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NPRR1328 Generation Firming Program

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May 8, 2026

Outline:

- Applies to new generators from Jan 1, 2027
- Targeting Sep 2026 Board approval
- Performance requirement based on historical availability
- Requirement may be satisfied through performance or via trade
- Trading mechanism similar to AS Trades

Key Takeaways

- NPRR1328 establishes the Generation Firming Program for the Firming requirements enacted in 88th Legislature HB 1500 (2023).

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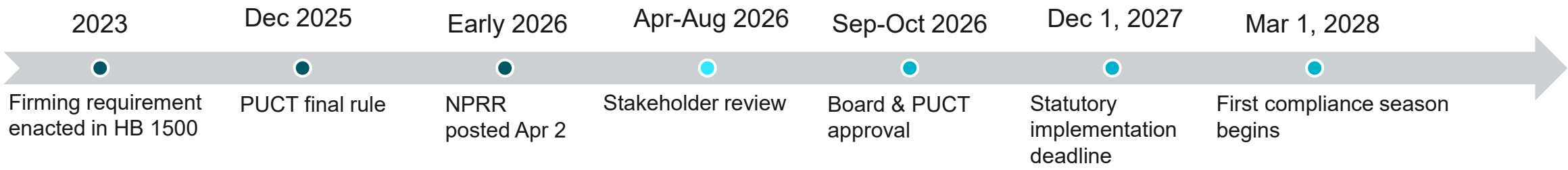
NPRR1328 establishes the Generation Firming Program



- Requires new Generation Resources to operate or be available at or above their historical average seasonal capability, either through their own performance or by securing trades, during hours when the Physical Responsive Capability (PRC) falls below 3,000 MW for at least 15 minutes within an ERCOT defined baseline period.
- Penalties for Generation Resources that fail to comply and incentives for those that exceed the requirement, funded from the penalty pool.
- On Apr 15, 2026 Protocol Revision Subcommittee (PRS) voted to grant NPRR1328 Urgent status, then tabled and referred the issue to Wholesale Market Subcommittee (WMS).
- Urgent status was requested to allow time for implementation given the statutory Dec 1, 2027 deadline.
- **Targeting Sep 2026 Board approval.**

Applicable to new Generation Resources starting on Jan 1, 2027

Subject to Requirements

- Generation Resources with original Standard Generation Interconnection Agreement (SGIA) executed on/after Jan 1, 2027
- And, in operation for at least 1 year prior to the beginning of a compliance season, with start considered as the Resource Commissioning Date.
- Thus, theoretically first compliance season is Spring 2028, i.e., begins Mar 1, 2028.

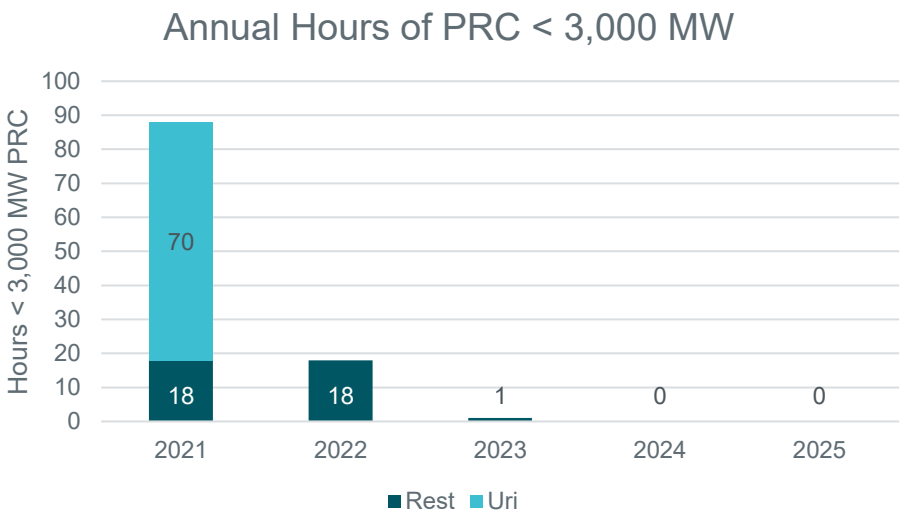
Does not apply to

- Energy Storage Resources (ESRs). However, these can provide firming to other generators.
- Must-Run Alternative (MRA) units, Reliability Must-Run (RMR) units, Generation resources contracted to provide capacity under Protocol Section 6.5.1.1, Settlement-only generators (SOG) and self-generators
- Generator co-located with load in Private Use Network (PUN), if > 50% nameplate capacity is dedicated to that load.*

* Resource Entity must submit an attestation form to ERCOT for this exemption

Performance obligations are triggered during low operation reserve hours

- Generation Resources "*must operate or be available to operate"* at or above the Seasonal Average Generation Capability (SAGC), during '*low operation reserve hours'* within the '*baseline period'*.
  - **Low operation reserve hours** are hours in which Physical Responsive Capability (PRC) < 3000 MW for at least 15 minutes and are within the Baseline period. Capped to worst 15 hours (i.e., lowest PRC) per season
  - **Baseline period** is the set of hours comprising seasonal morning and evening ramp hours (determined by ERCOT) and any high-risk hours identified in ERCOT's NERC Probabilistic Assessment.
- **Pre-season posting**: ERCOT shall post the baseline period to its website at least 10 days before the start of the upcoming season.



Hours where PRC < 3,000 MW for 15+ minutes within hour.
Data from ERCOT, Historical Real-Time ORDC
and Reliability Deployment Price Adders and Reserves.
https://www.ercot.com/mp/data-products/data-product-details?id=NP6-792-ER

Performance requirement is based on historical data on availability

- ERCOT must calculate the SAGC for all Generation Resources:

$$SAGC = min\left\{\left(\frac{1}{n}\sum_{i=1}^{n}\frac{HSL_i}{SRC_i}\right), 0.75\right\} \times SRC_t$$

For example, a wind plant with SRC = 100 MW and 5-year avg HSL/SRC ratio of 0.35:

SAGC = min(0.35, 0.75) *100 MW = 35 MW.

Where:

  - SAGC = Seasonal Average Generation Capability
  - HSL = Real-Time telemetered High Sustained Limit
  - SRC = Seasonal Rated Capacity (i.e., the applicable Seasonal net maximum sustainable rating, as registered with ERCOT)
    - SRC_t = SRC at the start of the compliance season *t*
    - SRC_i = SRC in the historic interval i
  - n = Total number of intervals from same season for up to previous 5 years
- To ensure that high-performing generators are not overly penalized, the Public Utility Commission of Texas (PUCT) created an upper bound on the SAGC of 75%.
- **Pre-Season posting**: ERCOT shall post the SAGCs for the upcoming season at least 10 days before the beginning of the season.

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Firming Trades and Tracking

Who can provide firming service

Generation resource
Incl. existing EGFs not subject to requirements
Firming Capacity = avg HSL (all available intervals, i.e. other than OUT status) − SAGC

Energy storage resource (ESR)
Also: DGR and distribution ESR registered with ERCOT
Firming Capacity = avg HSL (all available intervals, i.e. other than OUT status)

Load resource
Firming Capacity = avg consumption (adjusted for ERCOT deployments) − low power consumption

Not included (PUCT declined)
ADERs • Settlement-only DGs (SODGs)

New electric generation facility (EGF)
Subject to performance requirements

Same QSE portfolio
Firming resource within own portfolio
Still must be disclosed to ERCOT

Third-party QSE trade
Bilateral contract with external resource owner
Firming obligation transfers to selling QSE's resource

Trade arrangement process

1 QSE arranges trade
Same or different QSE; on-site or off-site resource; anytime before seasonal settlement deadline

→

2 Disclose to ERCOT
Both parties confirm arrangement; ERCOT verifies and notifies

→

3 Obligation transfers
If confirmed, obligation moves to resource providing firming service; if unconfirmed, obligation stays with original EGF

Firming Transfers must be reported to ERCOT and confirmed within 30 days of the end of the season.
If unconfirmed, the penalty risk stays with the original resource.

Penalties and incentives

How the penalty pool flows

Underperforming generators
Penalty: 20% of DASWCAP* per deficiency MWh
(Thus, $1,000/MWh for HCAP or $400/MWh for LCAP)

↓

Seasonal penalty pool
No season-to-season rollover

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Overperforming generators
Incentive proportional to share of excess MWh
Capped at $1,000/MWh • Cannot exceed total penalties

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Excess funds → Load serving entities
If any excess, allocated by seasonal load ratio share

Penalty exemptions

Planned / opportunity outage or derate
ERCOT-approved

Transmission outage
Resource limited due to transmission outage

Environmental compliance
Outage or derate

Market suspension event
As defined in ERCOT protocols

DAM energy / AS award
Exempt for awarded capacity portion only

Reliability service
Black Start Service and Firm Fuel Supply Service

Switchable generation resource (SWGR)
Exempt in hours committed to a neighboring ISO/RTO

*** DASWCAP:** Day-ahead system-wide offer cap is $5,000/MWh (HCAP) until Peaker Net Margin exceeds the annual threshold; then switches to $2,000/MWh (LCAP). Firming penalty is calculated using 20% of whichever cap is in effect.

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ERCOT determined ramping hours for firming based on historical net load up-ramp hours during 2023-2025

Firming Season	Morning Ramp Hours	Evening Ramp Hours
Winter (Dec, Jan, Feb)	Hours Ending 5, 6, and 7	Hours Ending 16, 17, and 18
Spring (Mar, Apr, May)	Hours Ending 5, 6, and 7	Hours Ending 18, 19, and 20
Summer (Jun, Jul, Aug, Sep)	Hours Ending 5, 6, and 7	Hours Ending 18, 19, 20 and 21
Fall (Oct, Nov)	Hours Ending 5, 6, and 7	Hours Ending 17, 18, and 19

Key Activities for Generation Firming Program

Pre-season	In season	Post-season
ERCOT		
Calculate & post SAGC Post at least 10 days before upcoming Firming Season	**Monitor PRC levels** Low operation reserve hours: PRC < 3,000 MW for 15 min in hour during Baseline Period	**Post long/short positions** Net of confirmed firming transfers
Publish baseline period Post at least 10 days before upcoming Firming Season	**Validate Firming Transfers** Notify QSEs of invalid transfers	**Settle penalties & incentives** RTM Final Settlement
		Report to PUCT Within 75 days of end of Firming Season
Resources / QSEs		
Review SAGC obligation From MIS Certified Area	**Submit Firming Transfers** Buyer + seller confirm	**Post-season trading window** Report & confirm transfers within 30 days of end of Firming Season
Attestation for PUN exemption Resource Entity to submit form	**Perform during low operation reserve hour** Operate at or above SAGC	**Receive penalty or incentive** 20% Day-Ahead SWCAP × shortfall MWh

SAGC = Seasonal Average Generation Capability