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PUBLIC UTILITY COMMISSION  
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APPLICATION OF THE CITY OF	§	
GARLAND, TEXAS, FOR A	§	BEFORE THE
CERTIFICATE OF CONVENIENCE	§	
AND NECESSITY FOR THE PROPOSED	§	PUBLIC UTILITY COMMISSION
RUSK TO PANOLA DOUBLE-CIRCUIT	§	
345-KV TRANSMISSION LINE IN RUSK	§	OF TEXAS
AND PANOLA COUNTIES, TEXAS	§	

**ERCOT'S INITIAL POST-HEARING BRIEF**

**I. INTRODUCTION AND SUMMARY**

Although this proceeding nominally involves a request by the City of Garland for a certificate of convenience and necessity (CCN) to construct a transmission line in East Texas, the sole purpose of Garland's proposal is to facilitate the interconnection of a 2000MW direct current (DC) tie to the ERCOT System. The transfer capability of this proposed DC tie, which would be owned and operated by Southern Cross Transmission LLC ("Southern Cross"), is more than 600MW greater than that of the five other existing ERCOT DC ties combined, raising a number of novel but important market and reliability issues that must be fully considered before the facility is permitted to interconnect with the ERCOT System.

No party—including ERCOT—has argued that all of these issues should be resolved as part of this contested case, although some have asserted that certain issues should be resolved in this proceeding to provide certainty to Southern Cross or to ERCOT market participants. Although ERCOT agrees that at least some of these issues must be resolved before the tie is permitted to interconnect, it is important in all cases that the solution appropriately reflect input from all interested parties through the appropriate process at the Commission or, if appropriate, at ERCOT, without unnecessarily restricting the range of possible solutions to those identified in testimony or briefing submitted by a select few parties in this contested case. The Commission's statutory authority to "prescribe reasonable conditions to protect the public interest"<sup>1</sup> in this CCN proceeding does not restrict the Commission to resolving these issues as part of this case. For this reason, ERCOT recommends that the Commission defer resolution of those questions identified

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<sup>1</sup> Tex. Util. Code § 37.051(c-2)

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in the Preliminary Order as “ERCOT Issues” and order that they be resolved before the Commission or ERCOT, as indicated below. ERCOT also supports Commission Staff’s proposal to open a compliance docket so that the Commission can monitor progress of resolution of these issues.

## **II. APPLICABLE LEGAL STANDARDS**

This CCN proceeding is governed by PURA sections 37.051(c-1), (c-2), (g), and (i). Subsection (c-1) requires any person who wishes to interconnect a facility that enables imports into or exports out of ERCOT to first obtain a CCN from the Commission. Subsection (g) requires a municipally owned utility to obtain a CCN as a condition for constructing transmission facilities outside the boundaries of the municipality. However, subsections (c-2) and (i) require the Commission to approve within 185 days any application submitted pursuant to subsection (c-1) or (g), respectively, for any “facility that is to be constructed under an interconnection agreement appended to an offer of settlement approved in a final order of the Federal Energy Regulatory Commission that was issued in Docket No. TX11-01-001 on or before December 31, 2014, directing physical connection between the ERCOT and SERC regions under Sections 210, 211, and 212 of the Federal Power Act . . . .” The facilities proposed by Garland in this CCN application appear to fall within the scope of the exception in subsections (c-2) and (i) (as do the facilities proposed by Southern Cross). Subsections (c-2) and (i) also provide that, in approving an application for a CCN described in subsection (c-1) or (g), “the commission may prescribe reasonable conditions to protect the public interest that are consistent with the final order of the Federal Energy Regulatory Commission.”

## **III. ANALYSIS OF SPECIFIC ISSUES**

### **A. The Commission should exercise its authority to impose “reasonable conditions to protect the public interest” by identifying in its final order those issues requiring resolution before the Southern Cross DC Tie can be permitted to interconnect with the ERCOT System. (Preliminary Order Issue 2)**

Subsections (c-2) and (i) of PURA section 37.051 do not require the Commission to fully resolve in this proceeding all potential policy issues raised by the proposed interconnection of the proposed Garland facilities or the Southern Cross DC Tie. The permissive language of the statute (“ . . . the commission *may* prescribe . . . .”) grants the Commission discretion whether to decide any

such issues in this proceeding or instead to resolve them—if at all—at some other time or through some other process. Indeed, the Commission’s only obligation in this proceeding is to grant Garland a CCN, subject to those conditions.

In ERCOT’s view, a Commission rulemaking or the ERCOT stakeholder process would provide a more suitable forum than this CCN proceeding for resolving most, if not all, of the many complex policy questions raised in the Preliminary Order. This contested case allows for comment only through the limit modes of testimony and briefing by the select few parties who found it appropriate both to intervene in this case and to address these issues within the strict timelines and procedures of a CCN proceeding. By contrast, a Commission rulemaking or ERCOT Protocol revision process would allow all affected parties to provide input through comments without assuming the costs and risks of intervening in a contested proceeding, and would allow more time for the Commission, ERCOT, and other parties to consider the appropriate policy outcomes on these questions.

For this reason, ERCOT recommends that the Commission refrain from fully deciding any of the “ERCOT issues” identified in the Preliminary Order and instead exercise its statutory authority under PURA section 37.051 to impose reasonable conditions on the approval of the Garland CCN by simply identifying, without limitation, the set of issues that must eventually be resolved either before the Commission or in the ERCOT stakeholder process. For certain issues involving matters of reliability—such as the potential need for a new ancillary service to address frequency spikes caused by a possible trip of a large, exporting DC tie<sup>2</sup>—ERCOT recommends that the Commission order the issue be fully resolved as a condition for the interconnection of the Southern Cross DC tie. Assuming the Commission concludes that one or more of these issues merit resolution in one forum or another, ERCOT further recommends that the Commission identify in its order which forum—ERCOT or PUC—is most appropriate to address the issue. In section III of this brief, ERCOT proposes findings of fact, conclusions of law, and ordering paragraphs consistent with these recommendations.

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<sup>2</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 18:23-19:6

**B. Because Southern Cross and Garland are already bound by their representations before FERC—including their commitment to comply “with all applicable ERCOT and PUCT requirements”—the Commission need not separately order them to give effect to these representations. (Preliminary Order Issue 2.b.)**

In the proceedings initiated by Southern Cross before FERC, Southern Cross, Garland, Oncor Electric Delivery Company LLC (“Oncor”), and CenterPoint Energy Houston Electric LLC (“CenterPoint”) jointly proposed an Offer of Settlement to resolve the case.<sup>3</sup> FERC’s final order approved the parties’ Offer.<sup>4</sup> Because this approval was sufficient to give legal effect to the settlement, no further action by the Commission is necessary. However, ERCOT notes that the Offer of Settlement includes explicit language requiring Garland and SCT to comply with Commission and ERCOT rules:

Garland and SCT shall operate the Garland-SCT Interconnection for any purpose, including the purchase, sale, exchange, transmission, coordination, commingling, or transfer of electric energy in interstate commerce with all applicable ERCOT and PUCT requirements.<sup>5</sup>

The order also explicitly recognizes the authority of Commission and ERCOT to curtail transfers over the ties during emergency situations or in other situations identified by the PUCT:

Garland and SCT will maintain and use such Interconnection for any purpose, except in and during emergencies as determined by Garland, Oncor, or ERCOT, or except when otherwise ordered by a governmental entity with putative authority, regardless of the source of the electric power in interstate commerce.<sup>6</sup>

These representations reflect a clear understanding by the settling parties (including Southern Cross and Garland) that the PUCT and ERCOT retain important rights with respect to the operation of the proposed DC tie.

**C. If Southern Cross is required to register as an ERCOT market participant, no coordination agreement between ERCOT and Southern Cross is necessary. (Preliminary Order Issue 2.b.)**

As a general principle, ERCOT favors addressing market participant obligations through

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<sup>3</sup> FERC Docket No. TX11-1-001, Offer of Settlement (Feb. 20, 2014)

<sup>4</sup> FERC Docket No. TX11-1-001, Final Order Directing Interconnection and Transmission Service, at 8 (May 15, 2014).

<sup>5</sup> FERC Docket No. TX11-1-001, Offer of Settlement, at 12, para. (F) (Feb. 20, 2014)

<sup>6</sup> FERC Docket No. TX11-1-001, Offer of Settlement at 12, para. (D).

generally applicable standards, such as the ERCOT Protocols, rather than through one-off agreements with individual participants. So long as Southern Cross executes the ERCOT Standard Form Market Participant Agreement, which would bind Southern Cross to follow to the ERCOT Protocols, a standalone coordination agreement between Southern Cross and ERCOT would be unnecessary. Southern Cross has committed to sign the Market Participant Agreement.<sup>7</sup>

As ERCOT witness Ted Hailu testified, changes to ERCOT's Protocols and potentially ERCOT's systems will likely be required to accommodate the registration of Southern Cross as an ERCOT market participant.<sup>8</sup> And a number of other policy issues identified in the Commission's Preliminary Order may need to be addressed through revisions to ERCOT standards or Commission rules to fairly and reliably interconnect the Southern Cross tie with ERCOT. However, once these changes have been made, Southern Cross will be bound by them by virtue of its status as an ERCOT Market Participant.

**D. The Commission should require ERCOT to establish standards that determine at what point of development a proposed merchant DC tie project like Southern Cross should be in the ERCOT planning models. (Preliminary Order Issue 4.a.)**

ERCOT standards do not address the specific phase of development at which a proposed DC tie should be assumed to be part of the ERCOT system for purposes of transmission planning. Determining exactly when to include new DC ties in ERCOT planning models is important because, as ERCOT witness Warren Lasher testified, including DC tie projects that are too speculative can result in the construction of consumer-funded transmission improvements that would be unnecessary if the DC tie never materialized.<sup>9</sup> DC tie projects should therefore be included only when they reach a milestone indicating they are likely to be completed.<sup>10</sup> ERCOT therefore recommends that the Commission include an ordering paragraph requiring ERCOT to determine at what point of development a proposed merchant DC tie project should be in the ERCOT planning models.

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<sup>7</sup> See, e.g., SCT Ex. 6, Rebuttal Testimony of David Parquet at 5:1-3.

<sup>8</sup> ERCOT Ex. 3, Direct Testimony of Ted Hailu at 6:1-9:13.

<sup>9</sup> ERCOT Ex. 1, Direct Testimony of Warren Lasher at 6:9-11.

<sup>10</sup> ERCOT Ex. 1, Direct Testimony of Warren Lasher at 5:24-6:2.

**E. The Commission should require ERCOT to determine how new DC ties should be modeled in planning cases. (Preliminary Order Issue 4.b.)**

For purposes of both reliability and economic transmission planning, ERCOT currently models DC ties based in part on recent historical operations.<sup>11</sup> A new DC tie, however, has no historical performance, and as Mr. Lasher testified, operational patterns of existing ties may not be a suitable proxy for the new tie that is larger than existing ties and that connects in a different location on the Eastern Interconnect than do existing ties.<sup>12</sup> Yet because ERCOT must make some assumption about how the tie should operate in determining system transmission needs, and because these assumptions could have a significant impact on the identification of need for certain publicly funded transmission improvements, it is important that this issue be satisfactorily addressed. For this reason, ERCOT recommends that the Commission include an ordering paragraph requiring ERCOT to determine how new DC ties should be modeled in planning studies.

**F. The Commission may wish to consider addressing the question of financial responsibility for upgrades due to exports over DC ties through a rulemaking. (Preliminary Order Issue 4.c.)**

ERCOT takes no position on which entities should be responsible for bearing the cost of these upgrades. However, ERCOT notes that Luminant<sup>13</sup> and TIEC<sup>14</sup> have explicitly opined—and Commission Staff has posited<sup>15</sup>—that entities exporting over the ties should bear the cost of any transmission upgrades needed to facilitate those exports, while Southern Cross has disagreed with this assertion.<sup>16</sup> The Commission may wish to evaluate different perspectives on this issue through a rulemaking.

**G. The Commission should require ERCOT to determine how congestion due to imports over the Southern Cross DC tie should most appropriately be addressed. (Preliminary Order Issue 4.d.)**

As ERCOT witness Dan Woodfin testified, the introduction of the Southern Cross DC tie may present difficulties in managing congestion on the ERCOT system due to the much larger size

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<sup>11</sup> ERCOT Ex. 1, Direct Testimony of Warren Lasher at 9:22-10:1.

<sup>12</sup> ERCOT Ex. 1, Direct Testimony of Warren Lasher at 10:20-22.

<sup>13</sup> Luminant Ex. 1, Direct Testimony of Amanda J. Frazier at 8:15-17.

<sup>14</sup> TIEC Ex. 1, Direct Testimony of Charles Griffey at 24:16-25:2; TIEC Ex. 2, Cross-Rebuttal Testimony of Charles Griffey at 9:17-18.

<sup>15</sup> Commission Staff's Statement of Position at 7-8.

<sup>16</sup> SCT Ex. 9, Rebuttal Testimony of Mark Bruce at 10:5-7.

of that facility compared to existing ties.<sup>17</sup> Mr. Woodfin noted that these circumstances could increase the likelihood of an actual violation of thermal limits.<sup>18</sup> Mr. Woodfin described two possible options for addressing this anticipated congestion: economically dispatching the ties through SCED, or instituting a Constraint Management Plan (CMP).<sup>19</sup> However, he also noted that both options have substantial drawbacks that must be considered.<sup>20</sup> ERCOT recommends that the various alternatives for managing congestion due to the Southern Cross DC Tie should be considered by stakeholders in an ERCOT forum and a solution developed before the Southern Cross DC tie is permitted to interconnect. Although one witness recommended that the Commission order the use of a CMP or a Special Protection System (SPS) to manage congestion from the Southern Cross DC tie,<sup>21</sup> this determination is premature without having yet evaluated the feasibility of a CMP or SPS.

**H. The Commission should require ERCOT to determine whether changes to standards or systems are necessary to reliably manage the ramping of the Southern Cross DC ties. (Preliminary Order Issue 4.e.)**

According to the testimony of ERCOT witness Dan Woodfin, the interconnection of a 2000MW DC tie to the ERCOT system raises the possibility that, under certain circumstances, the ramping of the tie could exceed the ramp capability of generation in the ERCOT system, which could require emergency operator action to restore frequency to acceptable levels.<sup>22</sup> A number of possible solutions might be adopted to address this risk, including integrating DC tie schedules with market tools or extending the current 10-minute ramp period to a longer duration.<sup>23</sup> ERCOT recommends this issue be addressed through the ERCOT stakeholder process.<sup>24</sup>

**I. The Commission should require ERCOT to determine a method for reliably and cost-effectively coordinating outages as a condition for the interconnection of the Southern Cross DC tie. (Preliminary Order Issue 4.f.)**

ERCOT witness Dan Woodfin testified that the coordination of generator and transmission outages in the ERCOT system becomes much more complicated due to the exponentially greater

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<sup>17</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 8:19-24.

<sup>18</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 9:1-4.

<sup>19</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 9:8-10:1.

<sup>20</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 9:1-4.

<sup>21</sup> Luminant Ex. 3, Cross-Rebuttal Testimony of Amanda J. Frazier at 8:14-18.

<sup>22</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 9:1-4.

<sup>23</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 12:20:21-13:1.

<sup>24</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 13:1-3.



number of scenarios that must be studied with the addition of a significantly larger DC tie, which cannot reliably be predicted to be importing or exporting in any future hour.<sup>25</sup> This complexity will require ERCOT to incur additional costs in developing more robust outage coordination systems and could limit the number of outages that can be accommodated at any one time due to the need to plan for a potentially wide swing from export to import (or vice versa) on this one tie.<sup>26</sup> ERCOT therefore recommends that the Commission order ERCOT in this proceeding to identify a method for reliably and cost-effectively coordinating outages as a condition for allowing the Southern Cross DC tie to interconnect. ERCOT takes no position on how any additional cost associated with this more robust outage coordination scheme should be allocated.

**J. The Commission should require ERCOT to negotiate and execute the necessary agreements with the appropriate Reliability Coordinator and/or Balancing Authority as a condition for allowing the tie to interconnect. (Preliminary Order Issue 4.g.)**

If the Southern Cross project proceeds, ERCOT will need to reach an agreement with the Reliability Coordinator and/or Balancing Authority on the eastern end of the tie to ensure coordination of operations during emergency conditions, among possible other issues.<sup>27</sup> For this reason, the Commission should order ERCOT in this proceeding to negotiate and execute the necessary agreements with the appropriate counter-parties as a condition for permitting the interconnection of the Southern Cross DC tie.

**K. The Commission should require ERCOT to determine whether any or all DC Ties must be required to provide or procure Voltage Support Service or Primary Frequency Response, or the technical equivalent of either service, and adopt and implement any standards revisions necessary to effectuate any such requirement. (Preliminary Order Issue 4.h.)**

Voltage Support Service (VSS) and Primary Frequency Response (PFR) are reliability services currently provided by Generation Resources in the ERCOT System. DC ties do not currently provide either service. However, as ERCOT witness Dan Woodfin testified, the interconnection of the Southern Cross DC tie could result in the tie's displacement of generators that *would* otherwise be providing PFR or VSS, and under certain system conditions, the displacement of that generation could have reliability implications.<sup>28</sup> ERCOT recommends that

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<sup>25</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 13:8-14:17

<sup>26</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 14:14-14:23.

<sup>27</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 15:13-16.

<sup>28</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 16:16-19.

the Commission require ERCOT to determine whether any or all DC Ties must be required to provide or procure Voltage Support Service or Primary Frequency Response, or the technical equivalent of either service, and to adopt and implement any standard revisions necessary to effectuate any such requirement.

**L. The Commission should require ERCOT to determine what additional ancillary services may be necessary to ensure the reliable interconnection of the Southern Cross DC tie and may wish to address the issue of direct assignment of ancillary services costs in a Commission rulemaking. (Preliminary Order Issue 4.i.)**

ERCOT takes no position on whether Southern Cross should be directly assigned any costs of ancillary services that may be attributable to the interconnection of its proposed DC tie. ERCOT witness Dan Woodfin testified that the Southern Cross tie would increase the Most Severe Single Contingency (MSSC) on the ERCOT System for both the demand side and supply side.<sup>29</sup> With respect to the demand side MSSC, Mr. Woodfin noted that ERCOT does not currently procure ancillary services to address the potential spike in frequency that would follow from a DC tie tripping offline while it is exporting 2100MW.<sup>30</sup> He also noted that ERCOT would need to investigate whether procuring a substantially higher amount of Regulation Down would be sufficient to alleviate that over-frequency condition, or whether an entirely new service would need to be created for this purpose.<sup>31</sup> Whether or not the Commission refers the cost allocation issue to a rulemaking, ERCOT recommends that the Commission require ERCOT to both evaluate whether additional ancillary services will be needed to reliably interconnect the tie and implement any modifications to ancillary services procurement as a condition for the interconnection of the DC tie.

#### **IV. PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW**

Based on the above positions, ERCOT recommends the following proposed findings of fact, conclusions of law, and ordering paragraphs. ERCOT takes no position on any issue concerning the routing of the proposed Garland facilities. Also, ERCOT has not included any findings or conclusions concerning matters of cost allocation.

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<sup>29</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 17:11-14; 18:13-15.

<sup>30</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 18:21-23.

<sup>31</sup> ERCOT Ex. 2, Direct Testimony of Dan Woodfin at 18:23-19:6.

**Findings of Fact:**

1. As part of their Offer of Settlement in FERC Docket TX11-1-001, Garland and SCT separately committed to operate the Southern Cross DC tie in accordance with all applicable ERCOT and PUCT requirements.
2. No existing ERCOT market participant type, as currently described in ERCOT rules and implemented in ERCOT systems, appropriately captures the role and functions of a DC tie owner like Southern Cross.
3. Creating a new market participant category for a DC tie owner like Southern Cross will require changes to ERCOT rules and systems.
4. Using an existing market participant category for a DC tie owner like Southern Cross will require changes to ERCOT rules and may require changes to ERCOT systems.
5. The appropriate categorization of the DC tie owner like Southern Cross under the functional model of the North American Electric Reliability Corporation (NERC) has not yet been determined and may influence the appropriate categorization under ERCOT standards.
6. As a condition for the interconnection of the Southern Cross DC tie, ERCOT should determine the appropriate market participant category for any DC tie owner or operator that is not also an ERCOT-registered Transmission Service Provider in the ERCOT System and should develop the appropriate changes to standards and systems to ensure the appropriate level of access to ERCOT Systems.
7. Upon implementation of rules and systems enabling registration of Southern Cross under an appropriate ERCOT market participant category, and as a condition for the interconnection of the Southern Cross DC tie, Southern Cross should execute the Standard Form Market Participant Agreement with ERCOT.
8. ERCOT and Southern Cross should not be required to execute a coordination agreement so long as Southern Cross appropriately registers as an ERCOT market participant and signs the ERCOT Standard Form Market Participant Agreement.
9. Revisions to ERCOT standards may be appropriate to establish when a new non-TSP-owned DC Tie is included in ERCOT's planning studies.

10. ERCOT should determine when a proposed non-TSP-owned DC tie project like Southern Cross should be included in the ERCOT planning models and undertake any standard revisions it finds appropriate to address this issue.
11. ERCOT should determine how best to model large DC ties in its planning cases and undertake any standard revisions it finds appropriate to address this issue.
12. As a condition for the interconnection of the Southern Cross DC Tie, ERCOT should determine whether some or all DC ties should be economically dispatched or whether congestion caused by transactions over DC ties can reliably and cost-effectively be managed in some other way, including by implementing a Constraint Management Plan (CMP) or a Special Protection Scheme (SPS), as defined in ERCOT Protocols. If ERCOT identifies a reliable and cost-effective solution for managing congestion, it should undertake any standard revisions it finds appropriate to address this issue.
13. Because ERCOT has not yet considered the feasibility of implementing any particular CMP or SPS for the purpose of resolving congestion related to the Southern Cross DC tie, any determination as to the suitability of a CMP or SPS to resolve congestion in this case is premature at this time.
14. As a condition for the interconnection of the Southern Cross DC tie, ERCOT should consider whether pre-determined restrictions on DC tie ramp rates should be imposed and undertake any standard revisions appropriate to address this issue.
15. As a condition for the interconnection of the Southern Cross DC tie, ERCOT should determine whether changes to outage coordination practices must be made to accommodate the addition of the Southern Cross DC tie and undertake any standard revisions that are necessary to address this issue. The Commission, through rulemaking, should determine whether the costs of any changes to outage coordination systems should be borne by Southern Cross or similarly situated DC tie owners.
16. As a condition for the interconnection of the Southern Cross DC tie, ERCOT should determine what coordination may be required with an entity registered as a Reliability Coordinator (RC) or Balancing Authority (BA) with NERC for the purposes of coordinating transactions over the Southern Cross DC tie and should enter into any

appropriate agreements with those entities.

17. As a condition for the interconnection of the Southern Cross DC tie, ERCOT should determine whether any or all DC ties must be required to provide or procure Voltage Support Service or Primary Frequency Response, or the technical equivalent of either service, and should adopt and implement any standard revisions necessary to effectuate any such requirement.
18. The Commission should determine whether any additional costs of ancillary services associated with the interconnection of the Southern Cross DC tie should be directly allocated to Southern Cross or any other appropriate party, and ERCOT should undertake any standard revisions that may be necessary to implement the determination of the Commission.

**Conclusions of Law:**

1. Subsections (c-2) and (i) of PURA section 37.051 authorize, but do not require, the Commission to address any particular issues in this proceeding.
2. The Commission may justifiably require that matters potentially impacting the reliability of the ERCOT system must be resolved before the Southern Cross DC tie is permitted to interconnect with the ERCOT system.

**Ordering Paragraphs:**

As a condition for granting the Garland CCN, the Commission orders the following:

1. Before it may allow the interconnection of the Southern Cross DC tie, ERCOT must determine the appropriate market participant category for any DC tie owner or operator that is not also an ERCOT-registered Transmission Service Provider in the ERCOT System and must develop the appropriate changes to standards and systems to ensure the appropriate level of access to ERCOT Systems.
2. Before ERCOT may allow the interconnection of the Southern Cross DC tie, Southern Cross shall execute the Standard Form Market Participant Agreement with ERCOT.
3. ERCOT shall determine at what point of project development a proposed DC tie project should be included in the ERCOT planning models.
4. ERCOT shall determine the appropriate operating assumptions for DC ties in ERCOT planning studies.

5. Before it may allow the interconnection of the Southern Cross DC tie, ERCOT must determine an appropriate means of managing congestion that may arise from the interconnection of the Southern Cross DC tie.
6. Before it may allow the interconnection of the Southern Cross DC tie, ERCOT must adopt and implement any necessary changes to standards or systems to ensure that the potential ramping of the DC tie does not create a reliability concern.
7. Before it may allow the interconnection of the Southern Cross DC tie, ERCOT must develop a method for reliably and cost-effectively coordinating outages following the interconnection of the Southern Cross DC tie.
8. Before it may allow the interconnection of the Southern Cross DC tie, ERCOT must execute an agreement with each appropriate NERC-registered Reliability Coordinator and/or Balancing Authority concerning the coordination of the DC ties,
9. ERCOT shall determine whether Southern Cross, or any entity scheduling a transaction over the Southern Cross DC tie, should be required to provide or procure Voltage Support Service or Primary Frequency Response, or the technical equivalent of either service. ERCOT shall adopt and implement any standard revisions necessary to effectuate any such requirement.
10. Before it may allow the interconnection of the Southern Cross DC tie, ERCOT shall evaluate whether additional ancillary services will be needed to reliably interconnect the tie and shall implement any changes to ancillary services procurement as a condition for the interconnection of the tie.
11. Commission Staff shall open a compliance docket to monitor compliance with the requirements of this order. Upon final approval by the ERCOT Board of Directors or any other appropriate ERCOT body of any Protocol revision or other system or standard change adopted pursuant to this order, ERCOT shall submit a filing in the compliance docket providing notice and a description of the approval or change and a description of the standard. Upon a determination that no standard or no modification is appropriate, ERCOT shall notify the Commission of such a determination by filing in the compliance docket.

## **V. CONCLUSION**

For the reasons stated in this brief, ERCOT respectfully requests that the Commission include ERCOT's proposed findings, conclusions, and ordering paragraphs as conditions on the Garland CCN.

Respectfully submitted,



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ATTORNEYS FOR ELECTRIC  
RELIABILITY COUNCIL OF TEXAS, INC.

### **CERTIFICATE OF SERVICE**

I hereby certify that a copy of this document was served on all parties of record on June 10, 2016, by posting on the PUC Interchange or by U.S. first class mail in accordance with the provisions regarding service in SOAH Order No. 3 in this proceeding.

