



# TRIED AND TESTED ENERGY STORAGE SOLUTIONS

FOR THE INDUSTRIAL  
AND UTILITIES SECTORS

**Utility Usman**  
Our batteries do not get the spotlight 🌟

**Unleash Your Power Potential**

If your current system can't meet the demand, it's time to go green.

**Unleash Your Power Potential**

Our batteries can support you with no watering required and have a design life of up to 20 years at 20% / day.

**Unleash Your Power Potential**

Are you still treating batteries like passive backups?

**Unleash Your Power Potential**

Our TPPL technology provides stable, high-rate output to protect critical infrastructure when it matters most 🌟

**Maintenance Malik**  
We require fewer truck rolls, longer life and cleaner lifecycle 🌱

**Engineer Elana**  
What battery guidance can u suggest with managing Black start procedures?

**Sustainability Sue**  
Sounds like sustainability without performance trade-offs! 🌟

**Unleash Your Power Potential**

Equipment protection starts with stable power.

**Reliability**  
Our legacy batteries often can't supply the power needed to restart generation or reclose breakers during restoration 🌟

**Unleash Your Power Potential**

Hey, ESG: Reliability. Black Start. Can your batteries keep up?

**Transmission Thierry**  
That's just the solution required.

**Transmission Thierry**  
During momentary outages or low voltages, environmental equipment like:  
- Digital relays  
- RTUs  
- SCADA controllers  
...can fail when our batteries can't deliver steady power 🌟

**Unleash Your Power Potential**

...and there's even more! TPPL batteries reduce site visits and Scope 1 emissions, use less energy on float (lowering Scope 2) and offer 99% recyclability to support ESG and circular economy goals 🌟

**Rebuilding Roshan**  
How can I explore how utilities are modernizing their battery systems to support intergrated, more flexible operations, and meet generation industrial demand?

**Energy Storage Pathways to Net Zero** .pdf

**UNLEASH YOUR POWER POTENTIAL**

## INTRODUCTION

### - THE ESSENTIAL ROLE OF BATTERIES IN INDUSTRIAL AND UTILITY PLANTS

From pharmaceutical, petrochemical, and food and beverage facilities to water treatment plants and electricity sub-stations, batteries are vital for power provision across the industrial and utilities sectors worldwide.

These tried and trusted energy sources are renowned for their reliability, flexibility and sustainability. They support uninterruptible power supply infrastructure that keeps businesses running during power outages, which can render critical equipment inoperable for extended periods. Even relatively short outages can cost companies thousands of dollars an hour in lost revenue and productivity.

Batteries also play a role in providing a more decentralized energy mix. They help integrate renewable energy from unpredictable sources such as wind farms, providing an effective means of energy storage for demand reduction during peak hours, lowering electricity costs.

Many industrial and utility companies also use batteries to support adopting more electric technologies. Their flexibility means they can be found powering electric forklifts in warehouses and factories and ensuring the continuous operation of automated control systems in remote utility substations, which are critical for monitoring and managing the distribution of electricity across vast networks.

Consequently, the battery market in utilities and industrial applications has grown substantially in recent years, and this adoption curve is likely to keep climbing.

## ANSWERING THE POWER NEEDS OF INDUSTRIAL AND UTILITY END USERS

ENERSYS OFFERS A BROAD PORTFOLIO OF RELIABLE, SCALABLE AND LOW-MAINTENANCE BATTERY SYSTEMS FOR INDUSTRIAL AND UTILITY ORGANIZATIONS.

The EnerSys® advantage means:

High-quality batteries with field-proven reliability in the harshest conditions

Constructed in modern, highly-automated, energy-efficient plants

An unrivalled mix of pure lead solutions, including flooded and valve-regulated

High power density for smaller footprint installations in space-constrained sites

Long-lasting, low maintenance operation that lessens the need for servicing and therefore reduces 'truck roll' visits to site

Complete solutions, including enclosures, charging systems, racking and spill containment – all from a single point of contact

**Even relatively short outages can cost companies thousands of dollars an hour in lost revenue and productivity.**

## HOW ENERSYS® CAN HELP MEET YOUR POWER CHALLENGES

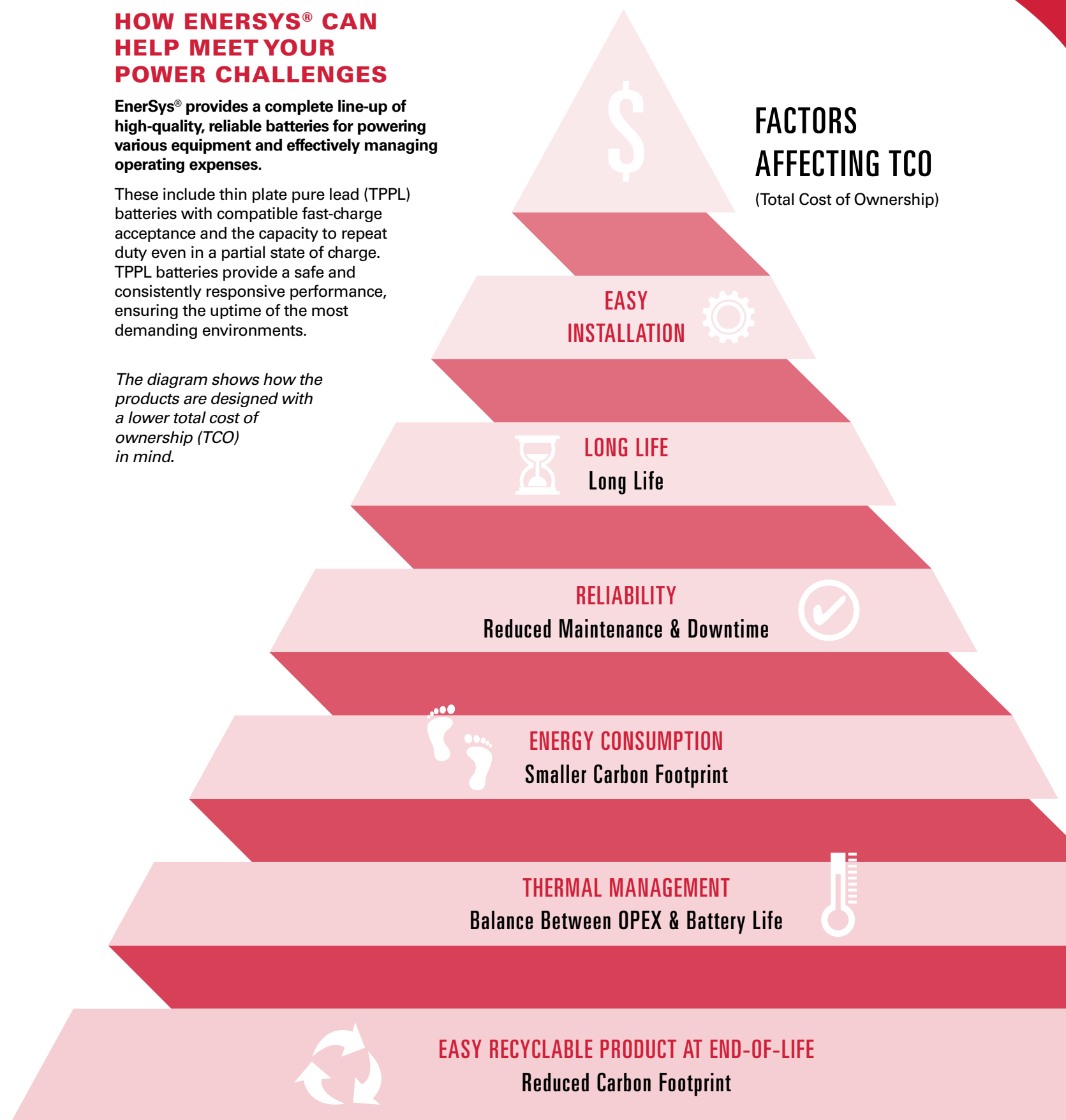
EnerSys® provides a complete line-up of high-quality, reliable batteries for powering various equipment and effectively managing operating expenses.

These include thin plate pure lead (TPPL) batteries with compatible fast-charge acceptance and the capacity to repeat duty even in a partial state of charge. TPPL batteries provide a safe and consistently responsive performance, ensuring the uptime of the most demanding environments.

*The diagram shows how the products are designed with a lower total cost of ownership (TCO) in mind.*

## FACTORS AFFECTING TCO

(Total Cost of Ownership)








# FLEXIBLE, RELIABLE & SUSTAINABLE POWER




Industrial and utility plants need reliable batteries with high energy density.

Pure lead batteries such as **Thin-Plate Pure Lead (TPPL)** are proven solutions for essential installations and meeting end-user needs.

## FLEXIBILITY

-  Suitable for various applications, including mission-critical backup.
-  High energy density for a smaller footprint in space-constrained facilities.
-  Excellent charge acceptance for **faster recharge.**




## SUSTAINABILITY

-  Designed to mitigate electrolyte water losses, eliminating the need for topping up.
-  Lower maintenance requirements cut the need for 'truck roll' visits to site.
-  The three main components—lead, plastic, and acid—are

**100% recyclable.**

These state-of-the-art batteries offer a unique combination of high performance and long service life.

## RELIABILITY

-  Made from durable high-purity lead, slowing down the corrosion process.
-  Built to operate across a wide temperature range and seismic tested to IEEE 693.
-  Longer service life, with change-outs typically recorded at **8-9 years.**

## INTRODUCING POWERSAFE® VALVE REGULATED LEAD-ACID (VRLA) BATTERIES WITH TPPL TECHNOLOGY

Designed specifically for the industrial power and utilities sectors, PowerSafe® battery ranges with advanced TPPL technology, let you select the perfect solution for your application. These state-of-the-art batteries offer a unique combination of high performance and long service life, with the following end user benefits:

### Operational Resilience in Extreme Conditions

The recommended operating temperature for maximum life and performance is 20°C (68°F). However, TPPL batteries can work in temperatures ranging from -40°C (-40°F) up to +50°C (122°F).

### Long-lasting performance in the field

The purity of materials used in manufacturing TPPL batteries results in a very low rate of self-discharge, allowing them to last up to two years at 20°C (68°F) before recharging.

### Fully optimized for Charging Efficiency

TPPL batteries are designed and optimized for continuous float operation, which is a safe and efficient method of charging VRLA batteries and, therefore, recommended. Float voltage compensation reduces the charging current as battery temperature increases and partially mitigates the adverse effects of high temperature.

### Support for High-Demand and Rapid Turnaround Applications

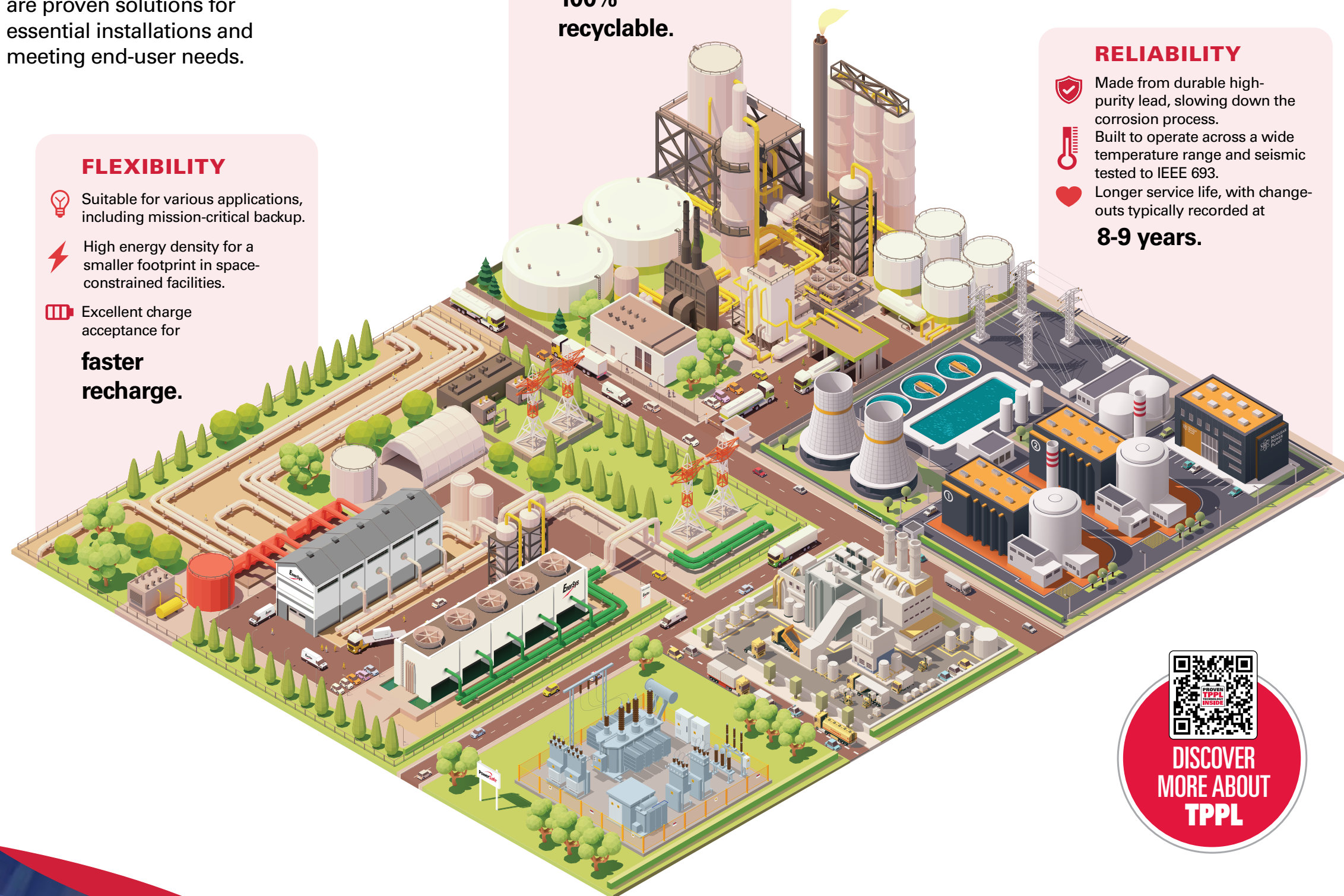
TPPL technology ensures inherently high charge acceptance and is suited for industrial power and utilities applications that require a fast time to repeat duty. As with float charge, temperature compensation for voltage applies to fast charge techniques. Once fully charged, the voltage can be changed to float voltage with temperature compensation as required.

### Durability for High-Cycle Environments

TPPL batteries offer longer cycle life compared to traditional VRLA batteries. Through innovation in plate design, electrolyte composition, and manufacturing processes, these batteries can withstand a higher number of charge-discharge cycles without significant degradation in performance. This makes them ideal for applications requiring frequent cycling and deep discharges, such as renewable energy storage and grid stabilization.

### Ease of Use with Reduced Upkeep Costs

TPPL batteries require minimal upkeep compared to traditional VRLA batteries. They are designed to eliminate the need for electrolyte maintenance, such as topping up with deionized water, reducing the risk of electrolyte leakage or spillage. This results in lower operational costs and increased reliability for end-users.



DISCOVER  
MORE ABOUT  
TPPL



## THREE OF THE BEST

– MORE DETAIL ON OUR POWERSAFE® BATTERY SOLUTIONS



### POWERSAFE® SBS XL 2V AND 12V BATTERY RANGES

PowerSafe® SBS XL 2V battery range provides industrial and utility end users with exceptional performance in high-temperature environments and extended operational life, which significantly reduces the frequency of battery replacements.

- **Large Ah capacity within a classic DIN-size design.**
- **Low maintenance**
- **Self-regulating pressure relief system**
- **Dual-seal terminal design to prevent leakage**

The batteries are manufactured to be non-spillable and are recognized for their safety and compliance with international transport regulations. Their ability to be installed on existing stands minimizes capital expenditure, making them a cost-effective upgrade for stable grid float applications.

PowerSafe® SBS XL 12V battery range is distinguished by its front terminal monoblocs, designed for ease of installation and maintenance, making them particularly suitable for the utility and industrial sectors.

- **20 year design life at 20°C (68°F)**
- **Robust construction with corrosion-resistant materials**
- **Leak-resistant dual-seal terminal design**
- **Durable and safe – even in high-temperature environments.**

The PowerSafe® SBS XL 12V battery range has a compact design with high energy density, allowing for efficient use of space. The batteries can be installed close to the point of use without a separate battery room, further reducing capital expenditure.



### POWERSAFE® SBS XC+ BATTERIES

PowerSafe® SBS® XC+ batteries offer 2V DIN-size cells and 12V front terminal blocs, catering to various cyclic applications such as off-grid hybrid, unreliable grid, and renewable energy systems. This range is engineered with advanced carbon chemistry combined with TPPL technology, enhancing energy throughput and cyclic performance.

- **Fast recharge capability**
- **Resilience against deep discharge**
- **High cyclic performance suitable for renewable energy and unreliable grids.**
- **Excels in environments with partial state of charge, reducing generator runtime, fuel consumption, and maintenance costs – contributing to lower operational expenses and C<sup>o</sup>2 emissions.**

The PowerSafe® SBS® XC+ battery range delivers a competitive TCO through durability, fewer replacements, and operational cost savings, making it the perfect choice for sustainable and cost-effective power solutions in industrial and utility applications.



### POWERSAFE® SBS EON TECHNOLOGY BATTERIES

PowerSafe® SBS EON Technology battery range provides exceptional cyclic performance and fast charge acceptance, making it highly suitable for demanding large-scale UPS and off-grid energy storage applications.

- **Long design life of 15 years at 20°C (68°F)**
- **Capacity range of 62 - 3900Ah, catering to a wide array of energy requirements, superior cyclic performance**
- **Fast charge acceptance for reliable power delivery**
- **High energy density for efficient space utilization and resilience to extreme temperatures and conditions.**
- **Front terminal designs provide easy installation and inspection**
- **Industry-leading capacities in DIN container sizes for the 320 - 3900 series**

The PowerSafe® SBS EON Technology battery range offers superior energy and power, high performance and proven reliability. Ideal for the hottest and harshest operating environments, these batteries offer exceptional durability and performance for critical utility and industrial applications.



### WHY ENERSYS®?

ENERSYS® OFFERS A BROAD PORTFOLIO OF RELIABLE, SCALABLE, AND LOW-MAINTENANCE BATTERY SYSTEMS THAT PROVIDE THE RIGHT-SIZED BACKUP POWER FOR INDUSTRY AND UTILITIES, WHATEVER THE APPLICATION. OUR PRODUCTS ARE MADE IN FIRST-CLASS FACILITIES TO THE HIGHEST STANDARDS AND BACKED BY SUPERIOR AFTERMARKET CARE.

EnerSys® can support your battery power projects from start to finish, with knowledgeable and experienced technical teams overseeing conception and installation, on-site maintenance, and after-sales service. Our outcome-focused battery specialists are recognized experts in sizing and battery chemistry and are adept at finding the best battery solution.



**ARE YOU  
READY  
TO BUY?**

## ABOUT ENERSYS

To learn more about EnerSys  
please visit: [www.enersys.com](http://www.enersys.com).

## SUSTAINABILITY

To learn more visit:  
<https://www.enersys.com/en/about-us/sustainability>.

**UNLEASH**  
**YOUR POWER**  
**POTENTIAL**



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