



Lithium Energy Storage Solution

SUNLIGHT

POWER IS KNOWLEDGE

www.systems-sunlight.com

Amongst world's top manufacturers of industrial and advanced energy storage solutions

SUNLIGHT, guided by a clear vision and forward-looking strategy, is driven by technological innovation and a passion for excellence.

It is ranked among the world's top manufacturers of industrial and advanced technology batteries and consists of one of the fastest growing enterprises in its sector.

SUNLIGHT constantly invests in the development of high-end products based on new technologies and evolves its operational efficiency with Industry 4.0 adoption.



SUNLIGHT at a glance



Company owned industrial complex in Xanthi with a total area of **61.000 sqm**



Battery Recycling plant in Komotini **5.000 sqm**



European Battery Assembly in Verona, Italy **6.000 sqm**



New subsidiary **assembly plant** in USA (2020) **9.700 sqm**

PEOPLE



Employment of **1.040 people**



No.3

among the world's top manufacturers of industrial batteries

PLANET

The only producer of industrial batteries applying the model of

Circular Economy



PRODUCT



Development of lithium-ion applications

PROFIT



Investment in equipment **€25 m** in the past 5 years

90% exports in over **100 countries** worldwide



KEY BUSINESS AREA



Batteries for industrial and off-road applications

VALUES

Quality in every step of the production lines



No.2

among the world's top manufacturers of advanced technology batteries



Worldwide

30+ years
in the battery market

Sales in
100+
countries

Sales in
US, Canada
& Mexico

Sales in
43
countries

Sales in
27
countries

Sales in
20
countries

Sales in
10
countries

Sales in
2
countries

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Industrial Activity and Business Philosophy based on Circular Economy

SUNLIGHT Recycling

State-of-the art recycling plant for lead-acid batteries, in Komotini, Greece
Production of new raw material



PRODUCTION OF NEW INDUSTRIAL BATTERIES

SUNLIGHT EUROPEAN BATTERY ASSEMBLY

New battery assembly line with the most high-end infrastructure, in Verona, Italy

SYSTEMS SUNLIGHT

The biggest and most modern battery manufacturing production site, in Xanthi, Greece



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Research & Development Lithium | Our Purpose

To make an impact on people's lives by **unlocking**
the potential of **scalable lithium technology**

Leverage R&D we will help us:

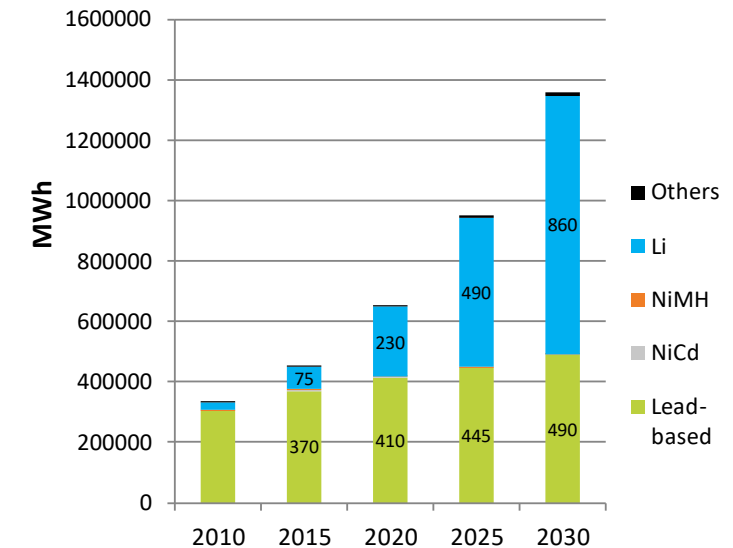
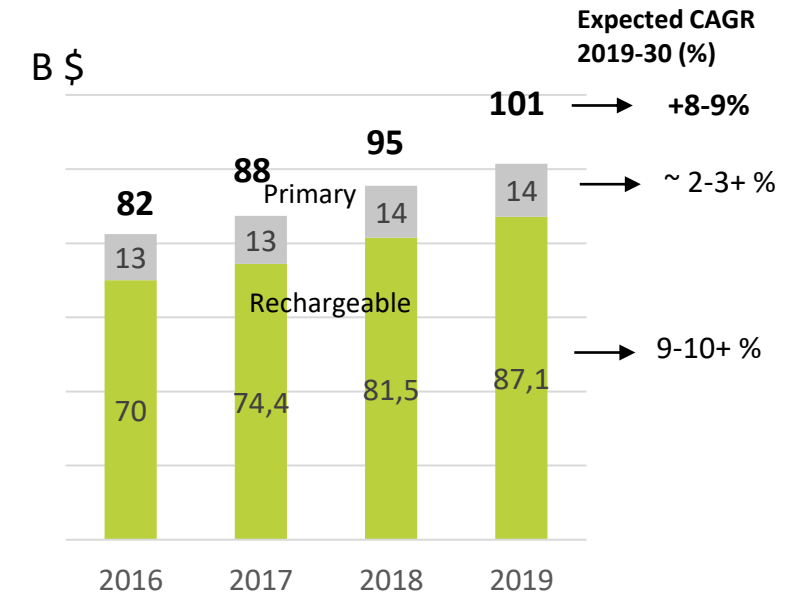


R&D



THE BATTERY MARKET 2015-2030

- In 2019 the total battery market revenue was at 101B \$
 - Of which, 87.1B \$, a market share of 86.2%, was dominated by rechargeable batteries
- Market value of batteries will reach 150B \$ by 2030
- Already by 2025 lithium battery production will surpass lead-acid batteries
 - Lead-based and Li-ion batteries will remain the most important markets

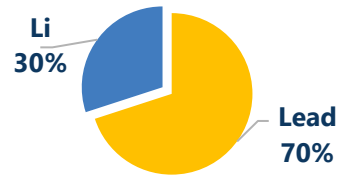


Source: "EUROBAT/Avicenne Study 2020: EU battery demand and supply (2019-2030) in a global context"

Reserve Battery market (Europe) | 2019 - 2030

UPS Battery market

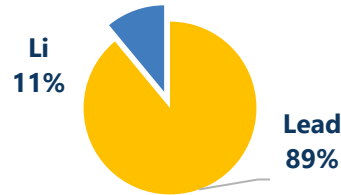
capacity mix 2030
(3.6 GWh total)



CAGR 2019/2030 : +5%

Telecom Battery market

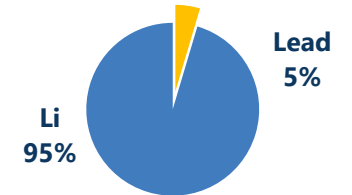
capacity mix 2030
(2.4 GWh total)



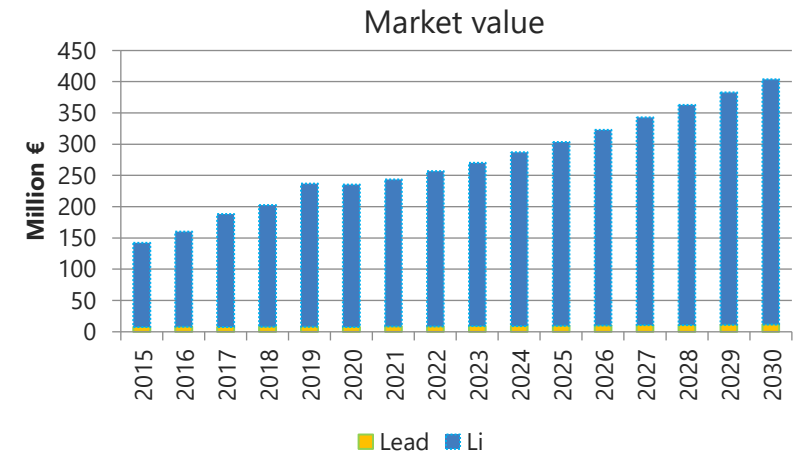
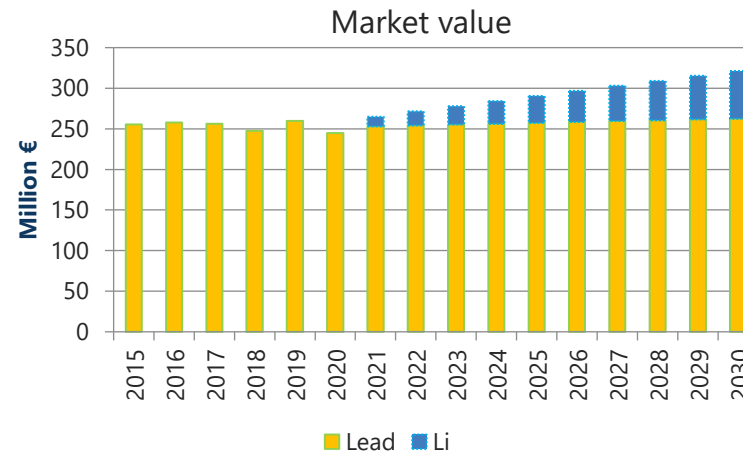
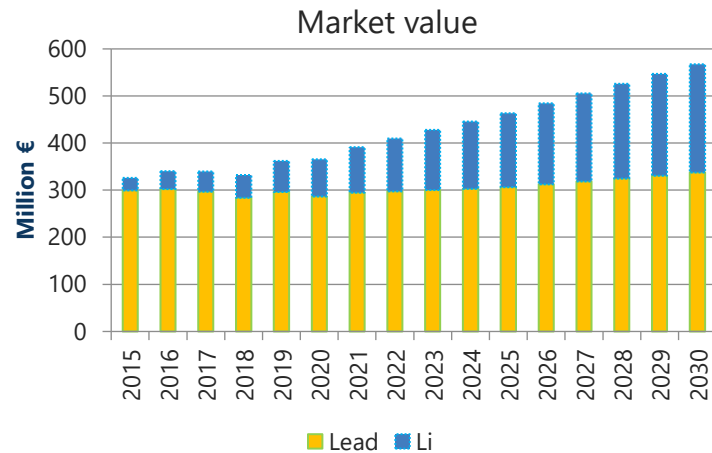
CAGR 2019/2030 : +3%

Energy Storage market

capacity mix 2030
(1.8 GWh total)



CAGR 2019/2030 : +10%



Source: Avicenne, EUROBAT (2020)



Environmentally friendly,
Non-toxic, **No Gassing**



Long cycle life
more than 4.500 cycles



Energy Efficiency
Voltage Stability



Optimal thermal stability
leading to supreme cyclic
performance and operation safety



Remote connectivity over the cloud



Cost and Time Savings – Remote maintenance,
diagnosis and debugging - **TCO reduction**



Maintenance Free



**Impressively stable
performance**
under harsh operating
conditions



Charging time:
~1 – 1,5h

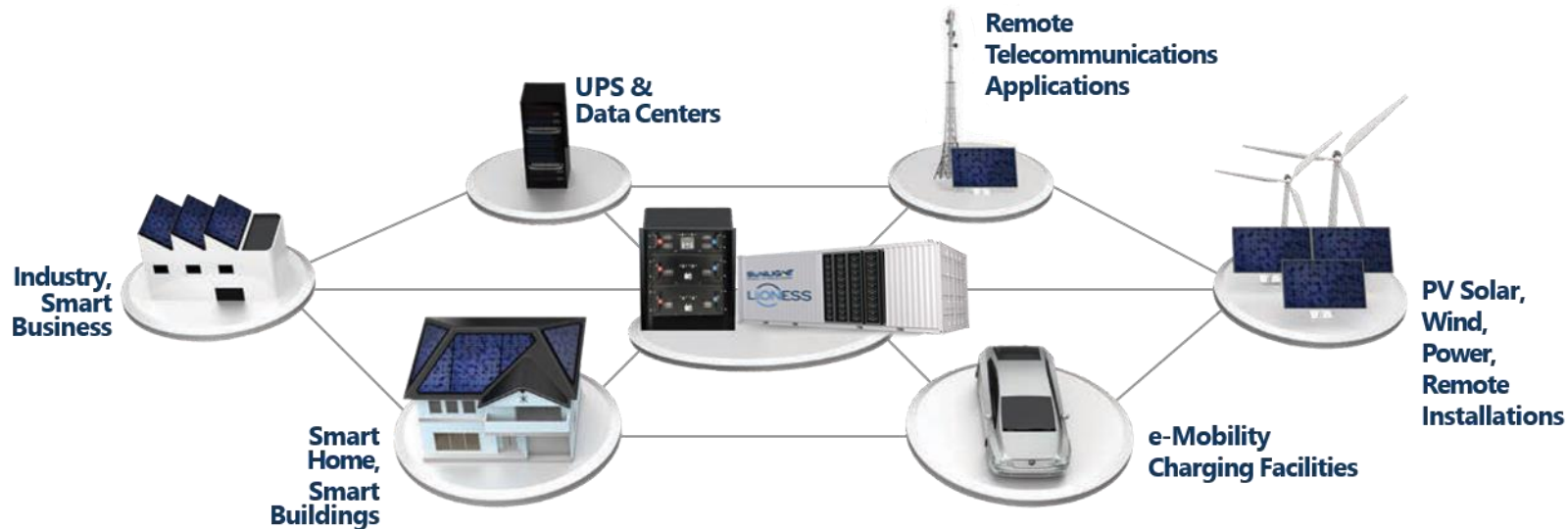


High energy density

Why Lithium Ion batteries

Sunlight Li.ONESS at the center of your applications

Li.ONESS applications



Peak Shaving

Energy transferred to off peak hours
-> Energy Management Optimization

Self consumption

Disassociation from utility grid and
energy cost variations

Uninterrupted power supply

Backup power

Off-Grid

Reliable power supply in case of no
or unstable connection to the grid

Grid Stabilization

Voltage control & Frequency
Regulation

Full use & storage of excess energy

produced by Renewable Energy
Sources during the day

Sustainable reduction of CO₂ emissions

The most Innovative & Revolutionary “Smart Battery Solution” in the market



Product Level:
Robust - Industrial
construction

**Communication/
BMS/Glocal:** Operation
Status, Feedback
Generation

**Unique
performance**
Features & Safety

Remote Service
Capabilities



Made to exceed clients' expectations at all
Levels by a **financially affordable** manner

Range: 51.2V, capacity 5kWh – 200kWh

Chemistry: LFP

Standard battery tray: 19" tray

Charging: up to 1C

Cycles : more than 4500

Operating Temperature:

Charging: 0°C up to 45°C | Discharging: -20°C up to 45°C

Compatibility – Communication with : ALL major inverters

BMS: ACTIVE

Why SUNLIGHT Li.ONESS Overview

Containerized solution by Sunlight

Range: 717V, capacity 500kWh – 2.5MWh up to 40-foot container

Chemistry: LFP

Ambient Temperature: Up to 50°C

BMS: ACTIVE

Voltage control on every single cell of the complete solution

- Grid stabilizing for voltage and frequency regulation of the grid.
- Full use & storage of excess energy produced by Renewable Energy Sources during the day.
- Peak Shaving, Energy transferred to off peak hours -> Energy Management Optimization

Major System Components:

Sunlight containerized Li.ONESS up to a turnkey solution:

- 1 Containerized battery systems
- 2 BMS and EMS control units
- 3 Converter
- 4 Step up transformers
- 5 Switchgear

3 out of the 5 key components of a MWh installation can be integrated in the container in order to be able to offer a complete solution.



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Flagship collaboration between IPTO and Sunlight

IPTO and Sunlight have signed an MoU for co-development of pilot installation of 20MW / 20MWh BESS system in Thebes.

■ Aim:

- To upgrade the efficiency of the transmission system on a local level.
- Enhance its capacity for the integration of new RES stations, without the necessity for the construction of a new 150 kV transmission line.

■ Sunlight's strategy:

- To play a key role in the fields of energy storage and management and support the communities where we operate.
- With a primary focus on new technologies and responding to the increased needs of our country and our customers around the globe, we have systems that can not only provide reliable on demand energy, but also exceptional technological achievements such as remote real time management and system restoration. These advanced management systems make Sunlight a technology leader worldwide.





Thank you

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