



The new Strategic Research & Innovation Agenda for batteries

Redefining the dynamics for the European battery sector

| 2024 |

Introductory Remarks from the Batteries European Partnership Association



Fabrice Stassin

Director Government Affairs,
Umicore &
Secretary General, BEPA

Webinar Agenda

10:00-11:30, 20 March 2024

STRATEGIC RESEARCH & INNOVATION AGENDA

February 2024



BATT4EU
Batteries European
Partnership

European Partnership



Co-funded by
the European Union

Welcome and Introduction

Intervention from the European Commission

Discovering the SRIA topics

Panel Discussion: understanding the future
agenda for batteries R&I

Concluding Remarks



EUROPEAN
PARTNERSHIP

What is the Batt4EU Partnership?



A co-programmed Partnership under Horizon Europe

PRIVATE SIDE OF THE PARTNERSHIP



**Association Delegation
&
Members**

**+ 220 BATTERY
STAKEHOLDERS**

PUBLIC SIDE OF THE PARTNERSHIP



EC Delegates

**DG RTD
DG MOVE
DG CNECT
DG CLIMA**

Both partners invest **925** million in battery R&I

The Batt4EU vision & objectives

Establishing a competitive and sustainable European battery value chain for e-mobility and stationary applications



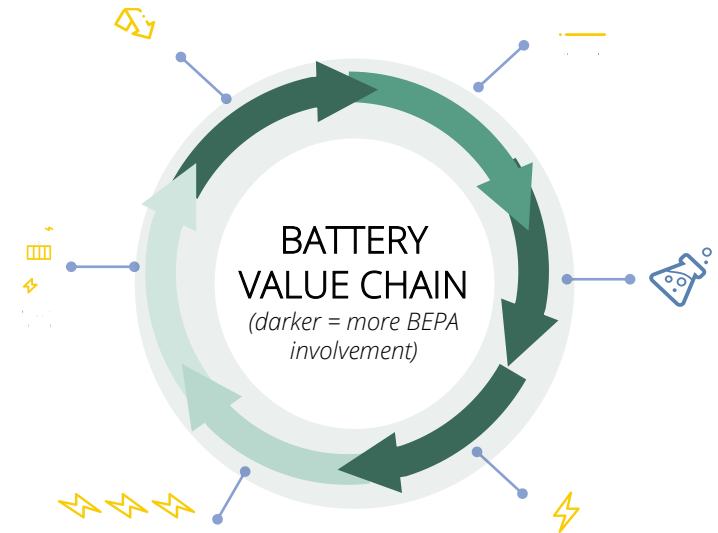
Support the development of **differentiating technologies in battery materials, cell design and manufacturing and battery recycling**



Accelerate innovation and deployment of **sustainable and affordable battery solutions for clean mobility**



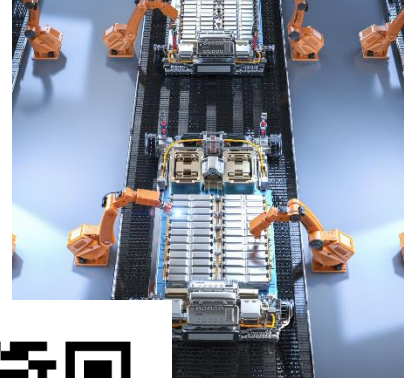
Develop **affordable batteries for stationary energy storage** applications to integrate in the power grid



What is SRIA?

The new Agenda which will guide R&I priorities along the battery value chain

- A Batt4EU **publication** advising on future **R&I actions** and **funding** allocation for batteries
- Over **500 experts** gathered under BEPA & Batteries Europe **Working Groups** contributing to the SRIA
- The second Batt4EU SRIA since 2021, with updated **priorities** for future **Horizon Europe** work programmes



Introductory Remarks from the European Commission



Rosalinde van der Vlies

Director of the Clean Planet
Directorate in the European
Commission's Directorate-General
for Research and Innovation

Discovering the SRIA Topics with BATT4EU Working Groups



Victor Trapp



Silvia Bodoardo



Daniela Fontana



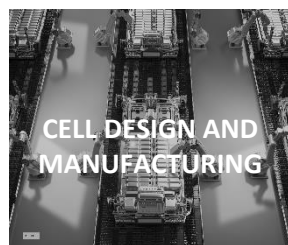
Franz Geyer



Luigi Lanuzza



Edel Sheridan





Victor Trapp

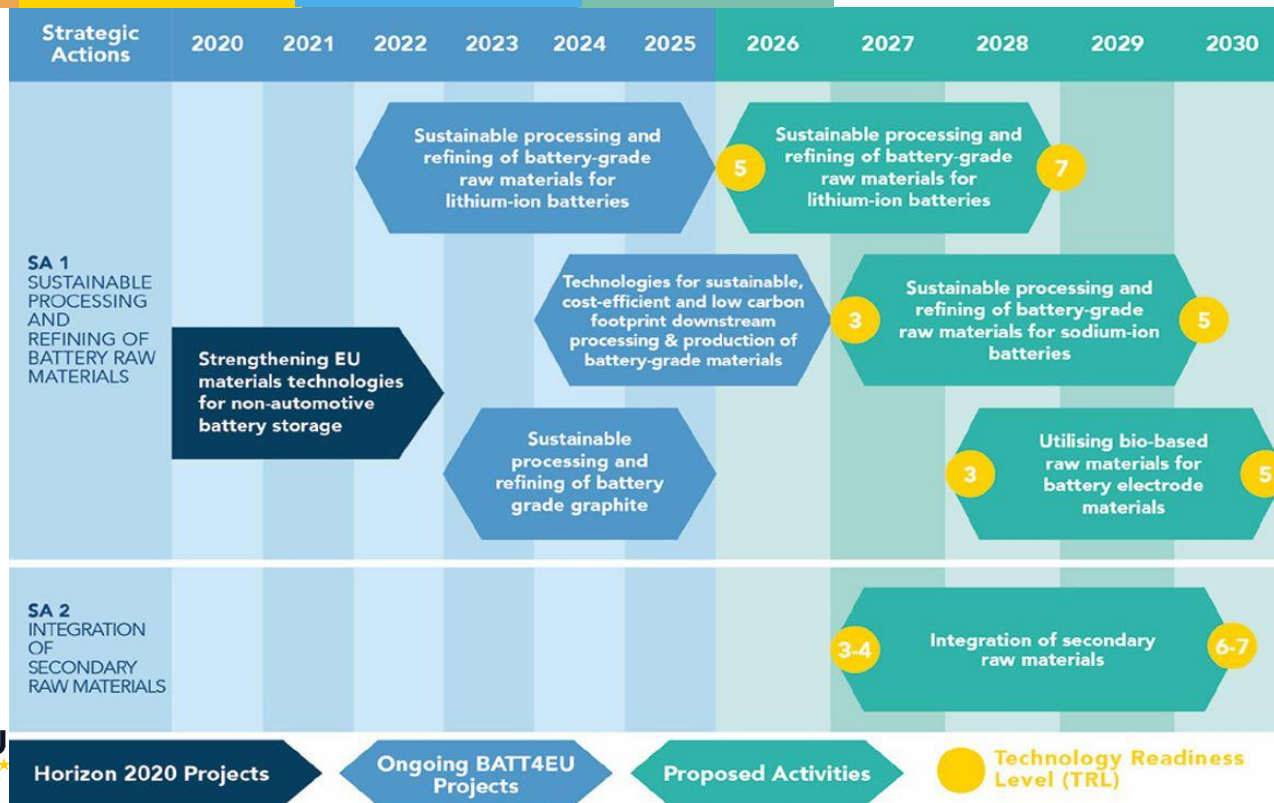
Head of Marketing and Sales, Fraunhofer Institute
ISC &
Repr. WG on Raw Materials and Recycling



Strategic Actions for Battery Raw Materials

- *Sustainable processing and refining of battery-grade raw materials for **lithium-ion batteries***
- *Sustainable processing and refining of battery-grade raw materials for **Sodium-ion batteries***
- *Utilising **bio-based raw materials** for battery electrode materials*
- *Integration of **secondary raw materials***

Timeline of Actions for Battery Raw Materials

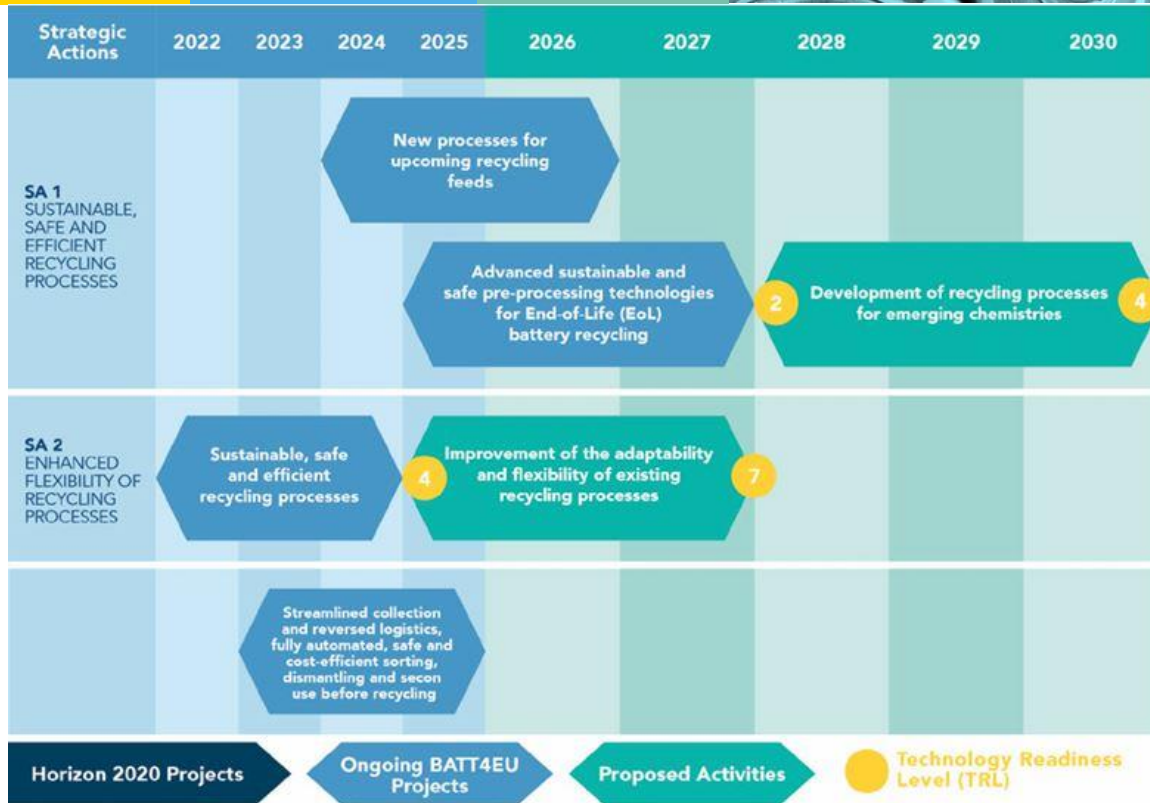




Strategic Actions for Battery Recycling

- *Improvement of the adaptability and flexibility of existing recycling processes*
- *Development of recycling processes for emerging chemistries*

Timeline of Actions for Battery Recycling





Silvia Bodoardo

Professor, Politecnico di Torino & Chair of
Advanced Materials WG

Strategic Actions for Battery Advanced Materials

Materials for Mobility

- **Liquid electrolyte lithium-ion batteries**
 - Development of *design-to-cost* chemistries
 - Development of *design-to-performance* chemistries
- **Solid electrolyte lithium-ion batteries**
 - Development of generation 4c
 - Scale-up and market intro of Gen. 4a and Gen.4b
 - Use of design-to-cost cathodes with solid-state electrolyte

Strategic Actions for Battery Advanced Materials

Materials for Mobility

- ***Sodium-ion batteries (mobility and stationary)***
 - Development of generation 3 (liquid electrolyte)
 - Development of generation 4 (solid electrolyte)
- ***Development of next generation sustainable batteries for mobility***

Strategic Actions for Battery Advanced Materials

Materials for Stationary

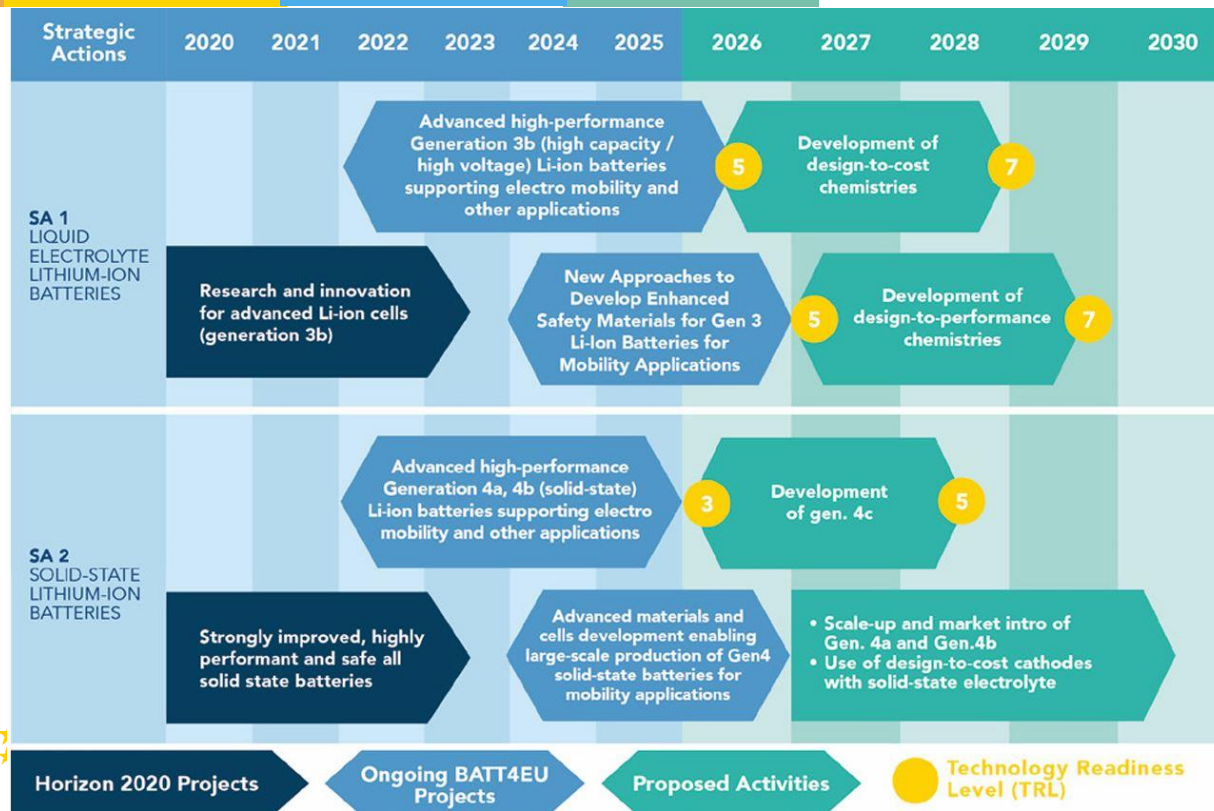
- *Enhanced materials for **vanadium redox flow** batteries*
- *Next generation batteries for **long duration storage***
- *Next generation batteries for **high-power applications in grid***

Strategic Actions for Battery Advanced Materials

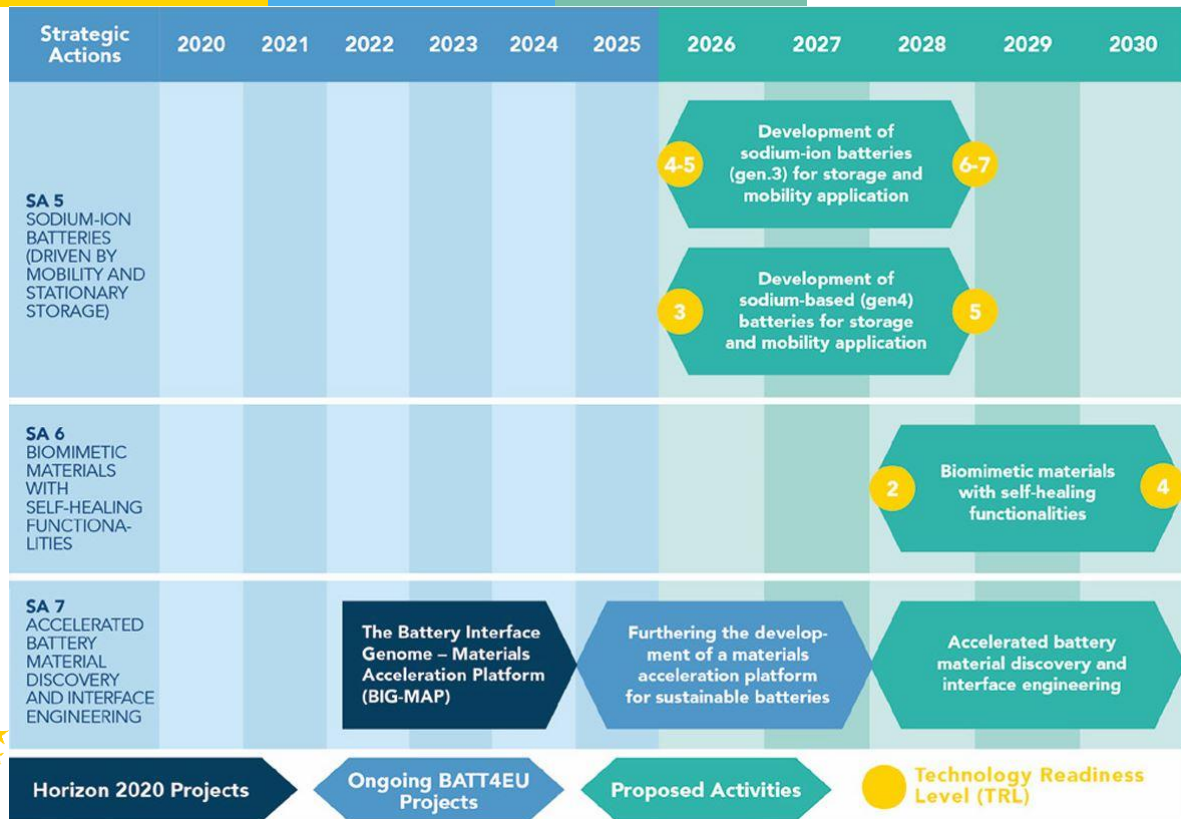
Other activities

- *Biomimetic materials with self-healing functionalities*
- *Accelerated battery material discovery and interface engineering*

Timeline of Actions for Battery Advanced Materials



Timeline of Actions for Battery Advanced Materials





Daniela Fontana

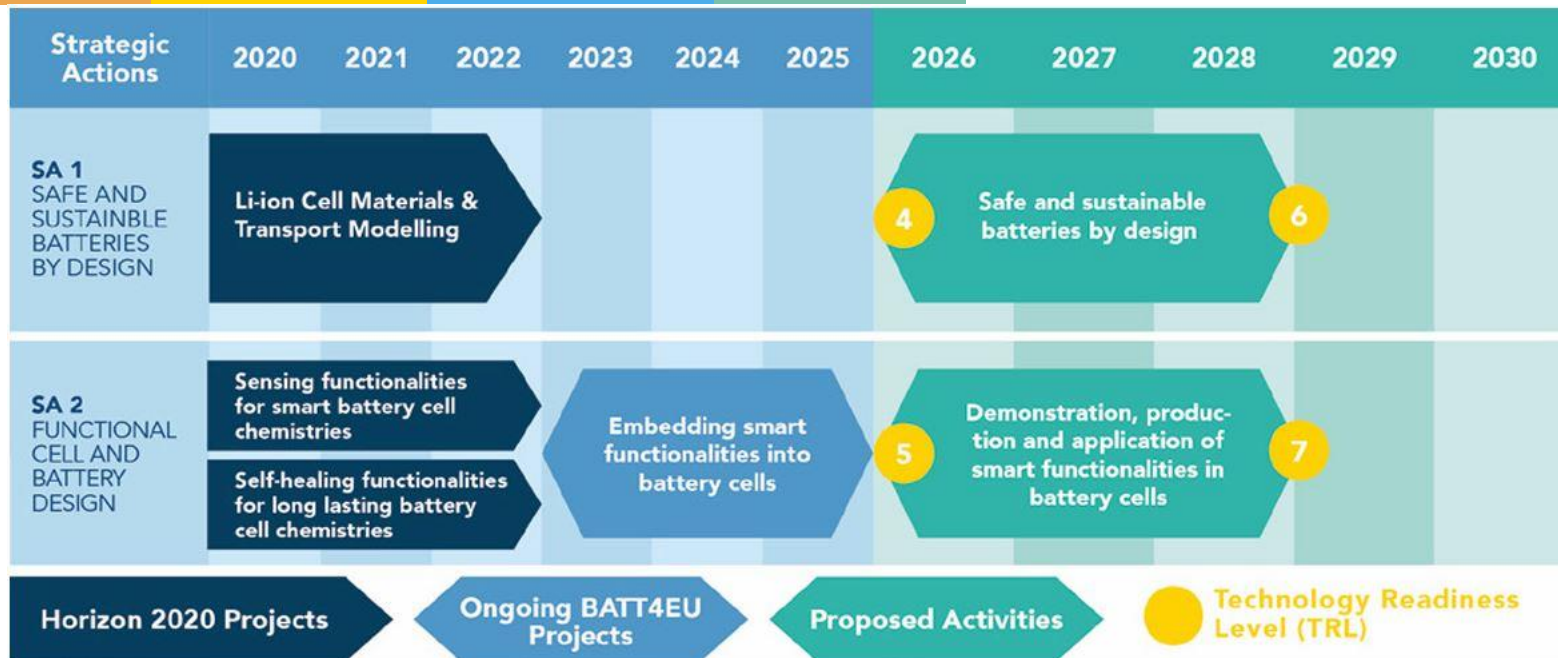
Electrification-Solutions Development Manager,
Comau & Chair WG Cell Design and Manufacturing,
BEPA



Strategic Actions for Battery Cell Design

- *Safe and sustainable batteries by design*
- *Demonstration, production and application of **smart functionalities***

Timeline of Actions for Battery Cell Design

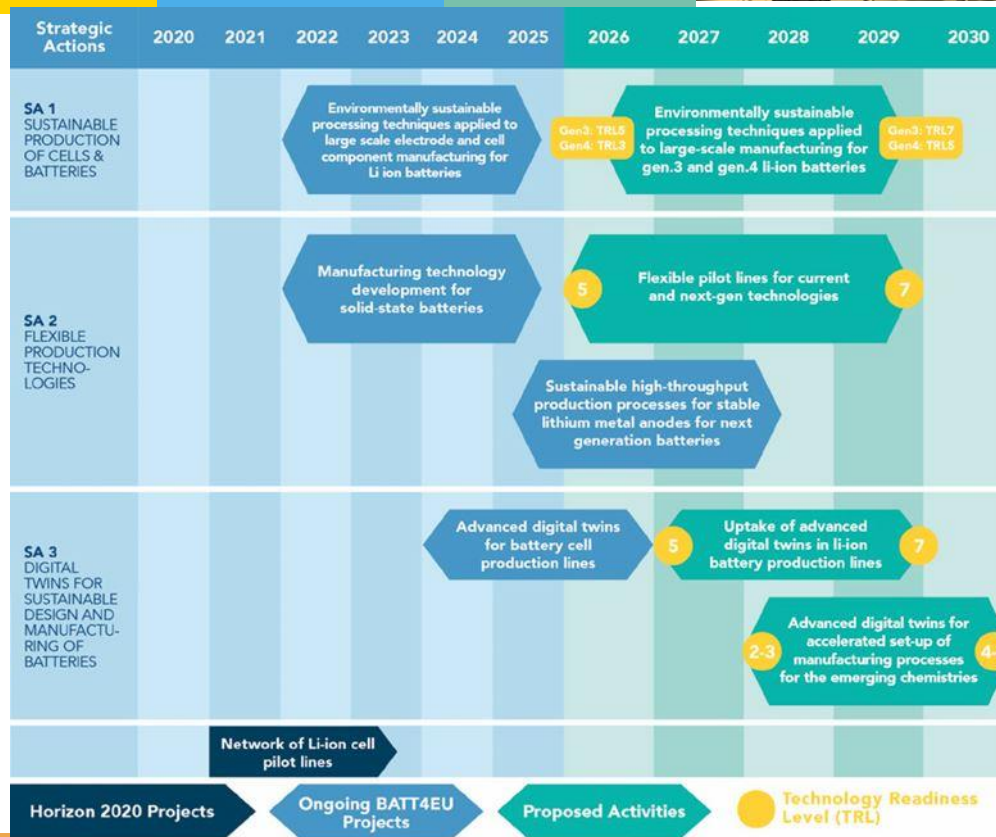




Strategic Actions for Battery Manufacturing

- *Environmentally sustainable processing techniques applied to large-scale manufacturing for gen.3 and gen.4 li-ion batteries*
- *Flexible pilot lines for current and next-gen technologies*
- *Uptake of **advanced digital twins** in li-ion battery production lines*
- *Advanced digital twins for accelerated set-up of manufacturing processes for the **emerging chemistries***

Timeline of Actions for Battery Manufacturing



Strategic Actions for Mobility Applications



Franz Geyer

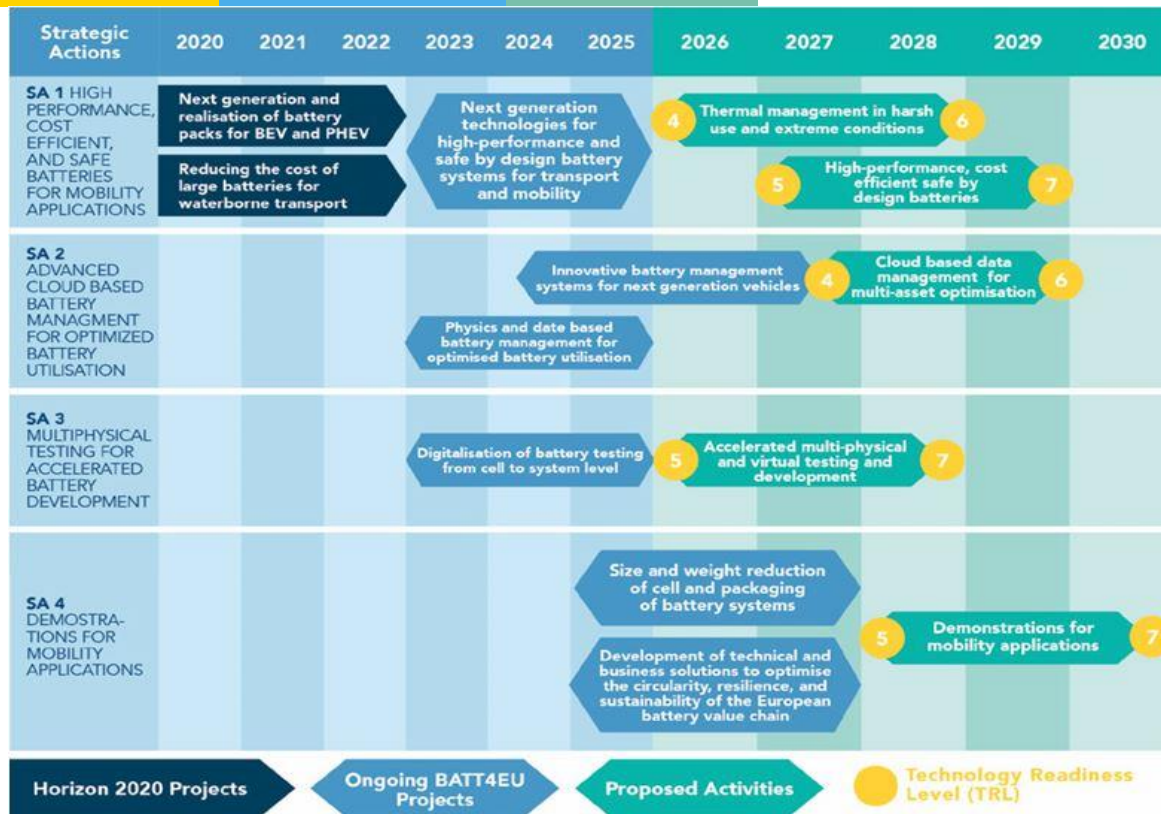
Head of Technology Cluster, BMW & Industry Chair
WG on Mobility Applications and Integration, BEPA



Strategic Actions for Mobility Applications

- *High-performance, cost efficient **safe by design** batteries*
- *Cloud based data management for multi-asset optimisation*
- *Accelerated **multi-physical and virtual testing** and development*
- *Demonstrations for mobility applications*

Timeline of Actions for Mobility Applications





Luigi Lanuzza

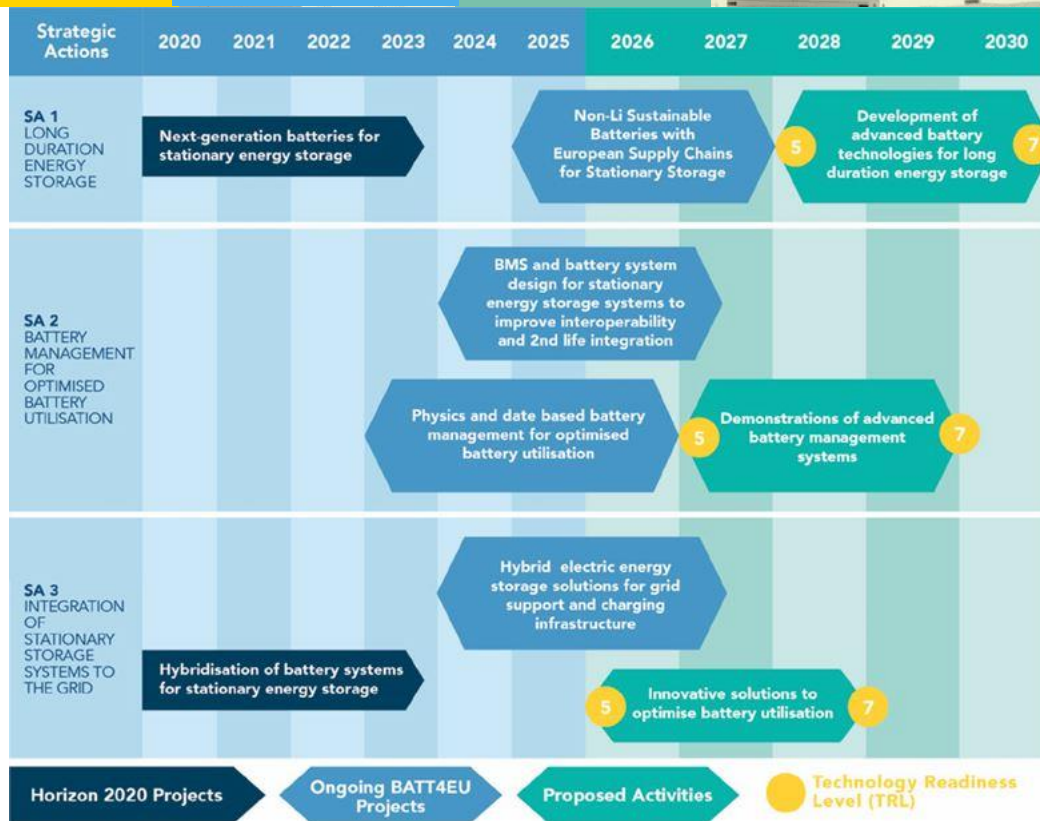
Head of B2B and Storage Innovation, ENEL X &
Executive Board Member, BEPA



Strategic Actions for Stationary Applications

- *Development of advanced battery technologies for long duration energy storage*
- *Demonstrations of advanced battery management systems*
- *Innovative solutions to optimise battery utilisation*

Timeline of Actions for Stationary Applications





Edel Sheridan

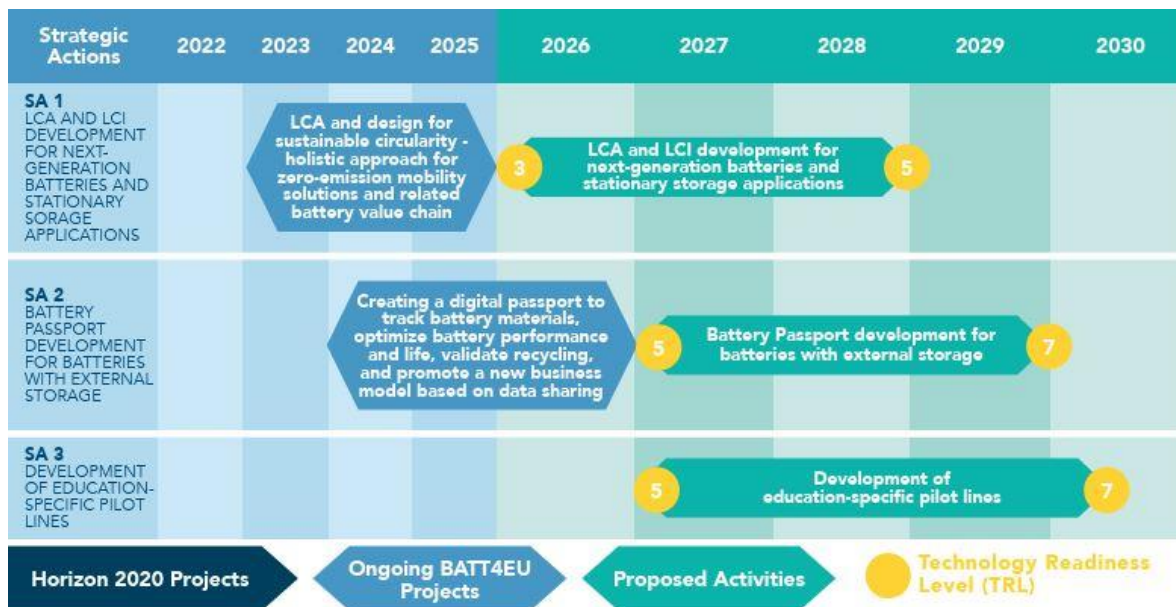
Business Developer, SINTEF & Adviser, Batteries Europe & Executive Board Member & Task Force Repr. , BEPA



Strategic Actions for Transversal Topics

- *LCA and LCI development for next-generation batteries and stationary storage applications*
- *Battery Passport development for batteries with external storage*
- *Development of education-specific pilot lines*

Timeline of Actions for Transversal Topics



Panel Discussion: Understanding the future agenda for battery R&I



Edel Sheridan

Business Developer, SINTEF & Adviser, Batteries Europe & Executive Board Member & Task Force Repr. , BEPA



Daniela Fontana

Electrification-Solutions Development Manager, Comau & Chair WG Cell Design and Manufacturing, BEPA



Victor Trapp

Head of Marketing and Sales, Fraunhofer Institute ISC & Repr. WG on Raw Materials and Recycling, BEPA



Franz Geyer

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Silvia Bodoardo

Professor, Polytechnic University of Turin & Chair WG Advanced Materials, BEPA



Luigi Lanuzza

Head of B2B and Storage Innovation, ENEL X & Executive Board Member, BEPA

Panel moderated by:



Johan Blondelle

Policy Officer, Clean Energy Transitions, DG Research and Innovation, EU Commission



Wouter IJzermans

Executive Director, BEPA

Concluding Remarks



Johan Blondelle

Policy Officer, Clean Energy Transitions, DG Research and Innovation, EU Commission



Edel Sheridan

Business Developer, SINTEF & Adviser, Batteries Europe & Executive Board Member & Task Force Repr. , BEPA



THANK YOU!

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