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ISO/RTO Market Context Matrix · INTERNAL ONLY

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ISO/RTO Market Context Matrix

The seven U.S. organized markets — structure, pain points, and where GridCORTEX lands in each

Companion to the Use Case Library (Doc 07) and the UC 20.x ISO/RTO deep dives | SoftServe + NVIDIA

How to Use This Document

GridCORTEX serves two distinct audiences in organized markets. First, utility clients participating in these markets — where the existing library already carries the market-facing use cases (UC 10.x generation, UC 11.x markets and trading, UC 12.x large load, UC 6.6 FERC 2222 readiness) and this matrix tells the AE how to tailor them to the prospect's ISO footprint. Second, the ISOs and RTOs themselves as buyers — the UC 20.x track. Before any call touching an organized market, find the prospect's ISO below, read the two-minute profile, and lead with the use cases marked for that market. Facts current as of July 2026; market design moves fast — verify auction results and program dates before quoting them externally.

The Seven Markets at a Glance

ISO	Market Structure	Congestion Instrument	Jurisdiction	2026 Defining Issues
ERCOT	Energy-only; no capacity market; RTC+B co-optimization live Dec 2025	CRRs	PUCT (not FERC, mostly)	Data center load wave; large load batch studies; winter resilience; DRRS design
PJM	Energy + capacity (RPM); largest RTO	FTRs	FERC	Capacity at $333.44/MW-day cap 3 auctions running; 2027/28 reliability shortfall; data centers = 40% of capacity cost; co-location tariff reform ordered
MISO	Energy + seasonal capacity (PRA); DLOL accreditation rolling in	FTRs	FERC	18 GW data center load by 2035; RA "at risk" per MISO; largest-ever study automation investment (Pearl Street)

CAISO	Energy + RA (state-administered); EDAM live May 2026	CRRs	FERC + CPUC	EDAM expansion (PacifiCorp live; PGE Oct 2026; LADWP/BANC/PNM 2027); queue deliverability reform for 2027 cycle
SPP	Energy + planning reserve margin; RTO West expansion live 2026	TCRs	FERC	Markets+ launch Oct 2027; western footprint buildout; wind-dominant operations; expedited RA study
NYISO	Energy + ICAP; locational capacity zones	TCCs	FERC	Order 2222 full implementation by end 2026; scenario-based reliability planning debut (2026 RNA); downstate adequacy
ISO-NE	Energy + FCM (capacity reform underway)	FTRs	FERC	Winter gas dependence; 2222 capacity participation Feb 2027; GridUnity selected for interconnection/planning

ERCOT — The Energy-Only Outlier

- **Market design.** Energy-only market with no capacity construct — scarcity pricing does the adequacy work. Real-Time Co-optimization plus Batteries (RTC+B) went live December 2025: ancillary services now clear against energy every five minutes, rewriting bidding strategy for every asset class and especially storage. Congestion hedging via CRRs. Largely outside FERC jurisdiction — PUCT and the Texas legislature are the regulatory audience.
- **What hurts right now.** The data center interconnection wave dwarfs every other ISO's; ERCOT is replacing one-off large load studies (PGRR115) with an ongoing batch study process. Winter resilience remains an existential board topic post-Uri. DRRS (dispatchable reliability reserve) design is contested.
- **GridCORTEX angles.** Utility side: UC 12.x large load suite is strongest here than anywhere; UC 11.1/11.2 must be pitched RTC+B-aware; UC 8.7 extreme cold twin resonates permanently. ISO side: UC 20.1 (batch study acceleration), UC 20.3 (winter adequacy twin — replay Uri), UC 20.2 (protocol/NPRR copilot). Note: Order 2222 does not apply — UC 20.6 maps to the ADER pilot framework instead.

PJM — Capacity Crunch Central

- **Market design.** Largest RTO; three-auction capacity construct (RPM/BRA) plus energy and AS co-optimization; FTR market. The capacity market IS the story: cleared at the $333.44/MW-day cap three consecutive auctions, and the 2027/28 BRA fell short of the reliability requirement RTO-wide — a first.
- **What hurts right now.** Data centers drove ~5,100 MW of one-cycle peak forecast growth and 40% of December auction costs; the Critical Issue Fast Path produced contested large-load integration proposals; FERC ordered tariff reform for co-located generation-plus-load in January 2026. Interconnection timelines exceed eight years application-to-energization.
- **GridCORTEX angles.** Utility side: UC 12.1/12.5 (interconnection modeling, tariff structuring) for every member utility fielding data center requests; UC 11.1 nodal forecasting in the most

congested footprint in the country. ISO/TO side: UC 20.1 study acceleration, UC 20.3 adequacy twin (the capacity shortfall makes it board-grade), UC 20.5 surveillance (record prices bring record scrutiny).

MISO — Load Growth Meets Accreditation Reform

- **Market design.** Energy + seasonal Planning Resource Auction; Direct Loss-of-Load (DLOL) accreditation being implemented — resource-class capacity values will be litigated with models. FTR market; 15-state footprint with entrenched state RA authority.
- **What hurts right now.** MISO itself says resource adequacy "remains at risk": 18 GW of projected data center additions by 2035, thermal retirements, and commercialization delays. MISO made the industry's largest study automation investment (Pearl Street) — proof the buyer category exists and pays.
- **GridCORTEX angles.** Utility side: UC 10.1/10.4 for the renewable fleet buildout; UC 5.3 electrification scenario planning for member IOUs; DLOL makes UC 20.3-style stress modeling valuable to members defending accreditation positions. ISO side: MISO already bought queue automation — position UC 20.1 as the complement (restudy optimization, report drafting), and lead with UC 20.3 (ERAS and RA anxiety) and UC 20.2.

CAISO — The Expanding Western Platform

- **Market design.** Energy market + state-administered RA (CPUC); CRRs; WEIM real-time footprint across the West, and EDAM — the Extended Day-Ahead Market — live May 1, 2026 with PacifiCorp, PGE joining October 2026, LADWP/BANC/PNM/Turlock signed for 2027.
- **What hurts right now.** EDAM onboarding is a multi-year integration grind for every joining entity. Queue deliverability allocation reform hits the 2027 cycle. GridUnity screening tools already deployed since 2024 — automation appetite demonstrated.
- **GridCORTEX angles.** Utility side: every EDAM joiner needs market integration help — UC 11.1/11.2 recalibrated for EDAM footprint pricing is a timely wedge; UC 6.x DER suite strongest here (mature aggregation rules). ISO side: UC 20.4 congestion forecasting across the expanding footprint; UC 20.2 corpus copilot (tariff + EDAM implementation docs); UC 20.6 as the mature-market reference deployment.

SPP — The Western Land Grab

- **Market design.** Energy market + planning reserve margin construct; TCRs; wind-dominant operations. Two-front western expansion: RTO West live 2026, Markets+ (the CAISO EDAM competitor) targeting October 2027 go-live.
- **What hurts right now.** Onboarding an entire second interconnection footprint while running Markets+ implementation — integration workload at institutional scale. Wind-driven congestion and extreme weather exposure (both cold snaps and derechos). Expedited RA study reflects adequacy pressure.
- **GridCORTEX angles.** Utility side: western entities choosing between EDAM and Markets+ need market participation buildouts either way — UC 11.x suite plus advisory framing. ISO side: UC 20.2 is unusually strong (two tariff regimes, doubling corpus complexity), UC 20.4 for wind-corridor congestion, UC 20.3 for the expanded footprint's first integrated winter assessments.

NYISO — Policy-Driven Precision

- **Market design.** Energy + locational ICAP; TCCs; single-state footprint with CLCPA decarbonization mandates shaping everything. Moving to scenario-based reliability planning

(2026 RNA dry run). Order 2222 full implementation targeted by end of 2026 — the nearest-term 2222 deadline in the country.

- **What hurts right now.** Downstate reliability margins as fossil retirements outpace replacement; large load interest arriving into a tight system; 2222 operationalization landing this year.
- **GridCORTEX angles.** Utility side: UC 6.6 FERC 2222 readiness is immediate for every NY utility and aggregator-facing member. ISO side: UC 20.6 is the sharpest near-term pitch in the entire ISO track (deadline: December 2026); UC 20.3 aligns with the scenario-based planning transition NYISO is already making culturally.

ISO-NE — Winter Risk and Market Redesign

- **Market design.** Energy + Forward Capacity Market, with capacity auction reform (prompt/seasonal) in progress; FTRs. Chronic winter gas dependence defines the risk profile. 2222 capacity market participation lands February 2027 for the 2028/29 commitment period.
- **What hurts right now.** Winter fuel security under extreme cold remains the singular tail risk; capacity market redesign creates rule-complexity churn; GridUnity selected for interconnection and planning — automation appetite demonstrated, execution layer still open.
- **GridCORTEX angles.** Utility side: UC 8.7 extreme cold resilience twin for member utilities; UC 11.x for the FCM transition period. ISO side: UC 20.3 gas-electric winter adequacy twin (replay Elliott), UC 20.2 during capacity redesign churn, UC 20.1 study-execution layer complementing the GridUnity intake platform.

Use Case × ISO Fit Matrix

L = lead with it (active pain, funded buyer) · S = strong fit · f = fit with tailoring · — = weak or not applicable. Utility-side rows apply to member/participant utilities in that footprint; 20.x rows apply to the ISO itself.

Use Case	ERCOT	PJM	MISO	CAISO	SPP	NYISO	ISO-NE
UC 10.1 Renewable Gen Forecasting	S	S	**L**	S	**L**	S	S
UC 10.4 BESS Dispatch Optimizer	**L**	S	S	**L**	S	S	S
UC 11.1 Nodal Price Forecasting	**L**	**L**	S	**L**	S	S	S
UC 11.2 Bid/Offer Optimization Copilot	**L**	S	S	**L**	S	S	S
UC 11.3 Congestion/ Curtailment Risk	**L**	**L**	S	S	**L**	f	f
UC 12.1 Data Center Interconnection	**L**	**L**	S	S	S	S	f
UC 12.5	**L**	**L**	S	f	S	S	f

Large Load Tariff Structuring							
UC 6.6 FERC 2222 Market Readiness	f	S	S	**L**	f	**L**	S
UC 20.1 Queue Study Acceleration	**L**	**L**	f	S	S	S	S
UC 20.2 Market Rules/Tariff Copilot	**L**	S	S	S	**L**	S	**L**
UC 20.3 RA & Extreme Weather Twin	**L**	**L**	**L**	S	S	S	**L**
UC 20.4 Operator Congestion Forecasting	S	S	S	**L**	**L**	f	f
UC 20.5 Market Surveillance	S	**L**	S	S	f	S	S
UC 20.6 DER Aggregation / 2222 Ops	f	S	S	S	f	**L**	**L**

Positioning Rules for ISO/RTO Conversations

- **ISOs are not utilities — sell institutional credibility, not ROI alone.** ISO buying decisions survive stakeholder committees, board governance, and FERC visibility. Every 20.x pitch leads with auditability, human-in-the-loop, and read-only posture — the same three inviolable rules, which happen to be exactly what a FERC-jurisdictional institution needs to hear.
- **Never say platform — and at an ISO, never say control.** GridCORTEX recommends, drafts, screens, and forecasts. The ISO's systems and staff decide. This line matters even more with system operators than with utilities.
- **Respect the incumbent automation.** MISO bought Pearl Street; most ISOs run GridUnity intake; every ISO has an EMS vendor relationship. Position 20.x as the intelligence layer above and between those systems — the Gap Layer story, unchanged.
- **The western market split is a sales map.** Every western entity choosing between EDAM and Markets+ is buying market participation capability somewhere. Track the commitments; time the outreach to their integration calendar.
- **ERCOT is different on purpose.** No FERC, no capacity market, no Order 2222 (ADER instead), fresh RTC+B protocol language. Never walk in with a PJM-flavored pitch.
- **Verify before quoting.** Auction results, launch dates, and compliance deadlines in this document were current July 2026 and will age. Check the primary source before repeating a number in the room.

The eight GridCORTEX domains were built above the utility OT stack. The UC 20.x track applies the same architecture — read-only, explainable, human-in-the-loop — above the market stack. Same framework, second buyer: the seven institutions that run the markets every GridCORTEX utility client participates in.

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