



CLONTARF
energy PLC

Europe needs offtake of pure
Bolivian Lithium
Bolivia needs Lithium exports



Europe's supplies of Critical Minerals are vulnerable - especially in Lithium, Cobalt and Rare Earths

- China's strategy to dominate Critical Minerals' processing, & mining has succeeded unopposed for 25 years. This now extends into EVs.
- Japan's pre-2010 dominance of Lithium-ion batteries is over.
- The USA's protectionist 'Inflation Reduction Act' prejudices Europe as much as China. It involves cheap energy, subsidies and defence-budgets.
- - many European companies, from Michelin to BASF, transfer plants to China and the USA.

We need a “Team Europe” effort

- No one company or country can grapple with China and NAFTA

- Need to combine operating skills, clean technology, with distribution & financing – including Risk Rating & bank support.
- Competing in all links of the value chain.
- Operators need EU institutional cover, as judicial systems are unreliable.
- Ideally minority investments by Member States’ entities to guard against expropriation (a risk in Latin America).

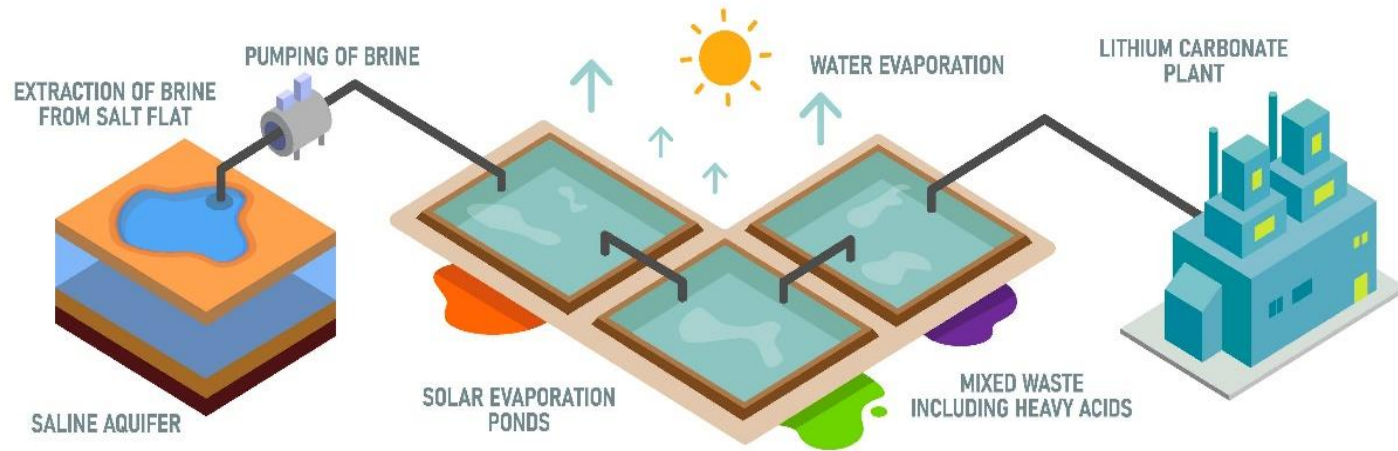
Finance is best linked to offtake.

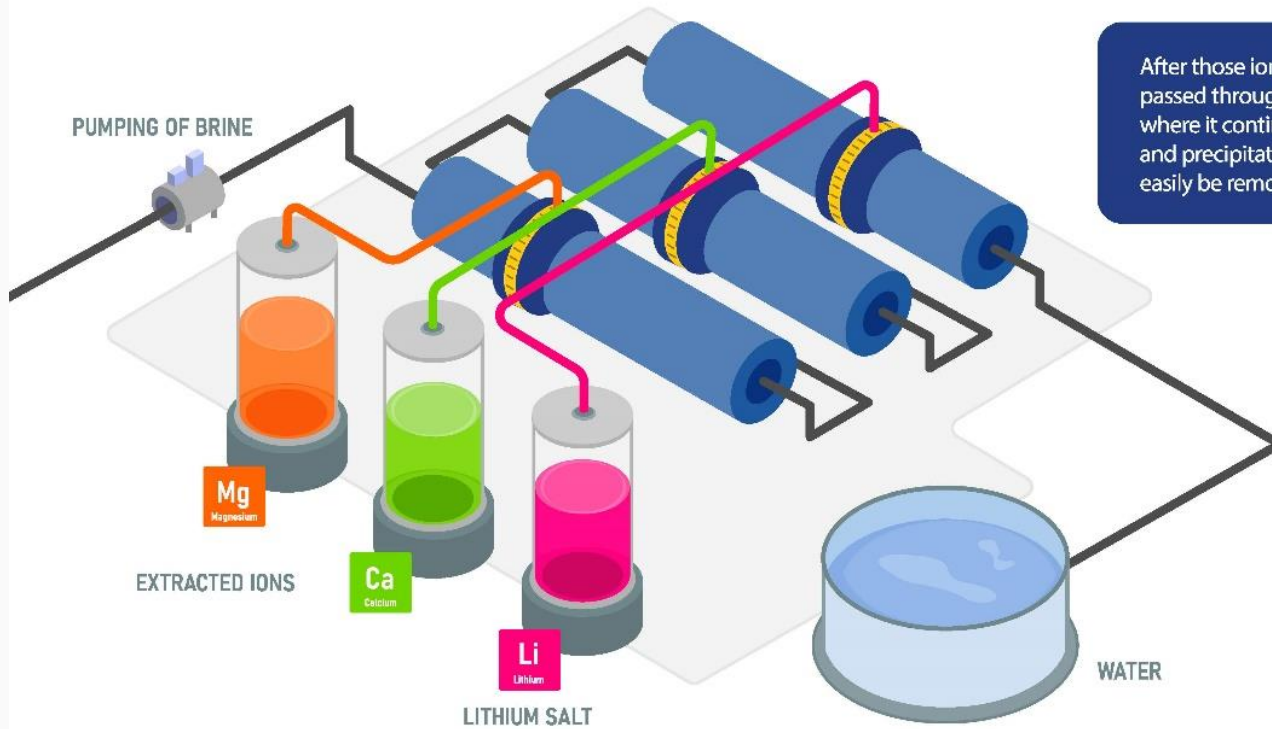
- Bolivia is not currently bankable

- Many supplier states (including Bolivia) have insufficient financial standing to constitute reliable counter-parties.
- But market fundamentals for long-term offtake contracts are excellent:
- Demand for Lithium carbonate equivalent grew 30% to circa 930k tonnes in 2023.
- Few commodities or specialty chemicals exhibit such growth.
- New projects struggle to deliver the supply needed.

Challenges include infrastructure, State control, and evaporation techniques

- Financial investors worry about up-front costs, and how majority YLB owned JVs will work.
- EU Green policies must embrace clean separation and processing, as opposed to dirty hard rock mining.
- Direct Lithium Extraction is clean, not dirty.
- Ionic separation does not mix liquids, or contaminate residual brine being re-injected into the cellar.





After those ions are removed, the solution is passed through the lithium extraction, where it continues until natural saturation and precipitation of a lithium salt, which can easily be removed from the system.

YLB *convocatoria*, or call for expressions of interest on evaporites' technology & development:

- 21 companies, including 7 EU (+ 2 Russian, CH, GB).
- Phase 4: detailed assessment by YLB Commission of technology maturity and financial capacity.
- Phase 5: negotiation & signing *convenios* – initially for Phase 1.
- Later deployment of production pilot plant to Bolivian salares.
- Under the Bolivian Constitution & the shortly-to-be updated 2017 Lithium Law.

Bolivia deftly adjusts the *convocatoria* in real time, to focus on evaporites' technology & development:

- Stream 1 for operating DLE plants (3 Chinese companies, and 1 Italian water purification company). Probably first to sign.
- Stream 2 for DLE plants ready for production testing in 2024/5. Likely Clontarf gets additional bulk samples & be treated as Stream 2.
- Stream 3 for immature DLE technology or under development.
- Stream 4 for laboratory-stage processes.
- All will have the opportunity to demonstrate their Lithium technology.

Clontarf proposes 5 plants on different salares

- Each salar has different chemistry, requiring bespoke designs.
- Initial plant designed at 500 tonnes / year of LCE.
- Skid-mounted modular plants on concrete slabs, with infrastructure.
- Subsequent plants likely to be 3,500 to 14,500 tonnes / year of LCE.
- Ultimate goal 150,000 tonnes / year of LCE.
- Necessary to meet expected demand, though subject to permitting.

Contractual & fiscal terms have yet to be negotiated

- Bolivia is a mining country with 3% royalties & profits taxes.
- NB: Petroleum Contracts were production sharing until 2006, when they were migrated to service contracts – resulting in reduced resource addition, leading to export gas shortages.
- The 2017 Lithium Law envisaged state control of evaporites – though some flexibility for secondary recovery.
- Policy now under review with petroleum-style contracts possible.

Stable tax systems must be clear, fair & efficient

- working for all stakeholders (subject to proposed Lithium law fine-tuning)

- Local communities must benefit directly (via circa 10% royalty + 2.5% ESG) for Lithium derivatives (other Mg, K, etc. minerals at 3%).
- Local plants will likely operate on a 51:49 JV basis.
- Possibly 'cost Lithium' & 'profit Lithium'.
- May be a graduated profit share (by output or price).
- Alternatively, debt repayment and profits may come from offtake.

Effective Royalties likely to be circa 15.5%

- similar to oil or diamonds, rather than mining

- 10% royalty on Lithium derivatives (mainly to producing regions).
- 2.5% ESG levy for local communities.
- 1% for non-producing departments.
- 1% for the national Treasury.
- 1% for the new regulator.

This solves the local community issues.

Europe needs secure, long-term supply chains:

- All markets are important, but the automotive OEM market is critical.
- “Team Europe Commercialisation JV” to deal with YLB in a Commercialisation arrangement to protect EU interests.
- Political & economic support by the EU, Member States entities like government vehicles, EU institutions / banks including EIB, etc.
- Giving Europe secure, as well as clean raw materials.

This initiative fits the EU Raw Materials Act classification as a “Strategic Project”.

- “EU Commercialisation JVs” to balance national exporters including YLB.
- Helps exporters find, develop & distribute high-quality, clean materials.
- EU sovereign loan funds enable essential infrastructure with 20-year money at 3.3% interest rates.
- Such infrastructure typically constitutes 2/3 of total capex of new projects in fresh regions
- Involving locals through shared services & technology transfer.

Partners, not bosses or employers

- Communities welcome investment, but we must earn social licences to operate.
- Provide mixed commercial and tourist infrastructure in a win-win; operators need infrastructure to extract lithium. Local communities get jobs, training, value-added, and can operate & ultimately inherit the infrastructure.
- Bolivians will benefit from partnership more than from the Potosi cerro rico silver boom, or that in 20th century base metals.
- A win-win development model – sweetened by royalty share.

And Bolivia thereby joins the Lithium export boom

- South America's Lithium triangle offers the cleanest, lowest cost, and highest purity potential source of battery-grade Lithium.
- Europe wants clean, as well as secure raw materials.
- But an undeveloped resource is worthless to Bolivia, and clean technologies.
- We must develop now, under updated laws and constitution – but meeting future, as well as current demands for volume and quality.

Investors need EU support with finance and legal title

- Without EU support, there is only weak legal title for private companies in Bolivia, since courts are sometimes not independent of the State.
- Investors need effective remedies to reduce financing costs.
- Junior developers and R+D innovators lack blue-chip ratings.
- One solution is EIB infrastructure funding via the Bolivian State, potentially covering up to 2/3 of capital costs.
- International bodies could take equity stakes – say, via Member States' development organisations.

We need ambitious policies to protect Europe's economy

- Cleanly extracting and refining lithium products.
- Delivering Green Direct Lithium Extraction technology & power.
- Building Lithium extraction and refining pilot plants.
- Industrialization of Lithium products in Europe.
- Value added in all parts of the process.
- Price premium for clean, Green Lithium from brines.