TURN ENERGY DATA INTO ACTION

NEXTera 360™

Commitment to Sustainability: Powering an Elite Academic Institution with Integrated Solar and Battery Storage to Reach 100% Renewable Energy

One of the world's oldest and most elite academic institutions aimed to reach net zero emissions by 2050, powered by 100% renewable energy. The goal centered on enhancing generative output and overcoming renewable energy production inconsistencies by adding battery storage.

> "There was no one else that could support our complex hybrid solar, and storage needs in such an accelerated timeframe."
>
> - University leader

Challenge

The addition of battery storage to the university's generation assets significantly increased the asset's complexity in four interconnected areas:

- Cost-effectively utilizing battery storage based on existing asset generative output and university load requirements.
- Optimally charging and discharging the battery to minimize supply disruptions while protecting asset longevity.
- Maximizing the return on trading activity.
- Complying with local market rules.
- Timeline: 3-month pilot

Solution

The first step was to engage the asset using system telemetry for visibility and predictive asset management. The project team utilized Asset Monitor for real-time monitoring to detect patterns of underperformance and address underlying issues. The next step was to design a dispatch strategy to optimize power output and usage in support of trading activity. The team developed and selected a trading strategy based on volumetric and

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price risk tolerances, while profit simulations were conducted for energy arbitrage in day-ahead and real-time markets.

Armed with renewable asset data and custom trading strategies, the team turned to Automatic Trader. The platform's energy trading solution used market, load, and generation forecasts to inform trading strategies that captured value between day-ahead and real-time markets. Automatic Trader ingested the asset data and newly designed trading strategy to generate automatic smart bids, recover maximum Federal Investment Tax Credits, participate in the CAISO Energy and Ancillary Services Markets, and comply with California Resource Adequacy Rules.

Result

» TIMELINE realized.

» FIRST academic institution to utilize hybrid renewable energy solar and storage capabilities in CAISO.

The university is using the project's success to accelerate plans for further renewable energy investments and place it on track to meet its net zero emissions goal for 2050.

About Us

Built on 15+ years of experience in energy optimization, data science, forecasting, and analytics, NextEra Analytics, Inc. (NEA), a subsidiary of NextEra Energy Resources, developed NextEra 360™ a comprehensive energy management software, designed to increase operational efficiency, reduce cost, and accelerate decarbonization no matter where you are in your clean energy journey. Swift and agile, NextEra 360 can be tailored to your site-specific operations and business objectives.

NextEra Energy Resources, together with its affiliated entities, is a clean energy leader, with approximately 27,400 MW of total net generating capacity in the U.S. and Canada, as of year-end 2022, and a world leader in battery storage and is driving the development of the green hydrogen economy. NextEra Energy Resources offers a wide range of clean energy solutions to help businesses and customers across the country meet their emissions reduction goals.

For more information, visit NextEra360.com.

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