REBEL CORE

Unlock the full power with individual cell control

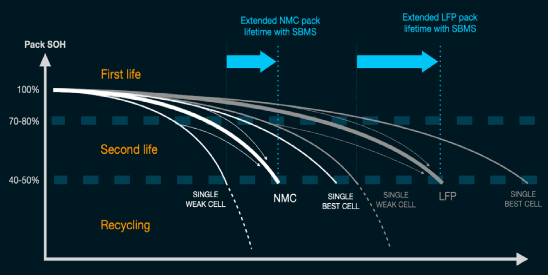
HAGAL

Cell Switching Principle

Advance your energy storage solutions with Rebel Core's innovative SBMS architecture. Unlike traditional battery management systems, Rebel Core guarantees the safest management of second-life electric car batteries, reducing the risk of fire.

Extended battery lifetime

By controlling each cell individually, the load can be determined for each cell over time and thereby harmonize the lifetime of all cells in a pack. For a battery system you ensure that all cells are utilized to the maximum and ensure a maximum operating time and at the same time that all cells in a pack will be exhausted at approximately the same time.



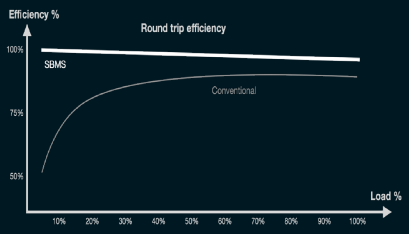
KVANTA RT-OS

Revolutionize your energy storage with KVANTA RT-OS. This advanced software is the core value of Hagal, and it sets Rebel Core apart from its competitors. Developed with the latest R&D technology, KVANTA RT-OS delivers exceptional performance and efficiency to Rebel Core.

Efficiency Curve (Ultimate efficient)

The efficiency curve of SBMS sets it apart from traditional inverters. Unlike conventional systems, the idle losses of SBMS are practically zero. Rather than being lost as heat, energy is stored in the battery. As battery applications increasingly require longer operating times, this becomes particularly crucial. Traditional battery discussions have focused on the peak

load that can be sustained on a cell level and the speed of energy discharge and recharge. However, future renewable solutions will rely on long-term backup of energy from solar and wind power. In this context, loss is unacceptable.



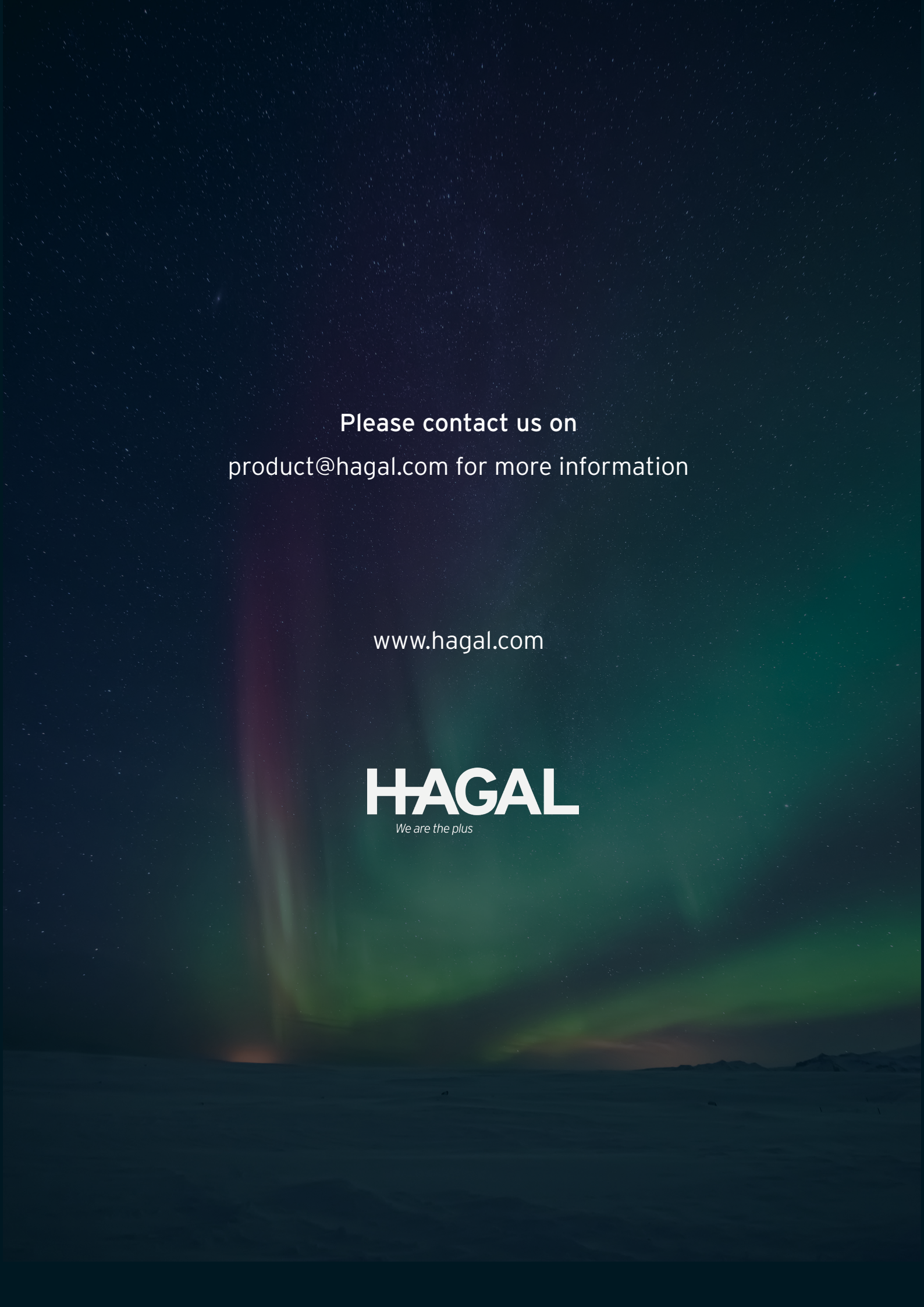
Rebel Core

The Switching BMS from Hagal will maximize lifetime of any battery pack by providing individual cell control.

	Cost	Efficiency	Safety	Targeted systems
H - Core	Superior	Superior	BMS monitoring Module failover	Multi level inverter. A cost effective solution for high performance distributed block switching
L - Core	Good	Good	High fire safety Dead cell failover	Very good architecture for DC regulated (Cell level PWM) or AC modulated low voltage systems.
Z - Core	Good	Superior	High fire safety Dead cell failover	The ultimate architecture for high voltage DC regulated or AC modulated systems. Need more overprovision.

Safe and Robust

Over time, cells lose energy storage capacity due to stress, high loads, and operating temperatures. To avoid cell death and short-circuits, it's vital to continuously monitor the temperature at the cell level. With SBMS technology, cells are monitored individually and their health status is continuously tracked. A single cell can be disconnected within microseconds in case of any issues, while the rest of the battery pack remains operational. This prevents cell malfunction and the risk of fire, which increases when the cell's health falls to 40-50% residual capacity.



Please contact us on

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www.hagal.com

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We are the plus