

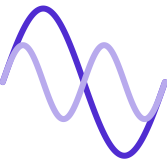
Agentic Infrastructure

Batch Workshop #6 Speed to Power

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March 2026

Speed to Grid Power Concepts in Flight



G+1 Capacity Co-location

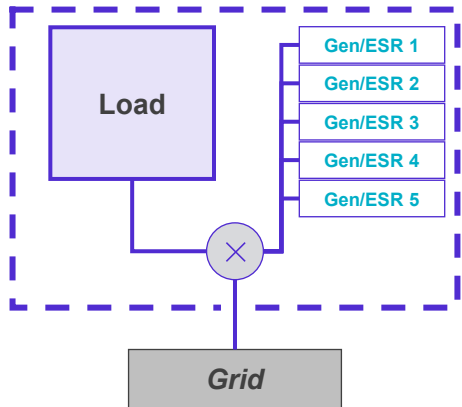
Firm transmission service granted by co-location configurations which ensures load can be served even after the single largest contingency

Privately Managed As-Available Transmission Service

As-available transmission service granted by loads commitment to curtail if required in real-time due to transmission limitations (CLR)

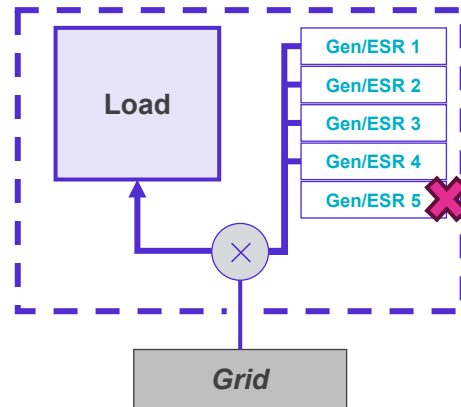
Normal Conditions

Load = 1,000 MW
ESR/Gen = 5 x 250 MW = 1,250MW

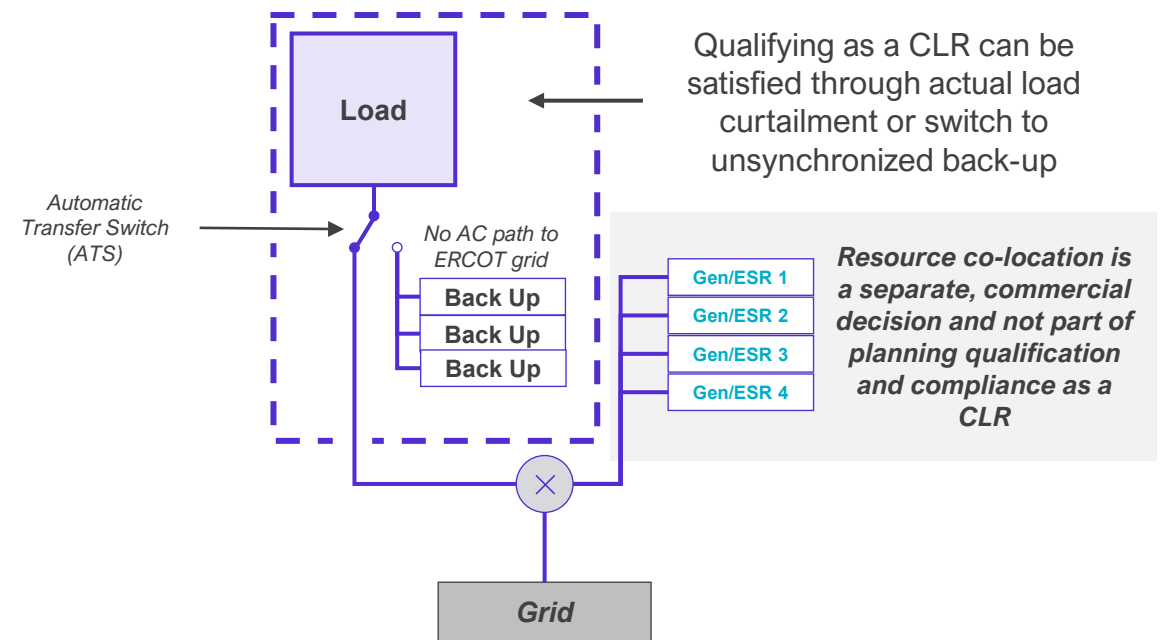


Contingency Conditions

Load = 1,000 MW
ESR/Gen = 4 x 250 MW = 1,000MW
G-1 compliant (serve 1,000 MW load) or most limiting contingency



Controllable Load Resource (CLR)

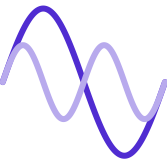


Site design meets grid operator regulatory requirements of being able to meet G-1, N-1 NERC planning contingency cases and therefore granted firm transmission service

Grid operators are indifferent to on-site resource selection and design redundancy because they know curtailment of load will be “dispatch of last resort” in SCED if required in real-time operations

⊗ = Point of Interconnection

On “PUN+”



Private Use Network

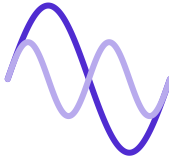
ERCOT Nodal Protocols Sect 2

An electric network connected to the ERCOT Transmission Grid that contains **Load that is not directly metered by ERCOT** (i.e., Load that is typically netted with internal generation).

“Private Use Network” is not a planning concept (or even an operations concept),
it’s a ***settlement and metering*** concept

We should use terminology which avoids confusing the fact that co-located, but separately registered and metered, load + Resources should qualify for this concept

PUN vs. an “Un-Netted Network”



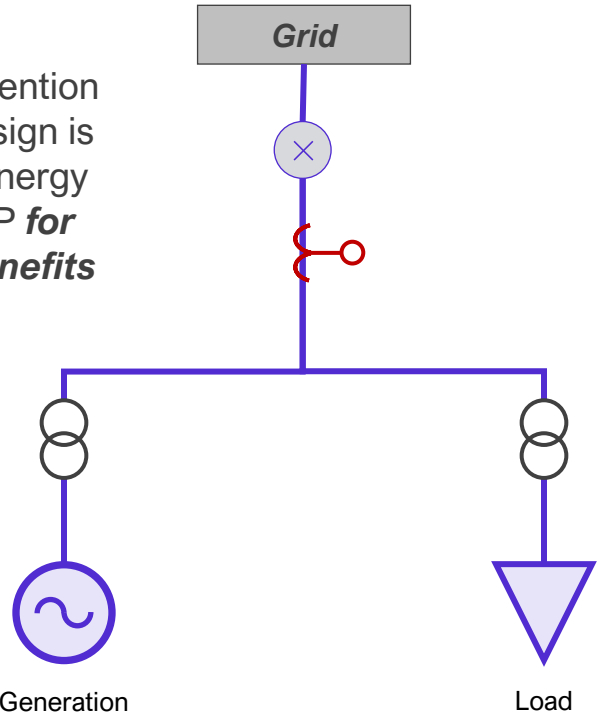
Private Use Network (PUN)

An electric network connected to the ERCOT Transmission Grid that contains Load that is not directly metered by ERCOT (i.e., Load that is typically netted with internal generation).

“Un-Netted Network”

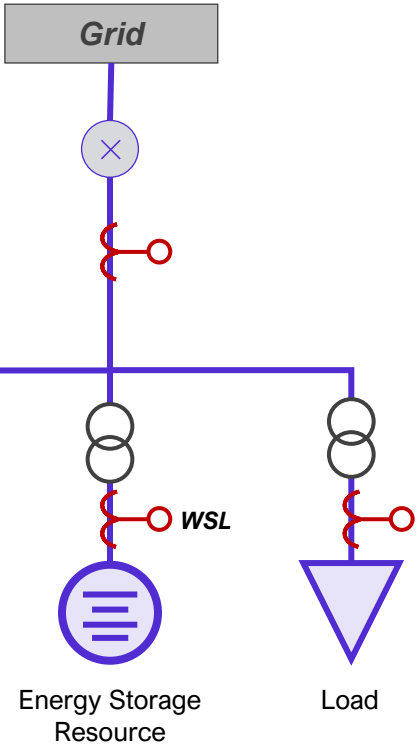
An electric network connected to the ERCOT Transmission Grid that contains Load, Generation, and/or Energy Storage Resources each individually metered by ERCOT

The original intention of the PUN design is to self serve energy and defer 4CP **for settlement benefits**



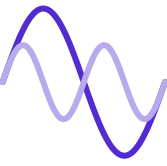
The intention of the “PUN+” concept is to manage physical network constraints **for planning benefits**

The primary objective is not trying to net the settlement of retail energy or TDSP charges



⊗ = Point of Interconnection ⚡ = EPS / TDSP Load Meter

ESR Inclusion Summary



“PUN+” has potential to be a powerful planning mechanism

- *Provides developer options to ensure economic activity is maximized in Texas while also meeting the requirement for a robust and reliable system (**Transmission Security**)*
- *Makes significant contribution to preventing energy scarcity through resource additions to the ERCOT system (**Resource Adequacy**)*
- *Less burdensome operating requirements compared to CLR*s

However, as presented by ERCOT at the 3.24.26 Batch Workshop #5, the concept would only be eligible for Generation Resources and not other forms of capacity like Energy Storage Resources (ESRs)

- *This would be an extremely discriminatory market rule for batch zero and at odds with current ERCOT transmission planning practices*

It is imperative that ERCOT Batch Zero market rules remain technology agnostic + Market rules must be coherent with current planning practices for stand-alone resources

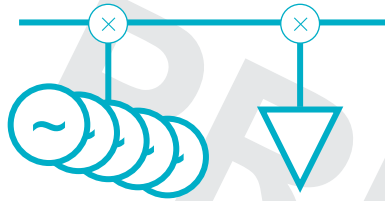
Conceptual Batch Zero BYOG operating configurations for Large Load interconnection³

From ERCOT Batch Workshop Presentation Here

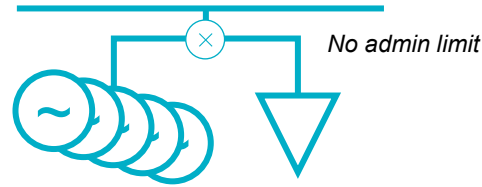
⊗ Point of interconnection (POI)

Configurations

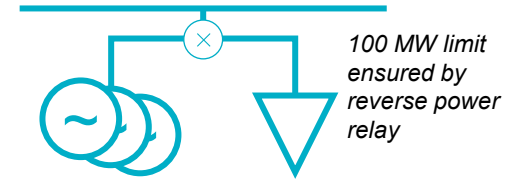
Business as Usual (BAU)



PUN+



Batch Self-Limiting Facility (SLF)



Description

Load and generation are connected at separate POIs (shown) or behind the same POI and interact through the transmission system under existing interconnection framework

Load is supported by dispatchable on-site generation such that $G-1 \geq \text{load}$ and treated as firm, with reliability managed through ERCOT operational actions

Site operates with a fixed transmission withdrawal limit determined through batch study

Details

- Generation and load are studied separately
- Generation is only included in the LLIS if it meets PG 6.9 criteria
- Load deliverability depends on transmission capability and may be constrained through the current study process
- Transmission upgrades from batch study based on G-1+N-1 analysis

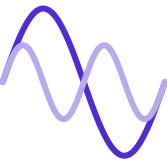
- Configuration satisfies $G-1 \geq \text{load}$ (loss of one generator still allows remaining units to serve the load)
- Load is treated as firm
- No planning or administrative limit at POI
- No transmission upgrades from batch study since configuration is G-1 secure

- Generation mix may include thermal resources, renewables, and batteries
- A fixed transmission withdrawal limit is established (e.g., 100 MW grid import limit) determined in the batch study
- ERCOT does not coordinate RUC¹ or outage management for the facility
- The load and generation owners must coordinate operations to ensure grid imports never exceed the limit
- The site would be equipped with a reverse power relay or equivalent protection to enforce the limit
- Transmission upgrades required if identified by the batch study to meet reliability criteria²

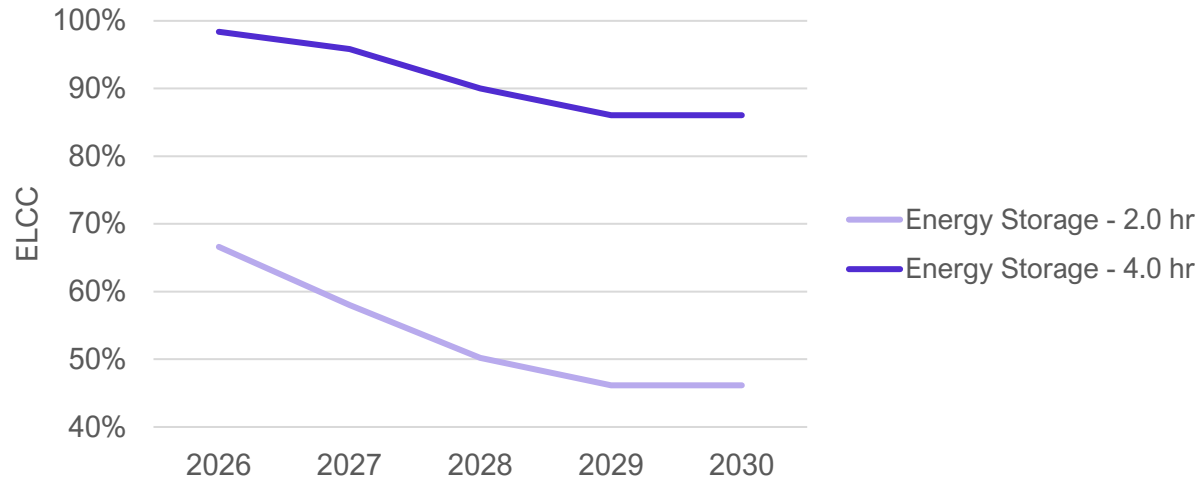
This is also true for Energy Storage Resources (ESRs) TODAY

- In operations:
 - ERCOT may reject generator outages or require mitigation plans
 - ERCOT may RUC resources¹
 - In real-time, mitigation plans or local load shed may be used

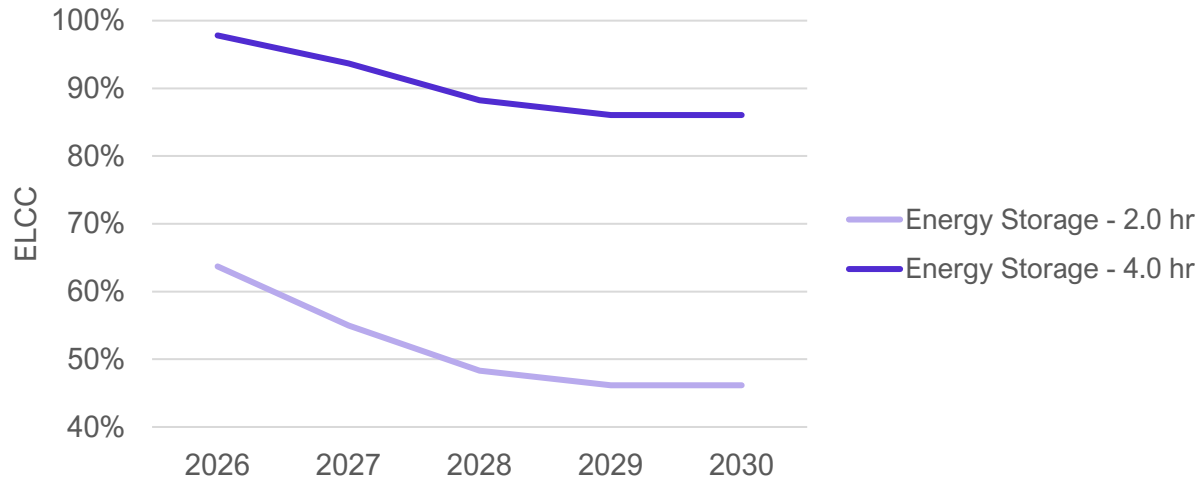
Only 1 Extra Step for ESRs, ELCC*



Effective Load Carrying Capability: Summer Peak & Net Peak



Effective Load Carrying Capability: Fall Peak



*Effective Load Carrying Capability

ERCOT uses this concept to inform how ESR capacity is reflected in steady state cases today and uses the figures as provided in the latest Capacity, Demand, Reserves report

Possible Approach:

1. Load granted firm service equal to $G-1 \times ELCC$ for COD year
2. Annual RTP/RPG/LCP manages delivery of firm transmission service over time as all ESR ELCCs decline (status quo tx planning today)
3. All the same caveats stated in PUN+ slide apply, resolving any operational reliability edge cases (outage schedule, local load shed, etc)**

This transmission planning philosophy would be consistent with consensus market feedback that firm service ought to be delivered to PUN+ sites over time

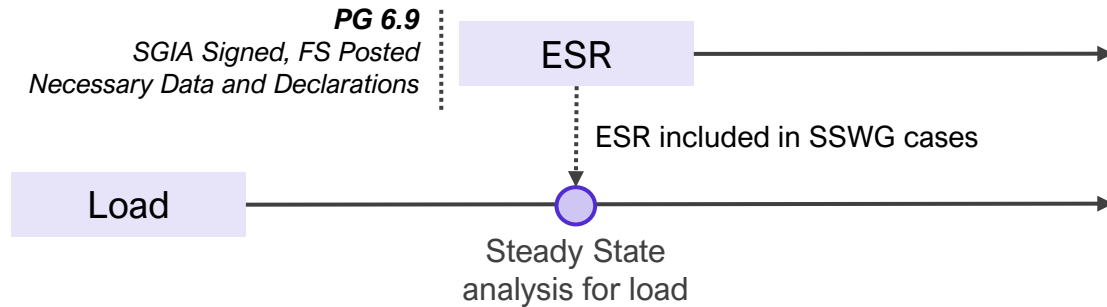
**In operations:

- ERCOT may reject generator outages or require mitigation plans
- ERCOT may RUC resources
- In real-time, mitigation plans or local load shed may be used

Existing Planning Treatment for ESRs



Energy Storage Resource “Business as Usual” (Today)

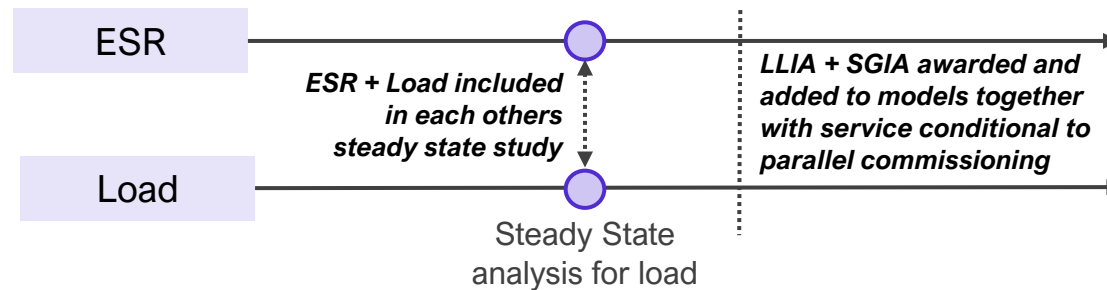


To not include ESRs in PUN+ would be extremely discriminatory market rules

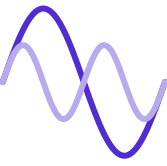
AND

leaves co-located Load + ESRs worse off than all stand-alone, unaffiliated load and ESRs operating today (aside from PG6.9 timing mismatch)

PUN+ (Including ESRs)



RECAP* BYOG Scenario 1: No SLF Needed

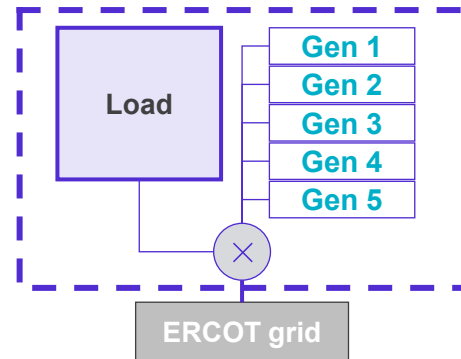


BYOG Scenario 1:

- G+1 Site generation configuration is sized such that on-site generation could serve full energized load even after losing the largest single contingency (largest gen unit G-1, or common electrical element X-1)

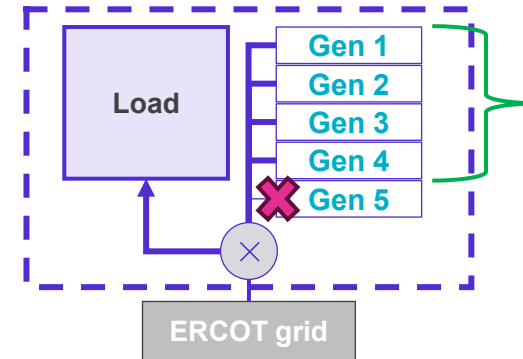
Normal Conditions

Load = 1,000 MW
Gen = 5 x 250 MW = 1,250MW



Contingency Conditions

Load = 1,000 MW
Gen = 4 x 250 MW = 1,000MW
G-1 compliant (serve 1,000 MW load) or most limiting contingency



1GW of Gen still available to serve 1GW of load

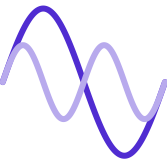


*Full Agentic presentation at the 3.13.26 LLWG [HERE](#)

Agentic Comments:

- This is how the gen and load would be treated on a stand-alone basis assuming the gen and load were both in the same steady state model
- This site design satisfies the G-1, N-1 criteria in ERCOT planning standards and therefore the site could be served **without an SLF concept**
- Only incremental rule change required would be to allow election of combining FIS/LLIS so they are studied in the same steady state study

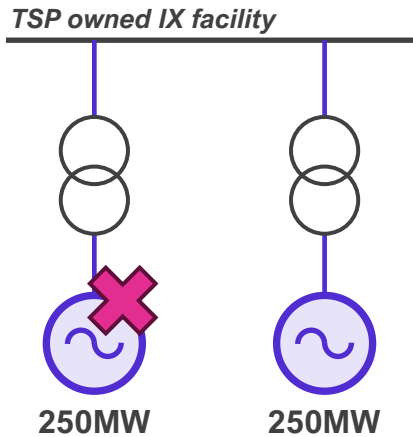
RECAP* BYOG Clarifications



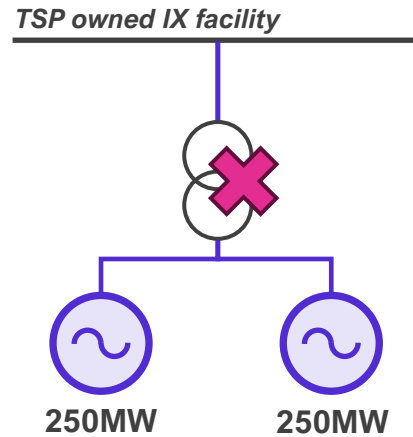
G-1 or single largest contingency

***Full Agentic presentation at the 3.13.26 LLWG [HERE](#)**

Largest Contingency:
G-1 = 250MW



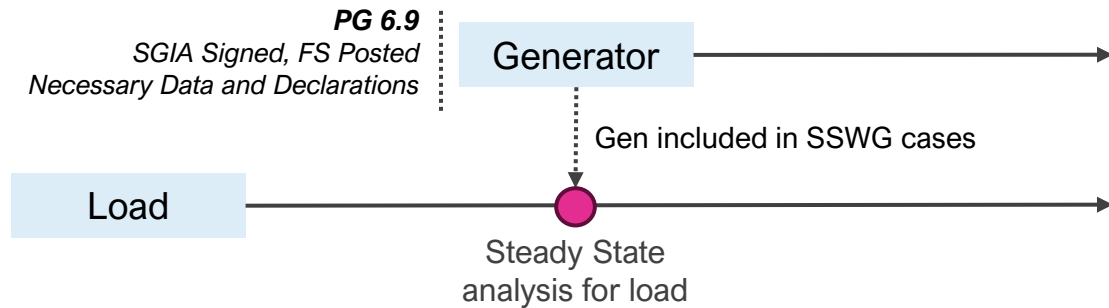
Largest Contingency:
X-1 = 500MW



Scenario 1 BYOG (No SLF Required)

Scenario 1 as described is already how unaffiliated gen and load is treated under traditional IX today, but... **this assumes the generator had satisfied PG 6.9 which creates a process timing mismatch**

Conceptual Planning/Interconnection Timelines



Agentic Opinion:

Only a minor revision to FIS/LLIS procedure should enable this scenario

