection rules, will be subject to these new requirements." (pp.7-8)

- **CAISO Management presentation to the CAISO Board** (September 1st, 2016):

"Management proposes new reactive power requirements for non-synchronous generators that would be applied prospectively." (Slide 1)

However, the posted tariff language does not contain any provisions limiting applicability of the new AVC requirements to prospective projects only. EDF RE recommends that the CAISO revise the posted tariff language as shown in the Attachment to this document to clarify that the AVC requirements would apply only going forward and in the following circumstances:

- (1) **New generators that have not commenced any Interconnection Studies** as of the effective date of the new requirements adopted by the FERC; and
- (2) **Existing generators that** apply to repower or refurbish units after the effective date of the new requirements adopted by FERC in a manner that requires re-entry through the interconnection queue, or that constitutes a material modification under the interconnection rules.

EDF RE concerns about new AVC requirements

EDF RE understands that the purpose of this part of the stakeholder process is to develop draft tariff language reflecting the Board policy decisions on this matter. However, EDF RE's limited suggested revisions to the draft tariff language should not be read as implying that EDF RE agrees with or supports the new AVC requirement, especially in the context of the overall framework for this initiative. EDF RE's concerns are summarized in the list below.

- **The CAISO has not demonstrated a need for widespread AVC requirements.** The CAISO has stated that there is a need for asynchronous generation to provide voltage control via AVC but has not provided specific evidence supporting that assertion. Moreover, FERC did not find such a need in Order No. 827, which found that generation units can provide voltage control via reactive control. The lack of support for the additional AVC requirement renders the CAISO proposal unjust and unreasonable.
- **The CAISO has not adequately incorporated consideration of grid-level alternatives in this initiative.** There is no formal consideration in the Interconnection Study process or annual Transmission Planning Process (TPP) of whether single or multiple large Static Var Compensators (SVCs) in the transmission grid – i.e., transmission assets – would be a more efficient means of addressing voltage insufficiency than the proposed AVC requirements. Reactive power is a service needed to support the CAISO grid; thus, it would be just and reasonable to consider grid alternatives to address this need and not push the cost onto independent asynchronous generation.
- **The CAISO proposal does not include any compensation for the additional costs to install and operate AVC.** CAISO provides no compensation, at all, for reactive supply capability provided by synchronous and asynchronous generation. EDF RE brought this to CAISO's attention in recent comments during this initiative. That is unjust and unreasonable. CAISO's AVC proposal and proposed Tariff language will add costs to asynchronous generation and beyond what FERC addressed in order No. 827, also uncompensated. Indeed, CAISO has not discussed the cost impact to all types of asynchronous generation to include AVC. Wind generation projects, for example, would need to address this additional cost requirement in connection complex and sometime lengthy collector feeder lines.

The lack of compensation to install AVC (for a reactive supply capability) in these situations is contrary to the State's intention to attract new wind resource development.

Moreover, voltage-support needs are largely driven by load need. FERC cost-causation policy and precedent requires that load (beneficiary) pays for this service. The lack of any CAISO-provided

means for asynchronous generators to recover AVC capital and operating costs (and all reactive supply capability costs) renders the CAISO AVC proposal unjust and unreasonable.

For these reasons, EDF RE opposes the proposed AVC requirement as currently drafted.

EDF RE RECOMMENDED EDITS TO POSTED DRAFT TARIFF LANGUAGE

(Accepted CAISO-recommended language, showing only EDF- RE changes in green highlight)

8.4 Technical Requirements For Providing Ancillary Services

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8.4.1.3 Voltage Support

A Generating Unit providing Voltage Support must be under the control of generator automatic voltage regulators throughout the time period during which Voltage Support is required to be provided. A Generating Unit may be required to operate underexcited (absorb reactive power) at periods of light system Demand to avoid potential high voltage conditions, or overexcited (produce reactive power) at periods of heavy system Demand to avoid potential low voltage conditions.

For Asynchronous Generation Facilities providing Voltage Support, 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. 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 Point of Interconnection, as assigned by the Participating TO or ISO, within the constraints of the reactive power capacity of the Asynchronous Generation Facility. The Asynchronous Generation Facility shall not disable voltage regulation controls, without the permission of the CAISO, while the Asynchronous Generating Facility is in operation.

The above requirements in this Section 8.4.1.3 shall apply to all Generating Units providing Voltage Support which, as of the effective date of this provision adopted by FERC, have not:

- Commenced Interconnection Studies; or
- Applied to repower or refurbish units in a manner that requires reentry through the interconnection queue, or that constitutes a material modification under the interconnection rules.