



# JEMSE

## PROJECT PROMOTER STRATEGIC FOR A SUSTAINABLE FUTURE



# MISSION

Promote the sustainable productive transformation of the province of Jujuy, fostering public-private partnerships through the development of mining, renewable energies and their complementary activities.

## BUSINESS UNITS:

Renewable  
Energies

Hydrocarbons

Mining

Technological  
development

Lithium

Free Trade  
Zone



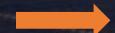
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# Renewable Energies

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# PROJECTS IN EXECUTION



CAUCHARI SOLAR I, II AND III  
PHOTOVOLTAIC PLANT  
(300 MW)



IN THE CONSTRUCTION STAGE OF  
EIGHT DISTRIBUTED SOLAR  
PHOTOVOLTAIC PLANTS  
(TOTAL 48 MW)



WITH APPROVED EXPANSION  
PROJECT TO 500 MW OF TOTAL  
GENERATION

PROGRESS OF WORK IN P.I. PERICO,  
CANNAVA, FINCA EL PONGO,  
CHALICAN AND HUMAHUACA

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# Cauchari I, II and III Photovoltaic Parks



Commercial  
Authorization  
of P.S. Cauchari

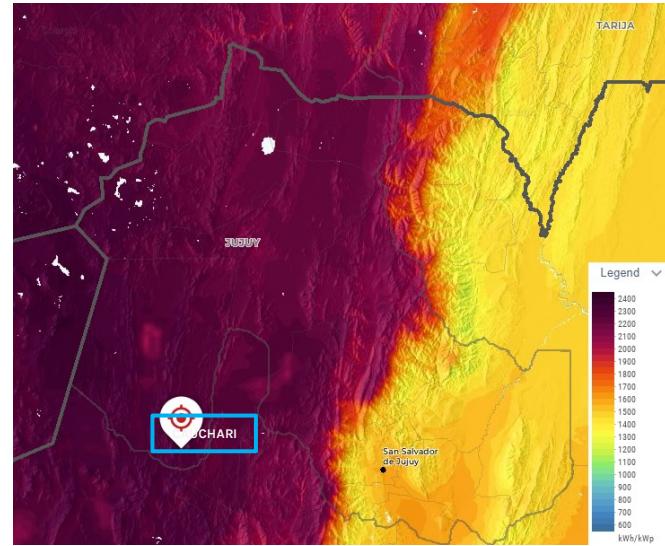
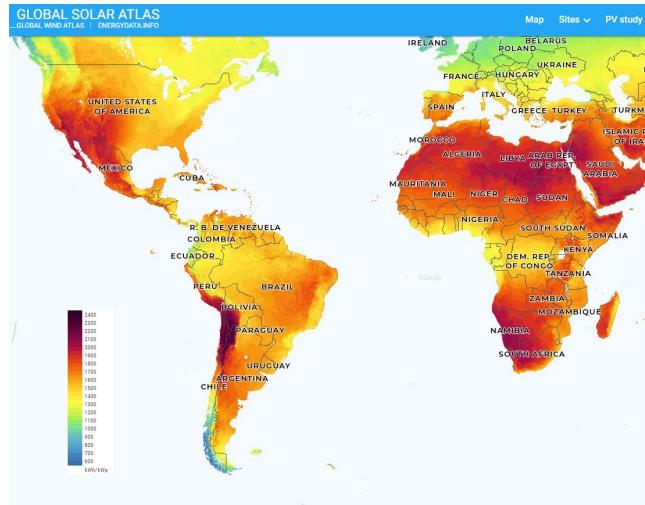
Cauchari Solar exceeds  
2.07 million MWh of  
generation

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# LOCATION CAUCHARI SOLAR 315 MW

- La Puna, Department of Susques,
- 278 km west of the city of San Salvador de Jujuy.
- At 4,100 meters above sea level

## IRRADIACION SOLAR EN EL MUNDO:



Radiation levels in Jujuy are significantly higher than other locations in the world.

# Cauchari I, II and III Solar Plant



**315.79MW<sub>p</sub>**

The wind farms have a total nominal power of 315.79 MW<sub>p</sub>.

**800 ha**

800 hectares of total area (8,000,000 m<sup>2</sup>).

**+25**

Estimated lifespan: more than 25 years.

**325,000tn**

The generation of 325,000 tons of CO<sub>2</sub> per year/100 MW is avoided.

**967,680**

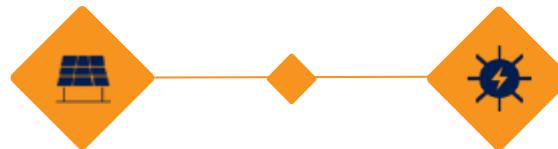
Photovoltaic panels installed. Brand Talesun polycrystalline

**1,700**

People worked on the construction.



# POTENTIAL RENEWABLE ENERGY PROJECTS



## SOLAR THERMAL PHOTOVOLTAIC HYBRID PLANT PROJECT

11 MW

Construction of an 11 MW model solar thermal generation plant with 13 hours of molten salt accumulation. Strategic partnership with INVAP for the preparation of the executive project.

## STAGE II DISTRIBUTED ENERGY GENERATION PROJECT

48 MW

Development of 8 (eight) solar parks connected to the provincial distribution grid of between 6 and 12 MW with a total expected contribution of 48 MW distributed in the Puna and Quebrada regions.



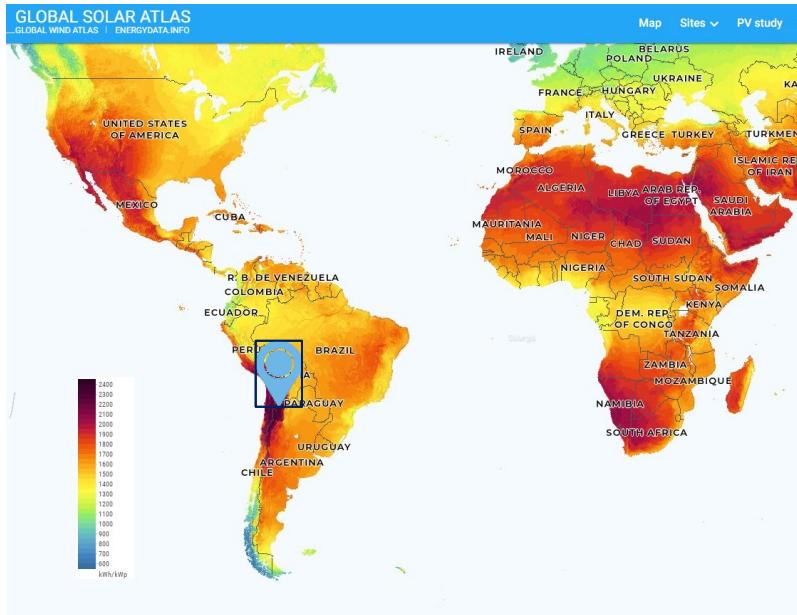
# SOLAR THERMAL PHOTOVOLTAIC HYBRID PLANT



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# Location of solar thermal plant

- Close to mining projects
- Located in the Puna Jujeña, Department of Susques,
- 278 km west of the city of San Salvador de Jujuy.
- At 4,100 meters above sea level.



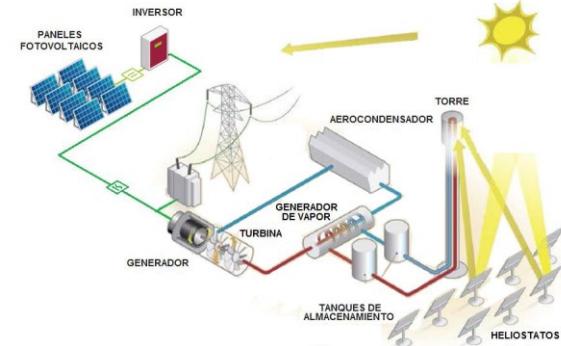
Solar radiation levels in Jujuy are significantly higher than other locations in the world.

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# Project Features

Thanks to the joint development of technology carried out by INVAP SE and JEMSE, it is possible to build a base plant capable of delivering clean energy to the grid 24 hours a day based on the sun, a renewable source of energy. This solution makes it possible to supply both interconnected systems and isolated systems, residential micro grids and/or mining establishments.

- ◆ The project is composed of 2 blocks, an 11 MW solar thermal block with 13 hours of molten salt accumulation and a 12 MW photovoltaic block, with a hybrid dispatch philosophy, photovoltaic during the day and solar thermal at night.
- ◆ Supply of 37000 residential homes.
- ◆ CO2 Arg electricity saving: 45000 tons/year
- ◆ Public-Private PPA: sale price: 180 usd/MWh for 20 years.
- ◆ National design, with complete feasibility study.
- ◆ Direct normal irradiation: 3527 kWh/m<sup>2</sup> / Horizontal normal irradiation: 2483 KWh/m<sup>2</sup>
- ◆ Average annual generation: 88.36 GWh
- ◆ Power dispatch: 24 hours.



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# DISTRIBUTED SOLAR PROJECT IN THE PROVINCE **STAGE 1**

- Cannava 6MW
- Rodeito 3MW
- El Carmen 3MW
- P.I. Perico 16.5MW
- Chalicán 7.5MW
- Los Lapachos 6MW
- Humahuaca 6MW

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## Project Features

- ◆ The project has 7 solar parks, of which 6 are already progressing.
- ◆ Progress was made in soil movement, perimeter fencing and structural driving tasks for the installation of panels.
- ◆ During 2023, panels, trackers, inverters, and the rest of the equipment necessary to assemble the parks were imported.
- ◆ The construction stage is estimated to be completed in March 2025.





# MINING

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# Objectives and goals



We carry out mining prospecting in areas with high potential to promote new exploration projects



We promote activities to promote the good integral development (including social and environmental aspects) of mining in Jujuy.



We support the development of sustainable mining projects, being partners in the mega lithium productions in the Salar de Olaroz - Cauchari

# JEMSE'S SHAREHOLDINGS IN LITHIUM CARBONATE PRODUCTION PROJECTS

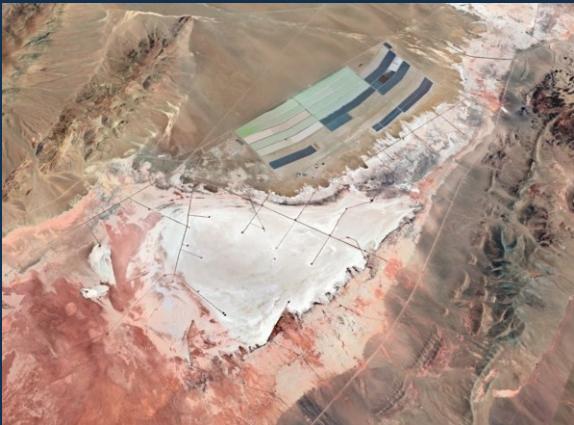


1. JEMSE's shareholding of 8.5% of the share capital
2. Located in the Cauchari salt flat in Susques – 40 years estimated useful life.
3. Projected capacity of 42,500 tpa. Lithium carbonate per year.
4. 12,863 tpa of LCE production in fiscal year 2022.
5. 20.7 MT LCE of lithium-rich brine resources, one of the largest in the world.
6. Lithium hydroxide plant raw material in Naraha.



# JEMSE'S SHAREHOLDINGS IN

## LATE-STAGE LITHIUM CARBONATE PROJECT



1. Participation in the share package
2. \$979M of CAPEX  
Current phase: to start pre-commercial productions and completion of commissioning of additional purification systems for battery grade.
3. Located in the Olaroz Cauchari salt flat in Susques – 40 years estimated useful life.
4. Ongoing planning for stage 2 expansion of at least 20,000 tpa. more.
5. Production plant capacity of 40,000 tonnes per year of battery-grade lithium carbonate.

Ganfeng Lithium  
赣锋锂业

Lithium  
Americas

MINERA  
EXAR

JEMSE

# New exploration agreements

1

Aguiliri Mine Project (Susques): Signing of a mine purchase option agreement with the company HANAQ, 7,000 hectares for the exploration of Lithium, Silver, Lead and Zinc. Over 800K USD investment over 24 months. JEMSE has a profit of 3% of the net return of smelting on the sale value of all minerals.

2

Salinas Grandes-Guayatayoc Project (Tumbaya-Cochinoca): LITHOS DESARROLLOS ENERGETICOS, awarded the Bidder's Tender No. 1/2023 of JEMSE, for lithium exploration. JEMSE has a future shareholding of 10% in the production stage and a 6% preference for the purchase of the mineral product, with more than 19MU \$SD of investment commitment in the province.

# Nuevos acuerdos de exploración

3

Salar de Jama Project (Susques): INTEGRA RECURSOS NATURALES, awarded Tender No. 1/2018 for GEOLOGICAL PROSPECTING, EXPLORATION AND FEASIBILITY OF MINING PROJECT IN THE EXCLUSIVE AREAS OF INTEREST OF J.E.M.S.E., will develop exploration with investments of more than US\$4M. JEMSE has a future shareholding of 9%, a pre-emptive purchase right of 10%, a 3% profit on the sale price of the mineral.

4

Lithium project and feasibility of a mineral value-added plant north of the Salar de Olaroz. Approximate area of the Project: 9,500 hectares: Estimated investments in the province in the first stage of the project for USD 20Million and production capacity of 10,000 TN/year in phase 1. Exploration Agreements with GOTION ARGENTINA S.A. (Subsidiary of GOTION HIGH TECH CO. LTD.)

# Opportunities

- ◆ JEMSE has the Perico Free Trade Zone, a 50-hectare property in its first stage for the installation of factories, laboratories and processing plants, on RN 66.
- ◆ JEMSE manages the Technological Development Center in Palpalá, where the Lithium Institute or CIDMEJu is located, which executes lines of research linked to the study and development of the mineral lithium, aimed at new technologies.
- ◆ By the end of 2024, the province of Jujuy will have an installed capacity of 82,500 tons of lithium carbonate per year.
- ◆ JEMSE, through agreements with ARCADIUM-SALES DE JUJUY and EXAR, can acquire up to 5% of the battery-grade lithium carbonate production in both projects, at market prices and conditions, and use it industrially in the province of Jujuy.



# Lithium Carbonate Value Added Factory

Signing of letters of intent and joint venture created with international battery factories for the installation of a lithium battery factory or cell assembly in Jujuy:

- **GOTION INC.**
- **FAAM – GRUPO SERI INDUSTRIAL**
- **GANFENG LITHIUM Group Co.Ltd.**

# Other mining projects

**Oro Aluvional,  
Polimetálicos y  
Tierras Raras**



## **ALLUVIAL GOLD - SANTA CATALINA PROJECT**

7,780 hectares on the Santa Catalina River and El Torno River (Alluvial Gold) Polymetallic veins, tin alluvium, turbidites with gold and gold alluvium can be found in the area.

## **RARE EARTHS - TUSAQUILLAS PROJECT**

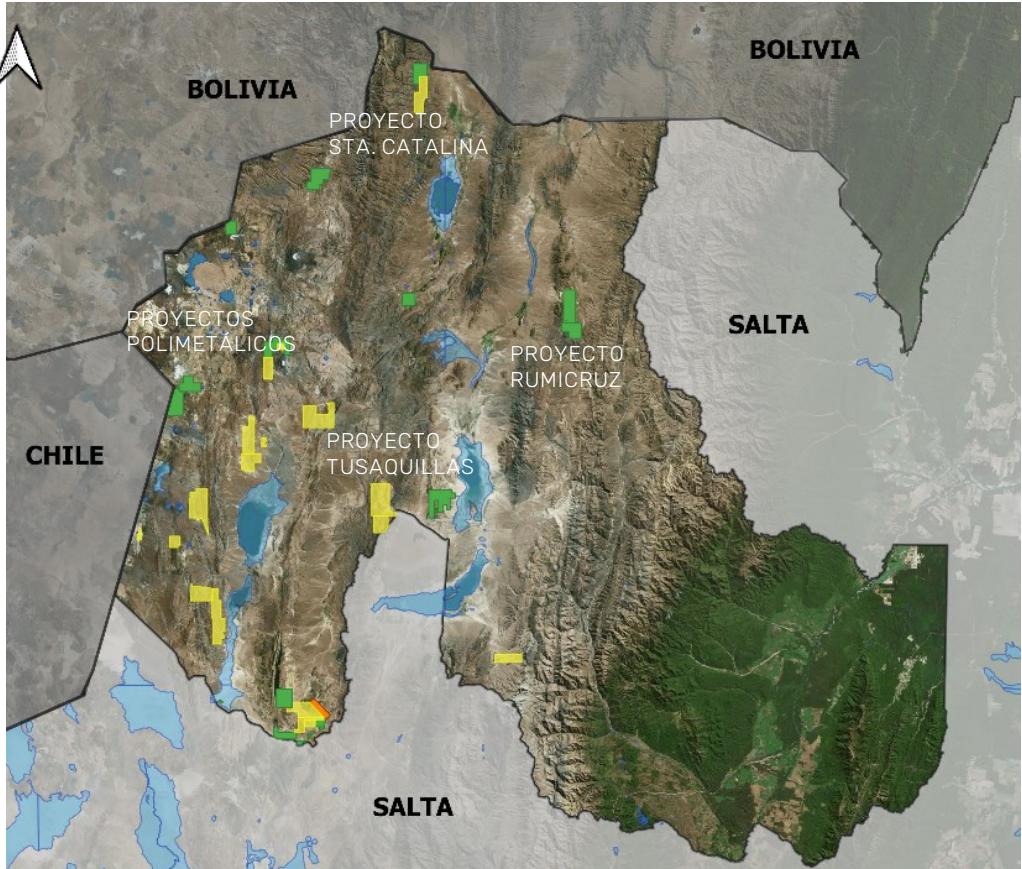
18,230 hectares on Sierra de Alfar and Tusaquillas, in the department of Cochinoca, on Ordovician granites. Carbonatites of hydrothermal and metasomatic origin with rare earth and thorium content can be found in the area. Tungsten can be found in greisen belts (wolframite veins), in the composite batholith of Tusaquillas.

## **COPPER-LEAD-ZINC-NICKEL-CO - RUMICRUZ PROJECT:**

9,100 hectares 25 km east of the town of Abra Pampa, within the Purisima-Rumicruz Polymetallic District. It has polymetallic deposits type Five Element Deposits with a paragenesis composed of U, Ni, Co, As, Ag + Bi, Cu, Pb, Zn.

# GENERAL TERMS AND CONDITIONS OF BUSINESS IN LITHIUM PROJECTS / JEMSE PARTICIPATION

- ◆ Shareholding: As consideration for the assignment and/or transfer of mining properties, JEMSE receives a shareholding in the company that will carry out and operate the project.
- ◆ Entry Fee: As consideration for the transfer of mining properties, JEMSE receives an amount denominated in USD, calculated based on the surface area and characteristics of the mining properties.
- ◆ Exploration Phase: The interested party will present a plan of work and planned investments. During the Exploration Phase, the interested party will assume the costs and investments of the execution of the described works in one hundred percent (100%).
- ◆ Production Phase: if there are merits to move forward with a commercial lithium production project, then the interested party will pay JEMSE a complementary consideration to the amount of the Entry Right, for the transfer of mining properties.
- ◆ Benefit: In case of advancing to the Production Phase, the project will recognize to JEMSE a periodic fee (monthly, semi-annual, annual) deferred equivalent to a percentage of the project's profit before interest, taxes, depreciation and amortization, during the life of the project or a certain period.
- ◆ Option: Once the commercial production of lithium carbonate has begun, JEMSE and/or whoever is indicated, will have the option to acquire a percentage of the annual production.



## Mining Properties

- ◆ **21 PROSPECTING AREAS: 77,650 ha. 16**
- ◆ **EXPLORATION AREAS: 49,400 ha.**
- ◆ **1 MINE: 2,000 ha.**

# Our commitment to the integration and social development of Jujuy

## Social objectives of our projects:

- ◆ To achieve the integration of the communities of each of our projects.
- ◆ To strengthen community technical capacities through technical training plans and agreements for the development of each project.
- ◆ Promote the hiring of local labor.
- ◆ Ensure the active participation of communities through consultations, talks, meetings, etc.
- ◆ Promote local community development, enabling the progress of entrepreneurs who can join the project.



# FREE ZONES IN JUJUY

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## PERICO INDUSTRIAL FREE ZONE

**It is designed for the installation of factories, laboratories and processing plants that seek to add value to a certain merchandise.**

**It is currently enabled and fully operational.**



## ◆ Geographical Location

Located on National Route N 66,  
27 km from the city of San Salvador de Jujuy.

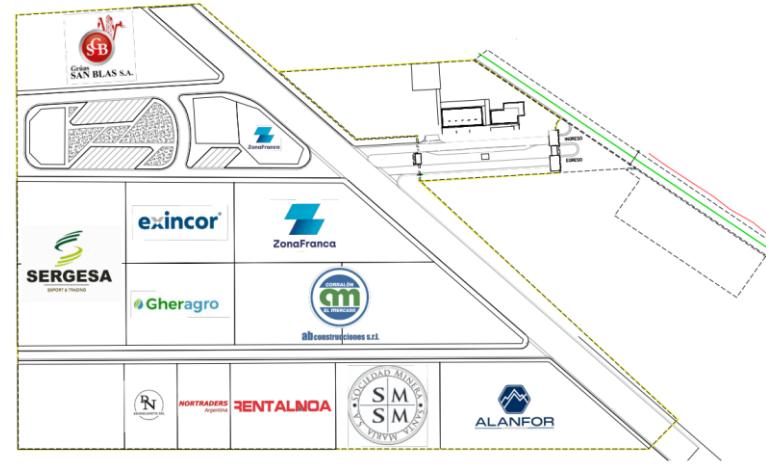
## ◆ Infrastructure

A 50-hectare property in its first stage.  
Excellent logistical linkage.

On National Route N 66, 4 km from the International Airport. The laying of the General Belgrano railway connects the back of the property with the Horacio Guzmán International Airport, where an air cargo terminal is projected for 2024.



# LAND DISTRIBUTION AND AVAILABILITY



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# Incentives to the Perico Free Trade Zone

- ◆ Tax exemption for the entry of merchandise, machinery, and productive equipment.
- ◆ The goods that enter will not be subject to export or import duties as long as they come from third countries and not from the general customs territory.
- ◆ Export incentives (Law 22415-Cod. Customs)
- ◆ VAT: Exempt export (VAT Law art. 8 inc.d) Special regime of Art. 43 Law 24331 art. 30)
- ◆ Only the remuneration and service fees provided by the concessionaire will be paid. Exemption from the payment of taxes that reach imports for consumption.
- ◆ Tariff and tax treatment within the Free Trade Zone.



## ADDITIONAL BENEFITS

- ◆ Exempt from national taxes are communications, gas, electricity, running water, sewage and sewage services.
- ◆ The maximum concession period for a user is 30 years, which can be automatically extended for another 10 years.
- ◆ It allows the entry of goods covered by economic restrictions for the General Customs Territory.
- ◆ Goods stored within the ZFIP shall not pay taxes of any kind, only the services provided for their maintenance and handling.
- ◆ Goods that after being processed or perfected suffer a jump in the Nomenclator in ZFIP may be exported to any country in the world without paying export duties.



# PROMOTION OF TECHNOLOGICAL DEVELOPMENT

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# ADMINISTRATION OF THE TECHNOLOGICAL DEVELOPMENT CENTER "GENERAL SAVIO"

- ◆ What is the Technology Development Centre (CDT)? It is a provincial initiative aimed at the development, production, research and transfer of professional scientific knowledge, among others.
- ◆ What is JEMSE's role in the CDT?  
JEMSE, as Executive Director, coordinates actions among the members of the center in pursuit of progress and growth in scientific research.
- ◆ Who are the members of the CDT?  
The CDT houses the CIDMEJu (Research Center for and Development in Advanced Materials and Energy Storage of Jujuy), InDyA (Institute of Dating and Archaeometry), JUJUY LITIO S.A.P.E.M., and the provincial headquarters of INTI.
- ◆ What are the objectives of the CDT?  
The main objectives are to promote, develop knowledge transfer and with lines of research aimed at new development technologies.



JUJUY LITHIUM Added  
value to the Lithium  
chain

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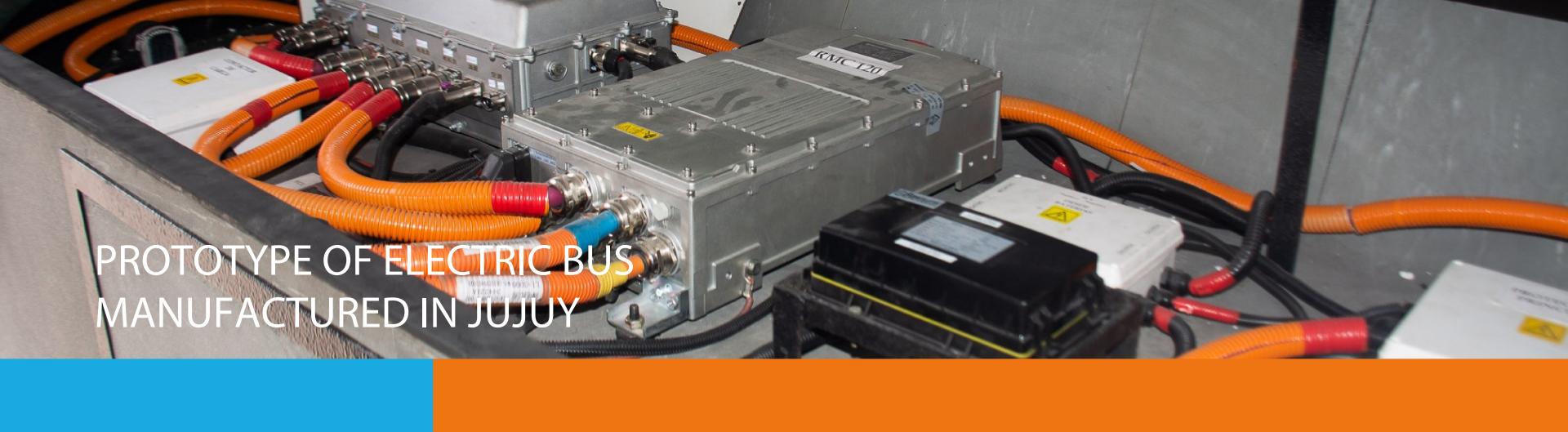
# Milestones Jujuy Lithium

- ◆ Objectives of the Conversion Program  
Generate an ecosystem of added value around the lithium industry, benefiting the environment and saving operating costs for transport companies.
- ◆ Actors involved  
JEMSE- Jujuy Litio, National University of La Plata, Xibi-Xibi urban transport company and Federal Investment Council.
- ◆ Achievements  
In October 2023, the conversion of the first prototype was completed, which will serve ordinary urban transport by April 2024.
- ◆ Benefits of reconversion  
It costs half as much as buying a 0 km unit, has the same durability and reliability, minimal maintenance, reduces operating cost by 85%, reduces noise pollution and GDE emissions.



# ELECTROMOBILITY

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## PROTOTYPE OF ELECTRIC BUS MANUFACTURED IN JUJUY

- ◆ It has a 128 KW/h engine, which allows it to reach 172 HP, 90 km/h (electronically limited VEL. MAX) and a minimum range of 200 km, transporting the same number of passengers as a combustion engine.
- ◆ In terms of operating cost, each unit consumes up to 85% less than a combustion unit and is minimally maintained.
- ◆ Each unit saves the emission of 6.9 tons per year of greenhouse gases and decreases noise pollution, improving the quality of the user's journey.

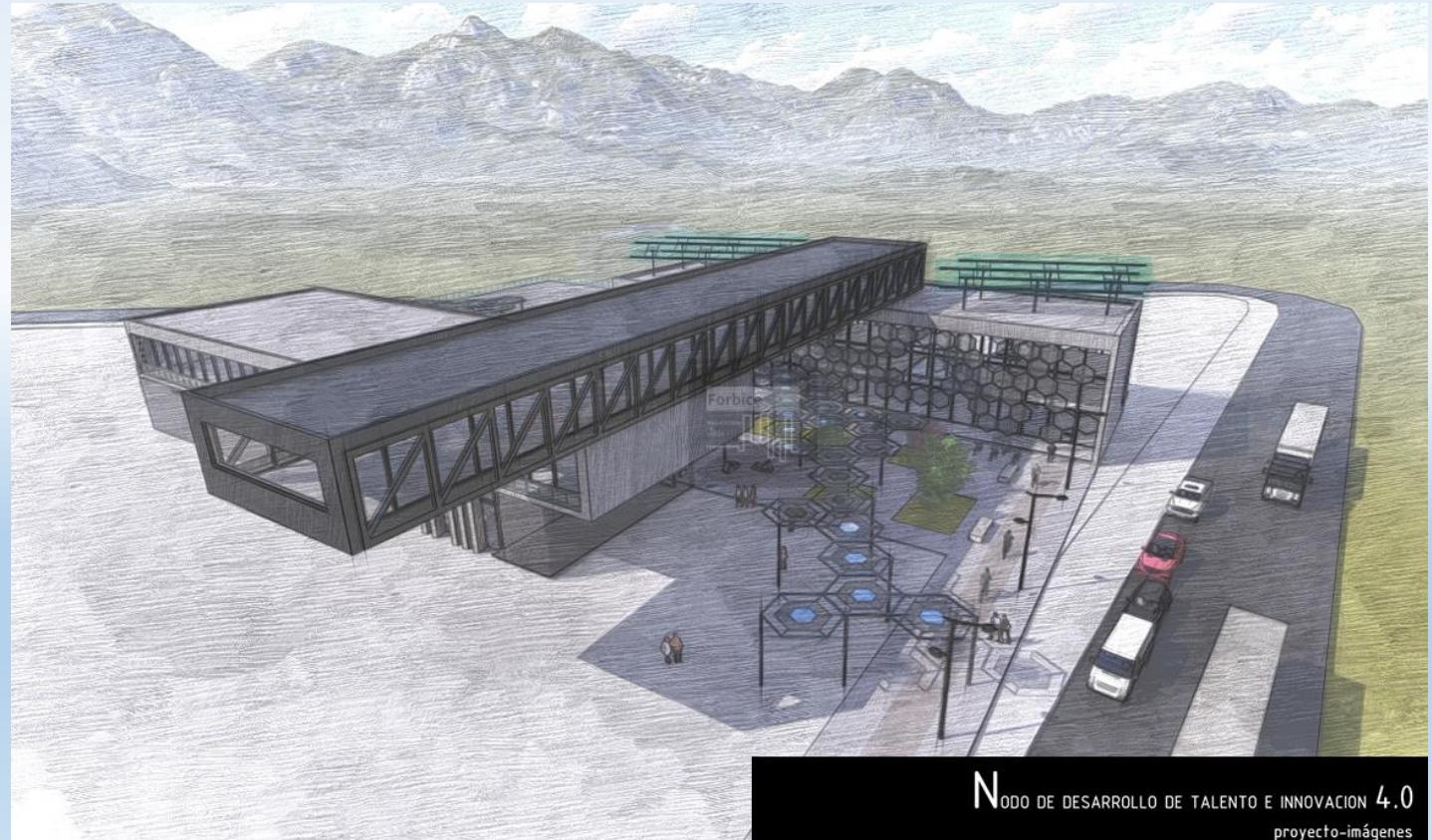
# Provincial Investment Law (Law No. 5,922)

## PROMOTIONAL BENEFITS

- ◆ Reduction in the Gross Income Tax Rate for Manufacturing Activities
- ◆ Reimbursement of up to 30% of the AMOUNT OF THE INVESTMENTS effectively made.
- ◆ Exemption from Stamp Tax for a period of up to 5 years.
- ◆ Reimbursement of up to 50% of the COMMISSIONS PAID to the MUTUAL GUARANTEE COMPANIES (SGR).
- ◆ Reimbursement of up to 50% of the EMPLOYER CONTRIBUTIONS PAID by the new personnel hired during the Investment period.
- ◆ Refund of up to 80% of INCOME TAX.
- ◆ Exemption from Real Estate Tax for a period of up to 5 years.
- ◆ Reimbursement of 5% of the INTEREST RATE for Bank Loans taken for Working Capital.

# Talent Development Node for Industry 4.0

A project to foster innovation and economic growth in Jujuy, Argentina



# Project Overview

**Project Name:** Talent Development Node for Industry 4.0

- **Location:** Industrial Polygon at Development Hub, between Perico Free Trade Zone and Perico Industrial Park, Perico, Jujuy
- **Institutional Leaders:** Minister Juan Carlos Abud Robles, Sonia Leis, Belén Castro Agüero.
- **Executing Organization:** Production Ministry.
- **Total Project Cost:** USD 7.5 Million.



# Background and Context

Jujuy is transitioning from traditional industries (agriculture, tobacco, sugar ) to more sustainable sectors (renewable energy, medicinal cannabis, lithium extraction).

Shift towards Industry 4.0 with digital technologies, automation, and real-time data analysis.

Challenges: Economic dependence on traditional sectors, skills gap, limited economic diversification, and geographic concentration of business incubators in the capital.



# Project Solution

- Establishment of a Talent Development Node to enhance technological capabilities.
- Focus on training local talent, fostering public-private collaboration, and building a sustainable, innovation-driven economy.



# Skill Development and Training

- Create a comprehensive curriculum for Industry 4.0 technologies.
- Hire expert instructors and provide state-of-the-art facilities.
- Develop partnerships with local businesses.
- Offer scholarships and financing options for students.
- Establish a coworking space for businesses and entrepreneurs.
- Promote projects to reduce carbon footprints and enhance resource efficiency.
- Create an incubation program with an 80% success rate in transitioning startups.

# Expected Outcomes: Economic, Environmental, and Social Impact

## Economic:

- Increase human capital through specialized training for Industry 4.0.
- Modernize local businesses with cutting-edge technologies, enhancing competitiveness at the national and international levels.
- Positive economic impact by creating high-quality jobs in key sectors like lithium extraction, renewable energy, and technology.

## Environmental:

- Promote sustainable energy solutions such as lithium storage and solar technologies.
- Reduce waste through advanced manufacturing techniques like 3D printing.
- Implement environmental monitoring systems to minimize degradation and improve resource management

## Social:

- Diversify the local economy and expand job opportunities, reducing poverty and unemployment, especially in regions outside the capital.
- Foster a culture of collaboration, creativity, and entrepreneurship within the province.
- Improve the overall education level by offering training in high-demand fields, reducing disparities in education and access to STEM disciplines.



NODO DE DESARROLLO DE TALENTO E INNOVACIÓN 4.0  
proyecto-imágenes



NODO DE DESARROLLO DE TALENTO E INNOVACIÓN 4.0  
proyecto-imágenes

# Economic Diversification and Entrepreneurial Growth

## **Expanding the Entrepreneurial Ecosystem:**

- Increase investment in underdeveloped regions, leading to creation of new job opportunities.

## **Support for Local Entrepreneurs:**

- Provide mentorship and financial support to local entrepreneurs, enabling them to grow their businesses and increase regional competitiveness.
- Facilitate partnerships with local businesses and academic institutions to encourage innovation and modernization.

## **Startup Incubation:**

- Create an incubation program aimed at helping startups transition from the initial phase to the growth stage, with an 80% success rate target.
- Attract investment in new technologies, focusing on sustainable growth and technological advancement in the region.

# Project Timeline and Key Beneficiaries

## •Project Timeline:

•Estimated Execution Time: 24 months

- Phase 1: Curriculum and infrastructure development (6 months)
- Phase 2: Instructor hiring and partnership development (6 months)
- Phase 3: Training programs and startup incubation (12 months)

## Key Beneficiaries:

**Students:** Access to specialized training in Industry 4.0 technologies, improving their employment prospects and preparing them for future industries.

**Local Community:** Economic growth, job creation, and improve quality of life as the province diversifies into high-tech and sustainable sectors.

**Companies and Entrepreneurs:** Access to a highly skilled labor force, business development resources, and advanced technological infrastructure for innovation.

**Educators:** Opportunities to collaborate with the node and improve their skills, contributing to the educational growth of the region.

**Public Sector:** Increased investment and economic stability, contributing to regional development and reducing disparities.

# Conclusion and Vision

The Talent Development Node for Industry 4.0 is a strategic initiative designed to enhance Jujuy's economy. By building a stronger, more competitive industrial base aligned with Industry 4.0 standards, the project will promote sustainable growth and create long-lasting economic benefits for the province.

## Future Vision:

- The successful implementation of the node will position Jujuy as a leader in technological innovation, renewable energy, and high-tech manufacturing.
- The project will not only strengthen the local economy but also contribute to Argentina's national development by fostering a workforce capable of driving innovation and modernization across key industries.

## Call to Action:

- Continued collaboration between public institutions, private companies, and educational organizations is essential to fully realize the potential of this transformative project.
- Investing in Industry 4.0 technologies is a necessary step toward achieving economic resilience, environmental sustainability, and social progress in Jujuy and beyond.

# CONTACT



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