PUC Project No. 46304

Oversight Relating to the Southern Cross Transmission (SCT) DC Tie

Cost Allocation (Directive 11)

Date: 05/25/2022

Market stakeholder input:

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| **Directive # 11 –Cost Allocation** | **ERCOT shall study and recommend appropriate responsibility for, and allocation of, the costs identified in the Commission's final order in Docket No. 45624, including costs common to the ERCOT system and special costs that are specific to the Garland line and Southern Cross DC tie, and shall identify any existing protocols that need to be modified or new protocols that need to be created, or (if appropriate) any existing Commission rules that need to be modified or new rules that need to be enacted, to appropriately address those costs.** |

***Determination:***

***ERCOT has determined that costs identified in the Public Utility Commission of Texas’s (PUC) final order in Docket No. 45624 have been appropriately addressed through the resolution of each of the PUC’s directives in Project No. 46304 and through the memorandum of understanding between ERCOT and Southern Cross Transmission LLC. ERCOT has not identified any additional revisions to ERCOT Protocols or PUC rules that are required to appropriately address these costs.***

Reasons for determination:

The PUC’s final order in Docket No. 45624 (the “45624 Order”) identified a number of different categories of anticipated costs associated with the DC Tie proposed by Southern Cross Transmission LLC (Southern Cross) that were to be considered by ERCOT in connection with its resolution of the directives from the PUC’s May 23, 2017 order in the Project 46304 oversight proceeding (the “46304 Order”). These cost categories include the following:

* Costs associated with the operation of the DC Tie, including for example, costs of transmission upgrades driven by imports and exports over the DC Tie and costs associated with Ancillary Services needed to accommodate flows over the DC Tie.
* Costs of ERCOT labor for studies and other activities undertaken pursuant to the PUC’s directives identified in 46304 Order.
* Costs of software changes associated with revisions to ERCOT rules necessitated by the interconnection of the Southern Cross DC Tie.

With respect to the first category identified above, ERCOT has determined that the costs associated with the operation of the Southern Cross DC Tie have been implicitly addressed by the resolution of each of the directives in the 46304 Order without requiring an explicit allocation of costs. In some cases, the resolution of the directive will naturally require Southern Cross to bear the cost of the solution. For example, NPRR1098, which was proposed to resolve the voltage support service element of Directive 8, will require Southern Cross to install reactive capability equivalent to a 0.95 power factor. Because Southern Cross will bear the cost of installing that capability, there is no other cost under this directive that needs to be allocated. In other cases, the resolution of the directive resulted in a policy solution that avoided creating costs that would need to be allocated. For example, the costs of certain transmission upgrades that ERCOT found would otherwise be needed to accommodate imports and exports over the Southern Cross DC Tie, as required by Directive 6, have been avoided because PGRR077[[1]](#footnote-2) (approved by the ERCOT Board in October 2020) requires ERCOT to curtail DC Tie schedules to avoid a violation of reliability criteria. Similarly, to address the risk of frequency overshoot in the event of a loss of the Southern Cross DC Tie while exporting, as identified as part of ERCOT’s resolution of Directive 9, NPRR1034[[2]](#footnote-3) allows ERCOT to limit and/or curtail flows on a DC Tie to avoid such a risk, rather than requiring the creation of a new Ancillary Service or procurement of additional Ancillary Service amounts to address this risk, which would impose additional costs on ERCOT consumers.

The second and third categories of costs identified above—costs of studies and costs of software changes—were allocated pursuant to an October 2017 memorandum of understanding (MOU) between ERCOT and Southern Cross.[[3]](#footnote-4) The MOU provides that Southern Cross will reimburse ERCOT each month for its labor costs associated with studies and other tasks associated with the resolution of the directives. Since the MOU was executed, ERCOT has been invoicing Southern Cross, and Southern Cross has been paying ERCOT for these costs. The MOU also provides that Southern Cross will fund the development of software changes needed to implement the revisions to ERCOT rules required by the directives. Southern Cross is required to remit payment only after it has notified ERCOT that it is prepared to proceed with the project and ERCOT has issued an invoice for the estimated cost. The originally remitted amount is subject to true-up as ERCOT’s implementation costs are realized. Southern Cross has not yet provided ERCOT notice to proceed with the development of any of the projects associated with the PUC’s directives.

ERCOT believes that the resolution of the directives and the cost recovery mechanism under the MOU appropriately address the costs identified in the Commission’s order. ERCOT therefore concludes that no further revision of ERCOT rules is necessary to allocate costs under the Commission’s final order in Docket 45624.

The costs associated with each of the directives are identified more explicitly below.

**Directive 1**

**Summary**: Determine Market Participant type and implement necessary changes to ERCOT rules and systems. Determine market segment and make any necessary revisions to Bylaws.

**Resolution**: NPRR857[[4]](#footnote-5) and NOGRR177[[5]](#footnote-6) established a new DC Tie Operator (DCTO) Market Participant type and associated requirements. Southern Cross has communicated to ERCOT that it does not wish to pursue the revisions to ERCOT Bylaws necessary to allow Southern Cross to join an ERCOT market segment at this time.

**Cost Allocation**: Software changes and associated implementation costs will be funded by Southern Cross under MOU. No cost allocation is required for resolution of the market segment issue.

**Directive 2**

**Summary**: Negotiate coordination agreement between ERCOT and other appropriate entities.

**Resolution**: This directive has not yet been addressed because Southern Cross has not yet begun construction on the DC Tie. ERCOT will work with appropriate entities during construction of the DC Tie to ensure the necessary coordination agreement is in place ahead of energization.

**Cost Allocation**: ERCOT labor costs will be funded by Southern Cross under the MOU.

**Directive 3**

**Summary**: Determine ramp rate limits and implement changes as needed.

**Resolution**: NPRR999[[6]](#footnote-7) clarified that ERCOT may request rescheduling of, or if necessary, curtail e-Tags that would violate ramp limits.

**Cost Allocation**: System changes and associated implementation costs will be funded through the ERCOT budget because these costs are associated with all DC Ties.

**Directive 4**

**Summary**: Determine outage coordination needs and implement changes as needed.

**Resolution**: Existing procedures set forth in ERCOT Protocols and Market Guides are sufficient to ensure reliable and cost-effective coordination of outages.

**Cost Allocation**: No cost allocation required.

**Directive 5**

**Summary:** Determine planning model assumptions needed for DC Ties and implement changes as needed.

**Resolution**: Existing procedures set forth in ERCOT Protocols and Guides including PGRR068,[[7]](#footnote-8) Addition of a Proposed DC Tie to the Planning Models, can be used for purposes of determining how and when to model the Southern Cross DC Tie’s physical equipment. No project is required to implement PGRR068.

**Cost Allocation**: No cost allocation required.

**Directive 6**

**Summary**: Determine what transmission upgrades, if any, are necessary due to interconnection of Southern Cross DC Tie.

**Resolution**: While transmission system upgrades would be necessary to accommodate full import/export over the Southern Cross DC Tie, no such upgrades are ultimately necessary to manage congestion resulting from power flows over the Southern Cross DC Tie because PGRR077 allows ERCOT to curtail flows to avoid violations in planning cases, and ERCOT can manage constraints in real time.

**Cost Allocation**: No cost allocation required.

**Directive 7**

**Cost Item**: Determine whether SCED or a Congestion Management Plan (CMP) or Remedial Action Scheme (RAS) should be used to resolve congestion from flows over Southern Cross DC TIe.

**Resolution**: DC Ties should not be incorporated into SCED because that would be prohibitively complicated and expensive. ERCOT will evaluate any CMP or RAS proposed in the future in light of the relevant facts and circumstances at that time. Existing mechanisms can be used to manage congestion due to flows over the DC ties.

**Cost Allocation**: No cost allocation required.

**Directive 8**

**Cost Item**: Determine if the DC Tie should be required to provide primary frequency response or voltage support service.

**Resolution**: DC Ties should not be required to provide primary frequency response. NPRR1098[[8]](#footnote-9) and NOGRR234[[9]](#footnote-10) require new DC Ties interconnected after January 1, 2022 to provide voltage support service at a 0.95 power factor leading and lagging.

**Cost Allocation**: No cost allocation required for primary frequency response. System changes and associated implementation costs for NPRR1098 and NOGRR234 will be funded by Southern Cross under the MOU. The cost of facilities or equipment necessary to meet voltage support requirements will be funded by Southern Cross.

**Directive 9**

**Summary**: Determine if additional ancillary services are required.

**Resolution**: No new additional Ancillary Service is needed to address frequency overshoot risk because NPRR1034[[10]](#footnote-11) allows ERCOT to establish limits on DC Tie imports or exports to address frequency risk and to curtail flows if necessary. No other changes to Ancillary Services are needed.

**Cost Allocation**: System changes and associated implementation costs for NPRR1034 will be funded by Southern Cross under the MOU.

**Directive 10**

**Summary**: Determine whether any changes to pricing are necessary to address emergency actions affecting DC Tie flows.

**Resolution**: ERCOT has not identified a need at this time to modify the policy determinations on emergency pricing achieved in NPRR626[[11]](#footnote-12) and NPRR768,[[12]](#footnote-13) as previously approved.

**Cost Allocation**: No cost allocation required.

**Directive 12**

**Summary**: Determine whether there are other export-related costs that should be allocated to QSEs.

**Resolution**: ERCOT has not identified any additional export-related costs that should be allocated to QSEs.

**Cost Allocation**: No cost allocation required.

**Directive 13**

**Summary**: ERCOT must provide status updates to PUC.

**Resolution**: ERCOT provides periodic status updates to the PUC.

**Cost Allocation**: No cost allocation required.

**Directive 14**

**Summary**: ERCOT must provide status updates to PUC regarding dates for completing the above directives.

**Resolution**: ERCOT’s periodic status updates to PUC include information on completion dates.

**Cost Allocation**: No cost allocation required.

1. PGRR077, DC Tie Planning Assumptions [↑](#footnote-ref-2)
2. NPRR1034, Frequency-Based Limits on DC Tie Imports and Exports [↑](#footnote-ref-3)
3. The MOU was attached to ERCOT’s Second Status Update to the PUC, which is available at: <http://interchange.puc.texas.gov/Documents/46304_7_965009.PDF>. [↑](#footnote-ref-4)
4. NPRR857, Creation of Direct Current Tie Operator Market Participant Role [↑](#footnote-ref-5)
5. NOGRR177, Related to NPRR857, Creation of Direct Current Tie Operator Market Participant Role [↑](#footnote-ref-6)
6. NPRR999, DC Tie Ramp Limitations [↑](#footnote-ref-7)
7. PGRR068, Addition of a Proposed DC Tie to the Planning Models [↑](#footnote-ref-8)
8. NPRR1098, Direct Current Tie (DC Tie) Reactive Power Capability Requirements [↑](#footnote-ref-9)
9. NOGRR234, Related to NPRR1098, Direct Current Tie (DC Tie) Reactive Power Capability Requirements [↑](#footnote-ref-10)
10. NPRR1034, Frequency-Based Limits on DC Tie Imports or Exports [↑](#footnote-ref-11)
11. NPRR626, Reliability Deployment Price Adder [↑](#footnote-ref-12)
12. NPRR768, Revisions to Real-Time On-Line Reliability Deployment Price Adder Categories [↑](#footnote-ref-13)