Services on Energy Storage Systems

March 2026

From initial investment design to securing bank financing, we provide end-to-end support—ensuring your Energy Storage project is strategically structured, fully compliant, and financially sound.

We study different configurations including RES-BESS and potentially flexible loads

Standalone Energy Storage	Co-located Energy Storage	Common Point Energy Storage	Load and Flexibility
✓ Expert guidance on Greek legislative and licensing framework governing your asset.	✓ Modelling and analysis of all asset configurations.	✓ Estimation of your asset's revenue potential across wholesale and balancing markets.	✓ Financial advisory services to support clients in negotiations with financial institutions for project financing.
✓ Decision-making support to identify your most suitable asset configuration.	✓ Optimal sizing of your asset considering all technical, regulatory, licensing and market factors.	✓ Design of optimal bidding strategy for tender participation	✓ Assisting with any bank requests related to asset participation in energy markets and revenue streams
✓ Navigation through tender processes, clarification of support mechanisms and tender participation requirements.	✓ Sensitivity analysis on all modelling parameters of interest, whether it be cost, size, market prices etc.	✓ Guidance and support in the evaluation of Route-to-Market Long-Term Agreements	
		✓ Design and evaluation of Power Purchase Agreements suitable for the asset.	

Grant Thornton

Our flexible modeling tools enable in-depth system analysis tailored to your project's unique needs.

Electricity market prices
Using PLEXOS, we model South-Eastern electricity markets to deliver reliable price projections and strategic market insights.

System configuration
Our optimization tool models market participation for any setup -RES, Energy Storage, RES with integrated BESS (11A, 11B), BESS at common point (11C), electrolyzers- delivering tailored insights for every asset type.

Technical & operational assumptions
We incorporate all key operational assumptions— asset degradation, replenishment strategy, operating cycles, curtailments, schedule—to deliver robust, realistic system analysis.

Market assumptions
We model asset market participation assuming cross-market revenue stacking from Day-Ahead Market, Intra Day Market, Balancing Capacity/Energy, factoring in future market cannibalization.

Asset revenue potential
With our flexible modelling tool, we estimate asset revenues across all markets under multiple price scenarios—delivering actionable insights for strategic planning.

Long-term agreements
We provide guidance for route-to-market agreements with aggregators/optimizers, and we design and evaluate revenue hedging with Power Purchase Agreements, using specialized tools.

Optimai bidding strategy
We leverage our customized financial and market modeling tools to define optimal bidding strategies—maximizing your success in competitive tenders.

Securing bank financing
We offer end-to-end support in your negotiations with financial institutions—utilizing our advanced tools and deep expertise to secure favorable outcomes.

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The Grant Thornton Configurable Optimization Tool for RES & BESS Investment Analysis

This in-house developed software tool is built in Python and leverages advanced optimization techniques to support the commercial and operational evaluation of renewable energy and energy storage assets. Designed with flexibility and modularity at its core, the tool enables users to simulate, optimize, and assess the performance and market participation of a wide range of asset configurations under diverse technical and market conditions.

Highly Configurable Architecture

The tool is **fully adjustable and customizable**, allowing users to model:

- **Any type of Renewable Energy Source (RES)** (e.g., solar, wind, hydro)
- **Any type of Energy Storage System (ESS)** (e.g., lithium-ion, flow batteries, pumped hydro)
- **Hybrid RES-BESS systems**, including:
  - RES with integrated BESS (Regulatory categories 11A and 11B)
  - BESS co-located with RES at a common grid connection point (Category 11C)
- **Electrolyzers and flexible loads**, enabling modeling of demand-side flexibility and green hydrogen production

Market Participation Optimization

The core optimization engine models **optimal market participation** across multiple energy markets:

- **Day-Ahead Market (DAM)**
- **Intra-Day Market (IDM)**
- **Balancing Capacity and Balancing Energy Markets**

Supports **revenue stacking** across markets and evaluates:

- **Balancing market cannibalization effects**
- **Sensitivity to multiple market price scenarios**, including stochastic and stress-tested case

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Technical & Operational Parameterization

The tool supports detailed technical modeling, including:

- **Asset degradation curves** for both RES and BESS

- **Replenishment strategies** for storage systems (where applicable)

- **Limits on operating cycles** to preserve asset health

- **Static and dynamic curtailment modeling**

- **Custom operating schedules**, including seasonal and hourly constraints

Financial Modeling & Bankability Assessment

We Integrate technical and market outputs into a **financial model** tailored for investment and financing decisions:

- Calculates **IRR, NPV, DSCR**, and **payback period**

- Supports **stress testing** and **scenario analysis** for lender due diligence

- Generates **bank-ready business cases** with clear assumptions and risk buffers

Plexos Modelling Platform

In an interconnected world a regional view is absolutely necessary, we have therefore modelled the entire EU system with focus on the South-Eastern Europe, utilizing market analysis for BESS assessment

Greek energy market data

Power
- Demand
- Generation Plants
- Historical bidding strategies
- Market rules

Gas
- Gas imports at boundaries
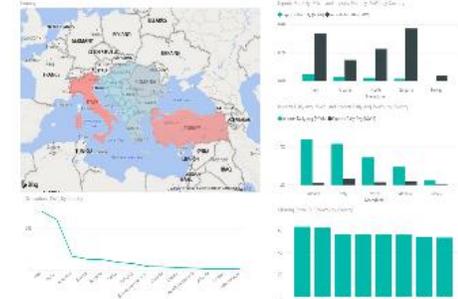- Gas infrastructure and non-PP demand

Regional energy markets data

- Power demand
- Power generation plants
- Power interconnectors
- Gas infrastructure and non-PP demand

Capturing of other parameters

- CO_2 emissions prices
- Fuel contracts
- Fuel prices (gas, nuclear, lignite, coal)
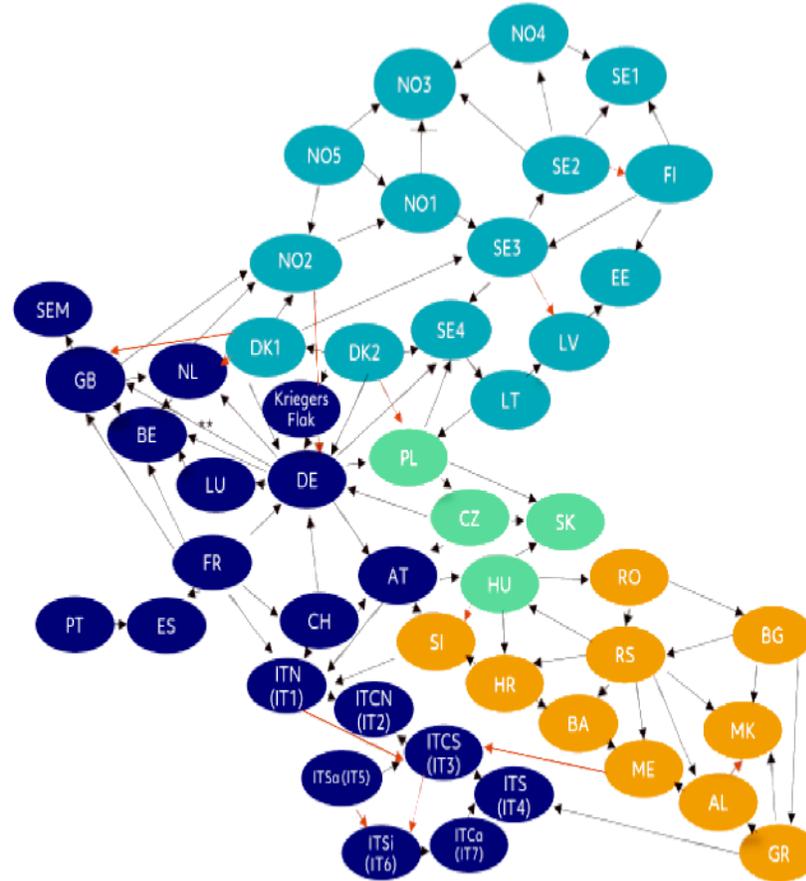
Reporting Dashboard
(Spatial and visual representation)

Indicatively

- Wholesale prices
- Power and Gas flows through interconnectors
- Generation Expansion and Adequacy studies
- Other indicators, as requested

The Grant Thornton Configurable Optimization Tool for RES & BESS Investment Analysis

Comprehensive Financial Models

Development of integrated financial models to support decision-making, integrating various mechanisms as required by the financial institutions.

Scenarios & Sensitivity Analysis

Evaluation of multiple business cases and stress-testing of key assumptions.

Strategic Insights

Clarification of model outputs into actionable insights for the client's management and stakeholders.

Bank Support

Provide assistance and support to the client in order to provide any clarifications and/ or additional information needed to the financial institutions.

Participation in Model Review

Participation as deemed necessary and requested by the client in meetings with the financial institutions within the course of the model review process.