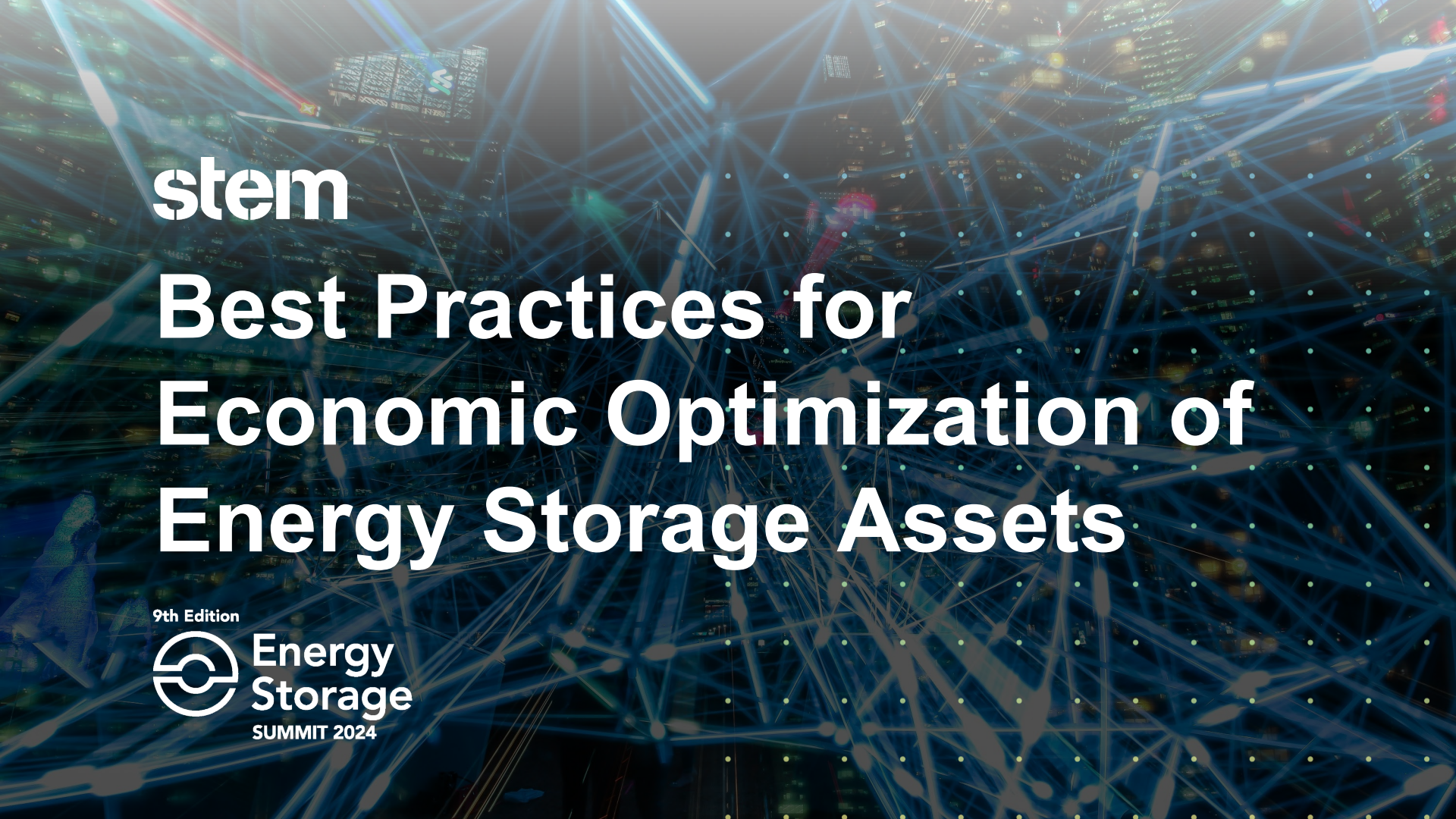
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Best Practices for Economic Optimization of Energy Storage Assets
9th Edition
Energy Storage
SUMMIT 2024

Stem is a global leader in AI-driven clean energy solutions & services

We maximize the value of energy assets and portfolios.

Matt Tappin
President, Technology & Services

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5+ GWh
Storage assets under management across 1,000+ sites operating or contracted

25+ GW
Solar assets under management across 200,000+ sites worldwide

30+ Million
Runtime hours of leveraged data

50+ Countries
Worldwide with assets under management

75+
Permitting jurisdictions across 260+ cities and 40+ utilities

83,000+
Grid services site dispatches

Agenda

- Employing holistic approaches to the management of storage assets
- Understanding impacts of emerging financing structures
- Understanding impacts of OEM warranties on operations
- Balancing operational risk and business objectives effectively

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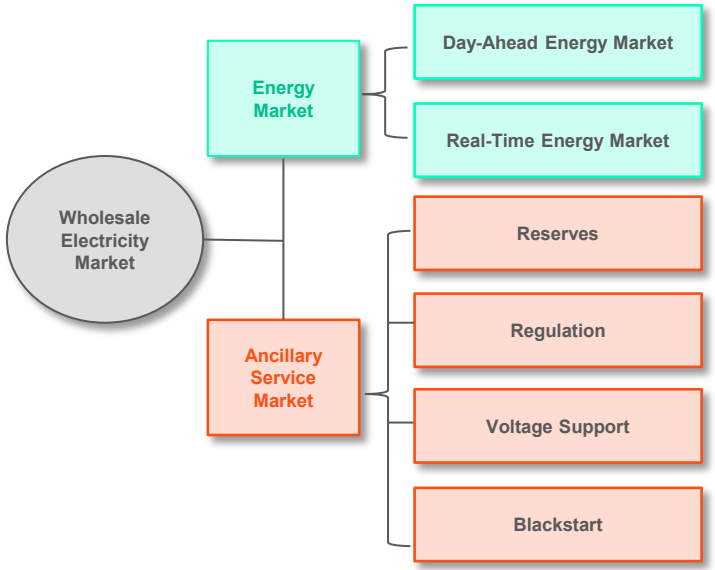
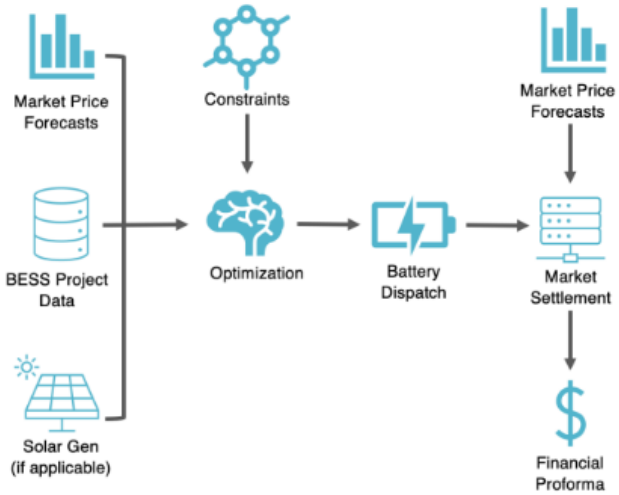
Interdependencies of technical and market operations create new dynamics

Unlike traditional renewables, storage achieves attractive returns by stacking revenues across complex market opportunities – doing this well is key to asset management.



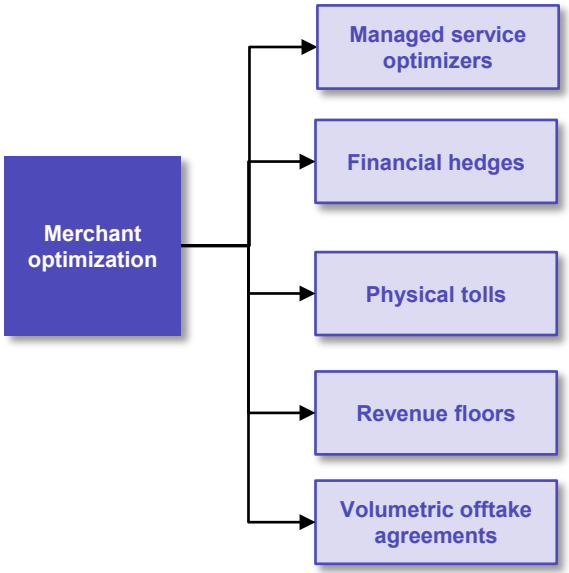
Technical operations and market optimization are related in complex, dependent ways – dispatch requires forecasting and technical availability while optimization strategies can impact asset health.



Source: Stem's *Benchmarking ERCOT Performance of Stem's Athena® Optimization Platform* Whitepaper – December 2023

Emerging contract structures support investment but contribute to complexity

Risk is being moved from asset owners to traditional risk-bearing balance sheets



But contractual structures are evolving, costs are opaque, and complexity remains

- Unlike solar, storage requires more active management to extract asset value
- Highly negotiated contracts reflecting distinct scopes amongst parties can mediate some, but not all, of the complexity
- Misaligned preferences can still exist between contract counterparties and the asset owners
- Simplification may result in more limited revenue opportunities and project investment

Asset owners (and counterparties) need shared tools to manage and exploit risk

Warranties and other project protections limit adoption of otherwise profitable trading strategies

- Enabling capital formation, warranties and guarantees represent significant value to asset owners
- However, legal limitations can reduce the profitability flexibility of trading strategies:
    - System level exclusions, such as cycle count, depth of discharge, and other operational matters
    - AVLs and other administrative requirements on corrective and preventative maintenance
- Direct procurement further compounds these challenges

The ideal toolset does not yet exist but can be imagined

- **Automated ingestion** of relevant contracts as structured data to complement technical and market indicators
- **Scenario-based analytics** reflective of specific market environments and dispatch strategies
- **Economic value analysis** of remaining warranty values and breakage costs, weighed against near term revenue opportunities
- **Break glass capabilities** for emergency market compliance, portfolio coverage, or an unforecastable event

Thank you!

For more information:

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About Stem

Stem (NYSE: STEM) is a global leader in AI-driven clean energy solutions and services.

Stem (NYSE: STEM) provides clean energy solutions and services designed to maximize the economic, environmental, and resiliency value of energy assets and portfolios. Stem's leading AI-driven enterprise software platform, Athena® enables organizations to deploy and unlock value from clean energy assets at scale. Powerful applications, including AlsoEnergy's PowerTrack, simplify and optimize asset management and connect an ecosystem of owners, developers, assets, and markets. Stem also offers integrated partner solutions to help improve returns across energy projects, including storage, solar, and EV fleet charging.

For more information, visit www.stem.com

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