

# Pinflow energy storage

## Solution for stationary applications



### Independent power and capacity according to requirements

When compared to conventional batteries, the power of flow battery is not directly coupled to the capacity which enables to tailor the battery parameters according to customer needs.



### Excellent durability and cycleability

System is based on vanadium electrolytes, biodegradable electrodes and durable membrane. Based on accelerated testing, the durability of >15000 full charge-discharge cycles is expected (corresponding to >25 years lifetime).



### Safe and environmentally friendly

Non-explosive and non-flammable solution due to the use of aqueous electrolytes. Our electrolytes do not contain heavy metals and are fully recyclable and reusable for energy storage.



### Strong and robust solution

Possibility to overload (long-term) the system by up to 250 % without affecting the battery life. Total discharge without signs of degradation, operates in wide range of temperatures.



### Low maintenance requirements

The whole system is remotely monitored and requires only minimal maintenance, servicing of installed systems is therefore significantly reduced.

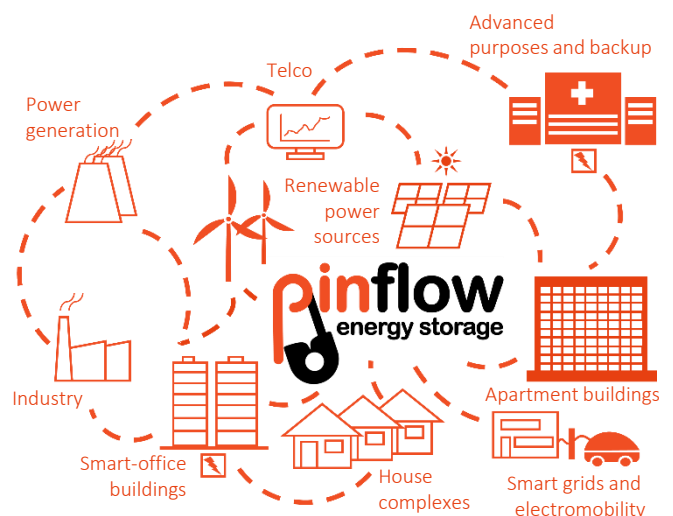


### Cheaper capacity than power

Low cost storage when related to the capacity and lifetime. LCOE are enhanced by high efficiency of our battery stacks.

### We are ready for your grid

The tailor-developed solutions for stabilizing and management of renewable energy sources. The advantages are fast charging, UPS mode, online monitoring and control via the mobile application.



## Performance

DC/DC round-trip efficiency	> 80 %		
AC/AC round-trip efficiency	> 70 %		
Depth of discharge	100 %		
Power at declared efficiency	5 kW	50 kW	250 kW
Rated current	105 A	105 A	525/262 A
DC voltage	48 V	480 V	480/960 V
Energy capacity	Up to 50 kWh	Up to 500 kWh	Up to 2 MWh
Max. discharging power	12 kW	120 kW	500 kW
Max. charging power	10 kW	100 kW	400 kW
AC/AC round-trip efficiency at max. power (overloaded)	> 60 %		
System life	> 25 years, > 15000 cycles		

## Environmental

Operating temperature	-15°C to +45°C outdoor temperature
Extended operating temperature (optional)	-35°C to +55°C outdoor temperature
Environment	Indoor and outdoor
Enclosure rating	IP 54

Information subject to change without notice.

