



SALAR DE UYUNI

BATTERY-GRADE LITHIUM Project

This is a feasibility study assessing whether a lithium extraction and industrialisation project at the Salar de Uyuni can be made possible. It is built on real data — a complete techno-economic model, hydrogeology, energy supply and the site master plan — and on technology from Germany and Switzerland.

Backed by the German Government and the Euler Hermes / UFK export credit coverage programme.

Finished in Bolivia · Powered by the Bolivian sun

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Confidential — Draft for discussion



Bolivia



Germany



Switzerland



Potosí

The project

What is being proposed in Nor Lípez, in figures.

Product	Lithium carbonate (Li_2CO_3), battery grade.
Production	80,000 t/yr at steady state, preceded by a 10,000 t/yr pilot plant.
Resource	Brine from the lithium-rich zone of Nor Lípez: 12.23 Mm ³ /yr from YLB's existing wellfield, at 1.5 g/L lithium and 82% recovery. No new wellfield.
Process route	Route C, without evaporation ponds: mechanical evaporation and controlled crystallization, in a US\$278.4 million system that replaces the ponds — which makes the project a net producer of water.
Energy	Self-sufficient, no grid connection: photovoltaic field with batteries and a solar thermal field.
Phases	Pilot plant built in year 1, tested in year 2, commercial from year 3. Main plant built in years 3–5, commercial in year 6.
Life and cost	45 years modelled, 43 in production. Total cost US\$3,465.4 million. Bolivia 51%, sponsor 49%; the sponsor funds 100% of the equity, Bolivia contributes no cash.
What it takes from YLB	One element only: use of the salt disposal cells, at no cost. Brine, water and energy are self-supplied.

702

permanent jobs in operation

390

Operations

Continuous 80,000 t/yr plant, four-shift roster.

187

Maintenance

Mechanical, electrical and instrumentation.

125

Technical, lab and administration

Metallurgy, quality control, health and safety, finance.

Rotation regime, about 12 rotations per year, with transport to Uyuni and Oruro. Priority hiring for Río Grande and Nor Lípez, with training paid by the project.

Source: Hydrological and Hydrogeological Assessment — Phase 0, v1.5 (CUPCONL copy), page 3, "The project". Figures from the techno-economic model; description, not assessment.

What changed

Five commitments that did not exist before.



No evaporation ponds.

We do not depend on rebuilding what has already failed on the salar.



No fuels.

100% solar, off-grid. No diesel, no gas, no power grid.



Our own water.

The plant produces its water from the brine. The surplus goes to the community.



15% stays in Potosí.

Of the private profits, reinvested in the department. It does not pass through the national treasury.



Agreement before building.

Community agreement in assembly with Río Grande and CUPCONL before the first works.

Finished product in Bolivia — not raw brine.

The opportunity

Battery-grade lithium, finished in Bolivia.



80,000 t/y

of battery-grade lithium carbonate (>99.5%), from the lithium-rich Nor Lípez zone of the Salar de Uyuni



~US\$3.5 billion

of foreign direct investment in Bolivia — total project cost: US\$3,465 million



Finished product

battery material — not raw brine — that places Bolivia inside the global supply chain

The world's largest lithium resource, processed and finished inside Bolivia.

Why it succeeds where others have failed

The challenge

Uyuni holds the world's largest lithium resource, but the most difficult brine to process, with the highest magnesium content that exists.

It has defeated conventional methods.

Our solution

A proven method (Route C) removes the magnesium using the brine's own chemistry and Bolivia's free winter cold.

No exotic reagents. No unproven steps.

 **No ponds.**

No dependence on rebuilding the salar's failed ponds.

A plant that burns nothing

All the energy comes from the Altiplano sun.



Energy

100% solar + battery, fully off-grid.

No diesel. No power grid.



Heat

Concentrated solar mirrors with thermal storage.

No gas. No boilers.



Water

The plant produces its own water from the brine.

Surplus for the communities.



Residues

Magnesium and salt returned responsibly to the salar.

No ponds. No tailings dams.

Powered entirely by the sun — nothing is trucked in to burn, nothing smokes over the salar.

Water

Produced from the brine, not extracted from the territory.

200,000

litres per day

of drinking water for Río Grande, guaranteed.

**We do not touch your water.
We produce our own.**

Of the order of 3,150 m³/day remains available even in the pessimistic case. A collection point at the plant, open to all 53 communities.

*90 domestic · 20 communal · 50 livestock · 40 productive = 200 m³/day.
Contractual commitment: 200 m³/day to Río Grande.*



NB 512 quality

Monthly analysis by an independent laboratory. Results public in the community.



Surplus for all Nor Lípez

Of the order of 3,150 m³/day remains available even in the pessimistic case. A collection point at the plant, open to all 53 communities.



Continuity

30 days of storage on site. If the plant stops, we supply by tanker.



At closure it is yours

Reservoir, treatment and distribution network pass to communal ownership.

Bolivian standard NB 689 sets 30–50 L/person/day for the rural Altiplano. This offer delivers more than three times that amount.

How much fresh water each plant needs

Comparison of the three lithium plants in Bolivia — fresh water drawn from the territory, per year.

COMPARISON — SAME PROJECT, THREE APPROACHES

R U S S I A

Contracted DLE plant

14,000 t/y of lithium carbonate

1.2

Mm³ of fresh water per year

38 l/s drawn · 85 m³ per tonne

The intake comes from micro-basins next to the plant.

C H I N A

Two contracted DLE plants

35,000 t/y of lithium carbonate

10

Mm³ of fresh water per year

317 l/s drawn · 286 m³ per tonne

Four times what the state company uses today.

U S

Uyuni · battery-grade carbonate

80,000 t/y of lithium carbonate

0

Mm³ of fresh water per year

0 l/s drawn · 0 m³ per tonne

We produce our own from the brine.

At the same scale

If all three produced 80,000 t/y

Russia at that scale

6.8 Mm³/year · 215 l/s

China at that scale

22.9 Mm³/year · 725 l/s

Us

0 Mm³/year · 0 l/s

Fresh water according to the technical annexes of the DLE contracts in force: 1,184,471 m³/year for the Russian plant; more than 10,000,000 m³/year for the Chinese plants (Red de Protección Ambiental / ANA, 02-2025; CEDIB 04-2025). Contracted production: 14,000 t/y and 25,000 + 10,000 t/y respectively. Flow, intensity and scaling to 80,000 t/y calculated by us. Excludes brine.

The plants' water, measured in people

Fresh water per year, compared with the domestic water of the whole department of Potosí.

All Potosí — domestic water

861,292 people, Census 2024



15.7 Mm³

the reference

The contracted DLE plants

49,000 t/y of lithium carbonate



11.2 Mm³

= 613,000 people · 7 in 10

That intensity at our scale

80,000 t/y, at their consumption per tonne

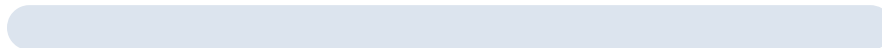


22.9 Mm³

= 1.25 million · 1.5 times Potosí

Our plant

80,000 t/y of lithium carbonate



0

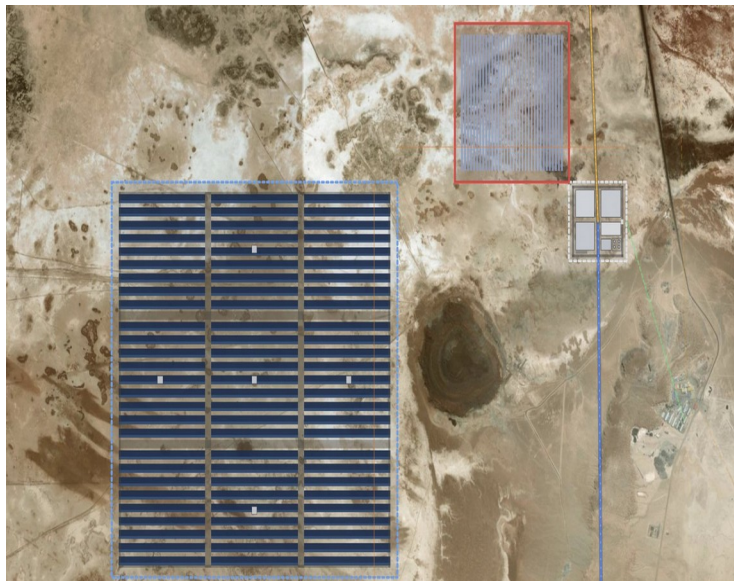
we draw no fresh water

We produce our water from the brine. The last bar is ours.

Domestic water calculated at 50 litres per person per day (rural Altiplano allocation), Census 2024 population. At the national average of 97 l/person/day the department would use 30.5 Mm³/year and the contracted plants would equal 37%. Plant fresh water according to the technical annexes of the contracts (Red de Protección Ambiental / ANA 02-2025; CEDIB 04-2025). Excludes brine.

Site layout

Plant, solar power and the solar corridor.



- Solar photovoltaic field**
2.5 × 2.5 km · off-grid power
- Protarget CSP**
1 × 1 km · solar process heat
- Plant**
0.5 × 0.5 km · finished carbonate
- Brine pipeline**
17.9 km ↑ to the well field
- Salt conveyor**
elevated · to the ponds

Firm ground: TIOC Nor Lpez — INRA executive title of 19 Apr 2011, 2,000,291 ha. **Inalienable land:** the instrument is a land-use agreement, agreed in assembly with Río Grande and ratified by CUPCONL. Brine and solar surface: State fiscal reserve, YLB industrial zone.

Plant, Protarget and solar power on firm ground at the edge of the solar; brine pumped 17.9 km north from the rich zone. Satellite: Esri/Maxar.

Who receives what

Four separate channels. None is deducted from another.



STATE OF BOLIVIA

State participation of 51%, taxes and royalties

→ The country's share



DEPARTMENT OF POTOSÍ

15% of the private shareholders' profits, reinvested in Potosí

→ The region's share



TIOC NOR LÍPEZ

Investment in the 53 communities of the territory, decided by CUPCONL

→ The title-holder's share



RÍO GRANDE

Water, guaranteed monthly payment, surface canon and priority employment

→ The share of those who host the works

The four channels are additional to one another. None is deducted from another.

Value for Bolivia

~US\$33 billion

for Bolivia over the ~43 years of production, at an assumed price of US\$15,000/t of carbonate.

~US\$12.6 billion as the 51% State participation, plus ~US\$13.7 billion in taxes and ~US\$6.5 billion in royalties.



Permanent skilled employment

thousands of jobs during construction, with training and technology transfer



Industrialisation

finished battery material, made in Bolivia — not exported as raw brine



15% of private profits reinvested in Potosí

≈ US\$3.6 billion directly in the host region over the ~43 years of production

Assumed price: US\$15,000/t of lithium carbonate. Independently verified techno-economic model. Contract term: 50 years in total — ~7 of construction and closure, ~43 of production.

Direct investment in Potosí

Development that stays where the lithium is.

15%

of the private 49% share

of the private partners' 49% profit share is invested directly in the department of Potosí — around US\$3.6 billion over the ~43 years of production.

Local infrastructure, health, education and jobs. The fund finances and the foundation executes the works: it transfers no money to any municipality or to the treasury.



Only Potosí

Not one boliviano of this fund leaves the department.



Per capita

Every Potosino counts the same, in the 41 municipalities and the AIOC Jatun Ayllu Yura. The city of Potosí included.



TIOC Nor Lípez channel

5% of the programme to the 53 communities of the host territory, via CUPCONL. Each inhabitant counts three times.

Illustrative figures at an assumed price of US\$15,000/t: a community of 1,000 inhabitants = US\$94,000 per year; a municipality of 10,000 = US\$940,000 per year. The 15% is fixed; the amount is not. If the price rises, it rises; if it falls, it falls.

Social Mining Revolution

Driving the future. Elevating a nation.

Globalization 2.0

A new social contract for resources.

The sponsor funds 100% of the mining operations; the Bolivian State receives an equity stake and contributes no cash.

51% of all mining profits go directly to the State of Bolivia. The private partners take the remaining 49%; 15% of that private share is ring-fenced to fund education, healthcare, infrastructure and community development across Potosí.

The old model

For decades, South America's raw materials flowed abroad while resource-rich nations remained trapped in poverty and dependence on unprocessed exports.

What Atacama proves

30% of the world's lithium and billions in revenue — yet indigenous Atacama communities still lack clean water. That is the cost of the old model.

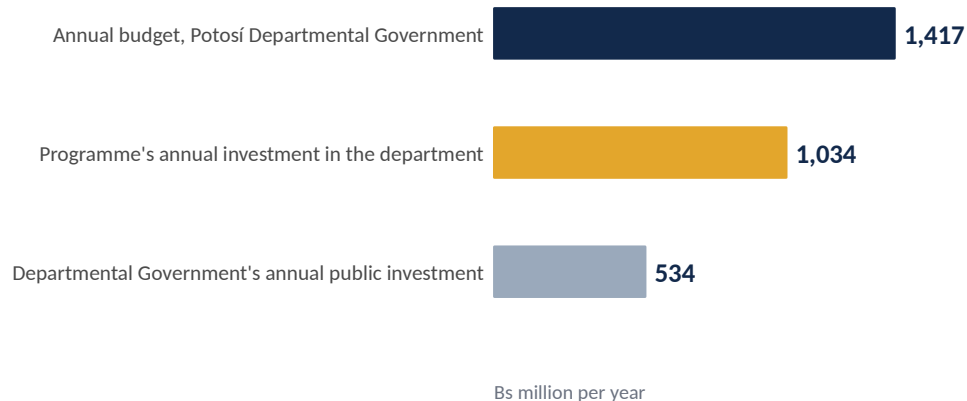
Communities decide

Health, schools, roads, water and irrigation — chosen by communities in Spanish, Quechua and Aymara, across the 42 territorial entities of Potosí. A training fund so Potosinos fill the 702 permanent jobs.

Those who benefit from Bolivia's resources should lift up its people.

What it means for Potosí

The programme's annual investment, compared with the departmental government's public investment.



1.94x

the annual public investment of the Potosí Departmental Government — every year, during the ~43 years of production.

It is not a parallel budget.

The programme executes the works. It does not collect or spend like a government.



Departmental budget 2025

Bs 1,416.6 million allocated to the Potosí Departmental Government in the PGE 2025 (≈ US\$117 million).



Programme investment

≈ US\$86 million per year (≈ Bs 1,034 million) — ≈ US\$3.6 billion over the life of the project.



Decided in Potosí

Not current spending: projects chosen and voted by the communities of the department.

Sources: PGE 2025, Gobierno Autónomo Departamental de Potosí (Bs 1,416,561,525); departmental public investment 2025 (Bs 534 million). Conversion at the official BCB rate of Bs 12.13/US\$ (2 August 2026); at the fixed rate of Bs 6.96/US\$ the ratio is 1.12x. Programme investment: estimate at an assumed price of US\$15,000/t. The 15% is fixed; the amount is not.

Potosí decides

We do not allocate the 15%. Potosí does.

1 **Proposals**

Any community submits projects — health, school, roads, water, irrigation — through a mobile app in Spanish, Quechua and Aymara. An in-person registration point where there is no coverage.

2 **Allocation**

Each community's investment follows its population, measured by the latest INE Census and updated at each census. The 53 communities of the TIOC Nor Lípez also have their own channel.

3 **Vote**

Each community votes and prioritises its own projects: what is done, and what is done first. Nobody decides for another.

4 **Shared projects**

Communities can pool their allocations for larger works — a road, a hospital, an irrigation system that serves several.

5 **Open accounts**

Every boliviano allocated, contracted and executed, published. Annual independent audit.

Río Grande receives its own package and does not take part in the programme — but it can benefit from shared projects of the region.

Decidimos — the app

Potosí decides — from any phone.

Every comunario proposes projects, ranks them and follows the money from their own phone — in Spanish, Quechua and Aymara. The ballot is secret by design; the accounts are open. **No money moves through the app.**

● RUN BY CUPCONL

Annual fee for the work below

US\$300,000

per year

● Registers facilitators

Its secretariat names each community's facilitator in the app, with the assembly's acta.

● Loads the padrones

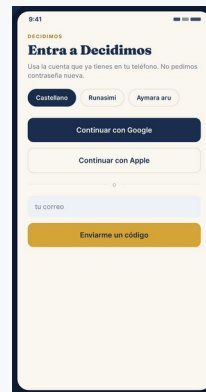
Only a community's own people vote — the app keeps a salted hash, never names.

● Accompanies assemblies

The app records what the assembly decides. It never decides for them.

● Publishes the accounts

The public portal: every boliviano contracted and executed, open to all.



Sign in & choose
your community



Rank & vote —
in secret



Open accounts,
to the invoice

Propose • Allocate • Vote • Share • Account

Operated on the ground by CUPCONL for its work coordinating the programme with the communities. • The assembly always decides who belongs and what reaches the ballot.

How it is executed

Hybrid model: the trust finances, the foundation executes; the State validates, receives and operates.

The model

- 1 Communities propose and vote**
On projects already costed, with a set deadline and ready to execute.
- 2 The trust finances, the foundation executes**
Disbursement per project against independent certification. The foundation contracts under private law, with pre-qualified companies: weeks, not years.
- 3 The State validates, receives and operates**
Framework agreement with the Departmental Government and each municipality. The asset is and remains public; operation and maintenance stay with its owner.

What can be financed

- Schools**
renovation, extension and equipment
- Health posts and centres**
renovation and medical equipment
- Water and sanitation**
drinking water systems, wells and irrigation
- Rural roads**
improvement of roads and access
- Rural electrification**
grids and stand-alone solar systems
- Community infrastructure**
halls, markets and sports facilities

Rule: priority to renovating and equipping what already exists and already has staff. New works only with an operation and maintenance commitment signed by the responsible public entity.

Structure: independent trust (custody and disbursement) and Bolivian non-profit foundation (execution). The foundation contracts under private law; it is not an entity subject to Law 1178. Annual audit published. Subsequent maintenance remains with the public owner.

The distribution key

One formula for everyone. Published before the first assembly. Everything comes out of the private 49%, while the plant produces.

Four steps

by exposure to the project, funded by the private shareholders. Each step receives more than the one before, and each has a name.

- **Potosí — the citizen • ≈ US\$94 per person per year**
95% of the 15% programme. Per capita, 42 entities, the city included.
- **Nor Lipez — the title-holder • ≈ US\$970**
5% of the programme + 60% of the US\$12M/y community programme. Counts three times, and decides in assembly.
- **Río Grande — who provides the land • ≈ US\$5,600**
US\$5.9 million per year, fixed, while the plant produces. Doubled. Linear works on any other firm ground: US\$30,000 per km per year, same terms.



From the 49%, not the 51%

The 15% is 15% of the private shareholders' profits; the Río Grande package and the community programme are operating costs. Nothing is deducted from Bolivia's 51%, taxes or royalties.



Rule before map

The criteria are set today, before anyone knows which community lands on which step. Nobody designs the rule knowing what they get.



Each assembly decides inside

Potosí allocates its channel. CUPCONL allocates its own among the 53. Río Grande allocates its padrón. The company sets the step, not the work.



Fixed money for impact, variable money for prosperity

Río Grande package and community programme: USD, every production year, whatever the price. The 15%: when there is profit. Review every 5 years; no step is cut without its own yes.

One rule, four steps, three assemblies — paid from the private 49%. The 51%, taxes and royalties are Bolivia's, in full and separately.

Figures at US\$15,000/t, average production year. The community programme (US\$12M/y) is an operating cost of the project, separate from the 15% and not deducted from it. Río Grande package in USD, indexed to US CPI. No payment before production; all payments while the plant produces (~43 years). Table per entity published before every assembly.

What the rest of Potosí receives

The whole department, not only where the plant is.

US\$81 million

per year to the department of Potosí, from the private shareholders' profits, distributed among its 42 territorial entities.

● 861,292 inhabitants

Per capita. Every Potosino counts the same, the city of Potosí included. ≈ US\$94 per person per year.

● 41 municipalities + 1 AIOC

From Villazón to Llallagua, from Tupiza to Mojinete, and the AIOC Jatun Ayllu Yura. Potosí decides whether to add an equal floor for all.

~43 years of production: ~US\$3,480M in total. That is 95% of the programme. The remaining 5% goes to the territory holding the land title: they are Potosinos too, and count three times.



A floor, if Potosí wants it

Option for the departmental assembly: 90% per capita + 10% in equal parts among the 42 entities. Mojinete would go from ~US\$94,000 to ~US\$276,000 per year; the city of Potosí gives up 9%. Potosí decides, not us.



Works with maintenance

Every work reserves 15% of its cost to operate it for 10 years. It is registered in the municipal POA before construction. No orphan works.



Pooling allowed

A small municipality can accumulate up to 5 years or join with its neighbours for a larger work. Per capita does not force small spending.



Only Potosí, works not cash

Not one boliviano leaves the department. The fund finances, the foundation executes, the State validates. The asset is and remains public.

We do not allocate the 15%. Potosí does — with the rule in plain sight and the per-entity table published.

Source of funds: 15% of the profits of the private 49%. Not a royalty, not State participation, does not pass through the treasury. Population: INE, Census 2024. Conversion BCB Bs 12.13/US\$. At US\$15,000/t: the 15% is fixed, the amount is not. All payments start with production and last while the plant produces.

What the TIOC Nor Lipez receives

The territory that holds the land title.

US\$11.4 million

per year to the title-holding territory, in two channels, both borne by the private shareholders, while the plant produces.

● US\$4.26 million — programme channel (5%)

Every TIOC inhabitant counts three times versus the rest of Potosí. Works, not cash. The CUPCONL assembly decides what is done and where. Arrives when there is profit; if the price rises, it rises.

● US\$7.2 million — community programme

60% of the US\$12M/y programme: water for the 52 non-host communities, environmental monitors, training for the 702 jobs, grievance mechanism. Operating cost: paid every production year, with or without profit.

~43 years of production: ~US\$500M in total. ≈ US\$970 per comunario per year, against ≈ US\$94 for a Potosino from another province.



Counts three times

A TIOC inhabitant receives from the programme three times what a Potosino from another province does: 5% of the fund for 1.5% of the population. It is the only weighting in the whole key, and it has a name: the land title.



CUPCONL decides

The allocation among the 53 is resolved by the assembly, not the company. Each community proposes, prioritises and votes its own work. Assemblies, not signatures.



With or without profit

The 15% depends on profit and can be zero in a bad price year. The community programme is an operating cost: it is paid every year the plant produces.



Open accounts

Every boliviano allocated and executed, published. Annual independent audit. Table per community before every Ampliado.

The title-holder does not just ratify the agreement: it decides and receives — three times per inhabitant, every year the plant produces.

Title-holder: CUPCONL, affiliated to FRUTCAS and CSUTCB. TIOC land: collective, indivisible and inalienable (CPE art. 394.III). TIOC population ≈ 13,000 (Census 2012; to be updated with Census 2024). Brine and salar surface: State fiscal reserve, YLB industrial zone; no payment to the TIOC. Remaining 40% of the community programme: 25% to Colcha "K", San Pedro de Quemes and Uyuni (services, maintenance, rotation hubs); 15% to a departmental training fund so that Potosinos fill the 702 jobs. All borne by the private 49%, while the plant produces.

What Río Grande receives

For impact and land use. Amount doubled; with rules that protect it.

US\$5.9 million

per year to Río Grande, paid by the company for impact and land use, guaranteed while the plant produces.

● US\$5,400,000

for impact and use, to the community as a collective. The Río Grande assembly decides each year how much is distributed by padrón and how much goes to communal works (starting proposal: 60/40). Today, with ~1,160 comunarios, up to ~US\$4,600 per person per year.

● US\$500,000

surface canon. The land is TIOC: it is not bought, its use is agreed.

~43 years of production: ~US\$254M in total. Paid monthly, in USD, from first production and while the plant produces, regardless of profit. Twice the amount per year of the previous version.



Reference padrón

Closed on the date of the assembly minute and ratified by CUPCONL. Grows by birth and marriage, not by arrival. Protects Río Grande from an inflated padrón and its 52 neighbours from money-driven migration.



Water — 200,000 L/day

Free, while the plant produces. Produced from the brine: we do not take yours.



Jobs first

Priority hiring for Río Grande and Nor Lítez, with training paid by the project.



Infrastructure at closure

Water system, reservoir, network and roads pass to Río Grande's ownership. Initial Community Fund of US\$200,000 in the first year of production, for a project Río Grande chooses.

Rule, not exception: any community whose firm ground carries permanent infrastructure receives compensation for impact and use on the same terms; linear works, US\$30,000 per km per year. Today, the only one is Río Grande.

The full footprint — plant, solar field, Protarget — stands on communal grazing land of Río Grande; the pipeline and conveyor run over the salar, State fiscal reserve and YLB industrial zone. This package is a project cost borne by the private 49%, additional to the 51% State share, taxes and royalties. No compensation is negotiated with individuals or leaders: only in assembly (CUPCONL Protocol, "free" principle).

Social licence

Community agreement in assembly before the first works. Not after.



Río Grande community

Corregimiento and communal assembly. Assembly minute.



CUPCONL

Holder of the collective title of the TIOC Nor Lípez — 53 communities.



Municipality of Colcha "K"

Land use and territorial planning.



Plurinational State

YLB, Ministry of Hydrocarbons and Energy, Potosí Departmental Government.

- **Agreement before the works, not after.** No work begins without a Río Grande assembly minute and a CUPCONL assembly resolution. Assemblies, not signatures. The State's prior consultation runs separately, before the authorisations.
- **In your language.** The whole process in Quechua, Aymara and Spanish.
- **Community environmental monitoring.** Community monitors, paid by the project, with site access. Public data.
- **The obligations follow the project.** If the project changes hands, all commitments transfer in full.
- **Nor Lípez, not only Río Grande.** The 53 communities of the TIOC receive their own channel of the programme, decided by CUPCONL.
- **The community keeps the padrón.** Río Grande administers and publishes the padrón every month. Payment follows the padrón, not the other way round.

At year 50

What remains when we finish.



The land returns to the community.

Complete dismantling and remediation of the site, at the company's expense.



Financial guarantee from year one.

Closure fund constituted and deposited from the start — enforceable even if the company no longer exists. Not a promise: money set aside.



The infrastructure stays.

Water system, reservoir, distribution network, roads and buildings pass to Río Grande's ownership.



No environmental liabilities.

No abandoned ponds. No tailings dams. No equipment rusting on the salar.

Southern Potosí knows the other ending. This project is designed not to leave it.



Status

Based on a complete, independently verified techno-economic model. The engineering is real and costed. Ready to advance to confirmation drilling and conceptual engineering (FEED).

Bolivia's lithium — finished in Bolivia, powered by the Bolivian sun.