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



The European Battery Alliance

A European Success Story

24th June 2021

Agenda

1. **About European Battery Alliance. Harvest since October 2017**
2. **Still, work to do and gaps to fill: How to go about them?**
3. **The merit of building a Japan Battery Alliance?**

A successful European story so far with even brighter future

European Battery Alliance – Launched October 2017

An “out of the box” approach

2



**EUROPEAN
BATTERY
ALLIANCE**

EBA250

This “fit for purpose” cooperative ecosystem gathers some 500+ stakeholders [key industrial, innovation and academia stakeholders, investors, the European Commission and interested EU countries]

EIT InnoEnergy has been trusted by the European Commission to drive forward and promote EBA250 activities, acting as an ecosystem manager and project enabler



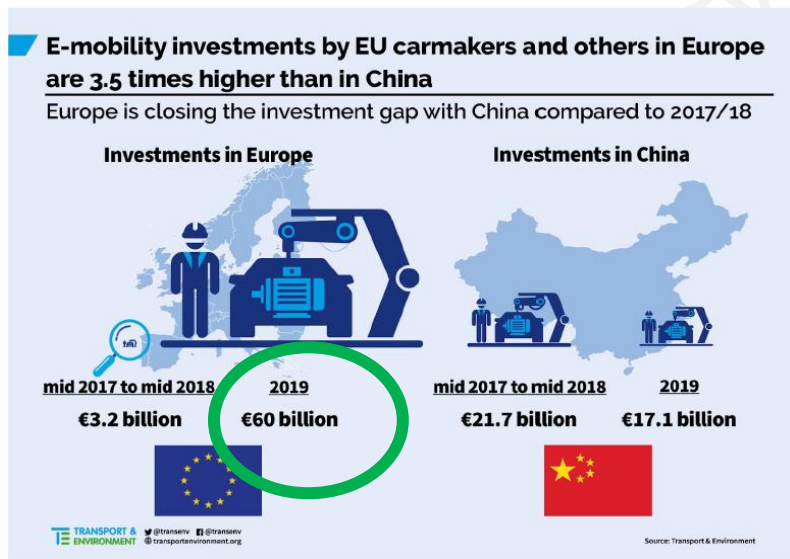
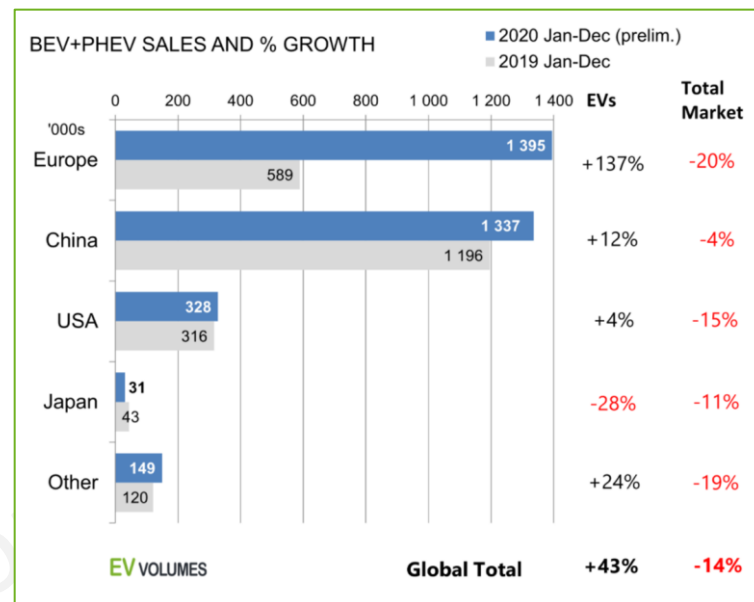
250B€



Impact

3-4M jobs

Europe sold more eVs than China in 2020, with a 137% growth



Europe captured 3,5 times more investment than China in 2019 & 2020*

EBA results since October 2017 (2/5)

Industrial projects all across the value chain in 22 countries

4



AUSTRIA - Raw materials: EUROPEAN LITHIUM (lithium) - Application & Integration: MAGNA STEYR (E-mobility), CYBERGRID (ESS)	ITALY - Battery Production: FAAM/LITHOPS - Application & Integration: ENEL (ESS)
BELGIUM - Active Materials: UMICORE, LEYDEN-JAR - Recycling: UMIICORE	NETHERLANDS - Active Materials: LEYDEN-JAR
CROATIA - Application & Integration: RIMAC (e-mobility)	POLAND - Active materials: UMICORE - Battery manufacturing: LG CHEM
CZECH REPUBLIC - Raw materials: CINOVEC (lithium), EURO MANGANESE (manganese) - Battery Production: MES	PORTUGAL - Raw materials: SAVANNAH (lithium)
DENMARK - Application & Integration: DTU (ESS), LITHIUM Balance (BMS)	ROMANIA - Application & Integration: ROMBAT
ESTONIA - Battery Manufacturing: SKELETON (supercaps)	SLOVAKIA - Battery Production: INOBAT, SK Innovation
FINLAND - Raw Materials: KELIBER (lithium) - Active materials: BASF - Recycling: Fortum/BASF/NORNICKEL	SPAIN - Raw Materials: Infinity, LITHIUM IBERIA (lithium)
FRANCE - Battery Production: ACC, VERKOR - Recycling: SNAM/HONDA	SWEDEN - Raw Materials: TALGA, VOXNA (graphite) - Active Materials/Battery manufacturing/Recycling: NORTHVOLT - Applications: EPIROC (Industrial), SEEL (IPCEI)
GERMANY - Raw Materials: VULCAN (lithium) - Active Materials: BASF - Battery manufacturing: ACC, NORTHVOLT/VW, TESLA, CATL, VARTA, BMW, CELLFORCE, AKSAOL, MICROVAST, FARASIS - Recycling: VW, PROMOBIOUS	NORWAY - Active Materials: SKALAND and ELKEM (graphite anodes) - Battery manufacturing: MORROW and FREYR
HUNGARY - Battery Production: SAMSUNG, SKI Innovation	SERBIA - Raw materials: RIO TINTO, NEOMETALS (lithium)
IRELAND - Raw materials: INTERNATIONAL LITHIUM (lithium)	UK - Raw Materials: Cornish Lithium - Battery Manufacturing: ENVISION, BRITISHVOLT



70 Industrial projects all across Europe, creating jobs and growth

EBA results since October 2017 (3/5)

The means: A “Fit for purpose” ecosystem built from scratch

5



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

600+ stakeholders, capturing a common goal



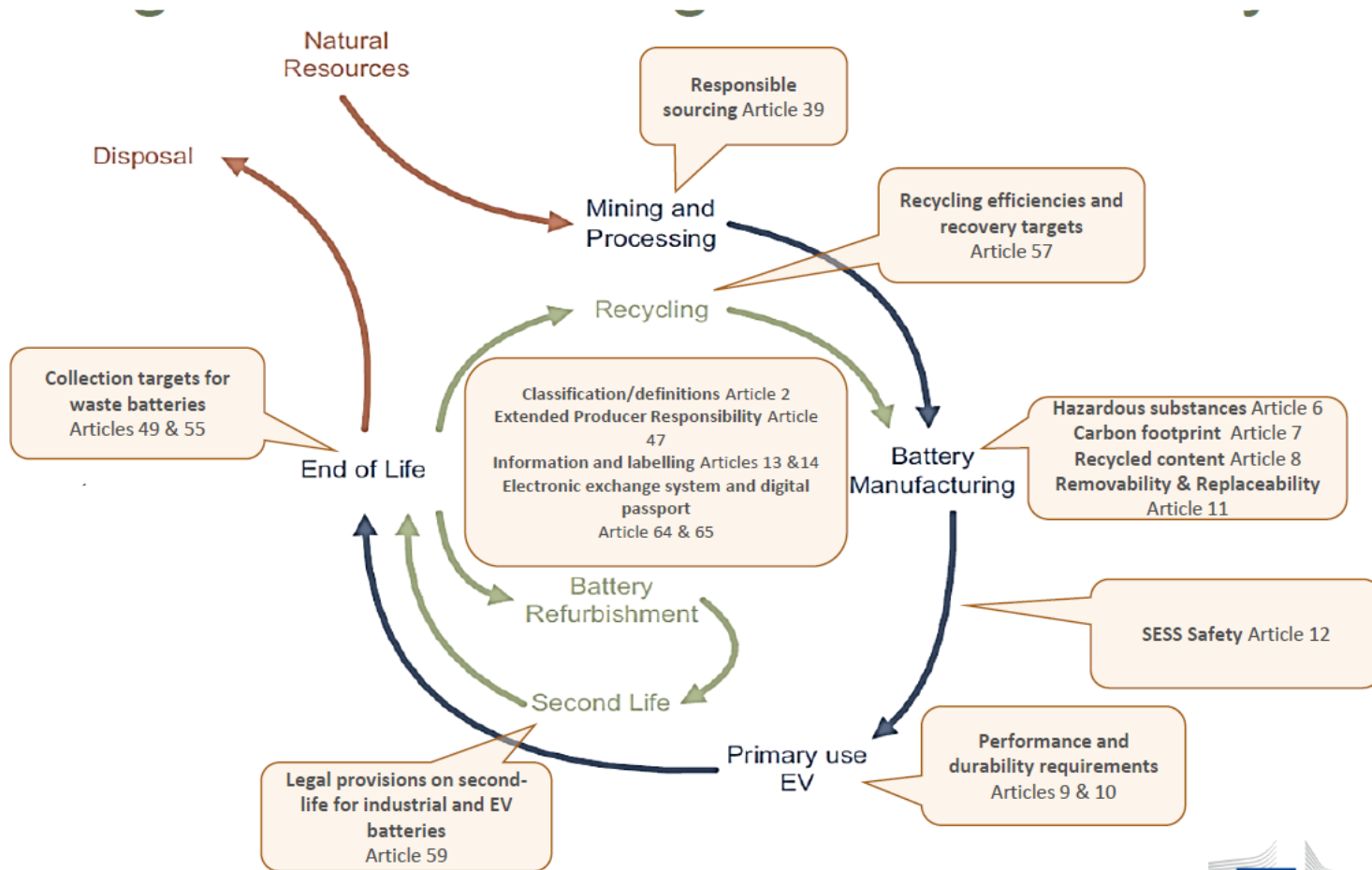
Impact

250B€

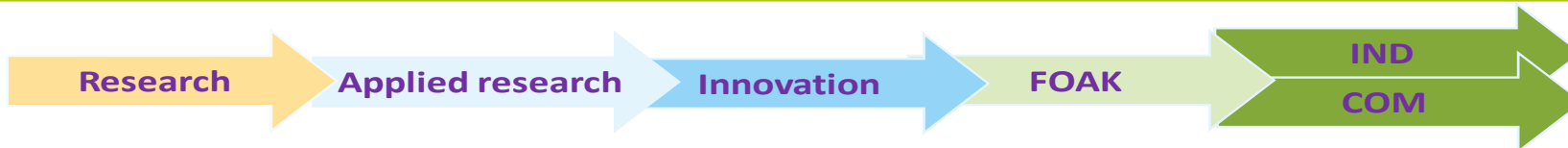
Research and associations active in large parts of the value chain	Fraunhofer Inst. Chem. Slovenia Munster Uni smartEN MCI DENA	CEA Innovate UK CIC DNV GL Valuad GART	SINTEF Faraday Inst TU Braunschweig TUV SUD AVERE Business Finland	AIT Uppsala Univ Aalto Univ AVL ADS VASEK	VITO VUB ERRIN RISE BVES GigaVaasa	ENEA CEPS EASE ifu A3PS Amiens	AVL ITALIA UTBM EUROBAT CEFIC Zabala Invest in Lithuania	CNR FEMTO T&E VDMA AMMA RVO	ANIE INST. ITALIANO EUCAR VDE TNO RSE	Politecnico Milano CIDETEC EGVI CEN/CENELEC ACEA CLEPA	CATCH SFEM Stora Federchimic Instituto Tec Energia VG-Colab CEEP	ECOS Not innovated here CEFIC
Financial Institutions involved in EBA	EIB	BPI	DEMETER	LB	BNP Paribas	ING	Total VC					
	EBRD	Société Générale	Equinor	Lazard	Credit Agricole	HSBC	Macquarie					
	PFR	KFW	LBW	San Paolo Intesa	Goldman	DZ Bank						

3-4M jobs

EBA: Institutions from most European countries, acting together, with an ambitious goal, lead from “Brussels”



Traceability, sustainability, circularity and ambitious Europe setting the reference ww for the battery supply chain



Partnership (900M€; executing ETIP roadmap)

ETIP (2M€ - Roadmap design)

Battery 2030+ (1B€)

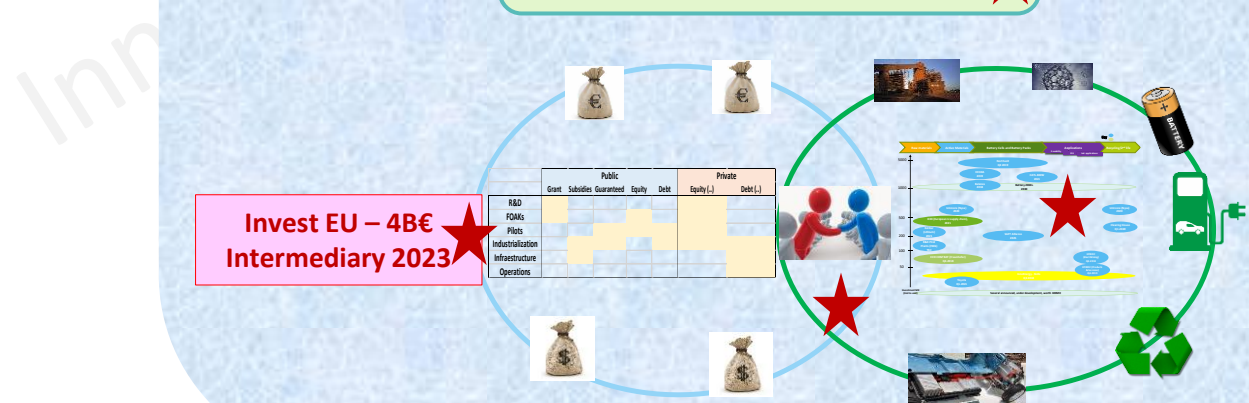
EBA@250
(Thought leadership)

IPCEI (5B€)

Innovation Fund (10B€-ETS, comp)

Invest EU – 4B€ Intermediary 2023

	Public				Private	
	Grant	Subsidies	Guaranteed	Equity	Debt	Equity (L)
R&D						
FOAKs						
Pilots						
Industrialization						
Infrastructure						
Operations						

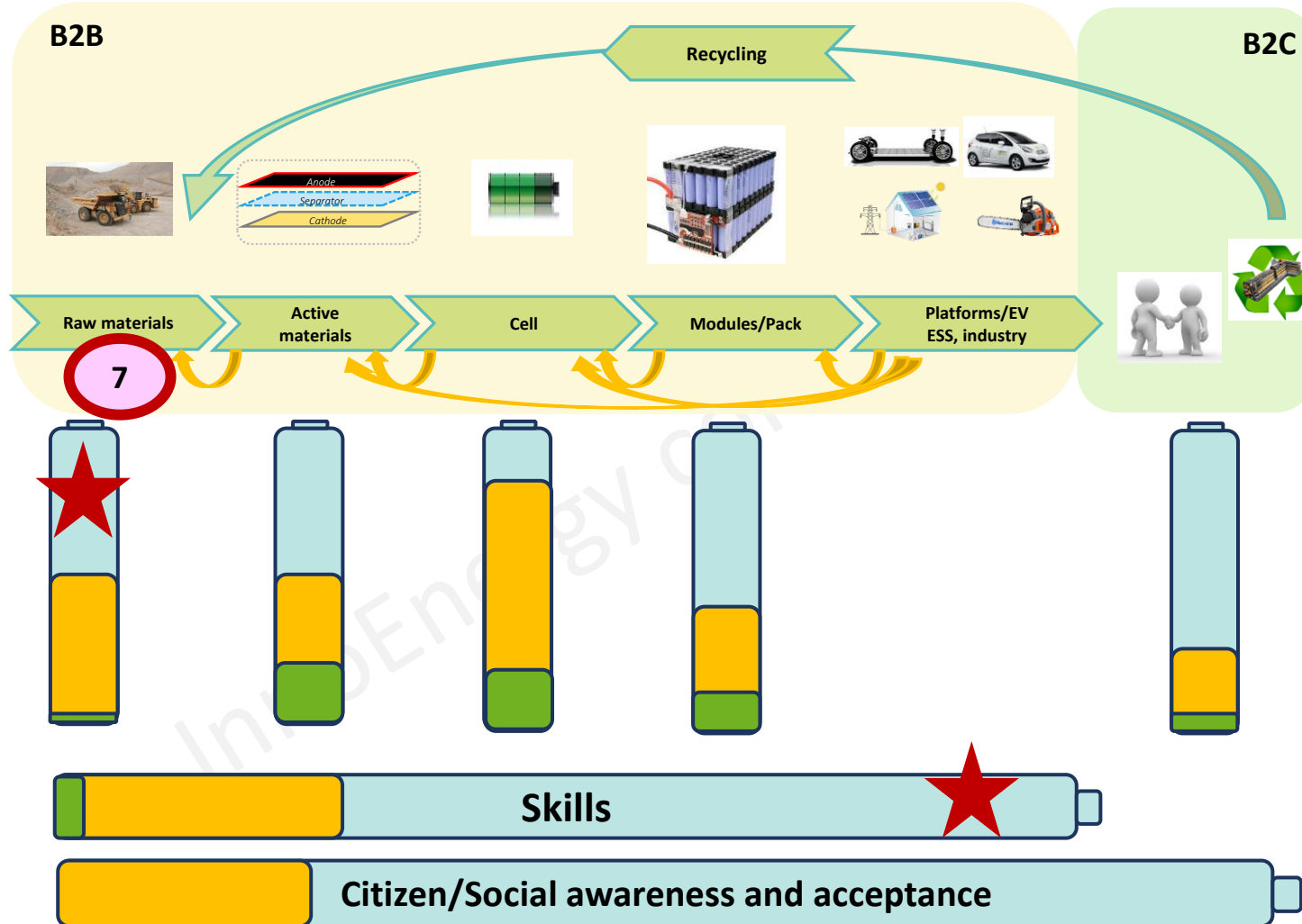


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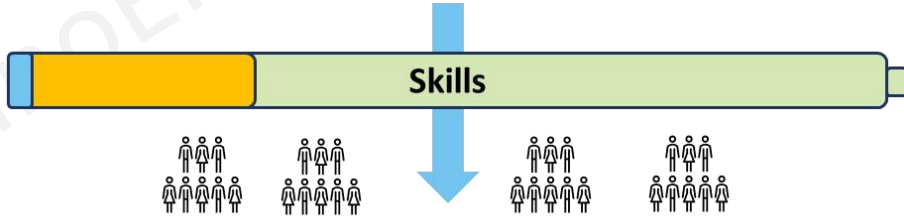
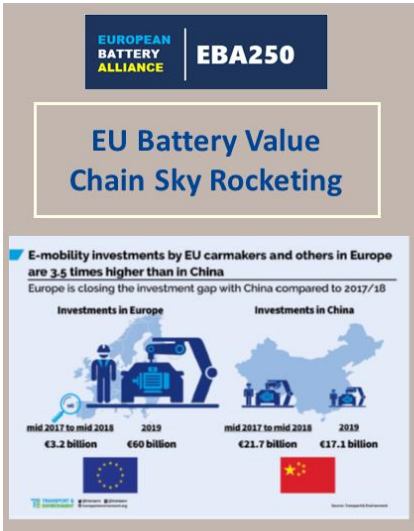
Gap between existing + committed and needed capacity (for 2025)



Resilience building up, yet more speed needed



Training 800.000 workers by 2025



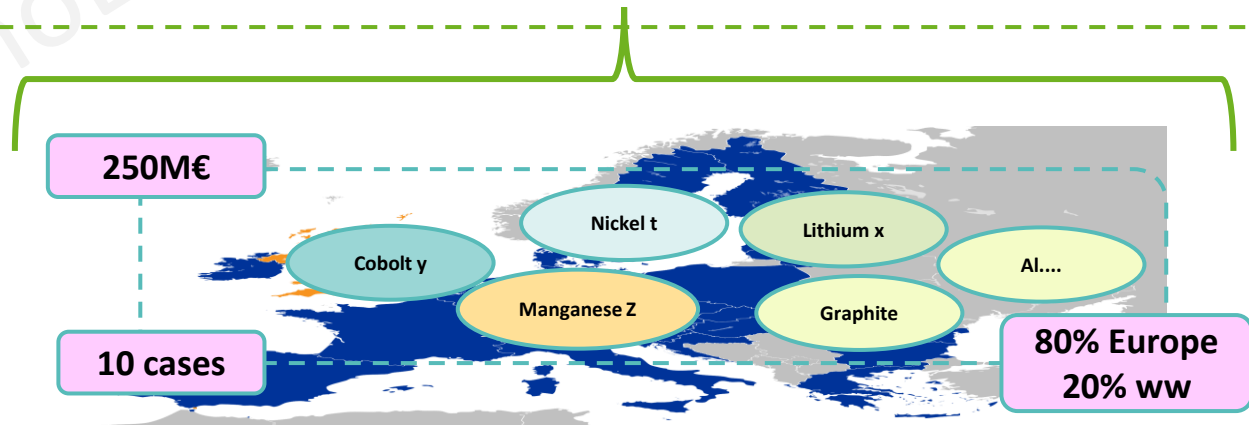
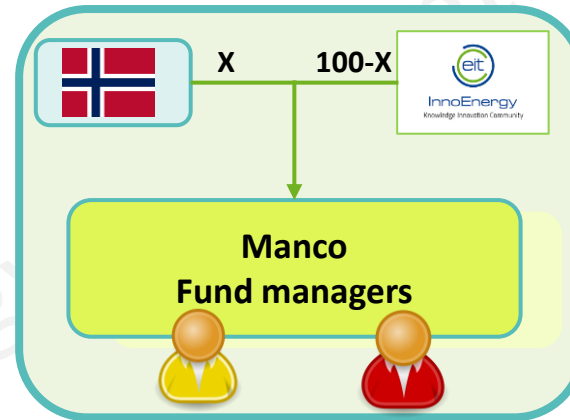
800.000 trained by 2025, 160.000 per year
Average cost/worker=1.000€

Still work to do and gaps to fill (3/3)

Securing resilience in Raw materials: EBA Green Fund by InnoEnergy 11



EBA Green Fund
Planned live Summer 21
Accelerating scoping, PFS,
DFS



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Accelerate Japanese end to end battery value chain?

Create a **new** additional **Japan GDP worth 300B\$ by 2026** (A new Kanagawa)

Create **new 4-5Millions new jobs** linked to the battery value chain

Secure **resilient supply chains, also in raw materials**

Developing a **“fit for purpose” regulatory framework**

joining forces in the worldwide scenario

and all this in

shorter time (compared to going solo)

by using the **lessons learnt, methodology and outputs from EBA**

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