

Candidate European Partnership under Horizon Europe

BATTERIES | Towards a competitive
European industrial battery value chain
for stationary applications and e-mobility

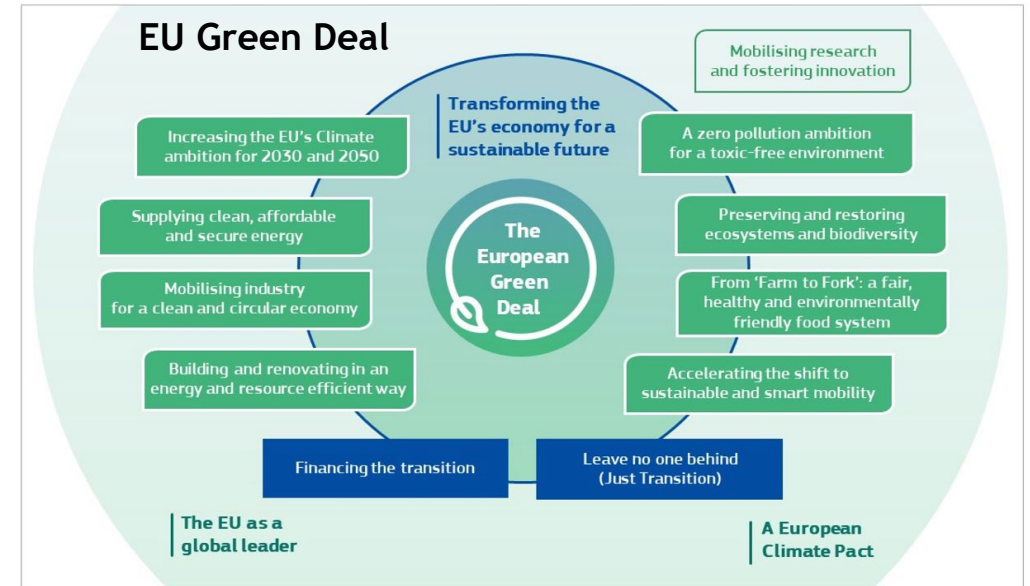
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Towards a competitive European industrial battery value chain for stationary and mobile applications

Global goals

- To put Europe on a firm path towards **leadership** in this key industry, supporting **jobs and growth** in a **circular economy**
- To enable the **decarbonisation of the European energy system**
- Solutions for **clean mobility** (electrification of the transport sector)
- Solutions for **flexibility of the power sector** (storage of intermittent renewable energy sources)
- to ensure an **improved environment and quality of life** for EU citizens



The Batteries Partnership's vision

To establish by 2030 in Europe the best in the world innovation ecosystem to boost a competitive, sustainable and circular European battery value chain and to drive the transformation towards a carbon-neutral society

- Only a **partnership**, i.e. a long-lasting and coordinated effort involving industry, research and the public sector, can live up to the challenge and bring predictability to the European battery value chain stakeholders.

By pooling Europe's resources and knowledge, partnerships have demonstrated their efficiency for accelerating the development, industrialisation and deployment of strategic technologies that underpin growth and jobs in key sectors of the European economy

Towards a competitive European industrial battery value chain for stationary applications and e-mobility

General objectives

1. Contribute to make Europe the 1st climate-neutral continent by 2050
2. Enable the European leadership in the battery industry across the value chain, creating economic growth and jobs in a circular economy
3. Contribute to achieve a zero-pollution ambition for a toxic-free environment

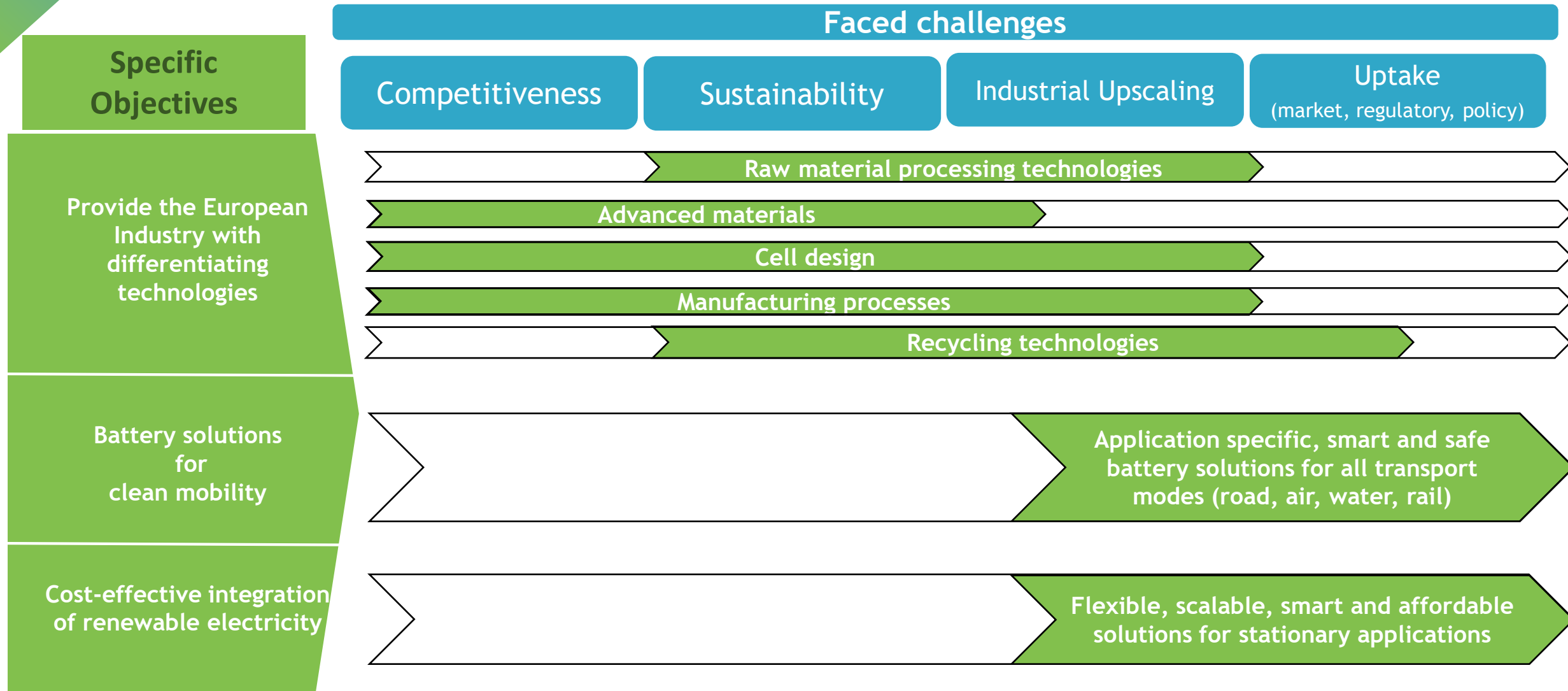
Specific objectives

1. Provide the European Industry with differentiating technologies, supporting the development of an innovative, competitive and sustainable battery manufacturing industry in Europe
2. Develop sustainable and affordable battery solutions for clean mobility
3. Enable a cost-effective integration of renewable energy sources in the power grid

Technical objectives (2030 targets vs 2019 values, in line with SET Plan)

1. Increase energy density +60%
2. Increase power density and charging rate (charging time < 20')
3. Improve cycle lifetime > 2x
4. Reduce battery cost - 60%
5. Ensure battery safety⁽¹⁾
automotive 4 / aviation and waterborne 2
6. implement BAT in manufacturing and recycling operations (plants 4.0 or 5.0)
7. Improve sustainability and circularity)

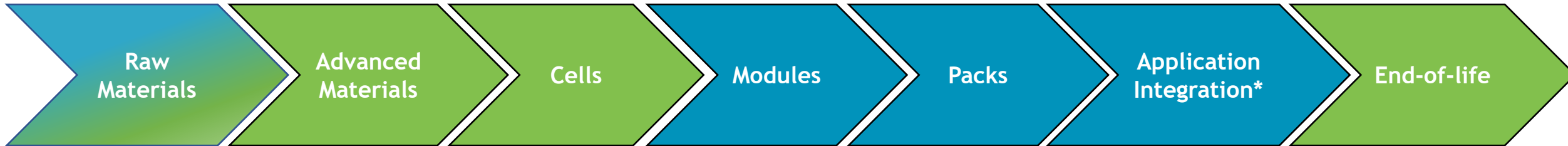
A clear intervention logic, identifying the key challenges to be tackled by the detailed targets for each specific objective



Scope of the Partnership

**For applications sectors with a dedicated partnership, this dedicated partnership will take the lead on the downstream R&I segments activities specific to this sector*

- While R&I has to be conducted on all parts of the value chain, advanced materials development and battery cell design & manufacturing are seen as the key activities for which a well-structured coordination will allow Europe to develop the most differentiating technologies



- The Partnership should therefore allocate a **substantial part of its resources** on these segments of the value chain, along with circular economy aspects
 - Active material and related components (battery-grade raw materials, cathodes, anodes, binders, electrolytes (particularly solid-state future electrolytes), the processes and equipment to manufacture them, and novel methods for accelerated discovery and engineering of materials and interfaces)
 - Other materials (separators, casing, mechanical components,...)
 - Cell assembly technologies: the transition to solid state creates the opportunity to invest in new technologies to compete worldwide, but it requires advanced technology for manufacturing: specialised equipment for new manufacturing technologies...
 - Re-use, recycling, secondary raw materials from recycling
- Regarding applications, the Partnership will mainly focus on batteries for decarbonised transport and stationary energy storage.

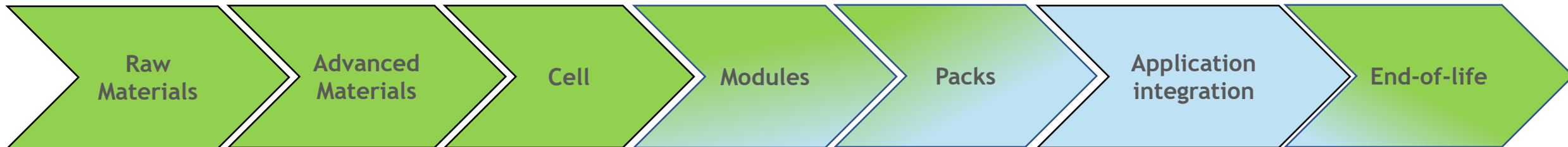
Interactions and synergistic effects with other Partnership

Applications sectors with a dedicated Partnership

- 2Zero
- Clean Aviation
- Zero-emission waterborne transport
- Transforming Europe's rail system

The dedicated partnership takes the lead on the downstream R&I segment activities specific to this sector

2Zero Partnership as an example



- 2Zero will be responsible for R&I activities dealing with the **integration** in the vehicle, **charging infrastructures**, etc.
- Topics related to **battery modules**, **battery packs** and **battery management system** will be addressed as interface in both partnerships. The responsibility will be allocated to main research focus (i.e. either upstream (material, cell or battery manufacturing innovations) or downstream (vehicle integration,...))

Interactions and synergistic effects with other Partnerships

Enabling / complementary Partnerships

- **Key Digital Technologies** Sensors, electronic components, BMS,...
- **Made in Europe** Cells, Modules, Packs Manufacturing / dismantling
- **Carbon Neutral and Circular Industry** Materials manufacturing and recycling, Circularity
- **Clean Hydrogen** Hybrid solutions,...
- **Clean Energy Transition** Grid flexibility, other Set Plan actions
- **EIT InnoEnergy**
- **EIT Manufacturing** Lab-to_market acceleration
Technology transfer
Market uptake
Skills
- **EIT Raw materials** ...

The Partnership on Batteries in the European R&I landscape

Other R&I activities
(under Horizon Europe, IPCEIs, S3 interregional Partnership, national and bilateral instruments,...)

Other Partnerships
Battery downstream & complementary WP under Horizon Europe

Coordination / Collaborations
(facilitated by ETIP Batteries Europe)

Horizon Europe Pillar 3 and other market uptake instruments

 **InnoEnergy**
Knowledge Innovation Community

 **RawMaterials**
Connecting matters

INNOVATION FUND

 **European Investment Bank**
The EIB bank

 **BATTERIES EUROPE**
EUROPEAN TECHNOLOGY AND INNOVATION PLATFORM

Feedback for SRIA / roadmaps update

Inputs to define R&I calls (SRIA / Technology Roadmaps ...)

PARTNERSHIP ON BATTERIES

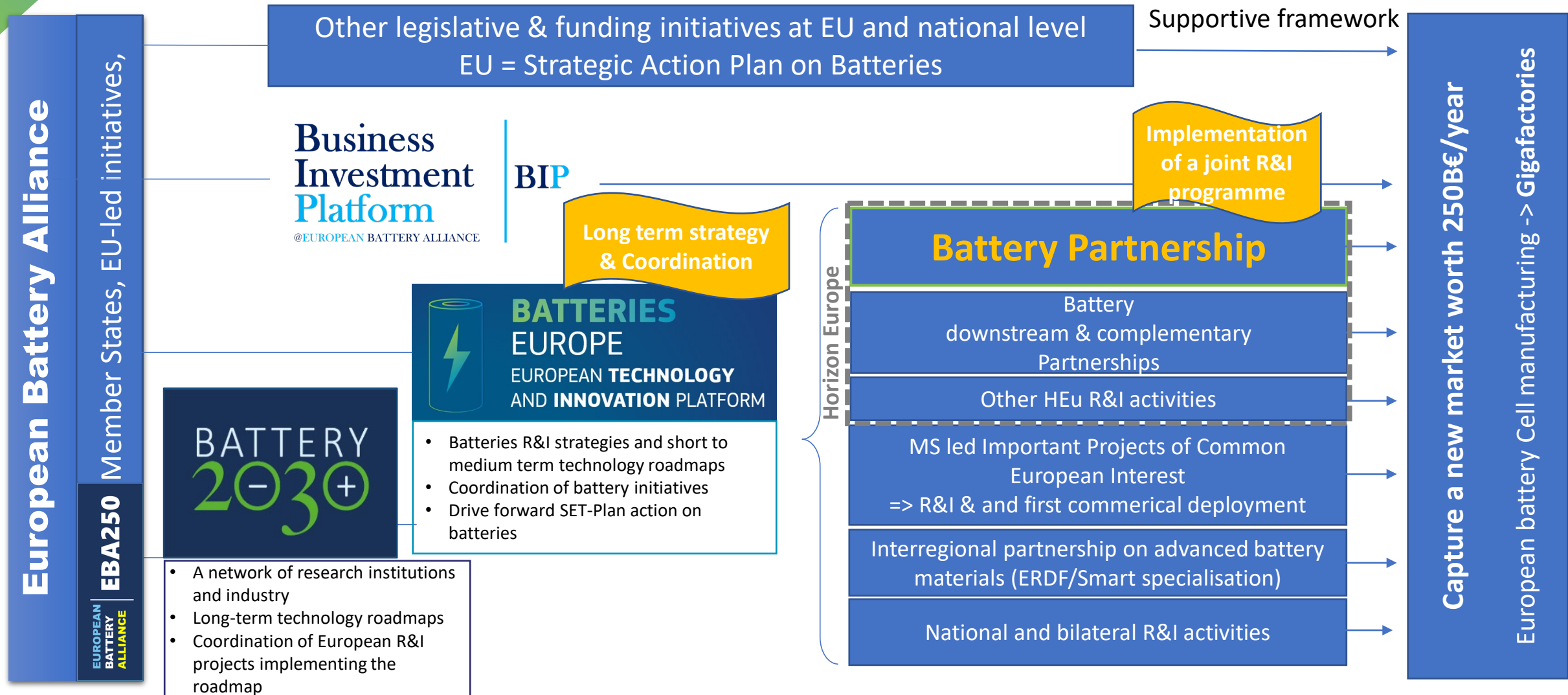
- Identify the high priority topics to be implemented in its R&I work programmes
- Support and oversee the portfolio of funded projects
- Reinforce networks between industry, RTOs, universities and other organisations
- attract engagement of more stakeholders in collaborative R&I activities and demo-projects
- Encourage a robust lab-to-market process and innovation and technology transfer

Innovation and technology Transfer

Skills development

Other strategic bodies...

The European R&I landscape for batteries



Next steps

Close coordination
with

BATTERIES EUROPE

June - July

- Embarking event with all stakeholders (26.06.2020)
- Prioritise call topics for 2021-2022 Work Programme

Shadow Group

By end September

- Elaboration and submission, in an consultation process open to all the battery stakeholders and Member States, of a draft of the Strategic Research and Innovation Agenda (SRIA) of the Partnership

Shadow Group

Q3-4 2020

- Negotiation of the commitments from partners and setting up the private-side association (AISBL), to be ready to sign the contractual arrangement

The Shadow Group

- Gathering **Industry and Research actors** legitimately representing the different segments of the battery value chain
- A **temporary** Group - to "fill the gap" until the private-side AISBL of the Battery partnership is up and running
- Representatives already **well engaged in EU R&I policy** initiatives
- Preference to companies and institutions who will quite certainly **become an active member** in the to-be-created Partnership private-side AISBL
- **Supported** by the core group representative associations

Shadow Group composition	
Industry	EDF
	ENEL
	MANZ
	NORTHVOLT
	OUTOTEC
	SAFT
	SOLVAY
	UMICORE
Research Organisations	CIDETEC
	CSIC
	CEA
	UPPSALA UNIVERSITY
	SINTEF

The Batteries Partnership's vision

To establish by 2030 in Europe the best in the world innovation ecosystem to boost a competitive, sustainable and circular European battery value chain and to drive the transformation towards a carbon-neutral society

The Partnership on batteries will provide key advantages:

- **Long-lasting and continuous industrial support and commitment for a common R&I vision in the field of batteries**
- **R&I action portfolio management**, including the establishment of a “feedback loop” between the outputs of the funded R&I projects and the inputs of the R&I programme, together with **additional activities supporting market take-up, to maximise the impact of R&I**
- **Leveraging technical and financial resources from both the public and private sectors**
- **Aligning R&I policy with industrial, environmental and education & training policies**

Why joining?

- **To contribute to the writing of the Partnership SRIA for Horizon Europe**
- **To provide concrete inputs for the WP 2021-22 calls description - September 2020**
- **To shape and participate to the Association governance via the elected positions**

To express your interest to join the to-be-created private-side association,
Please fill in the form available [here](#) (non-binding letter of intent)
You will also receive an individual invitation to join the association

Meet the core team



Philippe JACQUES
Managing Director



Claude CHANSON
General Manager



Stefan DEIX
Director



Patrick CLERENS
Secretary
General



Strongly supported by



Michael LIPPERT
Chairman of Gov. Board



Edel SHERIDAN
Sub-program leader



Simon
PERRAUD
Deputy-
coordinator



European
Commission

Thank you!

The Batteries Partnership Core team



with the support of

BATTERIES EUROPE
EUROPEAN **TECHNOLOGY**
AND **INNOVATION** PLATFORM

