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Global furniture maker goes with NexSys® TPPL (Thin Plate Pure Lead) technology for its new manufacturing site

Case Summary

As a leading furniture maker prepared to open a greenfield manufacturing site, the company sought a lower maintenance, lower cost option than flooded lead acid batteries to power the new facility's lift truck fleet. After reviewing the results of a power study conducted by EnerSys®, the manufacturer selected NexSys® TPPL (Thin Plate Pure Lead) batteries. The decision will help the new site virtually eliminate battery maintenance and save up to approximately $500,000 over five years.

Customer background and situation

Backed by almost a century of success, this global manufacturer produces and distributes recliners, reclining sofas and love seats, sleep sofas, modular furniture, leather upholstery and much more.

To support this product range, the company operates more than a dozen manufacturing plants and distribution centers throughout the U.S. and Mexico. For its new flagship facility, company management wanted to avoid the costly maintenance and operating issues associated with flooded lead acid batteries. These include labor-intensive watering requirements, as well as the need for frequent battery changeouts.

To help the company find a solution, the lift truck dealer that would be outfitting the new facility arranged a webinar presentation from EnerSys® on NexSys® TPPL batteries. Interested in the potential benefits of TPPL technology, the company next agreed to have EnerSys® conduct a power study that would compare the costs and benefits of the NexSys® TPPL batteries versus flooded lead acid batteries. The key operating data collected for this study are highlighted in **Exhibit 1**.

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Application Information

- Shift details – 1.5-2.0 8-hour shifts
- Days per week – 5-6
- Weeks per year – 260

Lift Truck Information

- Sit down lift trucks, turret trucks and order pickers
- Annual truck hours – 1,700 – 2,000
- Amp Hours (Ah) consumption per day – 400

EnSite™ Modeling Software Feasibility and Project Financial Report

EnerSys® entered the power study data into its EnSite™ modeling software, a proprietary program that applies an end-user's specific operating parameters and power requirements to generate reports comparing battery chemistries and costs.

This EnSite™ software report assessed the power demands of 9 vehicles in the facility's fledging fleet – 5 sit down lift trucks, 2 turret trucks and 2 order pickers – then compared the costs of meeting those demands with NexSys® TPPL batteries and NexSys®+ chargers versus flooded lead acid batteries with standard chargers.

The maintenance and operating cost differences were pronounced, primarily because NexSys® TPPL batteries offer two essential advantages over flooded lead acid batteries. Thanks to their TPPL design, they never require watering maintenance. They can also be opportunity charged in short time increments, eliminating the need for labor-intensive change-outs with every shift, and they do not require lengthy equalization charges. By eliminating these maintenance requirements, NexSys® TPPL batteries would deliver an estimated savings of $55,280.00 versus the flooded batteries (see "Maintenance Expense ANNUAL" in **Exhibit 2**)

The charging speed and energy throughput of TPPL technology also meant that one NexSys® TPPL battery could replace two standard flooded batteries and charge more energy efficiently, which would enable a cut in electricity costs of more than $33,000 (see "Fuel/Energy Expense ANNUAL" in **Exhibit 2**).

After weighing all of the variables, the EnSite™ software produced a Feasibility Report recommending the installation of NexSys® TPPL batteries. EnSite software also generated a Project Financial Report outlining Return on Investment (ROI), plus annual and potential five-year savings (see **Exhibit 2**).

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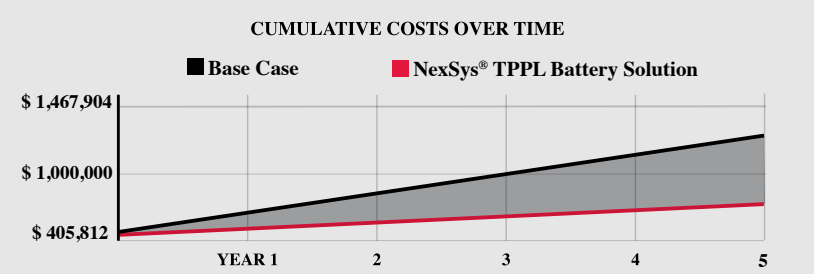
Exhibit 2 Projected Return on Investment

	NexSys® TPPL Battery Solution	Base Case	
Equipment Investment Summary ANNUAL	$81,162.36	$85,498.32	**- $4,335.96**
Fuel/Energy Expense ANNUAL	$12,002.87	$45,752.94	**- $33,750.09**
Maintenance Expense ANNUAL	$51,720.00	$107,000.00	**- $55,280.00**
Additional Expenses* PROJECT	$0.00	$6,399.96	**- $6,399.96**
Total Annual Benefit			**$99,766.01**
Timeline for ROI**			**Immediate**
Projected Savings Over Five Years			**$498,830.05**

*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

Convinced by the EnSite™ modeling software numbers and the inherent advantages of TPPL technology, the company purchased 9 NexSys® TPPL batteries and 9 NexSys®+ battery chargers to power the new facility's lift truck fleet.

Following product delivery, EnerSys® worked with the facility's team to ensure that charger settings were properly calibrated and trained operators on TPPL opportunity charging protocols. The NexSys® TPPL batteries proved so successful that the manufacturer intends to implement them at other facilities, and asked EnerSys® to conduct additional EnSite™ software power studies to quantify the corresponding TCO advantages.

Case Conclusion

By choosing NexSys® TPPL batteries to power the lift truck fleet at its new flagship facility, the furniture maker is avoiding the more labor- and cost-intensive operation of flooded lead acid batteries. With no watering maintenance and battery change-outs requirements, the facility can operate with greater productivity than flooded batteries would have otherwise allowed. The TPPL solution is on course to deliver the savings projected by the EnSite™ software Feasibility and Project Financial Report – $99,165.99 in the first year of operation and $498,828.34 over five years.