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Automotive and RV aftermarket manufacturer slashes battery maintenance costs with NexSys® TPPL (Thin Plate Pure Lead) technology

Case Summary

To avoid lift truck battery maintenance tasks in a key Distribution Center (DC), an automotive and Recreational Vehicle (RV) aftermarket manufacturer had been paying its battery supplier a significant premium to handle the job for them. Based on the results of a power study from EnerSys®, the DC is in the process of switching its lift truck fleet from flooded lead acid batteries to NexSys® TPPL (Thin Plate Pure Lead) batteries. With this shift to TPPL technology, the manufacturer is virtually eliminating the need for battery maintenance and is on track to save up to \$35,000 over the next three years.

Customer background and situation

Operating several locations across North America and Asia, this aftermarket manufacturer offers a range of automotive and RV accessories. One of its North American DCs keeps products moving with a fleet of 80 electric lift trucks comprised of Class I, II and III vehicles.

Prior to working with EnerSys®, the DC had been powering its lift truck fleet with flooded lead acid batteries. As part of a three-year lease term, the company was paying its battery supplier a significant sum upfront to handle all of the flooded lead acid fleet's maintenance requirements, which are substantial in terms of time and labor.

Looking for a lower-maintenance, lower Total Cost of Ownership (TCO) solution, the company looked to EnerSys® for alternate battery recommendations. EnerSys® suggested that the DC undergo a power study that would assess the facility's specific lift truck fleet usage and power requirements. Company management agreed and had the DC team work with EnerSys® to collect the necessary operating data – see **Exhibit 1**.

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Application Information

- Shift details – 2 8-hour shifts
- Days per week – 5
- Weeks per year – 50

Lift Truck Information

- Annual truck hours – 2,000
- Amp hour (Ah) consumption per day – 800

EnSite™ Modeling Software Feasibility and Project Financial Report

EnerSys® entered the power study data into its EnSite™ modeling software. This proprietary program applies an end-user's specific operating parameters and power requirements to generate reports that compare battery chemistries and identify the battery solution with the lowest TCO.

The EnSite™ software quantified the annual maintenance costs of the DC's flooded lead acid battery fleet. Flooded batteries have regular watering and equalization charging requirements that are time-consuming and labor-intensive, both of which the DC was paying for as a capital expense (CAPEX) of \$20,000 per year.

The EnSite™ software produced a Feasibility Report that recommended a switch from flooded lead acid batteries to NexSys® TPPL (Thin Plate Pure Lead) batteries. TPPL technology never requires watering or long equalization charges, and allows for the batteries to be fast- and opportunity-charged. EnSite™ software also generated a Project Financial Report outlining potential Return on Investment (ROI), plus annual and three-year savings (see **Exhibit 2**).

To complement the EnSite™ software assessments, EnerSys® also conducted an onsite demonstration of the TPPL batteries so the DC team could see how they would perform on the warehouse floor.

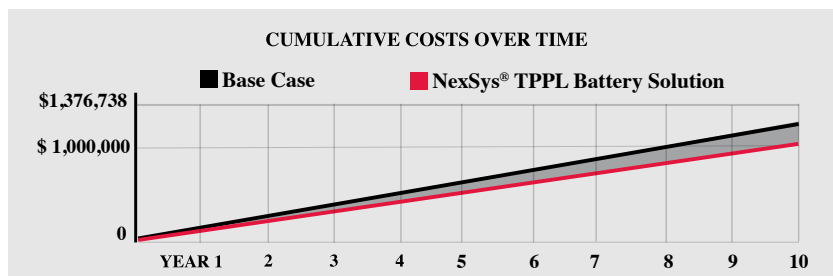
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Exhibit 2 Projected Return on Investment

	NexSys® TPPL Battery Solution	Base Case	
Equipment Investment Summary ANNUAL	\$84,688.80	\$76,080.00	+ \$8,608.80
Fuel/Energy Expense ANNUAL	\$16,261.28	\$16,261.28	\$0.00
Maintenance Expense ANNUAL	\$2,000.00	\$20,000.00	- \$18,000.00
Additional Expenses* ANNUAL	\$0.00	\$720.00	- \$720.00
Additional Expenses* PROJECTED	\$0.00	\$1,666.68	- \$1,668.68
Total Annual Benefit			\$11,777.88
Timeline for ROI**			Immediate
Annual TCO Savings			10.27%
Projected Savings Over Ten Years			\$117,778.80

* Additional expenses represent current operational expenses as identified and outlined by the customer represented in this case study and are not the responsibility of EnerSys®.

**Savings apply solely to the customer represented in this case study. Immediate results are not guaranteed and subject to change. ROI results are based on specific customer provided data.



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TPPL Battery Implementation

The DC team was equally impressed by the projected CAPEX savings and the onsite demonstration, and the company placed its first order for NexSys® TPPL batteries – 20 battery units supported by 20 chargers. Upon product delivery, EnerSys® worked with the DC team onsite to ensure that all charger settings were properly calibrated and trained operators on the importance of frequent opportunity charging plug-ins.

Following its initial TPPL installation, the DC has since purchased an additional 20 NexSys® TPPL batteries. Half of its lift truck fleet is now powered by TPPL technology, and the DC intends to convert the remaining 40 vehicles to NexSys® TPPL batteries as the flooded lead acid battery leases expire over the next 18 months.

Case Conclusion

With the company's ongoing switch from flooded lead acid batteries to NexSys® TPPL (Thin Plate Pure Lead) batteries, the manufacturer is benefiting from the productivity associated with operating with virtually maintenance-free batteries while eliminating a \$20,000 maintenance CAPEX premium. According to battery operating data collected at the time of this writing, the TPPL batteries initially purchased are on track to deliver the savings projected by the EnSite™ software Feasibility and Project Financial Report of up to \$11,778 annually and \$117,779 over ten years. Overall savings are projected to increase as the DC continues to transition its full lift truck fleet to TPPL technology.