



Powering Texas at the Speed of Business*

Proceedings from Phase 3 of the Large Load Symposium
at The University of Texas at Austin

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Executive Summary

Texas is experiencing a significant increase in large electrical load interconnection requests, driven by data centers, advanced manufacturing, and broader electrification trends. Recent policy developments represent a substantial effort to address the challenges with vetting loads, coordinating transmission studies across transmission territories, and identifying infrastructure and resources needed to meet the need. Under SB 6, the Public Utility Commission of Texas (PUCT) has advanced a Proposal for Publication in Project No. 58481 to establish a Large Load Interconnection Standard, while ERCOT has been working towards implementing a batch study framework through Planning Guide Revision Request (PGRR) 145. Together, these efforts introduce a structured approach to evaluating large load interconnection requests at scale.

Phase 3 of the University of Texas at Austin Large Load Symposium evaluates these developments from an implementation perspective. The central finding is that while Texas is in the process of establishing a structured framework, the components of that framework are not yet fully aligned. As a result, the system operators risk introducing new inefficiencies as it attempts to improve speed and predictability.

Stakeholders consistently emphasized that predictability and transparency are as critical as speed to energization. The current framework introduces new process steps, but it does not provide sufficient clarity on what project approval means in practice. Advancing through interconnection or study processes does not necessarily provide confidence that transmission will be available in time to support energization. This gap between procedural progress and deliverability remains a central concern.

Several key challenges emerged across discussions. Financial commitments are not yet aligned with the certainty of transmission infrastructure development, requiring developers to take on risk before knowing whether the necessary physical assets will be built. Fragmentation across the batch process, RTP, and RPG remains the primary barrier to speed and is now actively undermining prior progress, as projects approved through RTP and RPG are at risk of delay or displacement because they did not proceed through the separately developed Large Load Interconnection process that now serves as the backbone of project advancement.

Re-study cycles continue to limit predictability of energization schedules, particularly in the absence of clear boundaries around when studies are considered final. Transmission planning remains the binding constraint for project viability, as identifying modeling

solutions does not guarantee that actual projects will be identified and constructed. At the same time, standardization has emerged as a prerequisite for creating a lasting interconnection framework. Alternative pathways that negate the need for new transmission upgrades such as co-located generation and bring-your-own-generation (BYOG) arrangements are gaining traction with large load developers but are not yet fully integrated into the load interconnection framework.

The next several months represent a critical window for refining the framework before it is fully operationalized. Comments on the Proposal for Publication are due April 17, 2026, and ERCOT's batch process is expected to be considered by the ERCOT Board of Directors on June 1, 2026. Decisions made during this period will significantly influence how large loads are integrated into the Texas grid in the coming years.

Large Load Growth Challenges to Current System

Texas is experiencing rapid growth in electricity demand from large electrical loads, particularly data centers and industrial facilities. Individual projects now routinely request hundreds of megawatts to gigawatts of capacity, often on compressed development timelines. This growth has introduced new pressures on interconnection and transmission planning processes, which have not been designed to accommodate this scale or speed of demand.

The University of Texas Large Load Symposium series was established to bring together regulators, ERCOT, transmission providers, developers, and other stakeholders to examine these challenges. Phase 1 focused on identifying constraints, including coordination gaps between planning processes and emerging reliability concerns. Phase 2 shifted toward solution development, introducing proposed frameworks such as staged interconnection agreements, improved process flows, and enhanced modeling approaches. Phase 3 builds on this work by evaluating how these solutions function in practice under active policy development.

Since Phase 2, two key developments have shaped the policy landscape. The Proposal for Publication in Project No. 58481 establishes a formal large load interconnection standard, while ERCOT's batch study framework introduces a new approach to evaluating interconnection requests. These efforts represent meaningful progress, but have been developed largely in parallel, raising questions about how effectively they will operate together.

The policy timeline underscores the urgency to resolve these questions. Comments on the Proposal for Publication are due April 17, 2026, and ERCOT’s batch process is expected to be considered by the ERCOT Board of Directors on June 1, 2026. These milestones mark the transition from framework design to implementation, making it critical that remaining gaps are addressed in the near term.

Phase 3 of the symposium was designed to evaluate the implementation of emerging policies and processes. The symposium included participants from ERCOT, PUCT, transmission service providers, developers, generation owners, technology providers, and academic researchers, ensuring that a range of perspectives across regulatory, operational, and commercial domains were brought to the table.

The agenda combined plenary sessions with two breakout discussions. Breakout Session 1 focused on identifying gaps and risks in the current framework, including the purpose of the batch process and the effectiveness of existing tools. Breakout Session 2 focused on solution development, including financial commitments, transmission planning acceleration, modeling approaches, and associated tradeoffs.

Participants were assigned to mixed groups to encourage cross-sector discussion. Findings were synthesized across groups and evaluated based on consistency, alignment with current policy developments, and practical implications for implementation. Discussions were conducted under Chatham House Rules, and the report reflects aggregated insights rather than attributed statements.

How the Conversation Has Evolved

Each phase of the symposium has built on the last:

- **Phase 1 (July 2025)** focused on defining the problem. Stakeholders identified key constraints, including a lack of coordination between planning processes, insufficient modeling frameworks for large electronic loads, and growing reliability concerns associated with rapid load growth.
- **Phase 2 (October 2025)** shifted toward solution development. Participants developed proposed frameworks for large load interconnection, including standardized agreements, improved process flows that includes studying multiple loads together (known as “batching”), enhanced tracking tools, and approaches to integrating operational requirements such as ride-through capabilities.

- **Phase 3 (March 2026)** moves from conceptual design to implementation. With active rulemakings and protocol revisions now underway, the focus is no longer on what an ideal framework could look like, but rather on how the current proposals perform in practice and what adjustments are needed to ensure they are workable at scale.

Across the three phases of the symposium, stakeholders have made meaningful progress in defining both the problem and elements of a solution, but Phase 3 highlights that the framework remains incomplete and misaligned in critical ways including:

- **Misalignment of requirements and certainty:** Financial requirements are not aligned with project maturity or the level of certainty around energization timelines.
- **Risk of overcorrection in financial standards:** While financial requirements are becoming standardized across TSPs, they may be set at levels that risk excluding otherwise viable projects.
- **Uncertainty for in-flight projects:** Projects already progressing through transmission planning or transitional interconnection processes face potential delays or stranded progress under the new framework.
- **Serial study design and redundancy risk:** The batch process introduces multiple study stages (batch study, refinement, and RPG), but the pathway from load interconnection to transmission planning remains sequential rather than integrated. It is unclear whether each stage requires full reanalysis, creating the risk of redundant studies that could extend timelines and undermine the intended efficiency of batching.
- **Persistent communication gaps:** Communication and information sharing between load customers, Transmission Service Providers (TSPs), and ERCOT remain unresolved.
- **Disincentives for capability and flexibility:** Large loads continue to express concern that increased operational capability may lead to additional or stacked obligations, discouraging voluntary flexibility.

Table 1: Evolution and Status of Topics from Phase 1 to Phase 3

Topic	Phase 1 (Problem Identification)	Phase 2 (Solution Design)	Phase 3 (Implementation Reality)	Status
Need for batch process	Serial studies create endless restudy cycles and queue uncertainty	Batch framework introduced to study groups of projects together	PGRR 145 establishes batch zero process, but downstream integration remains unclear	Largely Addressed
Structured interconnection agreements	TSP-specific agreements and inconsistent requirements	Proposed standardized agreements + staged interconnection process	58481 establishes structure, but does not provide standardized agreements	Partially Addressed
Modeling and reliability requirements	Inconsistent modeling, frequent scope changes, and restudies	Cadence of studies included in batch framework	Standardized models and clear risk tolerances identified as a solution.	Partially Addressed
Legitimacy of load growth	Concern about speculative or non-viable projects	Filtering and screening concepts introduced	Demand broadly accepted as real, but uncertainty remains around developer ability to meet regulatory requirements	Partially Addressed
Financial commitments	General support for requiring financial obligations	Proposed staged and standardized commitments	58481 introduces staged commitments, but structure is misaligned with energization certainty and viewed as overly punitive	Partially Addressed
Treatment of in-flight / legacy projects	Not a primary concern go	Limited discussion of transition issues	Significant uncertainty about how existing projects are treated under new batch framework; risk of delays or stranded progress	Significant Concern
Study redundancy / lack of integration with transmission planning	Known inefficiencies between interconnection and planning processes	Transmission upgrades suggested to be part of Batch Process	Still unclear what will be studied (and re-studied) through the refinement period and RPG process following the batch study	Unresolved

Topic	Phase 1 (Problem Identification)	Phase 2 (Solution Design)	Phase 3 (Implementation Reality)	Status
Lack of Communication and Coordination	Miscommunication identified between customer, TSP, DSP, and ERCOT	Project status landing page concept introduced	Still unresolved policy issue although ERCOT has stated plans to provide something before the end of the year	Unresolved
Role of BYOG / demand response / operational capabilities	Concerns about operational requirements and curtailment obligations	Discussion of curtailment frameworks and operational roles	Growing interest in flexible load participation, but not yet integrated into rules, planning, or market design. Continued concern that more capable loads face additional or stacked obligations.	Emerging

Transmission Planning in ERCOT

Before evaluating how large loads are incorporated into the grid, it is important to understand how transmission planning currently occurs in ERCOT. Transmission development in Texas is primarily driven through two complementary but distinct processes: the Regional Transmission Plan (RTP), administered by ERCOT, and the Regional Planning Group (RPG) process, led by Transmission Service Providers (TSPs). Together, these processes are intended to identify, evaluate, and advance transmission projects needed to maintain reliability and support system growth. However, they operate with different objectives, timelines, and decision-making structures, which has implications for how quickly transmission solutions can be delivered.

At a foundational level, transmission planning in ERCOT is an analytical process that relies on developing and evaluating system models. Planners gather inputs on projected load, generation additions and retirements, and system topology, and use these inputs to construct both steady-state and dynamic models. Steady-state studies evaluate system performance at a specific point in time, while dynamic studies assess how the system responds over time to disturbances such as changes in voltage and frequency. Sensitivity analyses are used to test how different assumptions affect system outcomes. Historically, sensitivity analyses have prioritized generation dispatch as the most critical variable,

followed by system topology, with load coming in third. However, the scale and behavior of emerging large loads suggest that load may now be becoming a more sensitive driver in planning analyses, requiring a more dynamic and consequential treatment.

The RTP is ERCOT's primary vehicle for conducting this system-wide analysis. Performed annually, it provides a forward-looking assessment of transmission needs by identifying constraints and evaluating potential solutions under a range of scenarios. While the RTP plays a critical role in identifying what infrastructure may be required, it does not itself advance projects. It produces analytical outputs, not approvals, and therefore represents only the first step in the transmission development process.

The RPG process serves as the mechanism for advancing specific transmission projects. TSPs propose projects to address identified needs, and those projects are reviewed with stakeholder input before moving forward to regulatory approval. Ultimately, projects may need a Certificate of Convenience and Necessity (CCN) from the PUCT before construction can proceed. Stakeholders emphasized that the broader transmission development and regulatory process is often a binding constraint, noting that the combined timeline required to move projects through RTP/RPG and ultimately obtain CCN approval can, in some cases, exceed the time required to design and construct the underlying infrastructure.

While ERCOT has consistently adapted its planning and operations to successive waves of new resource types – including nuclear, natural gas, wind, solar, and storage – large load growth represents the next phase of that evolution, bringing a distinct set of challenges. Individual load projects are often significantly larger than traditional generation additions and can exceed 1 GW, increasing the impact that any single project can have on planning assumptions. This scale also introduces greater uncertainty when projects change, delay, or drop out. As a result, planning approaches developed for generation may not translate directly to large load interconnection without incorporating additional margin and flexibility.

Large load growth also highlights the intersection between planning and operations. Questions of resource adequacy, system behavior under disturbance, and load response over time are becoming increasingly important. Stakeholders raised the possibility that planning may need to evolve beyond a peak-focused paradigm toward a more continuous, 24-hour framework that better reflects the interaction between load, generation profiles, and net peak hours. At the same time, participants noted that ERCOT has maintained reliability in recent years, suggesting that while these concerns are

important, they must be evaluated in the context of actual system performance as well as modeled scenarios.

Modeling and standardization emerged as key areas of focus. Stakeholders expressed interest in whether more standardized approaches to load modeling – such as consistent dynamic models or defined performance characteristics – could reduce the need for repeated studies. Concepts such as ride-through requirements and operational flexibility were discussed as ways to make loads more predictable from a system perspective and more “fungible”. However, participants also emphasized that some re-studies remain necessary to validate outcomes as conditions evolve, particularly given the scale and uncertainty associated with large load development.

Advances in technology, including artificial intelligence and improved modeling tools, may offer opportunities to increase the speed and scale of analysis. However, stakeholders cautioned that these tools must be applied carefully, as errors in modeling could have significant reliability implications. However, the value of some tools on the horizon merit serious consideration due to efficiency, redundancy, and traceability benefits they might offer. ERCOT ultimately retains responsibility for ensuring that the system operates reliably, and any effort to accelerate planning must preserve that standard.

Stakeholders noted that while ERCOT’s planning processes generate significant analysis, that analysis does not consistently translate into timely project development and construction. Extensive studies already occur through RTP, RPG, and related processes, with RPG in some cases serving a function similar to batch analysis by evaluating transmission needs across groups of projects. **The central challenge is not the absence of analysis, but the lack of a consistent pathway to maintain efficient study scopes and translate results into timely, coordinated approvals and construction.**

Participants expressed concern that ERCOT frequently requires restudies, in part due to limited confidence in underlying models and evolving load assumptions. Updates to models or the submission of more accurate data can trigger additional study cycles, creating a disincentive to improve data quality and reinforcing a pattern of conservative assumptions and repeated analysis. While these restudies may improve the accuracy of study results, stakeholders questioned the practical impact of that increased precision given the significant uncertainty that remains at early stages of project development. As a result, repeated study cycles may contribute to delays without materially improving final outcomes. This dynamic is particularly relevant in the context of the batch process,

which introduces additional study steps that may further extend the timeline for advancing transmission development.

The New Interconnection Framework (PUCT 58481 and ERCOT Batch Process)

Texas is in the process of establishing a new framework for large load interconnection through two parallel efforts: the Interconnection Standard Proposal for Publication in Project No. 58481 and ERCOT's batch study process under PGRR 145. Together, these efforts mark a significant departure from the prior approach of adapting existing processes to large loads on a case-by-case basis. The 58481 framework introduces staged entry requirements, defined agreements, and financial commitments intended to align project maturity with system planning. ERCOT's batch process introduces a system-wide, grouped study approach intended to replace or at least reduce reliance on serial analysis of individual projects.

The 58481 framework establishes a formal process through which large load projects would move from an intermediate agreement and then to a final interconnection agreement. A central feature of the framework is the use of financial commitments to filter speculative projects and allocate responsibility for costs. Stakeholders focused heavily on the proposed structure under which an intermediate agreement between the large load customer and the interconnecting utility may need to be signed before the start of the batch process, with a financial security of \$50,000/MW and only a limited refundable portion (20%). Additional financial obligations may then be layered on for long-lead items. Participants viewed this as one of the most consequential aspects of the framework because it places significant economic risk on developers before there is line of sight into service timing, transmission scope, or project viability.

ERCOT's batch process is intended to improve on the inefficiencies of serial study by evaluating groups of projects together. Batch Zero, in particular, is intended to determine how much load can be served on the existing system and what transmission upgrades are needed to accommodate additional load. Batch outputs may include "haircuts" to project capacity where the system cannot support full requests, which means that projects may emerge with less available capacity than they originally sought. Stakeholders viewed this as both a useful reality check and a new source of uncertainty. Some noted that developers with nominal approvals may not yet appreciate how little certainty they actually have until batch results are complete.

In principle, the 58481 framework and the batch process should function together. The interconnection standard should determine how projects enter the process and what commitments they must make, while the batch process should determine what the system can serve and what infrastructure is needed.

In practice, the interconnection standard (58481) and the batch framework (PGRR 145) are not yet fully aligned:

- Financial commitments will be required before any batch results are known.
- Batch outputs do not automatically trigger transmission project approval.
- Previously approved RTP, RPG, and large load studies are not synchronized with the new batch zero process.

Stakeholders therefore described the current framework as structured, but not yet cohesive. That is, Texas now has more processes, but not yet a seamless path from project entry to study to transmission approval to energization.

Industry Perspective: Development and Risk Realities

The industry development discussion reinforced that the large load interconnection process is under strain due to both the number and size of projects. Participants described the current process as being near a breaking point. A consistent concern was that reforms designed to address very large projects (closer to 1 GW) should not overlook smaller large loads (traditional loads closer to the 75 MW threshold). Stakeholders emphasized that the grid must continue to work for all classes of customers, not only hyperscale projects. At the same time, participants stressed that Texas should avoid developing a process so slow or rigid that it begins to resemble other jurisdictions where interconnection timelines stretch beyond multiple years.

A central theme of the discussion was the lack of predictability in the current market. Participants noted that the main bottlenecks are procedural because of the sheer volume and scale of incoming load requests. ERCOT's lack of confidence in the modeling and the disconnection between load interconnection and transmission planning has made it difficult for developers to understand what approval actually means. **Several participants questioned whether a project that receives some form of interconnection or study approval will, in fact, have transmission available in time to energize. This**

distinction between procedural approval and actual deliverability was viewed as an important unresolved issue from the developer perspective.

The discussion also highlighted the need for faster review pathways, particularly for higher-quality projects. Participants generally agreed that only credible projects should enter the batch process to reduce restudy, but they cautioned against relying solely on very high entry barriers to screen projects. Speculative load, as several participants noted, is often in the eye of the beholder. If entry requirements are set too high, the process may exclude projects that are likely to materialize if not for excessive regulatory burden, particularly given continued growth in cloud storage and data demand beyond the current wave of AI-related development. **Several stakeholders suggested that quality screening should focus less on imposing uniformly high gates and more on creating a process that provides meaningful information at defined intervals.** In this framing, developers should be able to know within roughly six months what is likely to be available and, within roughly fifteen months, whether the related transmission is actually moving forward.

Participants also discussed what should qualify as sufficient evidence of project readiness. Site preparation requirements were generally viewed as reasonable, but uncertainty around modeling requirements emerged as a major problem. Developers described a lack of confidence in what model is needed, what standards apply, and what qualifies as sufficient information. This uncertainty was seen as especially problematic for projects that are actively moving forward, since stakeholders emphasized that projects demonstrating continued progress should not be harmed by ambiguity in the modeling process.

The discussion of co-located generation and bring-your-own-generation (BYOG) arrangements was particularly notable. Participants stated that developers are generally willing to pay for a viable path to interconnect, but they want transparency and predictability in return. There was a strong view that ERCOT should treat BYOG consistently with other resources, rather than as an anomalous category. In the existing load interconnection study process, ERCOT assumes the system will supply all required a generation. If a load brings its own generation, however, the load will be studied assuming that the generator is offline which can overstate system impacts and infrastructure needs.

Participants noted that, with clearer incentives and pathways, Texas could see additional generation development through BYOG. However, a slow and burdensome

interconnection process may instead push large loads toward islanded configurations to achieve faster speed-to-power and avoid curtailment requirements, even when they are funding their own generation. This outcome would be counterproductive for Texas, as it would shift both load and associated generation into islanded configurations, reducing available capacity to the grid and foregoing transmission revenues that would otherwise be paid by those customers.

Participants also raised important questions about load growth and operational treatment under a load “connect and manage” framework. While some stakeholders were comfortable with the general concept, they emphasized that the details matter greatly. Questions were raised about what constitutes a “new load,” especially where projects may already have paid for studies or have been incorporated into planning assumptions. Stakeholders also emphasized the difference between generation and load in commercial operation. Generation is often interconnected at full output, whereas load typically ramps over time. This creates difficult questions about how excess associated generation is treated in the interim, whether and how the load is compensated, and what role curtailment plays during the ramp period.

Curtailment and demand response were discussed as potential tools, but with important caveats. Participants argued that most large loads are not sufficiently price sensitive for conventional demand response to be relied upon unless curtailment is contractually defined in advance. In this view, loads need to understand the parameters of any curtailment obligation with much greater specificity. **Stakeholders expressed concern that some projects are effectively being told to bring their own generation, allow the grid to use it, and also accept curtailment, without a clear framework for how those obligations interact.** The concept of a “bridge to power” emerged in this context as a potentially useful transitional construct. BYOG and behind-the-meter (BTM) solutions were identified as potential “bridge strategies” to reduce reliance on grid in the near term while enabling phased integration.

Participants discussed what should be included in the base model for Batch Zero. There was general agreement that projects with completed Large Load Interconnection Studies (LLIS) and some sort of executed agreement with the TSP should be included. Participants also emphasized that large loads incorporated into past transmission planning processes (2024 RTP, 2025 RTP, or any RPG) should also be included.

Key Findings from Phase 3 Symposium

Batch Zero Purpose: Clear Objectives, Emerging Implementation Tradeoffs

Participants broadly agreed that the batch process is intended to align large load approvals with the transmission infrastructure needed to serve them. This includes evaluating projects collectively, identifying constraints early, and linking interconnection decisions to actionable transmission development. The process should also screen projects based on maturity while maintaining system reliability. Ultimately, stakeholders emphasized that batching must provide a clear pathway from study to construction and energization without risking extending the timeline for redundant analysis.

Table 2: What is the Purpose of the Batch Process?

Theme	Detailed Description	Risks / Tradeoffs
Actionable Infrastructure Alignment	Coordinates load approvals with identified transmission solutions, with the intent that batch outcomes lead directly to projects advancing toward construction and Notice to Proceed (NTP) decisions	Risk of becoming another advisory study layer if results are not clearly tied to project approval and construction pathways
Scalable Process Replacement	Transitions from serial interconnection studies to a centralized, batch-based model while incorporating existing RTP and RPG planning workflows	Risk of repeated reallocations and restudies if project dropouts significantly alter batch outcomes over time
System-Wide Visibility	Evaluates the cumulative impact of large loads on system conditions (e.g., voltage, stability), replacing fragmented utility-by-utility assessments with a coordinated system view	Requires consistent assumptions, shared data, and a more unified planning framework across ERCOT and TSPs
Readiness Screening	Uses financial commitments (e.g., \$50,000/MW) and site control requirements to differentiate more advanced projects from less-developed or duplicative requests	Higher entry costs may improve certainty but create barriers for smaller or less-capitalized, yet still viable, projects
Capacity Allocation / Pro-Rating	Identifies available system capacity and allocates it across projects, potentially reducing (pro-rating) approved load levels to reflect physical system constraints	Approved projects may receive reduced capacity relative to requested levels, creating uncertainty for developers and financing

Theme	Detailed Description	Risks / Tradeoffs
Deliverability Signaling	Provides early indication of how much load the system can support and under what conditions, helping developers understand feasibility before full commitment	Early-stage signals may be imprecise or change over time, potentially affecting investment decisions

Accelerating Energization: Existing Tools and How to Use Them Effectively

Participants emphasized that ERCOT already has many of the core tools needed to accelerate interconnection approval. Existing planning processes, study frameworks, and technical capabilities provide a strong foundation. The primary challenge is how those tools are coordinated, sequenced, and translated into actionable outcomes. As a result, discussion focused less on creating new mechanisms and more on how to better leverage and align existing capabilities to improve the overall batch process schedule from the load studies to the approval of transmission projects.

Table 3: Existing Tools to Accelerate Load Energization: Capabilities, Risks, and Alignment

Theme	How the Tool Is Used	Batch Process Improvements	Risks / Tradeoffs
Leverage Existing RPG Studies	RPG evaluates transmission needs for groups of projects	Use RPG outputs as a foundation for batch results and fast-track projects tied to identified transmission solutions	May not reflect fully coordinated or current system assumptions
Approval of Completed Work	Projects are studied through RPG or prior analyses	Advance projects with completed studies without re-studying, reducing backlog and accelerating timelines	May rely on outdated assumptions; fairness concerns for newer projects
Process Modernization (Parallel / Cluster Studies)	Studies are increasingly moving toward clustered approaches	Expand parallel processing of studies and planning activities to reduce sequential bottlenecks	Increased coordination complexity; risk of rework if assumptions change
Batch Process (Coordinated Studies)	Batch evaluates projects collectively	Ensure batch outputs directly inform project advancement and transmission development decisions	May become another study layer if not tied to execution

Theme	How the Tool Is Used	Batch Process Improvements	Risks / Tradeoffs
Remove Redundant Studies Across Processes	RPG, RTP, batch process may be duplicative studies	Eliminate duplicative analysis between RTP, RPG, batch studies, and subsequent refinement efforts (in particular, eliminate refinement period in Batch Zero), focusing only on studies that materially change system outcomes	Risk of removing validation steps that support reliability; requires clear criteria for what constitutes “redundant”
Use RTP as a Planning Foundation	RTP identifies system-wide constraints and solutions	Use RTP insights to guide batch assumptions and identify where load can be accommodated	RTP does not directly advance projects to construction
Standardization of Modeling, Data, and Agreements	Modeling, data, and agreements vary across TSPs	Standardize inputs and requirements to enable scalability, reduce variability, and support parallel processing	Over-standardization may limit flexibility
Integration of RTP, RPG, and Batch	Processes exist but are loosely coupled	Improve alignment across processes to ensure consistent assumptions and reduce duplication	Over-integration may increase complexity
Strategic Co-location (BYOG)	Co-location exists but is inconsistently treated	Use co-location and “bridge-to-power” approaches to enable staged interconnection while transmission is built	Operational and regulatory complexities remain
Advanced Tools and Automation	Limited use of automation and advanced modeling tools	Expand use of software and AI-assisted tools to improve productivity and transparency	Validation challenges; reliability risks if not carefully implemented
Third-Party Support	ERCOT and TSPs perform most studies internally	Use qualified external consultants to increase capacity and manage study volume	Requires strong quality control and ERCOT-specific expertise.
Use Sub-Regional or Targeted Planning Approaches	New construct	Use Sub-Regional or Targeted Planning Approaches	May create uneven development or overlook broader system interactions.
Voluntary Emergency Curtailable Load (VECL)	Utilities use it to manage curtailment	Could be used to register loads for voluntary curtailment when grid stressed	May be complicated to implement.

Theme	How the Tool Is Used	Batch Process Improvements	Risks / Tradeoffs
	during system-wide emergencies		
Micro-grid and islanding configurations		Could be an alternative pathway to grid interconnection or a bridge to power	Grid would not benefit from additional industrial customers. Loads would not benefit from reliability of the grid.

Beyond system planning and operations, landowner and siting considerations were identified as an often-overlooked risk. Transmission development ultimately depends on routing and permitting decisions, and community and landowner engagement can significantly affect timelines. As a result, even well-designed planning and interconnection processes may not translate into faster delivery without corresponding attention to siting and approval processes.

Load Categorization: Moving Beyond Static Classifications

Participants generally moved away from categorization frameworks based solely on size or technology type, noting that such approaches do not adequately capture system impact and may be easily gamed by being just below the size of what qualifies as a “large load”. Instead, discussion focused on whether and how loads should be differentiated based on operational characteristics, project maturity, and system behavior. While there was no single agreed-upon framework, participants broadly supported approaches that better reflect how loads interact with the grid, while recognizing the added complexity this introduces. The table below summarizes the range of proposed approaches, ordered from strongest to weakest alignment across groups.

Table 4: How Should Large Loads Be Categorized?

Category Basis	Detailed Description	Identified Risks / Tradeoffs
Recognize In-Flight / Base Load	Distinguish projects already studied or incorporated into planning assumptions from new entrants.	May reduce flexibility in optimizing system planning; fairness concerns for new projects

Category Basis	Detailed Description	Identified Risks / Tradeoffs
Size-Based Thresholds (MW)	Using specific MW cutoffs (e.g., 250 MW) to determine financial obligations, such as minimum transmission charges to ensure fair transmission cost recovery.	Prioritizing very large loads (>500 MW) could be seen as discriminatory against smaller industrial players or run into anti-trust regulatory hurdles. Lowering thresholds (e.g., to 50 MW) may lead developers to "game the system" by requesting 49 MW to avoid oversight.
Operational Flexibility (CLR/VECL)	Differentiating loads by their willingness to be Curtailable Load Resources (CLR) or participate in Voluntary Emergency Curtailable Load (VECL) programs.	Most data centers and high-performance AI workloads (e.g., Nvidia) are not designed to be easily curtailable, making this a difficult category for them to fit into.
Industry Type (Crypto vs. Data Centers)	Distinguishing between "Large Electronic Loads" (LEL). NERC specifically seeks to separate crypto mining from traditional data centers because crypto typically lacks Uninterruptible Power Supplies (UPS).	Traditional industrial loads (smelters, petrol) behave predictably (pumps/motors), whereas electronic loads have fast-ramping characteristics that are harder to model for grid stability.
Project Maturity & Readiness	Categorizing based on a "Maturity Index" or scoring system that verifies "realness" through site control or proof of equipment purchase (e.g., serialized transformers).	Over-reliance on a maturity index may lead to equipment hoarding by well-capitalized developers, blocking out new market entrants.
Technical Design (Standardized vs. Custom)	Providing a "plus factor" or faster processing for loads that use standardized, replicable designs rather than custom, site-specific configurations.	Location still matters significantly; even a standardized load can have vastly different impacts on a "weak" part of the grid versus a "strong" one.
Self-Limiting / "Bridge to Power"	Categorizing loads that use on-site generation (BYOG) or microgrids to limit their total draw from the grid during their initial ramp-up phases.	"Islanded" generation that is not grid-parallel avoids some oversight, but transitioning back to the grid introduces telemetry and regulatory complexities that current protocols aren't fully prepared for.

Aligning Financial Obligations with Project Maturity

There was strong alignment that commitment requirements should be progressive and tied to project maturity, rather than concentrated in early stages of the interconnection process. Participants emphasized the importance of balancing two competing objectives: filtering out non-viable or duplicative projects while avoiding the exclusion of legitimate demand. Discussion focused on how financial commitments, screening criteria, and refundability could be structured to improve both process stability and developer certainty. The table below summarizes proposed approaches, ordered from strongest to weakest alignment.

Table 5: What would be appropriate commitment requirements throughout the interconnection process?

Proposed Approach	Description of Discussion	Risks / Tradeoffs
Staged / Progressive Commitments	Increase financial commitments as project certainty improves, aligning with transmission visibility and timeline clarity	Too little commitment early may allow speculative entry; too much later may delay projects
Milestone-Based Screening	Use indicators such as site control, modeling readiness, and development progress instead of relying solely on financial thresholds	Introduces subjectivity in evaluating readiness
Physical Readiness Proof	A "Maturity Index" or proof of serialized equipment purchases (e.g., transformers or switchgear) to verify the project is actually under development	Risk of equipment hoarding by larger developers, potentially blocking new market entrants
Lower Early-Stage Financial Barriers	Reduce upfront costs to avoid excluding viable projects, particularly smaller developers	Higher risk of project dropouts
Refundability in Early Stages	Allow projects to exit after initial system information is received without excessive financial loss	May reduce stability of study assumptions

Proposed Approach	Description of Discussion	Risks / Tradeoffs
Higher Commitments at Later Stages	Increase non-refundable commitments once transmission scope and timelines are better defined	Could still create barriers if requirements escalate too quickly

Streamlining Modeling Assumptions

Modeling assumptions were identified as a key driver of both timeline delays and uncertainty in the interconnection process. While accurate modeling is necessary to ensure system reliability, participants emphasized that current approaches can create unintended consequences, including repeated restudies, inconsistent assumptions, and reduced confidence in outcomes. Discussion focused on how modeling practices influence developer behavior, planning efficiency, and ultimately project viability. In particular, stakeholders highlighted the need to better balance accuracy, consistency, and speed by standardizing where appropriate, improving transparency, and clarifying how modeling updates are incorporated into the process. The themes below summarize the primary challenges and considerations raised across breakout groups.

Table 6: How can modeling assumptions be streamlined?

Theme	Discussion Points	Key Risks / Tradeoffs
Model Update Disincentives	ERCOT requires updated dynamic models for accurate system assessment, but developers may be disincentivized from submitting improved data if updates trigger restudies and delay timelines	Improved accuracy may come at the cost of schedule certainty, leading developers to prioritize timeline over model fidelity
Data Accuracy and Representativeness	In some cases, models rely on proxy assumptions or conservative scenarios where actual generation or load behavior is uncertain, leading to a perceived gap between modeled and expected system conditions	Conservative assumptions may result in overly restrictive outcomes, including reductions in approved load levels, and may result in restudies because of non-existent defined risk tolerances

Theme	Discussion Points	Key Risks / Tradeoffs
Rapid Technology Evolution	Load characteristics, particularly for data centers, are evolving quickly, and final equipment specifications (e.g., chips, cooling systems) may not be known during early study phases	Updating models to reflect new technology can trigger restudies, discouraging developers from providing the most current data
Ride-Through Performance	Voltage ride-through (VRT) identified as one of ERCOT’s biggest concerns. Participants suggested a result based standard rather than a model based standard with allowances for sensitivity studies.	Low inertia and high concentration of load risks outages.
Standardization and Benchmark Models	Participants proposed using standardized or benchmark models (e.g., representative data center profiles) to streamline validation and reduce study timelines	Standardization improves scalability but must remain flexible to reflect evolving technologies and site-specific characteristics
System Visibility Limitations	ERCOT has limited visibility into load behavior behind the point of interconnection (POI), making it difficult to fully validate internal system configurations or develop complete system representations	Limited visibility increases uncertainty in modeling outcomes and may lead to conservative assumptions or additional validation requirements
Net Peak Case Modeling	Participants emphasized the importance of incorporating net peak load cases into planning studies, as shifts in load behavior can change when peak system stress occurs	Identifying and modeling the relevant peak conditions is complex, particularly as load profiles evolve dynamically over time
Risk Tolerance and System Design	Discussion included how to define acceptable levels of system risk, distinguishing between events that must be avoided (e.g., cascading outages) and those that may be managed operationally	Balancing reliability and flexibility requires clear definitions of acceptable system performance and operational limits
Resource Constraints	The increasing complexity and volume of studies place pressure on ERCOT and TSP resources, leading to interest in expanding capacity through additional staffing or external support	Limited resources may contribute to delays, inconsistent outputs, or challenges in maintaining study quality

Conclusions and Actionable Next Steps

Texas is at an important inflection point in how it integrates large loads into the electric system. Over the course of the three symposium phases, stakeholders moved from diagnosing the problem, to proposing solutions, to testing whether those solutions can be implemented in practice. The central conclusion from Phase 3 is that Texas now has the foundational elements of a workable framework, but those elements are not yet sufficiently aligned to deliver service at the speed required by the market.

The most immediate priority is to clearly define the purpose of the batch process and make sure that the implementation aligns with the purpose. Financial commitments must better track the level of certainty at each stage of the interconnection process. The connection between batch study outputs, transmission planning, and project advancement needs to be explicit and actionable. Standardization – both in interconnection agreements and in core modeling assumptions – should be accelerated. At the same time, the treatment of existing and in-flight projects must be clarified to avoid stranding prior investments or introducing unnecessary delay through transition ambiguity. These are near-term, solvable issues that will determine whether the current framework functions .

Beyond implementation, broader structural questions remain. Stakeholders repeatedly raised the need to revisit how transmission planning risk is allocated, whether new cost recovery mechanisms – such as minimum transmission charges – should play a larger role, and how co-located and behind-the-meter configurations should be reflected in planning and study assumptions. There is also growing recognition that planning methodologies may need to evolve toward more continuous, system-aware approaches that better reflect operational realities. While these issues extend beyond Phase 3, they are already shaping stakeholder behavior and investment decisions.

Texas has successfully adapted its electric system through multiple waves of technological and market change. Large load growth is the next phase of that evolution. What distinguishes this moment is not the nature of the challenge, but the speed at which it is unfolding – and the consequences of getting it wrong. The question is no longer whether Texas can design a framework for large load interconnection. The question is whether it can align and execute that framework quickly enough to maintain reliability, support economic growth, and preserve confidence in the system.