

EnerSys[®]

Power/Full Solutions



GLOBAL LEADER

in stored energy solutions for industrial applications

motive power | reserve power | aerospace & defense

A close-up photograph of two hands shaking, symbolizing agreement or partnership. The image is overlaid with a semi-transparent red filter. The text is centered over the hands.

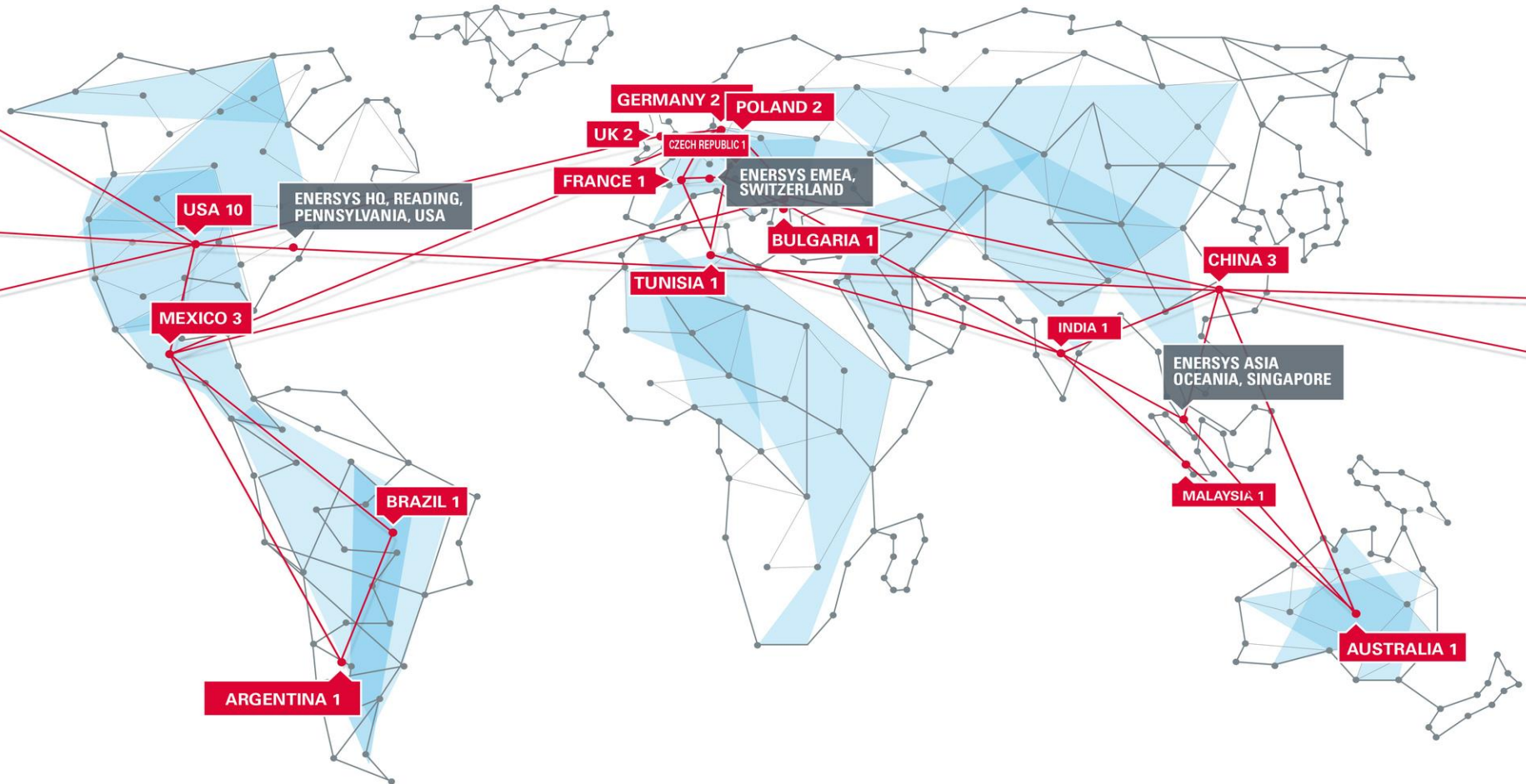
over **10,000**
customers in more than
100 countries

approximately
9,400
employees worldwide

125
over
years experience

\$2.3 billion
sales in fiscal year 2016

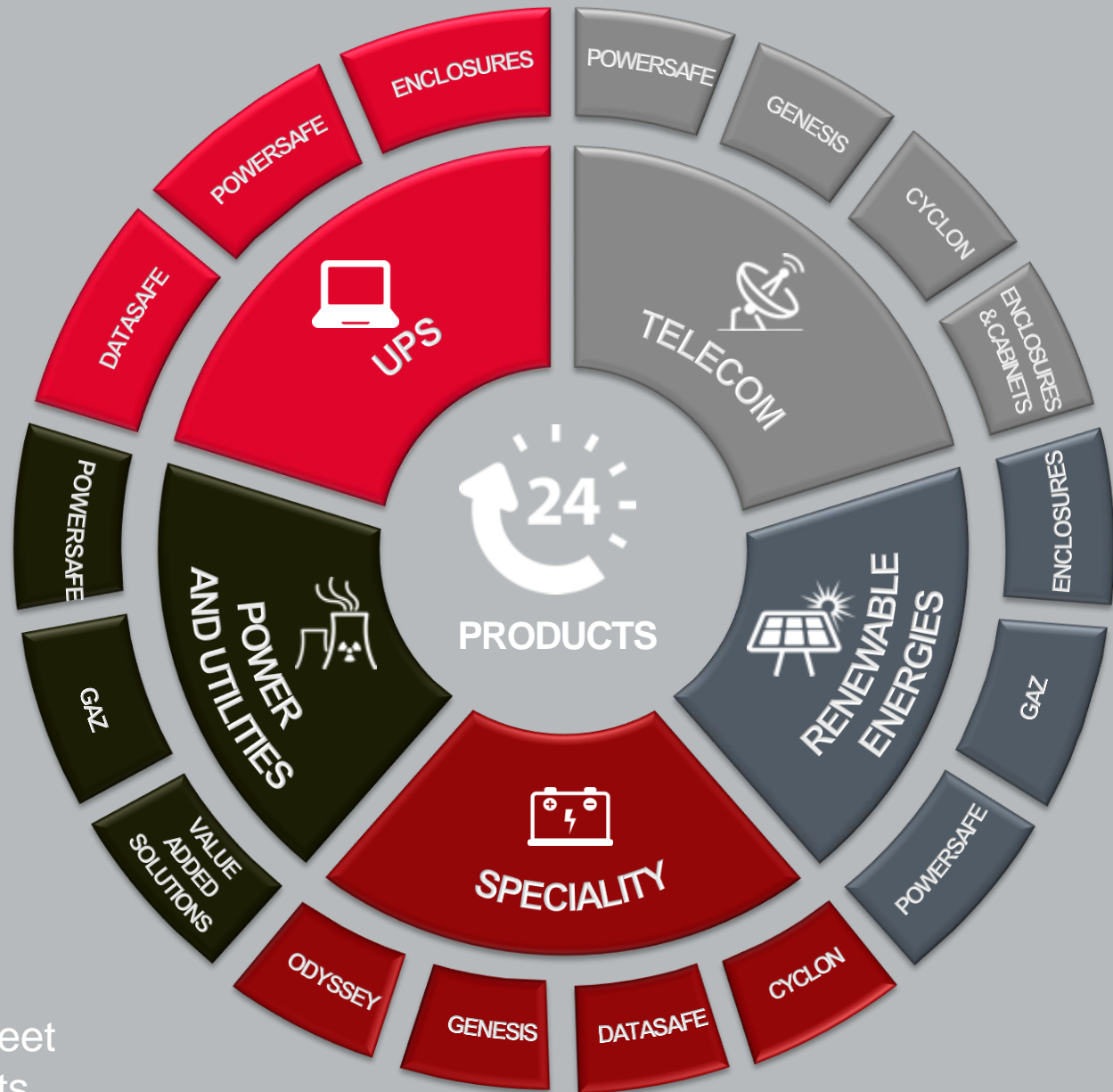
Advanced manufacturing and distribution capabilities



WORLD

renowned brands

PowerSafe® data safe® genesis® ODYSSEY® BATTERY CYCLON®



solutions

advanced technology to meet
our customers requirements

EnerSys

Power/Full Solutions



POWER to dream



PowerSafe®

data safe®



Mission-critical power



Datacentres

- Datacentres
- IT Systems
- Banking & Finance
- Process Industries
- Healthcare



Industrial UPS

- Oil & Gas
- Switchgear
- Distribution Substations
- Industrial Substations
- Process Industries
- Railways & Metros
- Air Transport



Standard UPS

- Datacentres
- Power Quality
- IT Systems
- Banking & Finance
- Process Industries
- Healthcare



for the modern Datacenters

DataSafe[®] XE

- Specifically designed for 5 minutes or less high-rate discharge applications
- 1010, 1109 & 1150 Watts per cell sizes (5 min. rate to 1.67Vpc at 25°C)
- Long life at elevated temperatures
- Fast recharge times reduce impact of multiple AC outages
- Low energy consumption compared to traditional VRLA AGM batteries
- Front terminal design for ease of installation and maintenance



UPS and mission-critical back-up

DataSafe[®] HX+

- Specifically designed for UPS and mission-critical back-up power applications
- Class-leading power density
- Reduced energy consumption
- 10-12 year design life at 20°C
- Low total cost of ownership



suitable for harsh conditions

PowerSafe[®] SBS EON Technology[®]

- Long design life
- High energy density
- UL94 V-0 rated flame retardant ABS plastic
- Up to two year storage life
- Fast charge capability



worldwide UPS reputation

PowerSafe® V (Front Terminal)

- Front Terminal connections for fast and easy installation and maintenance
- Suitable for 19", 23" and ETSI racking
- UL94 V-0 flame retardant case and lid
- Worldwide reputation for UPS backup
- Capacity range 31-190 Ah



worldwide UPS reputation

PowerSafe® V (Top Terminal)

- Capacity range 31-190 Ah
- Available in 2, 4, 6 and 12 volt units
- UL94 V-0 flame retardant case and lid
- Designed for a wide range of applications
- High reliability
- Proven long service life



protect your investment

UPS Cabinets

- Robust welded metallic structure
- Fast and easy installation: removable shelves and panels
- Factory pre-wired
- Heavy load (400kg) bearing shelves
- Superior ventilation ensured by air vents on all panels and cabinet top
- Your one-stop shop solution





PowerSafe® genesis® CYCLON®
POWER to communicate



challenging times in telecom



EnerSys provides you with optimised solutions to reduce your energy consumption and promote the longest battery life.



Today's telecom companies are under extreme pressure to improve operational efficiencies and reduce OPEX and CAPEX.



Innovative, reliable battery and site solutions from EnerSys promotes lower Total Cost of Ownership.





telecom market - looking ahead

- Total mobile telecom revenues exceeded \$1 trillion in 2015
- 1400+ operators, 4400+ networks, 65 Groups, 237 Countries
- By 2020 90% of the worlds population age 6 and up will have a phone
- Estimated 390,000 telecom towers will be deployed in off grid locations, and 790,000 in bad-grid locations by 2020





expertise in grid conditions



Reliable grid

- Stable reliable grid, stable ambient temperature, compensation to float voltage for any temperature fluctuation. No or very little cyclic use.



Unreliable Grid

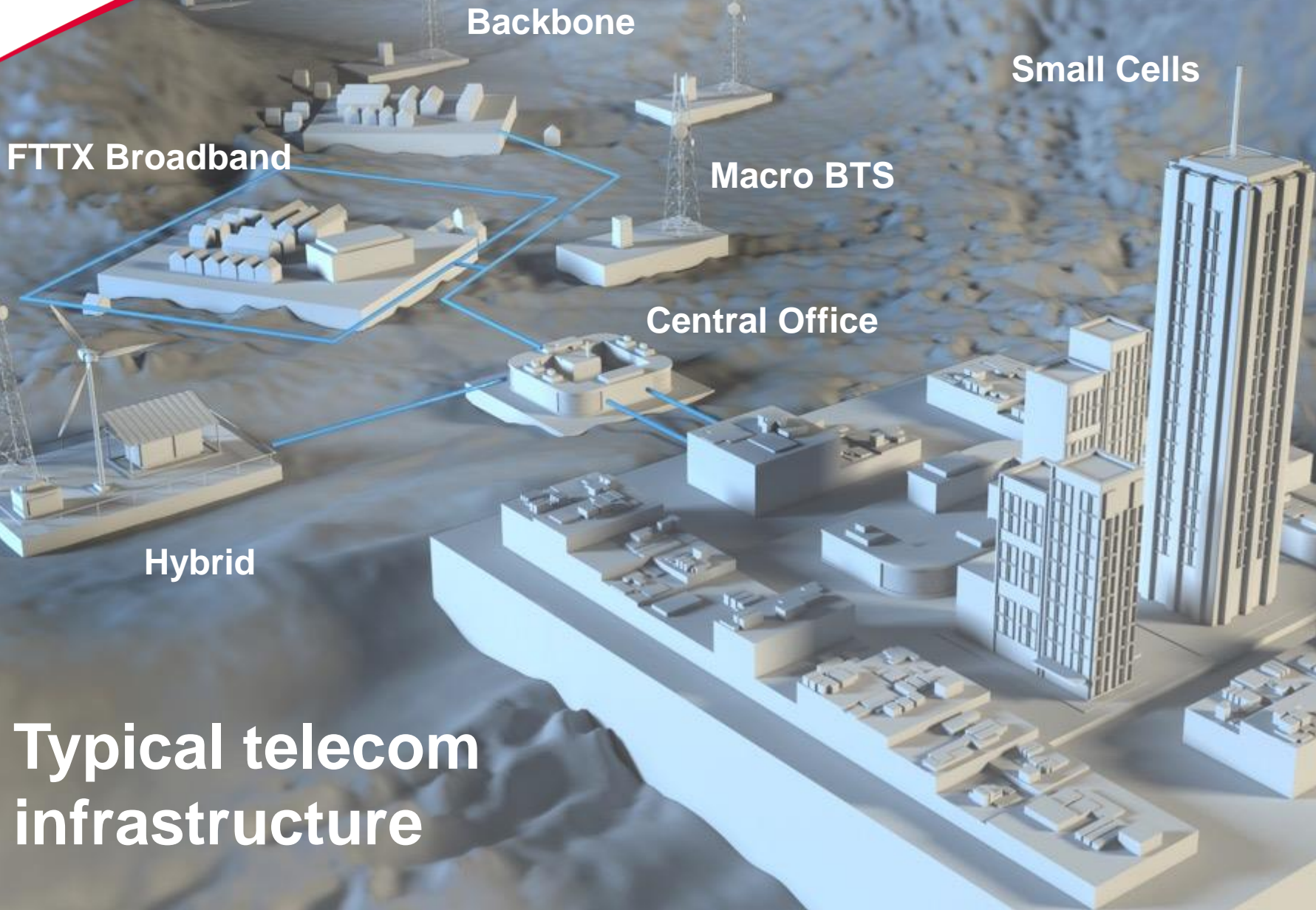
- Unstable grid, warm ambient temperature with uncontrolled cyclic use.
- Medium to high cyclic use.



Off Grid/Hybrid

- Typically diesel generator and battery hybrid.
- Warm ambient temperature, regular cyclic use.





pure lead products for Small Cells



PowerSafe[®] SBS

- High energy density – reduced footprint
- Capacity from 8 Ah upwards



Genesis[®] EP

- Deep cycle and PSOC capabilities
- High power density
- Capacity from 12 Ah upwards



Cyclon[®]

- Built for rugged applications
- Maximum flexibility in battery voltage and capacity
- Capacity from 2.5 Ah upwards



portfolio of DIN sized products



PowerSafe® SBS EON Technology®

- High energy density – small battery installations
- Fast recharge time for outstanding fuel savings
- Excellent cyclic performance



PowerSafe® V2V

- High energy density – smaller battery installations
- Fast recharge time
- For use in reliable and unreliable grid
- Proven TPPL technology



PowerSafe® OPzV

- Proven VRLA tubular gel technology
- Superb cyclic performance
- Ideal for solar applications



PowerSafe® OPzS

- Proven flooded technology for demanding applications
- Long design life
- Extensive range of single cells available



world-wide telecom reputation

PowerSafe® V-FT

- Recognised worldwide as a premium solution for telecom applications
- Front access for ease of installation and maintenance
- Long service life
- 24 month shelf life
- Manufactured to the highest international standards



a new **DIMENSION**

PowerSafe® V300-2/V850-2 Series

- Major extension to PowerSafe V brand
- Aimed predominantly (not exclusively) at traditional float applications
- Fast charge
- Long design life: 15 years at 20°C (float mode)
- Long shelf life for maximum flexibility: 24 months at 20°C



the off-grid/hybrid choice

PowerSafe® SBS EON Technology®

- Suitable for off grid /hybrid installations
- TPPL – Thin Plate Pure Lead Technology
- Superior energy density
- Excellent cyclic performance in >1800 cycles 50% DOD with optimized charging regime
- Manufactured to the highest international standards



central office and off grid/hybrid

PowerSafe® OPzV

- Proven positive tubular plate gel technology
- High cycle life
- Long design life (Eurobat 'very long life' classification)
- Excellent deep discharge recovery
- Low maintenance
- Conforms to DIN 4072 standard



reliability and safety for central office

PowerSafe® OPzS

- Proven flooded tubular plate technology
- Excellent cyclability
- 20 year design life at 20°C
- 3 year topping interval
- Low maintenance



when grid is not optimal

Genesis® EP 200

- Quick charge capability
- 24 months shelf life
- Deep cycle capability (up to 400 cycles to 80% depth of discharge)
- Ability to recover from repeated deep discharges
- Suitable for unreliable grid



reliable in extreme temperatures

-65°C to +80°C

Cyclon®

- Outstanding high-rate power density
- Maximum flexibility in battery voltage and capacity
- Can be used in any orientation
- Up to 2 year shelf life
- Up to 300 cycles (100% DOD)
- Ability to recover from repeated deep discharges
- Suitable for extremely high temperature (up to +80°C)



stands and enclosures



Stands

- Large range of conventional, anti-shock and seismic available
- Provide compact and effective battery arrangement
- Optimum access for both installation and maintenance
- Customer-specific stand designs can be engineered to meet any particular specifications



CBU[®] enclosures

- Temperature controlled cabinets – extends battery life
- Ideal for cold and hot operating conditions



Vaultflex[®] enclosures

- Temperature controlled cabinets – extends battery life
- Global standards
- Earthquake Zone 4 and 0 criteria compliant



outdoor battery cabinets

temperature controlled

Vaultflex®

- Standard off-the-shelf series – for blocs or single cells
- Comprehensive product portfolio
- Aluminum design to eliminate risk of corrosion
- Available with Direct Air or Air Conditioning
- Reduced cooling costs
- Extended battery life
- Built-in security features
- Lower Total Cost of Ownership (TCO)



outdoor battery cabinets

temperature controlled

CBU[®]

Smart, energy efficient technology and carefully selected components maintain optimal temperature inside the cabinet.

- Energy saving - low power consumption reduces operational costs and CO2 emissions.
- Robust design yet light weight.
- Operating temperature range: -40°C to +70°C.
- Battery life extended up to 5 times.





value added solutions



Battery Monitoring System

- Secure your power backup with monitoring systems



Cabinet & Rack Solutions

Wide range of cabinets and racks including:

- Cooled/heated cabinet for harsh environments
- Seismic approved racks and cabinets



Anti theft Solutions

- Connector and cabinet level solutions
- GPS



Installation & Service

- EnerSys can provide full solutions including installation and maintenance*

EnerSys

Power/Full Solutions



ODYSSEY *genesis* **CYCLON**
BATTERY

POWER of a winner



the powerful choice



Fleet/Vehicles

Today's vehicles are loaded with more electronics than have been imaginable just a few years ago. The ODYSSEY® battery has been designed to keep up with the changes.



Marine

With twice the overall power and three times the life of conventional marine batteries, ODYSSEY® batteries are ideal for trolling, starting and for powering the many on-board accessories common in today's boats and recreational vehicles.



Power Sports

Power sport vehicles need a powerful battery, one built to take the constant pounding that comes with the territory, whether it is on land, sea or snow. The ODYSSEY® battery can handle it.





your assets protected



Fire and Security

Alarm and security systems are only good if they work consistently. In a power outage, people and systems are even more vulnerable to danger. Don't let inferior batteries become the weak link in your security systems and panels.



Commercial

Broad applications such as general electronics and instrumentation have power requirements that are unique to their installations.



Gensets

Generator starting batteries, often referred to as 'genset' batteries, must have a power density, long service life and quick recharge capability in order to be effective.





twice the overall power

ODYSSEY®

- High cranking current and deep discharge cycling
- Proven resistance to shock and vibration
- Superior cycle life
- Higher power density than conventional batteries
- Excellent charge acceptance for fast recharge



suitable for various applications

Genesis[®] NP

- Extensive portfolio of sizes and capacities
- 5 year life in float service applications
- Uninterrupted energy supply for critical applications
- Excellent recovery even after deep discharge





allround backup

DataSafe® NPX

- Designed for high rate discharge applications
- Higher power and smaller volume than conventional batteries
- 100% initial capacity
- Ideally suited for small UPSs, security and alarm systems, booster packs and leisure





wide range of applications

DataSafe[®] HX

- Electrochemistry developed for UPS applications
- Wide range of voltages and capacities
- High power density
- Optimum footprint and volume efficiency
- Long design life



reliable in extreme temperatures

-65°C to +80°C

Cyclon[®]

- Outstanding high-rate power density
- Maximum flexibility in battery voltage and capacity
- Can be used in any orientation
- Up to 2 year shelf life
- Up to 300 cycles (100% DOD)
- Ability to recover from repeated deep discharges
- Suitable for extremely high temperature (up to +80°C)





PowerSafe® *genesis*®

POWER to shine





the future is renewable



Solar and Wind

Our range of batteries for solar panels, wind turbines and water turbine applications have been specially designed to provide high cycling performance and a safe, uninterrupted supply of energy.



Energy Storage

We have suitable batteries to save fuel and energy and respond to your own grid requirements.



Hybrid

EnerSys has long experience in the most demanding harsh conditions backup power requirements for hybrid installations.





renewables - looking ahead

- Renewables are today used in many industrial segments
- Telecom companies are using hybrid or solar only solutions
- Utility segment uses renewables in their energy storage projects
- Mini and microgrids use renewable energy as a backup
- We take our responsibility to the Earth very seriously and continually research ways to make our stored energy solutions environmentally-friendly.



suitable for renewable applications

PowerSafe® TS

- Products available filled and charged or moist charged
- Designed for long life solutions in renewable energy solutions
- Minimal maintenance required
- Capacity range: 300 Ah to 4850 Ah (120h)

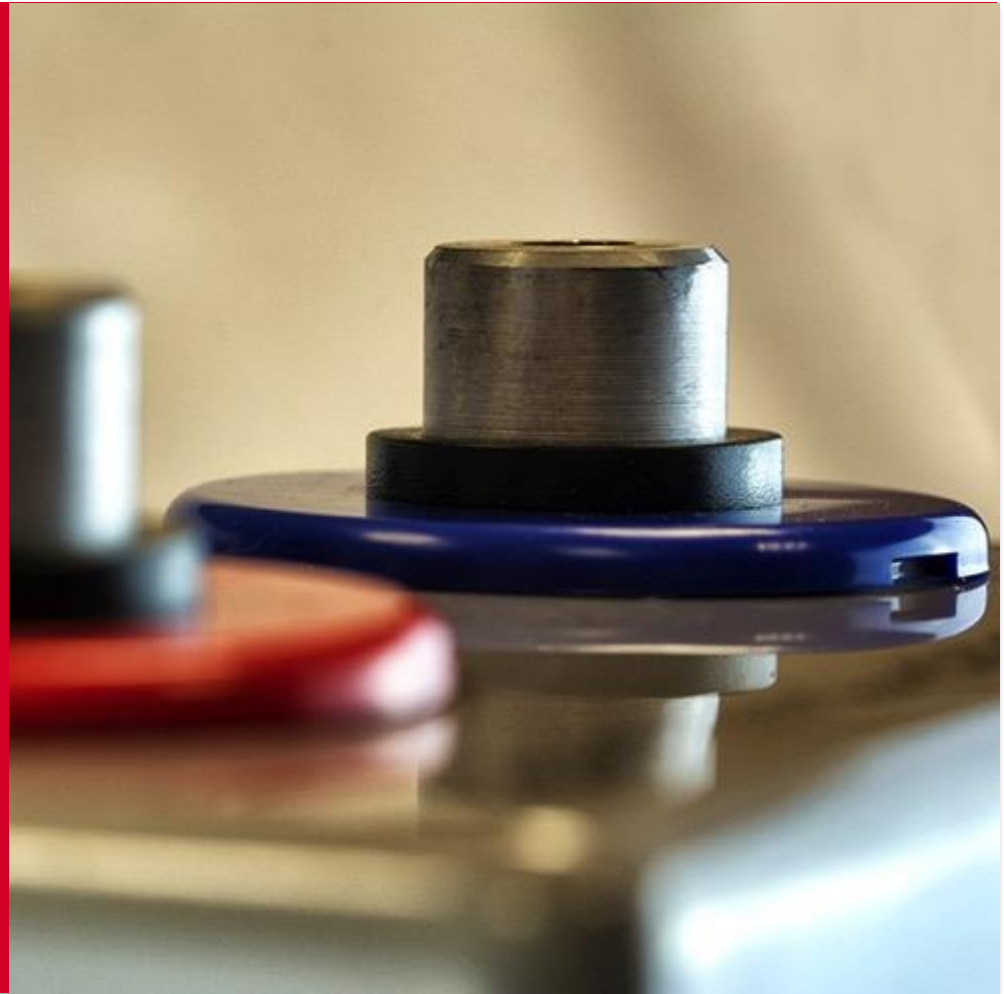




flexibility and long life

PowerSafe® OPzV

- Proven positive tubular plate gel technology
- High cycle life – 1900 cycles 50% DOD
- 20 year design life (Eurobat 'very long life' classification)
- Can be installed both horizontally and vertical
- Long service life – Highest Eurobat classification
- Excellent deep discharge recovery
- Low maintenance
- Conforms to DIN 4072 standard





renewable application

SOL G RANGE

- Based on well proved Iomain concept and long experience
- Wide range of capacities from 140 up to 1680 Ah (C₁₂₀)
 - reduces the need of parallel strings
- No capacity reduction at higher temperatures
 - Small battery size
 - Lower costs
- Long cycle life through improved cell design





POWER to power





a challenging environment



Generation applications

Solutions to enable safe and effective power generation in all fuel segments

- Hydro
- Nuclear
- Solar PV
- Wind
- Oil & Gas
- Coal
- Other renewables



Transmission & distribution applications

Reliability of power from generation to distribution

- Switchgear
- Transformation stations
- Transformation lines
- Distribution substations
- Industrial substations
- Distribution lines
- Transformers



Energy storage - OptiGrid

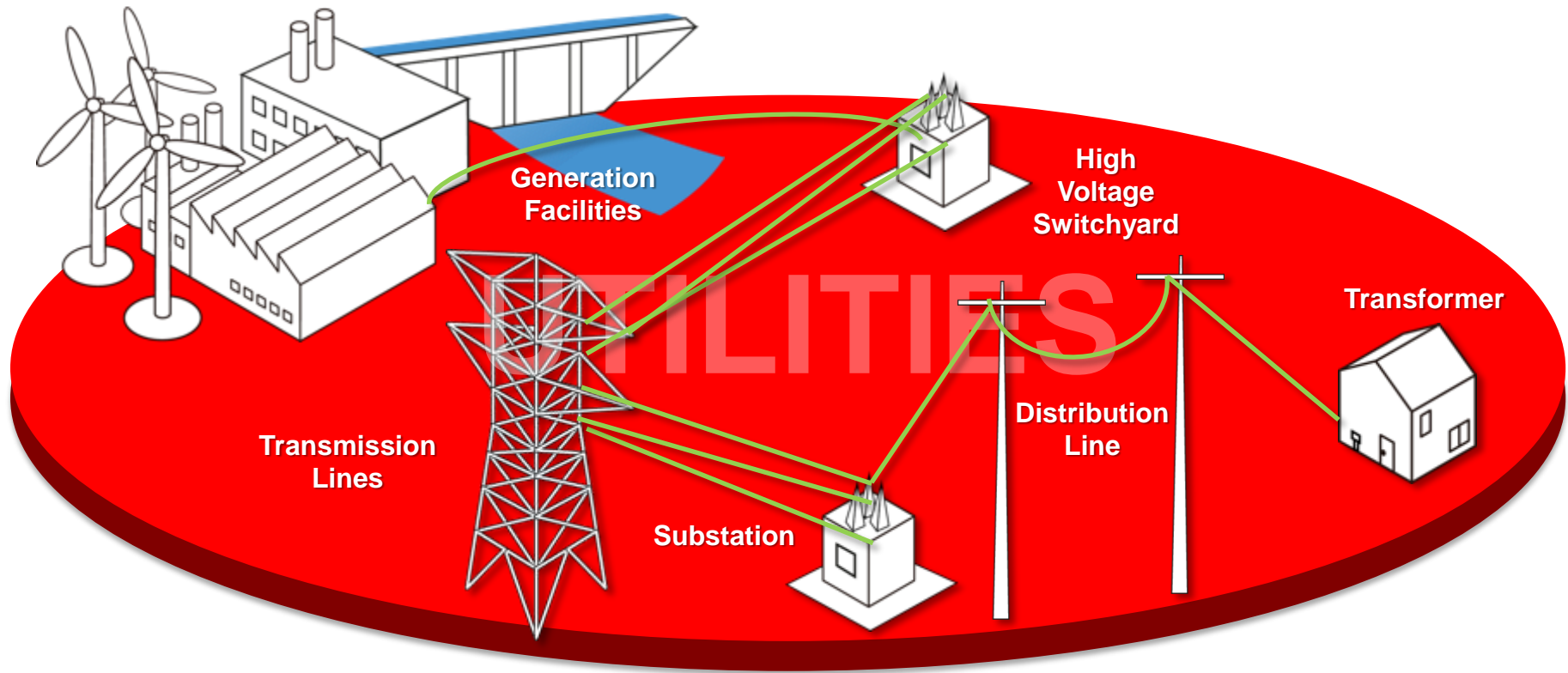
Stabilising your power grid is critical

- Power quality
- Load shifting
- Peak shaving
- Optimised generation
- Improved grid security
- Grid frequency support
- Area control
- Energy management



power backup

Stabilising your power from generation to consumer





trends looking ahead

- Global installed generation capacity will grow by 80% by 2040 with a large need for modernising many existing plants*
- The global cost for power generation will rise from \$1.6 trillion in 2012 to about \$2.9 trillion in 2040*
- Increased use of renewable energy sources will create energy storage & grid stabilising needs
- New government policies including safety and power quality will have a large effect on future investments





utility solutions – VRLA types



PowerSafe® SBS

High energy density and excellent cyclic performance



PowerSafe® V

Excellent world-wide reputation for industrial power backups



PowerSafe® OPzV

Proven and reliable technology with superb cyclic performance



PowerSafe® DDm

Flexible and modular solution with optional UBC-zone 4 approved racks





flooded range



PowerSafe® OPzS

Extensive single cells' range designed for demanding applications



PowerSafe® Vb

Often used in critical nuclear applications



PowerSafe® OGi

Monobloc range with excellent high capability

Long service life



reliable power

PowerSafe® SBS® and SBS EON Technology®

- TPPL – Thin Plate Pure Lead Technology
- Superior energy density
- Long service life – 15 years design life
- Excellent cyclic performance in >1800 cycles 50% DOD with optimized charging regime (SBS EON Technology series)
- Manufactured to the highest international standards



Photo by Annika Örborg, Vattenfall

world-wide industrial reputation

PowerSafe® V & V-FT

- Proven AGM VRLA technology
- Up to 25% space saving compared with traditional front terminal products of equivalent capacity
- Long service life
- Manufactured to the highest international standards

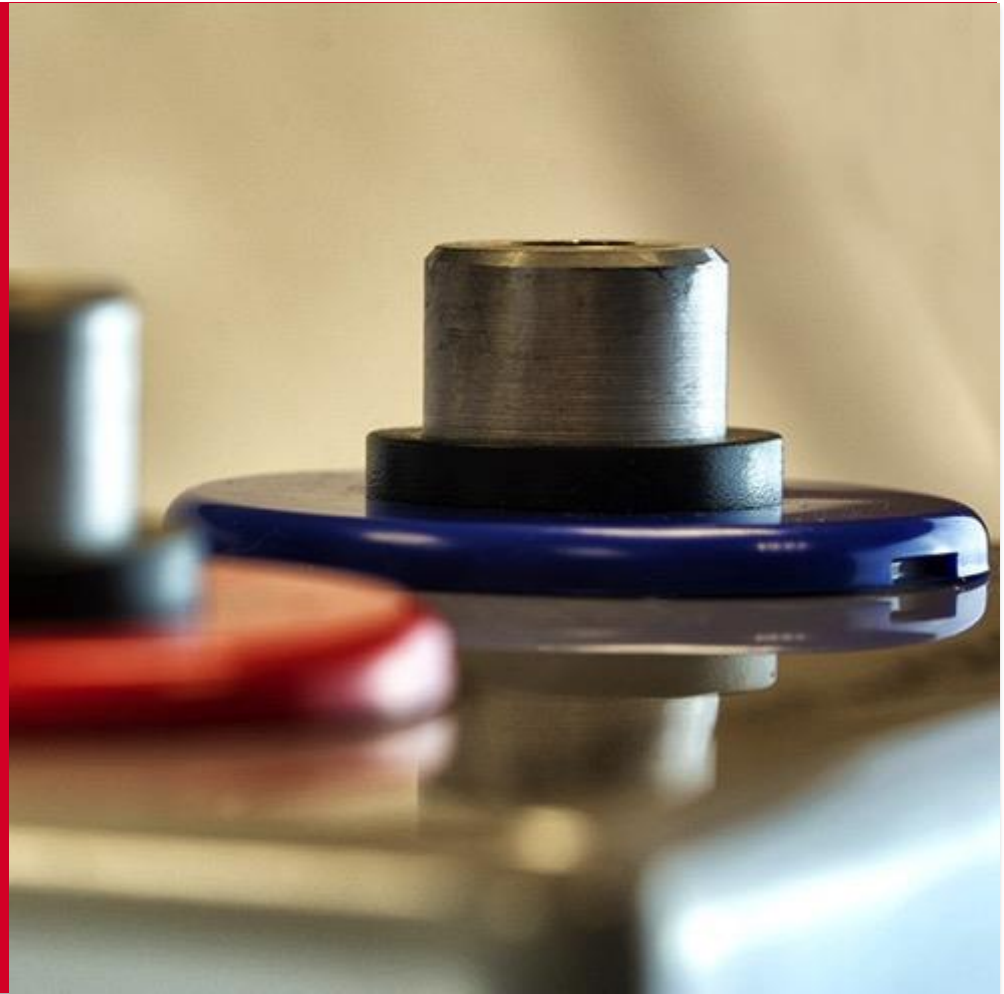




flexibility and long life

PowerSafe® OPzV

- Proven positive tubular plate gel technology
- High cycle life – 1900 cycles 50% DOD
- 20 year design life (Eurobat 'very long life' classification)
- Can be installed both horizontally and vertical
- Long service life – Highest Eurobat classification
- Excellent deep discharge recovery
- Low maintenance
- Conforms to DIN 4072 standard



AGM cells with modular racking

PowerSafe® DDm

- Available with conventional, anti-shock and UBC 1997 Zone 4 certified seismic stands
- High cycle life – 1900 cycles 50% DOD
- 20 year design life (Eurobat 'very long life' classification)
- Can be installed both horizontally and vertical
- Long service life – Highest Eurobat classification
- Excellent deep discharge recovery
- Low maintenance
- Conforms to DIN 4072 standard





reliability and safety

PowerSafe® OPzS

- Proven flooded tubular plate technology
- Excellent cycle ability
- 20 year design life at 20°C
- 3 year topping interval
- Low maintenance
- Terminals – lead alloy leak-proof pole with brass insert designed to give minimum resistance and maximum current flow
- Fully insulated, solid inter-cell connectors allow for voltage measurements
- Compliant with both IEC 60896-11 and DIN 40736-1



proven flooded choice

PowerSafe® Vb

- Proven flooded lead-acid battery technology
- Comprehensive range of 24 x 2 volt single cells
- 25 year design life in standby operation
- Special positive pasted rod plate design
- High cycle ability
- Low maintenance: approx 5 year topping up intervals
- Earthquake-proof design
- Manufactured to highest international standards



superior life and capacity

PowerSafe® Plantè

- Retains 100% capacity throughout life
- Proven long life battery technology
- 25 year design life in standby operation
- Low maintenance due to large electrolyte reserve
- Compliant with international IEC 60896-11 & British BS 6290 Part2 standards
- Factory certified to ISO 9001:2008 & ISO 14001:2004
- Large capacity range: 16 to 2400 Ah
- Trusted by British NPP industry



the classic flooded monobloc

PowerSafe® OGi

- Proven, reliable flooded lead-acid rod plate battery technology
- Excellent for fast discharge applications
- Choice of 2,6 and 12 volt blocs
- Long operational life
- Cells dimensions compliant with DIN 40737-3 standard
- Transparent and impact resistant container in SAN plastic
- Topping-up intervals: circa 3 years in standby operation at 20°C



nickel – cadmium technologies

GAZ[®]

- EnerSys NiCd batteries offer extremely reliable and widely recognised backup power for various telecom, UPS, utility and rail applications
- EnerSys portfolio also includes low maintenance option (Iomain™)



portfolio that performs

GAZ[®]

EnerSys NiCd batteries offer:

- Lighter weight and smaller footprint
- High Ah capacity across a wide discharge current range
- Good cycle life
- Long shelf life
- Excellent recharge efficiency
- Wide operating efficiency
- Wide operating temperature range
- Technology agreement for NiZn development

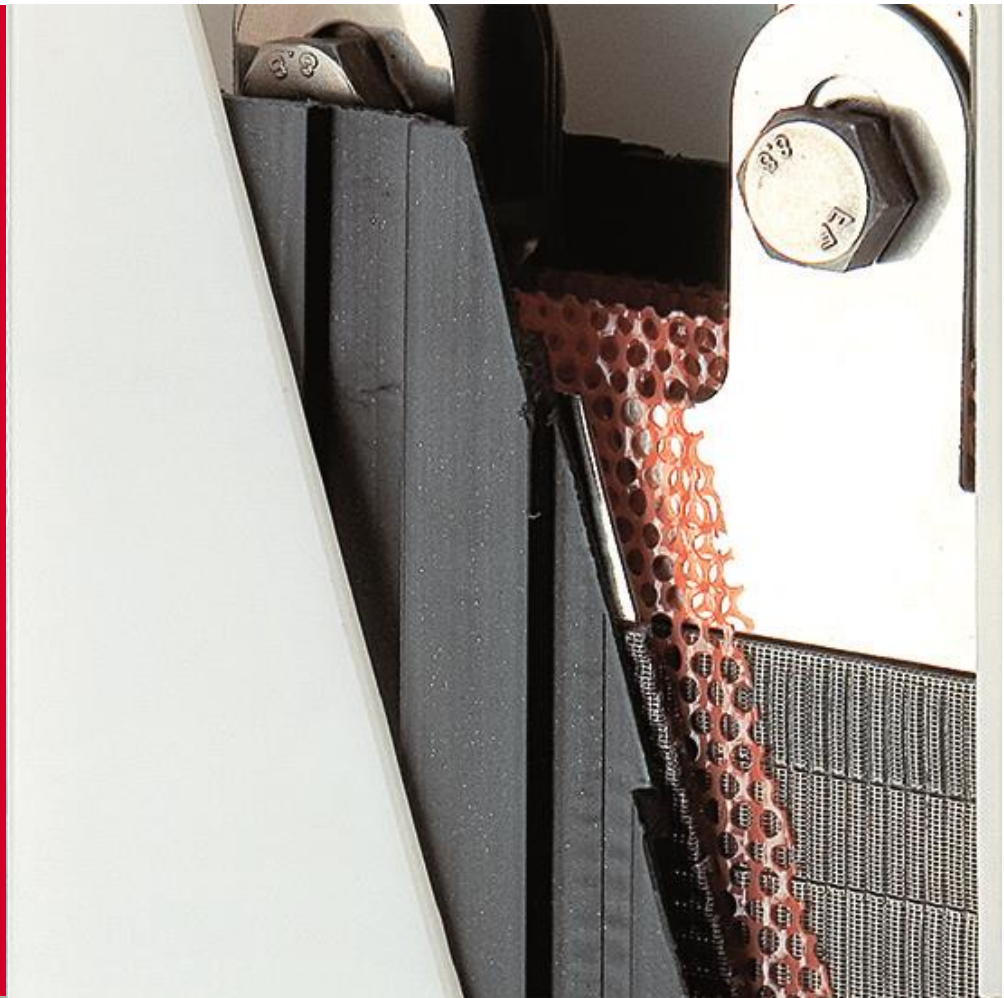




pocket plate design

GAZ[®] Standard ranges

- Very good high power rating
- Low internal resistance
- Reduced loss of capacity at low temperature
- Insensitive against deep discharge
- No electrolyte stratification
- Insensitive against misuse and optimised for harsh operating conditions
- Conforms with EN/IEC standard 60623 ►



next generation of batteries

GAZ[®] Lomain[™] range

- Proven GAZ Ni-Cd pocket plate
- Less water consumption
- Less maintenance cost
- Less performance loss at high temperatures and during aging
- Less recharge time
- Less cycle cost





value added solutions



Battery Monitoring System

- Secure your power backup with monitoring systems



Cabinet & Rack Solutions

Wide range of cabinets and racks including:

- Cooled/heated cabinet for harsh environments
- Seismic approved racks and cabinets



Anti theft Solutions

- Connector and cabinet level solutions
- GPS



Installation & Service

- EnerSys can provide full solutions including installation and maintenance*



Factory Tours

The TPPL manufacturing process is significantly different from other lead acid battery manufacturing.

We strongly encourage a visit to our facility to get a better understanding of our process.



value added solutions



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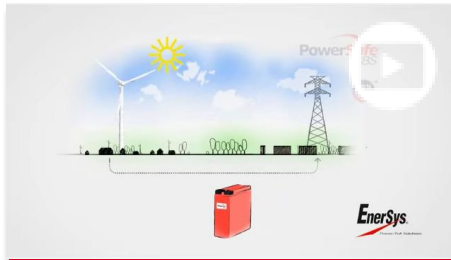


Installation & Service

- EnerSys can provide full solutions including installation and maintenance*

Applications

We are proud of our achievements during the years



Hybrid



OptiGrid



**ODYSSEY
BATTERY**



data safe XE

thank you
questions?

visit our website at
www.enersys.com

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sustainability

We produce lead acid batteries, and the majority is efficiently recycled. All components of our industrial batteries: metals, acids, plastics and lead are recyclable (to about 95%).

Globally located distribution hubs provides improved carbon footprint, cost reduction and best service to you, our customer.



ISO 9001 Certified
ISO 14001 Certified



EnerSys - your reliable partner

We have a broad knowhow of customized solutions for critical applications alongside a strong product range from innovative TPPL designs to flooded products.

We are a financial strong global company with over 125 years experience offering a local presence and high quality manufacturing in ISO-certified European factories with a focus on environmental and health & safety.



ISO 9001 Certified
ISO 14001 Certified

Forward Looking Disclaimer Statement

This presentation includes forward-looking statements and / or information, which are based on the Company's current expectations and assumptions, and are subject to a number of risks and uncertainties that could cause actual results to materially differ from those anticipated. Such risks include, among others, risk associated with competitive actions, technology development and implementation, intellectual property infringement, failure to integrate acquired businesses, penetration of existing markets, expansion into new markets, hiring and retaining high quality management and key employees and general economic conditions including the risks described in the Company's most recent annual / quarterly report, as applicable, on Form 10-K / 10-Q respectively, filed with the SEC, along with other unforeseen risks. Nothing that we say today should be interpreted as an update to the information or guidance that we provided in our most recent investor call, our most recent quarterly / annual report, as applicable, on Form 10-Q/10-K respectively, filed with the SEC, and our current reports filed with the SEC on Form 8-K since quarterly / annual report.