

BATTERY 2030+

At the heart of a green and connected society

A Large-Scale Research Initiative on Future Battery Technologies

**Nanomaterials are a prerequisite for good
batteries**

<http://battery2030.eu>

Coordinator: Prof. Kristina Edström, Uppsala University, Sweden

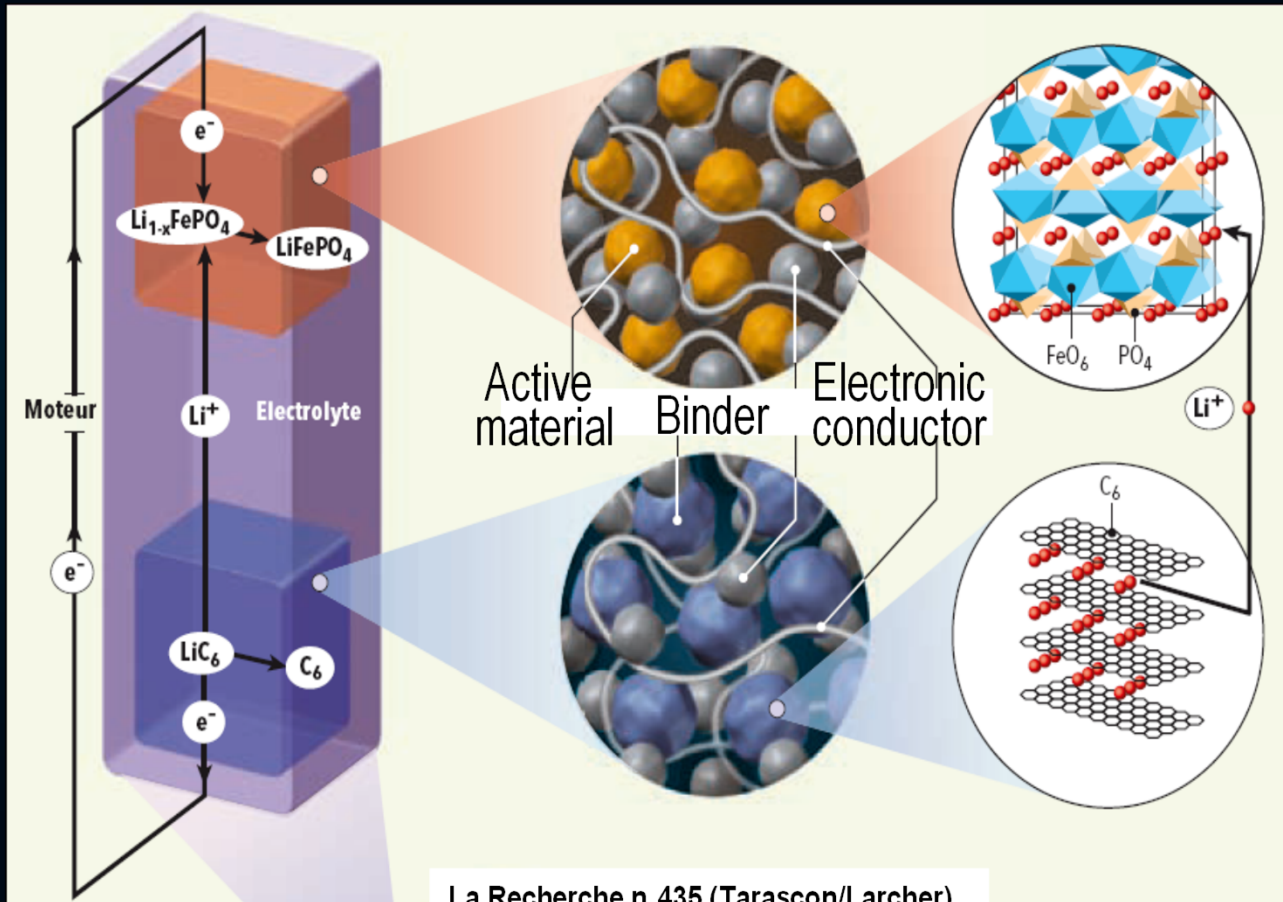
Deputy Coordinator: Dr. Simon Perraud, CEA, France



LITHIUM AND SODIUM-BASED BATTERIES

Positive electrode

Negative electrode



Estimate:
15
different
interfaces

BATTERY
2030+

BATTERY 2030+ - A LONG-TERM RESEARCH INITIATIVE

- Inventing the batteries of the future
- Providing breakthrough technologies to the European battery industry across the full value chain
- Enabling long-term European leadership in both existing markets (road transport, stationary energy storage) and future emerging applications (robotics, aerospace, medical devices, internet of things, ...)



Ultrahigh
performances



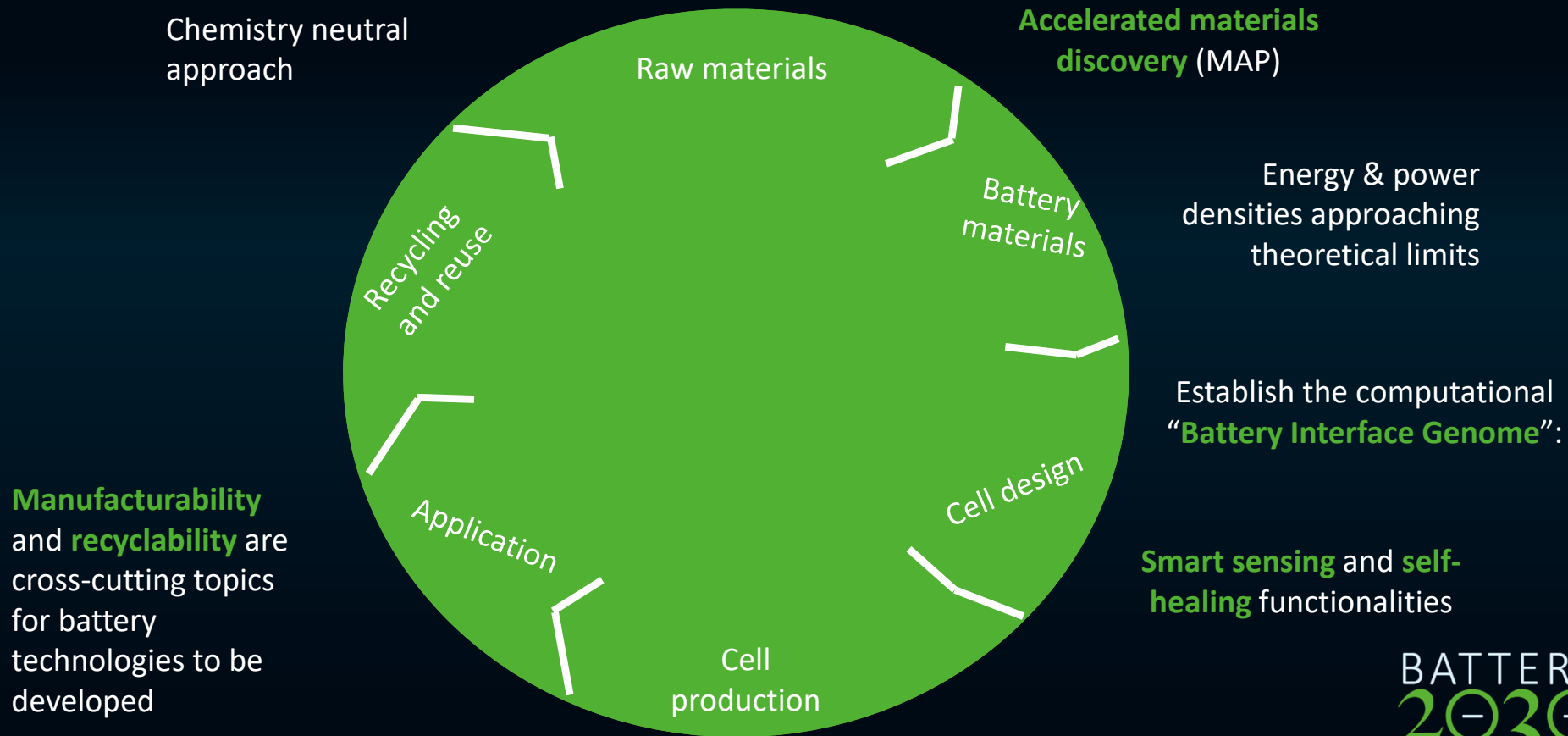
Smart
functionalities



Environmental
sustainability

BATTERY
2030+

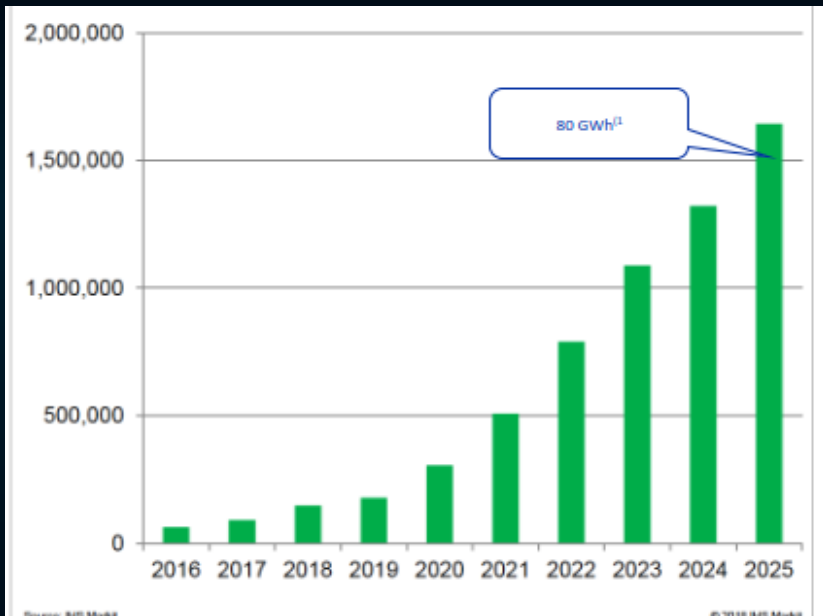
NOVEL CONCEPTS ALONG THE FULL VALUE CHAIN



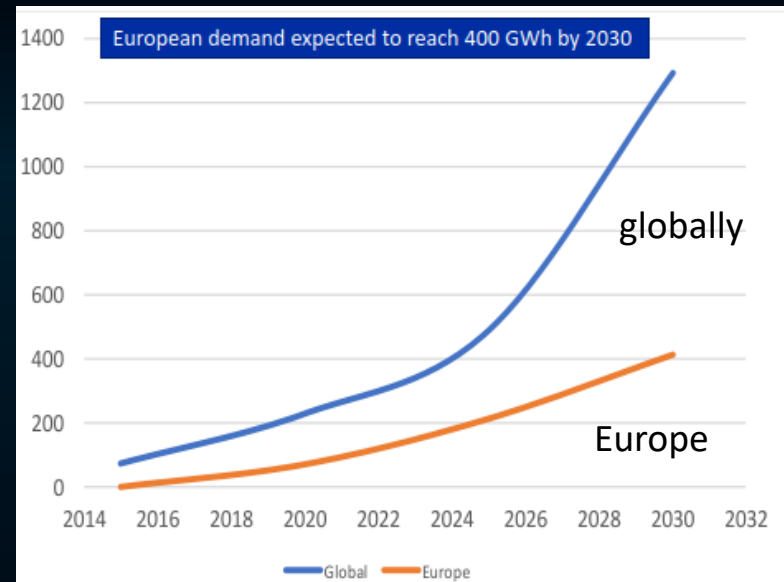
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DRIVERS FOR BATTERY RESEARCH

Transport sector, large scale storage, UPS and grid quality



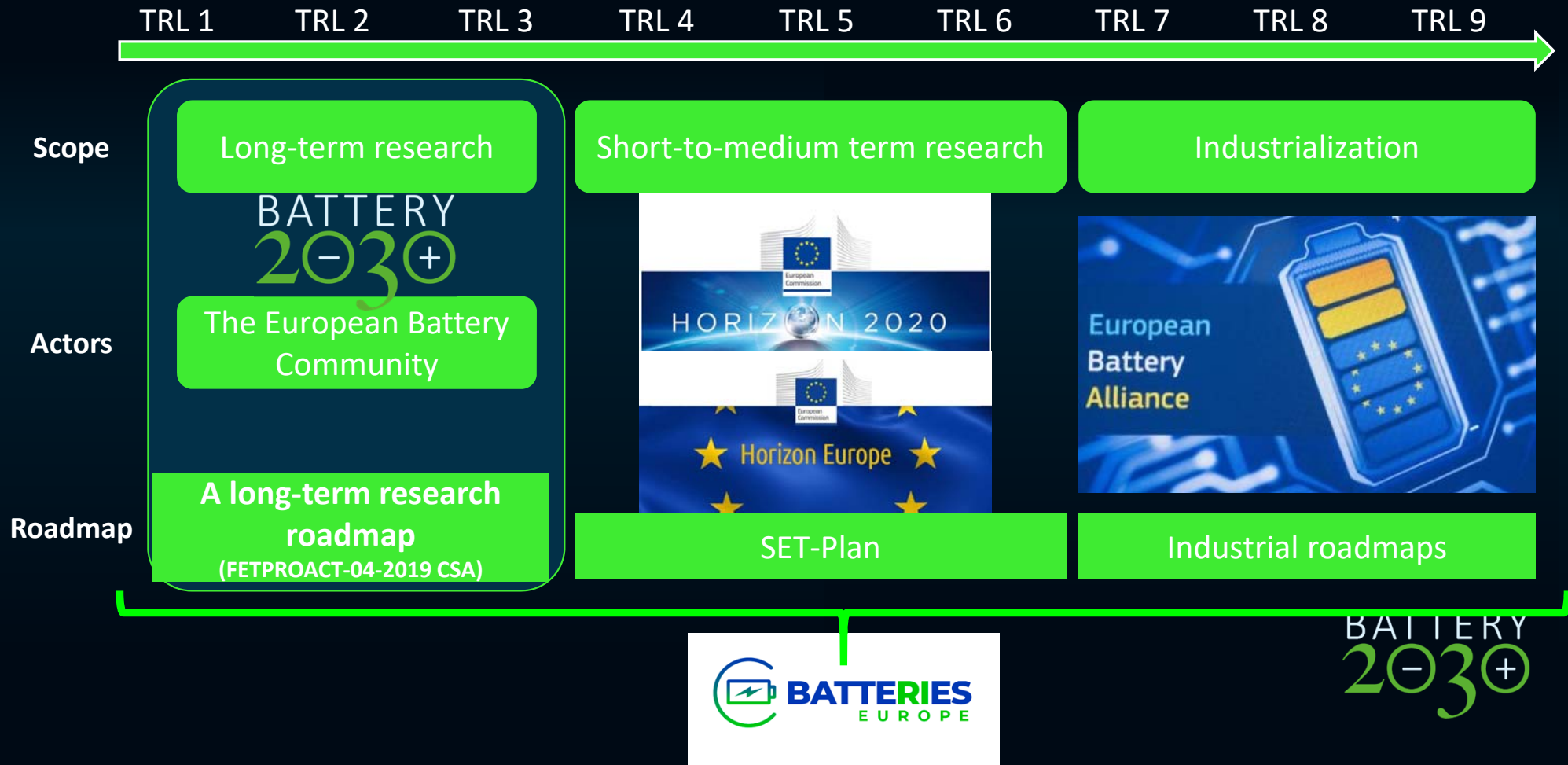
The expected increase in number of electric vehicles (EVs)



The cost of the Li-ion batteries is decreasing

The hokey stick model

A LONG-TERM RESEARCH INITIATIVE IN THE BATTERY R&I LANDSCAPE

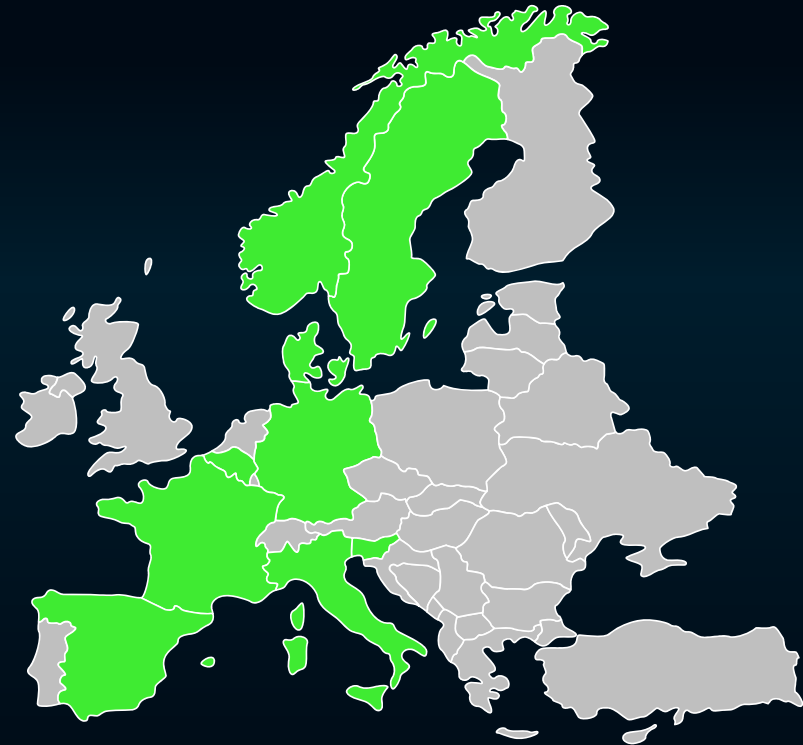


A LONG-TERM BATTERY RESEARCH ROADMAP – SO FAR

- Long-term objectives:
 - Energy & power densities approaching the theoretical limits
 - Outstanding lifetime & reliability
 - Enhanced safety
 - Environmental sustainability
 - Cost effectiveness
- Specific research areas contributing to the objectives:
 - Accelerated battery material discovery & interface engineering
 - Smart sensing & self-healing functionalities
 - **Open to ideas for new research areas!**
- Cross-cutting research areas:
 - Manufacturability
 - Recyclability

CORE GROUP

- **Uppsala University, coordinator**
- Westfälische Wilhelms Universitaet Münster MEET
- Forschungszentrum Jülich GMBH FZJ
- Politecnico di Torino POLITO
- Kemijski Institut
- Vrije Universiteit Brussels VUB
- RECHARGE
- CEA
- Technical University of Denmark DTU
- Fundacion CIDETEC
- Sintef AS
- CNRS
- Energy Materials Industrial Research Initiative EMIRI
- Fraunhofer-Gesellschaft FhG
- Karlsruher Institut für Technologie KIT
- European Association for Storage of Energy EASE



STAKEHOLDER SUPPORT

Core group



Supporting organizations



Industry (90+ companies belonging to the core or supporting organizations)

