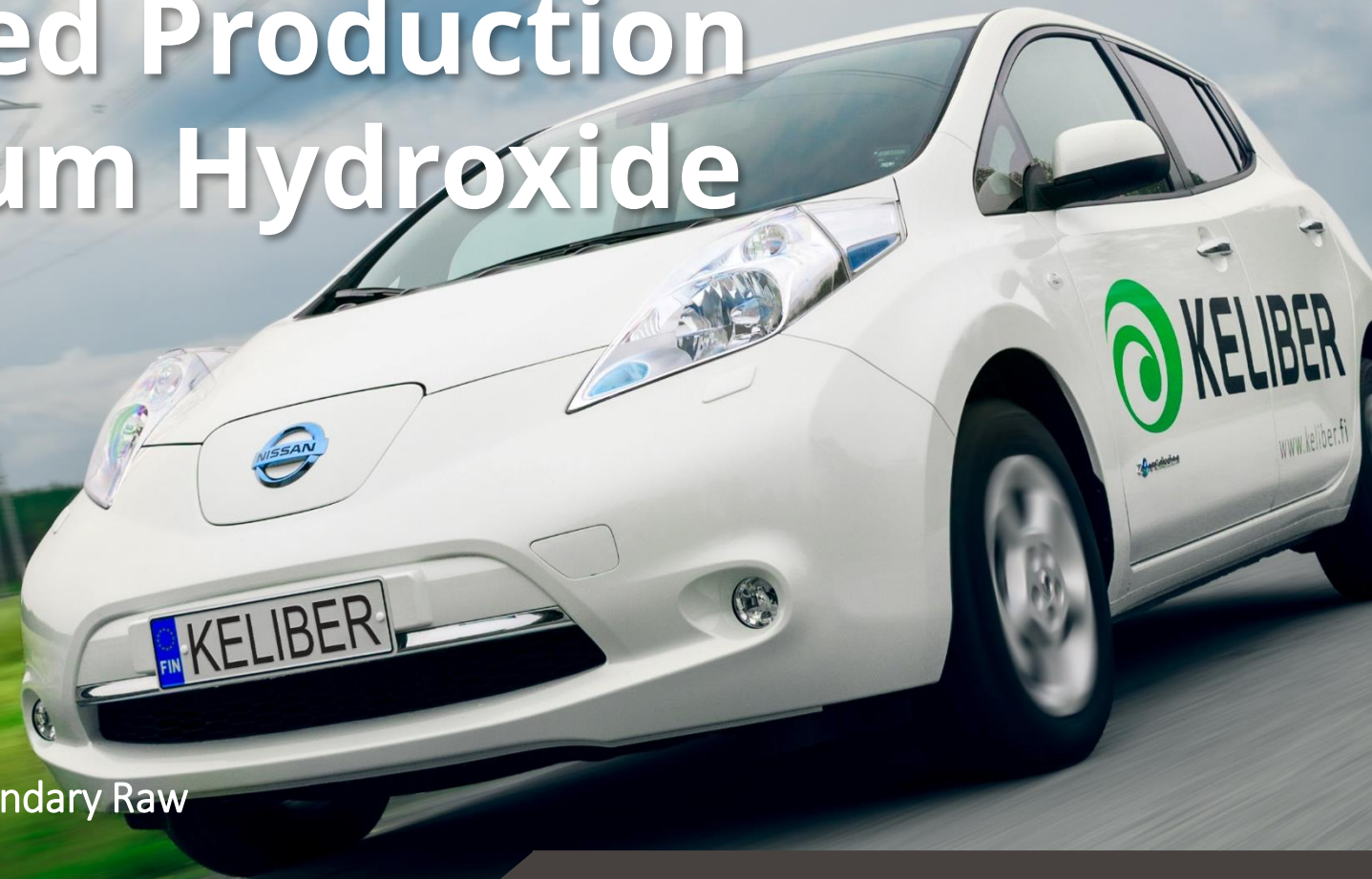


# Keliber - Integrated Production from Ore to Lithium Hydroxide



Mining Waste Streams as the Potential Sources of Secondary Raw  
Materials, EIT RM Morecovery project

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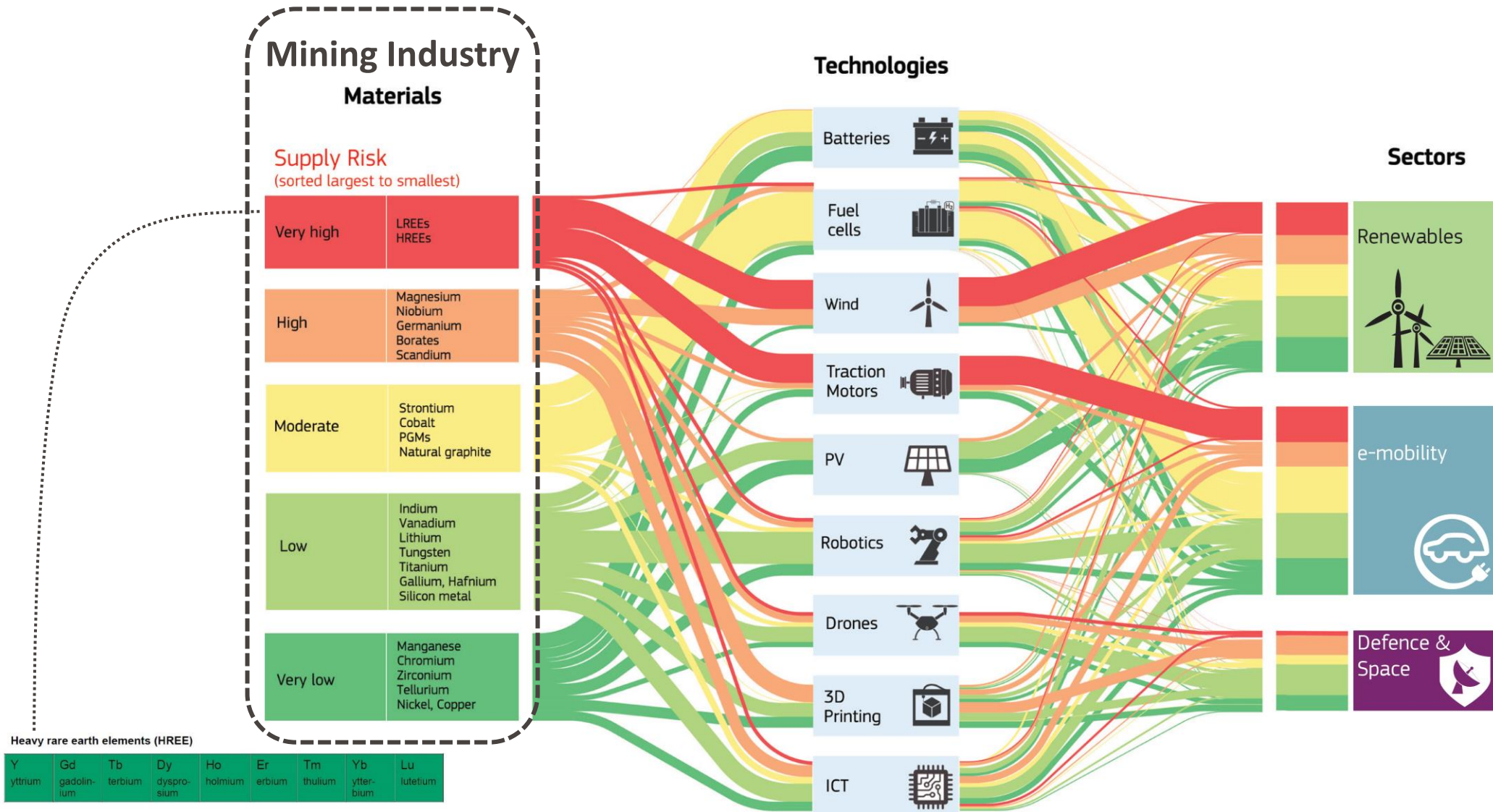
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# Metals and Minerals Needed for More Sustainable and Digitalized World



www.keliber.fi



# Drivers for Increasing Demand for Lithium

Slowing Down the **Global Warming**



**Electrification  
of transportation**



**Renewable energy  
production, energy storage  
systems and grid storage**

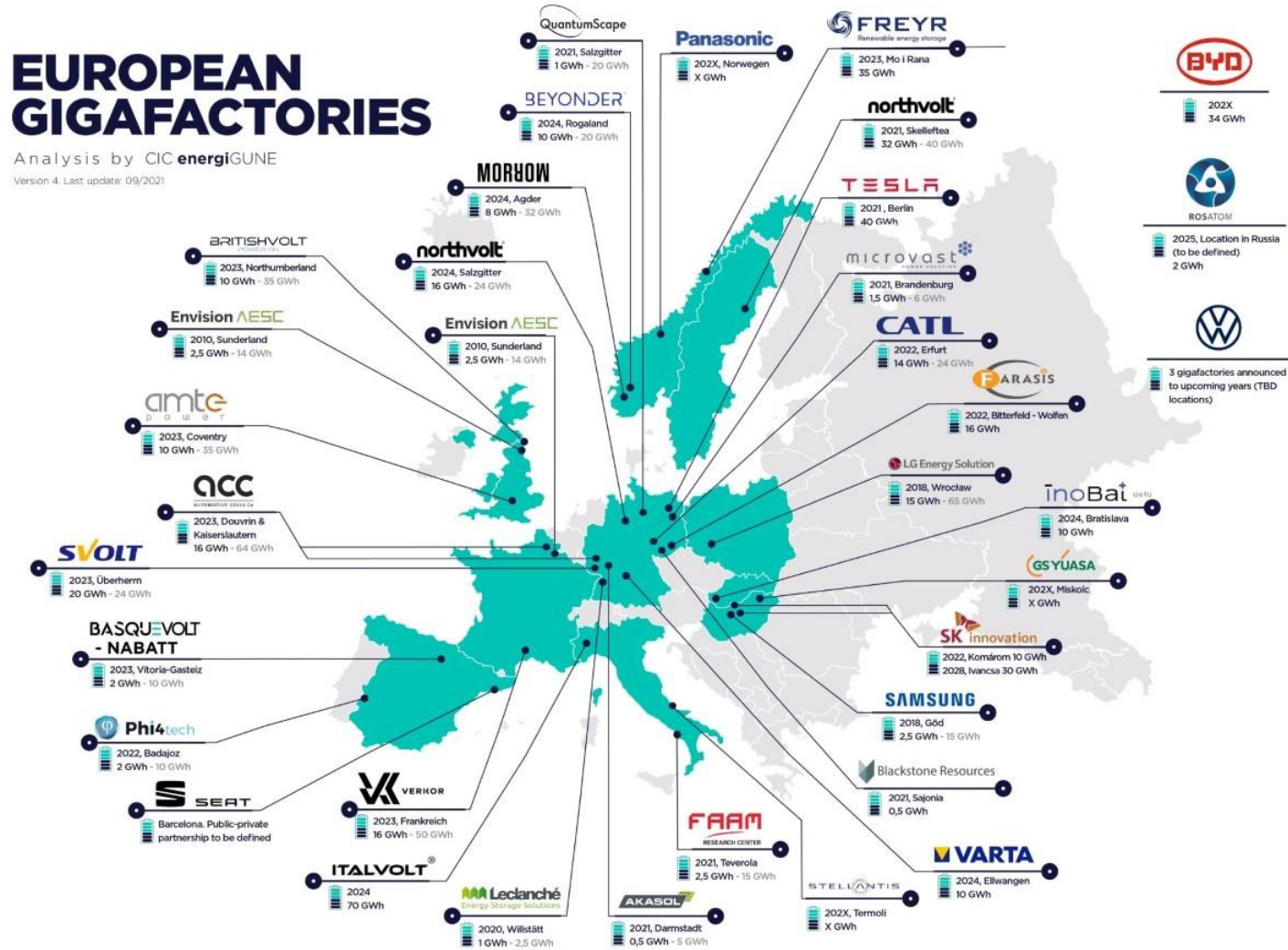
Speeding up **Digitalization**



**Electrification of  
consumer electronics  
and products**



# Planned European Gigafactories- status at 9/2021

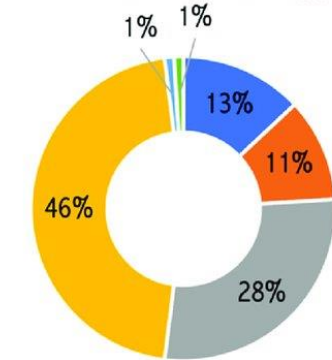


# Current Lithium Supply Creates More CO<sub>2</sub> and SO<sub>x</sub> Emissions Than a **Shorter Route**

Starting 2024:  
< 1 000 km



Lithium Raw Material Supply



■ China ■ Argentina ■ Chile ■ Australia ■ USA ■ Other

Current situation:

- Australia is the biggest lithium ore/concentrate producer (~70 % of spodumene concentrate)
- China is the biggest producer of lithium hydroxide and lithium carbonate

**Keliber** is a Finnish mining and battery chemical company that aims to start the sustainable production of battery-grade lithium hydroxide, utilising its own ore, in 2024.

Fostering sustainable development, **respecting people and the environment**

Ore Reserves for **15+ years operation**  
Significant upside potential

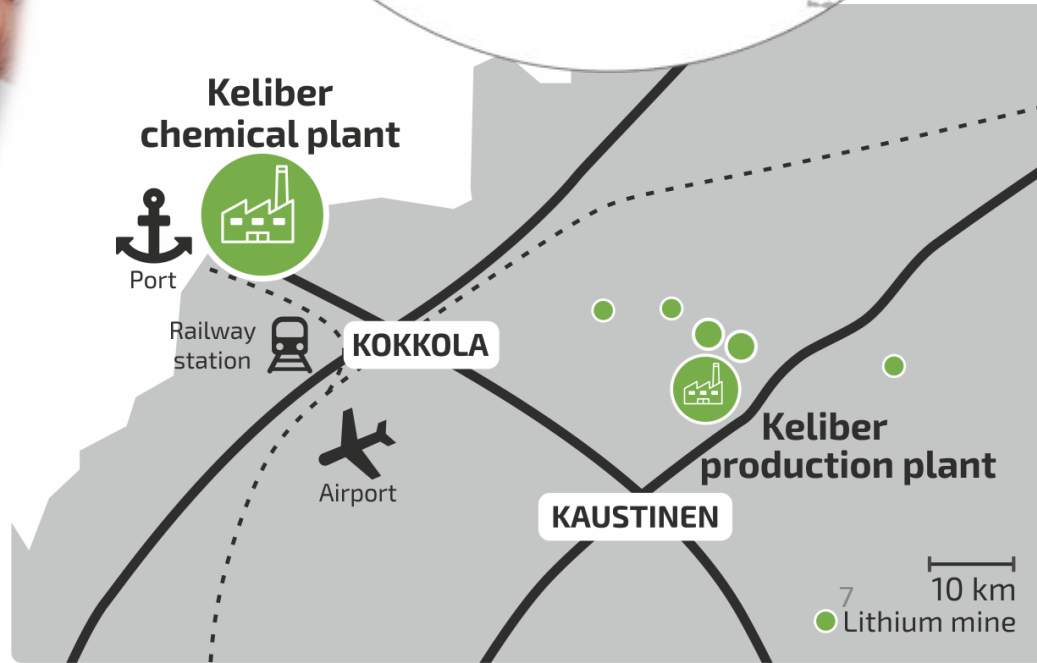
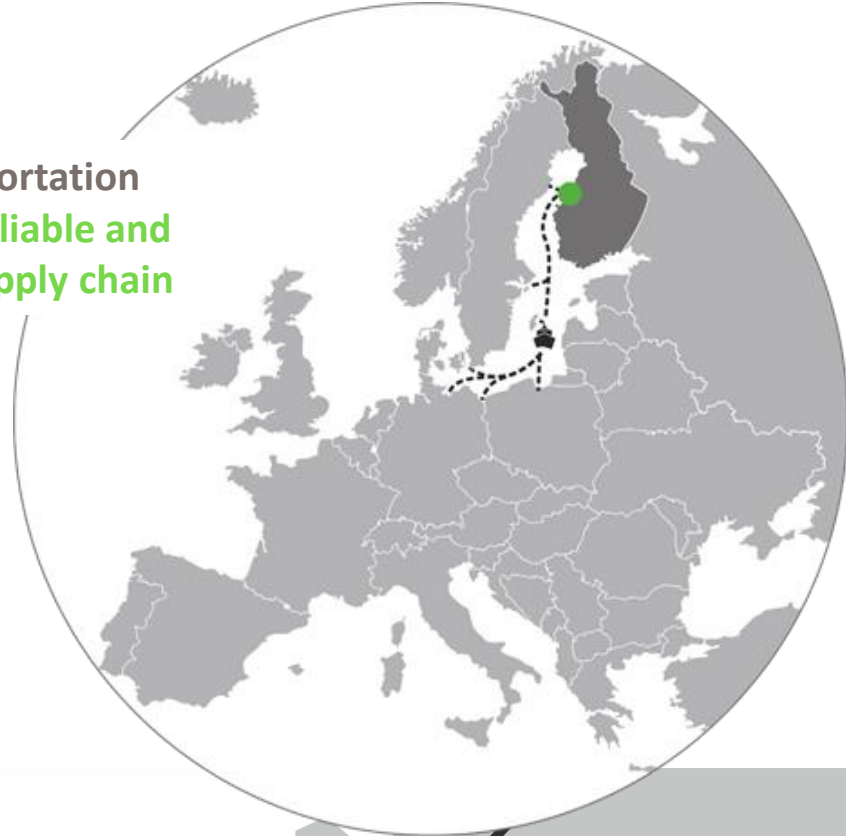
Novel **soda leaching technology** goes **technically and environmentally** beyond state-of-the-art

**Integrated production** from ore to lithium

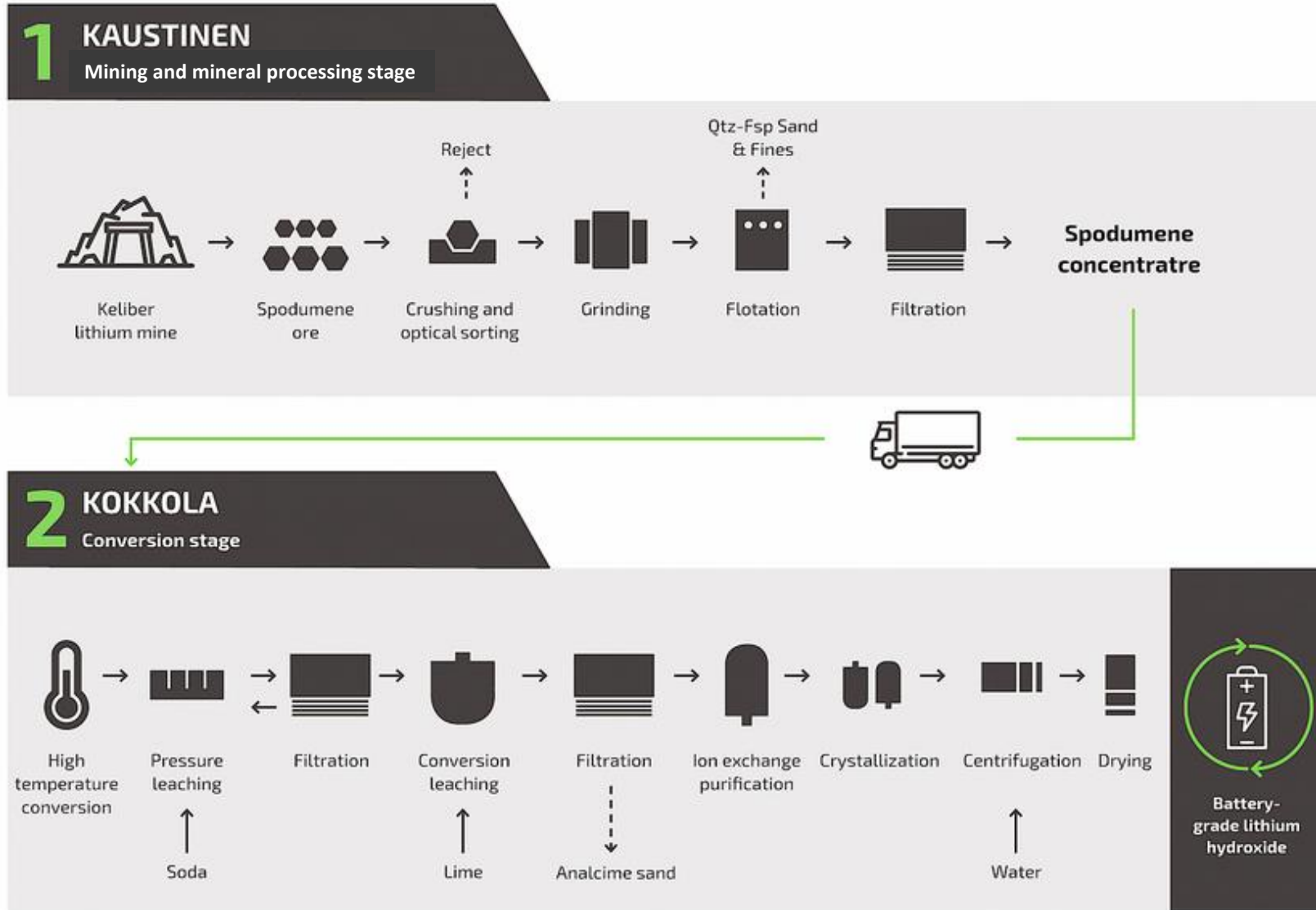
Planned annual production for **15,000 tonnes** of battery-grade lithium hydroxide monohydrate

Forecasted as one of the most **cost-effective** worldwide

Short transportation distances, **reliable and traceable supply chain**



# Keliber's **Integrated Production** of Lithium Hydroxide from Own Ore Reserves





# Research and Development – Circular Economy

- Keliber is active in R&D taking part in several national and European **research consortium**
- Focus on **sustainable** sourcing and production, traceability, battery recycling and circular economy
- Utilization of waste streams in circular economy
  - BATTCircle 2.0
  - BATTRACE
  - DECARBONATE
  - MIMEPRO
  - Both EU Battery IPCEIs
  - EIT RM Morecovery





# Keliber Highlights

- Strongly growing battery markets **increase demand for lithium**
- Existing Ore Reserves for 15+ years with **significant upside potential**
- **Integrated production** from **own ore to lithium hydroxide**
- **Proven production technology** based on best available techniques
- Planned annual production of 15,000 tonnes of **battery-grade lithium hydroxide monohydrate**
- European location is **an advantage in logistics**, meaning **small carbon footprint**
- **Sustainable** and **cost-efficient** operations



# Keliber - Sustainable Lithium from Europe



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