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PROJECT NO. 55718

RELIABILITY PLAN FOR THE PERMIAN BASIN UNDER PURA § 39.167	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

TEXAS INDUSTRIAL ENERGY CONSUMERS' COMMENTS

I. INTRODUCTION

Texas Industrial Energy Consumers (TIEC) represents energy-intensive businesses across the State of Texas who depend on a robust transmission system for a reliable electricity supply, and to facilitate an efficient, competitive wholesale market. Many TIEC members have assets in the Permian Basin and have been waiting for years for additional transmission capacity in West Texas to support their growth. Many other TIEC members do not have assets that will directly benefit from the Permian Basin Reliability Plan, but they will nonetheless pay the costs of the infrastructure being considered in this project due to the statewide socialization of transmission costs. The broader set of 765-kV proposals that have been raised for areas outside the Permian will also impact all TIEC members. As a result, TIEC seeks a balanced approach in supporting needed transmission expansion, while taking necessary precautions to minimize the risk of cost overruns, delays, or underutilized infrastructure.

TIEC is ultimately agnostic on whether 765-kV facilities are introduced in ERCOT *if* the data convincingly shows that a new, higher voltage is needed for reliability and is cost effective compared to alternatives, and *if* the Commission can obtain proper assurance that the parts and labor needed to construct 765-kV are readily available at a reasonable cost. Because 765-kV transmission involves fewer, larger facilities, it offers less optionality and flexibility to build out the system *incrementally* and make adjustments as better information is available on driving factors, such as load forecasts and generation siting. Put another way, once the decision to construct a 765-kV facility has been made, the Commission and the utilities are not able to cancel or delay portions of it, whereas discrete 345-kV facilities can be delayed or canceled if the facts on the ground change significantly. This puts more at stake if the assumptions about the future are wrong.

At this point in time, TIEC feels that a decision to introduce 765-kV elements remains premature and would benefit from additional diligence. The rush to make this decision is being

driven by claims that the 765-kV plan ERCOT has presented is essentially "all or nothing" and, as a result, the decision to include 765-kV elements in the Permian Basin Reliability Plan must be endorsed by May 1, 2025 or else 765-kV is effectively off the table. This is causing, in TIEC's opinion, a rushed process with inadequate diligence for a decision involving tens of billions of dollars in cost for ERCOT consumers. For example, ERCOT has requested that the Commission endorse the use of 765-kV facilities state-wide, even though over half of ERCOT's holistic plan for the state is still uncertain.[1] Other than the general routing plan for the Permian Basin, which was approved in accordance with PURA § 39.167, the other proposed 765-kV and 345-kV routes would normally be further studied by the transmission service providers (TSPs), who would come forth with more detailed individual proposals that would in turn be reviewed by ERCOT's Regional Planning Group (RPG) before receiving ERCOT endorsement.[2] Although ERCOT's Regional Transmission Plan (RTP) gives an overview of the necessary transmission improvements for 2026-2030, the RTP is clear that the transmission projects "***do not*** represent ERCOT's endorsement of those projects," and that the scope of those projects "***may change*** based on further analysis by ERCOT or the [TSPs] that indicate better alternative or a need to modify the projects due to changes in expected generation, load forecasts, or other system conditions."[3] Said another way, the RTP is based on a number of assumptions around where generation and load will materialize that may not be accurate. It is also a very high-level planning exercise that lacks the rigor of individual TSP project reviews. Accordingly, while ERCOT's analysis is a helpful starting point, the limitations of this analysis and the risk factors should be better understood before approving new 765-kV lines.

If 765-kV facilities provide significant economic, reliability, and resiliency long-term benefits, as ERCOT contends, it remains unclear why 765-kV facilities could not be further studied for the Central and Eastern regions of the state, even if the Commission moves forward with a 345-kV plan for the Permian Basin. For example, ERCOT notes that there is a significant amount of load in South Dallas that could be served by energy from the Coast Weather Zone.[4] If ERCOT

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[1] *See* ERCOT's Strategic Transmission Plan Comparison at iii (showing that the Permian Basin Plan is associated with $12.95 Billion of the $30.75 billion 345-kV costs and $13.77 billion of the $32.99 billion 765-kV costs).

[2] *See* ERCOT Protocols Section 3.11.4.

[3] ERCOT 2024 Regional Transmission Plan Report at viii (emphasis added).

[4] ERCOT 2024 Regional Transmission Plan Report at iii-iv.

and TSPs worked together to conduct additional analysis of a 765-kV loop in this region under an RPG-type process, ERCOT could potentially demonstrate the benefit of some 765-kV facilities in the near-term. While this may not provide "perfect" efficiency as compared to including 765-kV elements in the Permian Plan, it also limits risk and provides more time for diligence on this issue.

With more time, additional analysis could be done to better understand the potential costs and benefits of introducing 765-kV elements. For example, ERCOT could model the incremental benefit of 765-kV facilities *in each year*, rather than point estimates for just two future years (2030 and 2039). Or, as in typical RTP reports, ERCOT could estimate the consumer energy cost reduction for each line and upgrade, and provide stakeholders with significantly more raw data than is currently available to support the 765-kV option. Further, it is possible that a more deliberative process could show that the optimal solution involves a mix of 345-kV and 765-kV facilities, as opposed to the "all or nothing" approach the Commission is currently considering. Given the unknowns associated with the 2034 and 2039 load forecasts, and the lack of detailed information on other years in the planning horizon, it is advisable for the Commission to take a more cautious, flexible approach by approving 345-kV facilities for the Permian Basin Reliability Plan and continuing to evaluate whether it would be beneficial to integrate 765-kV facilities elsewhere on the ERCOT grid. While ERCOT's sensitivity analysis showed the 765-kV option was less beneficial when load dropped from 155 GW to 135 GW, the price differential would also grow in a scenario where load growth is slower than ERCOT projects because 345-kV elements could be removed from the plan whereas the 765-kV elements would likely remain the same. Notably, even ERCOT's 135 GW sensitivity analysis is still very significant and assumes historically unheard of load growth from today's levels. Similarly, while ERCOT's analyses assumed the addition of significant amounts of generation, there is no guarantee that generators will be incentivized to site near the 765-kV facilities, which may mean that some of the lines will be underused or unnecessary and additional lines will be needed based on actual siting choices.

At a minimum, TIEC recommends that the Commission require the specific TSPs that would be selected to build a 765-kV facility to provide detailed documentation about their supply chain for procuring the necessary facilities, including the specific timeline for obtaining parts, a plan for procuring labor, and the related costs. TIEC recognizes that this information is competitively sensitive, but buying power and *specific plans* to procure equipment will play a

major role in determining whether the initial 765-kV facilities can feasibly meet the state's needs. Further, TIEC recommends that the Commission consider whether it would be appropriate to impose reasonable cost caps on the 765-kV elements to ensure that customers alone do not bear the risk of cost overruns. This will also discipline providers to give more accurate estimates of the costs of these facilities. Again, TIEC believes this entire process would benefit from additional time and diligence, but if the Commission and ERCOT feel that is not an option, then robust consumer protections should be imposed to manage the risk of rushing a decision on billions of dollars of infrastructure.

II. COMMENTS

(1) In ERCOT's 345 kV- comparison document, the total capital cost estimates for each voltage's 2024 Regional Transmission Plan are comparatively close.

a. What other ongoing cost impacts should be given significant weight in this decision?

b. What economic and reliability benefits in the report should be given significant weight?

When considering the costs and benefits of 345-kV compared to 765-kV facilities, it's important that the Commission focus on the cost impacts *to consumers*. In ERCOT, customers pay for all transmission costs. Accordingly, to best evaluate whether transmission facilities are cost effective, TIEC has consistently advocated for the use of the congestion cost savings test, also known as the consumer impact test.[5] This test was also endorsed by the Legislature when it was required to be reinstated as part of SB 1281 in 2021. Conversely, production cost savings also count more efficient dispatch choices that benefit certain generators, even where it does not reduce consumer prices. As a result, this type of analysis is inappropriate for determining whether transmission is cost effective for consumers.

ERCOT's Strategic Transmission Plan Comparison does not provide the drill-down appendices or other relevant information that ERCOT has included in prior RTPs to allow stakeholders and the Commission to evaluate the results of ERCOT's economic analyses. Instead, ERCOT's report only contains estimates for two years, 2034 and 2039. In 2034, the report shows

[5] *See e.g., Review of Chapter 25.101*, Project No. 53403, TIEC Comments on Proposal for Publication (September 22, 2022).

that the 345-kV plan will decrease consumer costs by $199 million, compared to $63 million for the 765-kV plan.[6] Yet in 2039, ERCOT projects that the 765-kV plan will decrease consumer costs by $156 million, compared to a $73 million increase for the 345-kV plan.[7] Needless to say, these results are puzzling, and additional information would be helpful to allow the parties to better understand the underlying assumptions and implications of ERCOT's analysis. Specifically, it would help to understand the assumptions that caused the 345-kV option to be better in 2034 but worse in 2039, and the length of time it takes for the 765-kV option to payback its extra cost against the 345-kV option. Further, it would be helpful for stakeholders and the Commission if ERCOT evaluated the system's economic benefits on a more granular level. For example, it would be helpful for ERCOT to conduct a consumer energy cost reduction test that shows the costs or benefits in the other years prior to 2039. Additionally, it would be similarly helpful for ERCOT to provide the results of the consumer energy cost reduction test for each line, as done in typical RTPs. A more detailed analysis could also show that an approach that uses fewer 765-kV facilities could provide a greater economic benefit than either of the all-or-nothing options that ERCOT evaluated in its report.

(2) On September 18, 2024, ERCOT hosted a 765 kV Vendor Workshop which provided information on many aspects of design, construction, and equipment sourcing of 765 kV infrastructure.

a. Regarding supply chain delays or disruptions, are there any impacts specific to either 765 kV or 345 kV, or are both impacted equally?

b. Are there any critical 765 kV considerations that were not addressed during that workshop?

(3) Regarding the already-approved Permian Basin import paths, please compare the timing of construction buildout-to-energization for the 345 kV and 765 kV imports. Will one take significantly longer than the other? Please explain why.

The Commission should be diligent in investigating sourcing, design, construction, and timing issues associated with 765-kV facilities because the ERCOT TSPs have no direct experience with these high voltage facilities. For this reason, as noted above, TIEC recommends that the Commission require ***detailed documentation from the specific utilities*** that will be building 765-kV facilities in the ERCOT plan regarding procuring parts and labor. It would be

[6] ERCOT's Strategic Transmission Plan Comparison at 19.
[7] ERCOT's Strategic Transmission Plan Comparison at 19.

reasonable to expect that Texas utilities will experience a learning curve in sourcing, designing, and constructing a new type of facility. While the utilities' lack of experience regarding 765-kV facilities should not be determinative, it increases the risk of delays and cost overruns.

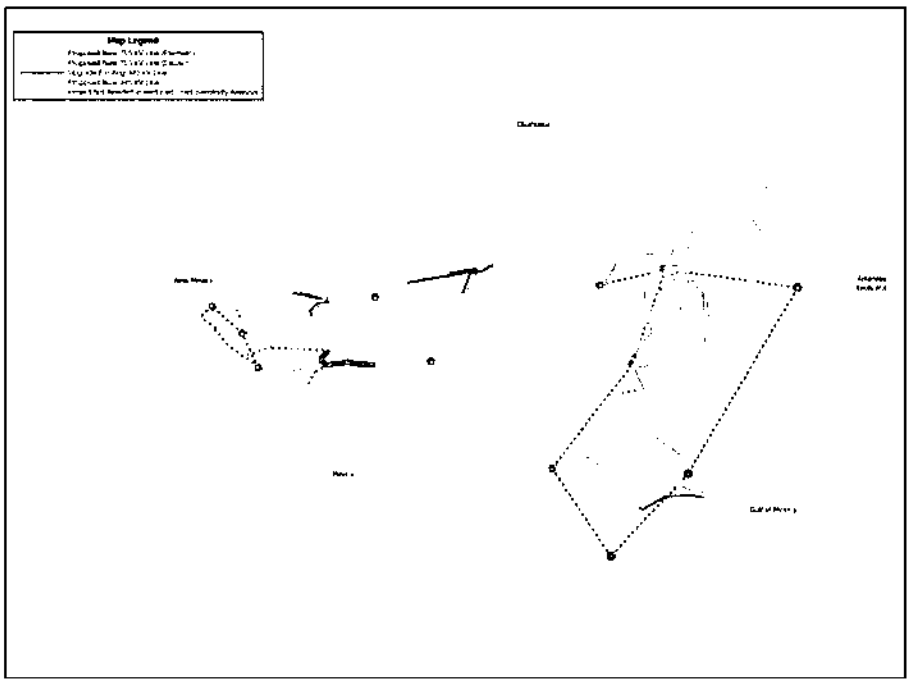
TIEC appreciated the vendor workshop, but the presenters at this workshop have an understood interest in introducing 765-kV facilities in ERCOT, and the information they provided does not specifically demonstrate that *individual utilities* will be able to successfully and cost effectively engineer, design, procure and construct 765-kV facilities. For this reason, TIEC submits that the Permian Basin Reliability Plan is not the best avenue for experimenting with 765-kV technology given urgent needs in West Texas and timing constraints; but at a minimum, the utilities who would build the 765-kV elements in that plan should be required to individually submit specific, detailed documentation in advance of a decision on 765-kV versus 345-kV. TIEC also believes it would be prudent to consider cost caps that would ensure that the risk of any substantial cost overruns does not fall exclusively on ERCOT customers. This would also incentivize the utilities to be realistic and forthcoming about any supply chain issues or cost uncertainties they anticipate.

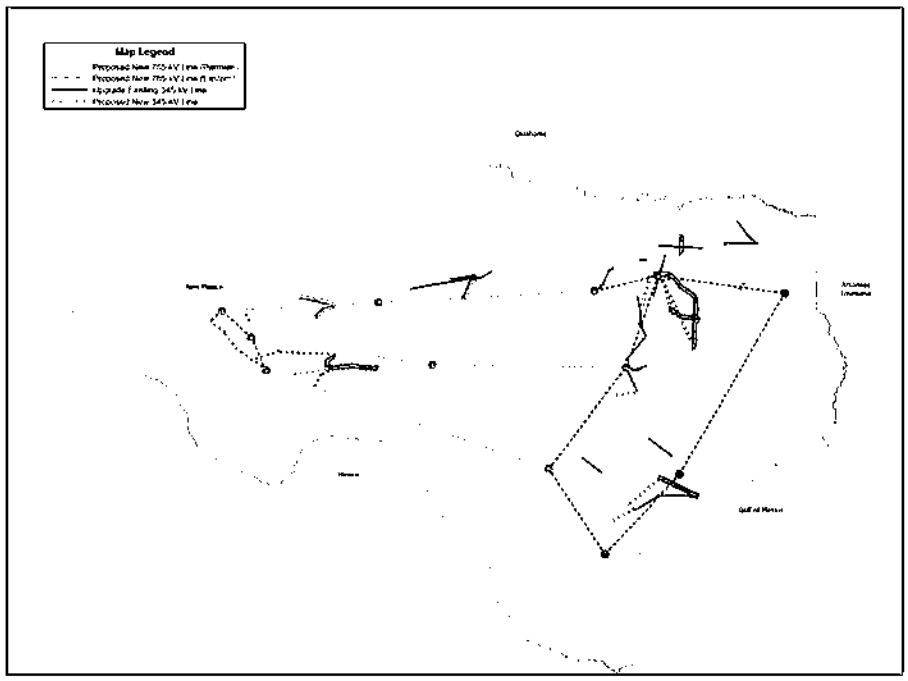
(4) Given that there are uncertainties in long-term load forecasts as well as load and generation types and siting, which plan would provide the most flexibility for ERCOT region?

As mentioned previously, using 345-kV facilities for the Permian Basin Reliability Plan will provide the Commission with the most flexibility. During the Open Meeting on January 30th, ERCOT argued that 765-kV facilities provide more flexibility because a 765-kV backbone allows power to move around the system efficiently.[8] While ERCOT is correct that a 765-kV network could easily move power among the different regions of the state, that presumes that a complete 765-kV network can be rolled out smoothly and that the need for such a network will materialize as ERCOT has projected. Critically, there cannot be one or two free-standing 765-kV lines. Instead, there must be a network of 765-kV facilities to actually move the power around the state, meaning that a significant amount of investment to achieve the minimum viable amount of 765-kV facilities. Notably, in ERCOT's Strategic Transmission Plan Comparison, the same loop of

[8] January 30, 2025 Open Meeting (available at: https://dash3.gridmonitor.com/sharing/?token=6ffff1ef-7564-4558-bb23-ef0c9e0ac7e2) ("So the 765 plan definitely gives you more of that flexibility if you do not know exactly where those loads are going to locate, where the generation is going to locate . . . The 765 backbone allows you to efficiently move power no matter where the load or generation ends up locating.").

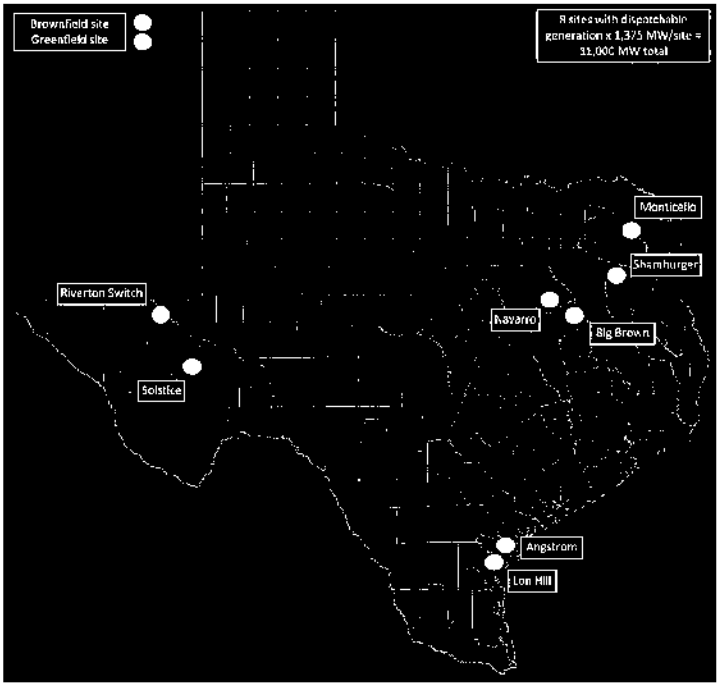
765-kV facilities in central and east Texas is required for the 765-kV facilities to provide a net benefit, even if the load growth is almost 16 GW less than anticipated. These facilities are shown below in pink.





ERCOT's analysis demonstrates that 765-kV facilities cost around $2 billion more than the 345-kV facilities under the expected load growth[9] and around $3 billion more if load growth is roughly 16 GW lower than expected.[10] As the load forecast decreases, it's likely that the cost differential between 765-kV and 345-kV would continue to increase because under any load scenario, there would still need to be a backbone of 765-kV facilities but you could incrementally eliminate or delay 345-kV facilities to match the updated needs.

There would also be cost implications if certain generation was delayed or did not appear. In ERCOT's RTP Report, ERCOT explained that it sited around 11 GW of dispatchable generation in Northeast and Southeast Texas.[11] By comparing the eastern 765-kV loop above with the map of ERCOT's assumed generation facilities below, it is clear that this hypothetical generation likely influenced the location of the 765-kV facilities.



[9] ERCOT's Strategic Transmission Plan Comparison at iv ("The initial estimated cost of the TX 765-kV STEP is approximately ***$2.24 billion*** higher than the 345-kV plan.") (emphasis added).

[10] ERCOT's Strategic Transmission Plan Comparison at vi ("The estimated cost of the 345-kV plan and the TX 765-kV STEP under the sensitivity case including the Permian Basin Reliability Import Path is $20.98 billion and $23.91 billion, respectively.").

[11] ERCOT 2024 Regional Transmission Plan Report at 8-9.

However, in a deregulated market without centralized planning, neither ERCOT nor the Commission can force generation to site in any particular location and it is questionable whether new generation has an incentive to site where 765-kV lines would be located. There are many other siting factors that could outweigh the benefits of being near a 765-kV facility, such as fuel availability (i.e. gas pipeline density/capacity), air quality attainment zones, nearby load, existing congestion, etc. Especially when generators do not pay interconnection costs unless they exceed the Commission's allowance,[12] deliverability is unlikely to be the main driver in siting decisions. Accordingly, there is no guarantee any generation will site near Lon Hill, Angstrom, Big Brown, Monticello, Navarro, or Shamburger. As a result, there may be little to no benefit to consumers associated with extending the 765-kV loop out to Northeast or Southeast Texas.

While 345-kV facilities may not move power as efficiently as a fully realized 765-kV system, 345-kV facilities provide more cost-effective flexibility compared to 765-kV facilities. Because ERCOT already has a significant 345-kV network, it could relocate or cancel prospective 345-kV facilities if load and generation do not materialize as ERCOT projected in its study. And as noted above, the Commission could move forward with 345-kV facilities for the Permian Basin Reliability Plan while continuing to study whether 765-kV facilities make sense for other parts of the state. The Commission has no obligation to approve a state-wide 345-kV plan because it can build off of the existing system to address changes in load growth or generation siting decisions.

Notably, changes in system conditions can drastically alter transmission needs in a short amount of time. For example, in 2023, the RTP study recommended a 345-kV line between South to Central Texas with a generic capital cost estimate around $1 billion.[13] Although there seemed to be a need for the line at the time, the 2024 RTP explained that with significant load incorporated in and around Corpus Christi, the South to Central Texas line is no longer necessary.[14] This example illustrates how ratepayers could benefit from the more ***flexible*** buildout that a 345-kV approach would provide, and could end up worse off if the Commission approves the 765-kV plan

[12] *See* 16 TAC § 25.195(f).

[13] ERCOT, 2023 RTP Economic Study Results at 28 (January 17, 2024) (available at: https://www.ercot.com/files/docs/2024/01/16/2023%20RTP%20Economic%20Study%20Results_v2.0.pdf).

[14] ERCOT 2024 Regional Transmission Plan Report at iii-iv.

that will involve roughly 2,468 miles of new lines (including the Permian Basin Reliability Plan) today based on uncertain assumptions.

(5) What are the pros and cons of deciding to utilize 765 kV infrastructure in the ERCOT region now versus waiting to implement it in the future?

Although there may be some duplicative costs associated with taking time to further consider the benefits of 765-kV facilities, the Commission would likely benefit from additional studies that would provide it with a better understanding of the potential cost impact on consumers. It is true that making a determination regarding 765-kV facilities now would efficiently integrate the needs of the Permian Basin into a larger 765-kV system, and doing so could avoid the costs associated with integrating the Permian Basin into a 765-kV system at some point in the future if the Commission later determined ERCOT should introduce extra-high voltage facilities.

However, it would likely be worth the incremental cost to ratepayers of integrating the Permian Basin into a higher voltage system in the future to allow the Commission and stakeholders to conduct additional diligence about whether 765-kV facilities are cost effective. As mentioned previously, the cost differential between the 345-kV and 765-kV plans in ERCOT's analysis is slim, and that analysis is dependent on a number of assumptions. Further, the Projects in the RTP may change based on further analysis by ERCOT and the TSPs through the RPG process. As ERCOT states in the RTP, that report "***do[es] not represent ERCOT's endorsement*** of those projects."[15] And the fact is, a 765-kV plan could be significantly more expensive than the current studies anticipate. Accordingly, the Commission and stakeholders would likely benefit from a more thorough analysis, and the Commission should not feel pressure to approve a plan for 2,468 miles of 765-kV lines without more concrete information. If 765-kV facilities provide significant economic, reliability, and resiliency long-term benefits, there should be economic and reliability justifications for extra-high voltage transmission lines irrespective of whether the Permian Basin Reliability Plan is included in the initial buildout of a higher voltage transmission network. For example, there is currently significant amount of load in South Dallas that could be served by energy from the Coast Weather Zone.[16] The Commission could ask ERCOT and transmission operators to conduct additional analyses to evaluate an eastern loop of 765-kV facilities connecting

[15] ERCOT 2024 Regional Transmission Plan Report at viii.
[16] ERCOT 2024 Regional Transmission Plan Report at iii-iv.

Dallas, Houston, and San Antonio. ERCOT could even work with utilities to analyze such facilities in the RPG project review process. Such a study would more clearly demonstrate the costs and benefits of building out a 765-kV network because it would be less reliant on long-term load forecasts and unknown generation siting decisions.

(6) Are there any other benefits or drawbacks that have not been brought up and addressed which are critically important for Commission to consider? Please describe in detail.

These issues have been addressed above.

III. Conclusion

TIEC appreciates the opportunity to provide these responses to Staff's questions and looks forward to further discussion on whether the Commission should move forward with allowing TPSs to build 765-kV transmission facilities.

Respectfully submitted,

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ATTORNEYS FOR TEXAS INDUSTRIAL ENERGY CONSUMERS

PROJECT NO. 55718

RELIABILITY PLAN FOR THE PERMIAN BASIN UNDER PURA § 39.167	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

TEXAS INDUSTRIAL ENERGY CONSUMERS' EXECUTIVE SUMMARY

- Texas Industrial Energy Consumers (TIEC) seeks a balanced approach in supporting needed transmission expansion, while taking necessary precautions to minimize the risk of cost overruns, delays, or underutilized infrastructure.
- Because 765-kV transmission involves fewer, larger facilities, it offers less optionality and flexibility, compared to 345-kV facilities, to build out the system incrementally and make adjustments as better information is available on driving factors, such as load forecasts and generation siting. Therefore, this puts more at stake if the assumptions about the future are wrong.
- At this point in time, TIEC feels that a decision to introduce 765-kV elements remains premature and would benefit from additional diligence. ERCOT's state-wide plan is based on a number of assumptions around where generation and load will materialize that may not be accurate. It is also a very high-level planning exercise that lacks the rigor of individual TSP project reviews. Accordingly, while ERCOT's analysis is a helpful starting point, the limitations of this analysis and the risk factors should be better understood before approving new 765-kV lines.
- If 765-kV facilities provide significant economic, reliability, and resiliency long-term benefits, as ERCOT contends, it remains unclear why 765-kV facilities could not be further studied for the Central and Eastern regions of the state, even if the Commission moves forward with a 345-kV plan for the Permian Basin.
- With more time, additional analysis could be done to better understand the potential costs and benefits of introducing 765-kV elements. For example, it would be helpful to understand the incremental benefit of 765-kV facilities in each year and the consumer energy cost reductions for each line and upgrade considered, as in a typical RTP report. It is possible that a more deliberative process could show that the optimal solution involves a mix of 345-kV and 765-kV facilities, as opposed to the "all or nothing" approach the Commission is considering.
- At a minimum, TIEC recommends that the Commission require the specific TSPs that would be selected to build a 765-kV facility to provide detailed documentation about their supply chain for procuring the necessary facilities, including the specific timeline for obtaining parts, a plan for procuring labor, and the related costs. Although this information is competitively sensitive, buying power and *specific plans* to procure equipment will play a major role in determining whether the initial 765-kV facilities can feasibly meet the state's needs.
- While TIEC believes this entire process would benefit from additional time and diligence, if the Commission and ERCOT feel that is not an option, then robust consumer protections should be imposed to manage the risk of rushing a decision on billions of dollars of infrastructure. For example, it may be appropriate to impose reasonable cost caps on the 765-kV elements to ensure that customers alone do not bear the risk of cost overruns.