FLUENCE

A Siemens and AES Company

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Degradation-informed optimization

Andres Barberan – Product Manager Nispera BESS products
andres.barberan@fluenceenergy.com

OUR MISSION

Transform the way we power our world to create a more sustainable future.

PURPOSE-BUILT PURPOSE-DRIVEN

ENERGY STORAGE SOLUTIONS (1)

11.1+
TOTAL GW

225+
PROJECTS

SERVICES (2)

7.3+
TOTAL GW

OPTIMIZATION SOFTWARE (2)

MOSAIC

12.3+
GW OF AI-OPTIMIZED BIDDING OF RENEWABLES AND STORAGE

NISPERA

12.7+
GW OF RENEWABLE AND STORAGE ASSETS UNDER MANAGEMENT

(1) Deployed or contracted as of June 30, 2024

(2) Contracted or assets under management as of June 30, 2024

Fluence Ecosystem

Energy Storage Solutions & OS

Purpose-built energy storage with integrated hardware & Fluence OS controls software, coupled with engineering, design, & commissioning services options

- Engineering Design Hi Fred,
- Consultative Services
- Delivery Services

Lifecycle Services

Comprehensive operational services tailored to project needs, including full-wrap capabilities

Operational Services

- 24/7 Monitoring
- O&M Maintenance
- Guarantees, Warranties
- Training
- Capacity Management

Optimization Software

Optimize renewable assets and energy storage with software products and applications that address dispatch, market participation, battery performance, and more

Nispera

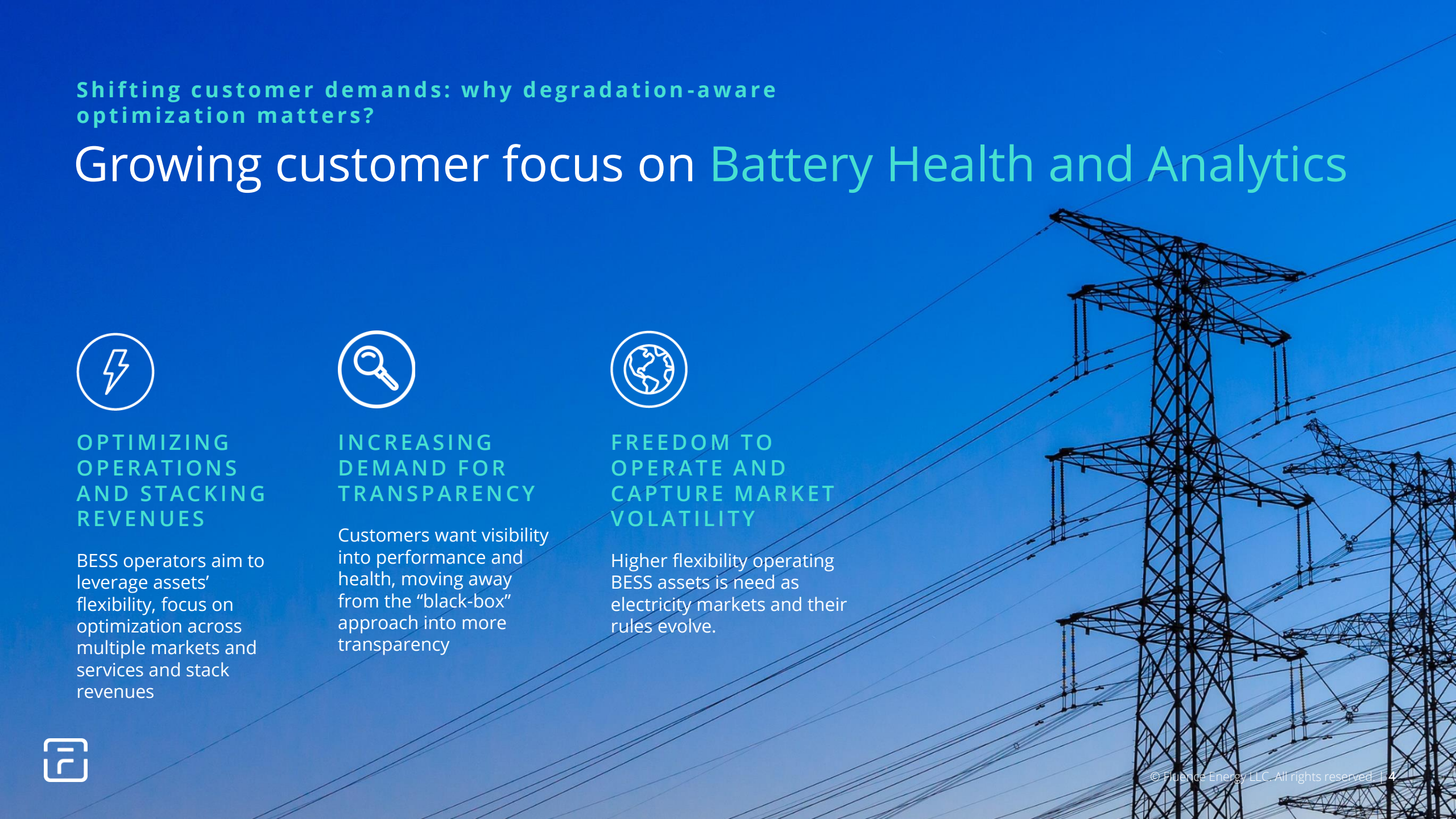
ASSET PERFORMANCE MANAGMENT

Mosaic

INTELLIGENT BIDDING

Shifting customer demands: why degradation-aware optimization matters?

Growing customer focus on Battery Health and Analytics



OPTIMIZING OPERATIONS AND STACKING REVENUES

BESS operators aim to leverage assets' flexibility, focus on optimization across multiple markets and services and stack revenues

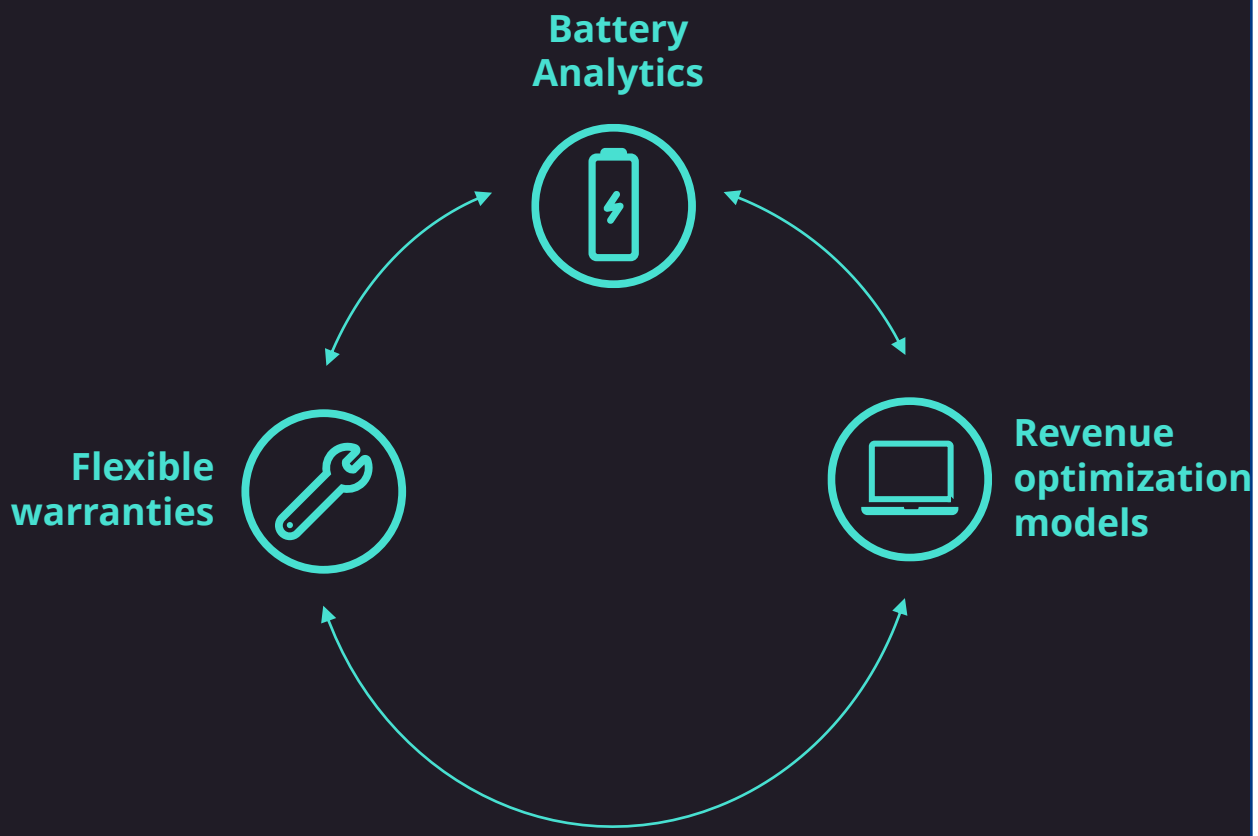
INCREASING DEMAND FOR TRANSPARENCY

Customers want visibility into performance and health, moving away from the "black-box" approach into more transparency

FREEDOM TO OPERATE AND CAPTURE MARKET VOLATILITY

Higher flexibility operating BESS assets is need as electricity markets and their rules evolve.

BRIDGING BATTERY ANALYTICS, FLEXIBLE WARRANTIES AND DEGRADATION-INFORMED OPTIMIZATION



Battery analytics as the first step

Understanding which factors influence battery degradation and transforming raw data into actionable insights

Flexible warranties based on real data

Designing warranties that are tailored for different markets, usage type or customer needs

Optimization models that consider degradation

- Balance between revenue maximization and minimum degradation
- Battery lifespan extension and reduction of total cost of ownership
- Improvements in BESS safety and reliability

KEY FACTORS THAT DRIVE BATTERY DEGRADATION

ELECTRICAL STRESS

THERMAL STRESS

MECHANICAL STRESS

Voltage

Temperature

C-rate

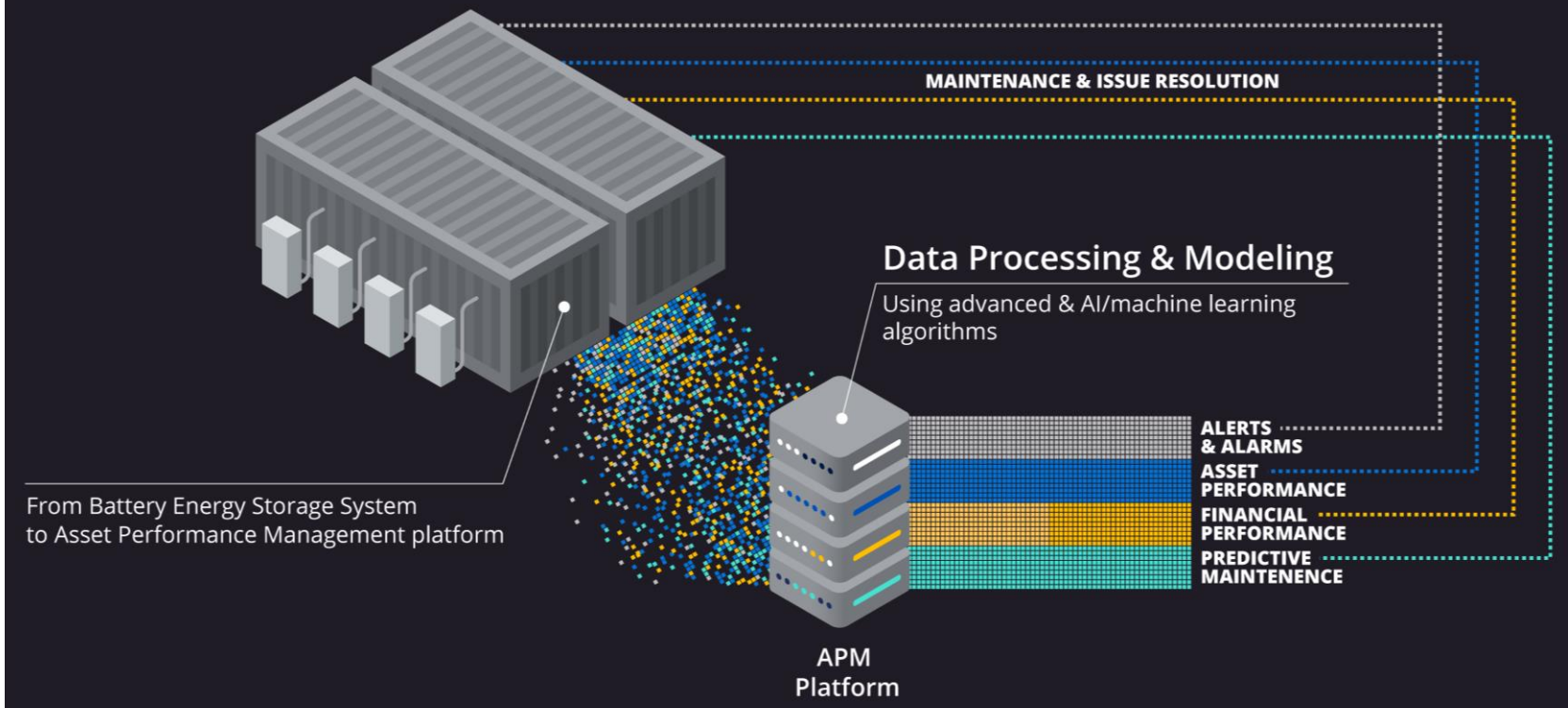
SOC

DOD

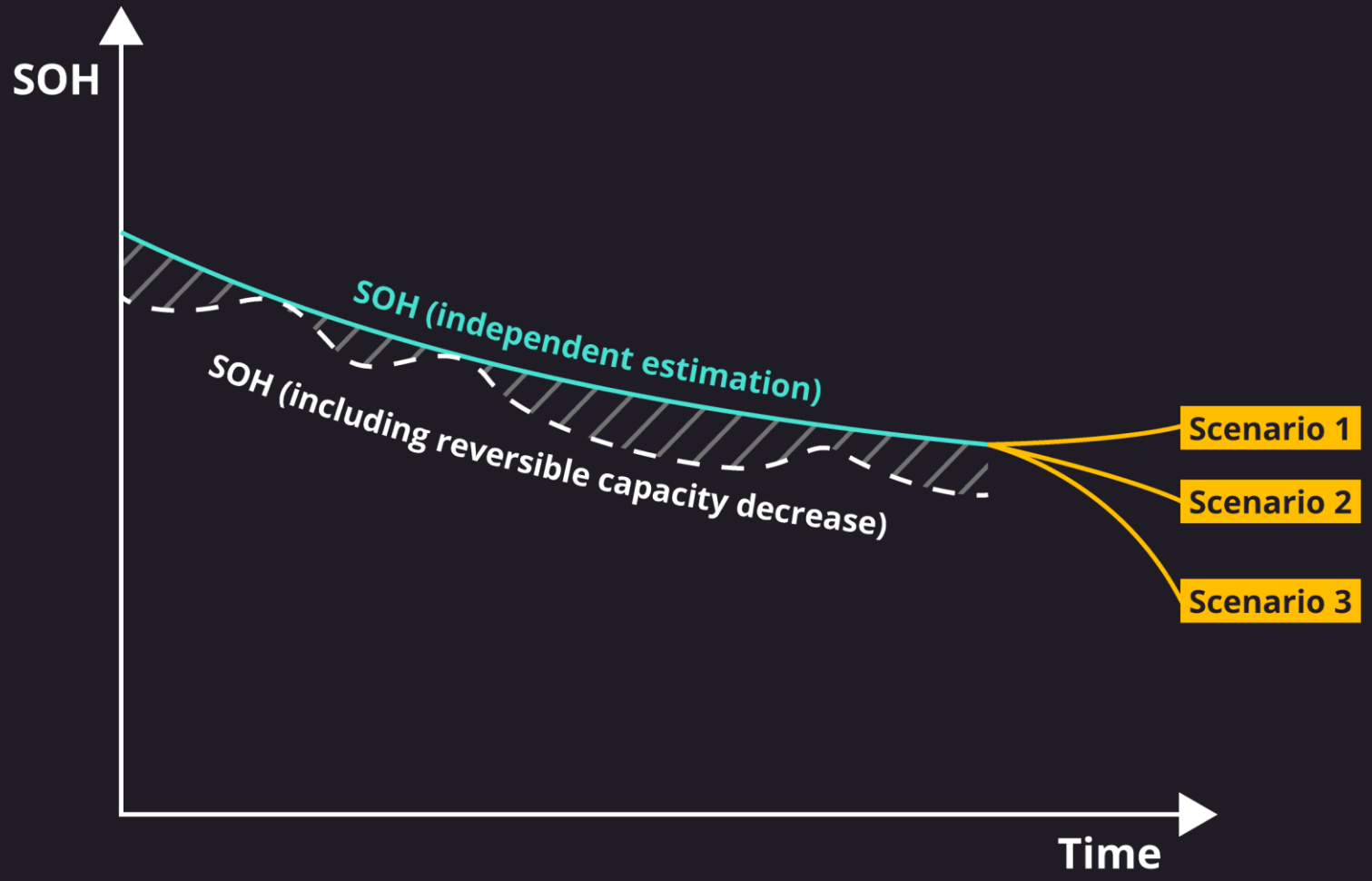
Cycles

Calendar Aging

ASSET PERFORMANCE MANAGEMENT: FROM DATA TO ACTION



Degradation-aware metric: State of Health (SOH)



Charge imbalance

Availability

Cell degradation

FINAL THOUGHTS

