

A large yellow drilling rig is positioned on a dirt surface in a desert environment. A worker wearing a white hard hat and a blue and orange safety suit stands in the foreground, looking towards the rig. The background shows a flat landscape with distant mountains under a clear blue sky. The rig has various cables and hoses attached to it, and a warning sign is visible on its side.

Eramet in Argentina Lithium Project

Press kit- November 2021

Eramet accelerates into the metals for the energy transition and engages the construction of its lithium plant in Argentina

Christel Bories, *Eramet group Chair and CEO*:

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Our decision to carry out our lithium project in Argentina is in line with the dynamic of strong market growth. It is a key milestone in the deployment of our strategic roadmap which aims at positioning Eramet as a reference player in metals for the energy transition.

Eramet will thus become the first European company to operate a sustainable and large-capacity lithium industrial complex: we take pride in this project and see an opportunity for Europe's sovereignty to secure tomorrow's critical metals. For this project with high value creation potential, our partner Tsingshan will provide its industrial expertise and financing capabilities needed for the construction of the plant.

Since the early phases of the project in 2019, the teams have remained highly committed, preserving the assets and maintaining strong relationships with all stakeholders. We are now ready to engage the site's development in the best conditions with initial production expected from 2024.

”



Salar of Centenario-Ratones, Argentina

Eramet engages the construction of its lithium production plant in Argentina through the signature of an agreement with the Chinese steel group Tsingshan. Eramet knows well this partner, the world's largest stainless-steel producer, with which the Group has developed with great success the production of nickel at Weda Bay in Indonesia.

With this project, Eramet will become the first European company to develop sustainable and large-scale lithium production, supported by a performing process developed in-house by its R&D centre.

Eramet will control the project, with a 50.1% interest. For its part, Tsingshan will contribute up to \$375m to the project through the financing of the plant's construction, leading to a 49.9% stake in the project.

The Group owns perpetual mining rights over a major lithium concession, in the form of brine, located on the Andean highlands in the province of Salta in Argentina. The project consists in extracting brine from the salar and processing it into lithium carbonate, which is the base compound for the energy storage industry.

The competitiveness of the process developed by Eramet ranks it in the first quartile of the cash cost curve of the lithium industry (cash cost of c.\$3,500/t LCE EXW¹), with large-scale drainable resources (nearly 10 Mt LCE²). A pilot plant installed on the site since 2020 has demonstrated, in real conditions, the quality of lithium carbonate produced, with very high direct extraction yields (90%).

The project has strong ESG performance, notably as demonstrated by the quality of the relationships tied with local communities during the preparatory phase of the project. Eramet's process also presents an advantage in terms of hydric resources use compared with projects supported by a conventional extraction process. All Eramet's CSR standards will be applied on the activity.

The lithium project was mothballed in April 2020 at the time of the health crisis, as the conditions were not then met to launch the construction of the plant.

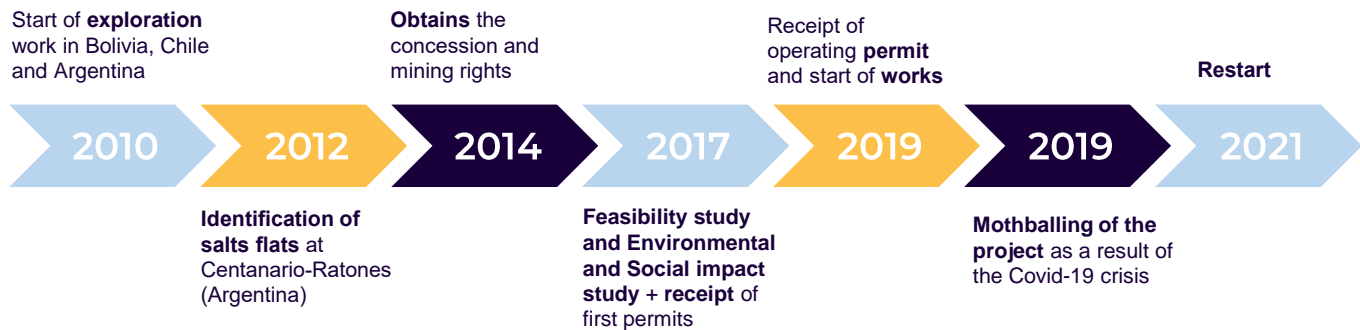
Based on the partnership signed with Tsingshan and factoring in solid fundamentals as well as excellent outlook for the lithium market, the Group's Board of Directors has considered that the conditions are now met to launch the plant construction.

Supported by the success of Weda Bay Nickel, a project developed in partnership in Indonesia, Eramet and Tsingshan are consolidating their relationship and are once again pooling their industry and mining experience and skills.

¹ Ex-Works: cost when leaving the plant, excluding taxes and royalties

² Lithium Carbonate Equivalent

A world-class deposit



Without lithium, Li-on rechargeable batteries would not be possible. Essential for the manufacture of both smartphones and electric cars, this metal is already highly sought after, and will become even more so in the coming decades.

10 MT of Lithium Carbonate Equivalent for the concession

This observation naturally led Eramet – which already operates in nickel and cobalt – to invest in the exploitation of lithium. It took two years of mining exploration before our teams identified the "salar" (salt desert) in 2012 in Centenario-Ratones, an area of the Andes in the north-west of Argentina. After obtaining the concession and the mining rights in 2014, the mining license was granted in 2019 following the approval of the Environmental and Social Impact study.

The project consists of extracting brines from the salt flat and transforming them into lithium carbonate – a basic compound for the energy storage industry. A **pilot plant** installed at the site in 2020 has demonstrated the quality of the lithium carbonate end product. The **competitiveness of the process** places it in the **top quartile** of the lithium industry's cash cost curve, with very significant drainable resources.

This progress is the result of the work carried out in situ by:

- The team of on-site geologists from 2010 to 2019,
- **In Salta**, our subsidiary Eramine Sudamerica, which has around 40 employees (geologists, chemists, engineers, HR, safety managers, etc.) notably in charge of conducting pilot drilling and getting the project under way.
- **In Buenos Aires**, the Eramet teams, who are in charge of preparing the technology calls for tenders in which various engineering, provision and construction specialists participate.

40 years of reserves
i.e. 24,000 tonnes of LCE/year

In 2020, Eramet obtained certification of its compliance with the JORC (Joint Ore Reserves Committee) Code: the mineral resources of the Centenario-Ratones salar are estimated at nearly 5,000 million cubic meters of brine with an average lithium content of 436 mg/ l, the equivalent of approximately 10 million tonnes of LCE (Lithium Carbonate Equivalent); and reserves stand at 1 million tonnes LCE, guaranteeing the production of 24,000 tonnes LCE per year over a period of 50 years and offering the prospect of a significant increase in production capacity in later phases.

A technical and human challenge



Located a five-hour drive from Salta at **3,800 meters above sea level**, the site stretches between two volcanoes in the Andes Cordillera, in a huge desert plain.

Under these conditions, building the plant, the drilling areas but also all the associated infrastructure - base-life, airstrip, roads, pipelines, power plant, telecommunications - represents **a unique challenge**.



Flashback: in January 2019, 15 tonnes of equipment left Eramet's R&D centre in Trappes near Paris for Buenos Aires, Argentina. A second load was to follow five months later to transport the lithium pilot process. 11,000 kilometers, 2 months at sea, 15 days in a truck and a height of 4,600 m above sea level later, the team arrived safely and the industrial pilot became a training center.



The training center – an on-site reproduction of the future small-scale industrial plant – opened in late 2019 and has continued to operate ever since, with **very satisfying technical results**.

The extraction process was developed by **Eramet Ideas**, the **Trappes-based innovation center**, near Paris, in partnership with IFPEN. To sum up Eramet Ideas in a few figures:

- **300 employees** dedicated to innovation
- **€35m** set aside for innovation by the Group
- **More than 30 collaborative projects** in Europe



Safety:

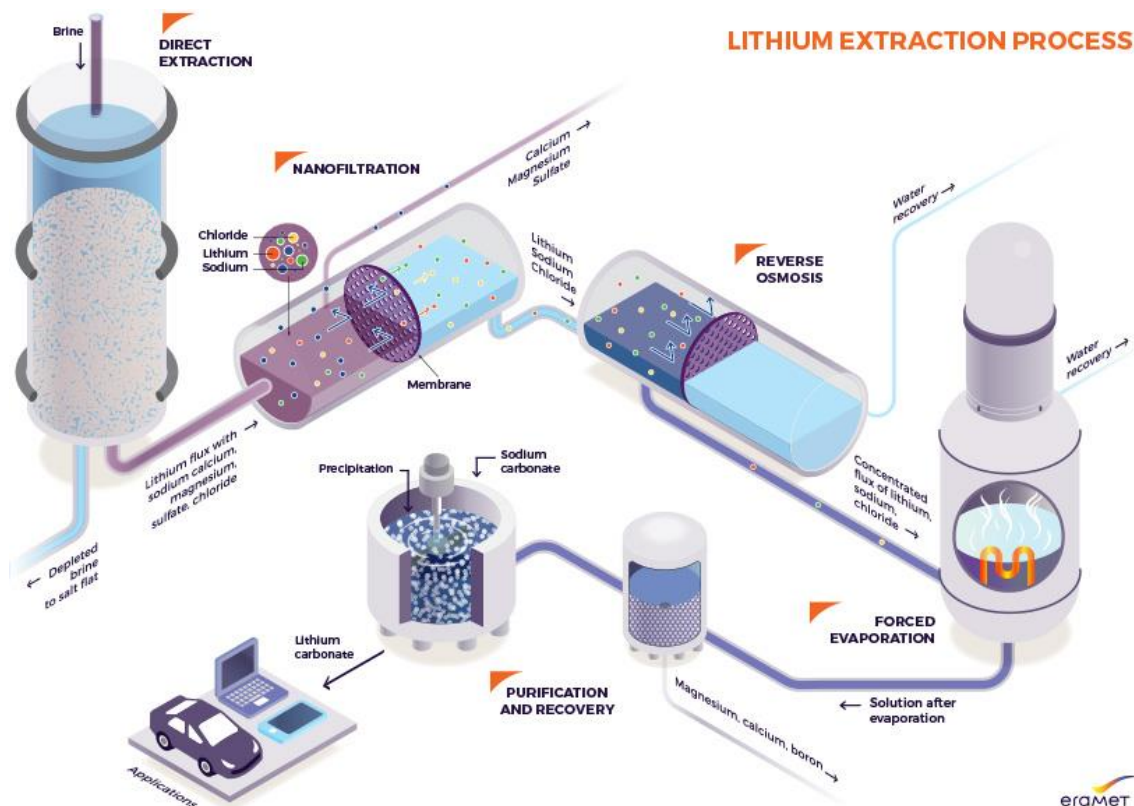
over 2 million hours

without a work
accident involving a
stoppage



An efficient extraction
process

Several years of laboratory testing and continuous monitoring have enabled the teams at Eramet Ideas to develop a new process for producing battery-quality lithium carbonate.



The process is different to the conventional method (by evaporation), and works in **two phases**:



- The use of an active solid **to extract and concentrate the lithium**. Developed by Eramet in liaison with IFP Énergies Nouvelles and Seprosys, this works like a sponge, capturing the lithium contained in the brine. Fresh water is then used to release the stored lithium. To further concentrate the metal obtained, two successive processes are then conducted: nanofiltration and reverse osmosis.
- **Purification** of the lithium, then reaction with sodium carbonate to convert it to **lithium carbonate**. Once filtered again and washed, it achieves the chemical quality of the finished product.

The extraction process developed by Eramet achieves an **90 % yield** over a processing period of just a few days. By comparison, the traditional procedure (based entirely on natural evaporation) delivers less than 50% yield in 18 months. .

In addition, and still in comparison to the traditional process, every effort has been made to minimize the consumption of fresh water in the process by increasing **the water recycling rate to the maximum possible, now reaching over 60%**.

A woman wearing a wide-brimmed straw hat with a floral band and a dark blue jacket stands in a field of yellow wildflowers. She is holding a plant stem in her hands, and a cloud of small yellow seeds is falling from them. The background shows a clear blue sky and distant hills. A white curved graphic element is at the bottom of the image.

A firm practical
commitment to
communities

Starting from the exploration phase, Eramet's teams established in-depth dialogue with the local population. As is the case in all places where the Group operates, Eramet strives to become a catalyst for development in the surrounding communities.

The Centenario-Ratones "salar" is located at the heart of a vast desert region, the "Puna Salteña". Several kilometers from the site, some families – the Puesteros – mainly live off extensive, nomadic farming methods, occupying isolated dwellings. Fifty kilometers to the north, the two hundred inhabitants of the village of Santa Rosa de Pastos Grandes represent the closest community.

At present, **75 people benefit directly from the project's CSR programs**, including 13 quinoa producers.

Creating a dialog from the outset of the project

In keeping with the regular meetings organized from the beginning of the exploration operations in 2011, **quarterly meetings are held to inform the local populations** of the project's progress, as well as to understand – and respond to – any concerns they may have. Furthermore, a CSR team is continually present on the ground to support local development projects, therefore ensuring ongoing interaction between neighboring communities and the company.

Eramet's transparency with regard to evaluating and mitigating the project's impact, namely on the environment, plays a vital role in establishing a relationship based on trust with the local communities. Within the framework of national regulation, and in partnership with UCASAL (Catholic University of Salta), Eramet has set up a **training program on "environmental monitoring" for local representatives**. Appointed by the communities themselves, these representatives are trained in, and contribute to, the project's sampling activities - for example, those aiming to monitor water quality. They additionally play a role in relaying information to the other members of their communities.

A project where all local players benefit

Employment: with 68% of the team being from the province of Salta and 18% coming from nearby dwellings and villages, Eramet promotes local employment. In anticipation of the construction phase, a clause relating to CSR and local employment was added to the collective agreement signed in 2019 with the Argentinean construction union. This was a first for Argentina. As such, Eramet, in collaboration with local stakeholders, identified candidates from the province of Salta who were interested in job opportunities during the construction phase. Moreover, in 2019, 35 people had received training in safety and the basic skills that will be needed over the next few years.

Currently, **75 people** (40 Eramine employees and 35 subcontractors) are permanently present on the site.

At the peak of the construction phase, more than **700 people** will be mobilized, and about **300 people** will eventually be employed in the operation phase.



Purchasing & Subcontracting: Eramet is equally committed to supporting the local economy through training programs, development programs and the use of local subcontractors. There are opportunities namely in catering, hospitality, the laundry industry, transport and earthworks. The aim is to maximize local employment indirectly linked to the project.

Autres actions contributives : Beyond actions to ensure the positive impact of industrial operations, Eramet actively participates in the development efforts of local actors. Since 2015, the Group has been supporting the Quinoa Project, a program to reintroduce the ancestral cultivation of this cereal in the region, which since 2018 has offered an alternative source of income to a dozen producers. This initiative has since been complemented by a programme to support the breeding and recycling of waste benefiting 15 people in the area.

In terms of **health**, and to address widespread problems in the region, such as child malnutrition, several projects have been launched to help local populations improve their diets. Thanks to the Community Organic Garden project and the Quinoa Project, people now have access to quality basic foodstuffs, allowing them to enrich and balance their diet..



The **Quinoa project** is an ambitious initiative that has revived farming of this traditional grain in a region where this ancestral know-how had died out. There are numerous advantages to cultivating quinoa, from creating job opportunities - especially for women - to developing the local economy, not to mention decreasing child malnutrition.

Several pilot plots have been developed since the project was launched. After the first successful pilots, around 30 participants in the project received training in soil preparation, and raising, cleaning, processing, packaging and selling this grain. Eramet has also helped to build a storage facility for quinoa yields, while producers have joined forces as part of the “Quewar” cooperative.

From the outset, the farmers have been engaged in organic farming, and Quewar quinoa has recently received organic certification from a third-party organization - a first for Argentinean quinoa. Between 2018 and 2019, Quewar quinoa production has increased by more than a metric ton! This figure is expected to double by 2022..



Who is Eramet?

Eramet transforms the Earth's mineral resources to provide sustainable and responsible solutions to the growth of the industry and to the challenges of the energy transition.

Its 13,000 employees are committed to this through their civic and contributory approach in all the countries where the mining and metallurgical group is present.

Manganese, nickel, mineral sands, lithium, and cobalt: Eramet recovers and develops metals that are essential to the construction of a more sustainable world.

As a privileged partner of its industrial clients, the Group contributes to making robust and resistant infrastructures and constructions, more efficient means of mobility, safer health tools and more efficient telecommunications devices.

Fully committed to the era of metals, Eramet's ambition is **to become a reference for the responsible transformation of the Earth's mineral resources for living well together.**

With exceptional mines and metallurgical plants with historical know-how, the Group is the **1st world producer of high-grade ferronickel, 1st world producer of manganese alloys, 2nd producer of high-grade manganese ore, 4th for zircon...** As a privileged partner of its industrial customers, Eramet contributes to making infrastructures and constructions robust and resistant, means of mobility more efficient, health tools safer, telecommunications devices more efficient.

Driven by a profound transformation, the Group has clearly defined ambitions: **to become a leading mining and metallurgical player, particularly in the metals of the energy transition.** This requires strong commitments in social, societal and environmental matters, but also through innovation, especially digital, to transform its know-how and its way of apprehending its professions.



€3,500m
turnover in
2020



13,000+
employees



20 country-
footprint

Our CSR commitment

Eramet implemented a CSR roadmap in 2018, focusing on 3 areas and 13 objectives to be achieved by 2023. Aligned with the Sustainable Development Goals (SDGs) defined by the United Nations, this roadmap constitutes a precise program that guides the Group in the realization of its societal and environmental ambitions..



	Objective	KPI 2023	2020 results
1	Ensure the Health and Safety of employees and subcontractors	Zero fatalities Workplace accident frequency rate with and without work stoppage FR2 < 4	TF2 = 4.1 4 serious accidents
2	Build skills and promote talent and career development	100% of Worldwide employees participate in at least one training course per year	67 % of employees
3	Strengthen employee engagement	Group employee engagement rate > 75% (barometer)	2020 survey postponed
4	Integrate and foster the richness of diversity	30% of managers are women	24.7 %
5	Be a valued and contributing partner to our host communities	100% of sites have established a mechanism for dialogue with local stakeholders 100% of sites have implemented an investment programme to contribute to local development, with a focus on actions in favour of young people	100% of mining sites have a complaints management mechanism compliant with IFC expectations



6	Be an energy transition leader in the metals sector	Committed diversification of Eramet's business portfolio in relation to the supply chain for electric mobility batteries	Partnership with BASF for the assessment of nickel production (EV). Lithium project in Argentina mothballed. Validated performance of the pilot plant in Argentina.
7	Actively contribute to the development of the circular economy	Quantities (t) of additional materials recovered through the circular economy action plan 2 Mt of low-grade incidental ores and tailings recovered over the 2019-2023 period 10 kt of waste recovered in the period 2019-2023	990 ,000 t recovered 50,000 t recovered
8	Be a reference company in terms of respect for human rights in our field of activity	Respect of of the UN Guiding Principles, measured by reaching a mature level according to the UNGP Reporting Framework (Shift-Mazars)	Updating of the Human Rights risk map and launch of priority training courses
9	Be an ethical partner of choice	100% of sales and purchasing teams trained on anti-corruption every year	100% of site directors and legal officers trained
10	Be a responsible company of reference in the mining and metallurgy sector	100% of the Group's suppliers and customers identified as high-risk are in line with Eramet's CSR/Ethics commitments	63% of suppliers and 99.1% of assessed at-risk customers are compliant



11	Reduce our atmospheric emissions	Tonnes of ducted dust emitted by industrial facilities: -80% in 2023 compared to 2018	- 56 %
12	Protect water resources and accelerate the rehabilitation of our mining sites by fostering biodiversity	Ratio of rehabilitated areas to cleared areas ≥ 1 over the period 2019-2023 (2)	1.03
13	Reduce our energy and climate footprint	KPIs: Reduction of tCO2/t outgoing product (ref. 2018) -26% in 2023 compared to 2018 (3)	25.4 %

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