



**Date:** July 31, 2018  
**To:** Board of Directors  
**From:** Matt Mereness, Director of Compliance  
**Subject:** ERCOT Recommendations to PUC Project No. 46304, Oversight Proceeding Regarding ERCOT Matters Arising Out of PUC Docket No. 45624 Relating to DC Tie Project Proposed by Southern Cross Transmission, LLC – Directive 8: Determination of Primary Frequency Response Requirement

**Issue for the ERCOT Board of Directors**

**ERCOT Board of Directors Meeting Date:** August 7, 2018

**Item No.:** 8.3

**Issue:**

Whether the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) should vote to accept ERCOT staff’s determination that no Protocol or Other Binding Document (OBD) Revision Requests are necessary concerning Primary Frequency Response (PFR) in order to specifically accommodate the new Southern Cross Transmission, LLC (SCT) DC Tie?

**Background/History:**

In PUC Project No. 45624, the Public Utility Commission of Texas (PUC) issued an Order that approved the City of Garland's application for a certificate of convenience and necessity to build a new 38-mile-long, 345kv transmission line connecting ERCOT to the proposed SCT DC Tie. In the Order, the PUC also imposed certain conditions on the interconnection of the SCT DC Tie. The PUC then opened PUC Project No. 46304, and on May 23, 2017, it issued a Revised Order in that project that directed ERCOT to complete a number of tasks—set forth in 14 different Directives—that the PUC deemed were necessary in order to accommodate the new SCT DC Tie.

The Directives require ERCOT to study various issues related to the new DC Tie and make determinations as to whether any actions need to be taken by ERCOT in order to specifically accommodate the new DC Tie, which is expected to have a capacity of approximately 2,000 MW. ERCOT staff have been working with stakeholders and SCT since mid-2017 to complete the tasks set forth in the Directives. Discussions on the Directives have been taking place in the relevant working groups and subcommittees of the Technical Advisory Committee (TAC) to assist ERCOT staff in reaching resolutions on the discrete issues raised in each Directive, and these discussions are expected to continue until all of the issues raised in the Directives are fully resolved.

Once a final determination is made by ERCOT staff as to how to resolve a discrete issue raised in a Directive, ERCOT staff have established an approval procedure that

will vary depending on whether or not the resolution of a Directive (or, in some cases, a part of a Directive) requires a Protocol or Other Binding Document (OBD) Revision Request. If the resolution requires a Protocol or OBD Revision Request, then, as appropriate, ERCOT staff will present the issue for discussion at relevant working groups and subcommittees, the TAC, and to the Board; however, ERCOT staff will only request a vote from these groups when the Protocol or OBD Revision Request that is intended to resolve the Directive is before the group for consideration and vote. However, when ERCOT staff have determined that no Protocol or OBD Revision Requests are needed in order to resolve an issue raised in a Directive, ERCOT staff will seek endorsement of this determination at the relevant working groups, subcommittees and TAC. Regardless of whether those groups endorse the determination, ERCOT staff will present the issue and determination to the Board for a vote to accept the determination.

This is the first instance in which ERCOT staff have brought a determination on a Directive to the Board for a vote. This particular determination concerns whether ERCOT should make any changes to how it handles PFR in order to accommodate the SCT DC Tie. This issue was raised by the PUCT in Directive 8, which requires that ERCOT:

“(a) study and determine whether Southern Cross Transmission or any other entity scheduling flows across the Southern Cross DC tie should be required to provide or procure voltage support service or primary frequency response, or their technical equivalents, (b) implement any necessary revisions to its standards, guides, systems, and protocols, as appropriate, and (c) certify to the Commission when it has completed these actions.”

Discussions with stakeholders regarding this issue occurred at the following meetings: Performance Disturbance Compliance Working Group (PDCWG) 10/11/2017, 11/08/2017, 12/13/2017, 01/12/2018, 02/14/2018; Reliability and Operations Subcommittee (ROS) 03/01/2018, 04/05/2018. ERCOT staff prepared a whitepaper ([link](#)) setting forth its determination and considerations relevant to that resolution, which was presented for discussion at these meetings. ERCOT staff, after consultation with stakeholders, have determined that no ERCOT Protocol or OBD Revision Requests related to PFR are necessary in order to specifically accommodate the new SCT DC Tie, because: (1) the ERCOT System currently exceeds minimum PFR requirements under NERC Reliability Standards; (2) coordinating with other Balancing Authorities in providing PFR would introduce significant operational complexities; and (3) current ERCOT Protocols and OBDs do not require existing DC Ties to provide PFR. Furthermore, ERCOT considers this determination and approach to be the most reliable solution for preserving the current frequency performance in the ERCOT Region, and it maintains independence from frequency issues in other regions.



This determination was unanimously approved by TAC on July 26, 2018.

Note: This recommendation concerns only the issue of PFR raised in Directive 8. Discussions at the ERCOT staff and stakeholder level regarding the Voltage Support Service (VSS) issued raised in Directive 8 are ongoing. ERCOT staff will seek a vote from the Board regarding VSS at a later date.

**Key Factors Influencing Issue:**

- Current DC Ties in the ERCOT Region are not required to be PFR capable.
- Per NERC Reliability Standard BAL-001-TRE-1 and ERCOT Protocols, PFR in the ERCOT Region is required and provided by Generation Resources.
- The ERCOT System currently exceeds minimum PFR requirements under NERC Reliability Standards.
- Imposing a PFR requirement on the SCT DC Tie would require coordination with other Balancing Authorities, which would introduce significant operational complexities.
- No current ERCOT Protocol or OBDs would impose an obligation on the SCT DC Tie, once it is operational, to provide PFR. Because ERCOT staff do not see a need, at this time, to impose such a requirement on the SCT DC Tie, no Protocol or OBD Revision Requests are necessary to resolve this portion of Directive 8.
- ERCOT considers the current PFR design for Generation Resources to be the most reliable solution for preserving the current frequency performance in the ERCOT Region, and it maintains independence from frequency issues in other regions.

**Conclusion/Recommendation:**

ERCOT staff, after consultation with the relevant stakeholder groups, have determined that no ERCOT Protocol or OBD Revision Requests concerning Primary Frequency Response (PFR) are necessary at this time in order to specifically accommodate the SCT DC Tie, because: (1) the ERCOT System currently exceeds minimum PFR requirements under NERC Reliability Standards; (2) coordinating with other Balancing Authorities in providing PFR would introduce significant operational complexities; and (3) current ERCOT Protocols and OBDs do not require existing DC Ties to provide PFR. ERCOT also considers this determination to be the most reliable solution for preserving the current frequency performance in the ERCOT Region, and it maintains independence from frequency issues in other regions.



As such, ERCOT staff recommend that the Board accept ERCOT staff's determination that no further action is necessary at this time to resolve the PFR issue raised by Directive 8 in PUC Project No. 46304.



**ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.**  
**BOARD OF DIRECTORS RESOLUTION**

WHEREAS, the Public Utility Commission of Texas (PUCT) issued a Revised Order (Revised Order) on May 23, 2017, in PUCT Project No. 46304 that contains 14 Directives requiring Electric Reliability Council of Texas, Inc. (ERCOT) to study certain issues related to the proposed Southern Cross Transmission, LLC (SCT) DC Tie and make determinations as to whether certain actions must be taken by ERCOT in order to specifically accommodate the SCT DC Tie;

WHEREAS, Directive 8 of the Revised Order requires, in part, that ERCOT determine whether the SCT DC Tie, or entities scheduling flows across the SCT DC Tie, should be required to provide or procure Primary Frequency Response (PFR) and whether any revisions to ERCOT Protocols or Other Binding Documents (OBDs) are necessary to effectuate that determination;

WHEREAS, ERCOT staff, after discussions with stakeholders, have determined that no ERCOT Protocol or OBD Revision Requests related to PFR are necessary in order to specifically accommodate the SCT DC Tie;

WHEREAS, after due consideration of the alternatives, the Board deems it desirable and in the best interest of ERCOT to accept ERCOT staff's determination;

THEREFORE, BE IT RESOLVED, that the Board hereby accepts ERCOT staff's determination that no ERCOT Protocol or OBD Revision Requests related to PFR are necessary in order to specifically accommodate the SCT DC Tie, effective upon Board approval.

**CORPORATE SECRETARY'S CERTIFICATE**

I, Vickie G. Leady, Assistant Corporate Secretary of ERCOT, do hereby certify that, at its August 7, 2018 meeting, the ERCOT Board passed a motion approving the above Resolution by \_\_\_\_\_.

IN WITNESS WHEREOF, I have hereunto set my hand this \_\_\_ day of August 2018.

\_\_\_\_\_  
Vickie G. Leady  
Assistant Corporate Secretary