R&I Support for stationary energy storage under Batt4EU Johan Blondelle DG RTD C2 – Future Urban & Mobility Systems Johan.blondelle@ec.europa.eu



European Commission

Why a partnership?

- Increased **stability** and **predictability** for stakeholders
- Coordinated and agreed multi-annual planning
- Strong interaction regarding work plan and activities
- Bilateral commitments regarding budget/activities and investments

Overview of 49 European Partnerships

PILLAR II - Global challenges & European industrial competitiveness

PILLAR III - Innovative Europe

CLUSTER 1: Health	CLUSTER 4: Digital, Industry & Space	CLUSTER 5: Climate, Energy & Mobility	CLUSTER 6: Food, Bioeconomy, Agriculture,	EIT	SUPPORT TO INNOVATION ECOSYSTEMS
Innovative Health Initiative	Key Digital Technologies	Clean Hydrogen	Circular Bio-based Europe	InnoEnergy	Innovative SMEs
Global Health Partnership	Smart Networks & Services	Clean Aviation	Rescuing Biodiversity to Safeguard Life on Earth	Climate	
Transformation of health systems	High Performance	Single European Sky ATM Research 3	Climate Neutral,	Digital	
Chemicals risk	Computing	Europe's Rail	Sustainable & Productive Blue Economy	Food	
assessment	European Metrology (Art. 185)	Connected and Automated	Water4All	Health	
ERA for Health	Al-Data-Robotics	Mobility (CCAM)	Animal Health & Welfare*	Raw Materials	
Rare diseases*	Photonics	Batteries	ccelerating Farming	Manufacturing	
One-Health Anti Microbial Resistance*	Made in Europe	Zero-emission waterborne transport	Systems Transitions*	Urban Mobility	
Personalised Medicine*	Clean steel – low-carbon steelmaking	Zero-emission road transport	Agriculture of Data*	Cultural and Creative	
Pandemic Preparedness* Co-funded or co- programmed	Processes4Planet	Built4People	System*	CROSS-PILLARS II AND III	
	Global competitive space	Clean Energy Transition			
		Driving Urban Transitions	European Open Science Cloud		bud

Institutionalised Partnerships (Art 185/7)

Institutionaised partnerships / EIT KICs

Co-Programmed

Co-Funded

* Calls with opening dates in 2023-24

** Calls with opening dates not before 2022

Under Horizon Europe, all battery research activities are grouped under a Partnership - **Batt4EU**



- 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.
- Running from 2021-2030
- EU Contribution €925 M, to be matched by private side
- Private side represented by Batteries European Partnership Association (BEPA)



Partnership 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





Update 01/10/2021

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 zeropollution ambition for a toxic-free environment

Strong alignment with Green Deal, Batteries Regulation, Fit for 55

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
- 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)



Batt4EU covers all parts of the battery value chain

Items in **RED**: core activities of Batt4EU, performed mainly inside the partnership.



Appropriate balance between short-to-medium term and long-term R&I activities > enhancement of close-to-market Li-ion technologies (TRL 5-8)

new promising and longer-term breakthrough technological solutions (TRL 2-4)

Synergies with other instruments



- Made in Europe, Processes4Planet: collaboration on sustainable manufacturing technologies
- EIT InnoEnergy, EIT Raw Materials, EIT Manufacturing: support for market uptake and skills development in the batteries sector

Battery Topics Horizon Europe

- All battery topics fall under Partnership Batt4EU
- Private side represented by Batteries European Partnership Association (BEPA), <u>https://bepassociation.eu/</u>
- Topic creation:
 - Co-creation group inside Commission (top down)
 - Collaboration European Technology & Innovation Platform (ETIP) Batteries Europe + Battery 2030+ (bottom up)
 - Full inter-service consultation process + Member States consultation
 - Jointly agreed Strategic Research & Innovation Agenda (SRIA)
- No need to be a member of BEPA calls are fully open









DRAFT – proposed topics for 2023-24 Battery Calls

- Hybrid electric energy storage solutions for stationary applications
- Non-Li Sustainable Batteries with European Supply Chains for Stationary Storage
- Computer-aided design and development of materials for next-generation redox flow batteries

NB strong member state support for stationary applications & flow batteries

- \rightarrow Strategic autonomy
- \rightarrow Non-critical raw materials



The Partnership on Batteries, a central actor of the European R&I landscape

Other Partnerships Battery downstream & complementary WP under Horizon Europe **Other R&I activities**

(under Horizon Europe, IPCEIs, S3 interregional Partnership, national and bilateral instruments,...)



Innovation Fund

Production and use of Renewable energy

including manufacturing plants for components

Carbon Capture Use and Storage

Scaling up clean tech

Energy-intensive industries

including substitute products

Energy storage

including manufacturing plants for components

Innovation Fund - Key features

Financed from the revenues of the EU Emissions Trading System Volume of at least EUR 20 billion until 2030 (depending on carbon price) Large projects: Support of up to 60% of additional capital and operating costs (up to 10 years) Small projects: up to 60% of CAPEX

0% of grant disbursed at financial close

60% of grant disbursed during 10-years operating period against GHG emission avoidance

Small scale projects – shorter 3-years period Annual calls for large-scale and small-scale projects

Single applicant or consortium Projects must be implemented in the EU, NO and IC

Project development assistance

Award criteria

GHG emission avoidance

• Quantitative indicators for absolute and relative avoidance

Degree of innovation

• Beyond incremental innovation and impact on EU policy objectives

Project maturity

 Ready to reach financial close within 4 years? Viable investment? Ready to be implemented?

Scalability

Market potential for widespread application

Cost efficiency

• Requested support per ton of CO2



First calls for projects

Call for small-scale projects

Grant volume of EUR 118 million awarded to 32 projects

up to 15 projects still to be selected for project development assistance

Call for large-scale projects

Volume of EUR 1 billion

66 projects submitted a second stage appl

Results expected 2nd half November

15 projects already selected for project development assistance



First call for small-scale projects

Project overview



Applications to first Innovation Fund small-scale call



Applications per activity of which some are cross-sectoral applications



Applications received per sector

Most proposals received for Hydrogen followed by Solar energy 7 sectors with more than 10 applications

Biofuels and bio-refineries

Glass, ceramics & construction material

Hydrogen

Intra-day electricity storage

Other energy storage

Solar energy

Other

12 sectors with 10 or less applications

Bio-electricity

Cement & lime

Chemicals

CO2 transport and storage

Geothermal energy

Hydro/Ocean energy

Iron & steel

Non-ferrous Metals

Pulp & paper

Refineries

Renewable heating

Wind energy

Breakdown by technology pathways



Many "out of the box" solutions

- In particular recycling or renewables
- Including digital solutions and services

Legend: High-level screening of applied technological pathways. Classification of projects can be overlapping.

Second call for large-scale projects

Grants

- Launch of single-stage call on 26 October 2021
- Expected deadline for **submission** in **March 2022**
- Expected results in July 2022
- Expected volume of EUR 1.5 billion

Project Development Assistance

- Support for projects with high potential but not yet mature for grants
- Up to 20 beneficiaries expected
- Expected results in Q3 2022



Second call for small-scale projects

Grants

- Expected launch of call in March 2022
- Expected deadline for submission late August 2022
- Expected results in Q1 2023
- Expected volume of EUR 100 million

Project Development Assistance

- Support for projects with high potential but not yet mature for grants
- Up to 20 beneficiaries expected
- Expected results in Q2 2023



Where to find more information?

All (past) call documents available on the Funding and Tenders Portal including

- \checkmark Guidance and calculation tools on GHG emissions and relevant costs
- ✓ Frequently asked questions
- https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/innovfund

Innovation Fund – YouTube

https://www.youtube.com/playlist?list=PLfRRcWLcpmM7CMWrfMI0DVIXI5GOkerFO

Further info, planning of new calls, recorded webinars and videos available on IF Website

https://ec.europa.eu/clima/policies/innovation-fund_en



Contact and information







EC Contact: Johan BLONDELLE, RTD.C.2 Johan.blondelle@ec.europa.eu



BEPA Contact: <u>info@bepassociation.eu</u> <u>https://bepassociation.eu/</u>