



Clean and affordable energy storage

Ni-FeS - Stage 1

Development of our flooded Ni-FeS battery
 Fast (dis)charge rates (<15 min)
 100% DoD without failure
 75% overall efficiency
 300 cycles (aim for 500 cycles)
 Revolutionary cell design with swapping electrodes at its end-of-life to extend the lifetime

Ni-FeS - Stage 2

License our iron technology
 Demonstrate cost-effective production
 Explore alternative lower cost cathodes (e.g. manganese, air)
 Increase energy density and cycle life by implementing gel/solid state electrolyte
 Explore in-house innovative electrode production method for other battery types - e.g. Li-ion, Ni-Zn

FeS-Air - Stage 3

Fe-Air is the most clean and low-cost option for energy storage and this is our ultimate goal. In the meantime, we will license and continue to advance our technology and production methods

	Pb-acid	Li-Ion	Ni-Cd	Ni-FeS (stage 1)	Ni-FeS (stage 2)	FeS-air (stage 3)
LCOE (€ per cycled kWh)	0,28	0,12	0,16	<0,125	0,08	<0,025
Capital cost (€ /kWh)	<100€	<150€	<250€	<150€	<100€	<50€
Cycle life	1000	1200	1000	300 - 500	2500	5000
Recyclable	+	-	+/-	+++	++	++
Weight	--	+++	-	+	++	+++

applications

Through our electrochemistry, innovative production method and swappable design we aim to use iron as the cheapest battery material on earth to enable energy storage for everyone. Our technology will be applicable to a wide range of applications, starting with cargo e-bikes and fork lift trucks. These applications allow us to manage the E-Stone battery over a shorter lifetime and extend the lifetime by replacing the iron electrode effectively. In the second and third stage when we have established longer cycle life (for which iron is known) we will move towards on and off-grid storage applications for solar and wind energy.

