

EUR24_XX - Battery Energy Storage and Optimization For Petroleum and Chemical industry

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Abstract:

We present a study on battery energy storage systems (BESS) in Petroleum and Chemical industry and Hydrogen production. Energy Optimization investigates benefits of integrating BESS to improve energy efficiency and optimize power use in hybrid systems combining grid power with solar and wind renewable generation. System Stability Simulations shows the impact of BESS integration on load balancing, peak shaving and peak tariff reduction. We also studied energy consumption, load forecasting and peak demand analysis. System Stability Simulations were carried out using industry-standard software to evaluate the impact of BESS.

This study contributes new insights into the practical applications of BESS in process industry hybrid systems, emphasizing energy optimization, system stability, and standby power reliability. The study provides a framework for the successful integration of BESS into existing infrastructure.