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**PROJECT NO. 55718**

**RELIABILITY PLAN FOR THE  
PERMIAN BASIN UNDER PURA  
§39.167**

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**BEFORE THE  
PUBLIC UTILITY COMMISSION  
OF TEXAS**

**COMMENTS OF THE ADVANCED POWER ALLIANCE AND AMERICAN CLEAN  
POWER ASSOCIATION**

The Advanced Power Alliance (APA) and American Clean Power Association (ACP) file these joint comments in response to the questions published by Commission Staff in their filing on July 30, 2024.<sup>1</sup>

**I. INTRODUCTION**

The Advanced Power Alliance (APA) and the American Clean Power Association (ACP) serve as the voice of more than 800 member companies that represent a diverse cross-section of the world's leading energy companies, energy investors, energy consumers, and power generation manufacturers from across the clean power sector that are driving high-tech innovation through the development of generation assets including wind, solar, and energy storage, spurring massive investment in the U.S. economy, including a cumulative investment in Texas of \$112 billion to date, while creating jobs for American workers, including more than 44,200 in Texas alone.<sup>2</sup> Projects developed by our member companies and investors generate more than \$434 million state and local tax dollars for schools, services, and infrastructure, as well multi-generational income for Texas landowners—more than \$448 million annually—mainly in rural Texas.<sup>3</sup> Our members'

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<sup>1</sup> *Staff Questions on the ERCOT Permian Basin Reliability Plan Study*, Project 55718 (July 30, 2024.)

<sup>2</sup> TEXAS CLEAN ENERGY FACT SHEET, AMERICAN CLEAN POWER ASSOCIATION May 2024, [https://cleanpower.org/wp-content/uploads/2024/05/Texas\\_clean\\_energy\\_factsheet.pdf](https://cleanpower.org/wp-content/uploads/2024/05/Texas_clean_energy_factsheet.pdf).

<sup>3</sup> *Id.*

projects help reduce Texans' electricity costs and create cleaner air, water, and improved human health.

## II. RESPONSE TO STAFF QUESTIONS

1. Should the Commission approve a *phased* plan for the Permian Basin? In other words, should there be a first phase to be implemented by 2030 and a second phase to be implemented by 2038? Or should the Commission approve a single, complete plan?

Given that ERCOT's Permian Basin Reliability Plan Study Report<sup>4</sup> states that "almost 90% of the 2038 load will materialize by 2030,"<sup>5</sup> the Commission could approve a single, comprehensive plan at the outset for the entirety of the anticipated load growth. This will provide transparency to the market for generation resource planning and project development purposes.

However, considering the significant amount of transmission buildout needed to meet the projected load growth in the Permian Basin in such a short amount of time, the Commission could approve a phased in approach where Phase 1 focuses on local transmission upgrades and 345 kV import paths as a bridge solution, and Phase 2 includes the new Extra High Voltage (EHV) backbone once finalized. Given the magnitude of congestion and curtailment, as described more fully in these comments, it may make sense to accelerate the local transmission buildout and 345 kV import paths, similar to the manner in which the Commission accelerated the South Zone transmission upgrades, while the EHV backbone solutions are under review and study.

Regardless of the approach the Commission settles on, the final approved plan should not prevent elements of the plan from being implemented in a phased manner that allows the greatest benefits to be delivered as quickly as possible given the challenging timeline projected by the

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<sup>4</sup> ERCOT's *Permian Basin Reliability Plan Study*, Project 55718 (July 25, 2024) (the "Permian Basin Reliability Report").

<sup>5</sup> *Id.* at iii.

planners. No alternatives should be overlooked to deliver low-cost, nearer-term benefits, including reconductoring of existing lines, and implementation of structural and operational grid enhancing technologies such as dynamic line rating, power flow control technology, and advanced contingency management. As improvements are built out, utilities should consider each emerging technology solution that could appropriately and safely enhance the energy transfer capacity of the existing grid.

2. To expedite the buildout of import paths into the Permian Basin while research and discussion of the optimal use of an Extra High Voltage (EHV) network in ERCOT system is underway in Project No. 55249, should this reliability plan consider a mixture of 345 kV and EHV options?

Yes, the reliability plan should consider all available options as different technologies can complement one another to maximize value to the system. With more than 23,000 MW of additional load expected in the Permian Basin by 2030, policy makers, Transmission Service Providers (TSPs) and generation developers need maximum flexibility to reliably and affordably serve this unprecedented load growth.<sup>6</sup> The importance of these issues should incent policy makers to act swiftly and consider all available options, such as reconductoring, as well as advanced hardware and software-enabled transmission management and reliability solutions. Policy makers should also prioritize the ability for generation resources to connect to the import paths. If 765 kV lines are chosen, some may argue that interconnections to those lines should be limited. In that case, a full mixture of options should be considered to ensure that generation produced can reliably serve load throughout the ERCOT region.

3. What would be the impact to implementation of the plan if the Commission approves the plan for all the common local transmission projects to permit the utilities to expeditiously file CCN

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<sup>6</sup> *Id.*

applications but delayed the approval of the import paths until after ERCOT completed its EHV Study in 2024? Please address in detail both the benefits and risks of this potential process.

It makes sense to allow the TSPs to expeditiously file CCN applications for all of the local transmission projects while the EHV Study is conducted. Unless expedited, it regularly takes six or more years for transmission projects to be completed. With 2030 already inside of that six-year window, the faster the import paths are approved, the better; however, nothing should delay the local transmission upgrades. The benefits of local transmission upgrades include production cost savings, reduction in curtailment of available generation supply needed to serve load, congestion cost savings and enhanced grid reliability and resiliency.

4. With the understanding that the cost of these projects will be passed along to all the ratepayers in ERCOT, what considerations should the Commission address to minimize rate impacts? Are there any guardrails the Commission should implement?

The Commission should take a holistic view of the costs associated with the Permian Basin transmission projects. The Texas miracle is driven primarily by our status as a leading energy producer—this includes oil and gas as well as renewable energy sources. The need for adequate electric transmission to serve Texas’ oil and gas producers is readily apparent in the Permian Basin Reliability Plan Study,<sup>7</sup> and it is beyond question that Texas vibrant energy sector supports many jobs for Texans<sup>8</sup> and provides abundant tax dollars to serve critical public functions such as public education. The value of ensuring electricity can reach these consumers is hard to quantify but is certainly critical to Texas’ continued prosperity.

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<sup>7</sup> See Permian Basin Reliability Plan Study at 1 (discussing the challenges associated with serving oil and gas load).

<sup>8</sup> See TEXAS ENERGY INDUSTRY, OFFICE OF GOVERNOR GREG ABBOTT, TEXAS ECONOMIC DEVELOPMENT & TOURISM, (Dec. 2022), available at [https://gov.texas.gov/uploads/files/business/Energy\\_Snapshot.pdf](https://gov.texas.gov/uploads/files/business/Energy_Snapshot.pdf).

However, renewable energy development also creates many jobs and drives tax revenues around the state—especially in rural counties.<sup>9</sup> In addition, constructing new import paths connecting the Permian Basin in ERCOT’s West Load Zone to the traditional load centers along and east of the I-35 corridor will provide significant benefits to consumers across Texas. If ERCOT can reduce its use of Generic Transmission Constraints (GTCs) in west Texas and the Panhandle, more renewable energy will be able to serve load across the state, which will relieve upward price pressure on Texas’ consumers that have already experienced significant cost increases since Winter Storm Uri. GTCs are artificial constructs that allow ERCOT to use its tools of economic dispatch to manage reliability limits that result from a planning process that delivers insufficient transmission to serve the system’s needs.<sup>10</sup> GTCs increase transmission congestion and the total costs of serving customers in ERCOT by preventing the export of power from low-cost resources to load centers<sup>11</sup> while exacerbating operational complexity and therefore increasing operational risk while damaging wholesale competition by shutting generators out of the market.<sup>12</sup> Congestion costs in ERCOT’s real-time market in 2023 alone were \$2.4 billion.<sup>13</sup> Congestion costs continue to remain extraordinarily high. As investment in transmission has stagnated over the past decade, congestion costs have ballooned to a staggering \$13.74 billion.<sup>14</sup> Because transmission planning and construction takes years, the inflationary impact of congestion costs on Texas consumers’

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<sup>9</sup> See *supra* note 2.

<sup>10</sup> Electric Reliability Council of Texas, Use of Generic Transmission Constraints in ERCOT, July 2020, p. 5. “[A] GTC is a predefined collection of transmission elements, over which the aggregate power-flow will be subject to a defined limit in Real-Time in order to maintain grid reliability.”

<sup>11</sup> POTOMAC ECONOMICS, STATE OF THE MARKET REPORT FOR THE ERCOT ELECTRICITY MARKETS, at xiii.

<sup>12</sup> PUC Project No. 53403 . Review of Chapter 25 . 101 Certification Criteria , Initial Comments of AEP Texas Inc . and Electric Transmission Texas, LLC Concerning Discussion Draft, July 8,2022, pp. 2–3.

<sup>13</sup> POTOMAC ECONOMICS, 2023 STATE OF THE MARKET REPORT FOR THE ERCOT ELECTRICITY MARKETS at xii.

<sup>14</sup> POTOMAC ECONOMICS, STATE OF THE MARKET REPORT FOR THE ERCOT ELECTRICITY MARKETS, (2014) p. 43; (2015) p. 49; (2016) p. 45; (2017) p. 49; (2018) p. 51; (2019) p. vii; (2020) p. viii (2021) p. 60; (2022) p. xii; (2023) p. xii.

electricity bills will get worse before it gets better. These costs will persist until transmission additions bring the robustness and resiliency necessary for the grid to support a competitive wholesale market. Reducing ERCOT's reliance on GTCs will provide cost savings to consumers across ERCOT, and the Commission should ensure that ERCOT prioritizes GTC relief in both its Permian Basin Reliability Plan Study and Regional Transmission Plan.

A robust transmission system can move low-cost renewable energy across long distances and improve reliability and lower costs.<sup>15</sup> The Commission's rules and ERCOT's protocols already contemplate consideration of various cost savings associated with certain proposed transmission lines; ERCOT could perform a similar analysis of the import paths and local transmission upgrades so the market has a clear understanding of the benefits of transmission upgrades, such as downward pressure on consumer prices and increased system stability.<sup>16</sup> After considering all of the benefits of upgrading transmission and reducing ERCOT's reliance on GTCs, the true cost of the transmission lines to consumers are far less than the estimates found in the Permian Basin Reliability Plan Study. Therefore, the Commission and ERCOT should take a fulsome view of the cost savings and continued economic growth supported by both the import paths and local transmission upgrades.

5. Are there specific costs not captured in ERCOT's study, such as reactive compensation devices, auto transformers for EHV if the Commission chooses EHV, and series compensation equipment? If so, what are those costs?

No response at this time.

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<sup>15</sup> <https://www.csig.energy/multi-value-transmission-planning-report> at vii.

<sup>16</sup> See 16 TAC § 25.101(b)(3)(A)(i) (relating to the congestion cost savings test and production cost savings test).

6. In approving this plan, how can the Commission ensure cost effectiveness for the listed projects? Please explain in detail and specifically address risks and offer potential mitigation solutions relating to:

- a. **Load forecast**, because this will be the first time the Commission will rely on load forecast methodology based on PURA § 37.056(c-1).
- b. **Cost estimates**, because projects will not be vetted through ERCOT's Regional Planning Group, the stakeholder committee that regularly reviews proposed transmission projects.

Despite the fact that relying on the load forecasts may introduce more uncertainty than solely considering load with signed interconnection agreements, the Legislature made the decision to mandate that load forecasts be considered. The apparent policy purpose behind this is because the Legislature wants to be conservative in counting load growth—conservative in the sense that it wants to ensure that there is enough transmission available to serve expected load growth and that generation produced has a pathway to serve that load. However, the Legislature also provided a check on the load forecast, and that check lies with the TSP.<sup>17</sup> Based on the statutory language, TSPs have discretion to determine how to forecast load growth, and they will be able to determine how to derive those forecasts.

The Commission's current process for granting a CCN already considers cost, and there is no reason that cost will not be a significant factor in the routing determinations for the import paths and local transmission upgrades. There are usually enough stakeholders in a CCN case to mitigate costs. With the length of the import paths, it is likely that there will be many affected parties

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<sup>17</sup> See PURA § 37.056(c-1) ("the commission must consider the historical load, forecasted load growth . . . as determined by the electric utility with the responsibility for serving the load.") (emphasis added).



participating in the process. The TSPs are adept at providing cost estimates, and there are enough 500 kV and 765 kV transmission lines around the country to provide cost benchmarks.<sup>18</sup> As discussed above, it will be important to also consider the costs the import paths will avoid and the downward pressure GTC exits will have on electricity prices.<sup>19</sup> While the cost estimates may not go through the usual ERCOT process, there are other ways to avoid runaway costs and ensure that the full picture of costs is considered.

7. How should the Commission address any project in the plan in which more than one Transmission Service Provider can claim the legal right to build it?

No response at this time.

8. Should the Commission consider any procedural changes to its traditional CCN process to account for the complexity and magnitude of the CCN cases?

No change to the CCN process should be needed. During the previous legislative session, the Legislature amended PURA to provide that the Commission must act on all CCN applications no later than the 180th day after the date the application was filed.<sup>20</sup> When considering the time allotted to the administrative law judges to prepare a proposal for decision, the timeline of these cases has condensed significantly. However, the importance of these import paths cannot be understated—there is no reason to lengthen the timeline for these CCN cases either.

9. What, if any, specific items should the Commission's final order include to provide clear and consistent directions for the implementation of the plan to the TSPs, ERCOT, and Staff?

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<sup>18</sup> See, e.g., *Oncor's Responses to Questions for Comment*, Project 55249 (July 29, 2024) at 2–3.

<sup>19</sup> ERCOT appears to recognize the value of reducing the usage of GTCs. See Permian Basin Reliability Report at 53 (noting the benefit of providing a “potential exit strategy for some current” GTCs).

<sup>20</sup> PURA § 37.057.

The final order should provide clear policy directives for the TSPs, ERCOT and Staff to accomplish the goals set forth by the Legislature in requiring a Reliability Plan for the Permian Basin. This means all the benefits should be considered and prioritized, including serving load growth in the Permian Basin and eliminating GTCs, which will provide greater flexibility for generation siting and ensure that maintenance outages can be safely and timely taken by both TSPs and generators.<sup>21</sup>

10. What unintended impacts or risks might arise out of approving or implementing ERCOT's proposed plan? How could they be avoided or mitigated? Are there any lessons from the Competitive Renewable Energy Zones implementation that the Commission should consider?

One of the biggest risks of implementing ERCOT's proposed plan will be the manner in which the transmission level outages, necessary to interconnect transmission upgrades, are sequenced. Any transmission level outages necessary should be scheduled in a manner that minimizes the impacts to both load and resources and the market should be provided ample advanced notice. A thoughtful and transparent approach can provide opportunities for market participants to hedge this risk.

However, there are more unintended risks associated with *not* building sufficient transmission. Before implementing ERCOT's plan, policy makers should consider the following questions:

- What happens to the load growth in the Permian Basin without this transmission build out? Recent decades of Americans relocating to Texas all tell the same story—they are coming, whether we build it or not. Failing to prepare could have disastrous consequences on the Permian Basin and across all of ERCOT.

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<sup>21</sup> *Id.* at 53–54.

- How much higher will Texans' electricity prices unnecessarily climb due to our failure to relieve transmission constraints? Cheaper power is available to serve load across ERCOT, if only it can get where it needs to go.
- If we wait to build out the necessary transmission infrastructure, how much more will it end up costing Texans? Recent experience also reminds all of us that costs associated with infrastructure are unlikely to go down. Waiting will only amplify the effects.

11. Are there any other aspects of ERCOT's proposed plan the Commission should consider?

Given the extraordinarily high level of congestion and its associated cost and the consistent curtailment of available generation supply coupled with extremely high forecasted load growth, APA and ACP support the solution that provides the most system benefits and has the greatest electrical impact on reducing congestion and curtailment particularly considering the unprecedented forecasted load growth.<sup>22</sup>

During the May 14 ERCOT Regional Planning Group meeting, ERCOT stated that the import paths for the Permian Basin could serve the dual-purpose of allowing both the import of generation to serve the forecasted Permian Basin load and the export of rich renewable generation in West Texas to the load centers; the Permian Basin Reliability Plan Study also acknowledges this.<sup>23</sup> In the face of that unprecedented load growth, and considering how consumers are plagued with the staggering cost of transmission congestion, the Commission should fully investigate all of the benefits of reducing ERCOT's use of GTCs. ERCOT has stated that EHV options will

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<sup>22</sup> ERCOT CEO Pablos Vegas reported that new estimates predict that electricity demand in the ERCOT Region will exceed 150 GW by 2030 (ERCOT Board Meeting, April 2024). This is nearly double ERCOT's all-time peak record demand set in August of 2023 of approximately 85.5 GW (<https://www.ercot.com/static-assets/data/news/Content/a-peak-demand/2023/all-time-records.htm>).

<sup>23</sup> ERCOT Regional Planning Group Meeting, May 14, 2024; Permian Basin Reliability Plan Study at 53.

efficiently move power over long distances, reduce congestion, increase grid stability, and could serve as a potential exit strategy for some current major GTCs resulting in more generation to serve customers.<sup>24</sup> The Commission can provide cost savings to consumers across ERCOT by ensuring that ERCOT prioritizes GTC relief in both its Permian Basin Reliability Plan Study and Regional Transmission Plan. A robust transmission system can move low-cost renewable energy across long distances and improve reliability and resiliency.<sup>25</sup> The proper management of the transmission lines in Real Time Operations will be crucial to maximizing this benefit throughout the ERCOT region. APA and ACP urge the Commission to have ERCOT review the Credible Single Contingency operations for better alignment with Good Utility Practices. This will ensure that consumers throughout the ERCOT region receive the highest level of system benefits in terms of lower cost and system reliability and resiliency. These actions will help to offset the cost of the impending transmission upgrades.

Toward the same goal, the Commission should investigate accelerating the Panhandle connection at White River from 2038 to 2030. The Commission should evaluate the reliability, resiliency, and cost benefits of providing Panhandle GTC relief in 2030, instead of delaying this project until 2038, particularly given the level of stranded generation in the Panhandle and the associated congestion costs that could be reduced if the GTC is relieved more quickly. Eliminating the Panhandle GTC benefits consumers by providing congestion cost savings and enhancing grid resiliency and stability which is important in the face of extreme weather events and the potential for high-intensity wildfires in the west Texas area.

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<sup>24</sup> *Id.*

<sup>25</sup> REPORT: MULTI-VALUE TRANSMISSION PLANNING FOR A CLEAN ENERGY FUTURE, ENERGY SYSTEMS INTEGRATION GROUP at vii, available at <https://www.csig.energy/multi-value-transmission-planning-report>.

Additionally, ERCOT and the Commission should consider prioritizing a move away from the deployment of Series Compensation Devices that can exacerbate grid stability and cause some generators to experience destructive sub-synchronous phenomena.<sup>26</sup> The resonant conditions can lead to severe system over-voltages, un-damped oscillations, and instability, all of which have the potential to cause cascading outages and equipment damage.<sup>27</sup>

Load growth requires more transmission, but it also requires more generation. Therefore, the Commission should consider how generation will be able to interconnect into the import paths, especially if the EHV options are ultimately constructed. Careful planning will be required to ensure that the benefits of EHV are realized while also allowing generation of all kinds to interconnect to the grid. The Permian Basin Reliability Plan Study considers the use of three double-circuit 500 kV or three single-circuit 765 kV lines. Considering those options, it may be prudent to construct double circuit 500 kV lines, as this will provide more overall voltage and allow for power to move in both directions at the same time. If 500 kV transmission lines also allow generation to more readily connect to the import paths, that option should be given serious consideration. This will allow Texas to continue to benefit from its all-of-the-above approach to generation development.

Dated: August 9, 2024

Respectfully submitted,

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<sup>26</sup> North American Electric Reliability Corporation (NERC), Lesson Learned: Sub-Synchronous Interaction between Series-Compensated Transmission lines and Generation, at p. 8.

<sup>27</sup> *Id.*

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**BEFORE THE  
PUBLIC UTILITY COMMISSION  
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**EXECUTIVE SUMMARY OF THE COMMENTS OF ADVANCED POWER ALLIANCE  
AND AMERICAN CLEAN POWER ASSOCIATION**

- The Commission could approve a single, complete plan at the outset because that will provide more certainty for market participants than a two-phase planning process. However, local transmission upgrades should not be delayed.
- The Reliability Plan should consider a mixture of 345 kV and EHV options.
- The Reliability Plan should be implemented expeditiously, but it is unlikely to be materially impaired by awaiting the EHV Study if local transmission projects are allowed to move forward while the EHV Study is conducted.
- To fully understand the cost to consumers of these transmission projects, their benefits must also be understood. The Commission's final order should consider all benefits associated with the import paths including reducing ERCOT's reliance on GTCs which will reduce congestion and production costs, increase grid stability and resiliency (which is critical in the face of extreme weather events and the potential for high-intensity wildfires), and allow consumers to access cheaper power across all of ERCOT.
- The proper management of the transmission lines in Real Time Operations will be crucial to maximizing benefits throughout the ERCOT region. APA and ACP urge the Commission to have ERCOT review the Credible Single Contingency operations for better alignment with Good Utility Practices. This will ensure that consumers receive the highest level of system benefits in terms of lower cost and system reliability and resiliency and it will help to offset the cost of the impending transmission upgrades.
- The ordinary processes associated with CCN applications will provide a check on costs.
- There are more unintended risks associated with *not* building these projects than with building them. The load growth will come to Texas without regard to whether these projects are constructed in a timely fashion.
- The Commission should consider how load and generation will be able to interconnect into the import paths. Transmission construction alone will not be enough to serve the load growth—generation will need to be constructed and interconnected into the grid as well.
- The 180-day deadline for the Commission processing of CCN applications should not be extended for the import path projects.