



**Item 8: 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**

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Board of Directors Meeting

ERCOT Public
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Outline of Discussion for 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

- Background of Project and PUCT Directives
- List of PUCT Directives
- Summary of engagement process to date
- Process to review and make recommendations on Directives
- Specific Directives in this update:
 - Directive 1 (Informational only)
 - Directive 5 (Informational only)
 - **Directive 8 - Primary Frequency Response (Vote)**

Background of Project and PUCT Directives

- Southern Cross Transmission LLC/Pattern Power Marketing LLC received FERC approval (FERC Docket No. TX 11-1-001) to interconnect DC Tie line.
- PUCT imposed conditions for interconnection of the SCT DC Tie line in two PUCT proceedings:
 - City of Garland docket – Docket No. 45624
 - Oversight proceeding arising out of City of Garland docket – Project No. 46304
- As part of the oversight proceeding, PUCT issued 14 Directives to ERCOT, requiring certain studies and determinations be made to accommodate the SCT DC Tie.
- Planned energization date is 2023

The bi-directional SCT Project can deliver up to 2,000 MW of economic energy and reliability products in either direction



List of PUCT Order 46304 Directives

Directive	Subject	Anticipated Start
1	Determination of appropriate Market Participant category and market segment for SCT.	Started
2	Execution of any necessary coordination agreements.	Q2-2020
3	Determination regarding ramp rate restrictions.	Q1-2019
4	Development of methodology for outage coordination.	Q1-2019
5	Determination of planning model assumptions and considerations.	Started
6	Determination regarding any needed transmission upgrades.	Started
7	Determination as to how to manage congestion caused by DC Ties.	Q1-2019

List of PUCT Order 46304 Directives (continued)

Directive	Subject	Anticipated Start
8	Determination regarding Primary Frequency Response and Voltage Support Service.	Started
9	Determination regarding modifications to Ancillary Services.	Started
10	Determination regarding price formation under emergency conditions.	Started
11	Determination regarding allocation of costs identified in PUCT Docket No. 45624.	TBD
12	Determination regarding possible assignment of export-related costs to Qualified Scheduling Entities (QSEs).	TBD
13	ERCOT reporting of status of work on Directives to PUCT.	Ongoing
14	ERCOT updates to PUCT regarding completion dates for Directives 1 to 12.	Ongoing

Summary of engagement process to date

Working Groups

ERCOT's engagement with experts in non-voting Working Groups or Workshops (OWG, PWG, QMWG)

Capture key assumptions and solutions in whitepapers and/or Revision Requests

At the direction of TAC/ROS/WMS, ERCOT has engaged the appropriate working groups to brainstorm and assist ERCOT staff in reaching determinations for the issues raised in each Directive.



Sub-committee

Take determinations to appropriate voting body (ROS, WMS, PRS) for endorsement

Whitepapers presented to relevant subcommittee. Stakeholder comments accepted and posted on ercot.com along with other documents relevant to work on Directives.



TAC

Determination on Directive presented to Technical Advisory Committee (TAC)

TAC has the option to vote to endorse a determination on a Directive.



Directive Review and Approval by ERCOT Board

- 1) If ERCOT determines that a Revision Request is necessary to resolve an issue raised in a Directive, then:
 - ERCOT will provide informational updates on the issue at relevant working groups, subcommittees, the Technical Advisory Committee (TAC), and the ERCOT Board.
 - ERCOT will request a vote when the Revision Request intended to resolve the issue is before each group for a vote.

- 2) If ERCOT determines that no Revision Request or other ERCOT action is needed to resolve an issue raised in a Directive, then:
 - Relevant working groups, subcommittees and TAC may vote to endorse this determination, at their discretion; and
 - ERCOT will present the issue and determination to the ERCOT Board for a vote to accept the determination.

Informational update for Directive 1

Directive 1

- Requires that ERCOT make two determinations:
 - 1) Determine the appropriate Market Participant category for SCT
 - 2) Determine the appropriate market segment for SCT
- This request addresses the first (1) determination only.
- **Determination:** Create a new Market Participant category called Direct Current Tie Operator (DCTO)
- **Solution:**
 - NPRR857, Creation of Direct Current Tie Operator Market Participant Role
 - NOGRR177, Related to NPRR857, Creation of Direct Current Tie Operator Market Participant Role.
 - Both revisions currently at TAC for consideration
 - ERCOT working to clarify approach to “boxed language” and how the timing of implementation connects to the status of the SCT Project (ie, when registration changes are needed to be in effect).

Informational update for Directive 5

Directive 5

- Requires a single determination:
 - 1) Determine how best to model the SCT DC Tie in ERCOT's transmission planning cases.
- **Determination:** Add language to ERCOT Planning Guide to require that new DC Ties be added to the planning models once they have posted financial security with notice to proceed to the interconnecting Transmission Service Provider (TSP).
- **Solution:**
 - PGRR068, Addition of a Proposed DC Tie to the Planning Model
 - Include DC Tie in model when there is a signed interconnection agreement with the TSP, a notice to proceed with construction, and financial security required to fund the interconnection facilities.

Request for Vote to Accept Determination on Directive 8

Directive 8

- Requires 2 determinations:
 - Determine whether SCT or any other entity scheduling flows across the SCT DC Tie should be required to provide or procure:
 - 1) Voltage Support Service
 - 2) Primary Frequency Response
- This request addresses the second (2) determination only.
- **Determination: No Protocol or Other Binding Document (OBD) Revision Requests concerning Primary Frequency Response (PFR) are necessary in order to specifically accommodate the SCT DC Tie.**
- **Basis for Determination**
 1. ERCOT's System currently exceeds minimum PFR requirements under NERC standards;
 2. Coordinating with other Balancing Authorities in providing PFR would introduce significant operational complexities and potential risk;
 3. Current ERCOT Protocols do not require existing DC Ties to provide PFR; and
 4. ERCOT considers this determination and approach to be the most reliable solution in preserving the current frequency performance in the ERCOT region, and maintains independence from frequency issues in other regions.
- **TAC unanimously endorsed this determination July 26, 2018**



Next steps

- ERCOT staff will continue to provide periodic updates to the PUCT on the status of these, and other, Directives.
- ERCOT staff will continue to work with stakeholders on remaining Directives
- Webpage established on [ercot.com](http://www.ercot.com) to track work on Directives: <http://www.ercot.com/mktrules/puctDirectives>