

## MOTIVE POWER CASE STUDY | CUSTOMER “B”

# GUARANTEEDPOWER® LEADS TO TREMENDOUS SAVINGS

### Situation

An engineer at a major player in the health and beauty industry was touring the facility of another company where he saw an Concentric installation. He then invited Concentric to come take a look at his facility.

During the initial meeting, the manager responsible for maintenance asserted that he had no issues with DC power. Everything was running effectively, he had three talented full-time people staffing his battery change room, and he was getting more than seven years of life from his batteries. At first glance, it really was a disruption-free and well-run operation.

However, an Concentric power study and fleet assessment revealed that though very effective, the DC power operation was not efficient. In fact, the assessment showed that a shift to opportunity/fast charging (charging the battery while still in the truck at times of opportunity such as lunch break) and Concentric’s remote monitoring systems could reduce the number of batteries in use. The company could move from approximately 350 batteries to 167, and they could still reach more than five years of life—that was two years beyond even the manufacturer warranty period.

Additionally, in collaboration with the lift truck supplier for the plant, Concentric showed that 95% of the lift truck fleet could be shifted to opportunity charging with one battery per truck. Productivity would improve as lift truck operators would no longer need to travel 20 to 30 minutes per day per truck to change their batteries. Further, the three battery room technicians could be moved to other positions in the plant.

## BY THE NUMBERS

Metric	Before	After
Facility Size	750,000 sq. ft	Same
Type of Operation	Manufacturing / Distribution	
No. of Lift Trucks	170	<b>147</b>
No. of Batteries	350	<b>167</b>
Size of Battery Room	190	<b>20</b>
(no. of spare batteries)		
No. of Battery Swaps	241	<b>0</b>
(non-swing per day)		
No. of Battery Swaps	40 daily	<b>11 daily</b>
(swing per day)		

**\$3,300,000**  
overall savings over the course of 60 months (58% savings)

## Challenge

There were few challenges that needed to be overcome before implementation.

- First was the challenge of high intensity swing reach truck operations. There were not many of these trucks, but they were critical to the plant's operation.
- Second, a significant amount of capital was required to change the AC electrical design in the plant to support charging distributed throughout the plant rather than in a central location. In a plant in excess of 750,000 square feet with 170 lift trucks, this was a significant consideration.
- Last, new high efficiency fast chargers were required to underpin the new DC power design in the plant. Further complicating the decision was the challenge of several existing staggered leases for existing power equipment.

## Solution

This was a major shift in management of DC power for the plant, and the final agreement to move forward did not come quickly. The management team justifiably had many questions.

To answer these challenges, Concentric and the lift truck supplier conducted a series of demonstrations to show that opportunity charging was feasible. With the optimal charge curves, the intensive swing reach applications could reliably operate with battery changing only once per day.

Concentric developed the complete installation and AC electrical plan for the entire facility and demonstrated its credentials to manage an installation of this magnitude. Under its GuaranteedPOWER® solution, operational uptime and cost of ownership parameters were absolutely guaranteed. Finally, Concentric worked out a plan to phase into the existing leases already in place.

## Results

In 2014, the massive installation was executed with no disruption to the plant's ongoing operations, and the shift to a lower cost of ownership approach commenced.