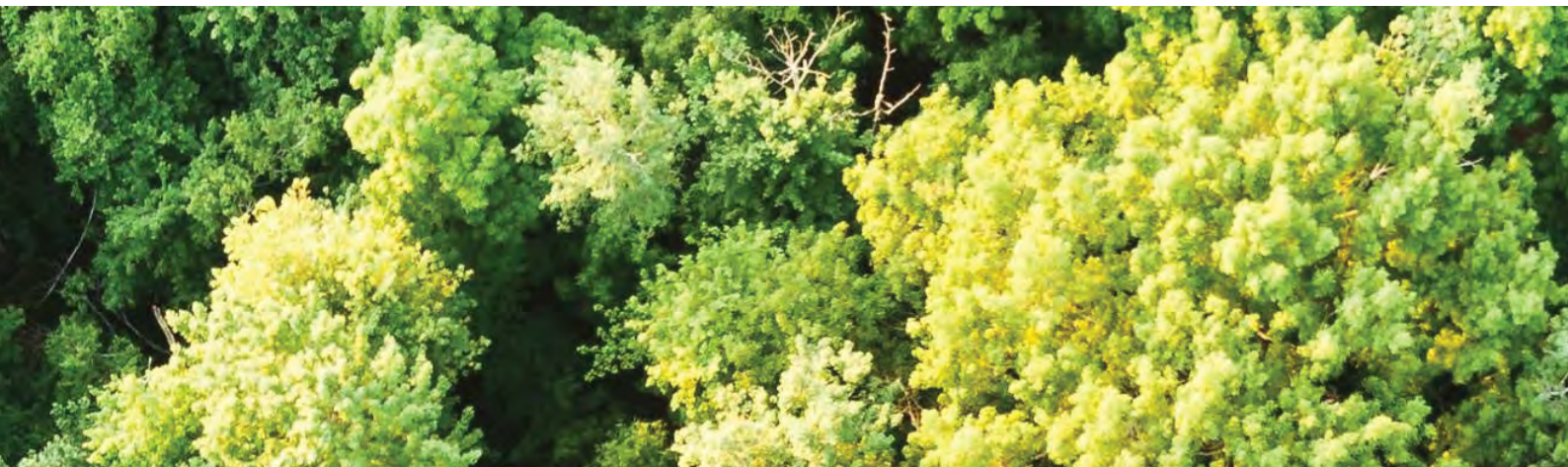

Probenenergy[®]

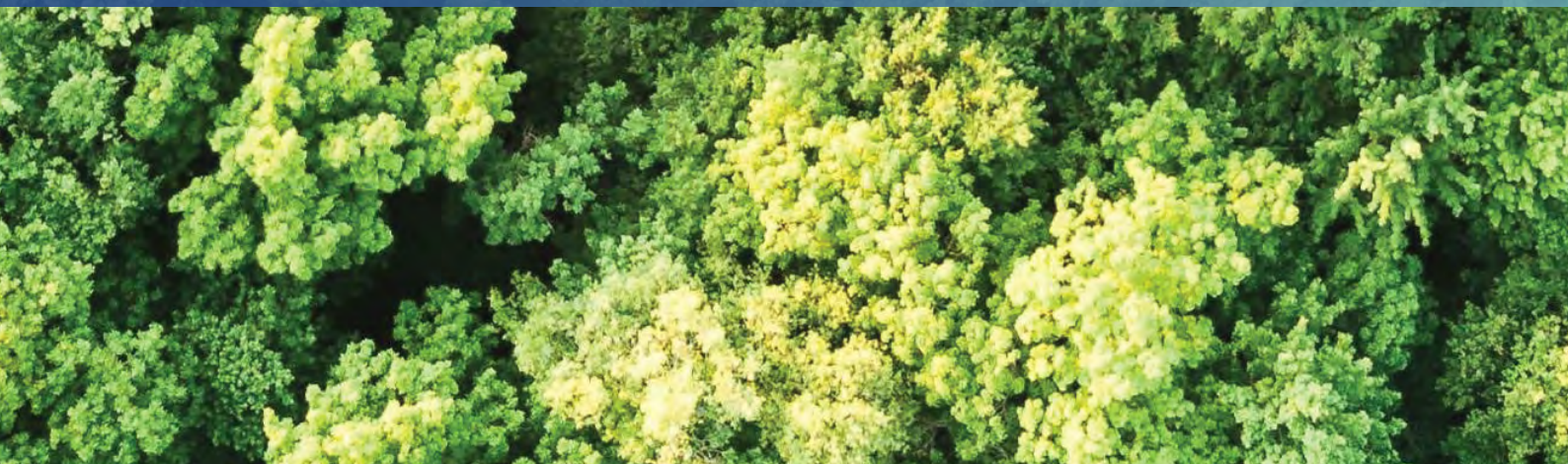
REDEFINING ENERGY STORAGE

TIMELESS INNOVATION | CUTTING-EDGE INSIGHTS





ABOUT US





WELCOME

FROM OUR GROUP CEO

Meet Frank Rovelli - Group CEO

"Understanding the product and the vision is the path to creating a limitless environment and achieving the desired outcome for all stakeholders.

There shouldn't be a cap to what one wants to achieve, while always remaining fair, unbiased and committed!"



WHO IS PROBENERGY

BATTERY STORAGE SPECIALISTS SINCE 1963

Frank Rovelli about Probenery (Pty) Ltd.

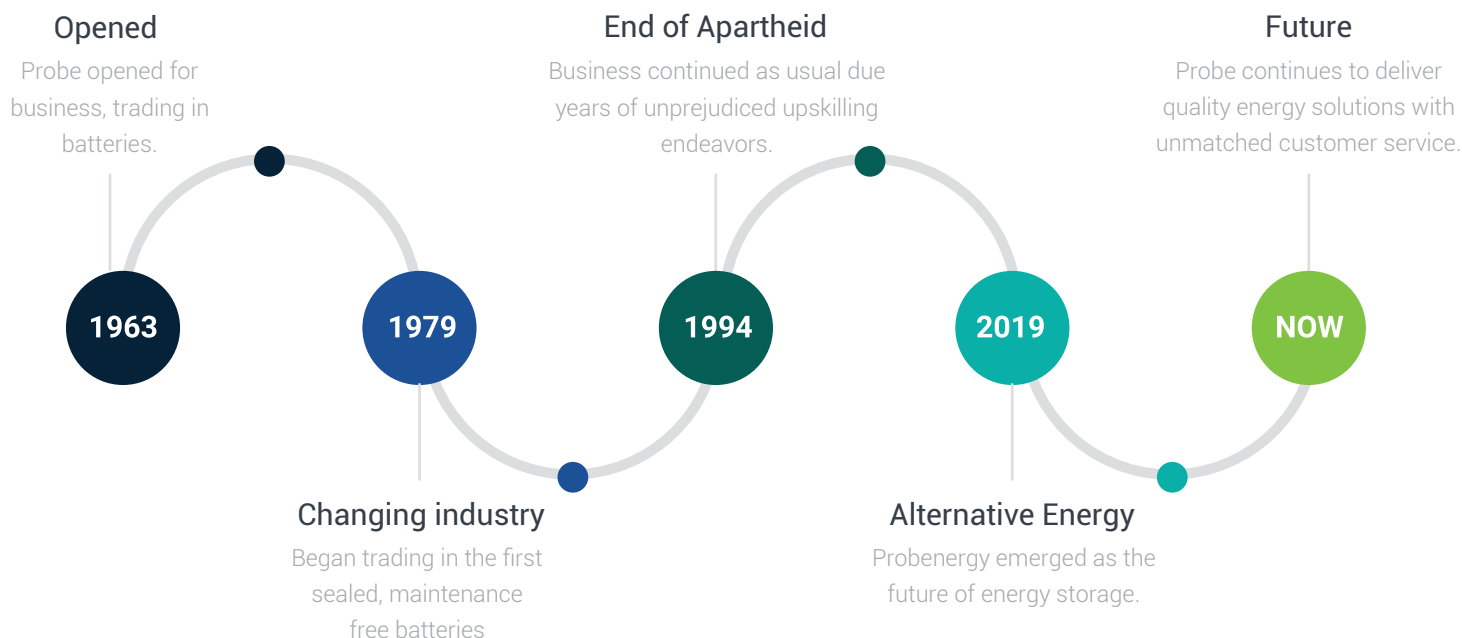
"We design, engineer and deliver Energy Storage Solutions with maximum power and efficiency, through integrated and optimised solutions, to ensure that a return on investment is achieved."

Probenery, in partnership with the Probe Corporation have been specialists in the battery storage industry for over 60 years. Since inception in 1963, the Probe Group of Companies have endeavoured to supply a wide variety of high-quality batteries, fit for purpose. As our industry evolves, we ensure that we remain at the forefront of technology through partnerships with trailblazing industry giants.

Probenery now has the capability to offer batteries in a variety of sizes, compounds, and application to residential, commercial and industrial clientele alongside our OEM network.

PROBE CORPORATION TIMELINE

ENERGY STORAGE SPECIALISTS SINCE 1963



OUR COMPANY VALUES

SHAPING A BRIGHTER, MORE SUSTAINABLE FUTURE

Excellence



We relentlessly pursue excellence in everything we do. We set high standards and continually strive to exceed them. Our pursuit of excellence drives innovation and ensures the delivery of top-notch energy solutions.

Sustainability



We relentlessly pursue excellence in everything we do. We set high standards and continually strive to exceed them. Our pursuit of excellence drives innovation and ensures the delivery of top-notch energy solutions.

Customer-Centric



We relentlessly pursue excellence in everything we do. We set high standards and continually strive to exceed them. Our pursuit of excellence drives innovation and ensures the delivery of top-notch energy solutions.

Innovation



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WHY PARTNER

WITH PROBENERGY

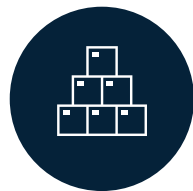
While Probenenergy has achieved notable success over 60 years, strategic initiatives have been crucial to realising our client's full potential alongside our OEM and EPC Networks that provide benefits for all involved.

Strategic partnerships have enabled Probenenergy to now offers fully funded solutions across all market segments to ensure that our diverse range of energy storage solutions match partner requirements.



Operational Excellence

Probenenergy is committed to excellence across all facets of our operations. With a legacy of 60 years, our intricate battery storage knowledge, streamlined processes and robust distribution network have established us as industry leaders. We continually enhance and scale our operations to meet growing demand, ensuring our continued leadership and adaptability in the market.



Direct Importer

Probenenergy has identified and capitalised on strategic market opportunities, positioning itself as a key player in this rapidly expanding sector. Key partnerships have enabled us to provide our clients with exceptional quality products at the correct price point.



Innovative Product Portfolio

Our team of experts continually develop groundbreaking solutions that not only meet current energy demands but also anticipate future needs. As we accelerate product development, ensuring we stay ahead of industry trends, we retain and maintain our competitive edge.



Diverse Technology Ranges

Beyond financial returns, investing in Probenenergy's broad product range represents a chance to make a significant positive impact on the environment. By supporting our sustainable energy solutions, you contribute to the global effort to reduce carbon footprints and combat climate change.



Tailored Solutions

Probenenergy has a track record of successful projects and satisfied clients. Our commitment to quality, reliability, and customer satisfaction has established us as a trusted partner in the renewable energy sector. In-house engineering ensures tailor made solutions are at the core of ensuring customer satisfaction.

HOLISTIC THINKING

RETURN ON INVESTMENT

Financial Forecasting

Through intricate financial forecasting, utilising our understanding of energy consumption patterns, businesses can make informed decisions to optimise their energy usage, reduce costs and improve the overall financial performance of their business.



HOLISTIC SOLUTION

Probenenergy offers a tailored energy storage solution by combining advanced financial forecasting with insights into energy consumption.

This enables us to provide businesses with customised recommendations that optimise energy use, reduce costs, and improve financial performance, ensuring that our battery technologies align with each client's unique needs and supports their sustainability goals.



LOAD & TARIFF ANALYSIS

Integrating load analysis and tariff analysis, businesses can make informed decisions to minimise energy costs through strategies like load shifting, demand response programs and energy efficiency measures, ultimately improving financial performance and sustainability.

PV & GENERATOR INTEGRATION

By evaluating the feasibility, performance and economic viability of implementing our batteries to solar PV systems with backup generators, we gain insights into increased ROI and shorter payback periods of existing systems.

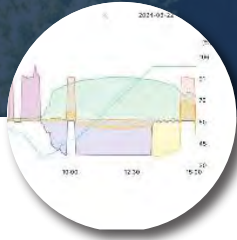
LOAD SHIFTING & PEAK SHAVING

Load shifting and peak shaving analysis are strategies aimed at optimising energy usage and reducing costs by managing electricity consumption during peak periods as well as your maximum peak demand.

DISCOVER HOW OUR HOLISTIC APPROACH TO ENERGY STORAGE SOLUTIONS CAN BE THE RETURN

HOLISTIC THINKING

RETURN ON INVESTMENT



Bill & Tariff Verification

Probenenergy utilises integrated financial modelling to verify monthly energy consumption found on municipal accounts. Through metered verification, complete account auditing identifies errors in historical billing providing insights into tariff optimisation that deliver vital savings on exorbitant energy costs.



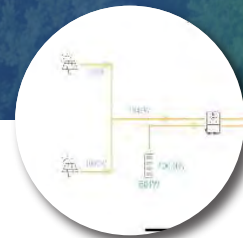
Energy Management

Intricate analyses of energy consumption identifies no cost, and low cost, initiatives to eradicate energy waste. Our bespoke energy interventions, implementations, and in-depth approach to understanding human error in daily activities allows Probenenergy to enhance savings, and forecast a return on investment, unlike any other in the market.



Load Shifting & Peak Shaving

Load shifting involves shifting both noncritical & critical energy-intensive activities to off peak hours through an integrated energy management & battery solution. Peak shaving focusses on reducing peak demand during times when electricity usage is highest. Implementing our battery and energy management, will seamlessly adjust the source of your power to lower overall demand.



Diesel Optimisation

Drastically improving the yield of existing Grid-Tie Solar Systems and increasing investment returns with Super-Cap Graphene batteries integration, their rapid charge rates, very high energy density and extremely high cycle life eradicates or maximises diesel consumption and ensures long term system stability in the most adverse of conditions.

HOLISTIC THINKING

SCALABLE SAVINGS

Automation and optimised energy management can significantly reduce costs and enhance efficiencies. By reducing human error, adjusting energy usage in real-time, and aligning with optimal tariff structures, businesses can lower energy consumption and shift high-demand activities to off-peak times.

24%

Shifting critical and non-critical, energy intensive activities through holistic solutions saving

12%

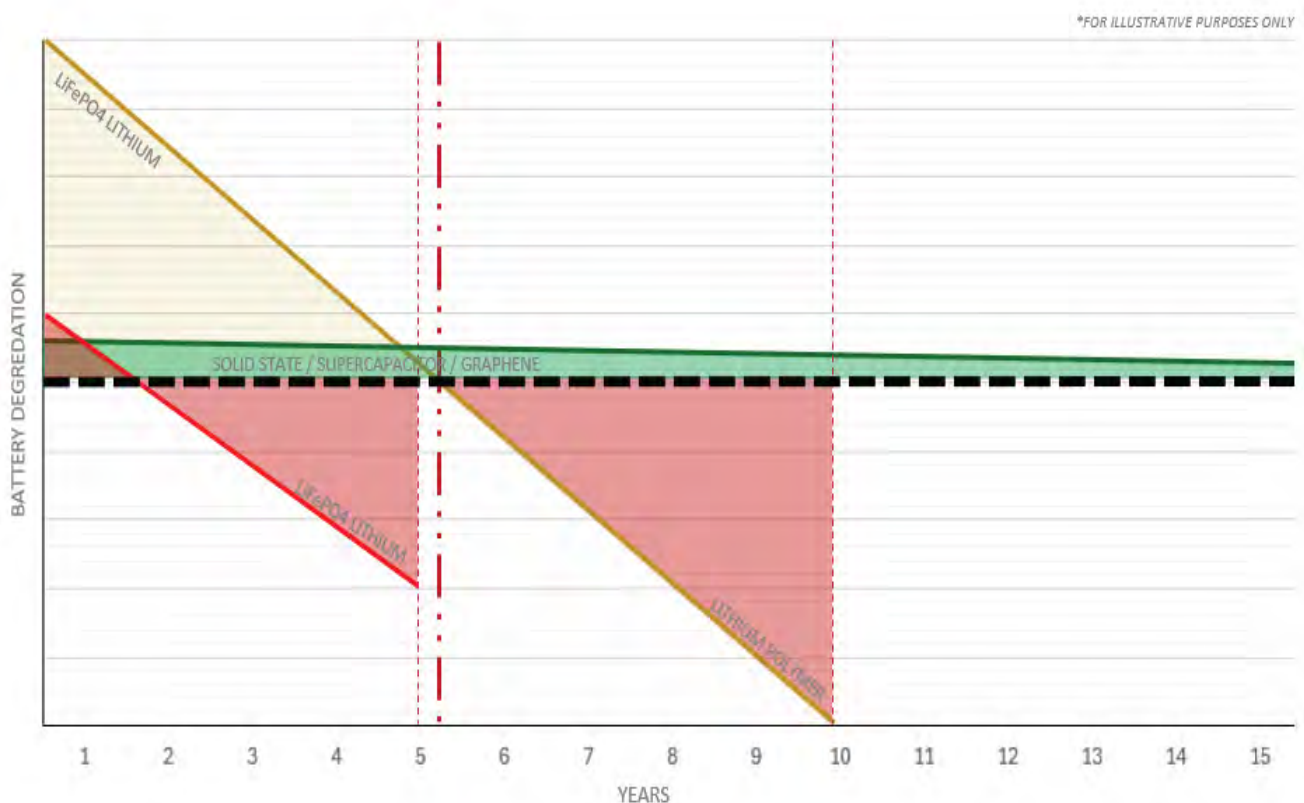
Understanding cost benefits of energy usage in optimum tariff structure savings

14%

Implementing automation, reducing human error to optimise energy efficiency savings

THE WEDGE

DEGREDDATION ASSOCIATED WITH A BATTERIES CYCLE LIFE IMPACTS INITIAL SIZING OF A SOLUTION, ROI AND SLA's ASSOCIATED WITH OUTPUT CAPACITY.

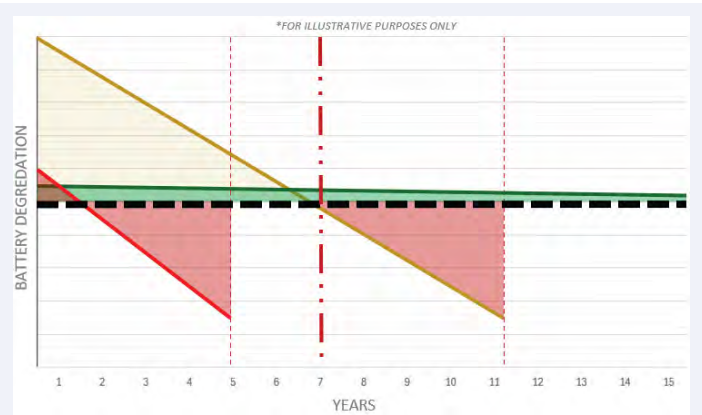


OVER 60 YEARS

UNDERSTANDING STORAGE

Probenenergy's extensive experience in designing and engineering solutions has allowed us insights into a concept, that we have coined the "Wedge".

This often misunderstood and complex engineering principle succinctly accounts for battery degradation and allows our team to design solutions best suited to client requirements. The 'Wedges' display the degree to which each incorrectly assigned technology can impact capex spend, additional diesel costs, or PPA penalties arising from diminished storage requirements on a site, over time.

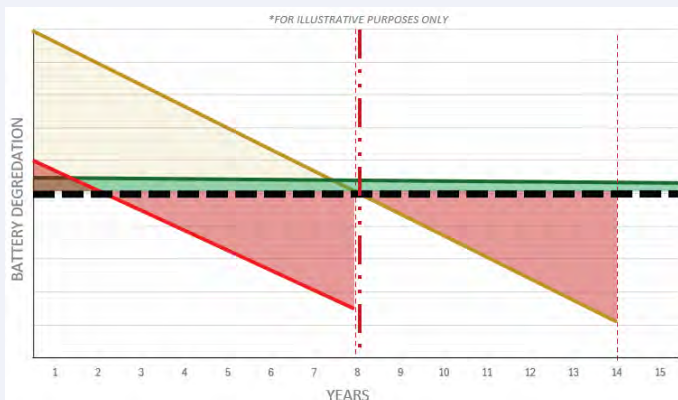


Three Cycles Per Day

LiFePO4 LITHIUM (80% DOD)

A Lithium battery sized with an additional 20% capacity from the load requirement, cycling three times a day, degrades rapidly and will reach end-of-life by year five after installation.

*including round trip efficiencies



Two Cycles Per Day

LiFePO4 LITHIUM (90% DOD)

A Lithium battery sized with double the required capacity of the load requirement, cycling twice a day, will both increase the lifespan of the battery but also double the initial capex spend upfront with similar degradation.

*including round trip efficiencies

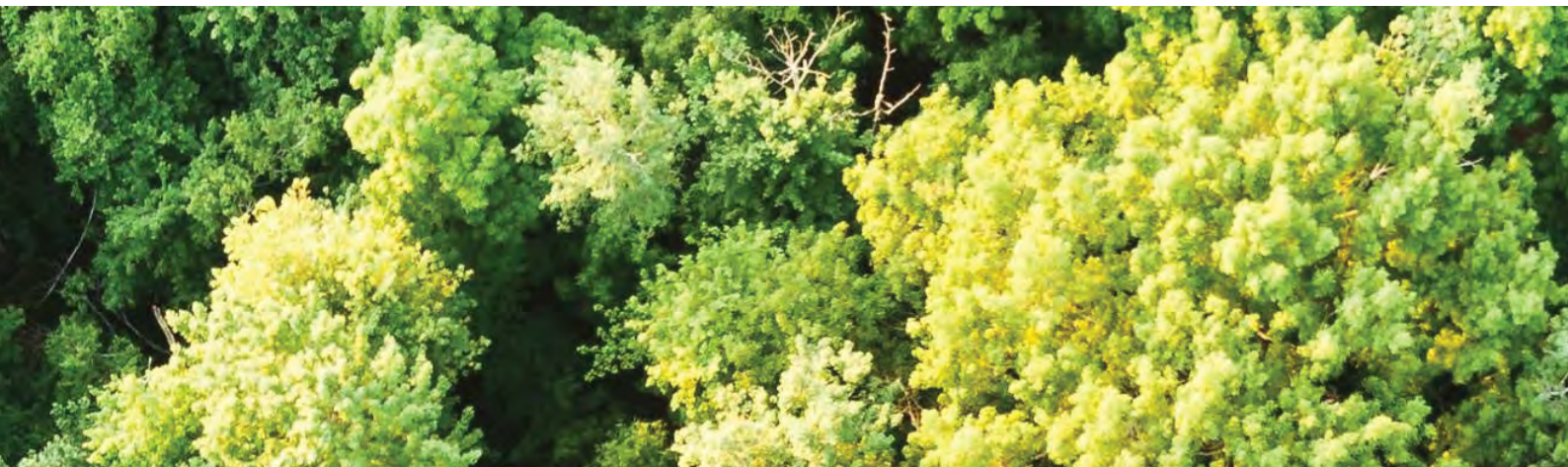


One Cycle Per Day

SUPERCAPACITOR / GRAPHENE (95% DOD)

Graphene with its super conductive abilities increases the round-trip efficiency of the entire solution with reduced energy losses. Level degradation is observed, exceeding the lifespan requirements by nearly 60% if cycled once a day.

*including round trip efficiencies



FUNDING SOLUTIONS



COMMERCIAL FUNDING

LEASE FUNDING

PPA

RENT

LEASE

MAXIMISING ROI WITH PROBENERGY

Probenenergy offers a unique opportunity for South Africans to "Invest in their Power," with commercial funding options that include flexible lease arrangements or outright purchase opportunities, enhancing the potential for substantial returns on investment.

By leveraging our full range of services, our solutions are executed inline with OEM requirements, with precision, supported by robust after-sales service, and come with extensive warranties. Probenenergy's offerings are designed to align perfectly with any professional business strategy, delivering significant financial benefits through our commercial funding options and expert execution.



FUNDING SOLUTIONS

OPTIONS



Purchase Power Agreement

The full capital cost will be outlaid allowing you to benefit immediately from power security and substantially well below your current energy exposure. Have your solar energy system maintained, insured and operated by a PPA funder hassle free.



Traditional Funding

Short term funding on a similar basis to PPA's where the solution is maintained and insured by the funder over the rental period. At the end of the term the client has the option to take ownership of the current solution or upgrade to newer and greener technology.



Rent to Own

Short term asset funding providing cash flow affordability options where the client can still take advantage of all SARS rebates and tax incentives inline with investing into an alternative energy solution

BATTERIES

TECHNOLOGIES

At Probenenergy, we leverage the expertise of our product department to provide comprehensive, customised solutions tailored to our clients' needs.

By analysing, designing, and engineering holistic approaches, we ensure that each solution is optimised for performance.

Our diverse portfolio of rigorously tested products enables us to meet the unique requirements of every client, ensuring both quality and precision



Lithium

Lithium batteries have high energy density, deep cycling capability, longer lifespan, and low maintenance requirements.

DOD: 80% | 8000-10 000 CYCLES | 0,5C | 0°C TO +40°C



Solid State

Solid State Lithium Polymer batteries have higher energy density and excel in high power output and rapid charge / discharge cycle environments.

DOD: 90% | 10 000-12 000 CYCLES | 1C | -20°C TO +60°C



Supercapacitor

Super-Cap Graphene batteries embody a convergence of groundbreaking efficiency, longevity, rapid charge rates, very high energy density and extremely high cycle life

DOD: 95% | 20 000-25 000 CYCLES | 3C | -20°C TO +60°C

BATTERIES

TECHNOLOGIES

CONTAINERISED SOLUTIONS



Features

Safety is enhanced with this non-flammable polymer electrolyte solid-state battery, providing a secure energy storage solution. Its ultra-long lifespan is due to the lower Direct Current Internal Resistance (DCIR), which reduces wear and tear, leading to lower maintenance requirements and improved reliability.



Solid State BESS

45-foot, 4 MWh container housing 11 battery clusters, each with 228 battery modules connected in series. It features a high-voltage control loop and a Battery Cluster Management Unit (BCMU) that oversees protection and control components, ensuring safe and efficient energy storage and distribution.



Elegant Finishes

High and low voltage lines, integrations and the Battery Monitoring System (BMS), are seamlessly installed in a concealed layout with elegant casing. This design ensures functionality without compromising aesthetics, allowing for an efficient and organised energy management setup.



Safety



Long Life



Easy Assembly



CONTAINERISED SOLUTION

FEATURES & BENEFITS

45-foot, 4 MWh container housing 11 battery clusters, each with 228 battery modules connected in series. It features a high-voltage control loop and a Battery Cluster Management Unit (BCMU) that oversees protection and control components, ensuring safe and efficient energy storage and distribution.

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BATTERIES

TECHNOLOGIES

RACK & STACK SOLUTIONS

FEATURES & BENEFITS

Our state-of-the-art battery pack system is engineered to offer a highly flexible and scalable solution, tailored to meet both present and future requirements while optimising initial investment.

At its core, the system is equipped with an advanced Battery Management System (BMS) that ensures comprehensive monitoring from the individual cell level through to the complete system. This integrated approach ensures reliability, safety, and adaptability, making it an ideal choice for both current needs and future scalability.

SIZES : 60kWh | 90kWh | 350kWh



Safety

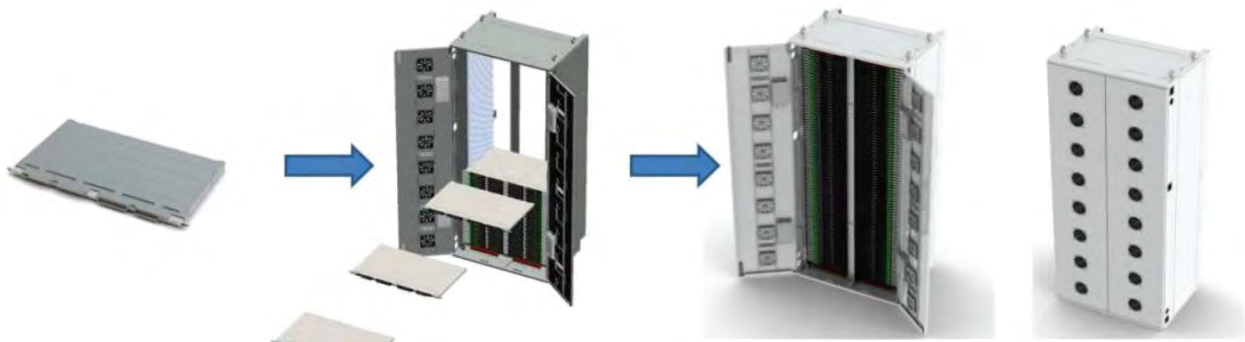


Long Life



Easy
Assembly

CLUSTER SOLUTIONS



Features

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Battery Clusters

The battery cluster, made of 224 series-connected 490Ah cells, managed by a high voltage control box, containing the BCU, relays, fuses, and power resistors, enabling real-time monitoring and protection. This product features high energy density, a wide operating temperature range and long life, making it a reliable and eco-friendly solution.

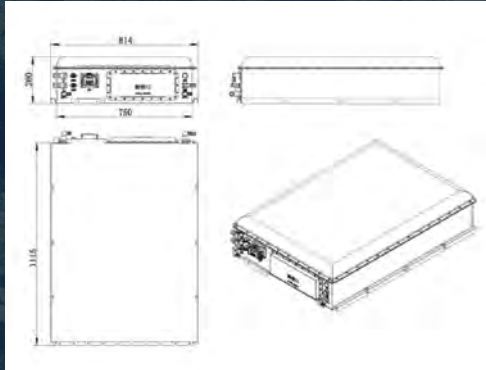
Elegant Finishes

High and low voltage lines, integrations and the three level Battery Monitoring System (BMS), are seamlessly installed in a concealed layout with elegant casing. This design ensures functionality without compromising aesthetics, allowing for an efficient and organised energy management setup.

BATTERIES

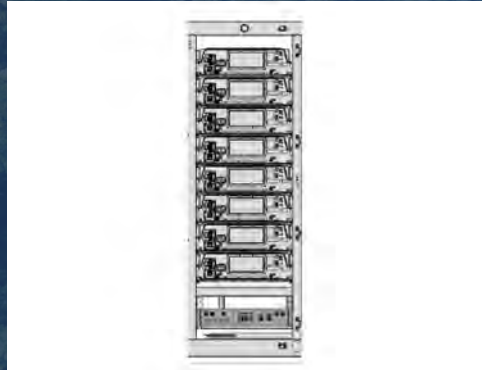
TECHNOLOGIES

STACK SOLUTIONS



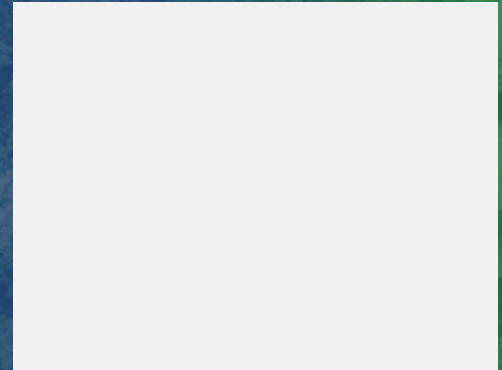
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BATTERY CELL COMPOSITION

3.7V/490Ah
SOLID STATE BATTERY CELL

This Solid-State Battery Cell design integrates mechanical, electrical, and data interfaces, enabling direct installation into energy storage cabinets without module assembly. This simplifies installation, reduces costs, and enhances system efficiency, while built-in voltage and temperature monitoring improves performance tracking and control.

The battery cell has a capacity of 280Ah, and a rated energy capacity of 896Wh. The working voltage ranges from 2.6V-3.65V, the energy density is 170Wh and 355Wh. The recommended SOC usage window is between 5% and 95%, while the standard charge/discharge rate is 0.5P.

Operating temperatures are 0~60°C (Charging)
-30~60°C (Discharging).

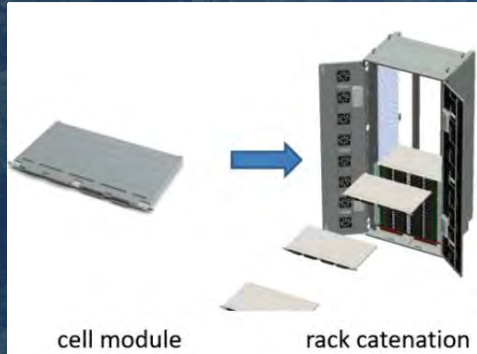
A battery cluster, can be made up of 224 series-connected 490Ah cells, managed by a high voltage control box, enabling real-time monitoring and protection.

This product features high energy density, a wide operating temperature range and long life, making it a reliable and eco-friendly solution.

BATTERIES

TECHNOLOGIES

BATTERY CELL COMPOSITION



3.7V/490Ah SS Battery Cell

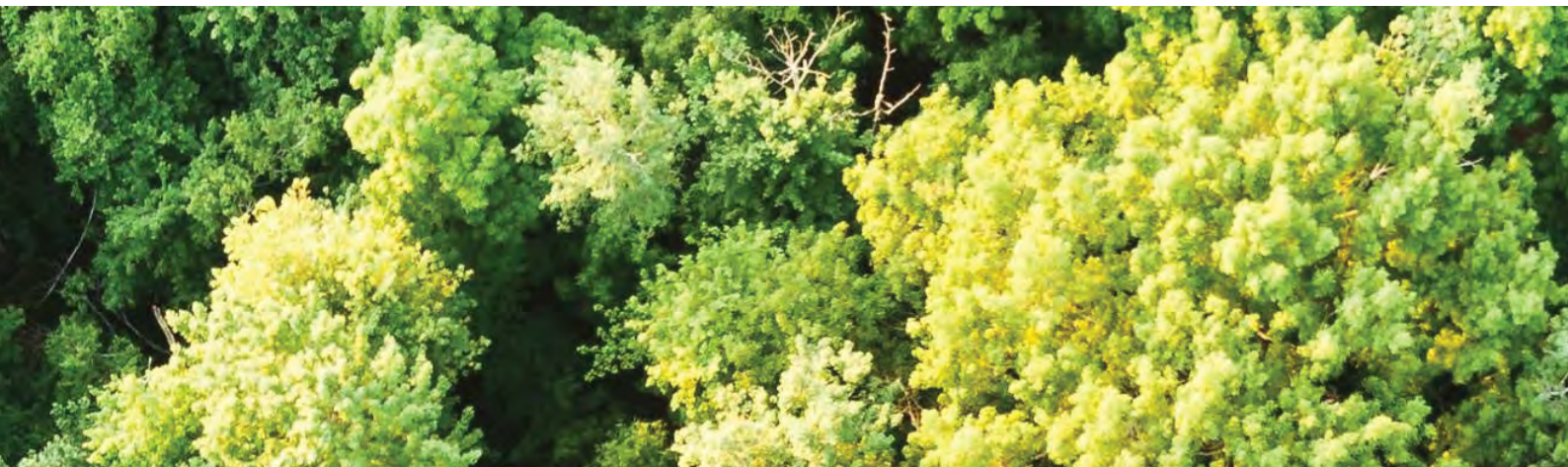
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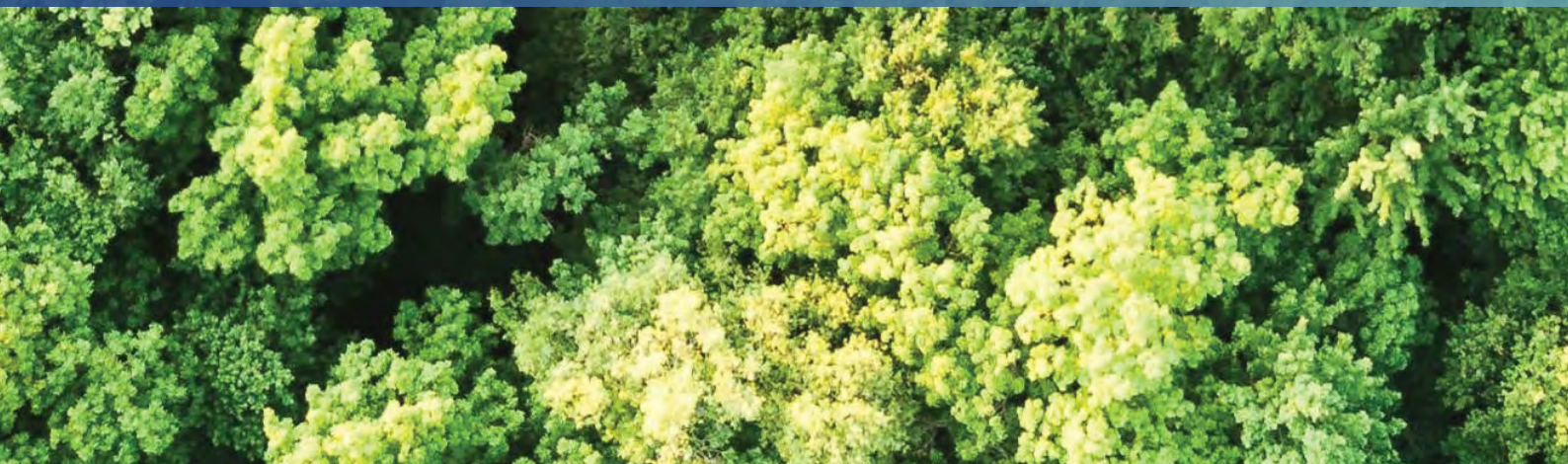
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PROJECTS REFERENCE



PROJECTS REFERENCE

LOCAL & GLOBAL



LOCAL PROJECTS

CASE STUDIES

SOLID-STATE BATTERIES
540kWh | 250kVA

LITHIUM BATTERIES
120kWh | 100kVA

In navigating the intricate South African energy landscape, it is essential to employ a sophisticated blend of technology, design, and strategic energy management to ensure optimal returns on investment. Our case studies exemplify this approach, showcasing how strategic partnerships with OEM's enable us to craft holistic and integrated energy solutions tailored to South Africa's unique challenges and opportunities.

By leveraging these collaborations, we deliver comprehensive strategies that address the complexities of energy management, driving innovation and efficiency in a dynamic environment.

GLOBAL PROJECTS

CASE STUDY

At Probenenergy, we pride ourselves on delivering innovative and effective energy solutions tailored to meet the diverse needs of our clients.

Alongside our OEM Partnerships we demonstrate expertise in integrating cutting-edge technologies and holistic approaches. From optimising energy storage, our projects showcase our commitment to excellence in performance, sustainability, and reliability.

Our rigorous testing, customised solutions, and strategic engineering have enabled us to achieve outstanding results and drive progress in the energy sector.

202MWh

Supported by a 200 MWh solid-state battery and a 2 MWh flow battery, this system integrates grid energy and storage, ensuring continuous power supply and enhanced energy security.

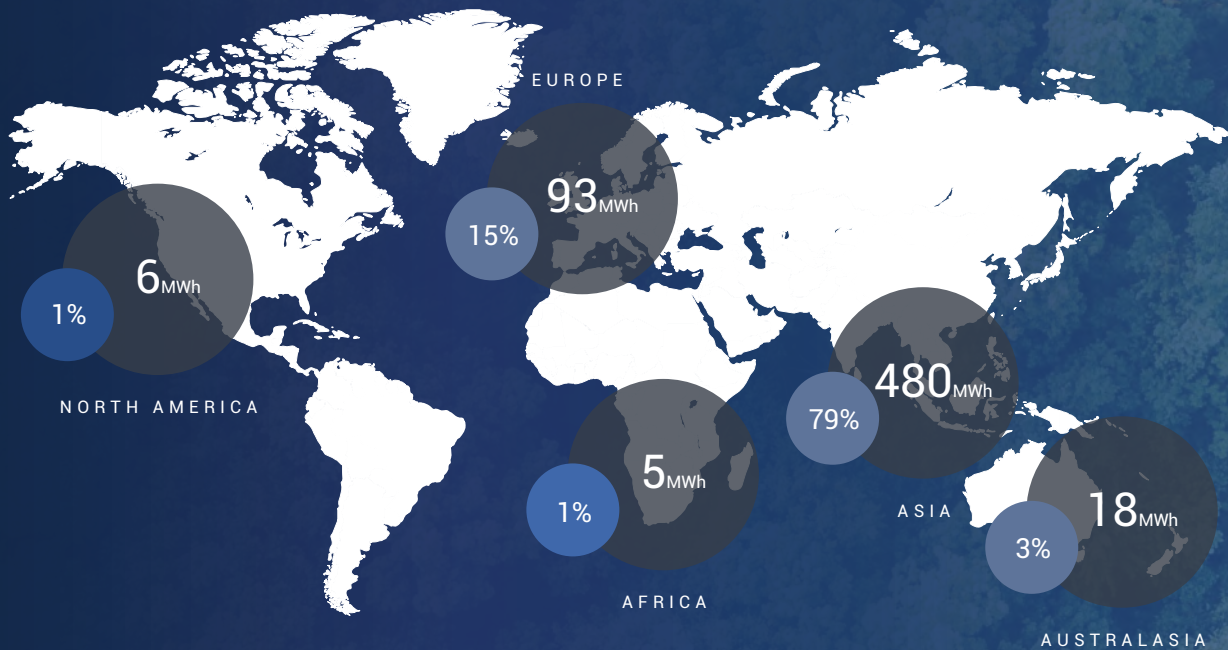
160MWh

Efficiently combining photovoltaics, aquatic farming, wind energy, and energy storage, creating a sustainable and eco-friendly solution for renewable energy production and land use



GLOBAL PROJECTS

ENERGY STORAGE DEPLOYED | IN EXCESS OF 30 GW



* FOR ILLUSTRATIVE PURPOSES ONLY

WORLDWIDE SUPPLY CHAIN

36 LOCAL BRANCHES





Probenenergy
REDEFINING ENERGY STORAGE

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GET IN TOUCH WITH US

REDEFINING ENERGY STORAGE SINCE 1963

**PROBENERGY IN PROUD
PARTNERSHIP WITH:**

PROBE CORPORATION
SINETECH ENERGY
OMNITECH ENGINEERING