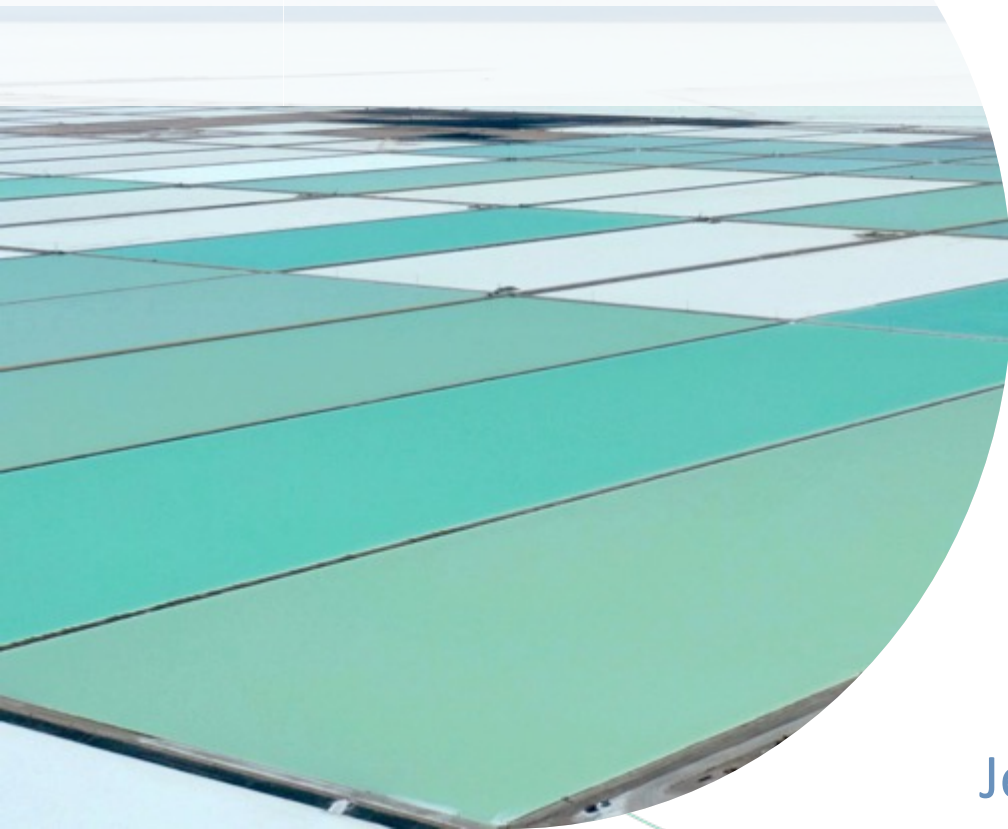




GEO LITH

Making Lithium Sustainable



Der **Digital**
Geothermie
Kongress
2020

Jean-Philippe Gibaud - CEO
November 13th 2020

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Europe is building the "**European Battery Alliance**" (EBA) to develop its **sovereignty** over the EV value chain. Europe need to secure the necessary raw materials.

One point of fragility: the mastery of lithium resources.

- In 2020, Europe produces only **3%** of its demand, to be **multiplied by 16 by 2030**.
- EBA's ambition is to control **80%** of its needs.
- Current productions are criticized for **Environmental Impact**
- More than economic value (lithium #5% of the value of batteries), Europe must face a strategic challenge of **Sovereignty**, and **Environmental standards**

Deep Geothermal Projects rely on subsidies (feed-in tariff)

Lithium may be the long awaited **game changer** for deep geothermal Projects:

- For example, a 300 m³/h geothermal project:
 - **Electricity** production # 3 MW capacity, **€ 6 M/year** (#1 without tariff)
 - **Lithium** @ 200 mg/l # 3600 t LCE/y , valued at 8 USD/kg # **€ 25 M/year**

GEOLITH Business positioning:

be the technology enabler for lithium production

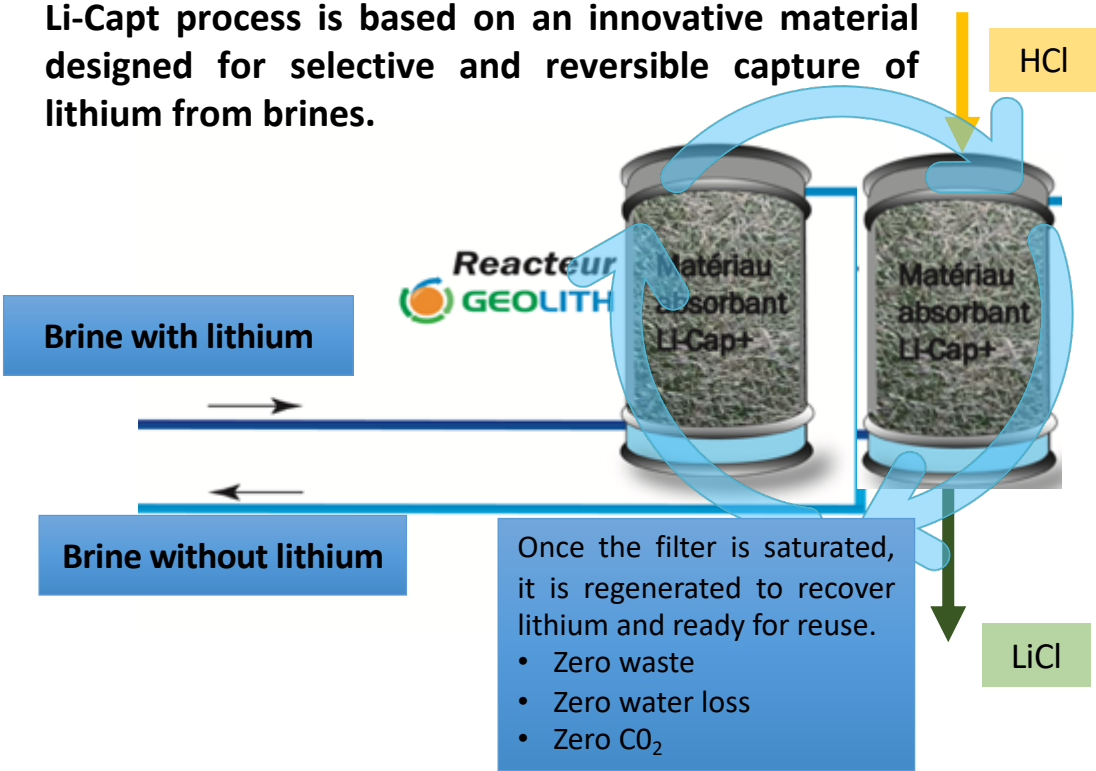
GEOLITH Business Model:

Sales of lithium filter cartridges + engineering services

Innovation 1 - Li Capt process

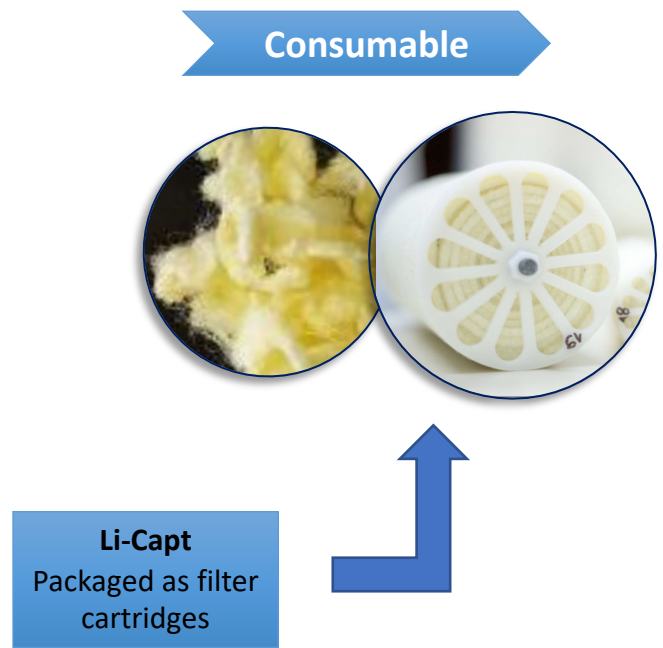
Process patent - published in April 2020

Li-Capt process is based on an innovative material designed for selective and reversible capture of lithium from brines.



Innovation 2 - Li-Capt media

Patent submitted October 2020



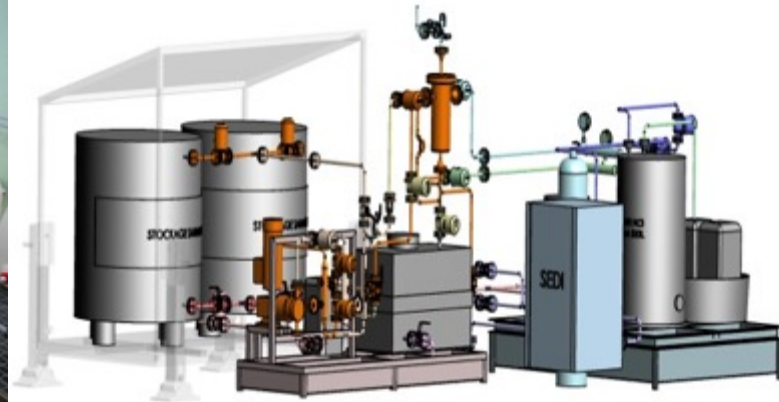
GEOLITH Li-Capt technology allows **Direct Lithium Extraction** thanks to a flexible process.

GEOLITH Li-Capt process has unique characteristics:

- An economically **competitive solution**, guaranteeing production costs in line with the market.
- An **eco-responsible** technology complying with European environmental standards: zero waste production, zero carbon emissions and zero water wastage.
- **Ready-to-use** technology: the most advanced development maturity at European level (POC for geothermal energy in progress with French and German partners).
- **Protected technology** (IP), scientifically robust.
- **Designed to meet geothermal constraints** from the beginning:
 - Installation as plugin on the injection well
 - High Pressure and Temperature
 - No specific pre-treatment needed
 - Minimal impact on brine

Process validated at bench scale :

- More that 90% lithium capture rate on synthetic brines
- Up to 70 % lithium capture on real geothermal brines (# 150Li mg/l)



Pilot plant under construction:

- Design to **operate in geothermal conditions** : Adjustable Pressure (up to 40 bars), Temperature (up to 70°C) and salinity
- Construction completed by December 2020
- Installation mid December in Vendenheim (Fonroche)
- Commissioning January 2021
- 6 months operations in Alsace

Agenda & Progress



From the idea to the creation of GeoLith

2015 -2016

Scientific validations

2017 -2020

2 patents : Li-Capt process and media

Clients bench POCs

< Q3 2020

Technical performances validation

Pilot first client

S1 2021

Vendenheim geothermal site

Other clients: pilots

S1 2021

International: Chile, USA/Canada, Germany?

Consortium set-up

< Q2 2021

Contribution to bringing together the players in the value chain (producers, refiners, distributors, customers, users).


Closing funding

< Q2 2021

Looking for 1 M€ investment

50 M€ revenues

2025



Geothermal lithium: the answer to the challenges of the Battery and the Geothermal industries with a secured, clean and local lithium.

GEOLITH Process proven at bench scale for lithium extraction: **70% on geothermal brine**

Pilot Plant in 2021: 6 months operations in Vendenheim

- Geothermal conditions (P,T)
- Zero waste, carbon impact negative

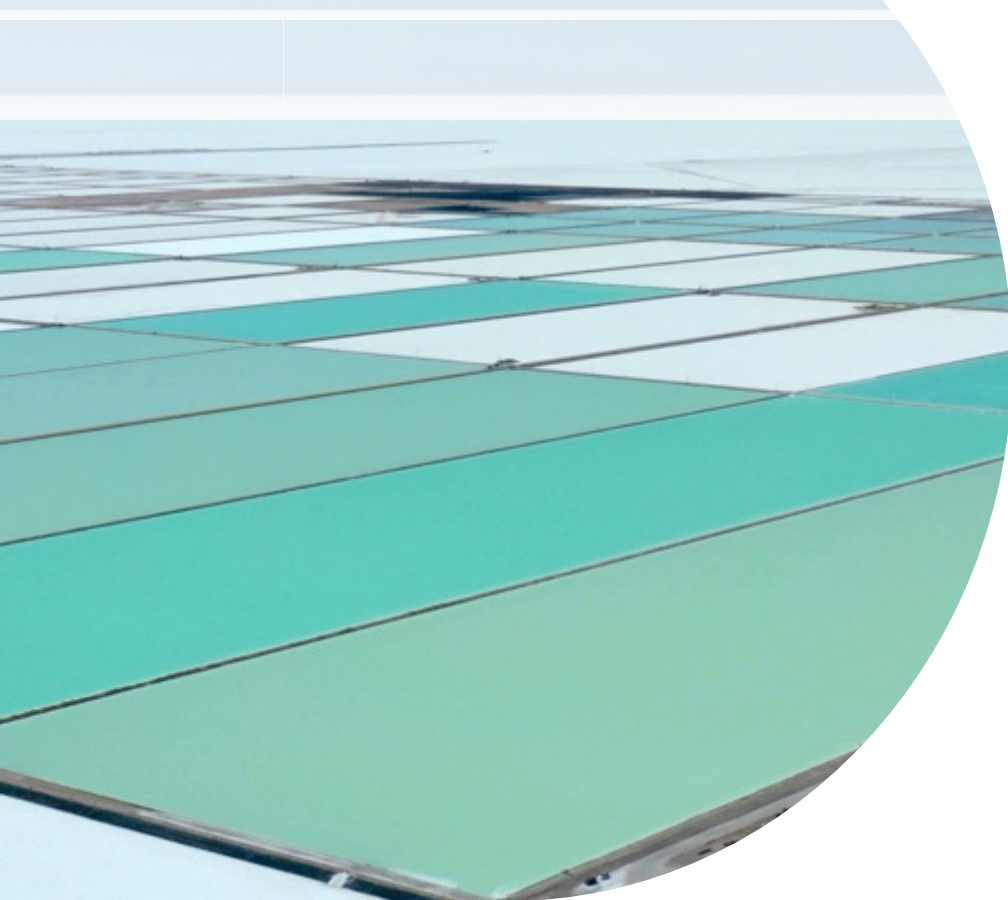
Responding to an initial Client project (Fonroche) and developing new projects with **ready-to-use green technology.**

GeoLith is a **technology enabler** : a **key partner for geothermal lithium projects.**



GEO LITH

Making Lithium Sustainable



Thank you

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Jean-Philippe Gibaud - CEO

Opportunity & issues : Geothermal

- Deep Geothermal Projects in Europe rely on heavy governmental support
- Cost of geothermal energy is not decreasing as other renewable energies
- Lithium is the long awaited silver bullet for geothermal developers
- Lithium demand is growing rapidly to meet battery demand

GEOLITH industrial solution: the key for lithium production from geothermal brines

- Proven at bench scale on geothermal brines and soon on pilot plant in the Rhine Graben area.
- GEOLITH process has unique characteristics:
 - Efficient and cost effective
 - Sustainable: zero waste, zero emissions, negative carbon footprint with geothermal.
 - Technology available to all
 - IP protected by several patents.
 - Flexible to various type of brines (salars, O&G, recycling)

Strategic Orientation:

- In a context of global challenges, approached by American and Asian leaders, **GEOLITH favours and ambitions to participate in the co-construction of a leading European industrial consortium, without any industrial bias.**

Needs

- Become part of a European consortium
- Increase financial capacities.

Proof of concept

- Installation December 2020
- Start-up January 2021

Management

JP. GIBAUD, CEO, founder
D. MUSCHALLE, COO

Scientific et industrial partners



Contacts

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Web site : www.geolith.fr/

Creation : 27/01/2016

Capital : 301 000 €

Location: Paris-Saclay area - France