



 Eleven

Sodium Battery

Sustainable, Safe & Intelligent Energy Storage
For Homes & Small Businesses



LITHIUM MINING'S ENVIRONMENTAL TOLL

Water-Intensive Extraction

Lithium mining from underground brines consumes vast amounts of water—over 1.9 million litres per tonne of lithium extracted.

Threat to Biodiversity

Mining operations disrupt native ecosystems, endangering plant species and migratory wildlife.



Impact on Local Communities

Lithium mining depletes water supplies critical for agriculture and livestock, while mining waste risks contaminating soil and freshwater sources.

Soaring Lithium Demand

Global lithium demand, driven by EV batteries and energy storage, is projected to grow over 40-fold by 2040. However, limited reserves and concentrated supply chains in a few countries pose significant challenges.



SODIUM

A Sustainable Alternative



Abundant and Accessible Resource

Sodium is over 1400 times more abundant than lithium. Eco-friendly extraction and processing methods, well-established globally for producing sodium chloride and soda ash, are already in place.

Sustainable Materials for Production and Recycling

- Cathodes: Made from industrial by-products such as iron oxide and manganese oxide, minimising waste.
- Anodes: Produced from abundant materials like cardboard, straw, or coal.

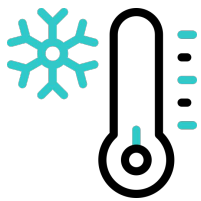
Environmental and Ethical Benefits

Sodium-based batteries avoid the use of toxic or unethically sourced materials like cobalt, offering a greener and more socially responsible alternative to lithium-ion technologies.



Robust

Reliable Performance in Extreme Temperatures



Sodium ion experiences lower ionic resistance than lithium ion. Their weaker bonds with the electrolyte allow for freer movement, reducing heat generation and enhancing performance in demanding conditions. The use of hard carbon anodes, with their spacious structure, further minimises resistance, boosting overall efficiency.

Our sodium battery can operate from -20°C to 55°C , compared to lithium batteries, which typically function between 0°C and 40°C . This makes our sodium batteries more reliable in both extreme cold and hot conditions, ensuring year-round performance.

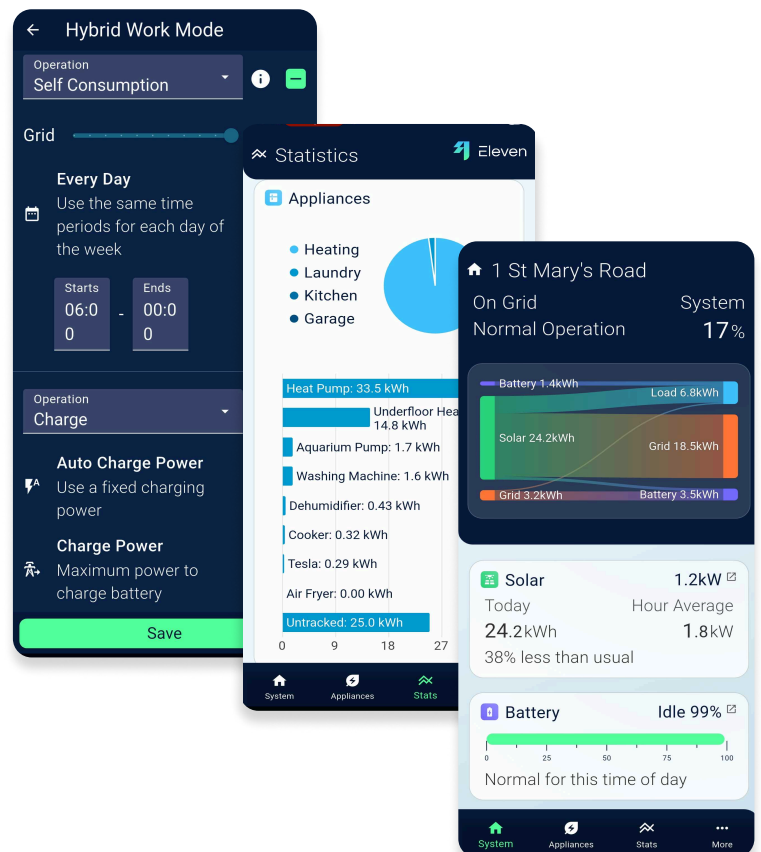


INTELLIGENT

Energy Management System

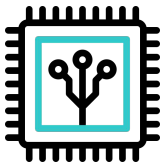


- UK-based secure data hosting
- Integrated monitoring of third party devices, such as EV charger and heat pump
- Automatically manage immersion heater based on available solar energy
- Easy access to real-time and historical data on energy production, consumption and storage.
- Supports AC-coupled to existing PV systems
- Remote control of settings including charging and discharging schedules and export power limit
- Prevent home battery from discharging to EV
- Compatible with Agile Octopus tariff.





HYBRID INVERTERS



- Single-phase: 3.6 kW, 5 kW and 6 kW inverters (2 MPPTs)
- Single-phase: 8 kW, 10 kW and 12 kW inverters (3 MPPTs)
- Three-phase: 12 kW inverter (3 MPPTs)
- Blackout backup power supply
- Up to 1.5x solar oversizing
- IP65 ingress protection
- Operating Temperature Range: -25°C to 60°C
- 10-year product warranty



BATTERY

4.5 kWh Expandable Battery Module



- Depth of Discharge:
92% On-grid / 95% Off-grid
- Rated voltage: 45 V
- Operating Voltage: 33 V to 59.2 V
- Maximum Charge/Discharge Rate:
100 A (single module); 200 A (multi-
module)
- Operating Temperature Range:
-20°C to 55°C
- IP65 ingress protection
- Up to 16 battery packs can be
connected to a single inverter (four
stacks of four batteries)
- 8000 cycle life
- 10-year product warranty



Battery Module: 640 x
350 x 250 mm
Junction Box: 640 x 220
x 250 mm
Base: 640 x 80 x 250 mm



Eleven

Clean Power
Smart Energy
Infinite Potential

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