


## Technical datasheet

 PROXHIMA <sup>™</sup> BY GALATECH	VR 25 - 250	VR 40 - 400	VR 40 - 240
Nominal Power	25 kW	40 kW	40 kW
Peak Power	36 kW	48 kW	48 kW
Energy Capacity	250 kWh	400 kWh	240 kWh
Range of Power	0-36 kW	0-48 kW	0-48 kW
Efficiency Charge/Discharge DC	> 80%	> 80%	> 80%
Time of charge "C"	10 h	10 h	6 h
Life time	> 20 years	> 20 years	> 20 years
Number of cycles	> 20.000	> 20.000	> 20.000
Depth of discharge (DoD)	100%	100%	100%
Self discharge rate electrolyte	< 1% year	< 1% year	< 1% year
Average temperature with climate control	-25°C + 55°C	-25°C + 55°C	-25°C + 55°C
Control system & monitoring	Intelligent BESS	Intelligent BESS	Intelligent BESS
Average ambient temperature	+5°C + 35°C	+5°C + 35°C	+5°C + 35°C
Weight (appr.)	16.000 Kg (without container)	25.000 Kg (without container)	16.000 Kg (without container)
Product warranty *	1 year	1 year	1 year
Battery inverter warranty	5 years	5 years	5 years
Dimension (WxDxH)	Container 20'	Container 40'	Container 20'

\*The warranty can be extended with the Proxima Maintenance Service Plan.

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# Proxima

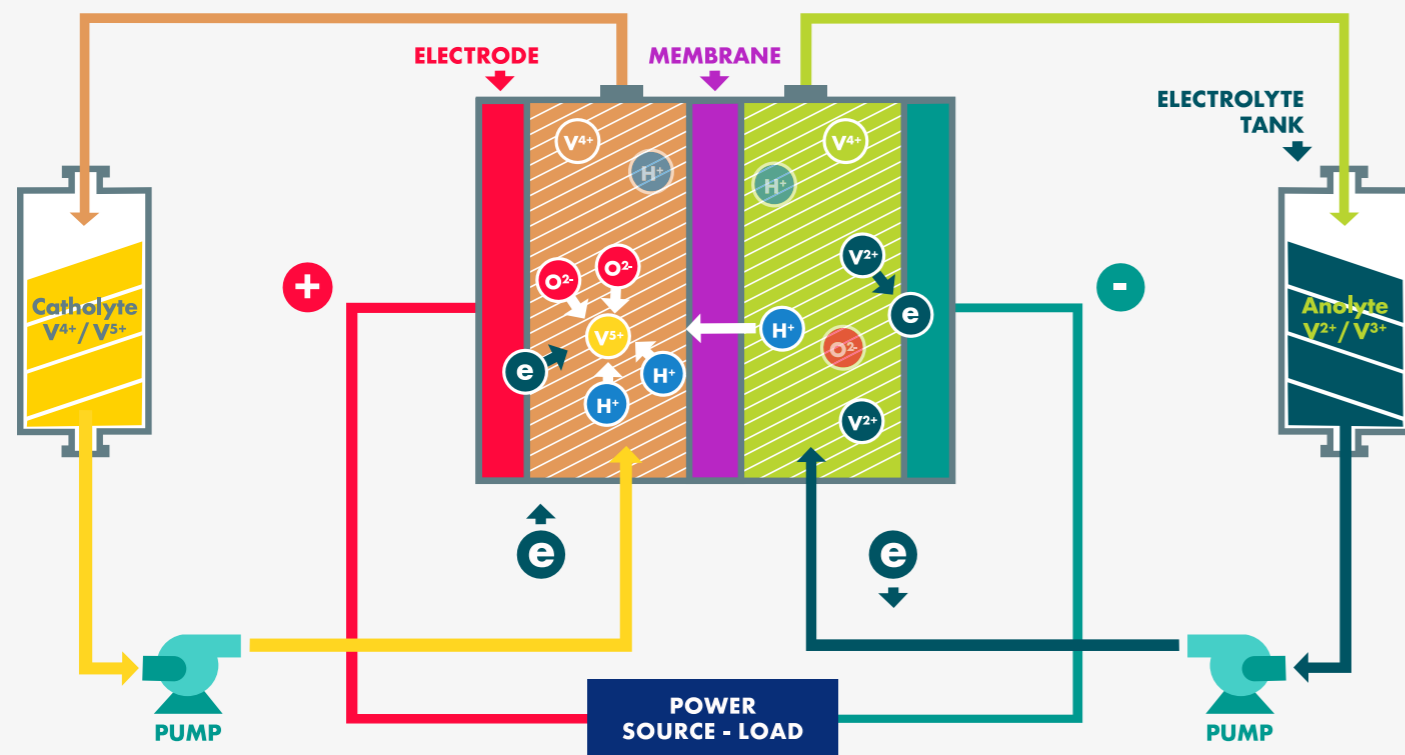
## TOWARDS ENERGY INDEPENDENCE



PROXHIMA MANUFACTURES AND SELLS VANADIUM REDOX FLOW BATTERIES, WITH THE TASK OF MEETING THE NEEDS OF ALL CUSTOMERS.

THANKS TO THE CONSTANT COMMITMENT IN ENGINEERING AND TECHNOLOGY DEVELOPMENT, PROXHIMA BATTERY, THROUGH ITS SCALABILITY, ALLOWS STORAGE UTILIZATION IN ALL CONTEXTS: HOMES, INDUSTRIES, UTILITIES AND OFF GRID SYSTEMS. WITH THREE BIG PLUS: MAXIMUM FLEXIBILITY, EXCELLENT DURABILITY, SAFETY & SUSTAINABILITY. PROXHIMA IS TOTALLY OWNED BY GALA S.P.A WHICH IS A LEADING ITALIAN COMPANY IN THE FOLLOWING SECTORS: SUPPLY OF ENERGY AND GAS, ENERGY EFFICIENCY SERVICES.

 **PROXHIMA**<sup>™</sup>  
BY GALA TECH



## How does it work?

The vanadium redox battery (VRB) is a type of rechargeable flow battery that employs vanadium ions in different oxidation states to store chemical potential energy. The vanadium redox battery exploits the ability of vanadium to exist in solution in four different oxidation states, and uses this property to make a battery that has just one electroactive element instead of two. When energy is needed, pumps move the ion-saturated electrolyte from the tanks, where electrolyte is stored, into the stack, where a chemical reaction causes the ions to change their charge, creating electricity. VRB are unique in their ability to meet specific energy storage and power demands of almost any size. Because the electrolyte that stores the energy in a VRB is housed in external tanks, it allows power and energy density to be scaled up independently of each other. Another unique attribute of a VRB is the fact that the electrolyte is stored externally from the battery's electrode or stack, which prevents the self-discharging that occurs in other battery systems.

## Main benefits

### 1 ABOUT VANADIUM REDOX TECHNOLOGY

- VERSATILE - power and energy are independently scalable.
- DURABLE - more than 20.000 charge and discharge cycles.
- AVAILABLE - negligible self-discharge.
- SAFE - non flammable; non explosive.
- GREEN - emission free and electrolyte can be reused at end of lifetime (circular economy).
- AFFORDABLE - cost for kWh decreases with increasing energy.

### 2 PLUS OF PROXHIMA PATENTED SOLUTION

- MODULAR - all components are integrated in one box designed with a RAMS approach.
- SCALABLE - placing side by side the plug and play modules.
- CONTROLLABLE - real time remote control and monitoring.
- INTELLIGENT - smart BMS apply management logics based on artificial intelligence.
- RESILIENT - in multi-modules configuration a fault of a module doesn't damage the system.
- POWERFUL - more power in comparison to similar technologies.

## Main applications

### 1 UTILITY SCALE (MW)

- Smart Grid stabilization.
- Energy Arbitrage.
- Integrating wind and solar to complement existing baseload generation.
- Load levelling and peak shaving.
- Stabilising voltage and frequency.
- Improve power quality.
- Deferring upgrade investments for large generators.
- Uninterruptible power supply for industrial applications.

### 2 SMALL (KW) TO LARGE SCALE (MW)

- Micro Grid stabilization.
- Demand Side Response application.
- Energy Arbitrage.
- Combined with solar or wind generation for remote communities (Remote Area Power Systems).
- Replacement of diesel generation for inaccessible installations.
- Uninterruptible power supply for commercial/telco/media applications.
- Time shift and self supply.