



Internship Proposal: Evaluating the Business Case of Battery Behind the Meter for Medium to Large Off-Takers

Background

irex Consulting is a business engineering consultancy company specialized in the energy & utility sectors. We are experts in tackling operational business challenges across the entire value chain – production, sourcing & trading, grids, and supply.

Assignment

As energy costs fluctuate and grid stability becomes a growing concern, businesses are increasingly exploring battery storage solutions to optimize energy consumption, reduce costs, and enhance resilience. Behind-the-meter (BTM) batteries offer significant value to medium and large off-takers by enabling peak shaving, load shifting, and participation in demand response programs. However, the financial viability of these investments depends on several factors, including load profile, energy price volatility, regulatory incentives, and evolving grid services markets.

This internship will focus on evaluating the business case for behind-the-meter battery storage solutions for medium to large off-takers. The research will assess key economic drivers, potential revenue streams, and risk factors associated with battery deployment in commercial and industrial settings. The goal is to develop a structured approach for quantifying the financial and operational value of battery storage, providing insights into investment feasibility and optimal use cases.

Through this research, the intern will gain valuable insights into:

- The impact of electricity price volatility and grid fee on the business case
- The impact of BTM battery technical parameters on the business case
- The role of regulatory incentives and market structures in shaping the business case
- By analyzing these factors, the findings will help energy consumers make informed decisions about deploying BTM batteries.

Objectives

- Develop an optimization model to determine the optimal size of a behind-the-meter (BTM) battery for energy cost management, considering factors such as load profiles, tariff structures, and grid service opportunities.
- Assess financial viability by quantifying cost savings, return on investment (ROI), and payback periods under different market scenarios and regulatory frameworks.
- Deliver a conclusive presentation to irex Consultants, enhancing their understanding of the BTM battery business case and its potential value propositions.

Preparation Material

- Relevant irex materials will be provided.
- "Monetizing Energy Storage: A Toolkit to Assess Future Cost and Value", Dr Oliver Schmidt and Dr Iain Staffell

Schedule Beginning of July -- End of August

Contact

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