



# SPBES

## Energy Storage Systems

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# Leadership Team



## **Brent Perry**

Personally involved in 90% of all large hybrid and electric ferry projects on the water today.



## **Chris Kruger**

A unique ability to understand energy storage from the design and end user side.



## **Paul Hughes**

Extensive expertise within the renewable energy, alternative fuels and biochemical sector.



## **Geoff Davenport**

Geoff Davenport has 40 years of experience in senior sales and strategic leadership.



## **Grant Brown**

Involved in maritime electrification since its commercialization, Grant is able to explain the benefits of energy storage and inspire others.

A Team Focused on Delivering Leading Technology and World Class Service

# Our Partners



June 1<sup>st</sup> 2019 - The principal owners of Shapoorji Pallonji and Sterling Wilson joined the founders of PBES and formed Sterling PBES - giving us the financial capacity to serve the global ESS market. Together they own industrial power companies that generate \$5B USD/year in revenues.

# SPBES Around the World

## SPBES Offices

### **Vancouver, Canada**

HQ R&D and Product Development

### **Trondheim, Norway**

Service Center, Parts Depot

### **Barcelona, Spain**

Project Management and Solutions

### **Kent, UK**

Solutions

### **Copenhagen, Denmark**

Solutions

### **Whangarei, New Zealand**

Solutions & Service

## Manufacturing:

### **GTC Gustrow Germany**

Manufacturing, Service

## Sterling Wilson Offices:

### **Mumbai India**

Solutions

### **Perth Australia**

Solutions

### **UAE**

Solutions

## Noris Automation Offices:

### **Rostock Germany**

Solutions

### **Amsterdam, Netherlands**

Solutions

### **Istanbul, Turkey**

Solutions

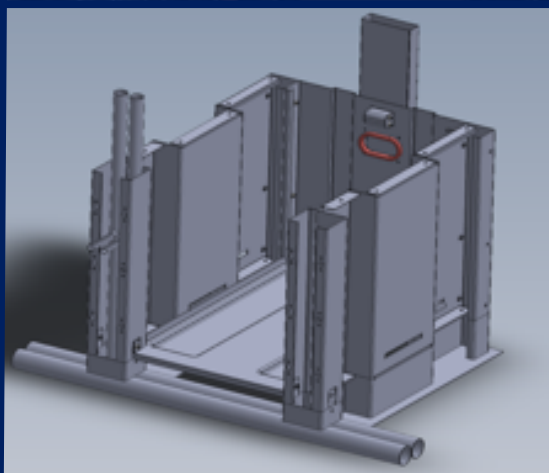
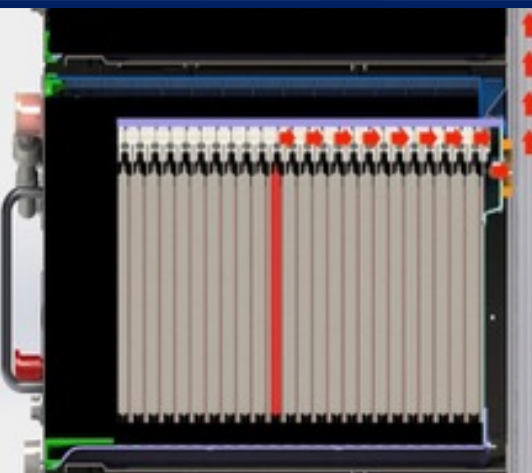
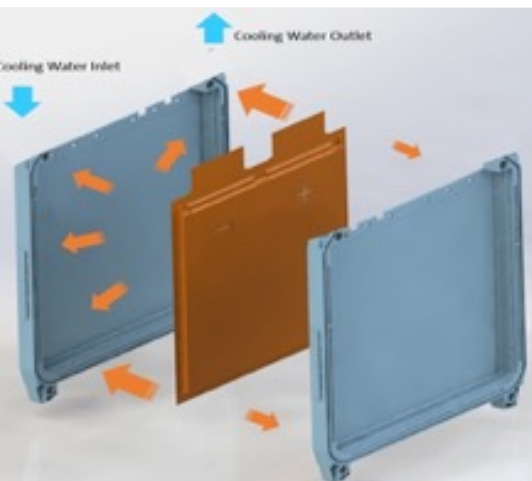
### **Alesund, Norway**

Solutions



# What Makes SPBES Unique

Safe, Powerful, Tough and Economical



## Marine Design

The SPBES Power 6.5kWh and Energy 9kWh solutions are DNV Type Approved and purpose executed for high impact commercial marine installations.

## Safety

SPBES products are the most advanced safety systems available today in the commercial marine industry.

## Sustainability

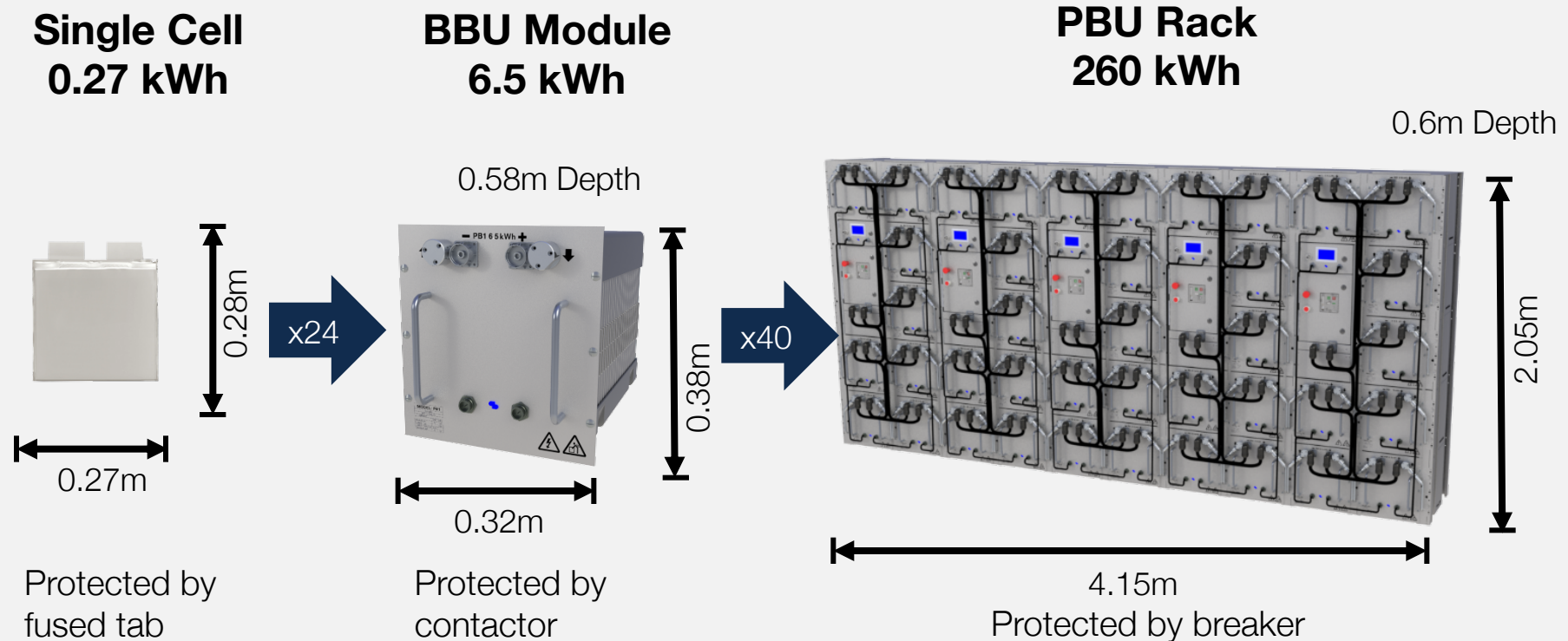
We don't fill up landfills - our products are designed for extended life with nearly 100% recycling included in every contract.

## System Design

Modular flexibility. Included fire detection/prevention, emergency ventilation, battery temperature control and cellular voltage and temperature monitoring.

# SPBES Design: Cell, Module, Rack

## Power System



Battery can be configured for capacity of 13kWh to multiple MWh

# Module Design

Terminals Isolated by Contactor

## No voltage during:

- Shipping
- Installation
- During power hookup
- When system off
- During emergencies
- During service



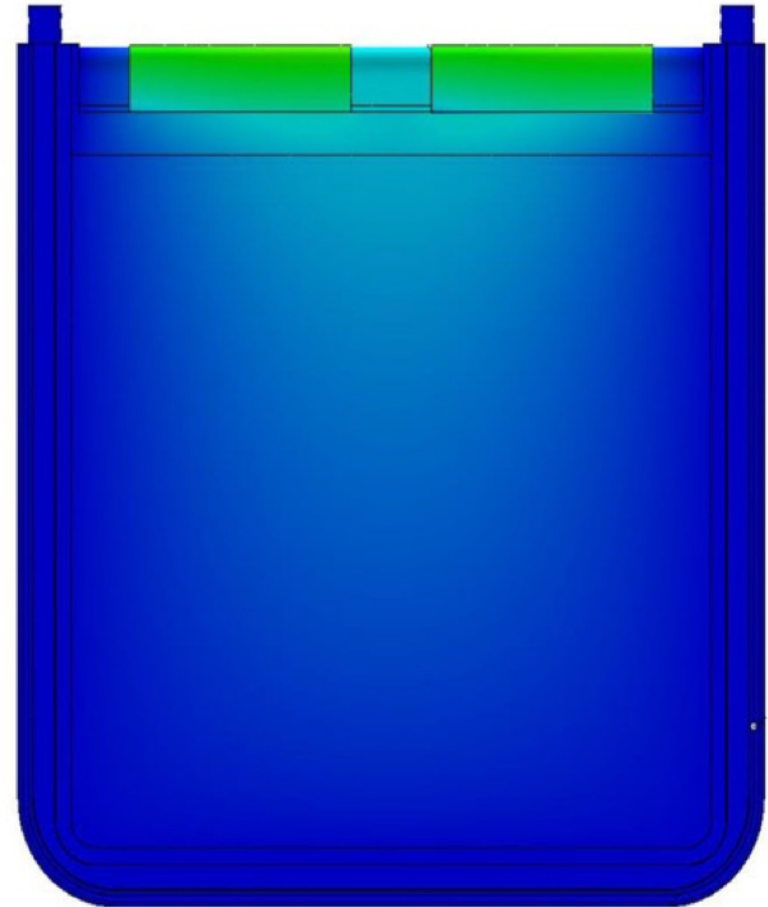
# Cell Carrier Design

SPBES Patented Technology

**Performance** - Maximum performance, smallest systems

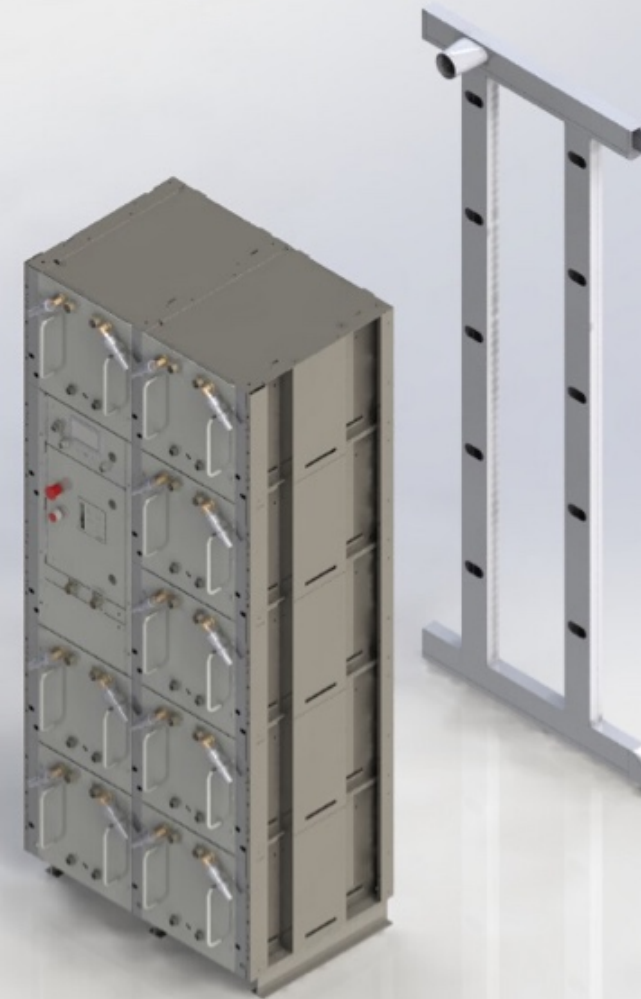
**Safety** - Prevents thermal runaway

**Value** - Lifetime value best in industry





# Rack Design



- Safest rack in the marine industry
- Scalable, flexible, modular
- Cabling, cooling and venting integrated
- 63 G Impact
- Fire detection / fire fighting built in

# SPBES Certification & Standards

**DNV GL Type Approval**

**International Organization  
for Standardization: ISO**



The SPBES energy storage system has received DNV GL Type Approval for use in commercial marine, offshore oil & gas and renewable energy applications.

SPBES has achieved certification of the ISO 9001:2015 standard.

# Industry Partners

## Setting New Standards



DNV·GL




FOUNDED 1862 **ABS**



**LR** Lloyd's Register



Federal Ministry of Transport and Digital Infrastructure



Ministry of Shipping  
Government of India




**DANISH MARITIME AUTHORITY**



MERILITTO - SJÖFARTSFÖRBUNDET RY  
FINNISH MARITIME ASSOCIATION




Sjøfartsdirektoratet  
Norwegian Maritime Authority



SWEDISH MARITIME ADMINISTRATION



**IMO** INTERNATIONAL MARITIME ORGANIZATION



IMO SOLAS

# Why SPBES

3C RMS - More performance smaller systems

Liquid cooled cell carriers

Modular flexibility, open to integration



Integrated Racking & Safety

Thermal runaway prevention

The most experienced marine energy storage team in the world



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