



Lead Batteries: Role for the Future

U.S. Lead Battery Symposium | 12.15.22

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INTRODUCING STRYTEN

A new company. Renewed energy.

Stryten Energy builds the best batteries
in the industry. We have the Energy to Challenge.

- Over a century of battery-building expertise
- Part of the Atlas Holdings platform of manufacturing companies
- Unwavering focus on the success of our customers



ATLAS STORY

The impact of Atlas' partnership.

Atlas Holdings owns and operates a diversified group of manufacturing and distribution businesses with more than 40,000 associates worldwide.

- Shared commitment to safety, superior quality and customer service
- Long-term approach to company holdings
- Provides stability and unique operational expertise



FACILITIES

Stryten Energy Footprint



● **Transportation Manufacturing Plants**
Salina, KS
Manchester, IA

● **Industrial Manufacturing Plants**
Ft. Smith, AR
Kansas City, KS
Ruckersville, VA

● **Component Plants**
Kansas City, MO
Lampeter, PA
Milwaukee, WI
Columbus, IN
Niagara Falls, NY

● **Energy Storage Innovation Centers**
Denver, CO
Ottawa, Canada
Alpharetta, GA

● **Headquarters**
Alpharetta, GA

DIVISIONS

Greater focus where it matters most.

We are built to anticipate and adapt quickly to the changing needs of our customers and partners, our industry and our world.

- The vision to drive industry innovation
- Right people, right place
- Poised for sustainable growth
- Serving four main business segments



Essential Power



Motive Power



Transportation



Military

APPLICATIONS AND SOLUTIONS

Military & Government

Stryten Energy supplies batteries to the U.S. Navy, Army, Coast Guard, Air Force, and FAA

- **Submarines:** U.S. Naval Sea Systems Command's (NAVSEA) Attack Submarine Program utilizes the Stryten SVRLA battery; SVRLA used for Nuclear Submarine propulsion backup system
- **Microgrids:** essential power batteries are used for critical power and/or back-up power to data centers, telecom installations, and military utility needs; FAA National Airspace Space (NAS) radar and US Coast Guard Rescue21 program radio sites; USAF UK-based listening post
- **Combat Vehicles:** 6TAGM and i6T lithium-ion transportation batteries and lithium-ion silent watch battery packs are used in military track and wheeled vehicles, including MRAPS
- **Ground Logistics Equipment:** motive power batteries are used for forklifts; warehousing; shipboard; and chargers for Military Sealift Command shipboard charging applications



CIRCULAR ECONOMY

Lead batteries have a recycling rate of 99%.

The lead battery industry, with its established circular infrastructure, is a model for other battery chemistries in how to responsibly source, use, reuse and manage materials. The circular economy ensures a reliable supply chain for lead battery manufacturers that is not dependent on imports and protected from global disruptions.

- Over 90% of materials in Stryten batteries are domestically sourced
- 100% of lead used in Stryten batteries is from recycled sources
- Over 90% of Stryten plastic battery components are manufactured with recycled poly



SUSTAINABILITY

Responsible to you and the planet.

Sustainable processes are not only great for our customers, they are vital to the communities where we live and work.

- Unwavering focus on health and safety practices
- Recycled materials dominate our portfolio of products
- Meeting the growing demand for renewable energy storage



The Strength of Stryten Energy



U.S.-Based Energy Storage
Manufacturer



Founded on 130+ Years of
Experience



Strong Revenue



2+ Million Square Feet of
Manufacturing Space



2,500+ employees

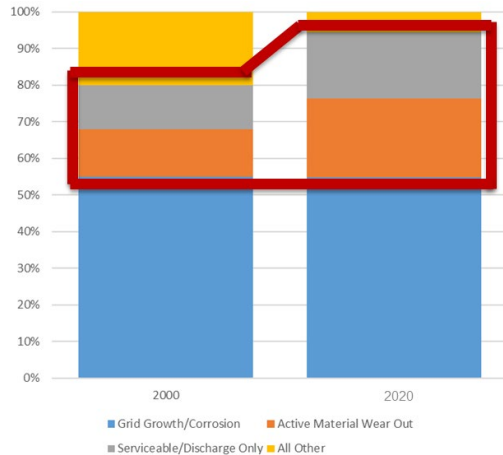


12+ GWh Manufactured Annually

Technology agnostic, large-scale manufacturing of the right battery
technology and the right cost for each application.

Enhanced Flooded Battery (EFB)

Designed from ground up to fight the fastest growing causes of premature battery failure in automotive applications

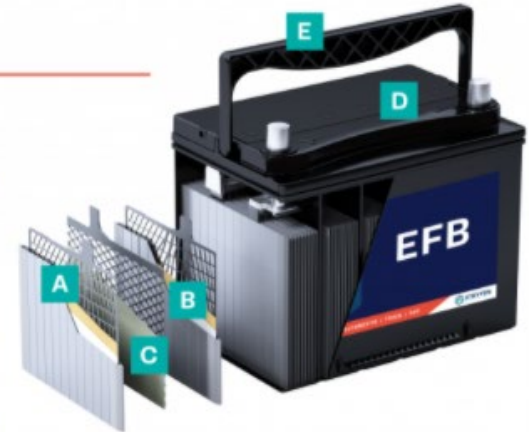


Source: 2020 BCI Junk Bin Study

Modern vehicles offer more electronic conveniences than ever before. These advanced electronic features place new demands on batteries, reducing battery life and driving new failure modes.

STRYTEN EFB FEATURES AND BENEFITS

- A** **LifeGrid™ Technology** are calcium/lead alloy punched-grid plates that provide maintenance-free performance, consistent power and enhanced durability.
- B** **Reinforced Pasting** using glass veil technology to provide extra plate protection for increased cycle life.
- C** **SureLife® Graphite Technology** provides greater dynamic charge acceptance by strengthening and maintaining charge pathways for faster recharge.
- D** **ErgoLock™ manifold cover** provides 2x better venting* and superior leak resistance with centralized vent ports that prevent acid leakage up to a 45 degree tilt.
- E** **ErgoLock™ handle** is a full-grip ergonomic design that neatly lies flat within the cover and can carry up to 3x the battery weight.



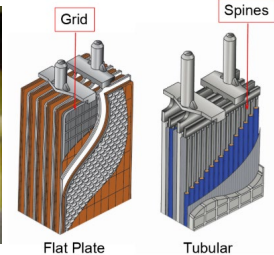
Motive and Essential Power Solutions

- The U.S. Naval Sea Systems Command's (NAVSEA) Attack Submarine Program utilizes the Stryten Absolyte SVRLA battery
- Provided the U.S. Navy with flooded lead acid systems for all classes of submarines for 100+ years
- In 2005 developed and implemented the SVRLA AGM battery for use on all classes of nuclear submarines
- Delivered over 20MW of energy storage over the last 4 years
- Stryten's line of stationary batteries provide power to data centers, telecom installations and military utility needs
- Ship board construction fork lift batteries and chargers
- Provided in both Flooded lead acid and VRLA AGM to meet requirements of shipboard construction



Motive Power Flooded Batteries

- Stryten produces two types of industrial flooded lead acid batteries for use in material handling applications:
 - Flat Plate
 - Historical positive grid design
 - Easier to produce but less robust.
 - Has material inefficiencies due to horizontal wires not providing much benefit to conductivity-> fewer AH.
 - Tubular
 - Utilizes several long spines of lead surrounded by active material to facilitate electrical conduction.
 - Requires more advanced production methods but is a more robust battery.
 - Increased material efficiency over flat plate -> more AH in the same box.
- Stryten has invested in advanced manufacturing equipment
 - Tubular plate making lines
 - Flow through Formation Process
 - World Class Technology for Single Cell Control



Lead Market Opportunities

Stryten Lead Best Market Opportunities

Applications	Critical Power, Cost Control (Peak Shaving), Frequency Regulation
Customers	C&I, Data Centers, Military Micro-Grid, Communities, etc.
Why Lead?	Minutes to 24 hours of Operation, Known Technology, Low LCOS, Recyclability, Ability to Support Stacked Services (Min to Hours), Medium Calendar Life, Safety Requirements, etc.
System Sizes	10s kW to MWs

Lead Storage Example: Metlakatla Power and Light:

1.4MWh at a 1.0MW discharge rate

Nominal 756VDC

Replaced with like battery after 11 years of service

Stabilize the island community's utility power grid;
providing instantaneous power into the grid when
demand was high ; absorb excess power from the grid to allow its
Hydroelectric generating units to operate under steady-state conditions.



Advanced Lead Battery Innovation and Development

Target improved material utilization and increase in cycle life

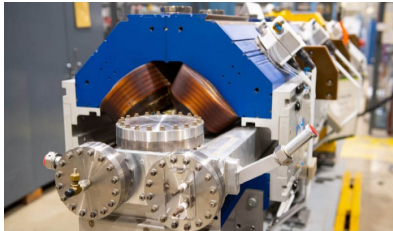
Lead Battery Science Research Project at Argonne National Lab (LBSRP)

- Funded and Managed by a consortium of U.S. battery manufacturers
- Precompetitive, fundamental based work
- Leverages ANL scientists and equipment including x-ray synchrotron for in-situ observation at the molecular level
- 4th year of 6 year program

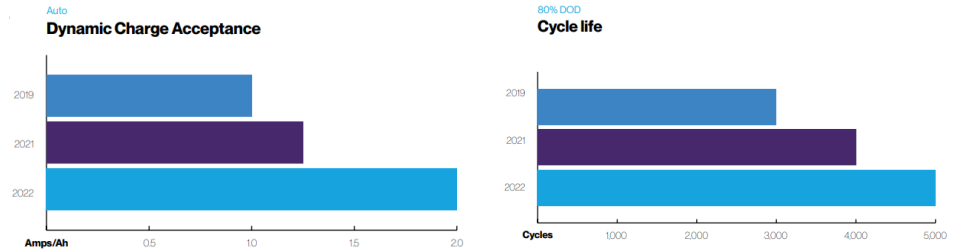
Consortium For Battery Innovation (CBI)

- Funded by a consortium of global battery manufacturers and suppliers
- Vetted R&D programs run by CBI member teams and/or universities
- Programs span fundamentals, development and demonstration
- Technical roadmaps tied to market and application needs

Advanced Photon Source – X-Ray Synchrotron



Battery Improvement Progress From 2019 - 2022



What is needed?

- Continued support from national labs to support research needed to unlock untapped potential of lead batteries in capacity and cycle performance
 - Battery life has increased 30 to 35 percent in the last 20 years. Lead batteries have a lifespan of up to 18 years, and some have demonstrated lives up to 30 years in standby applications.
 - Increasing the cycle life of lead batteries from 1,000 to 5,000.
- Funding to support:
 - Advanced manufacturing to improve costs and reduce process variation
 - Demonstration projects in multiple use cases