



PUC Project No. 46304
Oversight Relating to the Southern Cross Transmission (SCT) DC Tie
Ramp Rate Considerations (Directive 3)

Date: 09/08/2020

Market stakeholder input: PDCWG 04/10/2019, 06/12/2019, 08/14/2019, 10/09/2019, 12/11/2019, 01/14/2020

Directive #3 – Ramp Rate Restrictions	ERCOT shall determine what ramp rate restrictions, if any, will be necessary to accommodate the interconnection of the Southern Cross DC tie and shall implement those restrictions and shall certify to the Commission when it has completed these actions.
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Determination: ERCOT will need to impose restrictions on DC Tie flows when ERCOT determines that system conditions near or in Real-Time cannot accommodate the DC Ties' scheduled ramp. Nodal Protocol Revision Request (NPRR) 999, DC Tie Ramp Limitations, will revise the Protocols to make clear that ERCOT will curtail DC Tie Schedules when necessary to conform with the system's ramp capability, but that ERCOT will, when time permits, first request that one or more e-Tags be resubmitted with an adjusted ramp duration in order to minimize the need for curtailments. With the addition of system ramping capability considerations and the clarification of ERCOT's authority to restrict DC Tie flows which would exceed system ramping capability, the interconnection of the Southern Cross DC Tie can be accommodated.

Technical reasons for determination

The planned interconnection of the SCT DC Tie brings the potential for up to a 4,100 MW change in DC Tie Schedules (maximum import to maximum export of the tie). This potential change in DC Tie flows greatly exceeds the potential swings in flows that now exist on the ERCOT System with current DC Ties. DC Ties currently in ERCOT typically ramp over 10 minutes starting 5 minutes prior to the end of one Operating Hour to the next. This ramp period has been sufficient to address changes in flows between Operating Hours. Given the proposed size of the SCT DC Tie, however, ERCOT has determined that the traditional 10-minute ramp for DC Tie schedules may be insufficient to manage large swings in scheduled flows across the SCT DC Tie during certain grid conditions.

NERC Reliability Standard INT-006-4 R1 requires ERCOT to reject or curtail a DC Tie Schedule that ERCOT does not expect to be capable of supporting either in magnitude or ramp. ERCOT Protocol Section 4.4.4 paragraphs (5) and (15) authorize ERCOT to take action to address physical capacity limitations and transmission security concerns; however, the Protocols do not currently include language expressly addressing the treatment of insufficient ramp capability due to submitted DC Tie schedules.

In light of the above, and after consultation with stakeholders, ERCOT has determined that the Protocols should be modified to state how ERCOT will address insufficient ramp capability for submitted DC Tie schedules. Accordingly, ERCOT sponsored NPRR999, DC Tie Ramp Limitations, to add new Protocol Section 4.4.4.3, which provides that ERCOT will address an insufficiency of ramp capability for scheduled DC Tie



flows by first requesting voluntary resubmission of e-Tags with an adjusted ramp duration, if sufficient time for such a request exists. If there is insufficient time to request resubmission of e-Tags, or an insufficient number of e-Tags are resubmitted to conform with system ramp capability, ERCOT will curtail DC Tie Schedules on a last-in-first-out basis as needed to conform with the system's ramp capability.

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