

# S3 Interregional Partnership on Advanced materials for batteries

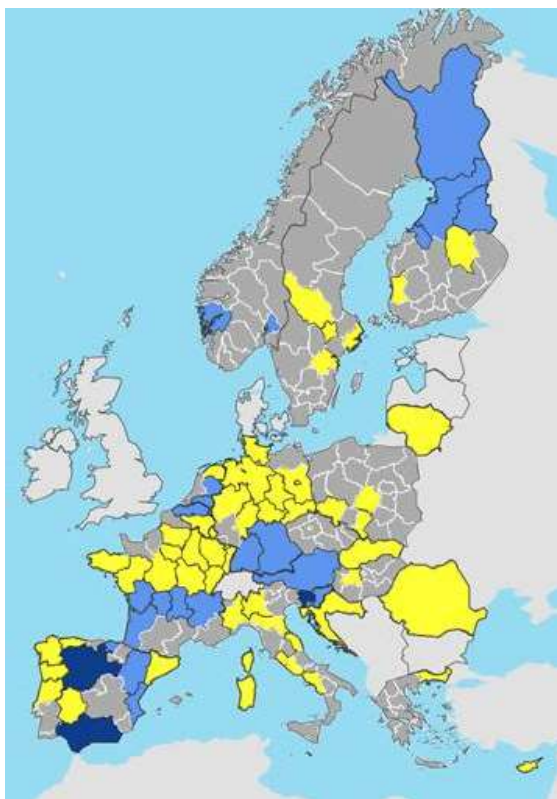
## **Contact details of the Leading Regions**

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<http://s3platform.jrc.ec.europa.eu/batteries>

# Partnership on 'Advanced battery materials'

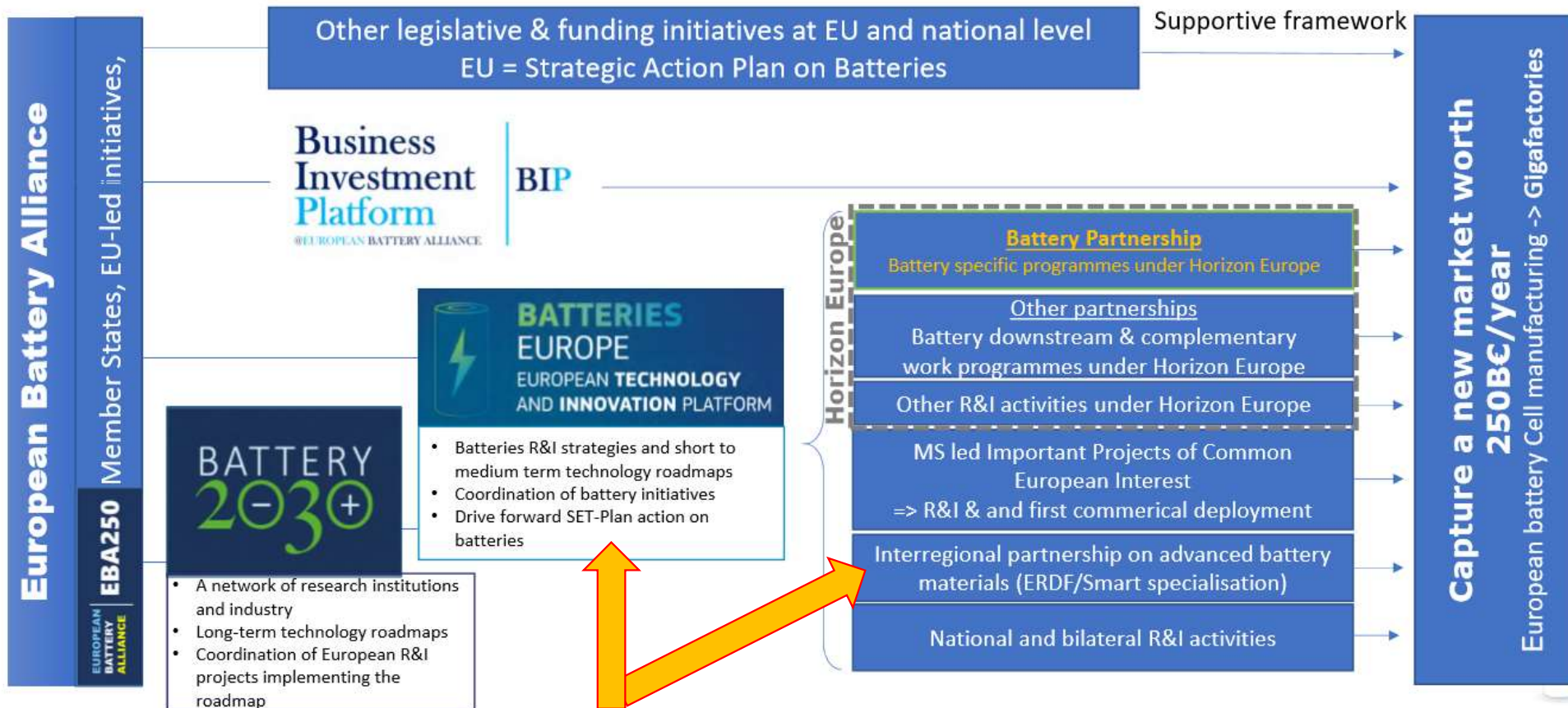


Launched October 2018 – Grown from 8 to 32 regions since.

- Led by Andalusia (Castile and Leon and West Slovenia)
- Other regions: Aragon, Austria, Auvergne-Rhône-Alpes, Baden-Württemberg, Basque country, Bavaria, Brussels, Catalonia, Central Ostrbothnia, Emilia Romana, East Slovenia, Eindhoven, Flanders, Kalnuu, Lapland, Navarra, North Ostrbothnia, Nouvelle Aquitaine, Northern Savonia, Piemonte, Hessen, Valencia, Vestlandet, Viken
- The Partnership is still open – “letter of intent”

<http://s3platform.jrc.ec.europa.eu/batteries>

# European Batteries Landscape



# Partnership on 'Advanced battery materials'

**Scope:** the partnership is on advanced materials for batteries for both:



**For electro-mobility**



**For stationary energy storage**



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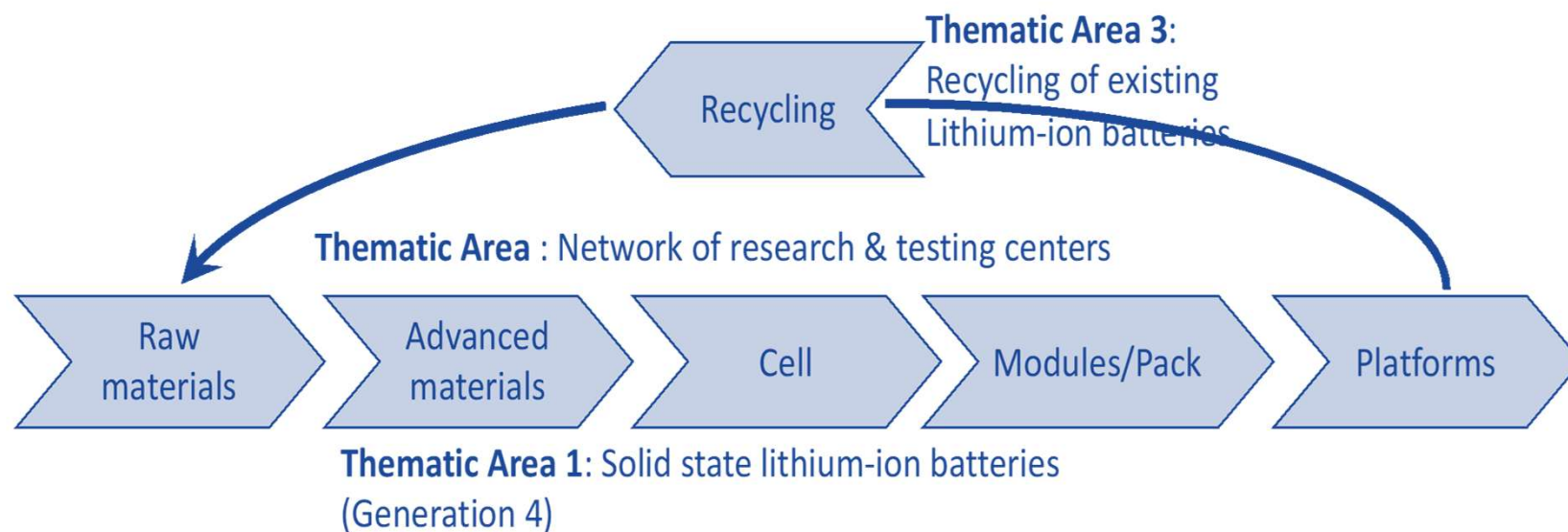
**Objective:** to facilitate the development of innovation investment projects through interregional cooperation. Key **elements:**

- Contributing to the modernisation of industry
- Accelerating the transition from the lab to the market;
- Supporting regional innovation ecosystems;
- Reinforcing innovation interactions within between industry, SMEs, RTOs and universities; and
- Supporting creation of full competitive value chains in Europe.

## Organise and Support



# Partnership on 'Advanced battery materials'



**Thematic Area 2:** Sustainable raw material extraction & processing

**Thematic Area 4:** Liquid based batteries (stationary)

**Thematic Area 6:** Improved lithium-ion batteries (Generation 3b)

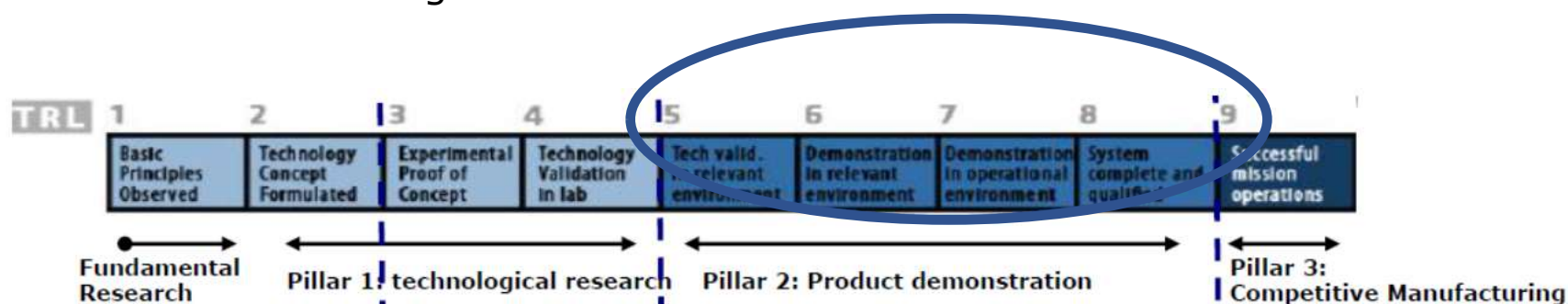
<b>PILOTs / leading region /Coordinator</b>	<b>Partner Regions</b>
<b>1 Solid state lithium-ion batteries (Generation 4)</b> BAVARIA <i>Coordinator:</i> Victor Trapp, victor.trapp@isc.fraunhofer.de	11: Auvergne Rhône Alpes (FR), Nouvelle-Aquitaine (FR), Flanders (BE), Brussels (BE), Basque Country (ES), Valencia (ES), Andalusia (ES), Aragon (ES), Vestland (NO), Viken (NO), Baden-Württemberg (DE)
<b>2 Sustainable Raw Material, Extraction and Processing</b> CASTILLA Y LEÓN <i>Coordinator:</i> Santiago Cuesta (Fundación Icamcyl) director.general@icamcyl.com	3: Oulu (FI), Kainuu (FI), Central Ostrobothnia (FI) Additional inputs by SIEMCALSA and the Iberian Sustainable Mining Cluster (ISMC)
<b>3 Recycling of existing Lithium-ion Batteries</b> BAVARIA <i>Coordinator:</i> Victor Trapp, victor.trapp@isc.fraunhofer.de	7: Flanders (BE), Andalusia (ES), Aragon (ES), Castilla y León (ES), Auvergne Rhone Alpes (FR), Vestland (NO), Baden-Württemberg (DE)
<b>4 Liquid-based batteries (stationary)</b> BASQUE COUNTRY and VALENCIA <i>Coordinators:</i> Mario Sanchez (mario.sanchez@ite.es) & Amaya Igartua (amaya.igartua@tekniker.es)	7: Aragon (ES), Slovenia (SL), Oulu (FI), Central Ostrobothnia (FI), Bavaria (DE), Andalusia (ES), Auvergne Rhône Alpes (FR)
<b>5 Network of research &amp; testing centers</b> WEST SLOVENIA <i>Coordinator:</i> Robert Dominko, Robert.Dominko@ki.si	8: Viken (NO), Vestland (NO), Andalusia (ES), Auvergne Rhône Alpes (FR), Valencia (ES), Aragon (ES), Castilla y León (ES), Basque Country (ES)
<b>6 Improved lithium-ion batteries (Generation 3b)</b> AUVERGNE RHONE ALPES <i>Coordinator:</i> Simon Perraud, simon.perraud@cea.fr	5: Nouvelle-Aquitaine (FR), Flanders (BE), Brussels (BE), Baden-Württemberg (DE), Bavaria (DE)

# Partnership on 'Advanced battery materials'

## Framework of the investment projects

**Each investment project** should comply with a set of minimum requirements:

- a minimum Technology Readiness Level (TRL) of 5 or 6 to technically reach a TRL 8
- commercialization reached in the end of the project (TRL9),
- be industry-driven,
- be based on a cross-regional setting with triple helix organisations from at least 3 Member States, and
- demonstrate cross- regional added value.





# Partnership on 'Advanced battery materials'

## First batch of investment projects

1. Efficient manufacturing process for customised alumina for Li-ion batteries
2. Artificial graphite for battery anode material - selected for the 2nd wave IPCEI from the French government
3. Battery Module Manufacturing Enabling Technologies
4. In process Testing for electrodes, cells and assembly
5. NextBatt4EU (Next battery for Europe)-Novel anode and cathode materials for 3b generation of lithium-ion batteries - TAF application approved
6. Tracing / transportation of recycled LiB
7. Modular processing platform (MPP) for Gen4
8. European trans-regional recycling network
9. Network of prototyping & testing centres- positive feedback from the Slovenian government
10. Develop and upscale Zn-air batteries
11. Pure carbon coated crystalline nano silicon powder - TAF application approved

# Moving from networks to Investment

## Interregional Innovation Investments

I3 → Financial and Advisory Support for:



### Strand 1 - Investments in interregional innovation projects

- Supporting partnerships to **develop, connect** or **make complementary use of testing and demonstration facilities** to accelerate market uptake and scale up of innovation solutions in shared Smart Specialisation priority areas.
- Managed through support to the **development of a portfolio of projects** by selected partnerships.

### Strand 2 - Development of value chains in less developed regions

- Increasing the **capacity** of regional innovation **eco-systems** in **less developed regions** to participate in **global value chains** as well as the capacity to **participate in partnerships** with other regions.
- **Creating linkages** between **less developed regions** with those in **lead regions**.
- Focus on **foreign direct investment, (FDI) driven value chains** & other **emerging sectors**.

- **Strand 3 - Learning activities, evaluation and capitalisation**

# Conclusions

## AMBP support regions working on batteries sector:

- To **connect** regional innovation eco-systems
- To exploit **complementing strengths**, avoiding duplication of investments and efforts in R&I
- To **overcome interregional fragmentation** and lack of critical mass across the EU
- To **improve the existing business environment** by identifying barriers to innovation, new investment or skills.
- To get access to **wider business opportunities and knowledge network**
- To join, enhance and even create new **EU value chains** in specific areas linked to their S3 priority areas, expanding business opportunities & realising **joint investment projects**
- To develop **shared infrastructures**
- To **build synergies** with other regional, national and EU initiatives: Horizon Europe, SET-Plan, etc.