



Battery Norway

Norwegian and European Battery Industry

-

Status and Outlook

Pål Runde – Battery Norway

Grimstad – June 2025



Battery Norway

Strategic partnerships



Members and partners



Vianode

MORROW

BEYONDER™

elinor.

Corvus Energy

ZNL ENERGY



Lithium



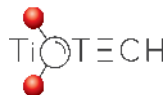
nilu



SCHIVE
THE BATTERY SPECIALIST



FME BATTERY



nordic
batteries

IFE

NORCE



PIXII

Grette

Skift

Battery Norway



Battery Norway

A national industry-based platform for collaboration

Board members:

Chair:
Kristin Skofteland



Valinor
elinor.

Deputy chair:
Fredrik Andresen



Stian
Madshus



Vianode

Pål
Brun



MORROW

Thomas
Bergan



BEYONDER™

Mona
Schanche



KUNIKO
ZEROCARBON BATTERY METALS™

Hanne Flåten
Andersen



IFE
FME BATTERY

Deputy:
Ola Johannes Jordal



Corvus



Energy

CENATE

Deputy:
Olav Leren Moen



“Our vision is to create a **competitive** and **sustainable** Norwegian **battery value chain**.

3C-strategy.....

Connect

Companies and Nations

Targeted Meetings
Webinars & Seminars
Conferences

CONNECT		
OVERVIEW		
Initiative	Objectives	Recommendations
1. Targeted Meetings	Establish a list of key stakeholders to meet with and schedule meetings to discuss key issues and challenges.	Identify key stakeholders to meet with and schedule meetings to discuss key issues and challenges.
2. Webinars & Seminars	Organize webinars and seminars to share knowledge and expertise with the industry.	Identify key topics to discuss and schedule webinars and seminars to share knowledge and expertise with the industry.
3. Conferences	Organize conferences to bring together industry leaders and experts to discuss key issues and challenges.	Identify key topics to discuss and schedule conferences to bring together industry leaders and experts to discuss key issues and challenges.

Collaborate

Across the Value Chain

Taskforce
Collaboration Culture
Active Members

COLLABORATE		
OVERVIEW		
Initiative	Objectives	Recommendations
1. Taskforce	Establish a taskforce to address key issues and challenges across the value chain.	Identify key issues and challenges across the value chain and establish a taskforce to address them.
2. Collaboration Culture	Establish a collaboration culture across the value chain.	Identify key issues and challenges across the value chain and establish a collaboration culture to address them.
3. Active Members	Establish a list of active members to participate in the collaboration culture.	Identify key issues and challenges across the value chain and establish a list of active members to participate in the collaboration culture.

Communicate

The Voice of the Industry

Social Media Platforms
Targeted Meetings
Webinars/Seminar/
Conferences
Branding

COMMUNICATE		
OVERVIEW		
Initiative	Objectives	Recommendations
1. Social Media Platforms	Establish a presence on social media platforms to share knowledge and expertise with the industry.	Identify key social media platforms to establish a presence on and share knowledge and expertise with the industry.
2. Targeted Meetings	Organize targeted meetings to discuss key issues and challenges with the industry.	Identify key issues and challenges with the industry and organize targeted meetings to discuss them.
3. Webinars/Seminar/Conferences	Organize webinars, seminars, and conferences to share knowledge and expertise with the industry.	Identify key topics to discuss and organize webinars, seminars, and conferences to share knowledge and expertise with the industry.
4. Branding	Establish a brand identity for the industry to represent the voice of the industry.	Identify key issues and challenges with the industry and establish a brand identity to represent the voice of the industry.

External networks and partnerships

European networks



The Nordics

www.nordicbatterycollaboration.com



Swedish Battery Arena:



Other countries



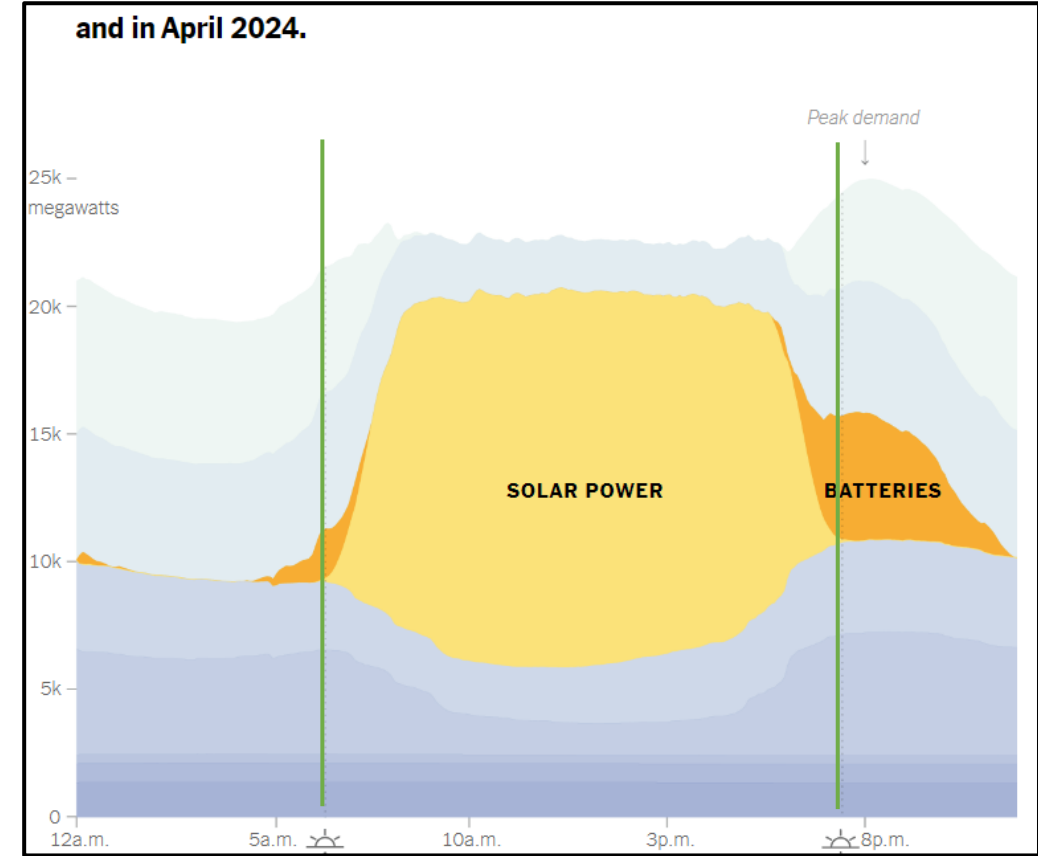
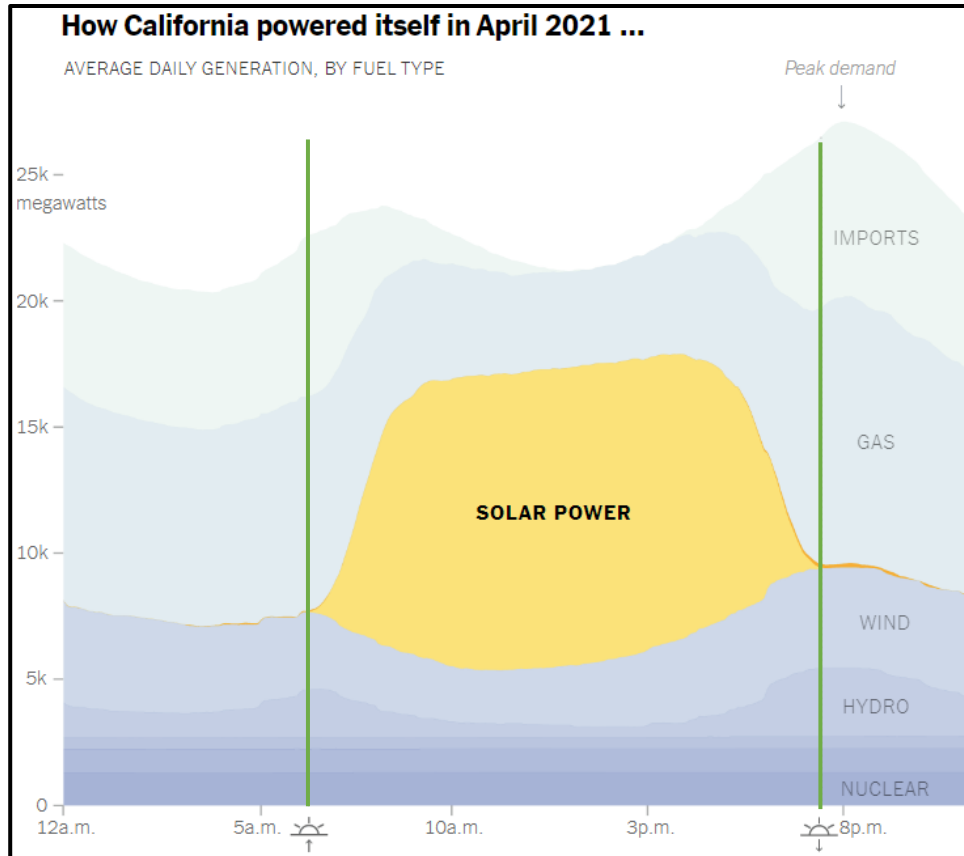
BESS is growing rapidly (but not so much in Norway)

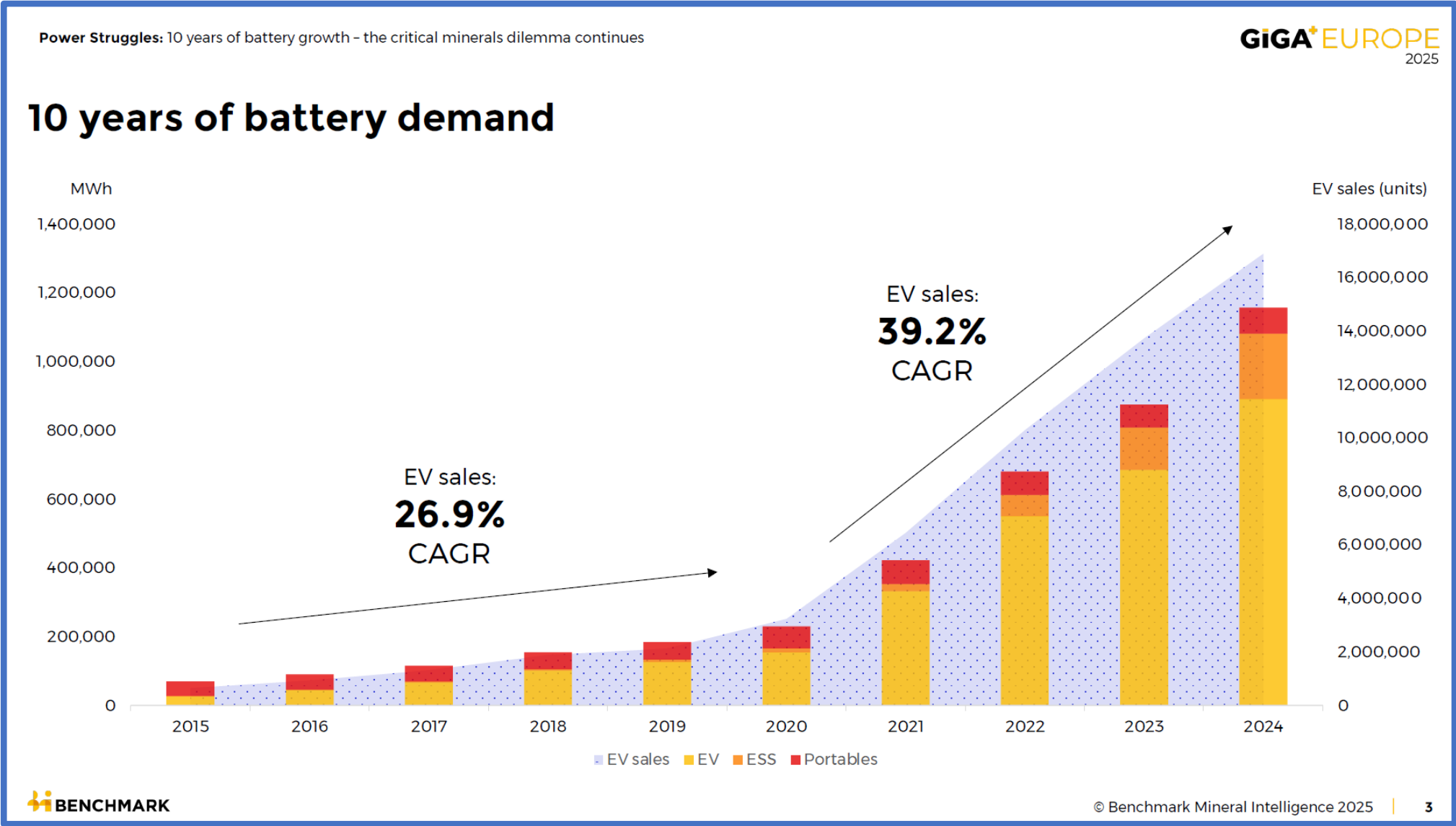


Giant Batteries Are Transforming the Way the U.S. Uses Electricity

They're delivering solar power after dark in California and helping to stabilize grids in other states. And the technology is expanding rapidly.

By [Brad Plumer](#) and [Nadja Popovich](#) May 7, 2024





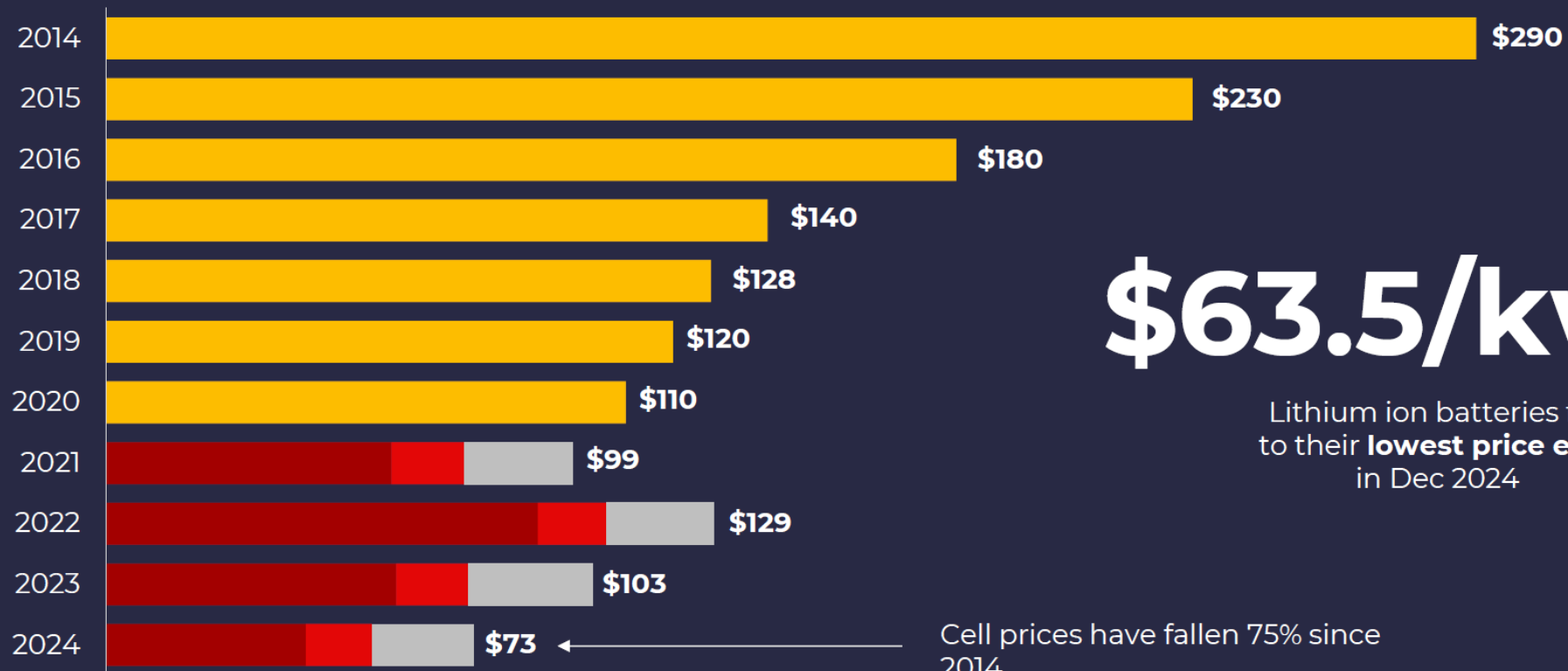
Power Struggles: 10 years of battery growth – the critical minerals dilemma continues

10 years of battery demand



Batteries Are Now Cheaper Than They've Ever Been Before

Global Weighted Avg. Cell Price (\$/kWh)



\$63.5/kwh

Lithium ion batteries fell to their **lowest price ever** in Dec 2024

Cell prices have fallen 75% since 2014

Freyr sparket sjefen, gir opp batterier, stenger på Mo

Sorrow for Morrow: Trenger mer penger – igjen
Morrow fikk endelig det statlige lånet som skulle redde dem. Nå

Økonom Steinar Juel tar et kraftig oppgjør med «tilkarringsindustrien» varslet krise
Økonom Steinar Juel er kritisk til løftene om statlig støtte

Finanspolitisk utvalg: – Batterisatsingen bør skrotes
Regjeringen får råd om å skrote klimasatsinger, droppe momsfritak og beholde exit-skatten.

Flatt batteri
Batteriselskapet Beyond er hatteriindustrien det nye permittierer halvparten av de ansatte – må hente penger

Batteriselskapet Northvolt er konkurs
Selskapet med nær 5000 ansatte leverte inn konkursbegjæring onsdag morgen etter at det ikke fikk inn mer penger.

Batteriselskap har tapt 310 millioner kroner
Hans Rustad 12.11.2024 11:14

Skjønnhetskonkurransen om støttekroner
Det er ikke et klimatiltak å bruke 60 milliarder på å gjøre Norge til «en grønn austrikjempe». Heller ikke berger det norsk økonomi «etter oljen».

Listhaug krever innsyn i milliardlån batteriprodusent
Innovasjon Norge har innvilget et lån på 1,5 milliarder kroner til batteriprodusenten Morrow. Frp-leder Sylvi Listhaug vil ha detaljene.

Det svenske batteriselskapet Northvolt sier opp 1600
Northvolt, som produserer batterier til elbiler

Quite a lot of good news as well....

Åpnet gigafabrikken på Sørlandet: – Europa trenger dette

Statsministeren klippet fredag snoren da batterifabrikken ble åpnet i Arendal. Han er åpen om at bransjen er forbundet med risiko, men er tydelig på at verden trenger batteriene Tomorrow skal produsere.



GM signs supply deal with Vianode for synthetic graphite for EV batteries

By Nick Carey

January 15, 2025 2:08 PM GMT+1 • Updated 5 months ago



Opening of pilot line at Kongsberg

Hydrovolt åpnet verdens mest automatiserte batterigjenvinningslinje

Nov 4, 2024 | News



Første FME for batteriteknologi

Apr 12, 2024 | News

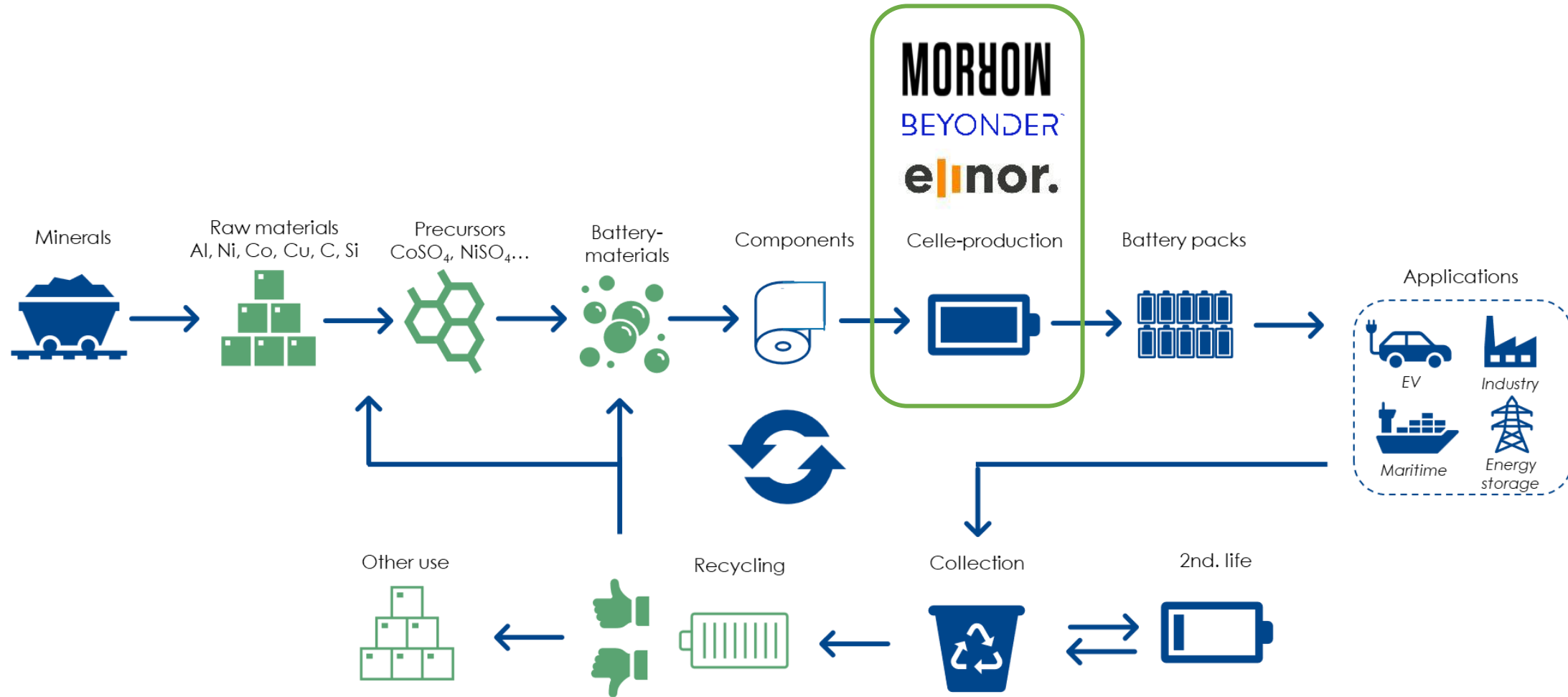


Corvus Energy to power the worlds first fully electric Offshore Vessel



The eCSOV will have almost 25MW of Corvus battery installed and will be the world's first fully electric offshore vessel.

So much more than battery cell production....



Battery cell production is complicated...

- Many processing steps
- High precision (0.001 mm)
- High speed (1 m/s)
- High degree of automation
- High quality requirements
- Very large scale



Battery cell production: Three active projects in Norway



Import and sale of complete battery systems for now.
Partnership with Chinese producer
Plans to produce cells at Orkland site at a later stage

BEYONDER™



Innovation line, scaling up on hold for the time being.
Cells are produced by Chinese partner (licensing)



Lessons learned so far

- Do not move too fast, and don't skip any scale-up steps
- Master the known technology/chemistry before introducing the next generation
- Collaborate/learn from companies/countries with experience (China, South-Korea, Japan)
- "Chicken & egg" dilemma

MORROW



Arendal:

MDC: Pilot line (South Korea → Arendal)
MCF: Full scale line (1 GWh plant)
Site available for additional lines/plants



Grimstad:

MRC: R&D center
Co-located with UiA battery lab.

Mining projects



GREENROC
STRATEGIC MATERIALS PLC



Minerals

Raw materials
Al, Ni, Co, Cu, C, Si



Precursors
 CoSO_4 , NiSO_4 ...



Battery-
materials



Components



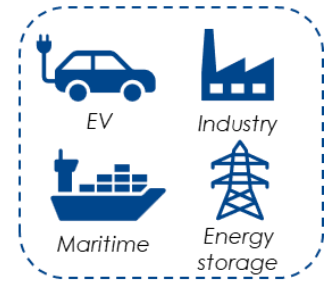
Celle-production



Battery packs



Applications



Norge Mineraler AS

Other use



Recycling



Collection



2nd. life



Mining projects



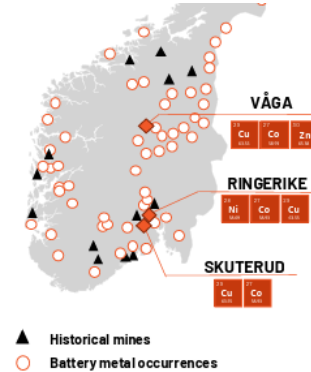
Ringerike Battery Metals Project

Flagship Ni-Cu-Co Resource in Southern Norwa

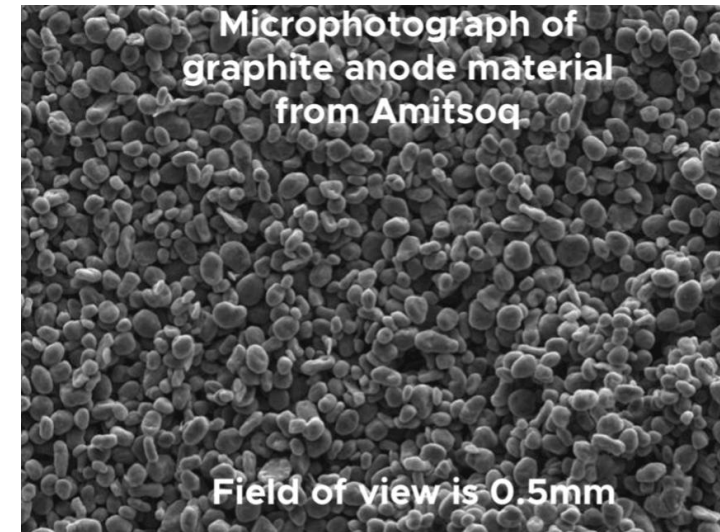
Ertelien JORC (2012)
Mineral Resource Estimate

40 Mt @ 0.25% NiEq
(22 Mt Indicated @ 0.26% NiEq and
18 Mt Inferred @ 0.25% NiEq)

Refer: ASX Release 14 Dec. '24



GREENROC
STRATEGIC MATERIALS PLC



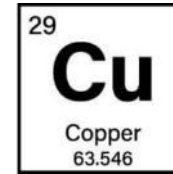
- Restarting of mine in Greenland (Amitsoq)
- Processing to battery grade anode material in Norway (Eyde Material Park)
- GreenRoc and Norgraph status as critical project by EU commission

Mining projects

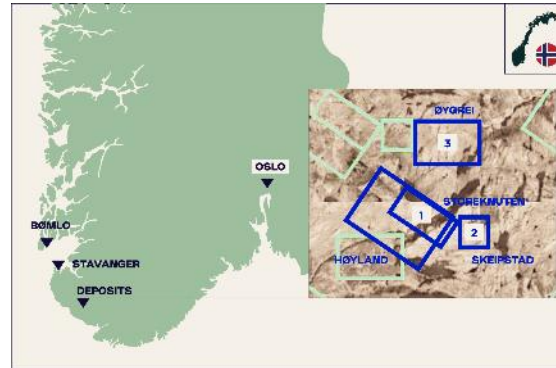


Blue Moon Metals Nussir Copper Project Receives Special Strategic Project Status from the European Union

June 05, 2025 06:45 ET | Source: [Blue Moon Metals Inc](#)



Norge Mineraler AS



Norge Mineraler can produce EU 2020 CRMs: vanadium, phosphate and titanium from 4.5 billion tonnes of magmatic rock according to JORC standard. We consider that in the northern part of the Bjerkeim-Sokndal intrusion, there are more than 70 billion tons of P-Ti-V bearing rocks.

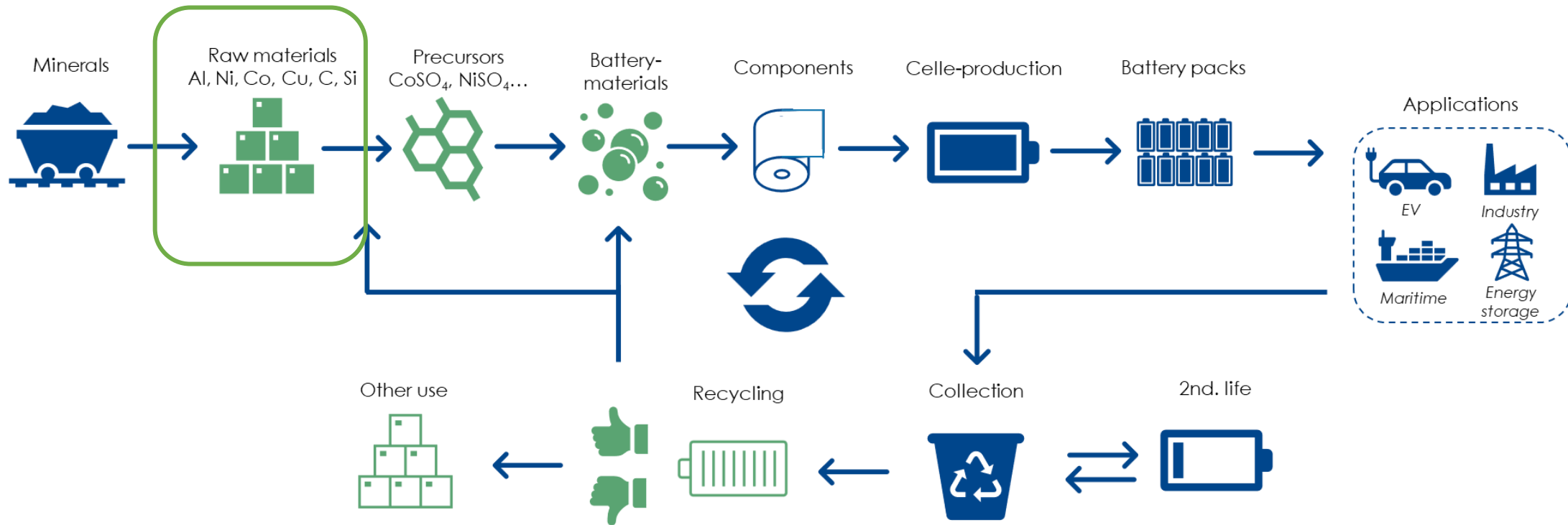


- Graphite was first discovered in the area in 1870 and production started in 1917.
- The only graphite mine in Scandinavia
- The biggest crystalline graphite producer in Europe



Norge Mineraler AS

Raw Materials / Metals

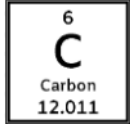
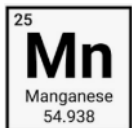
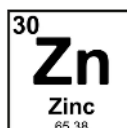
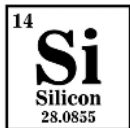
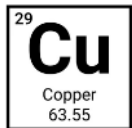
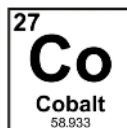
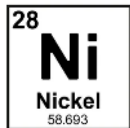


Norwegian Process Industry - Powered by renewable energy



Battery Norway

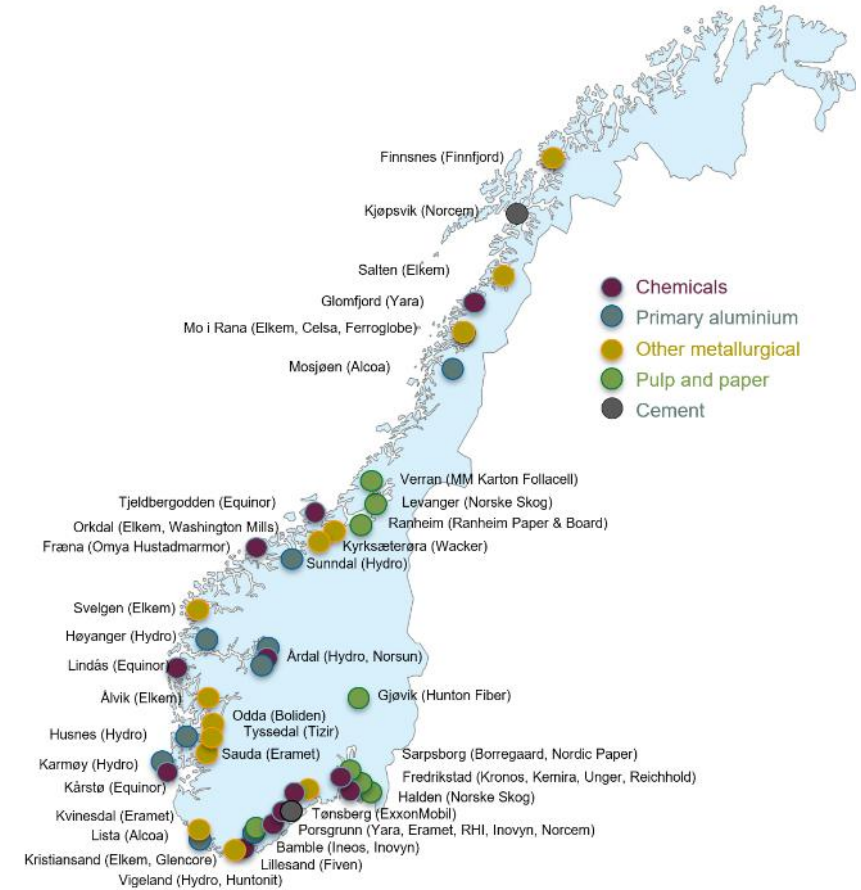
Many key materials needed for the green transition, included batteries, have been produced in Norway for >100 years....



NIKKELVERK
A GLENCORE COMPANY



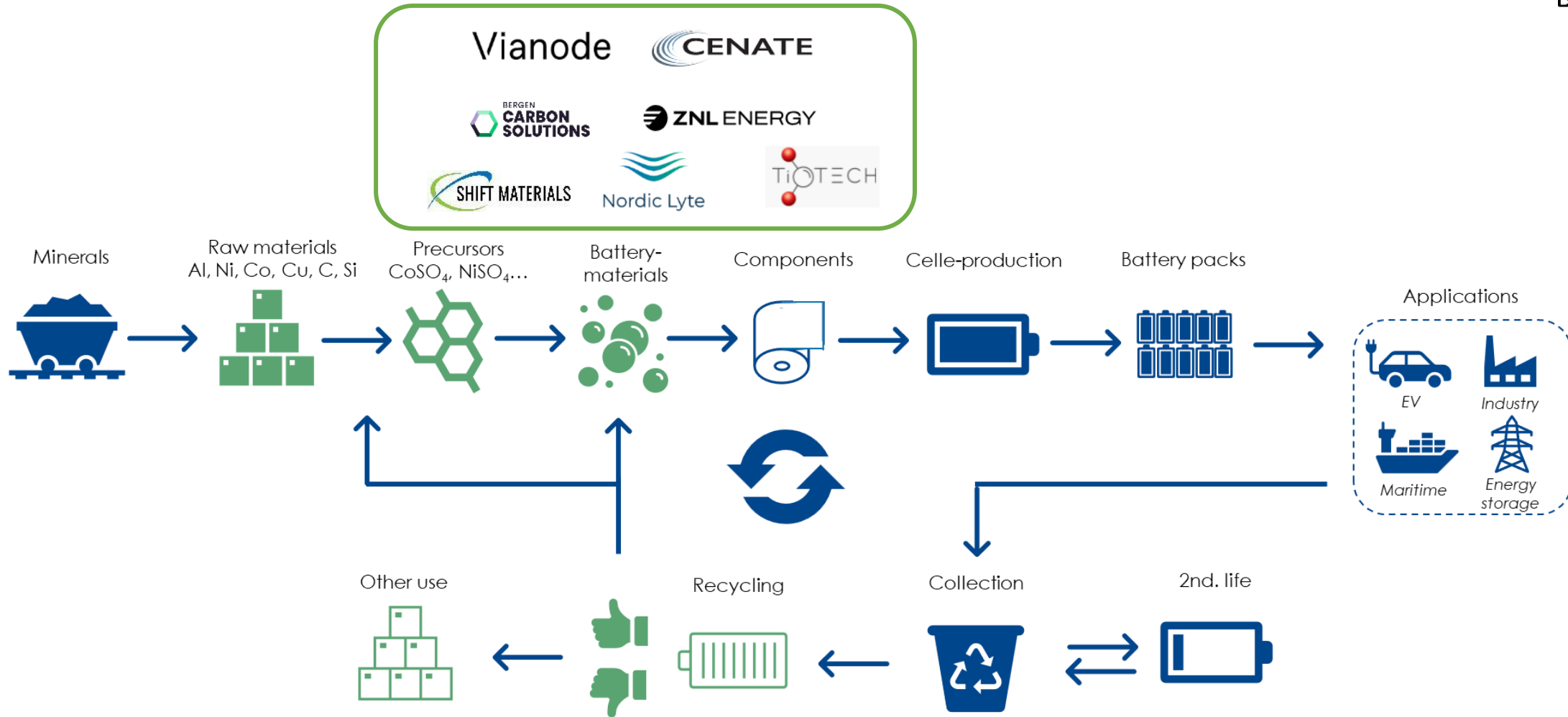
BOLIDEN



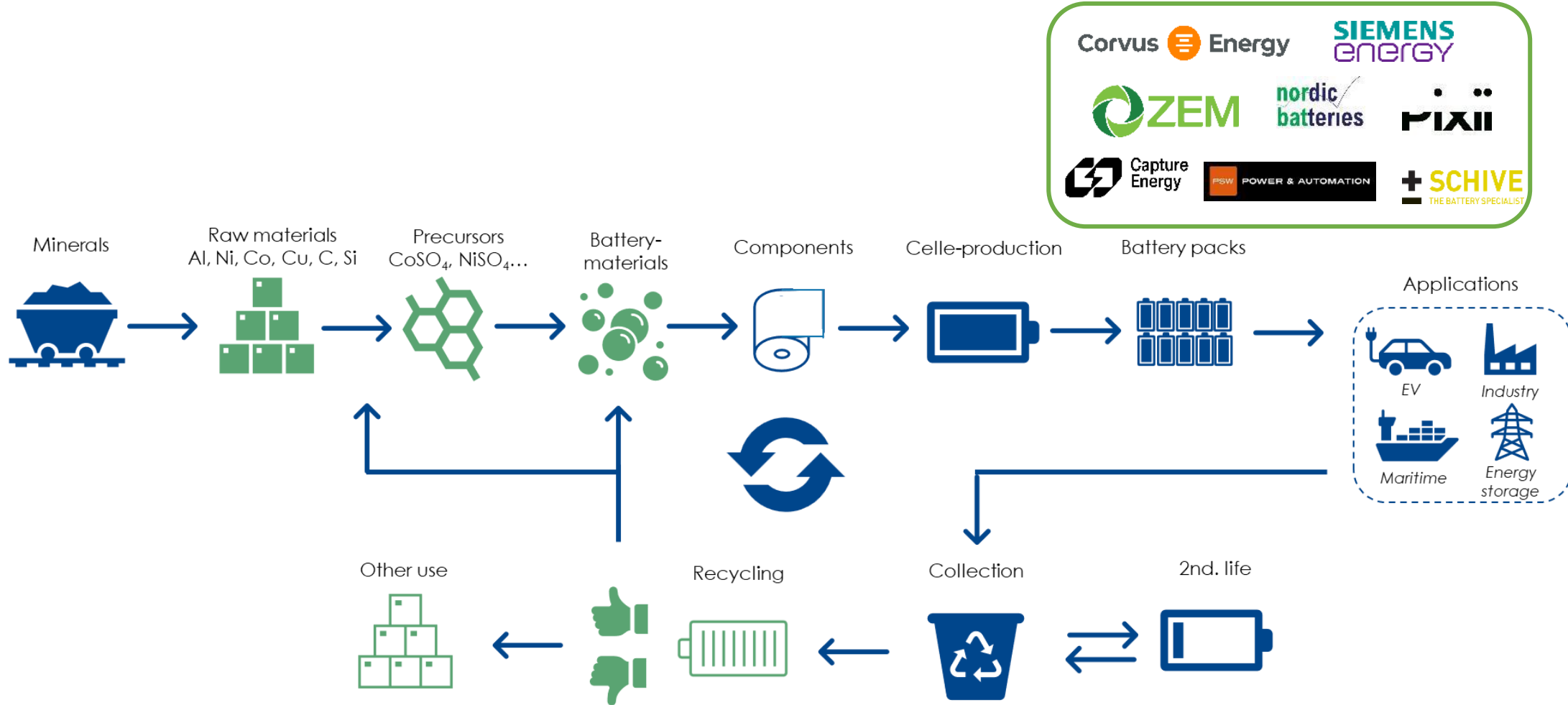
Precursors , Battery Materials and Components



Battery Norway



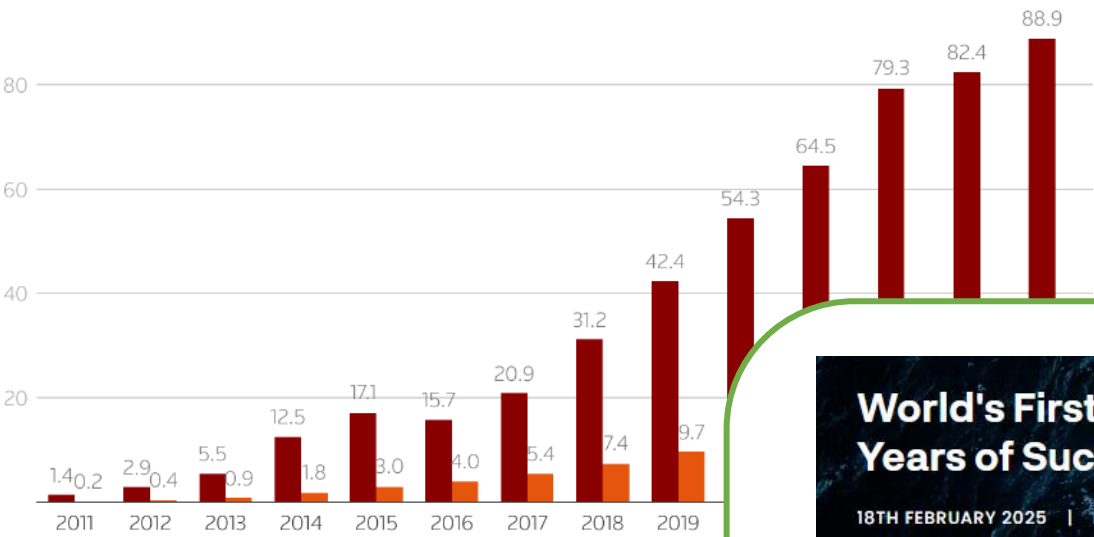
Battery packs, modules & systems



Applications & use

Zero-emission cars reach nearly 90% of new car sales in Norway in 2024

● Share of new passenger car sales ● Share of total passenger car fleet



Source: Norwegian Road Federation (OFV), Norwegian Public Roads Administration

World's First Electric Ferry Celebrates 10 Years of Success

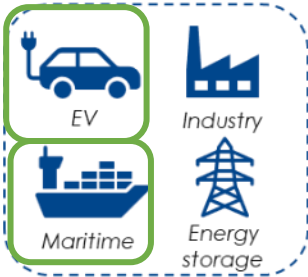
18TH FEBRUARY 2025 | IN NEWS | BY TONJE HOVLAND

In 2015, the launch of MF Ampere marked a moment in maritime history as the world's first zero-emission ferry. In the past decade, this groundbreaking vessel has revolutionized passenger and cargo transport, but also inspired a global shift towards clean maritime transport.

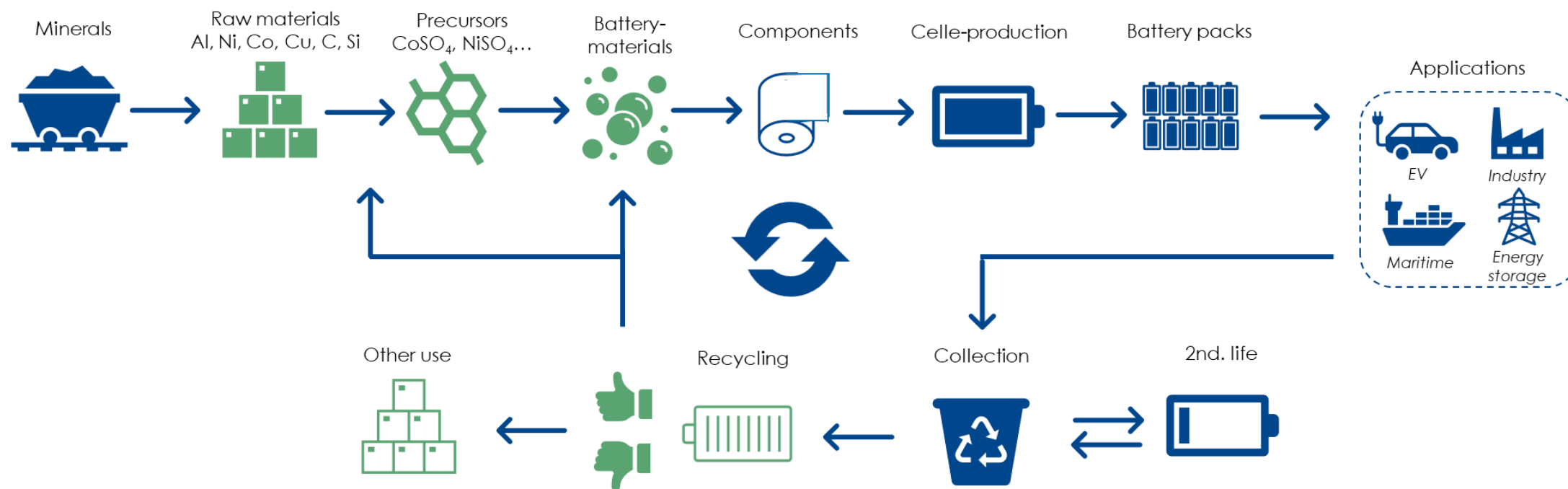
AC

The success of MF Ampere marked a rapid shift towards zero-emission solutions in Norway. Today, over 60 electric ferries and passenger boats operate across 67 routes, a result of MF Ampere's influence. The vessel's success accelerated technological advancements in battery systems, charging infrastructure, and ship design, paving the way for the next generation of clean ferries.

Applications



Collection, reuse, recycling,...



 **Hydrovolt**

 **BatteriRetur**

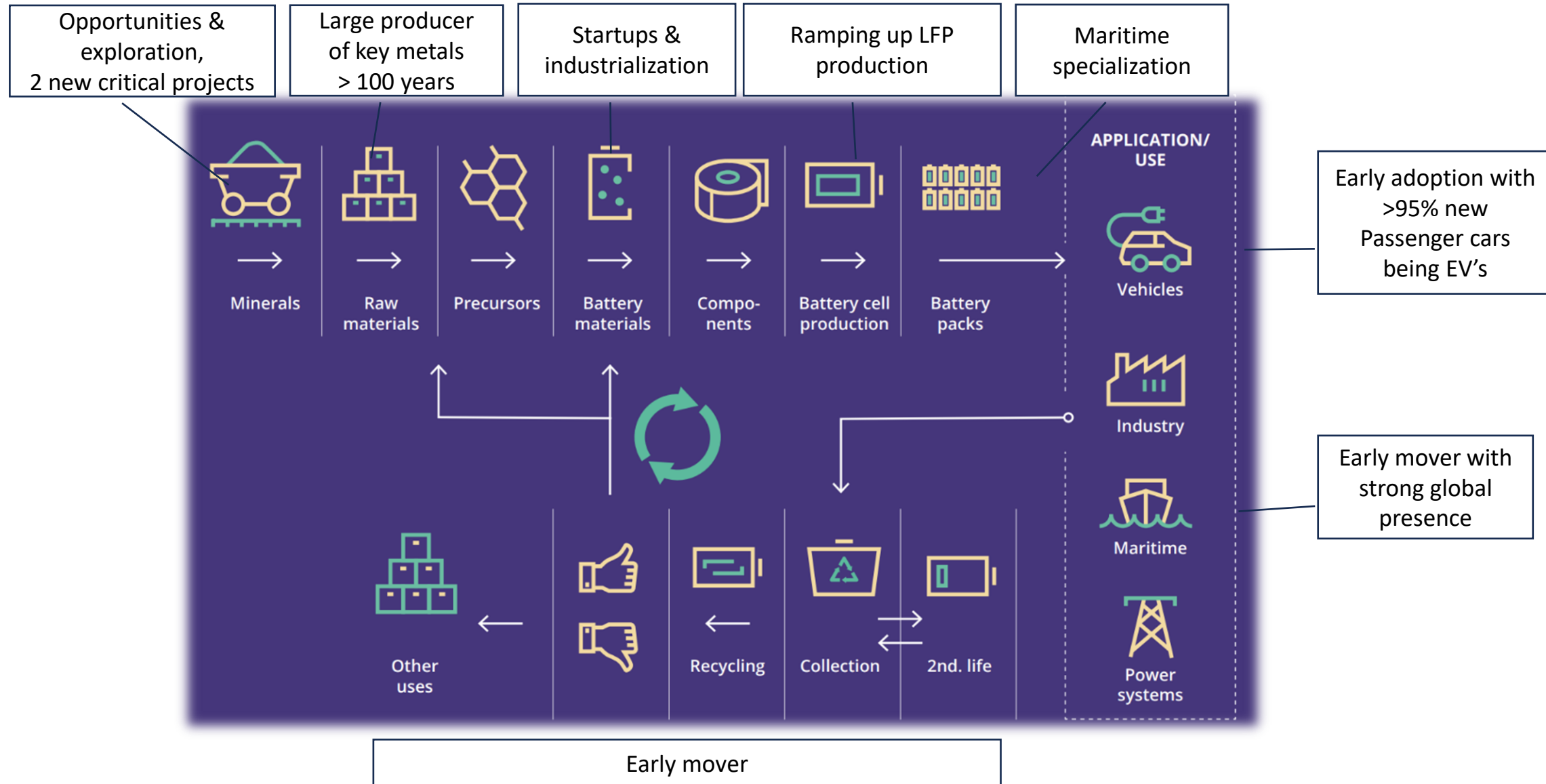
 **Lithium** 367

 **STENA**
RECYCLING

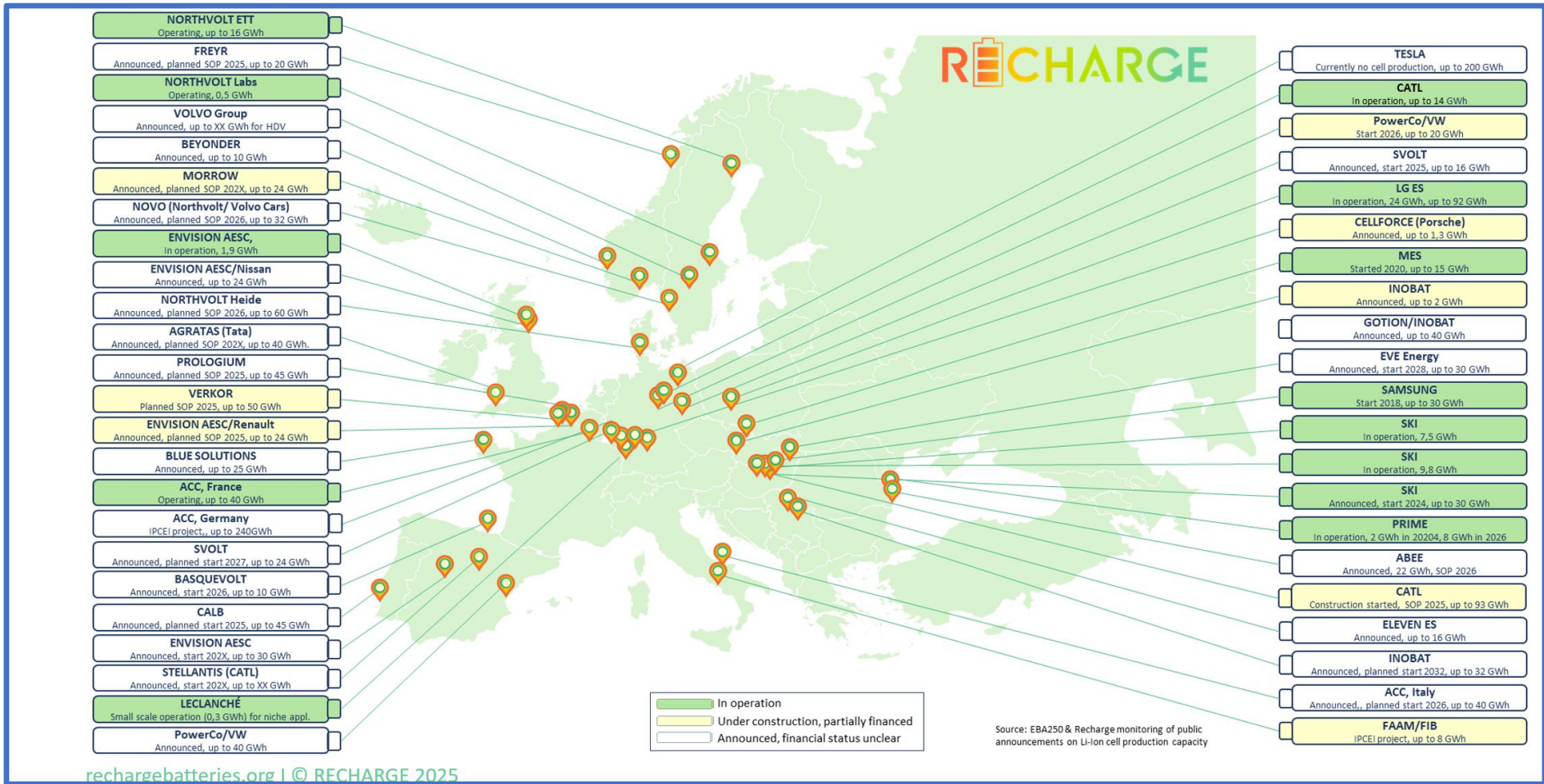
 **REGENERATE**

 **Evyon**™

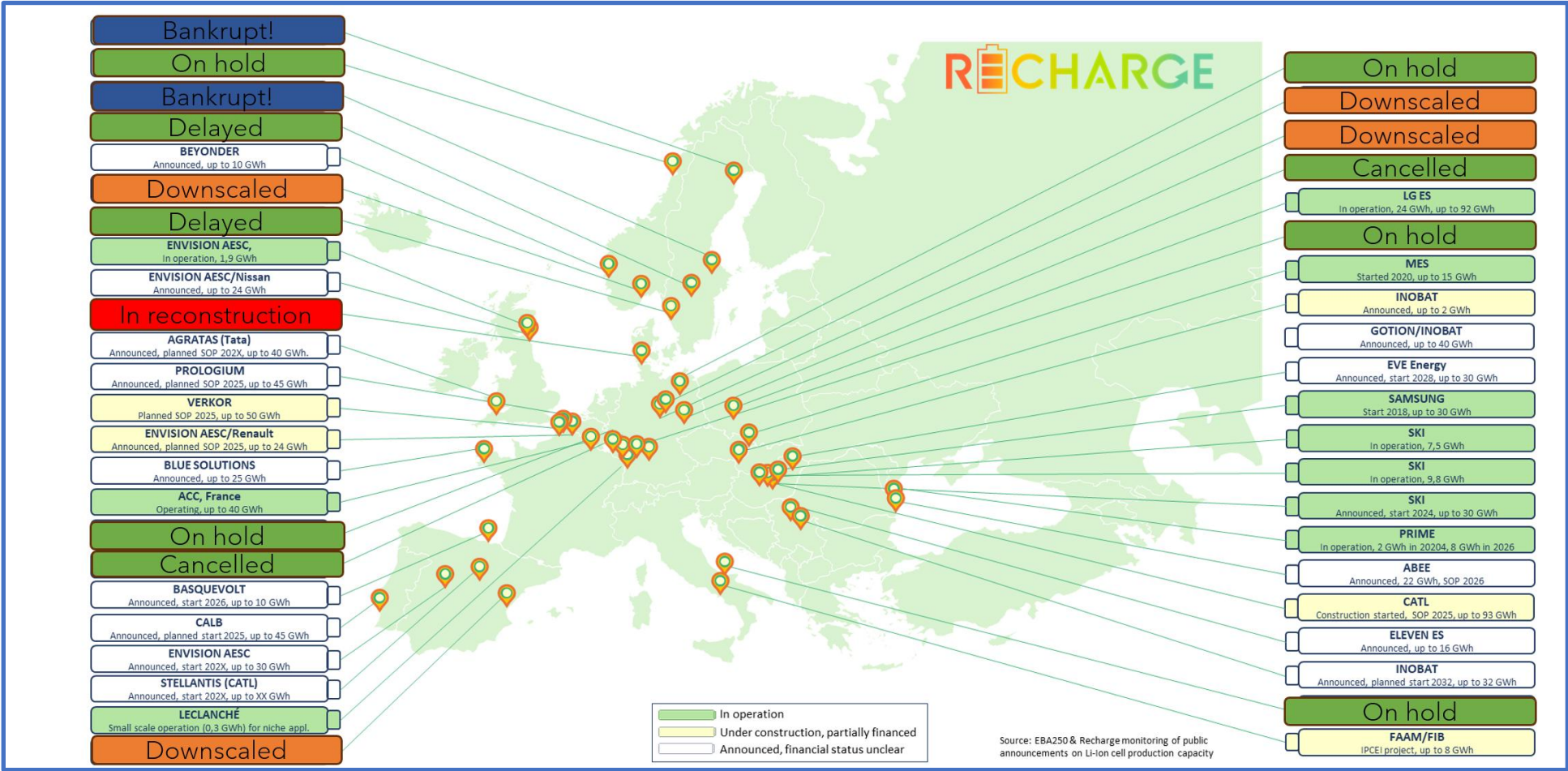
Summary – Norwegian Battery Value Chain



Cell Manufacturing in Europe (from RECHARGE)



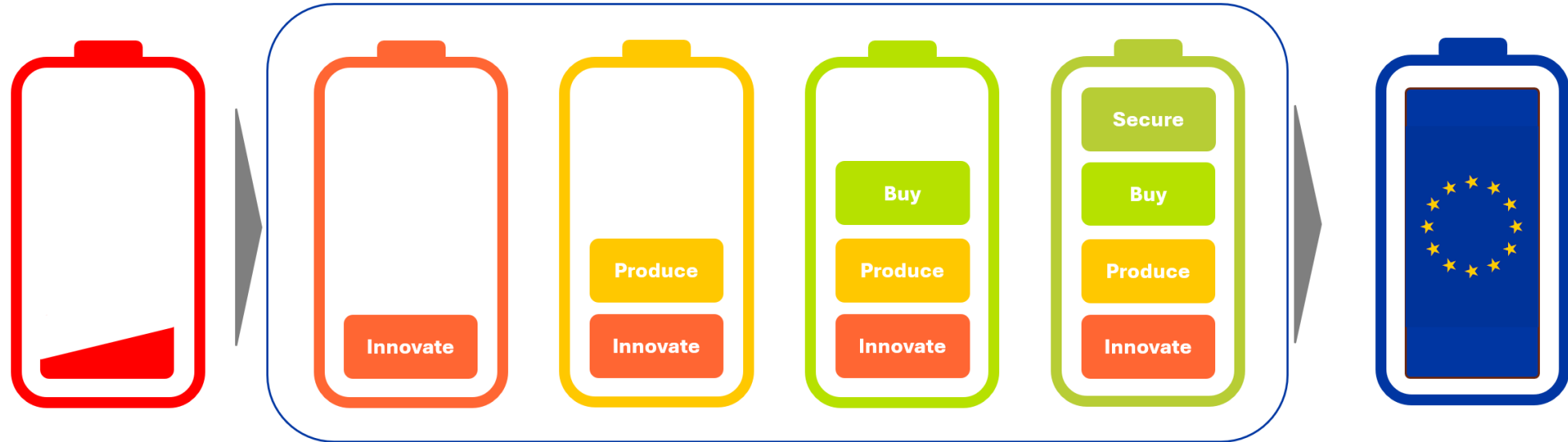
Cell Manufacturing in Europe (from RECHARGE)



RECHARGE: *Need for a New European Battery Strategy!*

To secure its position in the global battery race, Europe must adopt a coordinated strategy that integrates policy, industry, and innovation at EU and MS level

Our “Innovate, Produce, Buy, and Secure” strategy for the EU battery industry-
A holistic approach to ensure the growth of a robust EU battery ecosystem



Status of the EU battery
today-
critical

Our vision: A fully
charge EU battery
ecosystem

EU – Approx. 40 new flagship initiatives....

INDUSTRIAL ACTION PLAN for the European automotive sector

Competitiveness and supply chain resilience



Flagship actions

Competitiveness & supply chain resilience

- **“Battery Booster” Package:** EUR 1.8 billion for battery manufacturing under Innovation Fund and explore **direct cell production support** (linked to European content requirements)
- Use **Industrial Decarbonization Act** and **Circular Economy Act** to set European content requirements on battery cells and EV components
- Facilitate **joint private investments** into upstream value chain and support end of life of vehicle and battery recycling facilities

Summary

Norway : Challenging, but well positioned compared to many other European countries

- Battery cell production: One “giga factory” project now ramping up
- Battery packs, modules and systems developed for maritime sector
- Early adoption of EV → Early collection/reuse/recycling of batteries

Europe/EU

- Very difficult 2024 for the battery industry (and the automotive industry)
- Hard to compete with batteries (and EV’s) from China
- Investors moved to the US & Canada – will they come back?
- European projects typically done together with South Korean, Chinese and Japanese companies (but we ask for nothing in return....)
- More support needed, various proposals out there:
 - Increase support of European production of minerals and battery materials
 - *Local content* requirements for batteries and EV’s produced in Europe
 - **Direct production support during ramping up phase**
 - Reduce/stop export of black mass
 - “Buy European” programs, “Made in Europe” label....