

Merchant Storage Revenue and Financing

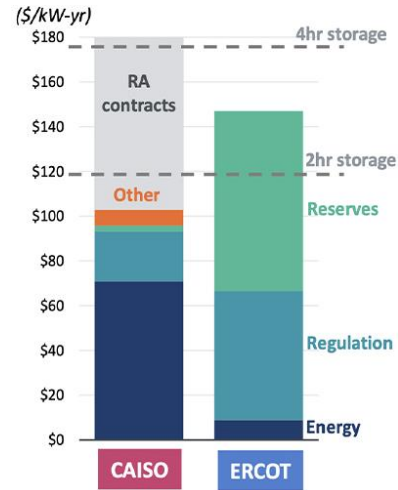
Insights from ERCOT and what they mean for Alberta – *from an IE's perspective*

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Revenue realities: what Alberta can learn from the US

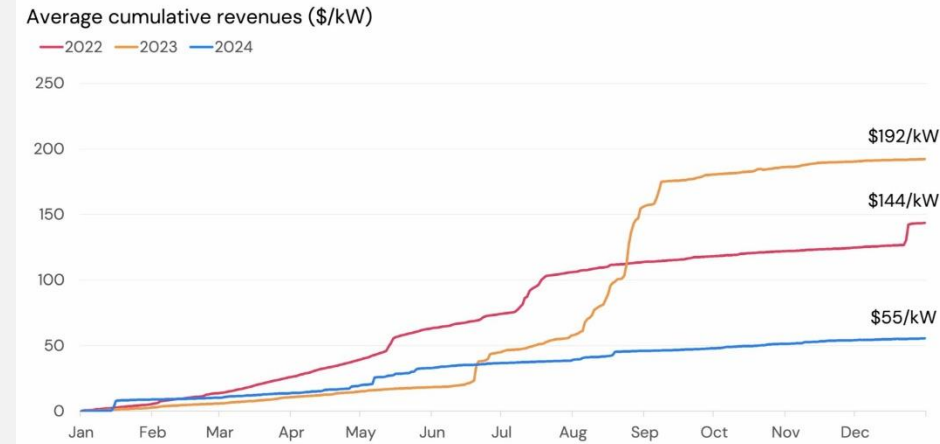
Storage revenue breakdown (2022)

Source: The Brattle Group

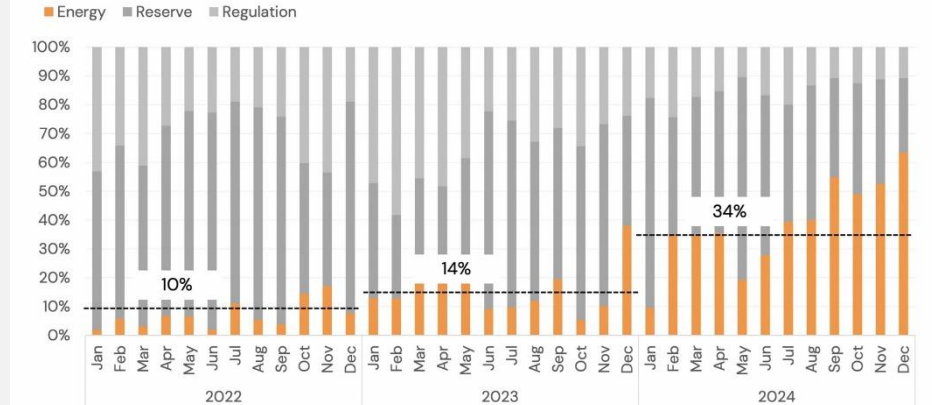


ERCOT revenue shift: 2022 to 2024

Source: Modo Energy



Proportion of monthly BESS revenues in ERCOT (%)



Merchant revenue volatility driven by extreme weather, AS saturation, market design & dispatch rules, and asset-level performance.

Key takeaways from ERCOT and CAISO

Revenue stacking across energy arbitrage, ancillary services (AS) and price volatility is crucial, particularly in energy-only markets

Market saturation happens fast with storage buildout and demands adaptive operating schemes

Nodal pricing helps strategic siting and locational price discovery

Scarcity events offer huge merchant upsides but are unpredictable

Performance variability underlines the need for optimized bidding and reliable asset operations

Considerations for Alberta

Well-structured, diverse market products and transparent price signals are key to unlocking merchant storage value

- Zonal pricing limits locational investment signals
- AS market is currently shallow and underdeveloped
- Potential need for fast-responding reserve products and preserved price volatility (e.g., scarcity pricing)

From opportunity to bankability: what lenders care about

Key risks	Market Risk	Technical Risk	Operational Risk	Regulatory Risk
	<i>"Will the project generate consistent revenue?"</i>	<i>"Will the system perform reliably and safely?"</i>	<i>"Will the operator run it correctly?"</i>	<i>"Does the market allow this project to succeed?"</i>
	Revenue uncertainty due to merchant exposure, saturation and price volatility	System under-performance due to integration complexity or vendor related issues	Misalignment in operations in dispatch strategy, asset performance, software / NOC gaps	Structural uncertainty Lack of long-term contracting framework and formalized market product, undefined / evolving rules
What IEs look for	Realistic dispatch modeling assumptions; sensitivity testing with downside scenarios; revenue uncertainty analysis ("haircut")	OEM and service provider track record; warranty and performance guarantees; proven safety compliance	Dispatch strategy aligned with actual operational capability; optimization scheme (manual vs. AI); degradation planning	Well-defined and diversified market structures with transparent price signals; comparable case studies
To make merchant storage more attractive in Alberta, the market must reward flexibility through clear price signals, and developers must prove performance under real operating conditions				