



Business Models for Innovative Clean Tech

The future supply chain for recycled Li-ion batteries

Julien Masson, VP Strategy, ERAMET

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ERAMET a European Leader in Mining & Metals



Global player in mines and metals
~3.7 B€ turnover in 2021

8 556*
collaborateurs

14*
pays

3,7 Md€*
chiffre d'affaires

17*
sites miniers & industriels

1 051 M€*
EBITDA

* hors activités cédées ou en cours de cession
* Données 2021

Pure player in Mining and Metals contributing to a sustainable future

Grow in metals supporting global economic development



Resilient markets

MANGANESE ORE & ALLOYS



NICKEL



MINERAL SANDS



Develop critical metals for energy transition

Fast-growing markets



LITHIUM



NICKEL/COBALT SALTS



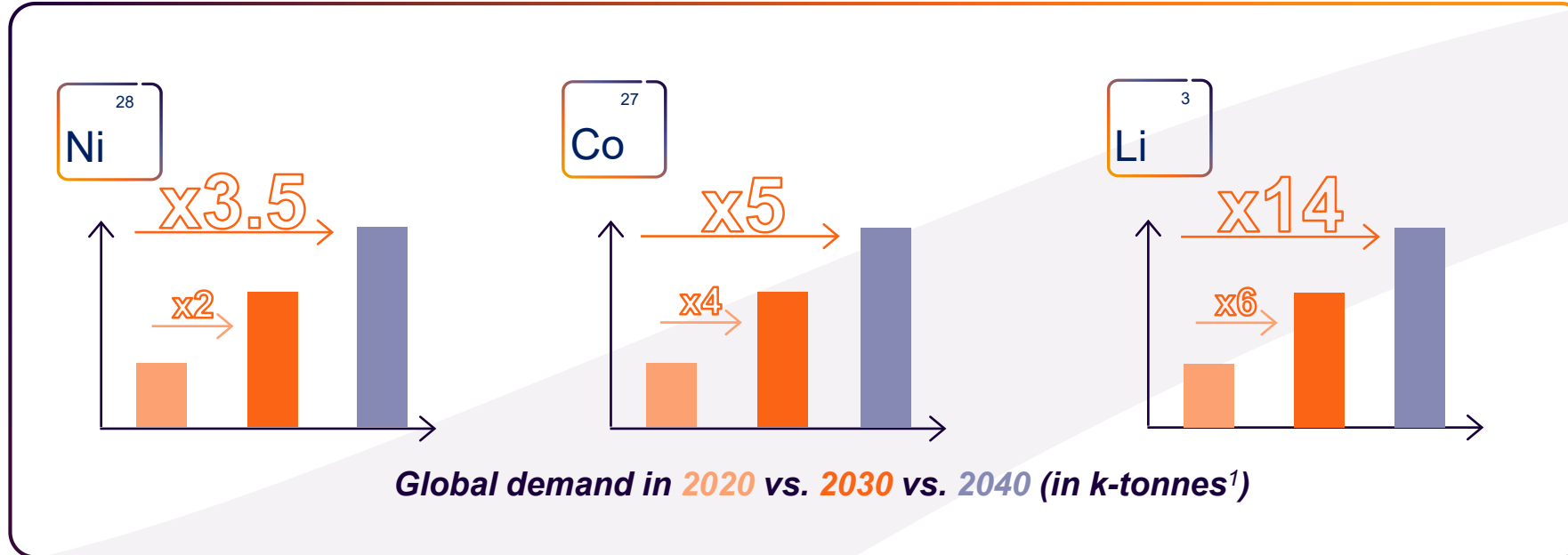
BATTERY RECYCLING

Demonstrated leadership and continuous value-accretive organic growth

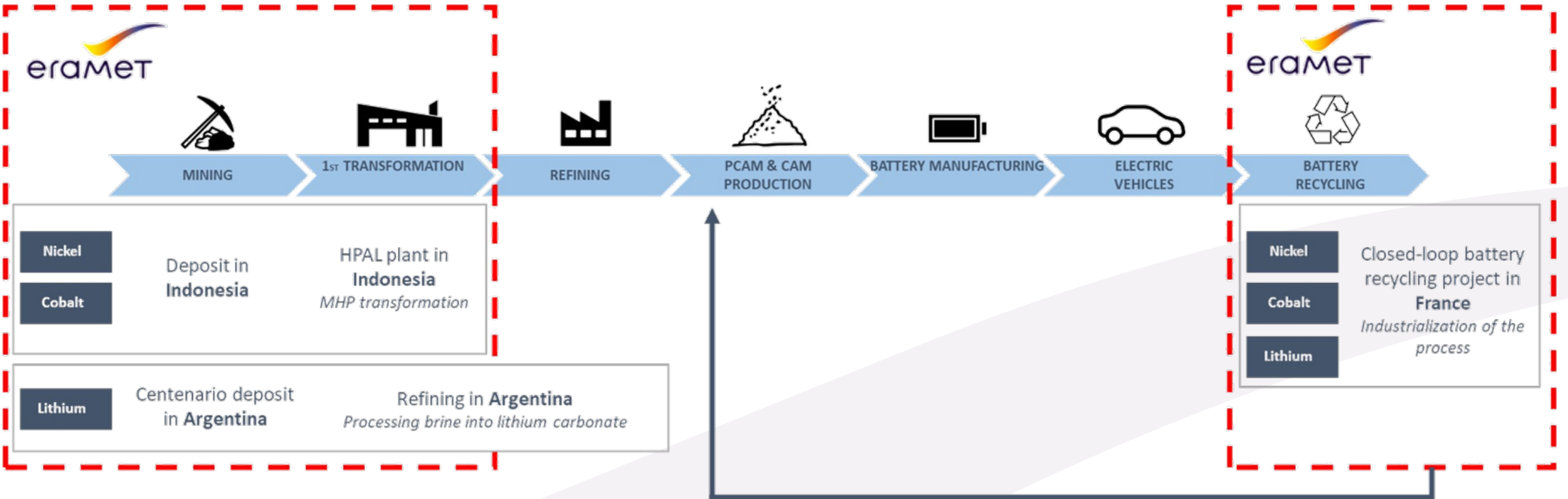
Huge potential to benefit from energy transition



Metals are the fuel of the energy transition



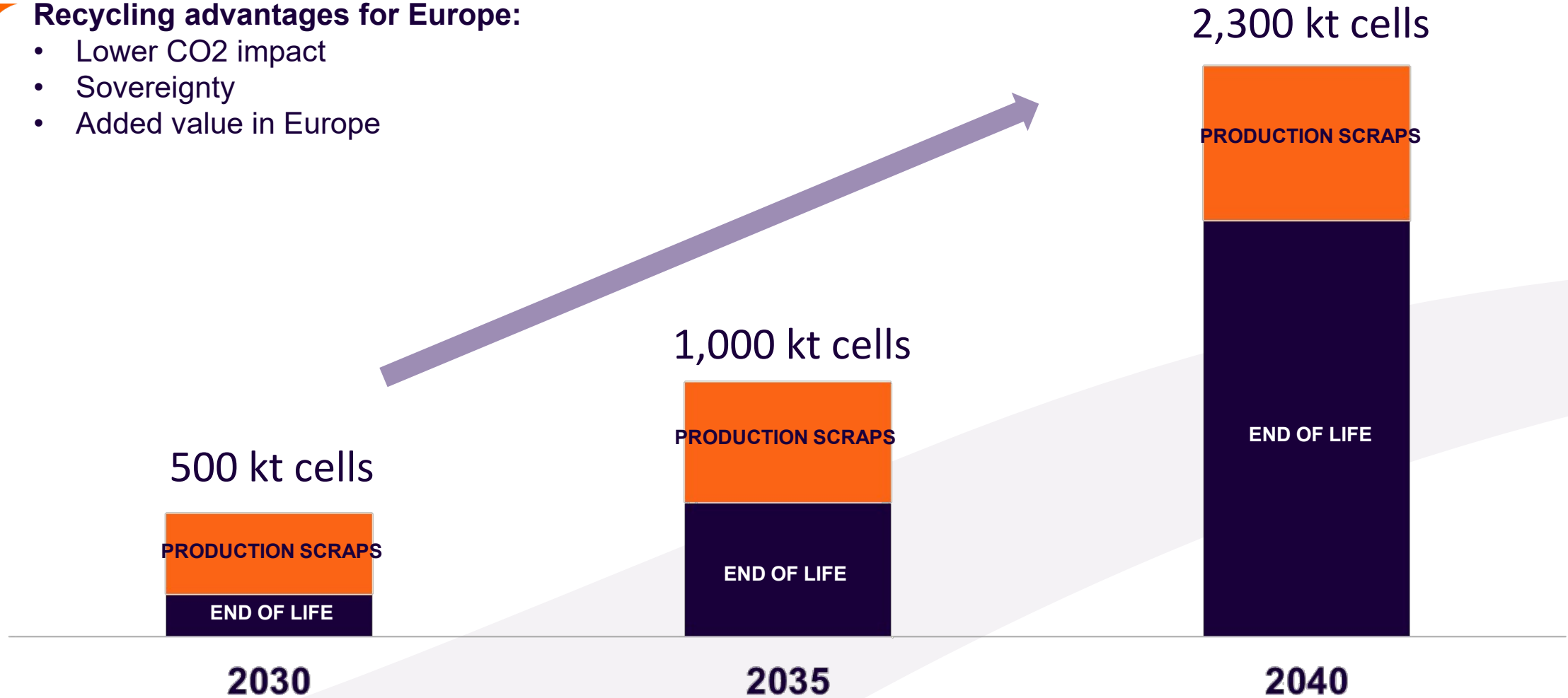
Battery Metals value chain : from the mine to vehicles then to recycling



Contrary to oil, metals are not wasted when used for mobility

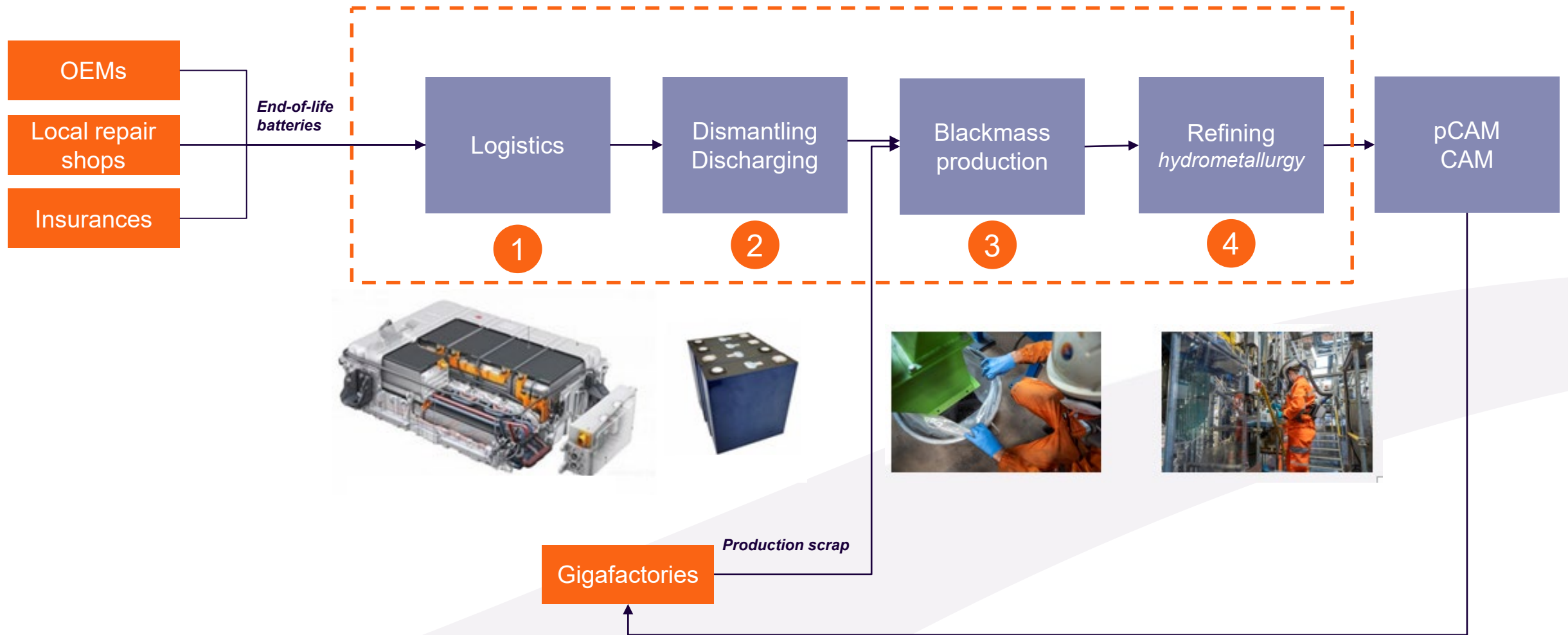
Recycling advantages for Europe:

- Lower CO2 impact
- Sovereignty
- Added value in Europe



Li-ion batteries feedstocks to be recycled in Europe

Recycling value chain for recycled Li-ion batteries



Key factors of success for the future EV battery recycling value chain

➤ **Mastering of blackmass and metal refining :**

- complex processes to design, obtain permits and then operate,
- need for skilled workforce with experience in hydrometallurgy,
- process performances to be maximized in order to reach the ambitious EU recycling efficiency targets
- need to optimize costs and minimize environmental impact,
- qualification of products to battery grade.

➤ **Partnership approach to secure feedstocks :**

- Eramet partnering with Suez for End-of-Life vehicle collection and logistics
- discussing with several OEM and gigafactories

➤ **Be part of “Battery Clusters”:**

- need to be close to gigafactories and downstream customers (PCAM/CAM) to secure operations, reduce logistic cost, have colocation synergies and minimize CO2 footprint

➤ **Adapting to the market for the initial period :**









- need to have a sufficient size to ensure competitiveness (economies of scale)
 - while avoiding being exposed to underuse of capacity due to a limited market for the first years
- ⇒ Support needed to initiate the chain !


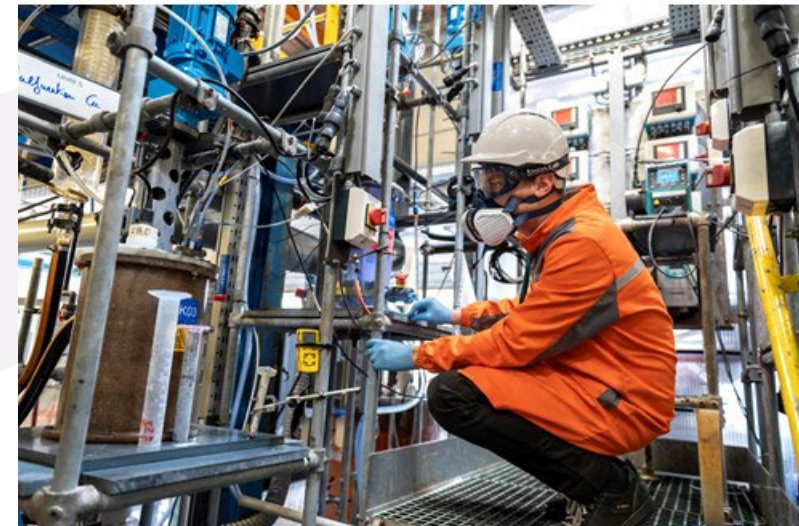
Thanks to Innovation Fund for their support !



Innovation Fund Second call for large-scale projects

Projects pre-selected for grant agreement preparation (17 projects)

-  Chemicals
-  Hydrogen
-  Refineries
-  CO₂ transport and storage
-  Manufacturing of components for solar energy
-  Wind energy
-  Cement and lime
-  Manufacturing of components for energy storage

A map of Europe with various icons placed on different countries to indicate the locations of 17 pre-selected projects. The icons include symbols for chemicals, hydrogen, refineries, CO2 transport and storage, solar energy components, wind energy, cement and lime, and energy storage components.



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