

Case Study: Penske Piloting Battery Storage for EV Fleet Charging



Location

Ontario, CA

Facility Type

EV Fleet Charging Depot

Solutions

Energy Storage, Commercial
EV Charging

Stem Operational Date

January 2021

Energy Storage System Size

350kW / 800kWh

Site Peak Energy Consumption

40% Reduction

With transportation now accounting for the largest share of U.S. greenhouse gas emissions, electric vehicles (EVs) will be key to the clean energy transition. Several states and the federal government have announced funding to increase the number of EVs on the road, and California requires all new passenger cars and trucks to be emissions-free by 2035.

Penske Truck Leasing, a leading transportation logistics provider, is exploring the benefits of a battery energy storage system (BESS) at an EV fleet charging depot in California's Inland Empire. As part of a co-creation project with Daimler, the BESS infrastructure, along with the electric vehicle supply equipment (EVSE), was funded and installed through grants with the South Coast Air Quality Management District (SCAQMD) and the ports. This pilot program was a joint effort among several partners, including Stem.

“ We collaborated with Stem and other suppliers in designing and implementing the electric vehicle (EV) charging infrastructure. We then used Stem's Athena® smart energy software to optimize the electricity requirements associated with charging commercial electric trucks. We've been pleased with the initial results, and we continue to evaluate expanding the use of this AI-driven energy storage system as new charging positions equipped with supplemental battery storage are established.

Sean Yentsch

Vice President Facilities at Penske



Challenge

California regulations now require heavy-duty truck fleets to start transitioning to zero-emissions EVs in 2024. This has tremendous implications for companies like Penske, who must rethink logistics around fleet charging and management and develop an appropriate investment strategy. Further, the project encountered headwinds when the original software provider had difficulty optimizing the battery to deliver value.



Solution

Because software issues had hampered the project, Penske's first priority was finding a proven software solution that could deliver superior EV charging results. And because this was Penske's first foray into leveraging energy storage for EV fleet charging, it needed an expert partner to provide a turnkey experience. With our extensive track record, service dedication, and best-in-class Athena® software, Stem excelled across the board.



Results

To maximize project revenues, Athena first modeled battery performance and charging behavior under a range of potential tariffs. Now Athena optimizes EV charging while providing a real-time window into system operations for Penske. Since starting the pilot, smart energy storage has driven a 40% decrease in Penske's site peak energy consumption. Athena also ensures the project reduces GHG emissions in accordance with California's Self-Generation Incentive Program (SGIP). Perhaps most importantly, the project is informing Penske's long-term fleetwide EV charging strategy.

To learn more about Stem's solutions, contact stem.com/contact-us.