

# HEU - SPRINT Project Kicks Off

Funded under Horizon Europe, **SPRINT** will drive advancements in **Sodium-ion battery development for stationary applications** to accelerate the energy transition.

## Press Release - Feb. 2025



**Sustainable European sodium-ion batteries for stationary applications featuring improved PProcesses, Inherently safe and Non-Toxic materials**



### **The Need for Sustainable Alternatives in Stationary Energy Storage**

As demand for stationary energy storage grows, lithium-ion batteries (LIBs) dominate the market. However, issues like raw material dependencies, cost volatility, safety risks, and environmental impact call for alternative chemistries. Sodium-ion batteries (SIBs) offer a promising solution with low-cost, non-toxic materials, but challenges such as energy density, cycle life, and large-scale manufacturability, along with sustainability concerns in cathode materials, limit their competitiveness.

### **SPRINT's approach:**

SPRINT will enhance performance by developing safe, non-toxic electrodes and optimising polymer composite electrolytes for improved safety and operation. It will demonstrate scalable, cost-effective manufacturing using European supply chains and validate high-performance, sustainable chemistries tailored to end-user needs, ensuring rapid commercialisation.



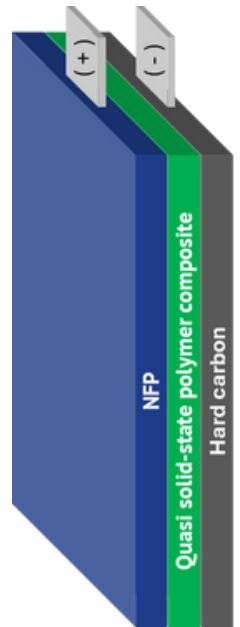
Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Co-funded by the European Commission and the SERI

Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

## SPRINT key innovations:

- **Optimised NFP cathode** materials developed through novel synthesis methods.
- **Hard-carbon anodes** derived from forest residues in Northern Europe.
- **Quasi-solid-state polymer and polymer composite electrolytes** with solvent-free synthesis, offering a safer alternative to flammable liquid electrolytes.
- Strategic **interface optimisations** to enhance cycle life.
- **Dry electrode processing** (incl. PFAS-free binders) to improve the environmental footprint of battery manufacturing.



## Key performance indicators:

- ✓ Cost reduction to **0.04€/kWh/cycle**.
- ✓ Increased energy density (**>200 Wh/kg & >420 Wh/L**).
- ✓ High power capability (**>500 W/kg**).
- ✓ Extended cycle life (**>5,000 cycles**).
- ✓ Enhanced safety through a **leak-free, non-flammable** design.

## Consortium and expertise:

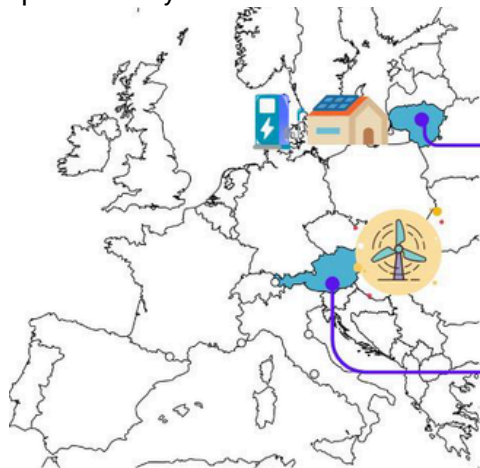
SPRINT gathers **17 partners** spread across Europe to drive innovation and address key challenges in energy storage and sustainability.

Expertises gathered cover the full value chain, from materials development to battery recycling, incl. cell and module prototyping.



## Demonstration and Roadmap to higher TRLs:

The developed battery solutions will be demonstrated at two pilot sites: **Austria & Lithuania**.



### 5kWh Demonstration in LT:

Battery connected to the grid, building loads, a PV inverter and an electric vehicle charging station

### 10kWh Demonstration in AT:

Battery connected to the grid and wind energy sources of the Lichtenegg Energy Research Park

To support commercialisation, an **Exploitation Board** will oversee market readiness, ensuring the successful uptake of SPRINT's innovations.

## Key communication channels:



SPRINT is already available on LinkedIn

You can also track progresses on our website: [www.sprint-he.eu](http://www.sprint-he.eu)