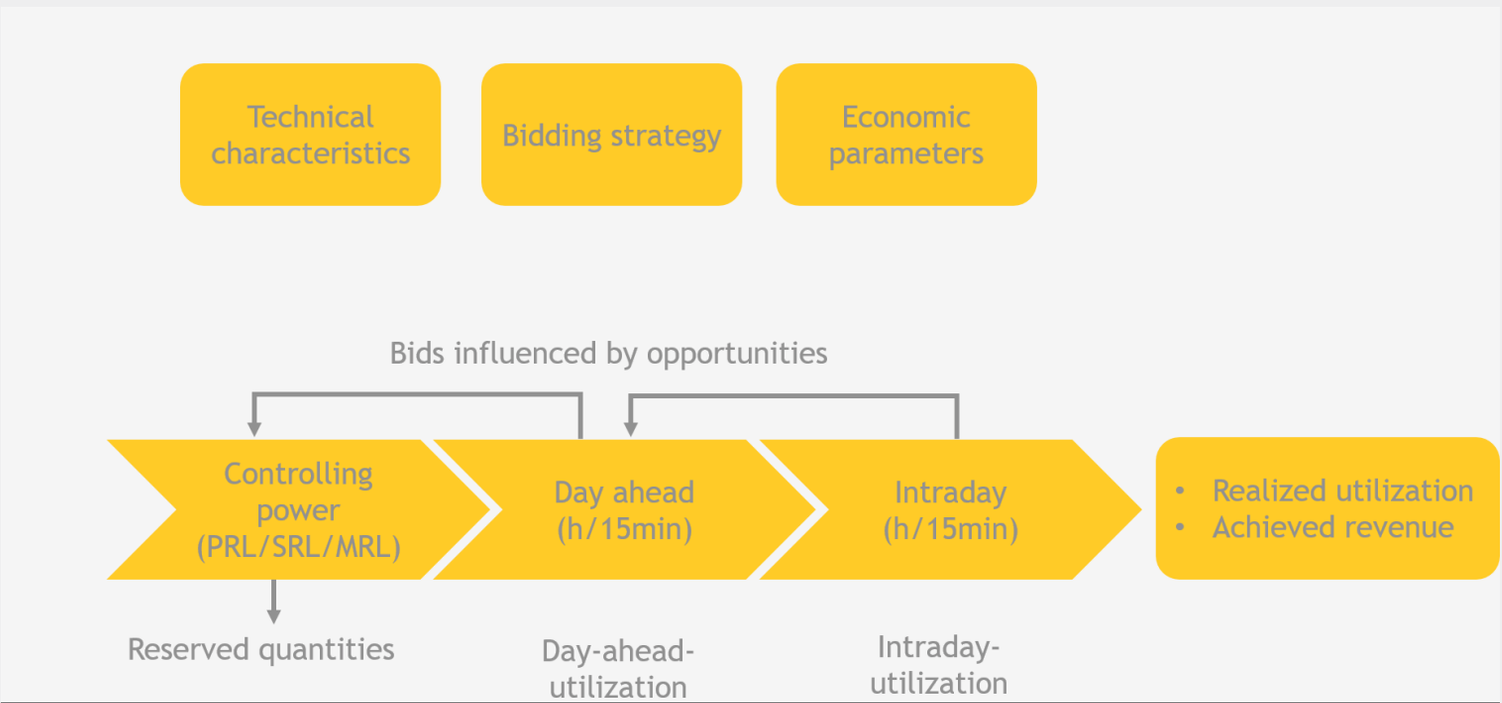
Energy Research & Scenarios

Exploring energy markets – enhancing decisions.

EASE

The Model

EASE (Electricity ASset Evaluation) enables the valuation of assets in electricity markets. It includes conventional (steam power plants), renewable (PV, wind and biomass) power plants, storage technologies (water, pump and battery storages) as well as demand and conversion technologies (industrial production plants, power-to-heat, heat accumulators, etc.) and virtual power plants. EASE optimizes the utilization of the assets on day ahead, intraday and control power markets and quantifies the corresponding revenues. The model takes into account both technical characteristics and economic parameters of the asset as well as price time series of the different electricity markets. Restrictions such as the needs to cover heat consumption or fermenters are explicitly considered in the model. The bidding strategies on the different markets are freely selectable, whereby collaterals by other assets or the utilization of the asset are represented in the portfolio. Variation of the bidding strategy, individual parameters or price developments can be simulated in different scenarios which allows for a comparison of the results.



Results of EASE are the offered quantities, the achieved contribution margins as well as the resulting utilization of the asset. The results are broken down by the different markets and available both in aggregated form, i.e. on an annual basis, and as a time series. Results can be presented in the form of developments over several years as well as in the form of aggregated revenues over a longer period of time.

Future price time series for day ahead, intraday and control power markets can determined fundamentally by means of the European electricity market model DIMENSION and fed into EASE via an interface.

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Applications

Revenue calculation in the short, medium and long term

EASE identifies future revenues of assets (renewable and conventional technologies as well as storages) on the different electricity markets.

Utilization

EASE creates a market optimal utilization of the assets with a detailed on a quarter hourly basis.

Analysis of flexibility options

EASE enables the analysis and valuation of revenue increases on the generation and consumption side.

Bidding strategies

EASE allows the verification of bidding strategies with a view to opportunities among the different markets.

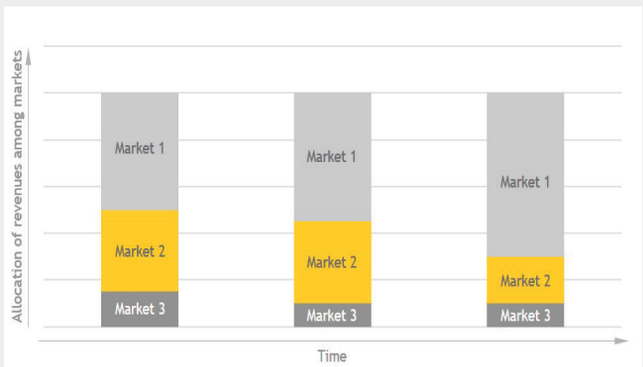

Figure 1: Composition of revenues over time

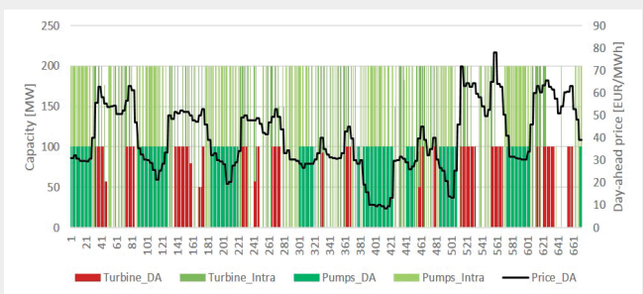

Figure 2: Exemplary utilization profile of an optimized storage on the day-ahead and intraday markets

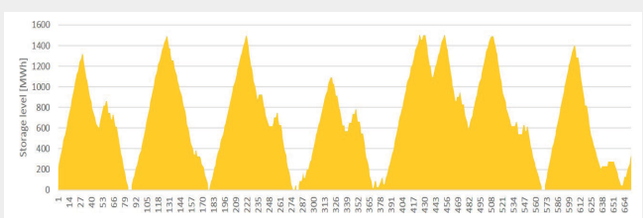

Figure 3: Storage infeed on a quarter-hourly basis

Have we sparked your interest? Please feel free to contact:
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