

Show Case – October 2024

Valuation of co-located battery

Are you interested in the revenue potential of battery systems, possibly in combination with a renewable energy system such as PV??

Are you planning to invest in a battery system?

Do you need valid valuation results for upcoming financing discussions?

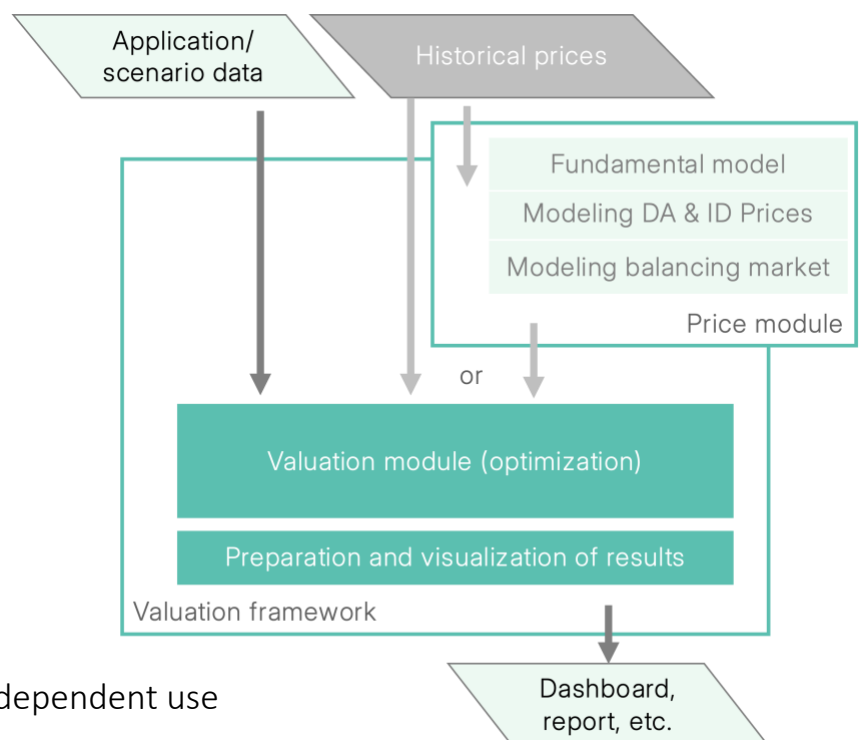
We determine the current and future revenue potential of co-located battery systems (or standalone) for you to support investment decisions.

We consider the following factors in the valuation:

- relevant markets, in particular with spot and balancing power products
- technical restrictions, such as number of full cycles, self-consumption and self-discharge
- site and system-specific feed-in of the photovoltaic system
- taxes, levies and surcharges
- forecasts based on published scenarios (e.g. TYNDP)

Modeling approach of the assessment framework

- Evaluation module as a multi-stage optimization model
- Historical prices or long-term price forecasts
- (optional) price module consists of
 - o Fundamental energy system model¹
 - o DA & ID prices module
 - o Control power module



Application and use

- Automated framework
- Frontend under construction for independent use

¹ From our partner [Maon – Market Simulation](#)



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Selected references:

E-Bridge Consulting <https://e-bridge.de/>

Energie und Wasser Potsdam GmbH <https://www.ewp-potsdam.de/>

Assumptions

- Storage specification: 1 MW, 2 MWh (90% overall efficiency)
- Photovoltaic specification: 2 MWp, south-facing, 15° tilt angle
- Location: Essen
- Shared grid connection: 1 MW
- Markets considered: Day-ahead and primary control reserve (FCR)
- Current year² and outlook 2030 and 2040 (according to TYNDP 2022, National Trends)
- Investment costs: 700 T€ (100 T€/MW and 300 T€/MWh)
- Interest rate: 4%
- Observation period: 15 years
- Investment end of 2024, revenues from 2025

Results

Key Performance Indicators (KPI's)

	Stand-alone	Co-located
Net present value	346 k€	387 k€
Internal rate of return	11.4%	11.8%
Static amortization period	7.2 years	7.1 years
Dynamic amortization period	8.6 years	8.4 years

Revenue potential

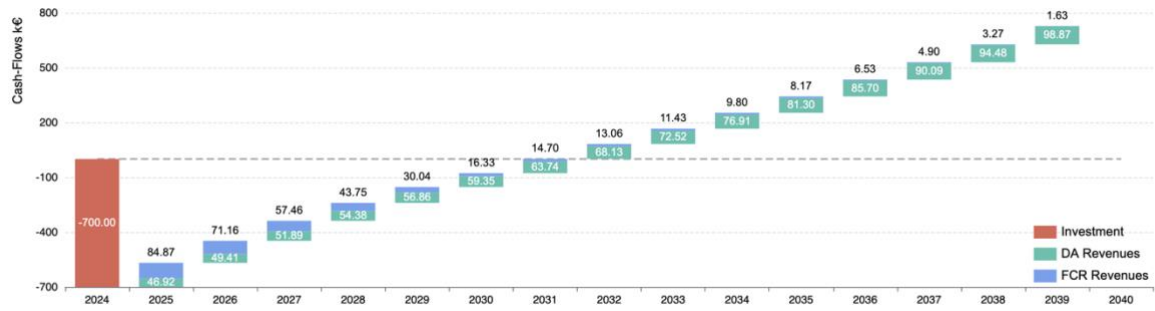
	Current year ²	2030– TYNDP22/NT	2040 – TYNDP22/NT
Total	156 k€	76 k€	103 k€
Day-ahead market	45 k€	59 k€	103 k€
Provision FCR	110 k€	16 k€	0 k€
Number of full cycles	467	566	881

² 01.07.2023 until 30.06.2024



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Cash flow over the observation period



Detailed view for exemplary period

