



Control Number: 45624



Item Number: 119

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**SOAH DOCKET NO. 473-16-2751  
PUC DOCKET NO. 45624**

**APPLICATION OF THE CITY OF  
GARLAND TO AMEND A  
CERTIFICATE OF CONVENIENCE  
AND NECESSITY FOR THE RUSK TO  
PANOLA DOUBLE-CIRCUIT 345-KV  
TRANSMISSION LINE IN RUSK AND  
PANOLA COUNTIES**

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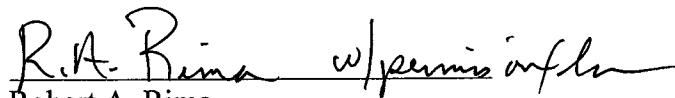
**BEFORE THE**  
2016 MAR 15 PM 2:13  
**STATE OFFICE OF**  
PUBLIC UTILITY COMMISSION  
FILING CLERK  
**ADMINISTRATIVE HEARINGS**

**SOUTHERN CROSS TRANSMISSION LLC'S RESPONSE TO TEXAS INDUSTRIAL  
ENERGY CONSUMERS' FIRST SET OF REQUESTS FOR INFORMATION  
TO SOUTHERN CROSS TRANSMISSION LLC  
QUESTION NOS. TIEC 1-1 THROUGH TIEC 1-36**

Southern Cross Transmission LLC files this response to Texas Industrial Energy Consumers' First Set of Requests for Information (RFI) to Southern Cross Transmission LLC. Southern Cross Transmission LLC received Texas Industrial Energy Consumers' First RFI on March 16, 2016. Pursuant to SOAH Order No. 2, Southern Cross Transmission's response is due on March 28, 2016; therefore, this response is timely filed. All parties may treat these answers as if they were filed under oath.

Southern Cross Transmission LLC reserves the right to object at the time of the hearing to the admissibility of the information provided herein.

Respectfully submitted,

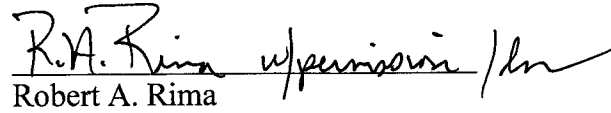
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*Attorney for Southern Cross Transmission LLC*

**CERTIFICATE OF SERVICE**

I certify that a true and correct copy of this document was served by electronic mail, facsimile, hand-delivery, overnight delivery, or First Class U.S. Mail on Texas Industrial Energy Consumers on March 28, 2016.

  
Robert A. Rima

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**Question No. TIEC 1-1**

Will SCT or any of its affiliates own any transmission or distribution assets in Texas related to this project? In ERCOT?

**Response No. TIEC 1-1**

As of the date of this response, SCT does not, nor does it have any plans to, own any transmission or distribution assets in Texas related to this project. SCT's affiliate, Rusk Interconnection LLC ("Rusk Interconnection"), in accordance with its agreements with Garland, will construct both the line between the Rusk and Panola Switching Station, as well as the Panola Switching Station. Rusk Interconnection presently owns the land under the to-be-constructed Panola Switching Station, and may over the course of construction temporarily own some of the ROW for the line the subject of this CCN. Rusk Interconnection will own those facilities and the noted land during construction, but only until they are transferred to Garland shortly before commercial operation of the line which is the subject of this CCN. Similarly, in accordance with its agreements with Oncor, Rusk Interconnection also now owns the land under the to-be-constructed Rusk Switching Station. That land will be transferred to Oncor prior to commercial operation of the line which is the subject of this CCN. Following those transfers, Rusk Interconnection will own no assets in Texas, nor does it have plans to own transmission or distribution assets in Texas.

Prepared by: David Parquet  
Sponsored by: David Parquet

Title: Senior Vice President – Special Projects  
Title: Senior Vice President – Special Projects

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**Question No. TIEC 1-2**

Please identify the location where Garland's ownership of the line connecting the Panola Switching Station to the DC Tie terminates. Does Garland own any portion of this line in Louisiana?

**Response No. TIEC 1-2**

Garland's ownership of the bus extension connecting the Panola Switching Station to SCT's Western Converter Station will terminate at the border with Louisiana. Garland will own no portion of any facilities in Louisiana. Please see the confidential schematic attached as TIEC 1-2.pdf which is provided under the protective order in this docket.

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**Question No. TIEC 1-3**

Refer to page 4, line 23 to page 5, line 2 of Mr. Parquet's testimony. Please explain in detail why Mr. Parquet believes it would be infeasible for a generator to interconnect on the Louisiana side of the border.

**Response No. TIEC 1-3**

As a general matter, an interconnection to the bus extension or the converter station would be contrary to good engineering practices and would not be allowed. Given the organization of facilities associated with the Western Converter Station, there is no space for a generator to interconnect between the Western Converter Station and the Panola Switching Station. It would be reasonable and feasible for a generator to interconnect at a new breaker location within the Panola Switching Station.

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**Question No. TIEC 1-4**

Refer to page 7, lines 14-17 of Mr. Parquet's testimony. Are there any direct or indirect costs of this project (including, but not limited to, the substations and lines) that are either (1) not the responsibility of SCT, or that (2) SCT will seek to recover from ratepayers? Please identify and specifically list all anticipated costs for which SCT is committing not to seek recovery.

**Response No. TIEC 1-4**

SCT will not seek to recover from ratepayers any costs of any facilities to be owned by GP&L and SCT identified in the interconnection agreements. SCT expects to recover all of its costs for the facilities to be owned by GP&L and SCT from those parties contracting for capacity on the interstate line.

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**Question No. TIEC 1-5**

Please identify and explain the reasons underlying the decision not to have a private entity owning the line between the Panola Switching Station and the DC Tie. Please specifically explain why the line is not being built as a private line owned by SCT.

**Response No. TIEC 1-5**

While from time-to-time the connection between the Panola Switching Station and SCT's Western Converter Station is referred to as a line, it is technically a bus extension. The Point of Interconnection is designated as the Texas – Louisiana border. That part of the bus extension located in Texas is within the Panola Switching Station and will be owned by Garland. Since investor-owned utilities in ERCOT were unbundled, municipally-owned utilities and cooperatives are the only entities that can be ordered by FERC to provide interconnection services to SCT under the Federal Power Act.

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**Question No. TIEC 1-6**

Please provide the schematic and confidential document described on page 7, lines 20-22 of Mr. Parquet's testimony.

**Response No. TIEC 1-6**

Please see Garland's CCN Application, Attachment 2 at 56-58 for a copy of the schematic drawing. A copy of the referenced confidential document will be provided pursuant to the protective order in the instant case.

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**Question No. TIEC 1-7**

Does SCT have any plans to interconnect the line for which a CCN is being sought in this proceeding (the "Garland Line") to any facilities other than the Panola Switching Station, the Rusk Switching Station, or the DC Tie? If so, please describe those plans and provide any related documents.

**Response No. TIEC 1-7**

No. SCT has no plans to interconnect its facilities other than at the Panola Switching Station.

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**Question No. TIEC 1-8**

Refer to page 10 of Mr. Parquet's testimony.

- a. In SCT's view, why is it necessary or desirable for SCT to be an ERCOT market participant?
- b. Please explain why SCT believes that it needs to be an ERCOT market participant in addition to executing a coordinating agreement with ERCOT.
- c. Please identify the reasons why SCT believes it is similar or dissimilar to the Southwestern Power Pool (SPP) or the Comision Federal de Electricidad (CFE) in terms of transacting with ERCOT. Are SPP and/or the CFE ERCOT market participants in addition to having coordination agreements?
- d. Please provide a citation for the claim on page 10, lines 16-17.
- e. Please identify the ways that SCT believes different than other owners of high voltage direct-current converter stations connected to the ERCOT grid.

**Response No. TIEC 1-8**

- a. It is necessary for SCT to be an ERCOT Market Participant because both the ERCOT Bylaws and ERCOT Protocols state that any entity performing an activity which is the subject of the Protocols is considered a Market Participant. As the operator of a DC Tie interconnected to the ERCOT transmission system, SCT will necessarily perform activities which are the subject of the ERCOT Protocols. The Protocols further require each Market Participant to register and execute the Standard Form Market Participant Agreement.
- b. Executing the Standard Form Market Participant Agreement is appropriate for the reasons described above in SCT's response to TIEC 1-8a. SCT does not assume it will also execute a coordinating agreement with ERCOT for the reasons described below in SCT's response TIEC 1-8c.

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c. SCT is fundamentally dissimilar to both SPP and CFE in terms of transacting with ERCOT. SPP and CFE are more functionally similar to ERCOT than to SCT. Although they have different regulatory labels (ISO, RTO, etc.), all three are system operators and perform the functions of regional balancing authorities. SCT, on the other hand, more closely resembles the transmission service providers that own and operate existing direct current transmission facilities interconnected to the ERCOT system. SCT expects that, similar to the way ERCOT negotiated and executed satisfactory coordination agreements with SPP and CFE, ERCOT will also desire a coordination agreement with the system operator on the eastern end of the DC Tie to be owned and operated by SCT.

d. ERCOT Bylaws Article 2.16  
ERCOT Nodal Protocols Sec. 2.1, "Market Participant"

e. SCT assumes the question is intended to read: Please identify the ways that SCT believes *it is* different than other owners of high voltage direct-current converter stations connected to the ERCOT grid. SCT has not undertaken a study to determine the differences between it and other owners of high voltage direct-current converter stations connected to the ERCOT grid. Nonetheless, the primary characteristic that differentiates SCT from other owners of high voltage direct-current converter stations connected to the ERCOT grid is that SCT will not own or operate any transmission facilities within the State of Texas and, therefore, is not an "electric utility" under Texas law or a "Transmission Service Provider" under the PUCT's Rules.

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**Question No. TIEC 1-9**

Refer to page 11, lines 16-17 of Mr. Parquet's testimony. Please describe any other changes necessary to ensure SCT's adherence to the ERCOT protocols.

**Response No. TIEC 1-9**

Once the ERCOT Standard Form Market Participant Agreement is modified to accommodate an Independent DC Tie Operator, SCT believes executing the Standard Form Market Participant Agreement with ERCOT is sufficient to ensure SCT's adherence to the ERCOT Protocols. SCT is not aware of any other changes necessary to effectuate that purpose.

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**Question No. TIEC 1-10**

Refer to page 12, line 2 of Mr. Parquet's testimony. Please provide an organization chart for SCT and its affiliates and describe the ownership structure and relationship among SCT, Rusk Interconnection, LLC, and other affiliates of SCT.

**Response No. TIEC 1-10**

By agreement with counsel for TIEC, this request has been limited to that portion of the organization chart for SCT and its affiliates that identifies the entities that are likely to be directly involved in business activities associated with the Southern Cross Transmission line. A copy of the referenced document will be provided pursuant to the protective order in the instant case.

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**Question No. TIEC 1-11**

Please identify the ERCOT-adopted standards of conduct Mr. Parquet is referencing on page 12, line 6 of his testimony.

**Response No. TIEC 1-11**

Mr. Parquet did not testify that applicable ERCOT standards of conduct exist. SCT will be subject to a FERC code of conduct. The ability to impose additional provisions on, or different code of conduct to, SCT is limited by PURA §39.157(d).

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**Question No. TIEC 1-12**

Who will own the capacity on the DC Tie? Please explain how this capacity will be initially allocated/purchased.

**Response No. TIEC 1-12**

SCT plans to allocate/sell capacity on the line either under its Negotiated Rate Order authority as approved by the FERC in Docket EL11-61-000 on December 15, 2011, or under the FERC's Final Policy Statement as approved in Docket Nos. AD12-9-000 and AD11-11-000 on January 17, 2013.

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**Question No. TIEC 1-13**

Will the capacity on the DC Tie be sold under long-term contract(s)?

**Response No. TIEC 1-13**

Yes, that is the intention. There may be some small amount of capacity that is not sold, and that would be offered to qualified parties on SCT's OASIS, under an Open Access Transmission Tariff approved by FERC.

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**Question No. TIEC 1-14**

Will SCT ensure that the owners of the capacity on the DC Tie will not export power from ERCOT when LMPs in ERCOT are higher than prices in SERC? If so, please explain specifically how this would be accomplished.

**Response No. TIEC 1-14**

SCT cannot ensure that the owners of the capacity on the SCT DC Tie will not export power from ERCOT when LMPs in ERCOT are higher than prices in SERC. SCT will facilitate DC Tie exports from ERCOT whenever a QSE submits an export schedule with an ERCOT-approved NERC E-tag, unless that schedule is interrupted by ERCOT instruction to curtail exports. SCT will follow ERCOT Operator instructions. It seems unlikely the owners of DC Tie capacity (exporting QSEs) would buy high and sell low but there are no ERCOT Protocols prohibiting uneconomic exports by QSEs since rational actors are expected to appropriately respond to economic signals in the market. In the event that ERCOT begins its emergency operations procedures to ensure system reliability, ERCOT has unilateral authority under the Protocols to curtail DC Tie exports during emergency conditions, reject E-Tags requesting exports, and request emergency DC Tie imports.

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**Question No. TIEC 1-15**

Where specifically will SCT's DC line terminate in SERC? To what utility will SCT interconnect that line in SERC?

**Response No. TIEC 1-15**

SCT has filed an objection to this request.

Prepared by:  
Sponsored by:

Title:  
Title:

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**Question No. TIEC 1-16**

Refer to page 13, lines 4-5 of Mr. Parquet's testimony. Will SCT agree not to export power from ERCOT during an ERCOT declared emergency? If your answer is anything other than "yes," please explain.

**Response No. TIEC 1-16**

Yes, during an Energy Emergency Alert, SCT will follow instructions issued pursuant to the ERCOT protocols.

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**Question No. TIEC 1-17**

Refer to page 12, lines 21-22 of Mr. Parquet's testimony.

- a. How are generation resources in SERC more diverse than those in ERCOT?
- b. How specifically will this project promote competition in the ERCOT wholesale market?

**Response No. TIEC 1-17**

- a. Mr. Parquet's testimony does not state that generation resources in SERC are more diverse than those in ERCOT. According to ERCOT's 2015 "Quick Facts", ERCOT had access to over 74,000 MW of generation resources, inclusive of natural gas, coal, nuclear, wind, and other. According to SERC's July, 2015 Informational Summary Brochure, SERC had access to 225,000 MW of generation resources, inclusive of gas, coal, nuclear, hydro, oil and other.
- b. SCT will promote competition because, any time the price in ERCOT at the Panola Switching Station node is higher (net of any SERC charges associated with export) than available to the interconnection point of SCT with SERC, SCT may find generation resources in SERC that could be imported into ERCOT to compete with generation resources in ERCOT. This competition, per Ms. Wolfe's testimony, will reduce production costs in ERCOT and promote consumer benefits.

Prepared by: David Parquet  
Sponsored by: David Parquet

Title: Senior Vice President – Special Projects  
Title: Senior Vice President – Special Projects

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**Question No. TIEC 1-18**

For the economic study in Ms. Wolfe's testimony, please provide an excel file showing, by the hour, the:

- a. LMPs for generation, load nodes, and hubs;
- b. Generation by plant;
- c. Load by node;
- d. Load by zone;
- e. Exports;
- f. Imports;
- g. Calculated benefit to customers;
- h. Calculated benefit to producers;
- i. Total benefit; and
- j. A calculation of export-related charges.

**Response No. TIEC 1-18**

Metrics for the economic assessment were predominately provided by LCG's algorithms annually.

In response to subpart (a), TIEC1-18attachment1.xls provides monthly average TOU prices by hub and zone for the simulation cases and monthly average load zone weighted prices by simulation case.

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In response to subparts (b), (c), and (d), hourly bus generation and load were not reported from UPLAN for the purposes of this benefits study.

In response to items (e) and (f), TIEC1-18attachment1.xls contains the hourly flows on the SCT project.

In response to items (g) and (h), benefits were derived from UPLAN over the entire year's run and were not reported hourly.

In response to item (i), it is unclear to what "Total Benefits" refers. Notwithstanding that, the benefits that were derived were done so for the entire year's run and not reported hourly.

In response to item (j), EW-1, page 33, shows a compilation of the charges associated with ERCOT exports over the SCT project. TIEC1-18attachment1.xls includes the hourly export related charges resulting from the SCT project flows for the two change cases.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

**SOAH DOCKET NO. 473-16-2751  
PUC DOCKET NO. 45624**

<b>APPLICATION OF THE CITY OF GARLAND TO AMEND A CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE RUSK TO PANOLA DOUBLE-CIRCUIT 345-KV TRANSMISSION LINE IN RUSK AND PANOLA COUNTIES</b>	§ § § § § § §	<b>BEFORE THE  STATE OFFICE OF  ADMINISTRATIVE HEARINGS</b>
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**Question No. TIEC 1-19**

Please explain how total production costs could decline in hours when exports are occurring and wind is not being curtailed.

**Response No. TIEC 1-19**

This request is somewhat ambiguous because production costs are not determined on an hourly basis, in particular because across-the-hour commitment costs are not hourly in nature. Generally, however, the simulations show that less wind curtailment occurs with the SCT project in place. The project also allows for imports during periods of what otherwise would be high prices in ERCOT. These results indicate that the additional wind production (essentially zero production cost) and the displacement of higher-cost resources during import hours result in the ERCOT production savings despite the predominant pattern of exports on the SCT project.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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**Question No. TIEC 1-20**

How did Ms. Wolfe benchmark the amount of wind curtailment that exists in the base count and ensure that that amount was reasonable? Please provide any related workpapers or supporting documents.

**Response No. TIEC 1-20**

Since the base case simulates the year 2020, and in particular because there is extensive additional build out of wind anticipated between today and 2020, there is no direct operating data with which to benchmark wind curtailment. LCG and Resero considered the level of wind curtailment, investigated the apparent root causes of the curtailment need, and considered possible resolutions to the observed wind curtailment. Short of policy changes on the operation of the ERCOT system or the assumptions employed in ERCOT's planning processes, LCG and Resero believe that the observed level of wind curtailment was within the range of reason.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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**Question No. TIEC 1-21**

How did Ms. Wolfe translate the 2014 SSWG non-coincident peak case into a coincident peak forecast? Please provide any related workpapers or supporting documents.

**Response No. TIEC 1-21**

Please refer to Exhibit EW-2 page 6 to the direct testimony of Ellen Wolfe for a detail of the load forecast assumptions. The 2015 series SSWG case for 2020 was used for the transmission topology and for the load distribution factors. The ERCOT peak load forecast was from ERCOT's September 2014 50-50 non-coincidental peak forecast and the load profiles by weather zone were based on ERCOT's RTP 2014 Economic case.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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**Question No. TIEC 1-22**

Please compare, on an hourly basis, the load forecast Ms. Wolfe used with the most recent ERCOT 50/50 load forecast as used in the CDR.

**Response No. TIEC 1-22**

No comparison of the ERCOT load forecast with the most recent ERCOT 50 -50 load forecast has been prepared. Resero and LCG applied non coincidental peak forecasts by weather zone and load profiles. The underlying assumptions in both forecasts are based on the same September 2014 RTP Economic case, which includes both coincident and non-coincident forecasts. The UPLAN analysis uses the non-coincident peak forecast as an input in conjunction with the weather zone and load profiles to create hour-by-hour nodal loads. The CDR, however, relies on the coincident peak set of forecast data. The forecasts are, otherwise, comparable.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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**Question No. TIEC 1-23**

Refer to page 4, line 22 to page 5, line 2 of Ms. Wolfe's testimony. Will exports from ERCOT only occur during hours in which renewables are constrained in the base case? If not, please explain the linkage between exports and renewable energy that is claimed in this sentence.

**Response No. TIEC 1-23**

In the production cost simulation model exports from ERCOT over the SCT project occur when the economics of ERCOT relative to the economics of the Eastern Interconnect (subject to system constraints) support such flows. That is, generally, when the price at the ERCOT terminus is lower than that on the Eastern Interconnect end of the project by more than the export related charges and loss impacts. Since the export flows on the project exceed the level of wind curtailment measured, it is not the case that exports only occur during hours in which renewables are constrained in the Base Case.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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PUC DOCKET NO. 45624**

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**Question No. TIEC 1-24**

Refer to page 5, lines 2-5 of Ms. Wolfe's testimony. Please provide the calculations behind the LMP reduction claimed in this sentence.

**Response No. TIEC 1-24**

Please refer to page 17 of Exhibit EW-2 to the direct testimony of Ellen Wolfe, the economic impacts report that shows the data resulting in the \$0.42/MWh LMP ERCOT LMP reduction.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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**Question No. TIEC 1-25**

Refer to page 8, lines 20-22 of Ms. Wolfe's testimony. Please describe in detail the assumptions that were "otherwise derived to the extent possible," and the data, methods, and calculations used to derive those assumptions. Please provide any related workpapers or supporting documents.

**Response No. TIEC 1-25**

Please refer to Exhibit EW-2 to the direct testimony of Ellen Wolfe, page 6, for a summary of the sources of assumptions.

Please also refer to Q&A 22 – 25 of the Wolfe testimony that further details the methods used for the other simulation assumptions.

LCG also enforced contingency constraints from ERCOT's Regional Transmission Plan ("RTP") contingency set and LCG also models market operations (e.g., unit commitment and dispatch) consistent with the ERCOT market operations protocols. Ancillary service assumptions were based on ERCOT's planning analysis policies; please see response to TIEC 1-29.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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**Question No. TIEC 1-26**

Refer to page 9, line 9 of Ms. Wolfe's testimony. Please provide the "additional data processing" referenced on that line, and describe in detail both the inputs and methods used in that process.

**Response No. TIEC 1-26**

LCG and Resero apply a variety of algorithms to the simulation cases' results that produce the impacts of the project. Primarily the algorithms compute net cost and other metrics such as net curtailment. Finally these results are compared between a change case and the Base Case to determine the impacts of the project. Exhibit EW-2 to the direct testimony of Ellen Wolfe is intended to capture these impacts. Please refer to the following pages of Exhibit EW-2.

- Page 17 shows the computation of the project impact on the weighted average ERCOT LMPs;
- Page 19 shows the impact to consumer energy benefits and production cost savings; (TIEC1-26attachment1.xls provides the computation of these results);
- Page 20 shows the computation of the producers' benefit;
- Page 21 shows ERCOT generation by fuel type by case;
- Page 22 shows wind and solar curtailment by case.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

	Case #1 (Base)	Case #2 (Base + 2GW Wind + SCT)	Case #3 (Base + SCT)
<b>GWh</b>			
Generation	392,997	399,533	399,175
Imports	1,320	2,516	2,159
Exports	0	(7,770)	(6,673)
Net	<b>394,317</b>	<b>394,279</b>	<b>394,661</b>
<b>\$ million</b>			
Energy Revenue	12,159	11,846	12,156
Prod Costs	9,082	8,876	9,057
Purchases	65	116	101
Sale Rev	0	(210)	(185)
Total	<b>9,147</b>	<b>8,782</b>	<b>8,974</b>
<b>\$ million</b>			
Generator Margin	3,077	2,970	3,098
Consumer Payment	12,281	11,975	12,119
Import/Export	65	(94)	(84)
Import/Export Benefit		159	148
<b>Producers Benefit</b>		<b>(107)</b>	<b>21</b>
<b>Consumers Benefit</b>		<b>306</b>	<b>162</b>
<b>Societal Benefit</b>		<b>365</b>	<b>173</b>

**\* Note:**

Consumer Payment = LMP \* Load

Producers benefit = Generator Margin\_Alternate Case - Generator Margin\_BaseCase

Import/Export benefit = Base Case - Alternate Case

Consumers Benefit = Consumer payment\_Alternate Case - Consumer payment\_BaseCase

Societal benefit = Difference in Total production Cost between Base Case and Alternate Case

	(Millions)		
	Base Case	SCT Only Case	SCT + 2000 MW Wind Case
Energy Revenue	\$12,159	\$12,156	\$11,846
Production Costs	\$9,082	\$9,057	\$8,876
Generator Margin	\$3,077	\$3,098	\$2,970
Producers' Benefit		\$21	(\$107)

0.68%                      -3.48%

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**Question No. TIEC 1-27**

Please provide the monthly gas price forecasts used for ERCOT and SERC that are referenced on page 12 of Ms. Wolfe's testimony.

**Response No. TIEC 1-27**

TIEC1-27attachment1 contains the LCG-proprietary ERCOT gas price forecast. TIEC1-27attachment2 contains the LCG-proprietary Eastern Interconnect fuel price forecast used in the analysis. These confidential forecasts are provided under the protective order in this proceeding.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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**Question No. TIEC 1-28**

Please provide the adjustments and calculations related to the “to, from and over” tariff and other export charges referenced on pages 13 and 14 of Ms. Wolfe’s testimony.

**Response No. TIEC 1-28**

Please see Exhibit EW-2 to the direct testimony of Ellen Wolfe, page 33, for a derivation of the charges associated with exports used in the analysis. Please also refer to the response to TIEC 1-36.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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**Question No. TIEC 1-29**

Did Ms. Wolfe assume any change in the amount of ancillary services needing to be procured in the "SCT Only" and "SCT + 2000 MW Wind" cases compared to the base case?

**Response No. TIEC 1-29**

Ancillary services requirements for simulation cases were taken from the ERCOT planning model, and adjusted in accordance with the ERCOT policy contained within the document "ERCOT Methodologies for Determining Ancillary Services Requirements," effective January 1, 2015. In accordance with the ERCOT policy document, the regulation up and regulation down requirements were adjusted for the SCT + 2000 MW Wind case in accordance with the aforementioned document's "Incremental MW Adjustment to Prior-Year Up[Down]-Regulation Value, per 1000 MW of Incremental Wind Generation Capacity, to Account for Wind Capacity Growth" tables.

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**Question No. TIEC 1-30**

Were any transmission upgrades assumed in the "SCT + 2000 MW Wind" case that were not included in the other cases? If so, please describe those assumptions.

**Response No. TIEC 1-30**

No. No transmission upgrades were included in the SCT + 2000 MW Wind case that were not included in the SCT Only case.

Prepared by: Ellen Wolfe  
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**Question No. TIEC 1-31**

Refer to page 16, lines 15-17 of Ms. Wolfe's testimony.

- a. How was cost apportioned to imports and exports?
- b. Were the Panola and Rusk Switching Stations included in any of the calculations of customer benefits?
- c. In hours with exports, was the export load across the DC Tie included in the denominator of the cost of serving load in ERCOT?

**Response No. TIEC 1-31**

With respect to subpart (a), the costs of imports were based on the hourly LMP at the SCT project eastern terminus multiplied by the hourly import flow, and the value of exports were similarly based on the hourly LMP at the export node multiplied by the export flows.

With respect to subpart (b), assuming the question is were the *costs* of the switching stations included in the calculations, then, no, the study assessed the impacts of the project and was not a study of costs of the project itself.

With respect to subpart (c), no, the cost to serve load in ERCOT was calculated as the load node LMPs multiplied by the load at each node and does not include flows over any of the ties.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
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**Question No. TIEC 1-32**

Please provide an annual price duration curve for the “Base Case” and each of the change cases.

**Response No. TIEC 1-32**

The request for an annual price duration curve is ambiguous as to what “price” it refers. TIEC1-18adden1.xls provides the hourly prices for the Rusk location. A price duration curve for this location has not been created, but it can be derived from that hourly data.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

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**Question No. TIEC 1-33**

Was a simulation run for the “Base Case” plus 2000 MW of wind? If not, why not? If so, please provide it.

**Response No. TIEC 1-33**

No, a case reflecting the Base Case plus 2000 MW of wind was not conducted. It was not requested of Resero, and it was not essential to presenting, or explaining, the other case results.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

**SOAH DOCKET NO. 473-16-2751  
PUC DOCKET NO. 45624**

<b>APPLICATION OF THE CITY OF GARLAND TO AMEND A CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE RUSK TO PANOLA DOUBLE-CIRCUIT 345-KV TRANSMISSION LINE IN RUSK AND PANOLA COUNTIES</b>	<b>§ § § § § § §</b>	<b>BEFORE THE  STATE OFFICE OF  ADMINISTRATIVE HEARINGS</b>
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**SOUTHERN CROSS TRANSMISSION LLC RESPONSE TO TEXAS INDUSTRIAL  
ENERGY CONSUMERS' FIRST SET OF REQUESTS FOR INFORMATION  
TO SOUTHERN CROSS TRANSMISSION LLC  
QUESTION NOS. TIEC 1-1 THROUGH TIEC 1-36**

**Question No. TIEC 1-34**

Refer to page 22, lines 15-16 of Ms. Wolfe's testimony. Did the transmission topology in any of the cases include the Houston Import Project? If not, why not?

**Response No. TIEC 1-34**

Yes. The Houston Import Project was represented in all the simulation cases as it was captured in the ERCOT power flow case employed.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

**SOAH DOCKET NO. 473-16-2751  
PUC DOCKET NO. 45624**

<b>APPLICATION OF THE CITY OF</b>	§	
<b>GARLAND TO AMEND A</b>	§	<b>BEFORE THE</b>
<b>CERTIFICATE OF CONVENIENCE</b>	§	
<b>AND NECESSITY FOR THE RUSK TO</b>	§	<b>STATE OFFICE OF</b>
<b>PANOLA DOUBLE-CIRCUIT 345-KV</b>	§	
<b>TRANSMISSION LINE IN RUSK AND</b>	§	<b>ADMINISTRATIVE HEARINGS</b>
<b>PANOLA COUNTIES</b>	§	

**SOUTHERN CROSS TRANSMISSION LLC RESPONSE TO TEXAS INDUSTRIAL  
ENERGY CONSUMERS' FIRST SET OF REQUESTS FOR INFORMATION  
TO SOUTHERN CROSS TRANSMISSION LLC  
QUESTION NOS. TIEC 1-1 THROUGH TIEC 1-36**

**Question No. TIEC 1-35**

Refer to page 24, line 18 of Ms. Wolfe's testimony. What reliability benefits are being referenced in this section? Does Ms. Wolfe believe that the "SCT Only" or "SCT + 2000 MW Wind" could result in an increase in operating reserve requirements in ERCOT?

**Response No. TIEC 1-35**

Generally, presuming that a resource is added in accordance with reliability standards, the addition of any resource in a system enhances the reliability of the grid by providing additional sources to satisfy operating needs of the system. Since the SCT project offers access to an additional pool of resources in the Eastern Interconnect, the addition of those resources for the possible energy balancing and other grid needs will increase the reliability of the grid. The SCT project could enable additional energy exchange agreements with the Eastern neighbors and the diversity of the supply mix in the adjacent markets would tend to be beneficial to the ERCOT system.

Ms. Wolfe has not formulated an opinion on whether the SCT project would, or would not, result in an increase in ERCOT's operating reserve requirements.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting

**SOAH DOCKET NO. 473-16-2751  
PUC DOCKET NO. 45624**

<b>APPLICATION OF THE CITY OF GARLAND TO AMEND A CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE RUSK TO PANOLA DOUBLE-CIRCUIT 345-KV TRANSMISSION LINE IN RUSK AND PANOLA COUNTIES</b>	<b>§ § § § § § §</b>	<b>BEFORE THE  STATE OFFICE OF  ADMINISTRATIVE HEARINGS</b>
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**SOUTHERN CROSS TRANSMISSION LLC RESPONSE TO TEXAS INDUSTRIAL  
ENERGY CONSUMERS' FIRST SET OF REQUESTS FOR INFORMATION  
TO SOUTHERN CROSS TRANSMISSION LLC  
QUESTION NOS. TIEC 1-1 THROUGH TIEC 1-36**

**Question No. TIEC 1-36**

Refer to page 25, lines 12-16. Please provide all documents and communications that led Ms. Wolfe to have the referenced understanding.

**Response No. TIEC 1-36**

A memo was provided to Ms Wolfe regarding the current transmission tariff charges and possible future policy changes. Please see TIEC1-36 attachment1.

Prepared by: Ellen Wolfe  
Sponsored by: Ellen Wolfe

Title: President – Resero Consulting  
Title: President – Resero Consulting



## MEMORANDUM

Date: February 22, 2016  
To: David Parquet  
From: Mark Bruce  
Re: Development of ERCOT export tariff estimates for Resero analysis

This memo summarizes the steps we took in 2014-15 to estimate the charges associated with export from the ERCOT system and our recent effort in 2016 to update the portion of those charges deriving from transmission rates based upon our evolving understanding of the applicability of transmission rates to exports over the Southern Cross Transmission (SCT) project. These estimates were used by Resero to perform the 2015 economic modeling of the SCT project and in Resero's 2016 sensitivity analysis to gauge the impact of potentially higher transmission rates than originally estimated on the economic model of the SCT project.

We examined two broad categories of charge types applicable to DC Tie exports. The first category is the ERCOT charge types assigned to DC Tie Loads. The charge types in this category were derived by consulting both the ERCOT Protocols and the ERCOT Settlements Charge Matrix. These documents identified the use of DC Tie Loads to represent exported power in the ERCOT settlement systems and the applicability of various charge types to DC Tie loads such as ancillary services obligations, transmission and distribution losses, unaccounted for energy, and others. Some of these charge types are relatively fixed, such as the ERCOT System Administrative Fee which is set by the PUCT, and others, such as ancillary services costs, vary over time depending upon such factors as fuel prices and ERCOT's procurement methodology.

It appears today, as it did when first analyzed in 2014, that the ERCOT settlement charges associated with DC Tie Loads are assessed to the Qualified Scheduling Entity (QSE) which exported the power in the relevant settlement period. We examined the various charge types, considered the factors which influence the charge types, and determined the annual average costs of the charge types during the previous four years. Based upon this information, we determined that a reasonable forecasted cost per megawatt-hour was \$3.23 for the ERCOT charge types assessed to QSEs for exports over the SCT DC Tie.

Transmission rates are the second broad category of charges applicable to DC Tie exports. PUCT rule requires DC Tie exporters to pay transmission rates for their use of the ERCOT transmission system. We consulted the filed tariffs of numerous TSPs and discovered the majority of them did not have tariff language concerning the application of transmission rates to DC Tie exports. Four ERCOT TSPs did have To, From and Over (TFO) Tariffs on file at FERC.

However, our reading of the PUCT rule seems to require all exporters of power from ERCOT to pay transmission rates for transmission service within the ERCOT region. Our broadest reading of the

Memo to David Parquet

Feb. 22, 2016

PUCT rule suggested the applicable transmission rate should be the ERCOT “postage stamp rate,” which at the time was \$5.31/MWh. We decided the postage stamp rate was the best number to use for off-peak hours in the SCT economic analysis.

For the on-peak hours, we noted two of the four TFO tariffs used a single hourly rate for all hours while the other two used a higher hourly rate for all hours in the months of June through September. We decided to include an on-peak adder a little higher than the sum of the two existing TFO on-peak adders on the assumption that another TSP could add such a component to its rates. So we used \$6.90/MWh for the transmission charge during “on-peak” hours, which we defined as any hour in the months of May through September, while noting the difference from the traditional definition of an “on-peak” hour since there are many hours in those months with low system demand.

Since that time, PUCT Staff has urged other ERCOT TSPs to implement tariffs for charges associated with exports when they applied for rate adjustments and we understand Staff believes that all ERCOT TSPs should obtain approval for such tariffs under PUCT Substantive Rule 25.192(e). Additionally, it appears PUCT Staff also expects all such tariffs to contain an on-peak export transmission rate calculated similarly to the two existing TFO tariffs containing such language. As the extent of the uncertainties regarding transmission charges for exports became more widely appreciated through a recent PUCT workshop and rulemaking proceeding, and as our understanding of Staff’s interpretation of the rule became more clear, we decided to test the sensitivity of the Resero analysis to increased transmission charges associated with exports.

A maximum transmission charge was calculated based on the assumption that all ERCOT TSPs would impose charges associated with export transactions using the formula contained in Substantive Rule 25.192(e). Although that assumption does not reflect the existing state of affairs in ERCOT, it does provide an upper bound for transmission charges under the current PUCT rule.

A total ERCOT postage stamp rate for transmission (\$/KW) of \$50.48097 was taken from staff’s First Draft Transmission Matrix, filed on January 22, 2016 in Project No. 45382.<sup>1</sup> This figure represents the sum of the access fees (postage stamp rates) of all TSPs in ERCOT and, although the staff filing is a draft, it is believed to represent a reasonable and up-to date assessment of the total ERCOT postage stamp rate.

The formula for export transaction charges set out in Substantive Rule 25.192(e) was applied to this \$50.48097/KW total ERCOT transmission rate. Application of the formula is illustrated in the attached workpaper, which was filed in Docket No. 44888<sup>2</sup> and reviewed and approved by Commission Staff. The calculation using the \$50.48097/KW total ERCOT transmission rate resulted in the following maximum-case transmission charges associated with exports from ERCOT, which were provided to Resero for its sensitivity analysis:

On peak hourly rate (ERCOT total):  $\$50.48097/2928=0.017241/\text{kW}$  or \$17.24/MW

Off peak hourly rate (ERCOT total):  $\$50.48097/8760=0.005763/\text{kW}$  or \$5.76/MW

<sup>1</sup> *Commission Staff’s Application to Set 2016 Wholesale Transmission Rates for the Electric Reliability Council of Texas.*

<sup>2</sup> *Application of Electric Transmission Texas, LLC for Interim Update of Wholesale Transmission Rates Pursuant to 16 Texas Administrative Code § 25.192(h)(1).*