



The European Battery Alliance

BEACON; Trondheim, June 18, 2019

Thore Sekkenes; EBA250 Programme Director; InnoEnergy

- About EIT InnoEnergy
- About EBA / EBA250

Who we are

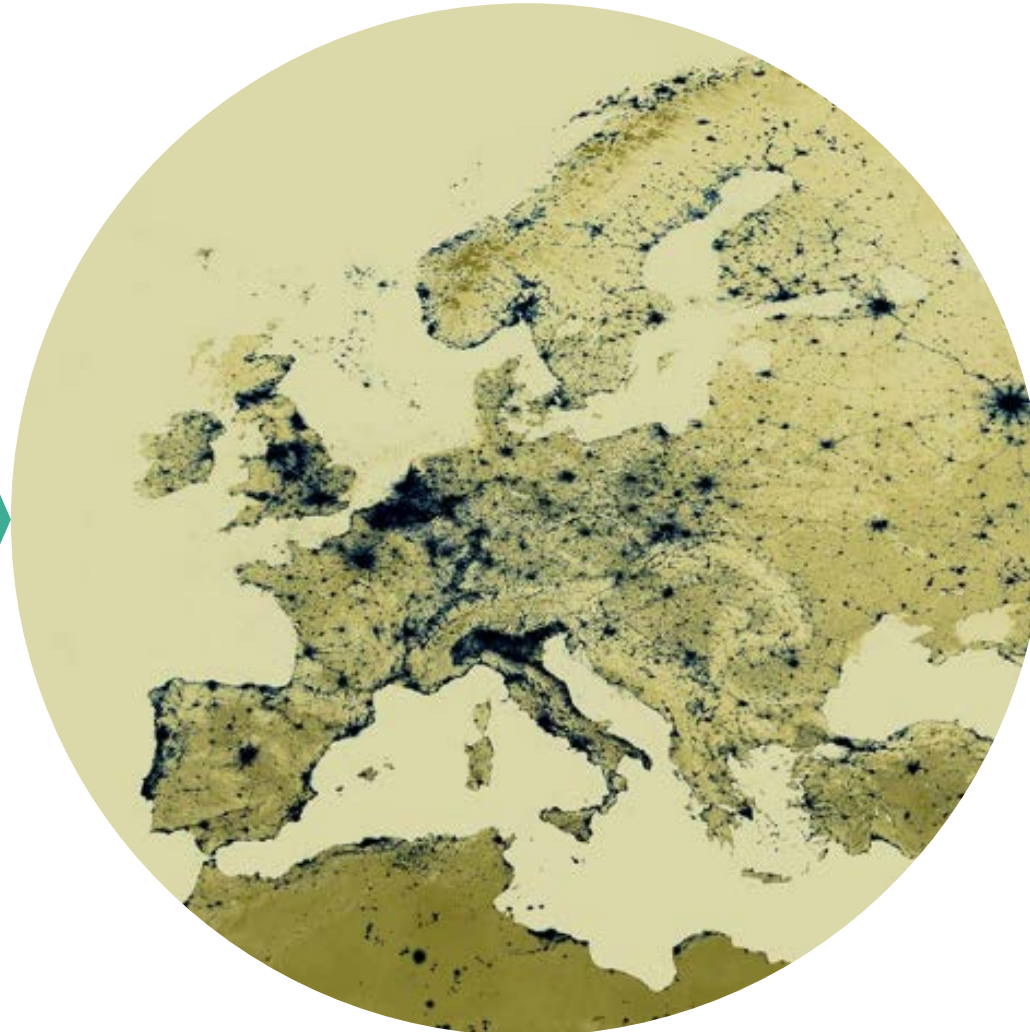
Europe's engine for innovation
in sustainable energy

Empowering every stage
of the innovation process

Investing in people,
technologies, businesses

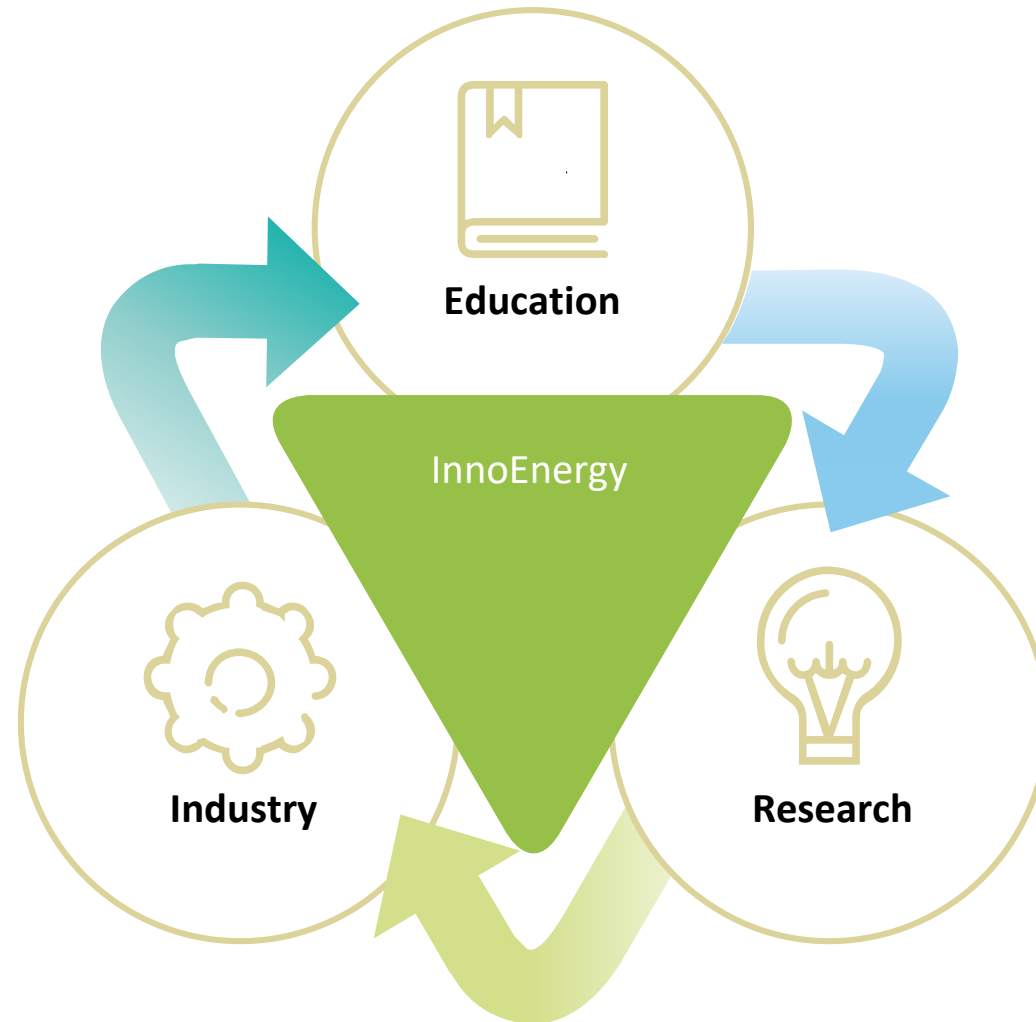
Established 2010:
supported by the EIT

Public-private partnership
aiming for financial
sustainability



Bringing the *Knowledge Triangle* to life

Strengthen EU innovation
Creates tomorrow's entrepreneurs
Increases sustainable growth
Encourages global competitiveness



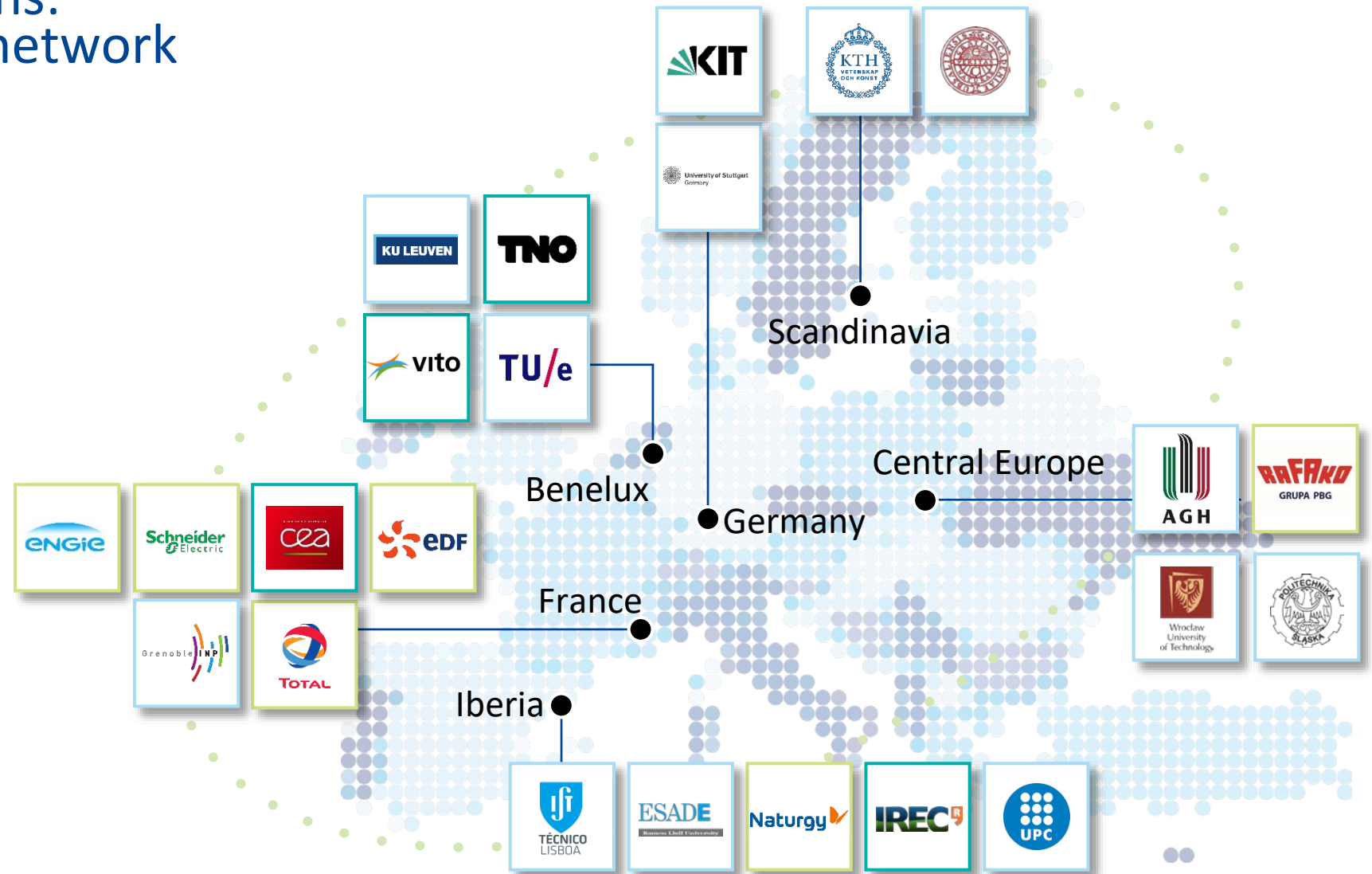
Our goal: sustainable energy

- **Ensure security and safety of supply**
- **Reduce costs in the energy value chain**
- **Reduce CO₂ emissions**
- **Improve European competitiveness**
- **Remove barriers to innovation**
- **Encourage sustainable growth**
- **Create jobs**



Making connections: the power of the network

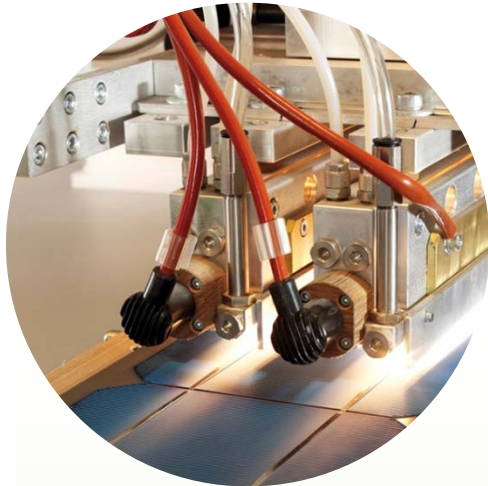
6 regional offices
23 shareholders
430+ additional partners
Activities in 17 countries



Our Shareholders

- Research Institutes
- Universities
- Industry Partners
- Regional offices

For every stage of the innovation journey



Innovation
Projects



Business Creation



Education

Innovation success

Neptune

***Wind power
from sea to sea***



Renewable energy

DeBugger

***Making the most
of biomass***



Energy from chemical fuels

EFFIC

***Improving efficiency
and cost of Solar PV***



Renewable energy

430+

Project partners
across Europe

98

Patents filed

120

Products and services
supported

3

Manufacturing
facilities constructed

222

Million euros of InnoEnergy
investment

1.7

Billion euros
in project costs

4

Billion euros in forecasted sale

Entrepreneurial success

Dracula Technologies

See the light with printed PV cells



France

Renewable energy

OpenDomo

Measuring energy consumption with Artificial Intelligence



Iberia

Smart and efficient buildings and cities

GRADIS

A new era of smart lighting



Poland

Smart electric grid

200

Early start-ups supported

120+

Start-ups selling

117

Million euros of external investment raised

2790+

Applications received

Our alumni

"We need to invest more in green power"



Gregory Kotsis,
MSc SENSE

Project engineer, IREC
Barcelona

"Long-term vision is the key to the future"



Roberta Cirillo,
MSc EMINE

Research engineer, CEA
Grenoble

"Versatility, entrepreneurship and international experience"



Joeri Siborgs

MSc Energy for smart cities
R&D project engineer,
Elia Brussels

870+

Graduates from the
InnoEnergy Master's School

13.3K

Applicants to the InnoEnergy
Master's School

93%

Graduates who find a job within
six months of graduating

15%

Average annual salary earnings
over graduates of similar
programmes

260+

PhD candidates supported

90+

PhD graduates

20+

Professional Learning courses

11

Start-ups created

Thematic fields and technology focus



Energy for Circular Economy



Energy storage



Energy efficiency



Energy for Transport and Mobility



Renewable energies



Smart and efficient buildings and cities



Smart electric grid



Nuclear instrumentation



InnoEnergy
Knowledge Innovation Community

**EUROPEAN
BATTERY
ALLIANCE**

EBA250

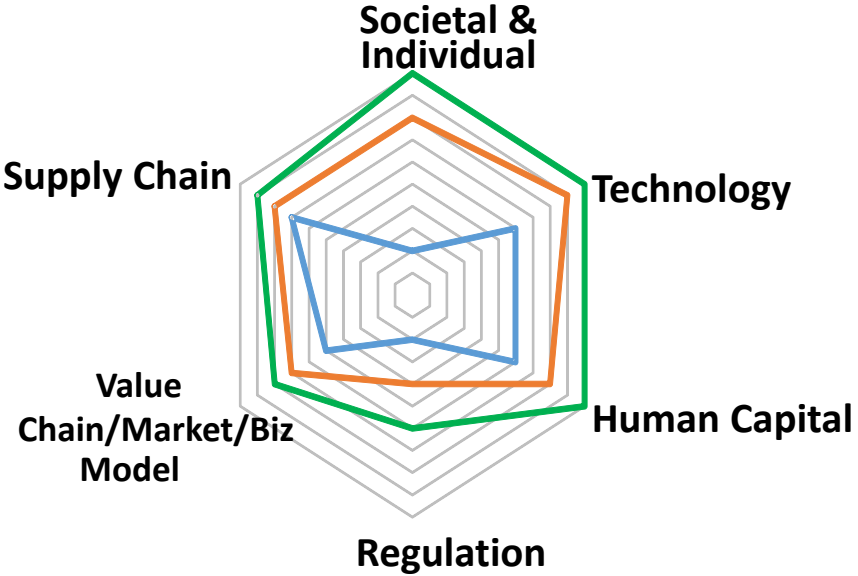
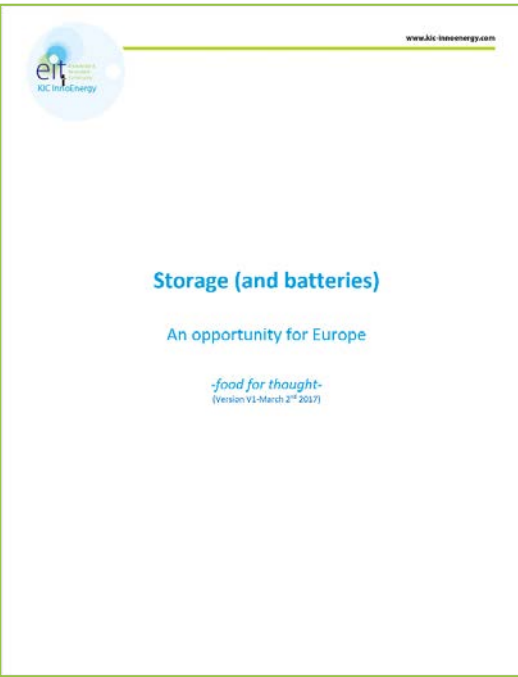
EBA250 - the industrial workstream of the European Battery Alliance

Thore Sekkenes, EBA250 Programme Director

How it started

February 2017 InnoEnergy received a question from the Commission

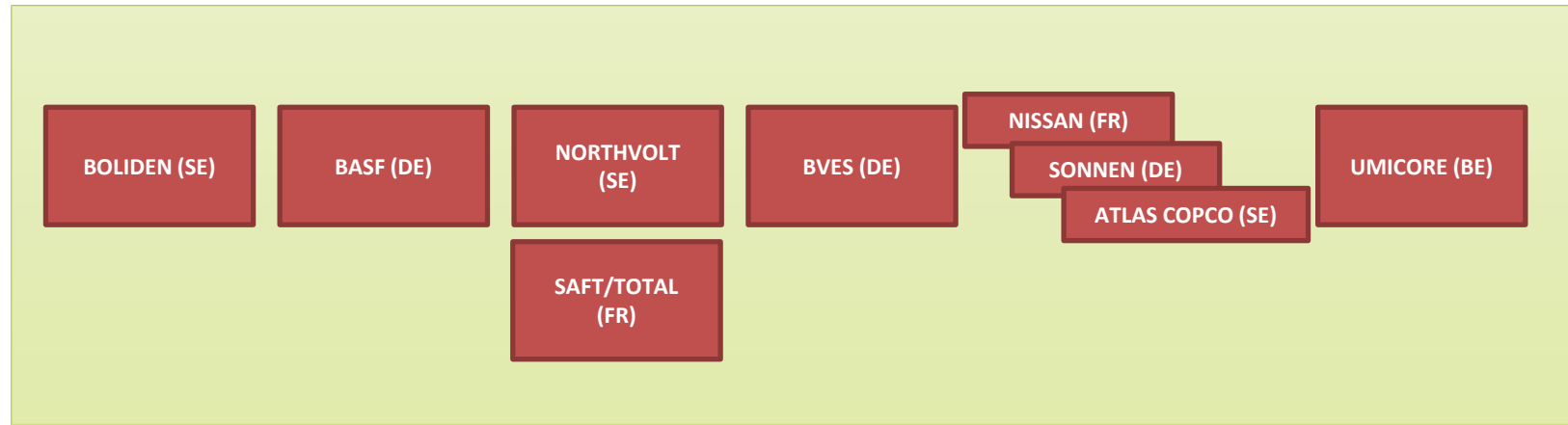
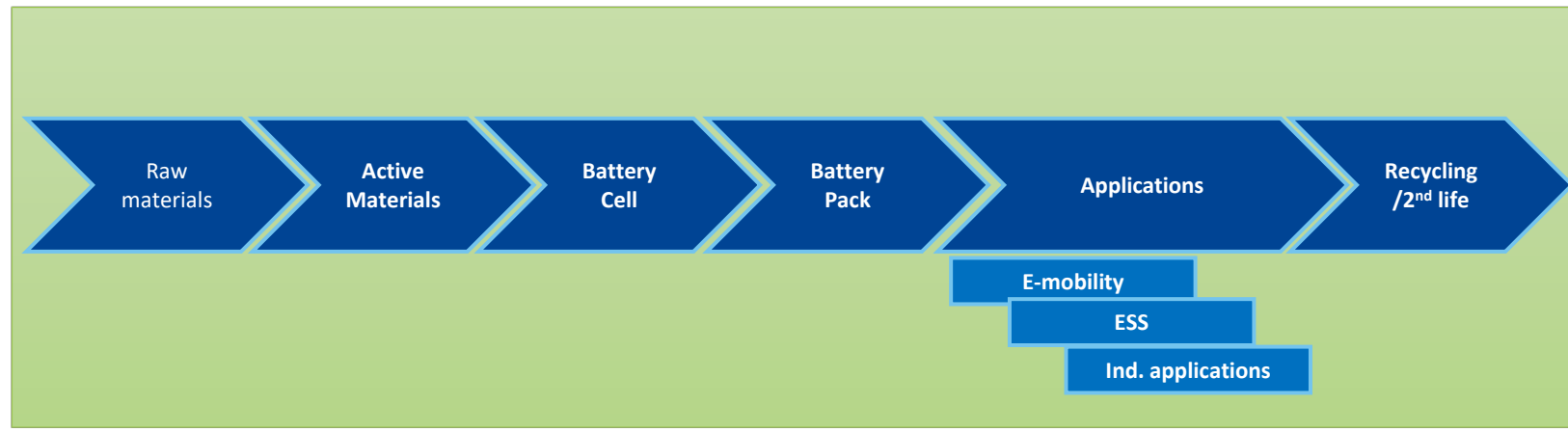
- How do we overcome the very low acceptance for the idea to build a battery industry in Europe?
- What needs to be done to make Europe a winner in batteries ?



It is not only about technology!

First High-Level Workshop September 14, 2017

Value chain approach



SUBJECT:
 INVITATION > High-level workshop: Can Europe be a global leader on batteries? > 14 September, 9:00-18:00

 **InnoEnergy**
 Knowledge Innovation Community

 **European Political Strategy Centre**

Dear Colleague,

On behalf of the European Political Strategy Centre (EPSC), the European Commission's in-house think tank, and InnoEnergy, the European Public-Private Partnership dedicated to innovation in energy, we have the great pleasure of inviting you to a **high-level workshop** on:

Can Europe be a global leader on batteries?

The event will take place on **Thursday 14 September 2017**, from **9h00 to 18h00** in the European Commission's headquarters (**Berlaymont building**, Rue de la Loi 200, 1049 Brussels, **room 12/040**).

The meeting convenes as the European Commission prepares the second wave of its 'Mobility package' proposals – foreseen for the end of this year – and ahead of a high-level meeting on 'Battery development and production in Europe' which will be organised under the auspices of Vice-President Šefčovič on 11 October 2017.

- Does the EU really need to develop a complete battery value chain, and if yes, what measures are required?
- How can the EU best support the creation of a winning European battery ecosystem? What strategic measures are needed in the fields of research and innovation, industrial supply chain, regulation, education and training, societal appropriation and other areas?

We would be grateful if you could **confirm your participation by email** to Bo Normark (bo.normark@innoenergy.com) at your earliest convenience and no later than **Friday, 8 September 2017**. Please note that **this invitation is personal and non-transferrable**.

We very much hope to have the pleasure of welcoming you to this timely exchange.

Best wishes,


 Ann Mettler
ANN METTLER
 Head, European Political Strategy Centre


 Diego Pavia
DIEGO PAVIA
 Chief Executive Officer

 **InnoEnergy**
 Knowledge Innovation Community

 **European Commission**
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Timeline European Battery Alliance



11. Oct. 2017
EU launches
European Battery Alliance

19. Dec 2017
1st High-Level Meeting

30. Jan 2018
2nd High-Level Meeting

12. Feb 2018
3rd High-Level Meeting

4. Sep 2018
4th High-Level Meeting

29. Jan 2019
5th High-Level Meeting

5

Implementation

4

3

European
Battery
Alliance



11. Oct 2017
EBA Launch

1

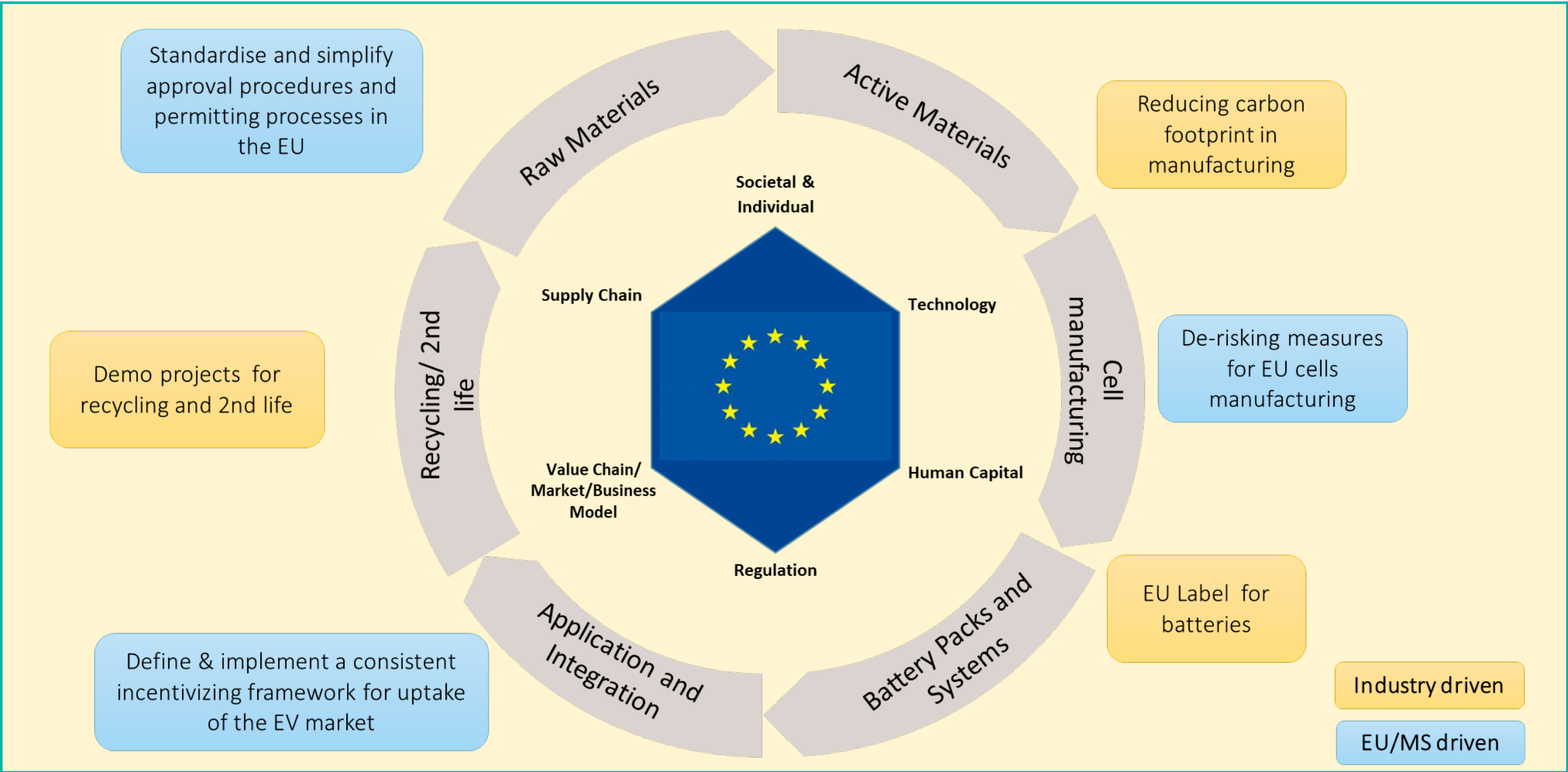
A thriving ecosystem
created

23 InnoEnergy
investments in
storage

18 recommendations
to harvest the 250bn €

49
actionable
actions

20 legitimized actions





Raw materials		Active Materials		Battery Manufacturing				Application & Integration			Recycling & 2 nd life
				Machinery	Cells	Packs	Systems	E-mobility	ESS	Ind. applications	
EIT Raw Materials	Leading Edge Materials	Nanomakers	Nawa Technologies	Soft	Akasol	Freudenberg		Sonnen	CNH Industrial	BMW	Veolia
Finnish Minerals Group	European Metals Holdings	3M	Grupa Azoty	KLIB	Tata Steel Plating	Manz		ErlingKlinger	Volkswagen	Epiroc	Suez
Fin. Network for Sust. Mining	European Copper Institute	Elkem	EMIRI	Northvolt	EM Micro-electronics	MW group		PSA Groupe	VESTAS	Portliner	Revatech
European Lithium	Gov. of Western Australia	Umicore	Ganomat	LION Smart	HE3DA	Thyssen Krupp		Renault SA	RIMAC	Ampere Energy	EBRA
Magnis/Allocate	Fennoscandian Resources	Imerys Graphite & Carbon	Leyden-Jar	LION E-Mobility	EV Battery	PEC		Daimler AG	FCA - EMEA	Cargotec	RECHARGE
Prince Erachem	Infinity Lithium	Solvay		CustomCells	Akkurate	FAAM FIB srl		NISSAN Automotive	FIAT	Cummins	Stena metall
Aura Energy	Eramet	LOTOS		EAS Batteries	Delfort	MG Energy		Einride	Centro Ricerche FIAT	Rafako	Stena Recycling International AB
Outotec	DERA	BASF		Terra E	Videoton	Honeywell		Jaguar Landrover	AmbiBox	ENEL	AkkuSer
Cobalt Institute	Boliden	Arkema		Lithops	EoCell Inc	ABB		TESLA	Innogy	TERNA	Interseroh
Copperalliance	Cobat	SGL Group		Leclanché	CAEC	Coperion		Ford	Red Electrica	EDF	Bee Planet
Keliber	FLSmidth	Heraeus		Liacon	Cleantron	NXP Semiconductors		VolvoCars	cyberGRID	ENEDIS	ARN
Albemarle	KGHM	Nanomakers		Electrovaya	Skeleton	Vaisala		Volvo	Albufera Energy Stor	Total	envirobat
EUROMINES		Wacker Chemie		Litarion	Clean Power Technology	CEGASA		Continental AG	Streetscooter	Vattenfall	
Trafigura		OXIS Energy		Varta	Passion Motorbike	Tungstram		Bosch	PKN ORLEN	EDP Inovacao	
Rio Tinto		Phillips 66		Hoppecke	Renata Batteries	Gestamp		Siemens	AMPS Power	OIG	
GTK		Evonik		Envites Energy	Dassault Systems	Swatch Group		Stihl	Fortum	CAF	
Crisolteq		Tribotecc		BELENOS	Blue Solutions	BMZ		Honda R&D Europe	Nordex	Alpiq	
Aurubis		Höganäs		Forsee Power	Freyr	Schäffer AG		Danfoss	TOYOTA Tsusho EU	FPT Powertrain Tech	
		RGS Development		MES				Viessmann	Husqvarna		

Research and associations active in large parts of the value chain	Fraunhofer	CEA	SINTEF	AIT	VITO	ENEA	AVL ITALIA	CNR	ANIE	Politecnico Milano	CATCH	ECOS
	Inst. Chem. Slovenia	Innovate UK	Faraday Inst	Uppsala Univ	VUB	CEPS	UTBM	FEMTO	INST. ITALIANO	CIDETEC	SFEM Storage	Not innovated here
	Munster Uni	CIC	TU Braunschweig	Aalto Univ	ERRIN	EASE	EUROBAT	T&E	EUCAR	EGVIA	Federchimica	CEFIC
	smartEN	DNV GL	TUV SUD	AVL	RISE	ifu	CEFIC	VDMA	VDE	CEN/CENELEC	Instituto Tec Energia	
	MCI	Valuad	AVERE	ADS	BVES	A3PS	Zabala	AMMA	TNO	ACEA	VG-Colab	
	DENA	GART	Business Finland	VASEK	GigaVaasa	Amiens	Invest in Lithuania	RVO	RSE	CLEPA	CEEP	

A European Value Chain



Our goal:

Build a strong pan-European battery industry to make Europe capture a new market worth 250B€/year in 2025.

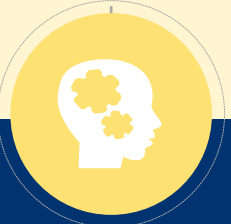
A UNIQUE OPEN ECOSYSTEM



A neutral meeting place:

More than 250 members all along the value chain, from mining to recycling, have joined the Alliance. Members come from industrial, academic and financial worlds.

Project Driven



Our actions' DNA:

Competitiveness, sustainability, significant impact, objective focus, urgency, concrete, project driven, sharing, investment

Enabled by INNOENERGY

InnoEnergy is the innovation engine for sustainable energy across Europe supported by the European Institute of Innovation and Technology. InnoEnergy has been assigned by the European Commission to drive forward and promote the EBA250 activities.

Regulatory Insights

- Alignment with the European Strategic Action Plan for Batteries
- A unique insight in ongoing activities in the battery sector from the Commission, Member States, Industry and Academia
- Update on upcoming legislation
- Public policies recommendations directly addressed to the European Commission

Business development catalyst

- Access to a network of industry and academic partners from the entire battery value chain (from mining to recycling)
- Catalyst for your business by connecting you with project partners, clients and giving you visibility

EBA250
A unique meeting platform for key players along the entire battery value chain

Market Intelligence

- Holistic and dynamic observatory on battery projects
- Access to market information and insights
- Update on projects' progress

De-risking Opportunities

- Access to InnoEnergy funding and potentially to the InnoEnergy VC Community
- Credibility to your funding requests and connection with the Alliance financial partners
- Support in navigating and decoding in the publicly funded landscape (EU, national and regional)

Quotes from speech:

“In this context, **the European Battery Alliance (EBA)** has been considered as the **perfect testbed** for our new **industrial approach**. And **the co-operation with the Bank has been an essential pre-requisite for its success**.

The EBA was set up a year a half ago, and **made operational at lightning-speed** as a collaborative platform with **and for the EU industry**.”

“Finally, our partners, through **EIT InnoEnergy**, again with the support of the European Investment Bank and the Commission, have designed a **Business investment platform for Batteries**.

The aim of this Platform is **to accelerate financial transactions (“deal flows”) between industrial projects and investors (public, private)**.

The **Platform** will support projects of different sizes and needs (grants, loans, blended finance etc.) depending on their maturity and nature: innovative products, demonstration, industrial deployment, Important Projects of Common European Interest, etc. It should be launched on **25 June**.”

Thank you, any questions?



www.innoenergy.co



InnoEnergy is supported by the
EIT,
a body of the European Union