EMILI Project - Lithium by Imerys

October 24, 2022

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Lithium: a key resource for the energy transition and achieving net zero GHG emissions

- Europe's target (EU Green Deal): **net zero greenhouse gas emissions by 2050.**
- **Fuel combustion across the road transport sector:** 20% of EU total greenhouse gas emissions*.
- European Parliament has voted to **ban new petrol and diesel-powered cars as of 2035.**
- Sales of electric vehicles in Europe*: from 5% in 2020 to 70% in 2030.
- Battery manufacturers rely on **Li-ion technology** (lithium is a vital material because of its high electrochemical potential, its size and its lightness).

Lithium is an essential component in the energy transition and European demand is set to increase x 10 between now and 2030

*** Includes battery-powered electric vehicles and rechargeable hybrid electric vehicles. Sources : Imerys estimate based on market intelligence, EU Commission**

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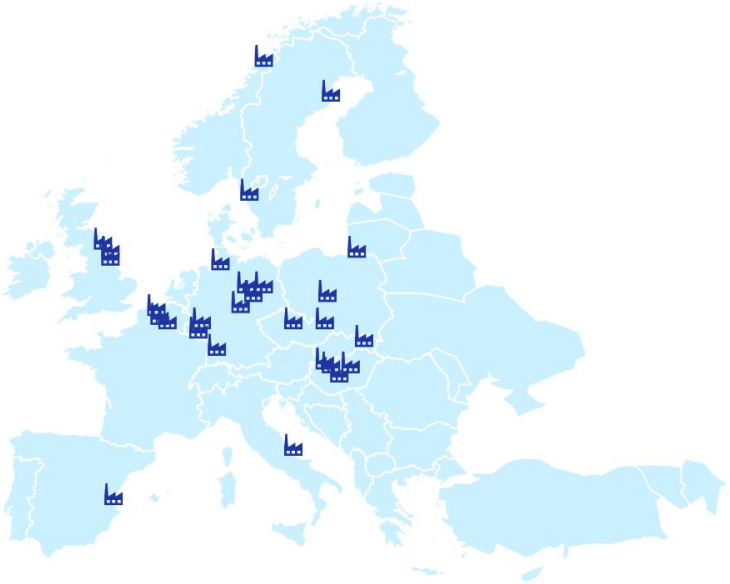
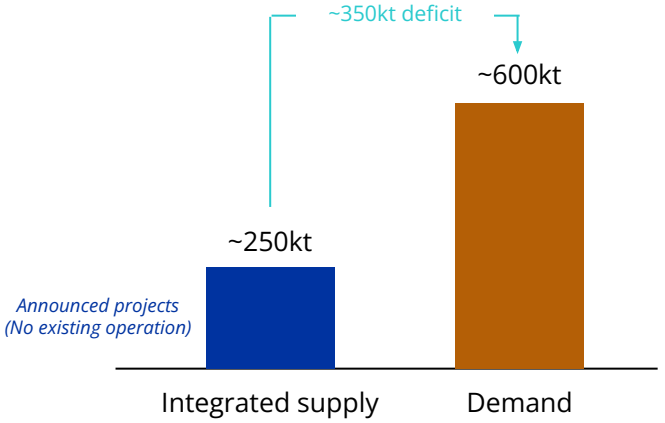
Lithium: a critical component for European independence

- Thanks to **massive investments**, the **European value chain for batteries is developing downstream**



European Battery Gigafactory Projects

- **However, Europe is currently very dependent on lithium imports**.
  - Announced European lithium extraction projects cover **less than 50%** of the final demand in Europe projected for 2030.
  - In 2020, the European Commission added lithium to its **"critical raw materials"** list



Lithium supply-demand balance in Europe in 2030 (kt LCE)*

*** Lithium Carbonate Equivalent**

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EMILI project: History and key milestones

1960s

Granite deposit containing lithium sits beneath Imerys' kaolin quarry in **Beauvoir**, in France's Allier *département* (Auvergne-Rhône-Alpes region).

Presence of lithium known since the **1960s.**

2015

Imerys submitted an application and was granted an exclusive research permit (renewed in 2021)

2019-20

Presence of lithium confirmed by drillings

Presence of **tin and tantalum** also confirmed

Project selected in the **France Relance** government subsidy program

2021-22

Main achievements to date

- **Geology:** Attractiveness of the deposit confirmed
- **Process development:** Base scenario for the process defined, laboratory tests launched
- **Engineering:** Identification of options for industrial set-up

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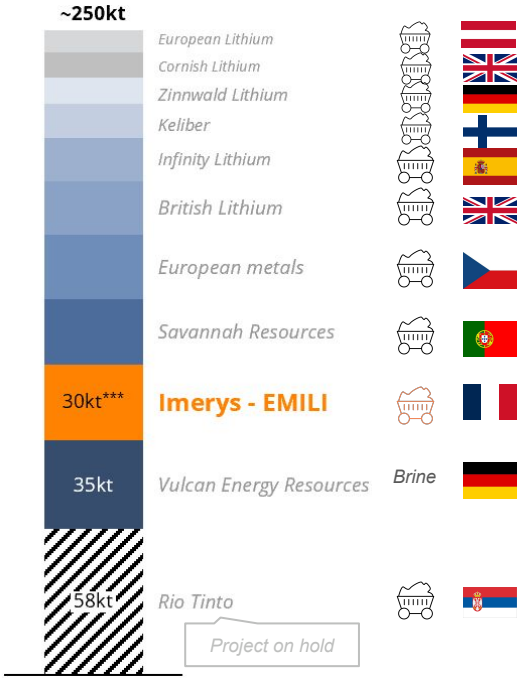
Imerys' ambition: become a major player in lithium supply to Europe in the coming five years

- Become one of the **primary European suppliers of lithium for batteries in 5 years** and a key player in the energy transition in France and Europe
- **Targeted production of 34.000 tonnes per year of lithium hydroxide,** to equip approximately **700.000 electrical vehicles per year***, and evaluation of the possibility of recovering valuable co-products (felspar, tantalum)
- **Ensure a competitive positioning** on the lithium hydroxide cost curve
- Design and develop a **responsible mine, in line with the IRMA** Standard,** limiting impact on the environment and local communities
- **Engage with all stakeholders** on a regular basis
- **Create value for the region:** > 1,000 direct & indirect jobs to be created

Announced European lithium projects
(kt LCE)



*** target set by the French government for 2030: 2 million**
**** Initiative for Responsible Mining Assurance**
***** 1 ton of lithium carbonate is equivalent to 1.14 tons of lithium hydroxide**

Key milestones going forward

Industrial milestones, subject to authorisations and stakeholder acceptance

H1 2023

Preliminary mine design established

Process tested and validated at **laboratory pilot scale**

2024

Detailed characterization of the **deposit** and **Life of Mine increase**

Industrial pilot plant **construction start**

2025

Industrial **pilot plant launch** (400t per year)

2028

Commercial plant and mine **launch** (34,000t per year)

Project phases

Industrial pilot	Scoping study	Feasibility study	Construction	Launch		
Commercial plant & mine	Scoping study	Pre-feasibility study	Feasibility study		Construction	Launch
Permitting	Permitting					

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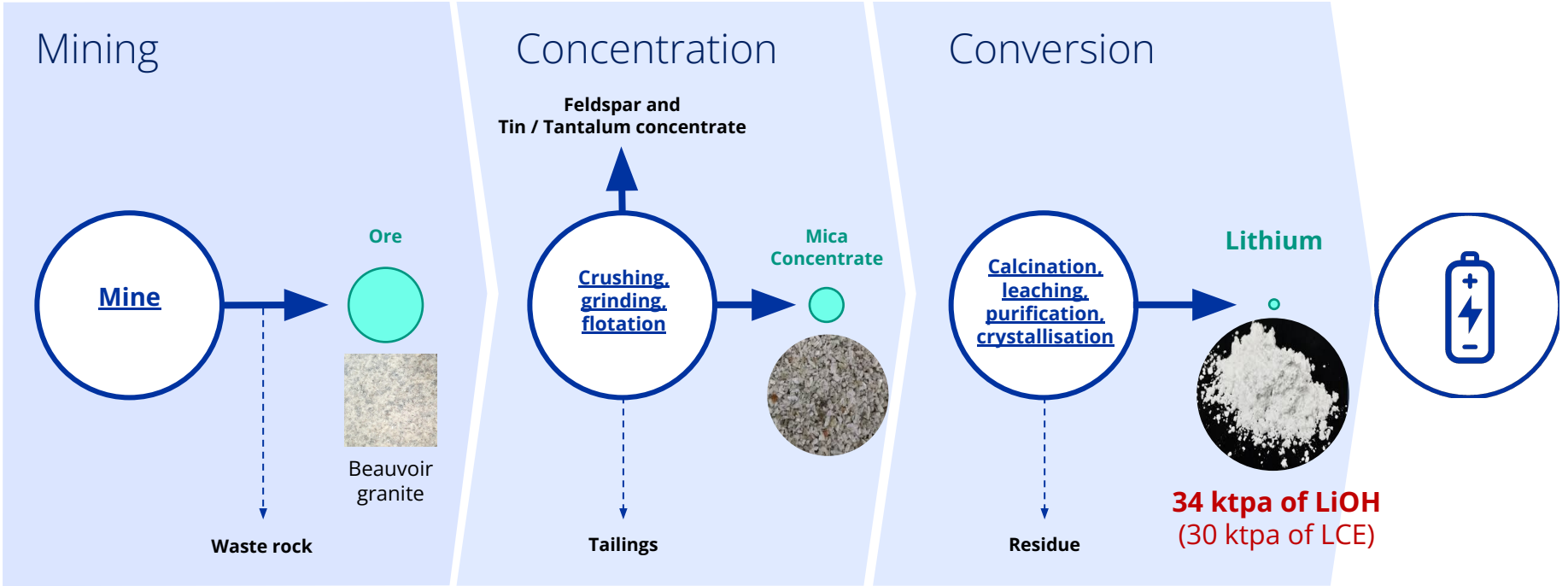
Imerys best in class mining and industrial technology to be adapted to the specific nature of the Beauvoir deposit

Main stages of the process considered for the scoping study



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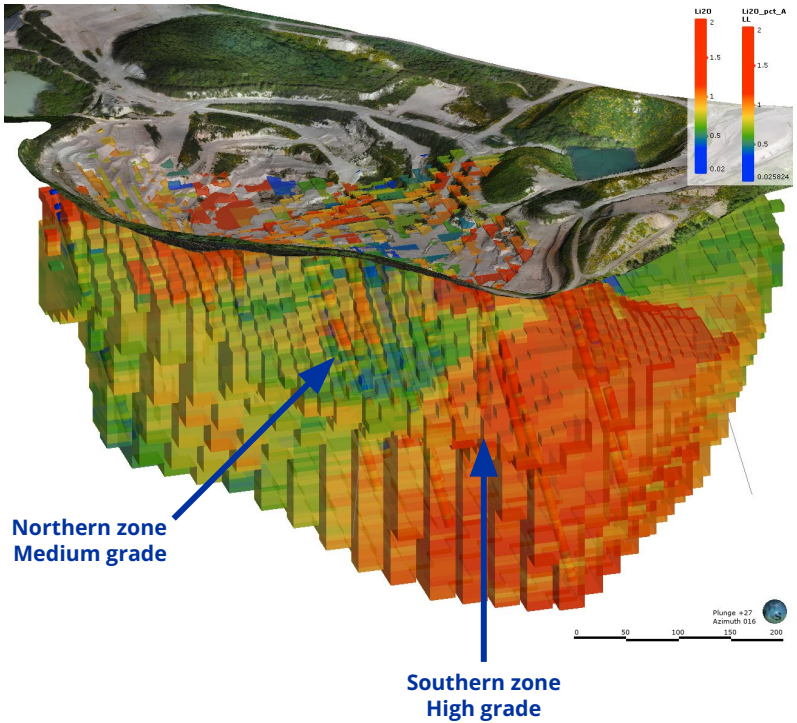
Deposit attractiveness confirmed



Resource:

- Following first drilling campaign, **deposit attractiveness confirmed**
- 117 mt of inferred resources with an average content of 0.9% of lithium oxide (Li_2O), **representing more than 1 mt Li_2O**, 0.13% of tin and 0.02% of tantalum
- **Highest lithium grade** for a known lithium-bearing mica project

Key elements considered in the ongoing scoping study:

- Deposit located **underneath existing kaolin quarry, operated by Imerys**
- Mining method: **underground mining** with most of the processing tailings backfilled underground
- Life of Mine:
  - at least **25 years** based on the production of 34kt per year of lithium hydroxide
  - **high probability to extend the life of mine** as the deposit continues at depth and to the South
  - **further drilling campaigns** planned to assess full potential of the deposit

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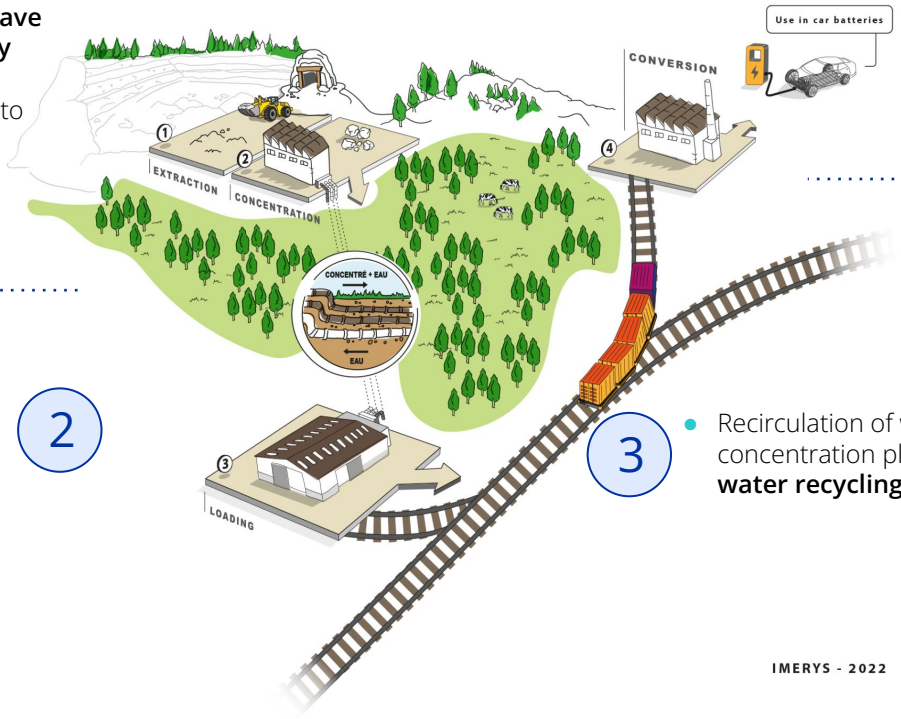
Responsible mining by design

1

- Underground mine with tailings largely backfilled underground to **minimize the environmental impact as well as noise and dust**
- Electrical fleet to **minimize emissions, save on energy** and **improve health & safety**
- Recovery of by-products during concentration **(feldspar, tin, tantalum)** to **maximize the return on footprint**

2

- Transport of concentrate via **underground pipes** to **reduce CO2 emissions and noise impact of truck transport**



3

- Recirculation of water back to the concentration plant to **maximise water recycling**

4

- Targeting an existing industrial zone
- Maximize use of rail to avoid **truck transport and reduce environmental & noise impact**

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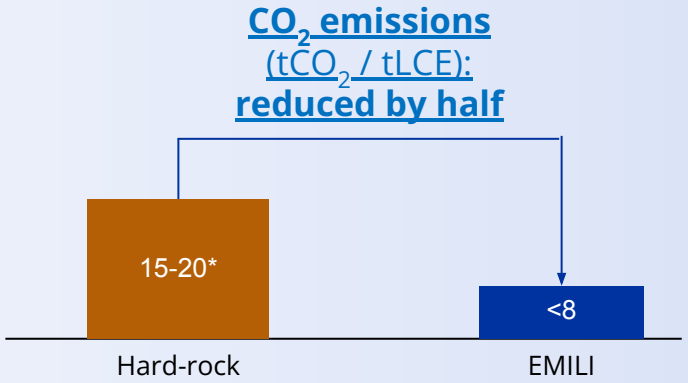
Project EMILI: potential for a European Lithium with best-in-class CO_2 emissions

Existing hard rock lithium sources are CO_2 intensive

Hard rock - Mostly mined in Australia and converted in China

- Lengthy logistics from the mine to the conversion plant to the final customer
- Carbon intensive process relying on coal-based electricity in China and Australia



*Imerys estimate based on market intelligence

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Building on solid assets in terms of sustainability, Imerys will develop a responsible mine

Solid assets in terms of **sustainability**

- A **local solution** for the European market
- Knowledge of **local biodiversity**
- Imerys' long **mining experience in France** (>30 active sites)
- Imerys is a **responsible and credible player** when it comes to sustainability considerations
- A project tied to an **existing quarry**

Developing a **responsible mine** as per IRMA Standard

- Generate value from **co-products**
- Design a **low CO_2 emissions project** vs. existing hard rock operations
- A mine design that will **limit environmental and social impact**
- Proactively engage with **all stakeholders**
- Meet **strict environmental criteria**, and apply industry best practises and standards

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Project EMILI: strong economic fundamentals

Based on ongoing scoping study assumptions, EMILI Project offers **an extraordinary potential for Imerys**:

- **Lithium hydroxide production:** 34 kt per year*
- **Lithium resources:** sufficient to operate at least 25 years with potential for significantly more
- **Production cash cost:** 7 - 9 € / kg** of lithium hydroxide
- **Currently estimated construction CAPEX:** approximately 1bn €

* Equivalent to 30kt per year of lithium carbonate
** Preliminary assessment. Including tin and tantalum credits, excluding CO_2 cost

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Project EMILI: a game changer for Imerys

- Project EMILI potentially represents a **game changer** for Imerys, and which could position the Group among the **top producers of Lithium in the world**

- A **dedicated structure and financing** will be put in place in due time to support a rapid realization of the EMILI project, which might include:
  - Entirely developed and financed by Imerys
  - Partnering with industrial companies (peers, customers, car producers)
  - Partnering with financial or institutional investors

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