

ELECTRIC GUIDE

THE

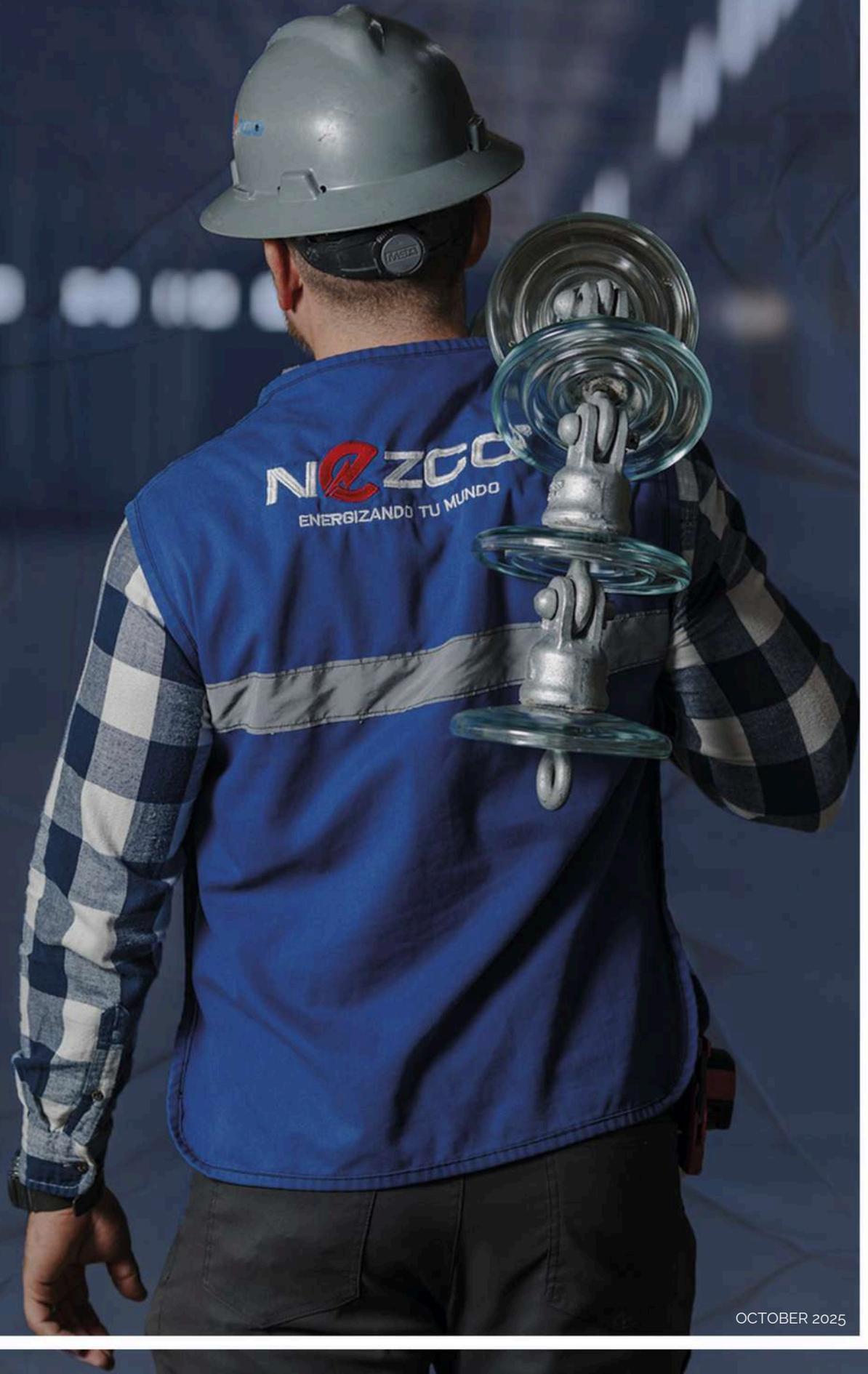


TABLE OF CONTENTS

CREDITS Editing, Design and Content	01	
CONTEXT	02	INTRODUCTION
OBJECTIVE	03	
ARE WE CONNECTED TO THE REST OF THE COUNTRY? National Interconnected System 13	04	ABOUT NEZCO®
	05	
	06	BAJA CALIFORNIA BASIC CONCEPTS 09 The Importance of Energy in Baja California 11 Basic Concepts of Energy in Baja California
	12	
	15	CURRENT INSTALLED CAPACITY AND GENERATION SOURCES IN BAJA CALIFORNIA 18 Energy Forecast in Baja California 18 Industrial Projects, Substations 2025
IS THERE ENERGY IN BAJA CALIFORNIA?	20	
	23	ALTERNATIVES FOR ACCESSING PRIVATE ENERGY
POSITIVE ASPECTS AND OPPORTUNITIES FOR BAJA CALIFORNIA	26	
	28	THINGS TO CONSIDER BEFORE HIRING AN ENERGY MANAGER
SOURCES AND REFERENCES	30	



Credits

This information was prepared by Nezco® for informational purposes only, and it is intended to guide the user to a better understanding of the energy environment.

This document was made thanks to the collaboration of the following team:

- Writing, Editing, Information Gathering and La Baja Images: Alfredo Ángeles
- Design and Visual Presentation: Ana Karen Garduño
- Technical Review and Content Validation: Ángel Nevares, Alexis Nevares, Alberto Valenzuela, Jorge Nevarez, Francisco Nevarez



Introduction

Over the years, Nezco® has strengthened its leadership in the electricity sector. With firsthand experience in the industry sector and close collaboration and relationship with the Federal Electricity Commission (CFE), Nezco® has been able to grasp the key aspects and essential steps for energy development in the region and the country.

Therefore, we decided to create a guide to display clearly and realistically the Baja California energy landscape.

To achieve it, our team worked on gathering relevant information about the region and organizing it in sections. Additionally, efforts made by the public and private sectors, jointly or separately, to promote economic, social, and sustainable growth in the state of Baja California, with electrical energy as the backbone, have also been disseminated.



Context

Since the 1980s, Baja California has experienced constant industrial growth—from the arrival of foreign manufacturing companies to the overall urban and economic development.

These circumstances have implied a sustained increase in the demand for electricity. This challenge, although present throughout the country, acquires special relevance in Baja California due to its geographical location and close relationship with the neighboring country, triggering its rapid growth.

NEZCO® is an electrical construction company with over 40 years of experience specializing in comprehensive energy solutions for the industrial, commercial, and residential sectors.

Its origins date back to the early 80s, when it started as a family business that eventually became a formal, solid, and professional company, recognized for its commitment to quality, safety, and efficiency.

Their experience ranges from design and management to electrical installations of medium and high voltage. Electrical inspections, compliance with the Código de Red (Grid Code), engineering development, as well as the construction of substations, lines of transmission and infrastructure are among the services they provide.



ABOUT NEZCO®



Electrical services provided by a committed team

In addition, **NEZCO®** provides a full range of complementary services required by the industry in construction and energy, always with a focus on integral solutions that bring real value to each project.



The team is comprised of a set of certified engineers, specialized technicians, and highly trained operational personnel, prepared to face any challenge under the highest safety standards.

In each project, NEZCO® is committed to doing things right from the very beginning, promoting the professional development of their team and actively contributing to the growth of the region through projects with a positive impact.

OBJECTIVE of the ELECTRIC GUIDE

The main objective of this guide is to promote the development of the electrical sector in line with the region's economic needs and demand. To this end, research focused on the industrial sector and its broader environment has been conducted, with the goal of ensuring a reliable electricity supply for both the industry and population, promoting sustainable and competitive growth in Baja California.



CONTEXT AND BASIC CONCEPTS OF BAJA CALIFORNIA.



Baja California, located in northwestern Mexico, holds a strategic geographical position that favors energy generation from diverse sources. It borders the U.S. state of California to the north, Sonora and the Gulf of California to the east, and the Pacific Ocean to the west. This privileged location not only facilitates access to international markets—it also offers a wide range of natural resources that have positioned the state as a key player in the border region.

The predominant climate is arid and semi-arid, which guarantees clear skies most of the year and among the highest levels of solar radiation in the country, especially in areas such as Mexicali and the San Felipe Valley. This has encouraged the development of photovoltaic projects in the region.

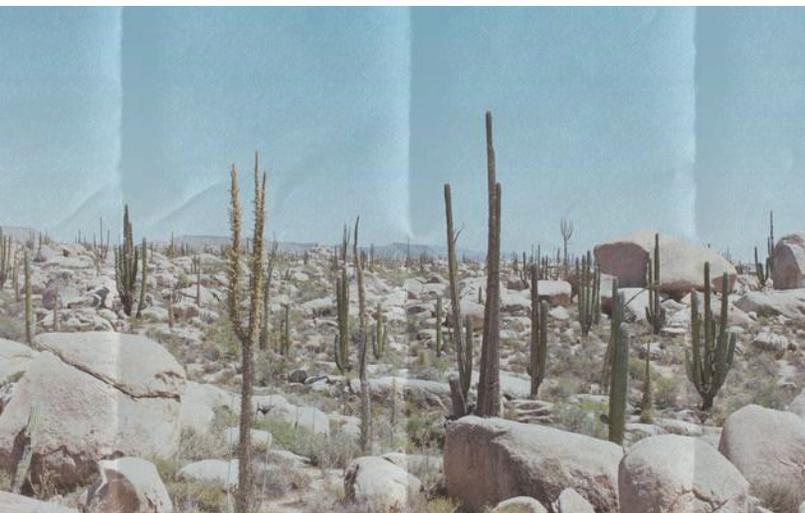
In addition, geothermal activity in the subsoil of the Mexicali Valley allows using the natural heat of the Earth to generate clean energy through the Cerro Prieto geothermal power plant, one of the largest in Latin America.



In the mountainous region of La Rumorosa, between Tecate and Mexicali, the constant winds that cross the canyons and rock formations have allowed for the installation of wind turbines, which create an even greater potential for large-scale wind power developments.

Although most of it is for export to California and, particularly, Silicon Valley, there is also a wind park project of 10 MW managed by the Government of Baja California to operate programs of social impact in the state.

Beyond the energy field, Baja California is also a region of natural contrasts. The Sierra de San Pedro Mártir is home to coniferous forests and unique species such as the California condor, successfully reintroduced, while its coastlines, both in the Pacific and the Sea of Cortés, are home to whales, dolphins, sea lions and an impressive variety of marine fauna.



These ecosystems, along with their extreme climate and low population density outside large urban centers, have their own challenges and opportunities to bring electricity to remote communities through technologies such as solar microgrids or hybrid generation systems.

Densely populated cities such as Tijuana and Mexicali, along with vast rural and desert areas, make energy distribution just as important as energy generation itself.

In this sense, Baja California not only has the capacity to produce electricity—it does so with clean sources, following a sustainable model of energy that uses its own geographical environment as a strength.

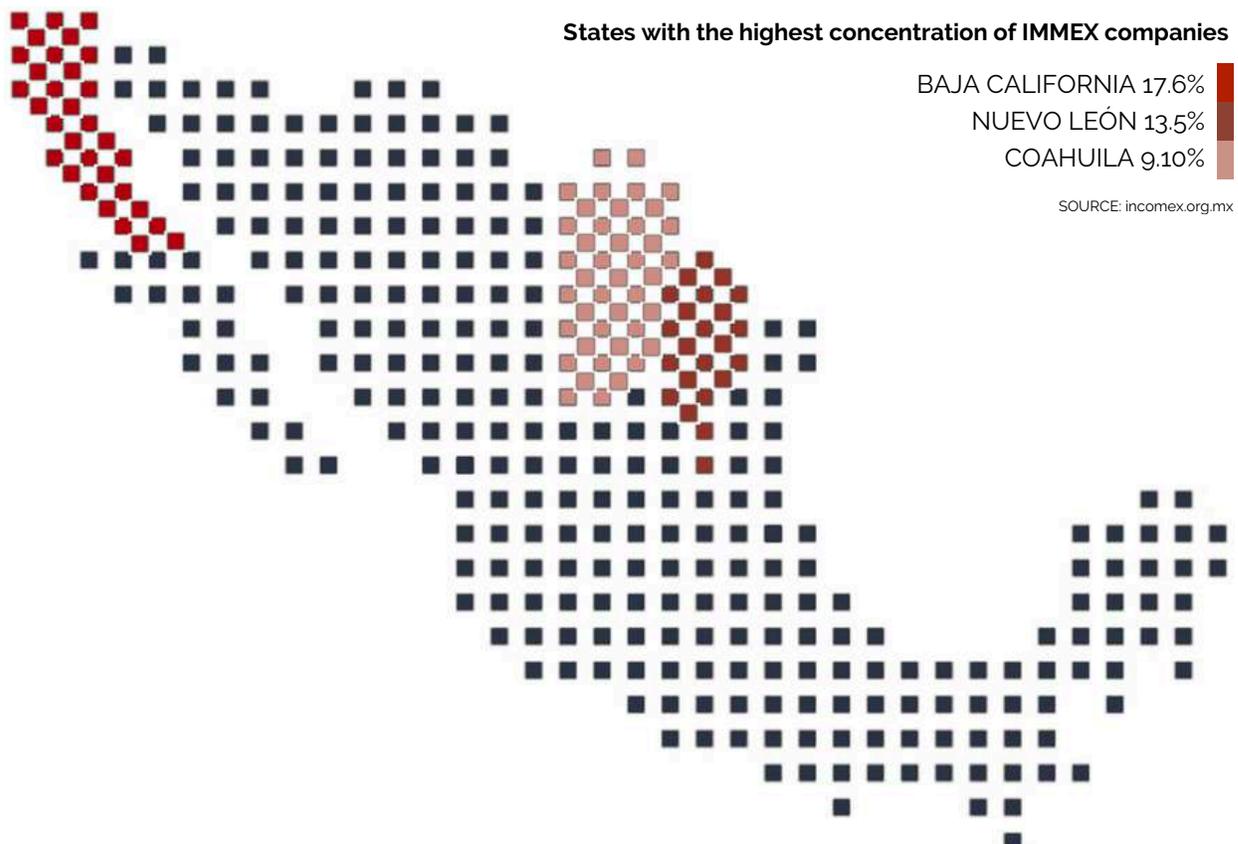


THE IMPORTANCE OF ENERGY IN BAJA CALIFORNIA

Manufacturing companies make up Baja California's most important economic foundation, with over 1,000 companies under the IMMEX program. They cover the most important branches, such as electronics, semiconductors, medical devices, aerospace, and automotive, among others.

The main industrial cities are Tijuana, recognized for its wide electronics and medical devices manufacturing base; Mexicali, which stands out in the aerospace and automotive industry; and other cities such as Tecate and Ensenada, which also host industrial and agro-industrial companies.

In 2025, Baja California was Mexico's leading state, concentrating 17.6% of the companies registered in the IMMEX program.





In addition, **Baja California ranks second in employment generation in the industry**, followed by Chihuahua, with 390,000 direct jobs and up to 420,000 during peak export season.

The attraction of domestic and foreign investment, new companies established, housing development, and the growing number of university programs focused on the industry are all factors that affect the state's challenge regarding energy.

It is a long-term effort that demands faster progress in order to meet the present and future needs of the state's population and industries.

PARTICULARITIES OF ENERGY IN BAJA CALIFORNIA



To get a grasp of the state's situation regarding energy, we must understand the participation of the Mexican Government authorities. Constitutionally, the energy sector falls under federal jurisdiction, supported by Energy Commissions and State Agencies, such as the Secretariat of Energy (SENER), the National Energy Commission (CNE), and the National Energy Control Center (CENACE). They are in charge of managing and operating the National Electricity System (SEN) through the Federal Electricity Commission (CFE) and the Wholesale Electricity Market (MEM).

The CFE is still the largest company supplying and distributing electrical power nationwide.

Nonetheless, the MEM—created after the energy reform (2013-2014)—allows generators and large consumers to enter energy trade agreements with private parties, promoting the gradual development of the industry, where the CFE seeks to remain the one in control with a national market participation of 54%.

It should be noted that this 54-46 dynamic started after the recent regulatory change that seeks to promote the energy transition to encourage the generation of clean energy.

ARE WE CONNECTED

TO THE REST OF THE COUNTRY?



As for electrical infrastructure, Mexico has a National Interconnected System (SIN) made up of 7 regions throughout the country and capable of sharing electrical resources—sending and receiving energy—on demand or in response to operational conditions. However, the only states that are not part of this National Interconnected System are Baja California and Baja California Sur.

The “Baja California Power Grid” is the state’s own energy system, operating independently from the rest of the country.

A key aspect is that, although Baja California is connected to this system, it is not interconnected.

What does this mean?

It means energy is received, but it is not sent from Baja California to the rest of the country.

NATIONAL INTERCONNECTED SYSTEM

Made up of 7 regions

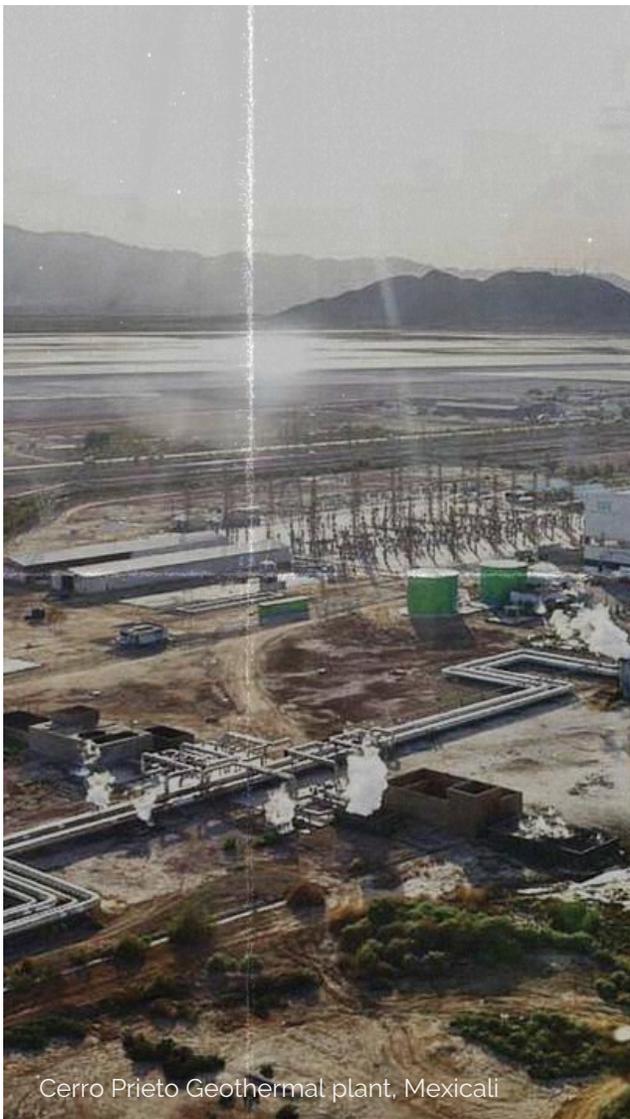


SOURCE: SENER

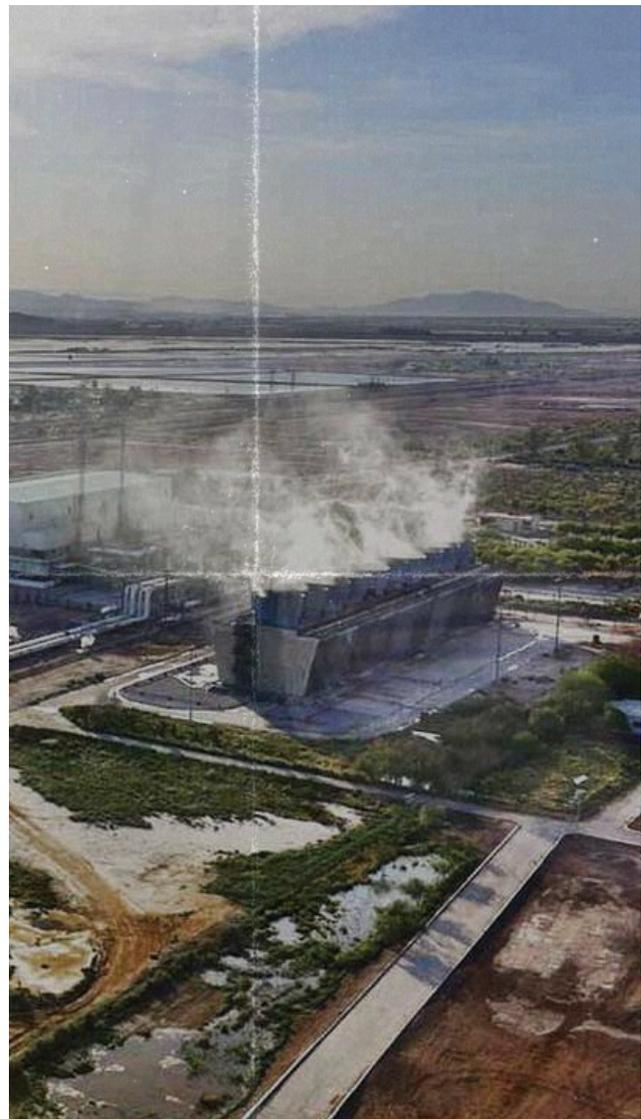
Rather than being a problem for Baja California, this situation has represented a technical and strategic challenge that has driven projects to guarantee the energy supply for the local industry and, at the same time, the analysis for the creation of projects to interconnect to the rest of the country.

Meanwhile, the state keeps developing its generation plants, as well as strengthening and upgrading transmission and distribution grids to bring energy to the centers of consumption.

At present, the state has several generation plants. Still, the facilities that provide most of the state's energy are the combined cycle generation plants in Playas de Rosarito and Mexicali, as well as the Cerro Prieto geothermal plant (in Mexicali), one of the largest and most important in the region.



Cerro Prieto Geothermal plant, Mexicali





Updated June 2025*

CURRENT INSTALLED CAPACITY

AND GENERATION SOURCES

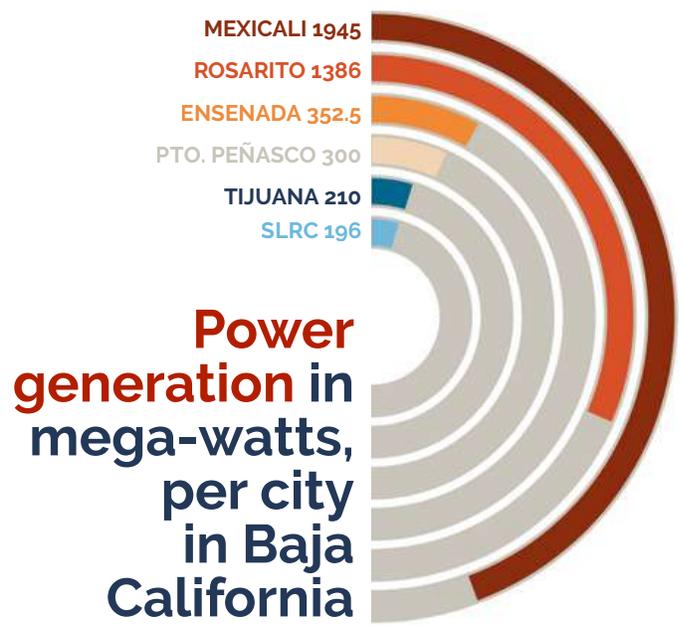
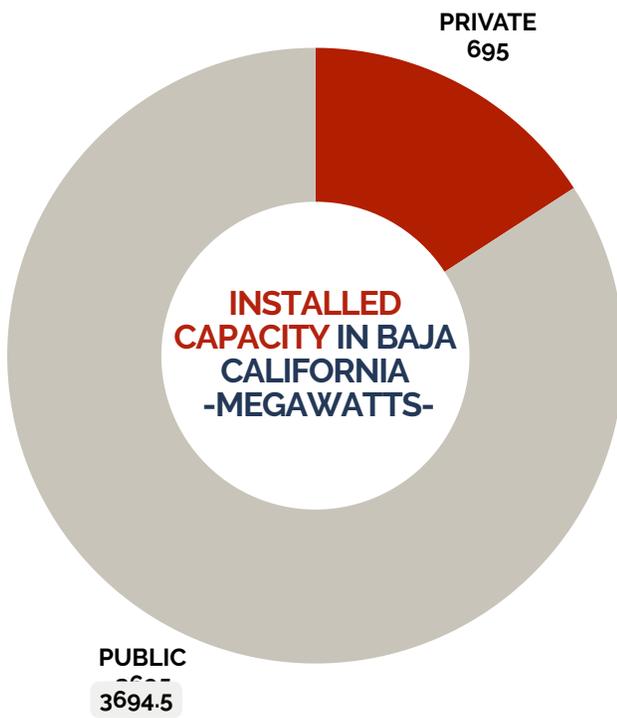
IN BAJA CALIFORNIA

The state's total installed capacity is between 4,250± and 4,400 MW±*. In addition, the state imports up to 408 MW from the California Western Electricity Coordinating Council (WECC) grid, which allows meeting peak demand during the summer period.

The State Energy Plan 2022-2027, published in October 2023 by Governor Marina del Pilar Ávila Olmeda, mentions the construction of a photovoltaic project in Puerto Peñasco, Sonora, with an installed capacity of 1,000 MW as part of a plan to connect Baja California to the National Interconnected System (SIN) starting in 2024.

Currently, the first two stages of this photovoltaic plant have been completed; 300 MW of are already being fed into the Baja California Power Grid, and there are plans to increase up to 880 MW for the state.

As also mentioned in the plan, the region's potential for energy storage from lithium batteries, as well as the use of green hydrogen as part of the energy transition towards 2030, remain on the agenda.



* Numbers calculated considering that some of the new combined cycle and turbogas plants announced in 2023 are already in partial operation, as well as some initial phases of the Puerto Peñasco Photovoltaic Project in Sonora, which contribute up to 300 MW at present

In addition, President Claudia Sheinbaum has made statements and taken actions on the importance of the energy sector, such as:

1) Continuation of the energy transition:

As part of the National Energy Plan, the Mexican Government has committed to reaching at least 40% of energy generation through clean sources nationwide by 2030. Baja California, due to its natural resources, strategic location and wind and solar potential, is considered an important region for developing energy storage models and renewable generation.

2) Boosting the lithium industry and research:

Under her federal administration, there are plans to strengthen the Lithium for Mexico (LitoMx) organization and to explore the potential of geothermal and brine reserves in the northwest of the country, including areas of Mexicali and Cierro Prieto, as well as adjacent areas to California's Imperial Valley. Support for lithium battery and microgrid pilot projects in border communities have also been brought up by her.

3) Encouraging nearshoring investments:

She has also discussed a fiscal stimulus program for companies that install renewable energy self-supply systems in Baja California and Sonora, making the most of the proximity to the U.S. market—with expectations of increasing cross-border cooperation in electromobility and clean energy projects, in conjunction with California in the U.S.

4) Strengthening the transmission and distribution infrastructure:

The President has mentioned in federal forums the need to accelerate transmission and distribution projects in the northern region of the country to help meet the increase in demand, particularly due to new investments, as well as the incorporation of new renewable generation plants. Together with SENER and the CFE, she will seek to review in detail the progress of the "BC-SIN Interconnection Project" and guarantee its completion.



ENERGY FORECAST IN BAJA CALIFORNIA

In Baja California, there are currently generation plants under construction that will add to the installed capacity in the coming years:

CTG González Ortega Power Plant: 184 MW, started operations in 2023.

Mexicali Oriente Internal Combustion Plant (Ejido Cuernavaca): 429 MW, started operations in 2023.

Industrial Park Internal Combustion Plant (San Luis Río Colorado): 196 MW, started operations in 2023.

González Ortega Combined Cycle Plant: 624 MW, planned for 2025, expected to start operations in 2026.

San Luis Río Colorado Combined Cycle Power Plant: 622 MW, planned for 2025, expected to start operating in 2026.

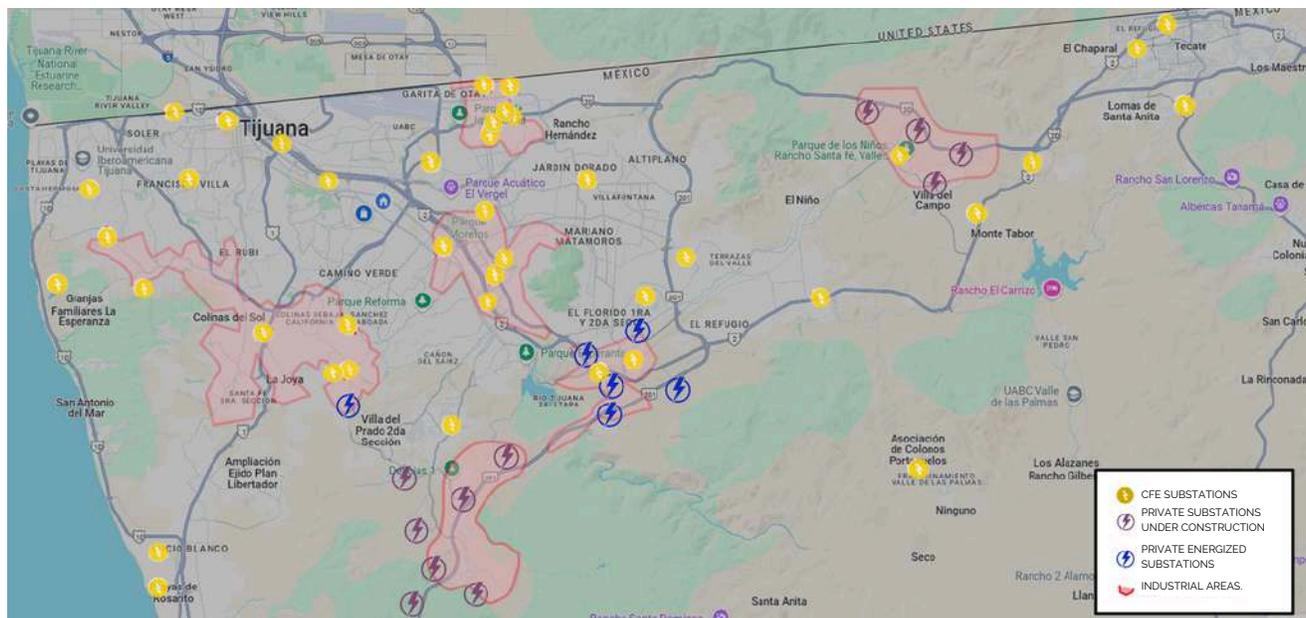
Puerto Peñasco Photovoltaic Project: Stages III and IV will add 300 MW and 280 MW respectively, for a total of 880 MW for Baja California.

These projects seek to meet the rapidly growing electricity consumption, especially during the summer, when demand can exceed 3,500 MW. In addition, their goal is to strengthen the supply to boost new industrial and real estate developments.

INDUSTRIAL PROJECTS 2025 SUBSTATIONS

Thanks to the direct collaboration with industrial developers, you are able to access the following information:

INDUSTRIAL PARKS + PUBLIC AND PRIVATE SUBSTATIONS

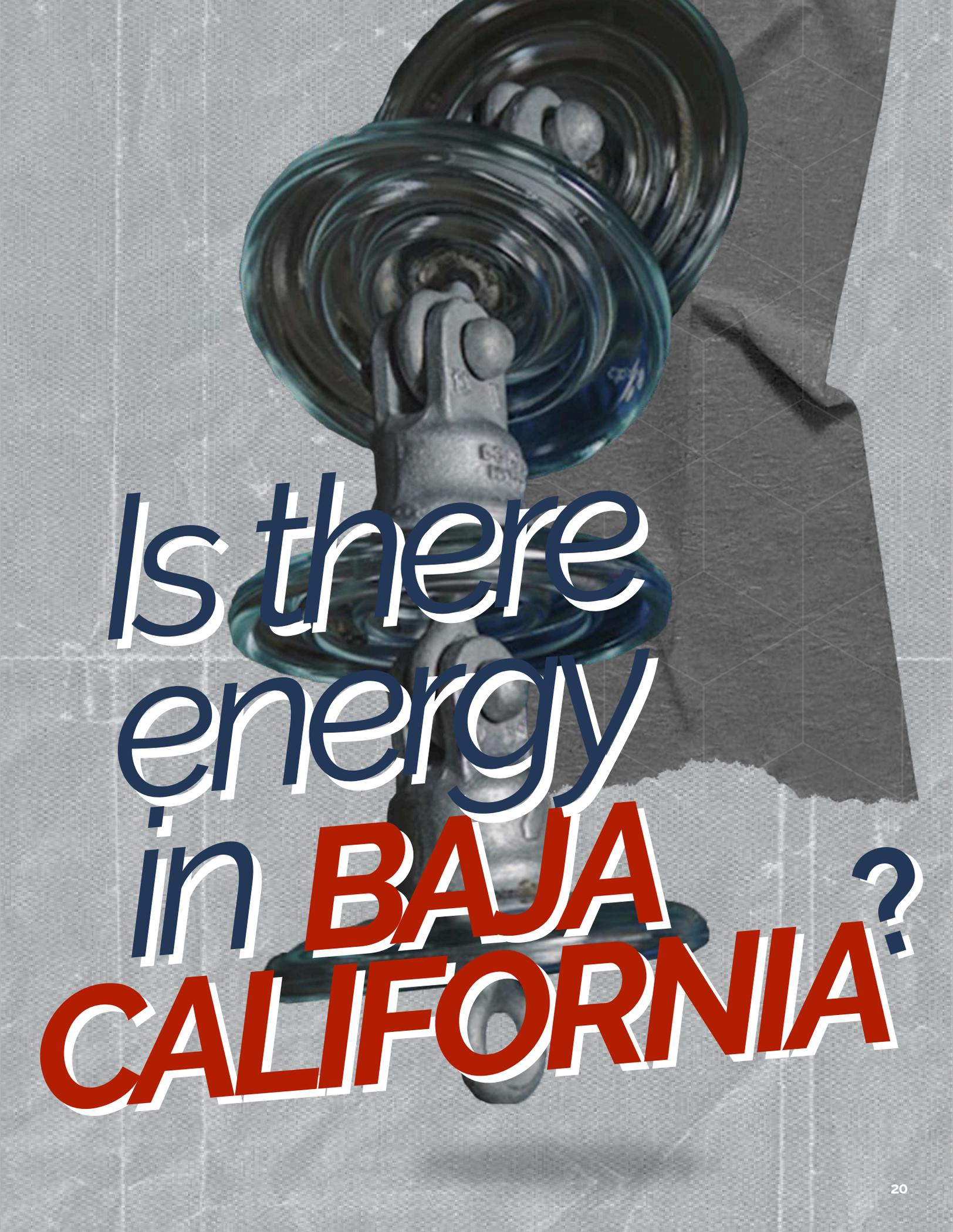


PROJECTS

CAPACITIES AND VOLTAGES

NAME	INSTALLED CAPACITY		VOLTAGE	STATUS	DELIVERY
LA ENCANTADA	15	MVA	69/115 KV	ENERGIZED	
LOS OLIVOS	30	MVA	69/115 KV	ENERGIZED	
PARQUE SUR	30	MVA	230 KV	ENERGIZED	
PARQUE NORTE	15	MVA	230 KV	ENERGIZED	
PI NOGALES	30	MVA	230 KV	ENERGIZED	
VESTA PARK MEGA REGION	30	MVA	69/115 KV	ENERGIZED	
NWIP	22	MVA	69/115 KV	UNDER CONSTRUCTION	Q4 2025
PI MAKRO	90	MVA	230 KV	UNDER CONSTRUCTION	Q4 2025
PI VIA	90	MVA	230 KV	UNDER CONSTRUCTION	Q4 2025
PI MUSA/RUBA	60	MVA	230 KV	UNDER CONSTRUCTION	Q4 2025
PI DORADO	15	MVA	69/115 KV	UNDER CONSTRUCTION	Q4 2026
PI COYOTE	30	MVA	230 KV	UNDER CONSTRUCTION	Q4 2026
NORTHLINK VALLE REDONDO	10	MVA	69/115 KV	UNDER CONSTRUCTION	Q4 2025
QUANTUM	30	MVA	69/115 KV	UNDER CONSTRUCTION	2026 - 2027
NORTHEAST IP / HUBS PARK	25	MVA	69/115 KV	UNDER CONSTRUCTION	Q4 2026
LA HERRADURA IP	13	MVA	69/115 KV	UNDER CONSTRUCTION	
ATISA 2000	15	MVA	230 KVA	UNDER CONSTRUCTION	Q2 2027
AVAILABLE CAPACITY	550	MVA's			

Note: Projects, industrial capacities, and voltages are an estimate and not final data.



Is there
energy
in **BAJA**
CALIFORNIA?

For at least 15 years, the increasing demand for energy, industrial development, and urban expansion have made evident the constant need to invest in infrastructure to ensure the electricity supply in each city.

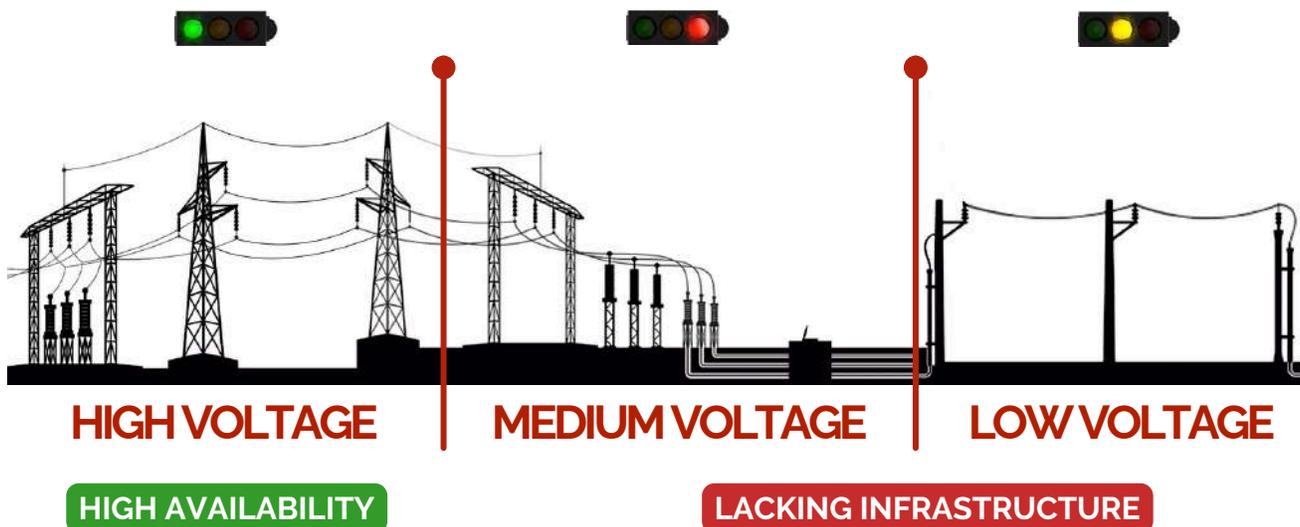
Therefore, the answer to the uncomfortable question about energy in Baja California is:

Yes, there is energy in BAJA CALIFORNIA

Currently, the state can generate electricity through its combined cycle power plants, the Cerro Prieto geothermal and photovoltaic plants, as well as new projects that are being added to the grid, such as their expansions and the possibility of importing electricity from California during the peak season—this generated electricity moves through high tension lines.

The real challenge is not power generation itself but having the proper infrastructure to deliver it where it is needed. Most of the available energy in Baja California is in high voltage lines, but the medium and low-voltage grid does not have enough capacity to efficiently supply companies, retail, and housing.

This lack of substations, transformers and distribution circuits makes it easy to believe “there is no energy.” However, the problem is not the availability of kilowatts or megawatts, but the need for infrastructure to distribute and transform energy.



The CFE already conducts projects to reinforce these levels, and the Expansion and Modernization Program of the RNT (National Transmission Network) and the RGD (General Distribution Network) prioritizes substations, microgrids and modernization of circuits for all the state. It even contemplates the potential of microgrids to address areas with energy poverty where there is currently no electricity infrastructure. In summary:

THERE IS SUFFICIENT ENERGY, BUT THE PROPER INFRASTRUCTURE IS REQUIRED TO ACCESS IT.

Now, what do we refer to when we talk about high voltage energy?

According to CFE specification L0000-02, the voltages are classified as follows:

VOLTAGE LEVEL	DESCRIPTION
LOW VOLTAGE	VOLTAGE UNDER 1,000 V
MEDIUM VOLTAGE	VOLTAGES OVER 1,000 V AND UP TO 35,000 V
HIGH VOLTAGE	VOLTAGES OVER 35,000 V AND UP TO 230,000 V
EXTRA HIGH VOLTAGE	VOLTAGES OVER 230,000 V

It should be noted that the investment required for the infrastructure mentioned above is remarkably high. The federal government and the CFE must manage and plan the execution of this type of infrastructure projects for each region and state, reason why it takes more time than contemplated for the current needs.

So, what type of infrastructure is required?

- Transmission lines to transport energy over long distances.
- Maneuver or switching substations
- Power substations (High to medium voltage).
- Distribution lines.
- Medium to low voltage substations.
- Protective equipment.



ALTERNATIVES FOR ACCESSING PRIVATE ENERGY

This is where private initiative can speed up the process to obtain energy: by providing the necessary infrastructure.

How it works?

Considering that the high voltage transmission system has enough power for the whole state, what is required is to take that high voltage, transform it to medium voltage and subsequently to low voltage to use it.

There are two options to manage this "particular energy":

a)

PRIVATELY

The company manages both the infrastructure and the energy and is responsible for performing proper maintenance services and charging its tenants accordingly.

TRANSFERRING RIGHTS

of the infrastructure to the CFE so that they are in charge of managing and billing for the energy, as is usually done.

b)

This investment can be made both individually as a company, or between several private entities or business groups, so they can cover the expense of having their own infrastructure and energy.

STAGES OF THE PROCESS

1

SCHEME SELECTION

3

APPROVAL: CFE AND CENACE

2

PROJECT DEVELOPMENT

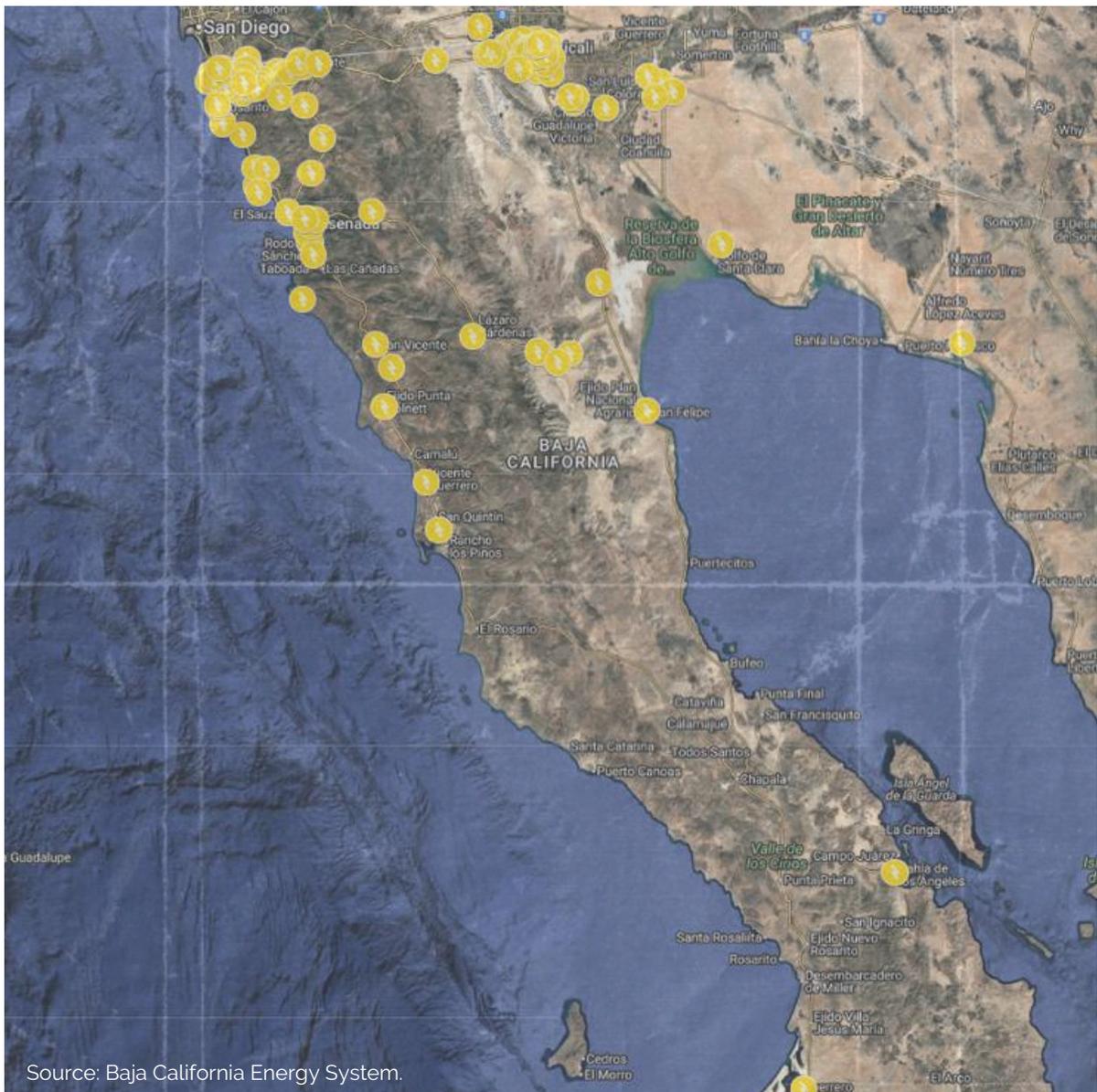
4

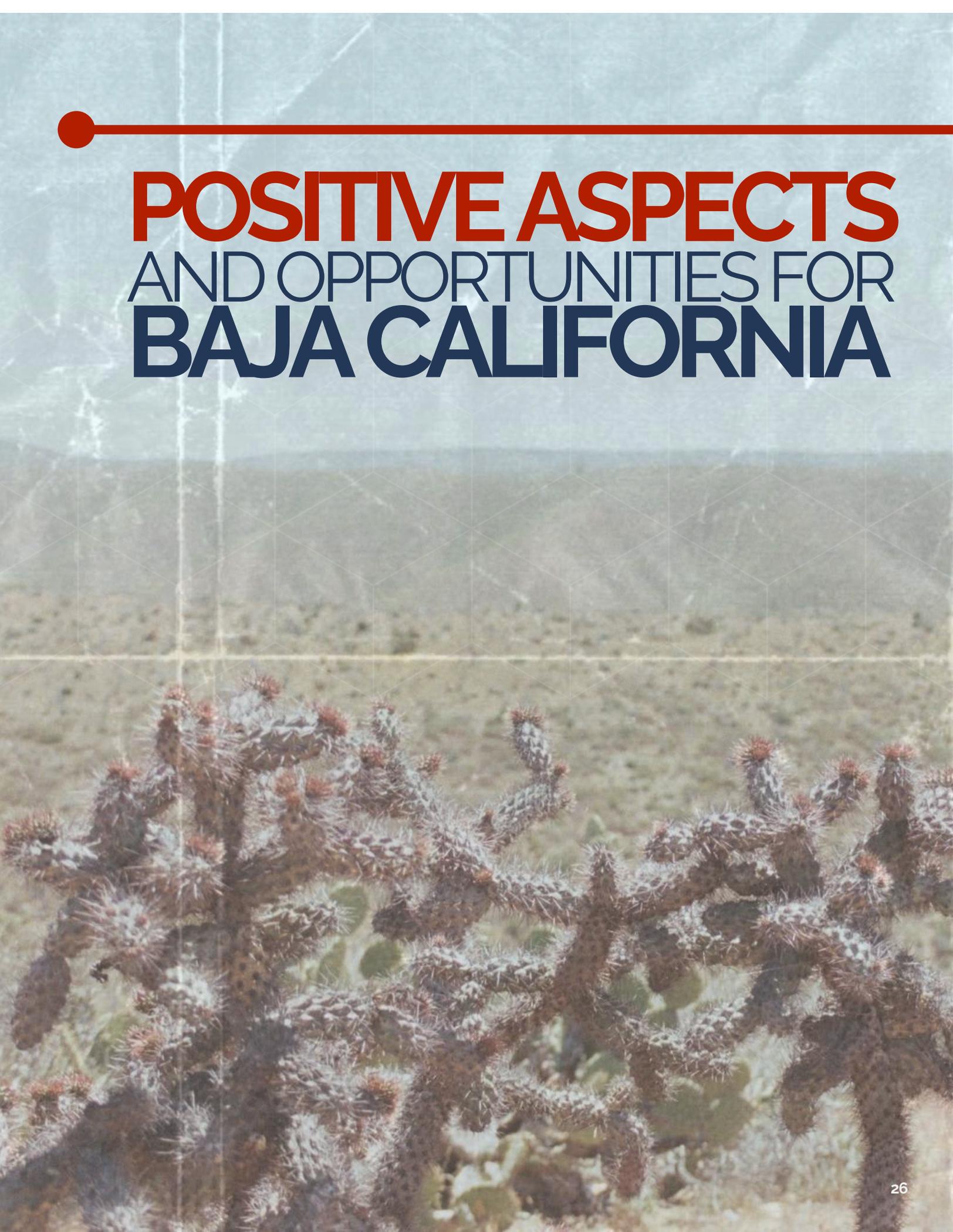
DEVELOPMENT OF INFRASTRUCTURE

It is important to consider the possible infrastructure needs for a project of this nature, such as:

- Extension of transmission lines (required to transmit energy at high voltage to a point close to where power is required, if applicable)
- Expansion of bays in existing substations
- Building maneuver or switching substations
- Recalibration of existing transmission lines
- Expansion of control and telecommunications booths

PUBLIC ELECTRICAL SUBSTATIONS





POSITIVE ASPECTS
AND OPPORTUNITIES FOR
BAJA CALIFORNIA

In addition to the above, there is a favorable outlook for energy in Baja California.

1) Abundant natural resources for investment in renewable energy generation projects:

- High levels of solar radiation (especially near Mexicali).
- Wind potential in La Rumorosa and other areas.
- Geothermal potential from underground steam.
- The Cerro Prieto geothermal power plant, which at one point provided up to 99% of the state's clean energy.

2) Large-scale projects underway:

- Interconnection with the rest of the country and the expansion of generation infrastructure (including the solar park in Puerto Peñasco) offer opportunities for reliable supply and better prices in the future.
- Plans to expand the natural gas network, driven by agreements between the CFE, Carso and Sempra Infraestructura.

3) Nearshoring and investment attraction:

- Proximity to the U.S. market and increased generation capacity provide competitive advantages.
- The industrial and manufacturing sectors could benefit from entering into electricity supply agreements at more stable prices.

4) Promoting innovation and new technologies:

- The State Energy Plan 2022-2027 of the Baja California State Government promotes research and planning on energy storage (lithium batteries, green hydrogen), electromobility and energy efficiency.



**TIPS TO MAKE SURE
THE NECESSARY ENERGY
IS AVAILABLE.**

**HOW DO I KNOW IF THE
PROPERTY I ACQUIRED OR AM
LOOKING TO BUY HAS ENERGY?**

It is believed that **“feasibility”** guarantees the supply and/or connection to the electricity grid, which is false and leads to misinformation.

At present, more than just having a “positive feasibility”, a formal request to the CFE must be submitted—this should be properly integrated and justified so that the regulatory authority can then carry out a review and analysis of the different factors and loads available for connection. This may result in a CFE request to develop infrastructure that guarantees the proper functioning of the grid and its reliability when delivering the requested load.

THINGS TO CONSIDER ●

before hiring an **ENERGY MANAGER**



THINGS TO CONSIDER BEFORE HIRING AN ENERGY MANAGER



When a company needs to conduct electrical adjustments, procedures, or projects, having a manager specialized in the field can make the difference between a swift process and one filled with complications.

Before choosing who to entrust this task, consider the following points:

DEMONSTRABLE EXPERIENCE IN THE SECTOR

Make sure the company has a proven record of industrial, commercial, and/or residential electrical projects. Experience helps anticipate technical, administrative, and regulatory issues that could delay a project.

KNOWLEDGE OF CURRENT REGULATIONS

The manager must be familiar with the Grid Code, with the CFE, CENACE and SENER guidelines, and with the applicable procedures for load increases, interconnections, or facilities regularization.

DIRECT CONTACT WITH AUTHORITIES

A good manager has constant communication with the corresponding institutions. This speeds up the processes and reduces waiting times, avoiding documentation errors or duplicated tasks.

TECHNICAL CAPABILITIES AND SPECIAL EQUIPMENT

It is not just about doing paperwork: many projects require surveys, electrical studies, measurements, or physical adjustments. Make sure the manager has qualified technical personnel and certified equipment.

FULL-SERVICE COVERAGE

Ideally, the supplier should be able to manage the entire process, from project planning and paperwork to execution and final delivery. This avoids fragmentation of responsibilities and facilitates the follow-up of guarantees.

TRANSPARENCY AND COMMUNICATION

Always ask for an explanation of the steps, timeline, and costs of each phase. A professional manager provides clear communication and updated reports on the project's progress.

REPUTATION AND REFERENCES

Check out references or success stories from other companies. Technical reputation and compliance are indicators of reliability.

LEARN MORE ABOUT NEZCO®



www.nezco.mx
www.nezco.us



+52 (664) 380 9530
+1 (619) 897 1680



contacto@nezco.mx
info@nezco.us



nezcomx

Baja California State Government (n.d.) Secretariat of Finance. Retrieved from <https://www.bajacalifornia.gob.mx/hacienda>

Baja California State Government (n.d.) State Energy Commission (Comisión Estatal de Energía, CEEBC). Retrieved from <https://www.bajacalifornia.gob.mx/energia>

National Energy Control Center (Centro Nacional de Control de Energía, CENACE). (2024). Quarterly reports on demand and installed capacity. Corrective Protocol Acts for Baja California. CENACE. (Reportes trimestrales de demanda y capacidad instalada. Actas de Protocolo Correctivo para Baja California. CENACE.) <https://www.cenace.gob.mx>

Secretariat of Energy (SENER). (2024). National Electricity System Development Program (Programa de Desarrollo del Sistema Eléctrico Nacional, PRODESEN) 2024–2038. Government of Mexico. <https://www.gob.mx/sener>

La Voz de la Frontera. (n.d.) News about energy and development in Baja California. Retrieved from <https://www.lavozdelafrontera.com.mx>

El Mexicano. (n.d.) News about energy in Baja California. Retrieved from <https://www.el-mexicano.com.mx>

El Imparcial. (n.d.) Coverage of energy projects in Baja California. Retrieved from <https://www.elimparcial.com>

Milenio. (n. d.) News about national energy and economy. Retrieved from <https://www.milenio.com>

El Universal. (n. d.) Energy and economy in Mexico. Retrieved from <https://www.eluniversal.com.mx>

National Institute of Electricity and Clean Energies. (n.d.) Research and issues on energy. Retrieved from <https://www.iie.org.mx>

Autonomous University of Baja California (UABC). (n.d.) Research and forums on energy. Retrieved from <https://www.uabc.mx>

CETYS University. (n.d.) Forums and issues on energy. Retrieved from <https://www.cetys.mx>

INCOMEX. (n.d.) Association of the Maquiladora and Export Industry (Asociación de la Industria Maquiladora y de Exportación). Retrieved from <https://www.incomex.org>

El Imparcial. (April 23, 2025). The state is leader in IMMEX companies in the country. (Lidera estado en empresas IMMEX del país). El Imparcial. <https://www.elimparcial.com/tij/tijuana/2025/04/23/lidera-estado-en-empresas-immex-del-pais/>