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Battery optimization

BESS evolution and what the Italian market can learn from the German market

Nurturing revenue for BESS owners with our proprietary,
AI-based, self-learning optimization platform.

Why enspired?

Innovative company shaping the market since day one

Industry-defining technology running on in-house expertise

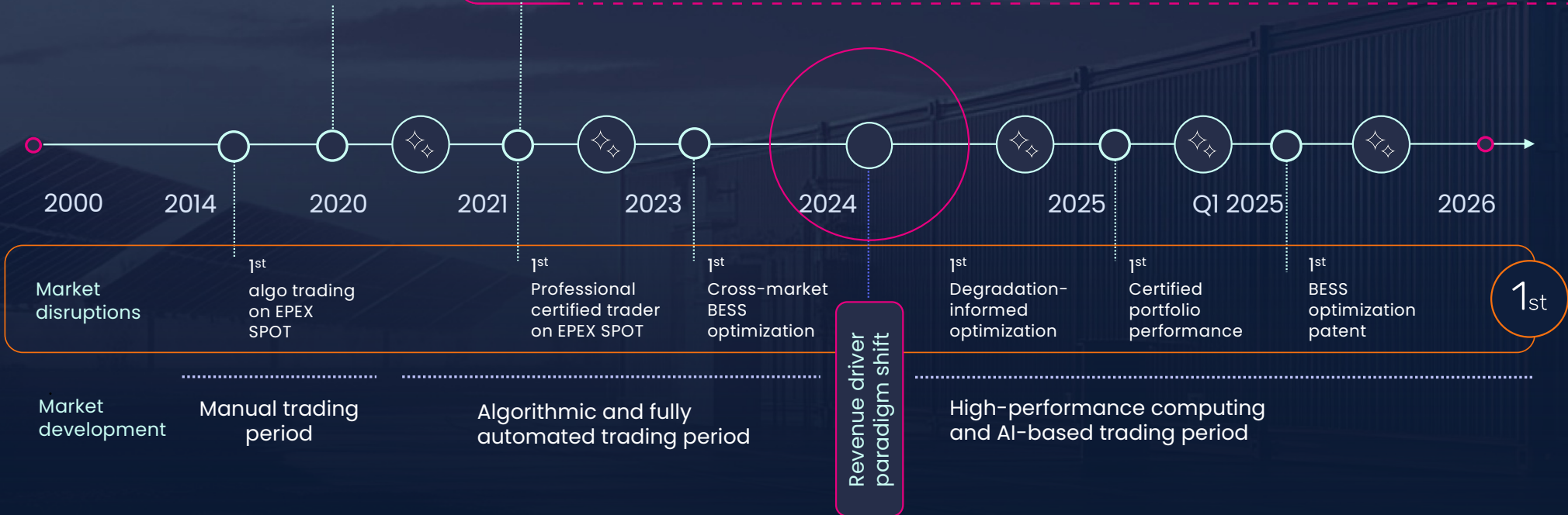Passionate team leveraging decade-long active experience

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5.000+ MW
assets under management

1.300+ MW
2.500+ MWh BESS under management

400+ MW
BESS in operation

Future markets
Japan, Italy, Romania, Bulgaria, Baltics

100+ employees
with market, trading, tech, and data science backgrounds
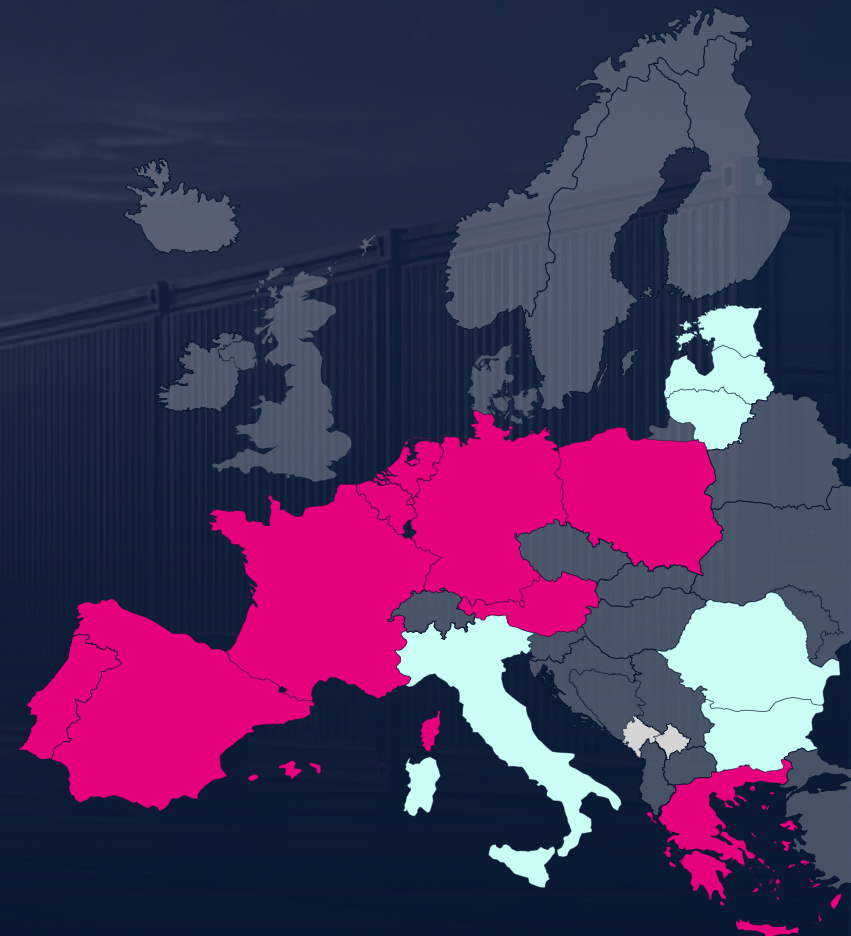
Market evolution
with regulations and balancing

First and only optimizer with **2h+ BESS** in Germany in full cross-market setup.

Optimizer of the biggest BESS in continental Europe with **103.5 MW/230 MWh.**

Our unique revenue optimization system
Our advanced AI/ML single source in-house platform

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Revenue impact factors

- Cross-market data access
- Trading potential
- Flexible trading opportunities
- Wholesale pricing
- Renewable plant performances
- Grid frequency
- Weather forecast
- BESS capacity and performance
- Warranty terms
- Contract requirements

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Patented BESS solver
Fully digital in-house platform
Self-learning AI/ML

10 bn+ data points	**€50+ mio.** invested
150+ person-years	**KPMG-certified** performance

A true partner for every stage of your project

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Feasibility study

- Expert market knowledge
- High-quality backtests
- Certified portfolio performance

Permitting & regulatory approvals

- Data support for TSO requests
- Active role in defining the regulatory market frame

Financing & partnerships

- Integrated ecosystem (EPC, knowledge sharing)
- Intro to financial parties (banks and investors)
- Tailored revenue models
- Market-approved terms and conditions

Operations & maintenance

- Live dashboard
- Regular client updates
- Degradation-informed optimization
- Optimized maintenance planning

Maximum revenue

Testing & commissioning

- Seamless onboarding
- Prequalification
- Testing

Design & procurement

- Warranty terms & restrictions
- Simulation dashboards
- Dedicated backtests

Customer spotlights

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ecoSTOR — Largest operational grid-scale BESS in DE

OPTIMUS ENERGY — Bringing BESS optimization to Greece; 270 MW portfolio

S4 ENERGY — First 4-hour BESS in the Netherlands

Gore Street Capital — First UK project deployed in Germany

MW STORAGE — Largest grid-scale BESS in Bavaria, Germany

OBTON — Largest grid-scale BESS financed in Germany

JENBACHER · SWM · KYOTO · ENERGINET · SUNGROW · uniper · Trinasolar · FLUENCE (A Siemens and AES Company)

SCHOENERGIE DIE SOLARKRAFTWERKER · HUAWEI · B. · WIEN ENERGIE (WIENSTROM · WIENGAS · FERNWÄRME WIEN) · BANPU · TotalEnergies

Partner spotlights

OPTIMUS ENERGY · FLEXCITY by Veolia · Entelios we are moving energy · nexus energía · ekovoltis

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Algo trading vs. manual trading

Battery dimensioning & performance warranties: Lessons learnt

Commercial model

Transparency

Algo trading vs. traditional trading
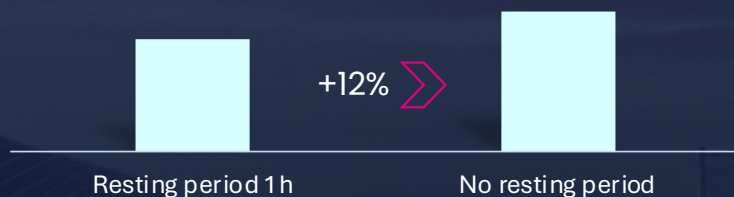
Algo trading vs traditional trading

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| Aspect	Traditional trading	AI-based algorithmic trading
Decision-making	Manual, based on human expertise and predefined rules	AI-driven, data-based, continuously optimized
Execution speed	Slow, human-dependent	Milliseconds, fully automated
Data processing	Limited to historical data and basic trends	Real-time analysis of multiple data sources (market trends, weather, demand, etc.)
Market adaptability	Reactive, slower response to sudden changes	Proactive, self-learning models adjust dynamically
Risk management	Rule-based, predefined thresholds	Predictive analytics for dynamic risk mitigation
Trading strategies	Static, limited flexibility	Dynamic, self-optimizing strategies
BESS optimization	Fixed charging/discharging schedules	AI-driven real-time adjustments for maximum profitability
Revenue potential	Limited by human constraints	Maximized through AI-driven efficiency
Regulatory compliance	Manual tracking of market regulations	AI can automate compliance monitoring and adjustments

Battery dimensioning

BESS performance warranties and their impact on revenues

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Resting period

+12% »

Resting period 1h | No resting period

#Average cycles/day

+11% » | +8% »

1.5 cycles | 2.0 cycles | 2.5 cycles
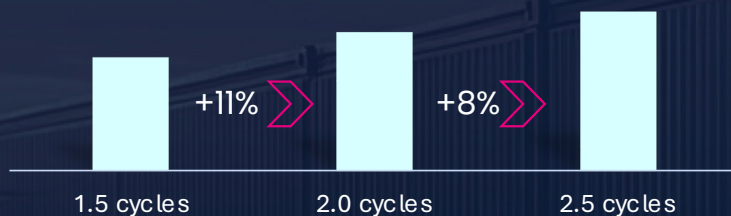
Available SoC range

+7% »

90% | 100%

% RTE

+0.37% »

89% | 90%

EUR/MW/Year

Impact of warranty conditions on revenues

Other examples together with cycles and duration

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89% RTE
95% usable SoC
1.8 cycles average
97% availability

+11.5%

90% RTE
100% usable SoC
2 cycles average
99% availability

260k EUR/MW/Year

290k EUR/MW/Year

e.g. 50 MW/**100** MWh BESS
1.5 mio. EUR/Year
15 mio. EUR over **10-year** period

Experiences from the German market
## Evolution of revenues for a 10 MW/20 MWh with maximum 2 cycles per day

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Legend: Wholesale (+SoC mgmt) + aFRR energy ■ FCR ■ aFRR capacity
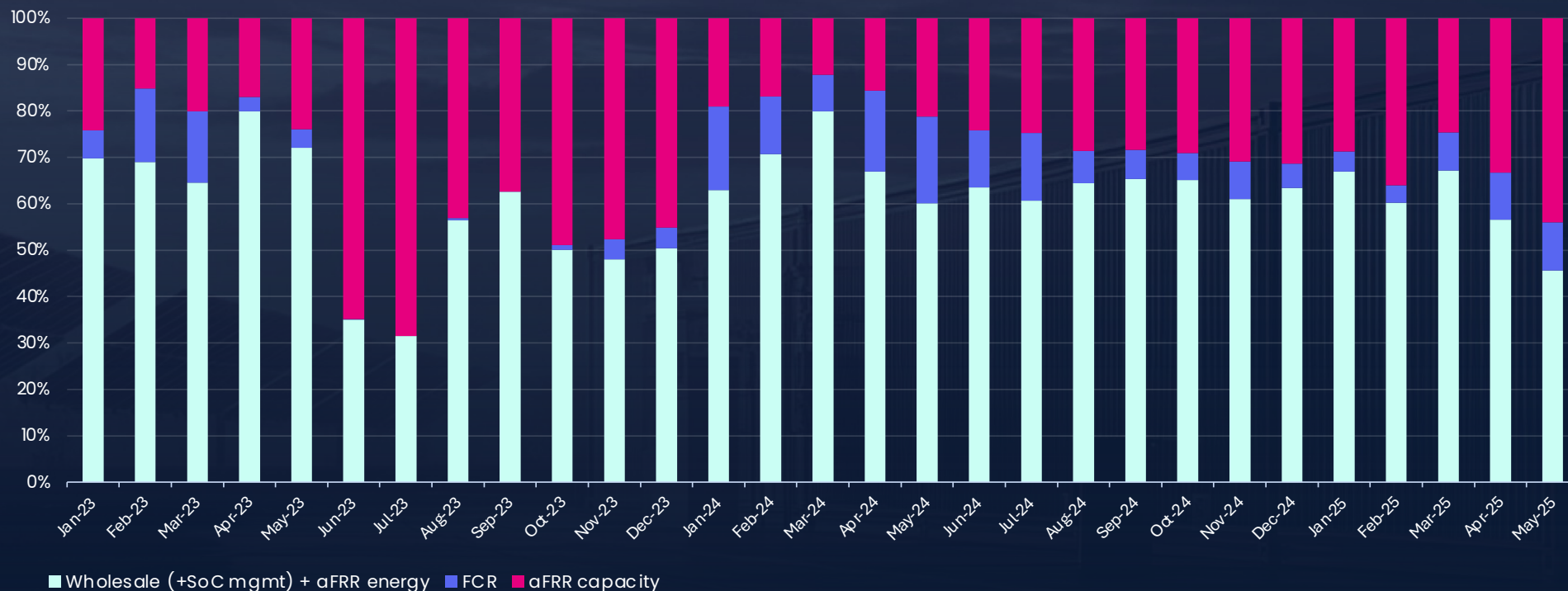
Commercial models

Tailored revenue models

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	Fully merchant	Merchant with floor	Merchant with cap & floor	Tolling
	Allows to fully capture upside and maximize project return	Allows full upside participation with downside protection	Allows efficient upside participation with downside protection	Provides guaranteed and plannable revenues for stable project returns
Transparency	Full transparency	Full transparency	Full transparency	✓
Downside protection	✓	Floor	Floor	Full
Upside potential	Unlimited	Unlimited	Capped	✓
Guarantee provision	✓	Revenue share about floor	Optimized revenue share between floor and cap	Included
Optimization fee	Share from total revenue	Share from total revenue	Revenue share up to cap	Included

Transparency

Full transparency for asset owners

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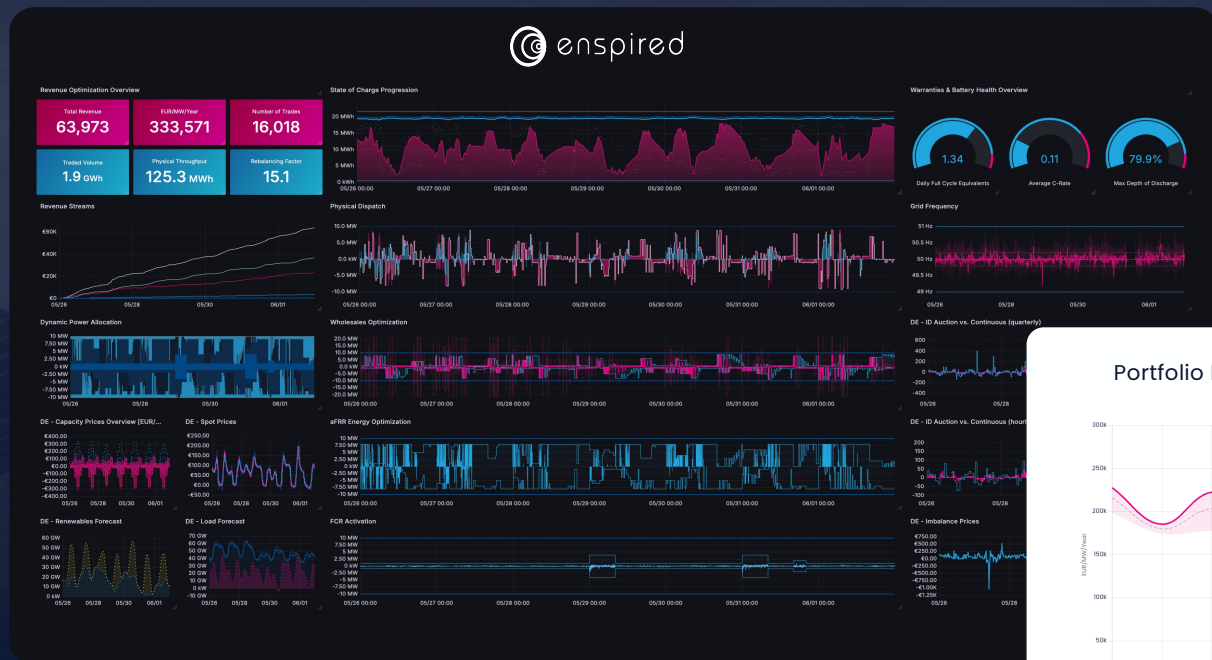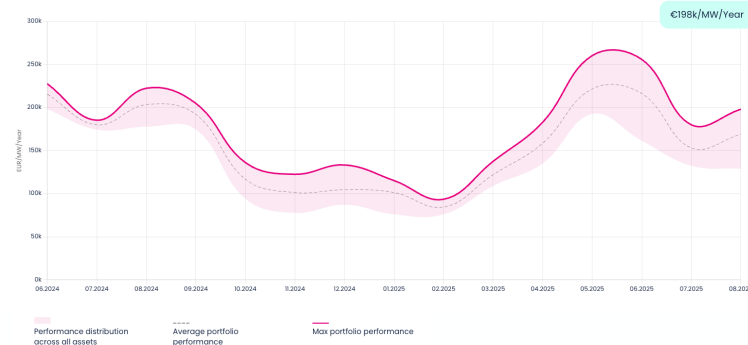
Certified portfolio performance

Degradation-informed optimization

Optimized maintenance planning

Tailored revenue models

Proprietary optimization platform

Full transparency on asset performance

Got a question?
Talk to our BESS expert!

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Learn more

Cross-market optimization

BESS revenues in Europe